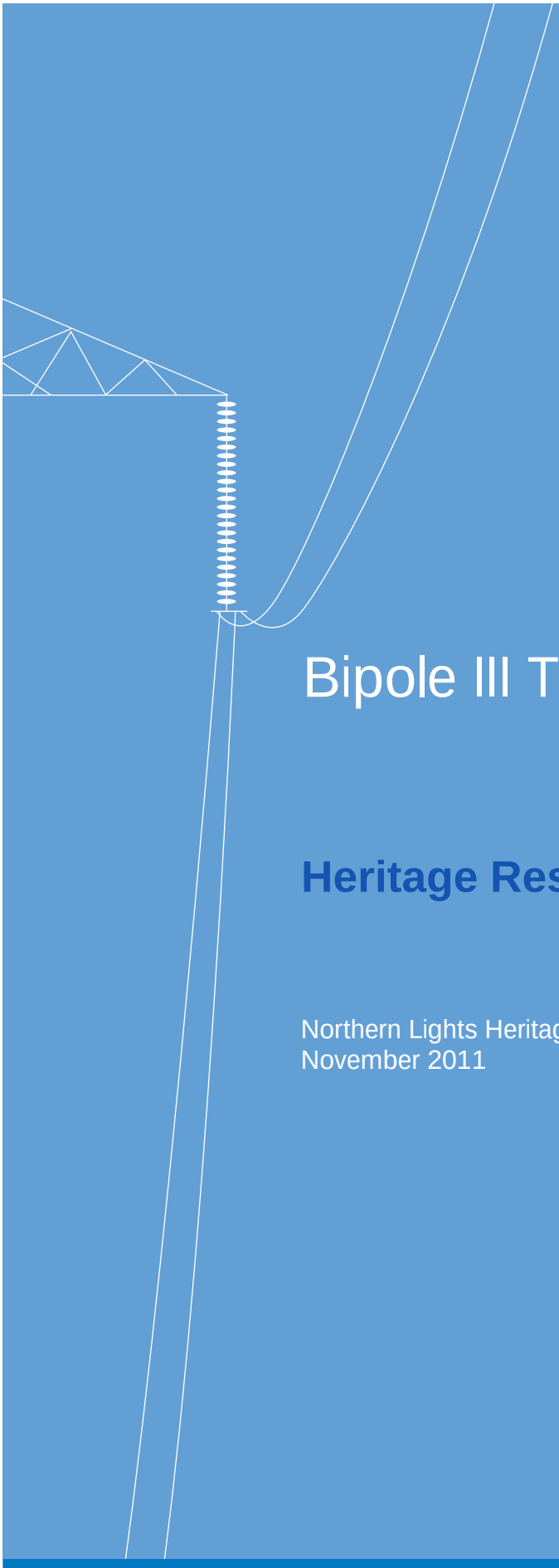

Bipole III Transmission Project

Heritage Resources Technical Report

Northern Lights Heritage Services Inc.
November 2011

Manitoba Hydro

Project: BIPOLE III TRANSMISSION PROJECT

Report Title: Heritage Resources

Company: Northern Lights Heritage Services Inc.

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November 2011

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Executive Summary

This Heritage Resources Technical Report is a supporting volume of information that was gathered during two years of documentary research and archaeological field investigations. In preparation of this technical report a multi-staged heritage resource impact assessment (HRIA) of the Bipole III Study Area was conducted by NLHS in order to determine project effects on existing heritage resources. The components included the Bipole III transmission line, the Keewatinoow (Northern) Converter Station, Collector Lines, Access Roads and Start-up Camp, Northern Ground Electrode, and the Southern Ground Electrode. The Southern Converter Station Site (Riel Sectionalization) was previously investigated in 2008 by NLHS.

Heritage resources are non-renewable and are protected under the Manitoba *Heritage Resources Act* (1986). This legislation is designed to instil that all types of heritage resources as defined by legislation are considered to be of provincial interest. The concept of Valued Environmental Components (VEC) as defined by the Bipole III Project was applied to heritage resources in general; with the understanding that certain categories of heritage exist.

The heritage assessment process for the BPIII Project included literature and inventory review related to archaeology, archival (history) and oral tradition. From this initial desk top exercise a predictive model was developed for the purpose of ranking the three alternative routes within the general study area through a valuation process. As part of the Site Selection and Environmental Assessment (SSEA) process heritage resources investigations were conducted to document the existing heritage environment and identify effects of the Bipole III Project on heritage resources. Once the preferred route was selected field investigations of known sites, sites identified during ATK interviews and areas selected by the predictive model occurred in those areas that were accessible. From a heritage perspective the final preferred route was determined to contain the least amount of interactions with known heritage resources in comparison to the alternative routes.

The results of the heritage assessment methods conducted for the Bipole III Project is discussed in section 3.0. The HRIA identified 94 existing heritage resources within the 3 mile corridor of the Final Preferred Route (FPR). In addition to existing heritage sites, a further 194 environmentally sensitive sites (ESS) were identified within the FPR corridor; these are recommended for further assessment and/or ground-truthing. The ESS was derived by archaeological field surveys, aerial overflight, desktop predictive modelling, and orthographic photograph analysis.

The construction and operation phases of the Bipole III Transmission Project are predicted to have an effect on existing heritage resources. This may result in the permanent loss of heritage resources and may further compound gaps in the cultural history of the province. The majority of archaeological sites within the general Study Area have been avoided through the SSEA process and selection of the preferred route.

Mitigation measures are discussed in section 6 and the recommendation for heritage resources include the avoidance of existing heritage resources within the Project Study Area. Mitigation will

involve on-going ground-truthing of the ESS areas, assessment of significance, and mitigation of any discovered heritage resources. The ground-truthing will be carried out only if sites are noted within the ROW or Project ancillary facilities such as access roads, storage and staging area and infrastructure. The ground truthing will occur between the end of the licensing process and the beginning of the clearing and construction phase. Ongoing monitoring will also occur at regular intervals during the Operations and Maintenance and Decommissioning Phases. During the operations phase of the project, increased access to heritage resource sites in close proximity to the BPIII Transmission Project may increase the chances of looting or damage.

Bipole III Environmental Assessment Heritage Resources Technical Report

1 INTRODUCTION

1.1 Background

Manitoba Hydro is proposing a new high voltage direct current (HVdc) transmission project (Bipole III) to improve overall system reliability and dependability. The Bipole III project includes a 1384 kilometre (km) transmission line located on a 66 metre (m) wide right-of-way (ROW), two energy conversion facilities, and system connections (See Bipole III Transmission Project: A Major Reliability Improvement Initiative Project Description). An environmental assessment (EA) is required for the Project.

Background research, existing site valuation, predictive modeling and field investigation where possible were important factors in determining route preference from a heritage perspective. The final preferred route was determined to contain the least amount of interactions with known heritage resources in comparison to the alternative routes.

In Manitoba, all heritage resources are protected by *The Heritage Resources Act* (herein referred to as *The Act*) (1986), which requires that investigation in the form a Heritage Resource Impact Assessment (HRIA) occur when it is the opinion of the minister that heritage resources may be affected by development. *The Act* ensures that any heritage resources, known or unknown will be protected in some manner from the effects of impact caused by development. A heritage resource includes:

- *a heritage site;*
- *a heritage object; and*
- *any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof* (Province of Manitoba The Heritage Resources Act 1986 (1)

Therefore, heritage resources can be tangible (something that can be seen or held, such as an arrowhead) or intangible (something that is conceptual, such a cultural thought or a cultural landscape). In this report, heritage resources include both the tangible and intangible, although the focus is on tangible resources. The Bipole III EIS ATK Technical Supporting Volume discusses, in part, the intangible component of heritage within the categories of Value of the Environment and Cosmology/Worldview (Usher 2000).

Supplementary to *The Act* is Manitoba's *Policy Respecting the Reporting, Exhumation and Reburial of Found Human Remains* (1987) provides the authority by which human remains found in an archaeological context are managed. Within the purview of the policy are all human remains found outside a cemetery setting, including teeth, digits, partial bone elements and interred individuals. Given the ancient history of human occupation within the Bipole III study area, there is potential for human remains to be found in many different physical settings; these remains are often not obvious until sub-surface activities occur.

1.2 Scope

The Bipole III Project heritage resources technical report will be presented along with other subdisciplines' reports to provide an evaluation for the regulatory process. Steps and processes outlined in the Bipole III Environmental Assessment Scoping Document (MH 2010) establishes the framework and scope for conducting the environmental assessment for the Bipole III Transmission Project and to prepare the current document for inclusion in the Environmental Impact Statement for regulatory review and licensing.

Geographic - The geographical scope of the project encompasses a major part of western Manitoba, extending south westerly from the Keewatinoow Converter Station near the proposed Conawapa Generation Station north of Gillam, Manitoba to The Pas, and continues south-southeast below Portage la Prairie crossing the Assiniboine River, and then turning south and east of Winnipeg crossing the Red River and then north to the Riel Converter Station (Map 1). Study Area boundaries were provided by Manitoba Hydro, including the proposed infrastructure.

Temporal - The temporal scope of the Study Area spans a record of human occupation of *ca.* 11,000-8,000 years in the south (Pettipas 1996:33) and *ca.* 8,000-6,000 years in the north (Figure 1.2-1).

1.3 Purpose and Content

The purpose of the Heritage Technical Report is:

- to identify the potential effects of the Bipole III transmission project to known heritage resources;
- to describe the existing environment of heritage resources in the Study Area;
- to provide evidence of compliance with the terms set out in *The Act;*
- to assist in determining mitigation of sensitive heritage resources; and
- to provide recommendation for mitigative strategies to minimize or eliminate adverse environmental effects.

Heritage resources are considered a Valued Environmental Component (VEC) that helps characterize the effects of the Project. Heritage resources include tangible material culture which is valued by people and intangible heritage resources that include ATK. Tangible

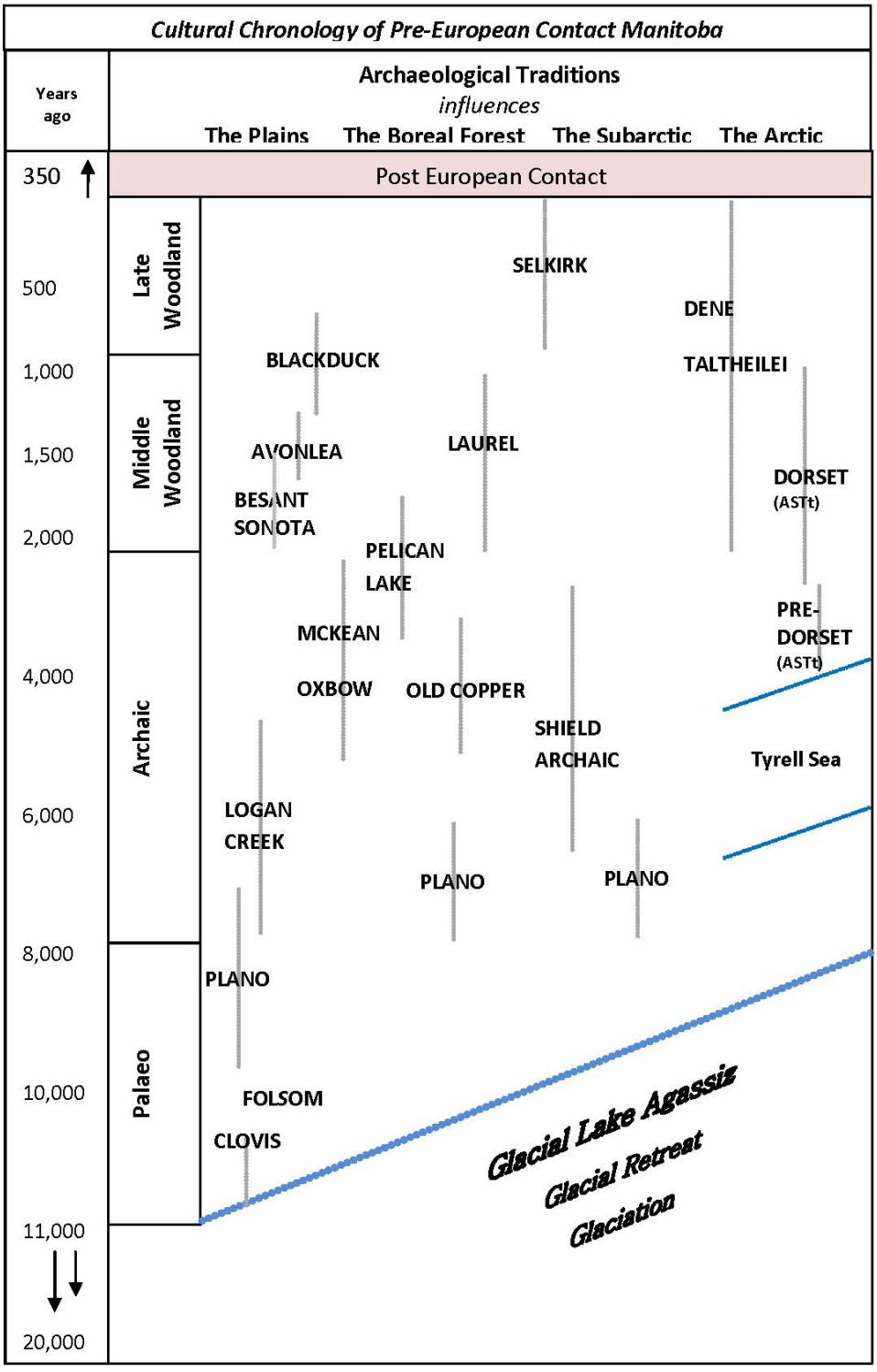

Figure 1.3-1: Cultural Chronology of Pre-European Contact Manitoba.

(material) heritage resources are linked to intangible heritage (ATK); if tangible heritage is lost there may be an effect on the intangible, culture and ATK. Since all heritage resources are protected under *The Act*, all are considered under a single VEC.

The objectives of the heritage technical report include the following:

- Describing the existing environment of the Study Area as a chronology of cultural occupations and heritage resources record for the general study area. There are overlaps between this heritage technical report and the ATK technical report. This is viewed as a collaboration and verification of the known record with knowledge gained from the ATK process.

- Discussing the process of valuation of heritage resources within the general study area that was used to rank the resources. Cultural resources are described but full documentation is found in the ATK technical report where valuations are provided based on the interviewing process.

- Providing an account of the archaeological investigations that were conducted once the preferred route was identified. As the ATK interviews moved forward specific knowledge relating to local heritage resources such as extant structures, features and historic locations were noted and areas flagged for archaeological field investigation.

- Assessing the effects of the Bipole III on known heritage resources within the preferred route corridor, and providing recommendations for mitigation to protect heritage resources.

The heritage resources technical report examines archaeological, historic, and cultural sites within the study area and begins with a description of the study area; this is followed by a review of methods that describes the manner in which the existing environment was defined, and the process used in identifying areas with potential for the discovery of as yet unknown heritage sites. The technical report will be presented using the following format:

- An overview of the existing heritage resource environment of the study area;
- A description of the heritage resources record within the various components of the project;
- A general methodology and set of methods used in assessing the heritage resources of the study area (see section 3.0 Methodology and Methods);
- A discussion of the existing environment; and
- The environmental effects assessment of the project on the heritage resources.

The technical report concludes with a review of the document and recommendations for mitigation and monitoring during and after the project. Bolded words or phrases within this document are explained in the Glossary of Terms found in section 9.0.

An understanding of the existing heritage and cultural environment is important as it:

- Provides the reader with an overview of the rich cultural history of the Province;
- Fulfills the requirements of legislation;
- Offers description, based on the provincial site inventory and known cultural record; and
- Assists in assessing the effects of the proposed Bipole III Transmission Project on heritage resources that may be situated within or adjacent to one or more of the components of the project.

2 STUDY AREA

2.1 General Regional Heritage Resources Overview

The Bipole III Transmission Project study area transects five terrestrial ecozones which has supported human habitation over the past 11,000 years. Since the retreat of the Laurentian ice sheet human populations have made their way into the far corners of what is now known as the province of Manitoba. Their presence is revealed in the tangible heritage resources that were discarded, abandoned or lost over time. The cultural chronology of the Study Area is discussed further in Section 5.0 - Existing Environment.

One of the most important post-glacial events to affect the physical landscape and in turn, human occupation of Manitoba was the impoundment of glacial meltwater (Lake Agassiz). The configuration of the lake changed frequently over its 4,000+ year life in response to changing discharge corridors.

Isostatic rebound and barricades of stagnant ice played an important role in the direction of drainage of this lake. This in turn affected the kinds of decisions early people made regarding their direction of movement. As the lake drained and receded and river systems were established, the newly exposed landscape offered additional areas of exploration and exploitation. Coastal Manitoba also saw physical changes as the final breach of ice-jammed corridors caused sea levels across the Atlantic Ocean to rise significantly. The basin now referred to as Hudson Bay flooded inland to create the Tyrrell Sea with its maximum extent just north of Gillam (Figure 2.1-1) (Dredge 1992).

The record of pre-European contact people indicates active mobility by autonomous family groups or bands across a wide expanse of geographical landscapes. Despite the progression of the Holocene or warming period, periodic cold spells punctuated with drought conditions affected the availability of food sources and caused early people to adapt to fierce weather conditions and new food sources. As the climate stabilized to near present conditions, so did natural environment thus providing resident human populations with a reliable subsistence base and the development of a tradition of knowledge.

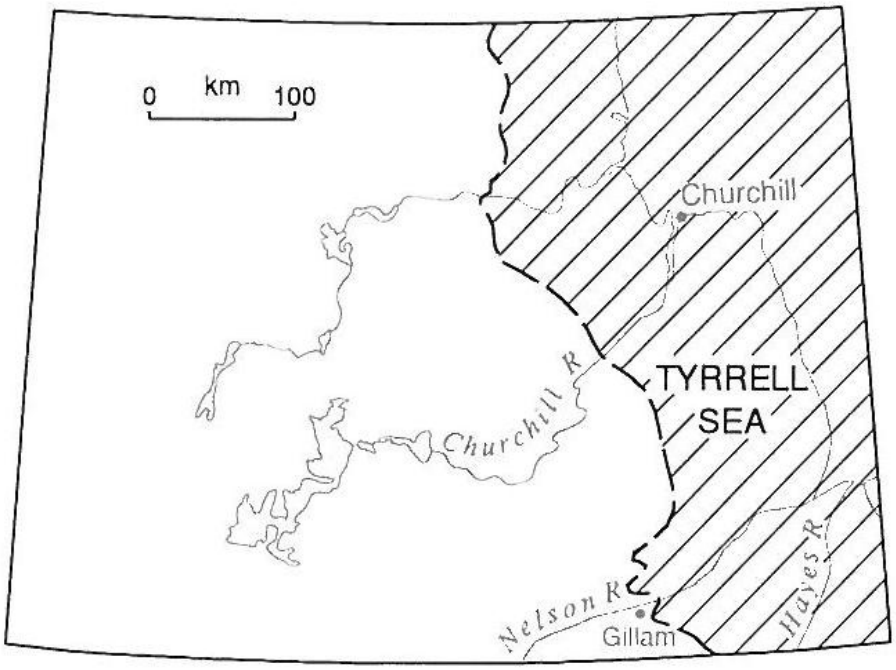

Figure 2.1-1, Map of extent of Tyrell Sea in northern Manitoba (Dredge 1992:11).

The chronology of particular style of stone tools and Native ceramic form and design suggests elements of ancient long-distance trade, intermarriage, diffusion of cultural ideas and adaptation to regional resources.

The arrival of early European explorers and fur traders ushered in the Historic Period with its new technologies, cultural traditions and worldviews. Long before Europeans reached the interior of the Province their trade goods were woven into the existing exchange system of First Nations. Many ancient traditions, such as the crafting of clay vessels and fashioning of tools from stone were soon replaced by more durable brass pots and steel knives.

The colonization of the Red River Valley by the Selkirk Settlers, the British North America Act which created the Dominion of Canada in 1867, the signing of Treaties by the various First Nations, the eventual establishment of the Province of Manitoba and global immigrations have all added cultural flavour to the Provincial history.

The current cultural environment is composed of First Nations, Metis and a non-Aboriginal population of many different ethnic backgrounds. In addition to the six present-day Aboriginal cultures (Cree [or Ininew] (Swampy & Rock); Ojibwa [or Anishinaabe] (Saulteaux), Siouan (Dakota) and Metis (Red River, Country born and self-identified), Dene (Chipewyan) and Inuit there is a rich heritage that celebrates the combined Aboriginal and Euro-Canadian historic period of provincial growth.

2.2 Specific corridor/site descriptions

This component of the report provides the scope of the project including a description of the infrastructure that comprises the Bipole III Project and its potential effects on heritage resources. The larger Bipole III Transmission Project Study Area has been described in detail in the existing environment section of the Environmental Impact Statement (EIS).

2.2.1 Transmission Lines and AC Collector Lines

The BPIII Transmission line route selection is based on a Site Selection and Environmental Assessment (SSEA) process which occurred over three planning phases – Alternative Routes, Preliminary Preferred Route (**PPR**) and the Final Preferred Route (**FPR**). Increasing levels of study area refinement lead to a balanced and comprehensive choice for a preferred route. The heritage assessment followed each of these phases and adjustments were made in scope of work to reflect the route placement and refinement. Additional project ancillary facilities which were also assessed include converter stations, collector lines, borrow areas, camp facilities, and ground electrodes. The general Study Area for all planning stages included an assessment of a 3-mile buffer of each proposed route which provided a manageable framework for the study.

The SSEA iterative process includes:

- Defining a project study area based on factors including community and public input, socio-economic, environmental, and technical (engineering) considerations.
- Identifying regional and site-specific constraints and opportunities for transmission line routing including potentially sensitive socio-economic, cultural, and biophysical features.
- Identifying and evaluating alternative routes based on community/public input, local and Aboriginal traditional knowledge, socio-economic, biophysical, technical, and cost considerations.
- Selecting a preliminary preferred route that, where feasible, minimizes potential adverse effects and enhances opportunities.
- Developing mitigation measures, where required, to address potential adverse effects.

Three alternative route planning stages were selected for a desktop study. Each route was located on the west side of the province and varied in length. The desktop assessment process ruled out sections of each route containing higher frequencies of existing heritage resources. This process led to the selection of a potential preferred route (**PPR)** which once identified became the focus for archaeological field studies.

The Bipole III preferred transmission line route begins at its egress from the Keewatinoow Converter Station and continues in a south-westerly fashion until it arrives at the

Saskatchewan River crossing. At that point the transmission line continues due south and southeast to the Riel Converter Station east of Winnipeg. The final preferred route was a modification of the preliminary preferred route. Together archaeological field assessment and desktop analysis identified sensitive site locations along this route.

2.2.2 Keewatinoow Converter Station

The Keewatinoow Converter Station is the northern converter station which will be located approximately 1.6km north-west of the Nelson River and 5km southwest of the potential Conawapa Generation Station (Figure 2.2-1)(Map 2) .

This facility site is approximately 600 X 700 m (42 hectares) and is located within an area of black spruce/tamarack swamp and hummocky peat. Two loci of gravel ridges present themselves in the form of knolls that rise approximately 1.2m above the surrounding swamp.

Converter Station Project components will include a 230 kV ac switchyard, converter transformers, converter building and solid state electronic valve groups, and a dc switchyard. Construction facilities will include a work camp designed to support 500 people. Additionally, the Project will include new 230 kV transmission lines linking the existing 230 kV switchyards at the Henday Converter Station and Long Spruce Generating Station to the Keewatinoow Converter Station. The potential effects on the AC transmission lines are discussed in conjunction with HVdc Transmission and AC Collector Lines.

Exploration activities associated with the Converter Station include drilling for soil samples and geohydrology studies. Access roads will provide travel routes for heavy drilling equipment. A total of 14 borrow areas in the immediate vicinity of the proposed Keewatinoow Converter Station, with an additional 5 areas near Limestone GS, have been identified for potential use during the Keewatinoow Converter Station construction.

A temporary construction camp will be established at the potential future Conawapa Generating Station site to initially house workers involved in the Keewatinoow converter station. This will be followed by the development of a full construction camp with a capacity of 550 workers near the Keewatinoow station site (Manitoba Hydro 2010).

Construction power for the construction camp, converter station and electrode site will be provided by extending the existing 138 kV transmission line that runs from Kelsey Generating Station to the Limestone construction power substation to a new construction power substation located near the Keewatinoow converter station site.

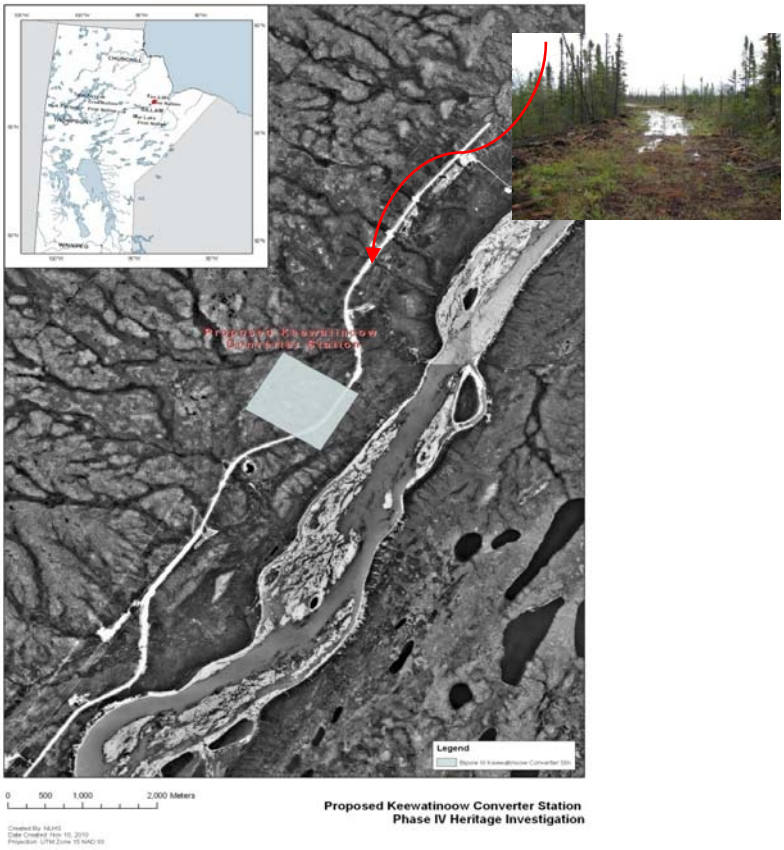

Figure 2.2-1. Preferred Keewatinoow Converter Station Site. Inset illustrated the general physical environment.

2.2.3 Riel Converter Station

The Riel Converter Station will be the southern termination for the Bipole III HVdc transmission line. The converter station will be located at the existing Riel Station site in the RM of Springfield, just east of the city of Winnipeg. It occupies 112 hectares of land that has been agriculturally modified over the past one hundred years (Figure 2.2-3). The Riel Converter Station is the terminal station for Riel Sectionalisation and is currently being developed under environmental licence granted in April 2009.

2.2.4 Ground Electrodes and Collector Lines Connections to the Northern Collector System

The ground electrodes and lines will be installed near the the Keewatinoow Converter Station and Riel Converter Station dc switchyards. Each ground electrode will consist of a shallow ring electrode, approximately 800 m in diameter, to provide a return path for current between the Keewatinoow and Riel Converter Stations.

Figure 2.2-2. Agriculturally modified land at the site of the proposed Southern Converter Station.

The site of the preferred Northern Ground Electrode was identified at NES6 which was determined to offer the lowest overall interference effects. NES7 was considered to be an alternative should environmental effects at NES6 make the preferred site unfeasible for development (Figure 2.2-2). The ground electrode required for the northern converter station will be located approximately 10 km south of the converter station site on the west side of the Conawapa access road and approximately 13.2 km north of the Henday Converter Station. This circular feature will be a buried iron ring approximately 500 m in diameter and will require a site area in the order of one mile square. Only a portion of the site will be cleared. There will also be a low voltage transmission line connecting the ground electrode and the converter station.

The Southern Ground Electrode SES1c was recommended as the preferred location and is found within Section 21, Township 11, Range 6E. The electrode site location is situated approximately 3.5 km NW of the town of Anola, MB and is situated approximately 20km east of the centre of the Riel Converter Station. This circular feature will be a buried iron ring approximately 500 m in diameter and will require a site area in the order of one mile square. There will also be a low voltage line connection between the ground electrode and the converter station.

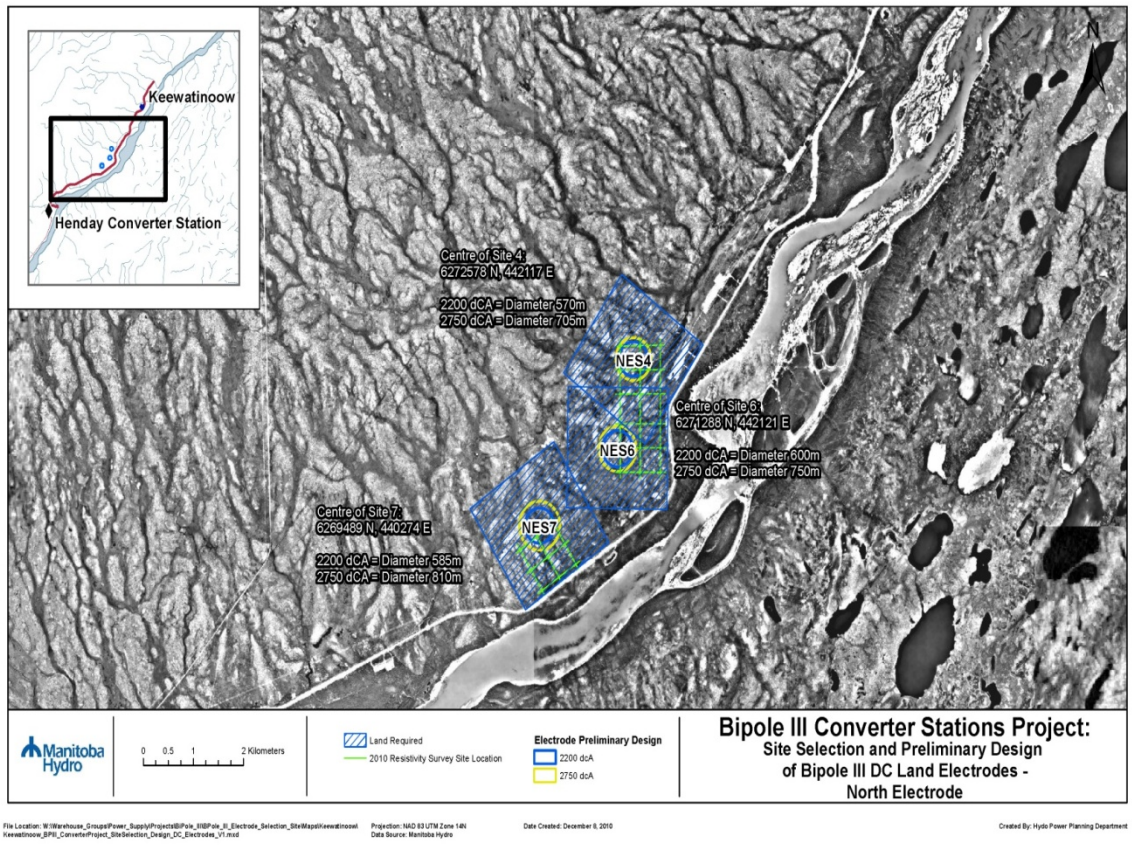

Figure 2.2-3. Northern Ground Electrode.

The ground electrode sites will be connected by a low voltage overhead line to the converter station's dc switchyards. Associated access roads for construction and maintenance will be constructed to connect the sites to the existing road network.

2.2.5 Preferred Route Access Roads

A series of access roads to the preferred route ROW will be established at locations along the entire transmission line. The access roads will provide travel routes for vehicles, heavy equipment and supplies during construction of the Bipole III preferred route.

3 METHODOLOGY AND METHODS

The theoretical approach to heritage resource research for this project was cultural ecology, which is the study of the role of culture as a dynamic component of any ecosystem in which humans participate (Frake 2009:53-59). Background research explored many documents, maps and journals, published and unpublished, historical and contemporary. Cultural resources and past traditional studies within or adjacent to the study area focused on the culture of First Nations and Metis; however, many recent historic ethnicities that contribute to the cultural mosaic of the Province were also examined; the main source of description being local history books.

To assist in the initial organization of research and identify gaps in the existing record, a literature review was conducted. This was followed by applying triangulation, a social science approach that utilizes knowledge of three or more disciplines to investigate a particular topic. For this project triangulation examined three categories of information: the oral tradition; the historic record (including archival and government documents); and the archaeological record (Figure 3.0-1).

The utilization of triangulation was to provide a better understanding of events and in turn assist in identifying and interpreting the archaeological record as it relates to project development. Any gaps noted within one research method can often be closed by referring to another. By this means a more complete characterization of the existing environment was obtained and provided the basis for determining areas of interest as noted by the existing record and set the criteria for developing a predictive model to further assist in the gap analysis and field investigations.

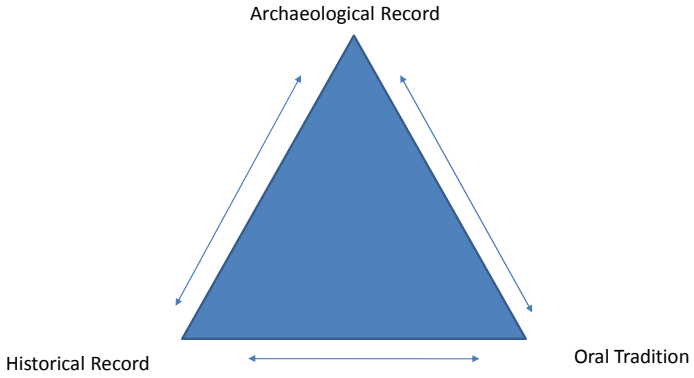

Figure 2.2Triangulation Approach to Archaeological Methods (diagram courtesy of NLHS 1998)

Oral Tradition

The oral tradition is a cultural resource that imparts knowledge and experience from one individual to another. This tradition includes both the oral narrative and oral histories; the former includes an understanding about the past that has been handed down from past generations, while the latter focuses on the historical experience within three generations of the individual providing the interview. Both these sources are routinely used by everyday people in everyday settings and are grassroots in nature; however, the oral tradition of First Nations, Metis and Aboriginal people is best identified as Aboriginal Traditional Knowledge (ATK). ATK studies acknowledge those who routinely use the resources of their natural environment for economic and cultural sustenance. Documents from this category include a variety of traditional land use and occupancy studies such as memory mapping, interviews,

community histories, and recitation of ancient oral narratives. The Oral Tradition provides an **emic** understanding of cultural practices and aids in **ethnographic analogy** which can be projected beyond living memory to the ancient past. This aids archaeologists in understanding the decision-making process that may have determined where people situated themselves at some point in the distant past and why.

The oral tradition also provides a window through which anthropologists aim to understand intangible cultural resources that celebrate distinctive identities.

Historical Record

The historical record provides a wide range of written documentation beginning with the first written journals and maps of European explorers and fur traders. It also includes:

- geological survey reports and maps;
- government documents;
- church records and journals;
- private records;
- still and moving images; and
- numerous secondary sources

The historic record provides an **etic** understanding of the history of events which have helped shape the cultural landscape. Until recently, the etic-based record has formed the official historical record and is the main source of present-day government and corporate policy. Oral history as a record is now accepted as evidence in the legal system provided it is recorded and collected in a meaningful manner.

Archaeological Record

The archaeological record chronicles the many different cultural occupations that have occurred over the millennia and relies on tangible heritage resources to provide interpretive evidence of past people. All documented archaeological sites are held by the Province of Manitoba in an archaeological site inventory. In addition to the Provincial archaeological site inventory there are official federal, provincial and municipally-designated sites that are of historical significance for their contribution to the growth of the nation, province and local environment (centennial farms, commemorative plaques and monuments). Supporting these inventories are numerous published books, unpublished reports, journals, documents and manuscripts that describe specific aspects of the existing archaeological record.

3.1 Desktop Study

As part of the triangulation approach a desk top study took place which examined the existing record for each of the above-noted categories. Both the historic and archaeological records provided documentation regarding events that have taken place over the past 11,000

years and noted how these have been instrumental in the development of the lands called Manitoba.

Oral Tradition

Documents related to the oral traditions in First Nation, Aboriginal, Metis and non-Aboriginal communities in Manitoba consisted of traditional land use & occupancy studies that had been prepared for academic purposes. However, the use of cultural indicators of change as a tool in the assessment of cultural resources within the Aboriginal Traditional Knowledge (ATK) component of the Bipole III Project provided an invaluable understanding of general and specific heritage and cultural resource areas that greatly assisted in the final analysis of data for writing the technical report on heritage.

Heritage Resources: The assessment of heritage resources began with a literature review of past archaeological, historical and architecturally historical investigations, theses, seasonal reports, books, journals and other relevant documents regarding the heritage record of the study area. This resulted in the creation of a working bibliography (Appendix 2).

The provincial inventory of archaeological sites was acquired from the Historic Resources Branch, Manitoba Culture, Heritage and Tourism. This agency is responsible for the management of all heritage resources on provincial lands; *The Act* does not apply to Federal lands such as Reserves and National Parks.

Site management: All archaeological sites in Canada are inventoried according to a national alpha-numeric identification system developed in the 1950s and referred to as the Borden System (Figure 3.1-1). In Manitoba all archaeological sites that have been discovered and/or investigated under a heritage permit are required to be registered with the province according to this numbering system. For the general Bipole III study area 2,987 registered archaeological sites were reviewed; this is approximately 1/3 of the total inventory of registered archaeological sites in Manitoba. Sites ranged in age from 10,000 years ago (ya) to 50 ya, and included campsites, burials, animal kill sites, tool-making stations, lookouts, quarries, ceremonial features, homesteads, industrial locations, pictographs, fur trade posts, palaeontological specimens such as plant and animal fossils.

Pertinent data from the provincial inventory of registered heritage resources were entered onto an Excel spreadsheet. This allowed for sorting by specific fields, such as Borden number, UTM coordinates, site type and NTS map sheet. These data were then transferred to geographic information system (GIS) format as point data. A series of maps generated was from the shape files; these indicated the location of archaeological and other heritage resource sites in relation to the alternative routes (Maps 4-8). Mapping also provided an opportunity to examine the distribution of archaeological sites based on site type, age and

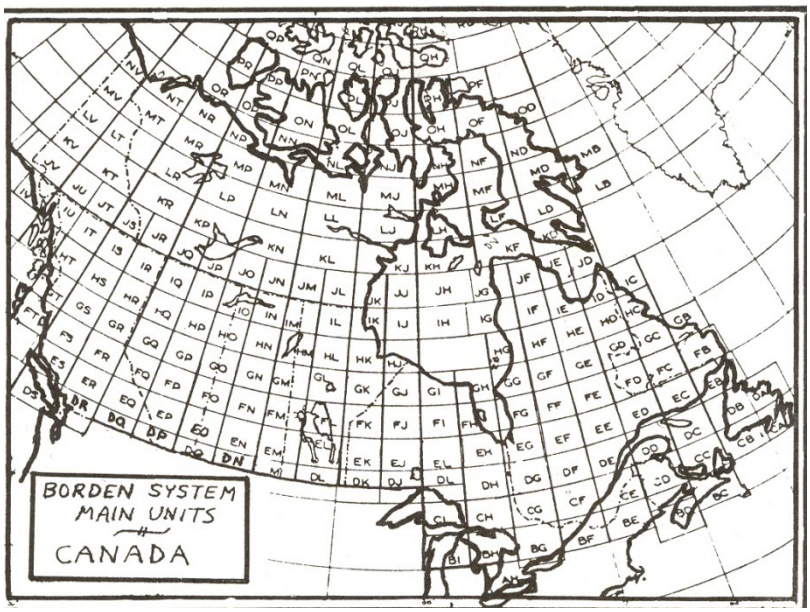

Figure 3.1-2. Borden System Identification Units.

cultural affiliation. Data were then studied to analyse the alternative routes through a process of site ranking based on weighted values (Appendix 1); these data also assisted in the development of a predictive model of potential archaeological site location. Once the preferred route was identified the predictive model was further refined to address the specific heritage environment. These methods are described below.

In addition to archaeological sites, there are historic sites that have been registered and designated by various levels of government. The descriptions of provincially designated heritage resources are:

- Centennial Farm - Any farm that is 100 years old, still operational and has been held by the same family. This is a provincial designation. Within the BPIII study area there are 525 Centennial Farms.

- Commemorative Plaques – Across the province events and historic occasions are marked with cairns & plaques to commemorate the magnitude of a particular event. Commemorations can be federal, provincial or municipal. There are 1,299 commemorative plaques within the study area.

- Municipally designated heritage sites – Sites that have been established by Municipal Heritage Advisory committees' as areas of importance and which are acknowledged

for the contribution made at the municipal level. There are 139 Municipal sites in the study area[1].

- Provincially designated heritage sites – Sites that are considered to be of great provincial value in that they reflect an event or happening that is important to the development of the province. There are 62 Provincial sites that have been designated under The Heritage Resources Act.

Federal sites were defined within The Canadian Register of Historic Places (CRHP) a national, searchable, online database of historic places formally recognized by federal, provincial, territorial and local governments. The register defines a historic place as a structure, building, group of buildings, district, landscape, archaeological site or other place in Canada that has been formally recognized for its heritage value by an appropriate authority within a jurisdiction. However, the descriptive location of these sites was high-level to the nearest community or town and therefore did not provide the required geographic data. There are 46 sites listed within the register in the Project Study Area that have been designated by the Federal government. None of these are within the FPR.

3.2 Predictive Modeling

Archaeological predictive modeling is a process by which a model is created or chosen to best predict the probability that an archaeological site may be present within a circumscribed area. It is one of many tools used to plan for archaeological field work and site verification. In archaeology predictive modeling examines the relationships between natural proxies (such as distance to water, slope, aspect, vista, soils, elevation, geological features, cultural landscapes and the occurrence of nearby archaeological sites) to determine the potential for archaeological sites to occur within areas of similar attributes and combinations (Appendix 3). Application of predictive models enables sound decisions to be made concerning heritage locations that may be impacted by development. This is especially important in the comparative management of known heritage resources sites and in physical environments that bear similar attributes to previously recorded sites.

Predictive modeling in archaeology has its roots in Gordon Willey's studies in the Virú Valley of Peru in the mid-1950s where the co-variability between cultural remains and natural features such as slope and vegetation were determined. The accumulation of a body of data and the development of quantitative methods led to the refinement of early models to include local natural features as variables.

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[1] The City of Winnipeg also issues by-laws respecting buildings, parcels of land or areas that council considers to be of special architectural or historic interest under *The City Of Winnipeg Charter Amendment Act - Historic Property Designations* (The Legislative Assembly of Manitoba 2002). There are 171 sites designated within the City of Winnipeg and documented in the Canadian Register of Historic Places. These sites however, are outside the FPR buffer zone and will not be impacted by the Project. Therefore they will not be discussed.

The goal of predictive modeling in archaeology is to locate potential archaeological sites based on the relationships of certain natural and known cultural proxies to archaeological sites.

Predictive modeling is employed as part of the overall methodology to indicate the relative probability of locating archaeological sites within a selected study area. The archaeological predictive model examines certain physical environmental attributes that can assist in ranking areas as high, medium or low potential for the presence of archaeological sites. Predictive modeling also allows for efficient and effective analysis of vast geographic territories during preliminary preparatory studies in order to conduct archaeological investigations in smaller, more manageable segments. Limitations of the predictive model are based on the scale and geographic complexity of the study area. Applications of the predictive model may produce a higher accuracy percentage on a local context with geographic features of a more homogenous nature. Local context may also produce higher results because of geographically similar features within a closed area. When dealing with large tracts of land such as the Bipole III transmission line changes in vegetation, elevation and other physical features can be difficult to manage.

A preliminary predictive model was developed for the Bipole III alternative routes in order to determine the level of potential for heritage sites. The predictive model required the selection of specific locations along the route whose attribute value criteria could be entered into a weighted value formula which could then be ranked as having high, medium or low potential to contain heritage resources. Because of the linear nature of transmission lines the category of water body crossings was considered an important criterion used in developing the model.

Ten attributes were applied to the predictive model for this project:

- proximity to potable water;
- soil types;
- slope;
- vista;
- aspect;
- geographic features;
- water systems;
- water body convergence;
- proximity to documented heritage sites; and
- elevation

The attributes consisted of environmentally based criteria with cultural and socio-economic inferences. The attributes were valued using ethnographic analogy to identify potential subsistence land use decision-making. This was in part modeled on the archaeological database site type of the Province of Manitoba. Each attribute class was assigned a numeric

value representative of the frequency of the attribute over site type from optimal to least favourable in a descending scale. The higher frequency of attribute classes for known sites suggested a potential optimal choice by past human populations. For example, the optimal aspect (direction facing) for a site was considered to be the attribute class southeast (value = 5) while the least favourable was northwest (value = 0). This consideration was based on the recorded frequency of southeast direction of sites over other cardinal directions.

Because the Bipole III study area encompassed four ecozones, two predictive models were required to account for differences in physiographic features and ecozone characteristics; one for the Hudson Bay Plains, Taiga Shield and Boreal Shield, the other for the Boreal Plains and Prairie. The two separate attribute lists were created to optimally capture the characteristics of site probability for the northern and southern portions of Manitoba. The boundary is delineated by the terrestrial ecozones Boreal Shield and Boreal Plains and is in proximity to the dividing line between Bipole III sections 2 and 3 (Map 9).

The Bipole III northern and southern predictive model attributes lists and weighted values are discussed in Appendix 2.

3.3 Alternative Route/ Site Selection and Environmental Assessment

As part of the SSEA the route selection methods were established for the evaluation of heritage resources along each of the proposed Alternative Routes prior to indicating a preferred route from a heritage perspective. Three Alternative Routes were assessed for presence and frequency of heritage sites or resources within assigned sub-segments within each alternative route. Each segment was calculated with a weighted value based on archaeological site type.

Methods included:

- Listing and plotting all registered heritage resources sites within the study area;
- Elimination of all heritage resources outside the 3 mile buffer zone around routes and subroute segments and nodes;
- Identification of five types of interactions (heritage resources categories as listed in the Provincial heritage inventory); and
- Ranking of sites for route and subroute segments and nodes evaluation based on Site type and Frequency of sites

Using the provincial inventory of registered heritage resources all relevant site data were entered into spreadsheet format and incorporated into a GIS data base. All sites outside the three alternative routes (A, B and C) three-mile buffer zone were then eliminated. Site distribution within the three mile buffer was examined for each alternative route and subroute by segment and node.

To evaluate the three routes based on heritage resource indicators, five types of interactions (heritage resources) were used: Archaeological Sites; Centennial Farms; Commemorative

Plaques; Municipally Designated Sites, and Provincially Designated Sites (Table 3.3-1). An interaction occurred when a heritage resource was encompassed by the three-mile buffer zone or occurred adjacent to the centre line of the route. The unique site-specific nature of heritage resources and their category as a non-renewable resource requires special consideration. Areas of interaction of the alternative corridors and known heritage resources were identified as specific areas of concern that could entertain an environmental effect.

Brief definitions of the categories and frequencies generated through use of a buffered area around each of the alternative routes of the categories of heritage resources are as follows:

- Archaeological sites - Any site or object that shows evidence of human endeavour. The Historic Resources Branch has identified a number of site types based on different human activities and time periods. Isolated burials, abandoned cemeteries (e.g. homestead) and found human remains are also contained within this category (See the definition of heritage resources in Manitoba's Heritage Resources Act 1986:1). Four hundred and thirteen archaeological sites are presently registered within the 3 mile buffer of the three alternative routes.

- Centennial Farm - Any farm that is a minimum of 50 acres, and demonstrates ownership of the same parcel of land over the course of a century is considered a centennial farm. This is a provincial designation. There are 90 Centennial Farms sites within the 3 mile buffer of the three alternative routes.

- Commemorative Plaques – Across the province events and historic occasions are marked with cairns & plaques to commemorate the magnitude of a particular event. Commemorations can be federal, provincial or municipal. There are 84 plaques within the 3 mile buffer of the three alternative routes.

- Municipally designated heritage sites – These are sites that are considered to be of municipal importance and are acknowledged for the contribution made at the municipal level. There are 10 Municipal sites within the 3 mile buffer of the three alternative routes.

- Provincially designated heritage sites – Sites that are considered to be of great provincial value in that they reflect an event or happening that is important to the development of the province. There are 2 provincially designated heritage sites within the 3 mile buffer of the three alternative routes.

Federal sites were not included as none were located within the alternative routes.

Table 3.3-1. Heritage Resources Interactions.

Heritage Resources	Interactions with archaeological sites
	Interactions with Centennial Farms
	Interactions with Plaques
	Interactions with Municipally designated heritage sites
	Interactions with designated heritage sites

Of the total of 599 registered sites within the Bipole III three alternative routes, a total of 748 interactions occurred (735 along routes and 13 along nodes) within the three mile buffers of the three alternative routes. The heritage resources sites include: Archaeological – 413 including 19 burials; Centennial Farms – 90; municipally designated – 10; Provincial Plaques – 84; and 2 provincially designated sites. Tables 3.3-2 & 3.3-3 illustrate the site type and frequency of interactions that were identified for all routes, sub routes and nodes within the respective three mile buffer.

Heritage sites within each segment were then ranked according to arbitrary values assigned to each site type. The valuation, which is listed in Table 3.3-4, provides an overview of categories of valuation. Sites such as burials, pictographs and designated heritage sites were considered to be of highest value (five) because of their heritage significance to Manitoba, and because, as in the case of burials, provincial policy and legislation provides additional protection of these sites. Pictographs (rock paintings) are not only representations of cultural expression but are also integral to an ancient cosmology that forms the cultural core of many First Nations. Commemorative plaques and centennial farms receive their designation through a screening process that acknowledges places, structures and events as significant to the historical record of Manitoba.

The frequency of sites types were multiplied by the assigned valuation and totalled for each route segment (Figure 3.3-1). Route segments without values were eliminated. The sum of all route segments within each route provided the weighted value of the particular route (Table 3.3-5).

By this method Route B segments were considered for the preferred transmission line route since the frequency of sites and the total valuation within these segments was the lowest and therefore had the least effect to heritage resources. The Preliminary Preferred route was first selected in March 2010, and modified in May 2010.

Table 3.3-2, Frequency of Interactions - All Routes and Sub routes, A, B and C

BIPOLE III TRANSMISSION PROJECT HERITAGE INTERACTIONS ALONG **SEGMENTS & SUBROUTES**	Archaeological Sites	Provincial Heritage Sites	Municipal Heritage Sites	Centennial Farms	Plaques	Total
Rte. A						
Sites along Route/Sub routes A	222	2	5	52	33	314
Overlap w/routes B/C	6	0	1	4	5	16
Total Route A	228	2	6	56	38	330
Rte.B						
Sites along Route/Sub routes B	80	0	3	18	24	125
Overlap w/ routes A/C	0	0	0	1		1
Total Route B	80	0	3	19	24	126
Rte.C						
Sites along Route/Sub routes C	121	0	1	24	26	172
Overlap w/ routes A/B	85		1	10	11	107
Total Route C	206	0	2	34	37	279
Total interactions						735

Table 3.3-3, Frequency of Interactions - All Route Nodes A, B and C

BIPOLE III TRANSMISSION PROJECT HERITAGE INTERACTIONS ALONG **ALL NODES**	Archaeological Sites	Provincial Heritage Sites	Municipal Heritage Sites	Centennial Farms	Plaques	Total
NODES - Rte. Junctions						
B15C17_B16_B	3	0	0		1	4
B18_B19C20_C19_BC	1	0	0			1
C21_C22_BC3_C		0	0		1	1
A15_C22_A17C24_BA4_AC	1	0	0			1
B23_B24_BB6_B	1	0	0			1
B26_B28_C28_C30_AC3_BC	1	0	0			1
B28_B29_CB1_B	2	0	0	2		4
Total	9	0	0	2	2	13

Table 3.3-4, Valuation of Interactions

- Burials, Pictographs, Provincial/Municipal designated, Centennial Farms, Plaques = 5
- Settlements, Structures (with features) = 4
- Kill site, workshop, fur trade posts, palaeontological (no features) = 3
- Farmstead, former town sites, industrial (late historic, no features) = 2
- Isolated find, commercial, public, structural (pre-contact/recent historic, no features) = 1.

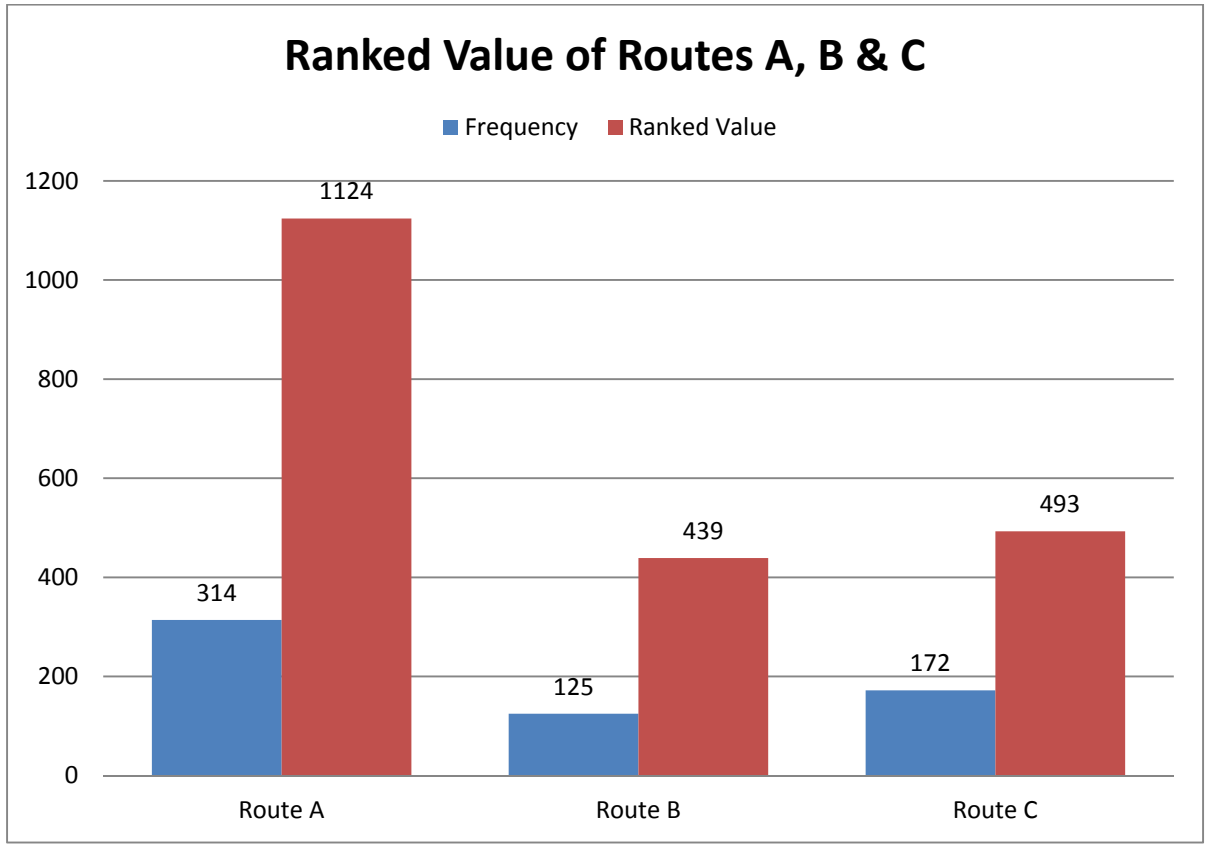

Figure 3.3-1, Ranked Value of Routes A, B & C.

Table 3.3-5, Site Frequency and Ranking of Route Segment Values based on weighted values of archaeological sites.

Route A			Route B			Route C		
Segment	Site fq	Value	Segment	Site fq	Value	Segment	Site fq	Value
A9	16	65	B9	3	12	C9	1	151
A10	1	3	B10	10	38	C10	55	3
A11C11	7	29	B11C13G	1	5	C19	45	161
A15	186	620	B16	1	2	C21	10	168
A17C24	23	84	B18	5	8	CA3	2	5
A18C25	7	31	B19C20	2	2	CB1	3	5
A19	10	50	B21	11	26			
A20	3	10	B22	7	55			
A21	2	6	B23	18	76			
A22	3	15	B24	8	25			
A23	2	10	B25	7	33			
AA2	11	29	B26	4	14			
AC1	41	137	B28	9	25			
AC3	5	17	BA4	15	59			
AC4	2	10	BB2	3	9			
AC5	1	5	BB3	2	5			
			BB6	14	50			
			BC3	3	13			
			BC4	2	10			
TOTAL	314	**1124**		125	**439**		172	**493**

3.4 Aboriginal Traditional Knowledge

For the assessment of heritage resources and ESS development, ATK was provided by 19 participating communities in the Bipole III ATK Project (Table 3.4-1) and seven self-directed ATK studies by Fox Lake Cree Nation [FLCN], Tataskweyak Cree Nation [TCN], Opaskwayak Cree Nation [OCN], Wuskwi Sipihk First Nation [WSFN], Long Plain First Nation [LPFN], Swan Lake First Nation [SLFN] and the Manitoba Metis Federation [MMF]. ATK collected from the community workshops within the categories of Heritage Resources assisted in identifying areas of heritage concern for use in the development of the ESS table. Only that information which fell within the 3 mile corridor of the FPR was incorporated in the ESS assessment.

Table. 3.4-1 List of BPIII ATK Team-led Participating Communities

Participating Community	**Location of Workshop**
Barrows	Barrows Community Hall
Barrows Area Includes the communities of: Powell Westgate Red Deer River National Mills Baden	Barrows Community Hall
Camperville	Camperville Community Hall
Chemawawin First Nation	Easterville Community Centre
Cormorant	Cormorant Community Hall
Dakota Plains First Nation	Dakota Plains Band Office
Dakota Tipi First Nation	Dakota Tipi School
Dawson Bay	Dawson Bay Community Hall
Duck Bay	Duck Bay Community Hall
Herb Lake Landing	Herb Lake Landing Senior's Community Centre
Pelican Rapids	Pelican Rapids Community Hall
Pikwitonei	Pikwitonei School
Pine Creek First Nation	Pine Creek Band Office
Thicket Portage	Thicket Portage Community Hall
Waywayseecappo First Nation	Waywayseecappo Conference Centre

3.5 Environmentally Sensitive Site (ESS)

A major goal of the BPIII Heritage study process was to assist in the determination of a final preferred route (FPR) and to minimize environmental, cultural and heritage impacts.

To accommodate both Project timelines and modifications to the route, a desktop analysis of orthographic photographs were analyzed to determine areas of environmental interest and potential for heritage resources. The ortho photos were provided through the Manitoba's Hydro Orientis web-based program. A number of areas were identified as having potential for heritage resources based on the environmental characteristics identified in the ortho photos. These areas will require ground-truthing to verify the desktop assessment and will be part of on-going monitoring of the Project after licensing.

Community group discussions and key person interviews not only provided a narrative record of the intimate knowledge of traditionally and currently used cultural landscapes, but also illuminated with great accuracy, the geographical placement of these environmentally sensitive regions. Once a final preferred route (FPR) had been determined, geographical information system (GIS) formats of information was crucial in the determination of ESS.

Through the ATK workshops, a total of thirty (30) areas identified as heritage resources category were located within the FPR corridor. This information was expressed and sub-categorized through GIS as eight (8) points, eight (8) lines or fourteen (14) polygons. The data represented information on locations of historic trails, locations of historic campsites, burials, archaeological sites, and historically-used cultural activity areas (Map 10).

3.6 Fieldwork – PPR and FPR

After the weighted valuation of the existing heritage resources along the Alternative routes was completed this was included in the SSEA process to select the PPR. At this stage, the starting point of the HRIA field investigations commenced in the spring/summer of 2010. Predictive modeling established areas which held potential for archaeological site within the PPR. These areas were refined after an aerial overflight of the entire length of the PPR in June 2010 (Section 3.6.2). Ground-truthing occurred in the areas of medium to high potential between June and October 2010.

The FPR was first presented to the study group in December of 2010. Due to the nature of the season, heritage field assessment was not conducted until the spring of 2011. The predictive model was further refined and field verification took place in July and August, 2011. The following sections will describe each component of the BPIII fieldwork for both the PPR and FPR.

Inhibiting factors such as the continued refinement of the placement of the PPR and FPR resulted in the negation of some of the field studies that had been conducted in 2010.

3.6.1 Predictive Model Application

Because of topographic differences, soil types, elevation, and water systems within the study area two general predictive models were created to reflect the characteristics of site probability. The predictive model was applied to the PPR to identify areas to assess for heritage resources. Based on selected attributes summarized in Appendix 2, a total of 214 areas were applied to the predictive model. A 3-mile buffer of the PPR was used to provide a boundary to the study area. Areas were rated for High, Medium, and Low potential for heritage resources. The total numbers for each component were:

- High Potential =17 areas
- Medium Potential =165 areas
- Low Potential =32 areas

The high and medium potential areas were highlighted for ground-truthing reconnaissance during field surveys planned for the summer of 2011. Five main areas of concern were identified based on existing archaeological data and ATK information gathered during workshops.

Table 3.6-1: Five Main Areas of Concern along the Preferred Route for the Bipole III Line as Identified by the Archaeological & ATK records

Area of Concern	**Identified by**	**Site Type**
Keewatinoow Converter Station region	Archaeological Survey	Pre-European contact burials; work stations, campsite
Cormorant Bottleneck	Archaeological Survey	Petroform
Red Deer River Bottleneck	Archaeological Inventory & ATK	Historic Salt Works
Cowan-Briggs Spur	ATK	Burials
Assiniboine River	Archaeological Inventory & self-directed ATK	Yellow Quill Trail, burials, archaeological sites

Of the five areas of concern identified, only two areas were investigated. In 2011 field investigations were conducted from Cormorant to Dyce Lake. No archaeological sites or issues of heritage concern were identified during the field investigations. However, the

fieldwork did confirm that the Cormorant Petroform, discovered in 2002 during the Wuskwatim Transmission Line HRIA, is within 16 m of the midline of the FPR ROW. While the petroform site has been protected through signage along a 15 metre perimeter of the site established by the Wuskwatim Transmission Project the site will require further mitigation. Section 5 will discuss the recommended mitigation measures for this and all other heritage resources for the BPIII Project.

The Keewatinoow (Northern) Converter Station was identified as an area of concern when two important archaeological sites (HdKl-01-and HdKl-02) were discovered within the preferred Keewatinoow Converter Station site during HRIA investigations in 2010. Subsequent field investigations were undertaken in the summer of 2011 to identify the extent of the sites and establish the boundaries of the sites to avoid impacts during construction of the converter station.

The remaining three areas of concern noted in the above table were not investigated as they were situated within privately held lands. These areas remain in the ESS table and will be part of the effects and mitigation components for the project.

3.6.2 Preliminary Overflight

Prior to archaeological field investigations, the PPR for the Bipole III transmission line was flown by helicopter from the Riel converter station to the proposed Keewatinoow converter station in June 2010. Areas of potential that were identified during the application of the predictive model were marked on field map books. As the overflight proceeded changes were made to the map booklets to reflect the condition of certain areas, noting which locations were accessible and those that were not accessible. Areas were added based on visual identification of buildings, high ground, intact groves of trees, and ancient creek beds or sloughs. These points were added to the Environmental Sensitive Site database.

3.6.3 HRIA of the Northern Component of the Transmission Line

The BPIII Study Area was divided into north and south components to facilitate the archaeological assessment, due to regional differences. The boundary was delineated near The Pas by terrestrial ecozones referred to as the Boreal Shield and Boreal Plains. Much of the field work in the northern portion of the Bipole III preferred route occurred on Crown Lands. Certain tracts of these Crown Lands were noted to be parts of different First Nation Resource Management Areas (RMAs).

The northern portion of the Bipole III PPR extended from The Pas northeast to the proposed Keewatinoow Converter Station. At the time of the heritage survey of the northern component only the PPR route was provided. The focus of the HRIA field investigations centered on water crossings along the northern PPR. Since most registered archaeological sites in northern Manitoba are situated on water bodies such as lakes, rivers and creeks these areas rank high as areas for potential site locations. An aerial survey via helicopter was undertaken with limited access to the majority of the water crossings. This

was due in part to the routes' placement through vast areas of poorly drained swamp and other wetlands. Accessible areas with a lower water table were examined by pedestrian (walking) survey and subsurface (shovel) testing. From a heritage resources perspective, the evaluation process of ranking heritage resources proved to be an effective and efficient means of selecting the preferred transmission line route. By this method the majority of known heritage resources sites were avoided. However, the high water conditions and dense vegetation were not conducive to helicopter landing and therefore areas that had been selected by the predictive modeling formula were not able to be verified.

3.6.4 HRIA of the Southern Component of the Transmission Line

The southern portion of the Bipole III PPR extended from the Riel substation east of Winnipeg, Manitoba and continued north-westward to The Pas, Manitoba. The study area in the southern portion consists mainly of privately-owned lands which at the time of the HRIA field investigations the majority were inaccessible since permission for access had not been received. This was a major constraint of the survey; thus archaeological field work focused on crown lands located along the proposed Bipole III transmission PPR. Despite the inaccessibility of private lands for pedestrian survey, areas where the transmission line would cross private property were visually surveyed by means of vehicular survey along road allowances. Two field investigations were conducted in the southern portion of the study area.

The first portion of the route from the Riel substation to Westbourne investigation began on September 1, 2010 in one specific quarter section of land where landowner permission had been granted. This area is situated in SE20-10-06E1 near Millbrook, Manitoba. A pedestrian survey with GPS tracking took place within the quarter section of land along the proposed route. An area in the northwest corner of the section near the existing rail line contained buildings and debris relating to a 1950s occupation. Photo-documentation and geo-referencing of three buildings were accomplished. The buildings are 230 meters due east of the route and should not be affected through installation construction. The site was not registered as an archaeological site because of its relatively recent nature. No additional areas were ground-truthed from the Riel substation to Westbourne due to restricted access and these areas therefore will require archaeological assessment once clearing of the route provides easier accessibility.

The second field investigation occurred from October 12 to14, 2010. The PPR segments between Westbourne and Winnipegosis were surveyed using pedestrian and vehicular modes of investigation. The majority of Crown land in this segment of the route was difficult to access due to obstructive fencing and dense poplar forests. A large portion of the route also crossed privately owned land; therefore the majority of the route was not available for survey. A number of abandoned buildings were noted in the southern study area, these were plotted using handheld GPS within an approximated distance as many of these areas were

on private land. As areas of interest, these should be assessed once landowner permissions have been granted or when clearing of the route provides easier access.

Due to time constraints, fieldwork north of Winnipegosis to The Pas was not undertaken and areas of concern have been derived from the predictive model, the aerial overflight of the route, known site locations and ATK related to the Bipole III Project. In total, 125 environmental areas of concern were identified within the 3 mile buffer of the PPR between the southern converter station (Riel substation) and The Pas. This number includes 79 existing heritage sites (Archaeological, Commemorative plaques, Provincial, Municipal, and Centennial Farms) are found within the 3mile buffer of the PPR from the Riel substation to The Pas.

3.6.5 Keewatinoow Converter Station, Camp Facilities & Collector Liens

The Keewatinoow Converter Station was investigated on five separate occasions as part of the HRIA process. The first four site investigations took place in 2010, the fifth in 2011.The first archaeological investigation consisted of a pedestrian survey with arbitrary shovel testing which resulted in two archaeological sites being identified HdKl-01 and HdKl-02. A second follow-up investigation identified stone features at both sites. Those at HdKl-01 were considered to be possible burial sites, while those features at HdKl-02 resembled stone circles or tent rings. The third visit entailed meeting with Elders of Fox Lake Cree Nation to share the findings of HdKl-01, a site visit with the Elders and seeking advice on drafting a plan of action for the sites. The fourth field investigation served the purpose of conducting geophysical survey by Electromagnetic Ground Conductivity (EMGC) in order to determine the nature of stone features at the HdKl-01 site. The fifth visit occurred in response to the proximity of structural and access features to the two identified sites. This investigation tested for site extent and archaeological significance at both registered sites.

Both sites were situated on low rise gravel ridges above black spruce swamp and were likely associated with gravel beaches ridges of the former Tyrrell Sea; identifiable sea shell, (*Hiatella arctica*) (Linne), was located at 10 cm below surface. Both sites contained elements of settlement, such as concentrated lithic scatters and stone features that represent human activity possibly at 3,500 years ago. HdKl-01 contained a number of stone features, three of which may represent former burial sites, in addition to numerous loci of lithic scatter. Further to these cultural features, a microblade tool was recovered during test excavation and may represent Palaeo-Inuit occupation. The second site contained stone features that may be tent rings; no diagnostic tools were found at this site during controlled surface collection (NLHS 2011).

Once the sites were identified and verified as containing complex heritage resources and two possible burial features Manitoba Hydro, FLCN and the Historic Resource Branch (Manitoba Culture, Heritage & Tourism) were notified. A series of meetings took place in Winnipeg and in Fox Lake (Bird). The meeting at Fox Lake was conducted in workshop format where the heritage resources details, maps and documentations were shared with a

small group of Elders and FLCN staff (4). Discussions as to next steps led the Elders to draft a set of actions that they wished to be implemented immediately, including a site visitation by three selected Elders. These actions were taken to Manitoba Hydro field engineers and implemented immediately. These actions included: immediate halting to all drilling and access activities around the two sites, barricades around the sites with appropriate signage, and site visitation. At the site visitation the Elders identified a third possible burial. Elders shared freely their ATK regarding the historical landscape. A recommendation was made by the Elders to have the entire gravel knoll cleared of deadfall in order to view the features. This was completed immediately by Manitoba Hydro crews. A request was also made to have electromagnetic ground conductivity (EMGC) survey of the potential burials (stone features) completed in order to rule out or verify the features. This was completed in October 2010 (NLHS 2010).

The geophysical survey consisted of five 10m x 10m grid units established to encompass the three rock features and surrounding soils identified during the second visit to the site. Soil types present consisted of rock, gravel and sand with underlying clay deposits. The data collected exhibited little variability which is indicative of consistent soil types and moisture content as well as the absence of any metallic objects at the site.

The analysis identified several subsurface anomalies throughout the five survey grids. Specific anomalies were linked to visible soil disturbances that were included in the site sketch map as tree throws (soil disruption from overturned trees exposing the root balls) and granite boulders. The three rock features were also identified as subsurface anomalies (red ovals – Figure 3.4-1). The link between the rock features and the presence of subsurface disturbance at the feature location corroborates the hypothesis that the features were probably created through human modification. The data was not conclusive to identify the anomalies as burials.

Further anomalies were identified during analysis that were not associated with visible surface disturbances and are likely soil disturbances from older tree throws, dense subsurface pockets of cobble or subsurface boulders; or may represent not yet identified human activity.

Thirty-seven shovel tests were carried out at HdLk-01. Of these 7 were positive. Extent of site was noted to be within the temporary fenced area. Thirty-two shovel tests were conducted at HdLk-02 with 10 being positive for heritage resources. This site extends beyond the former site boundaries established in 2010.

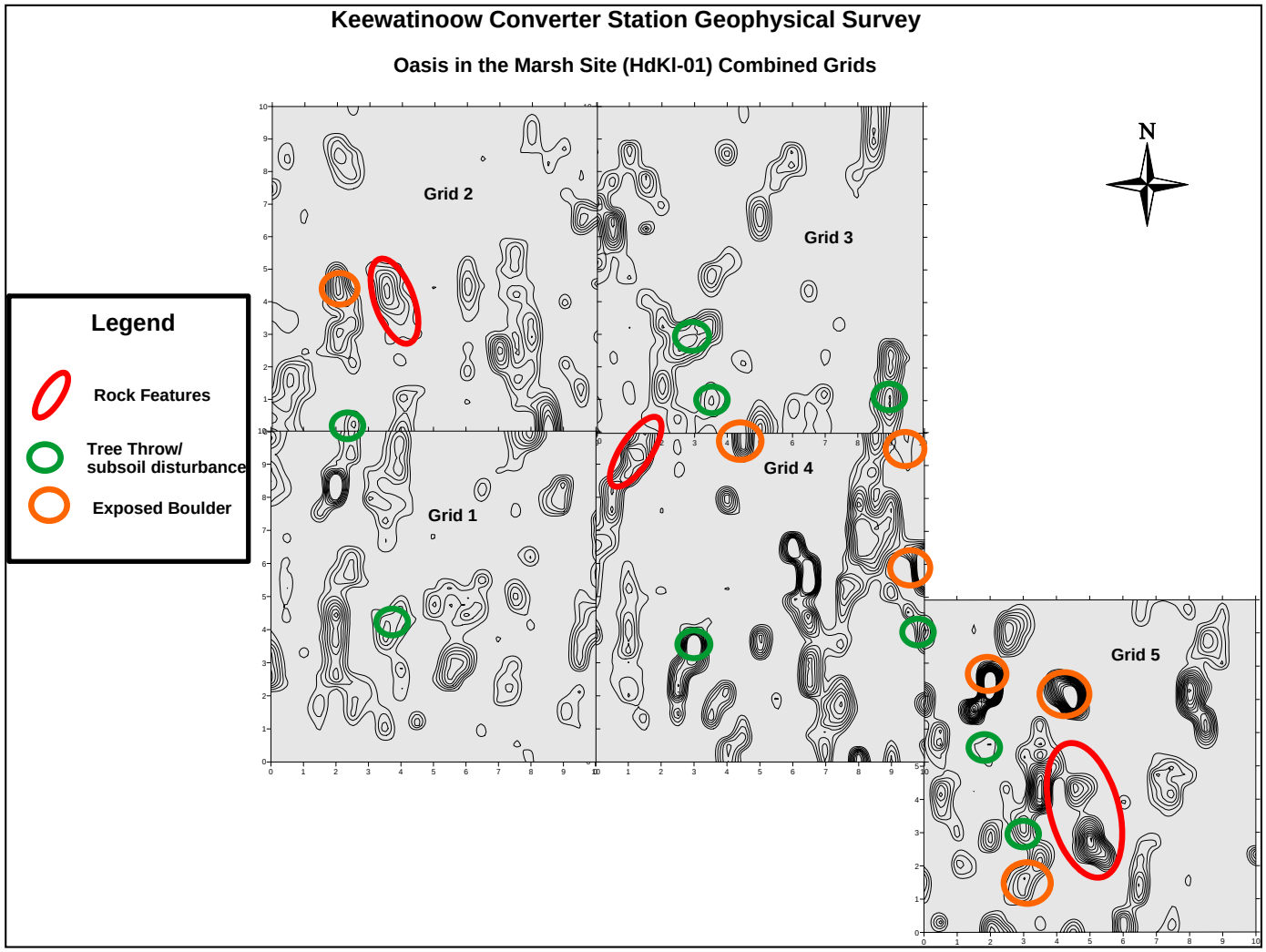

Figure 3.6-1, Combined EMGC contour map of the five grids surveyed at HdKl-01.

The Keewatinoow 230 kV collector lines were assessed in August 2011. The ROW was assessed as various points along the line in areas that had favourable characteristics for heritage resources. A fly over of the proposed location of the collector lines between the Keewatinoow (Northern) Converter station and the Henday Converter Station assessed suitable areas for landing and to identify areas conforming to favourable environmental characteristics. At the time of the aerial survey, the area was noted to be super-saturated with vast expanses wetland and trembling bog. Thirty potential landing access areas were reviewed; many of these were located in cut-line areas that had been cleared the previous winter. Of these areas, only nine (9) areas were able to be ground-truthed due to the high water table.

The Keewatinoow camp facilities were examined in August 2011. The main camp and manager's camp will be located on the east side of PR290 in a high gravel area that slopes down to creek valleys. Evidence of recent resource use was noted, in the form of a tent frame and cartridge casings. Pedestrian survey and shovel testing did not provide evidence of archaeological materials in the area. The two lagoon areas are situated on the opposite side of the highway and were situated in a contrasting environment. The area was a saturated marsh and ground-truthing was only accomplished in the northern lagoon area which was only marginally drier. No heritage resources were discovered in the lagoon area.

3.6.6 Riel (Southern) Converter Station

This site was investigated in 2007 and 2009 as part of the Riel Station Sectionalisation Project (NLHS 2007, NLHS 2009). Prior to 2007, no archaeological field work had been conducted within the specific parameters of the study area. During the 2007 investigation, two Pre-European contact sites were identified (DlLf-10 and DlLf-11) and registered with the Province. In 2009, NLHS staff conducted a second Heritage Resource Impact Assessment (HRIA) of the Riel Sectionalisation, fulfilling the recommendations made during the 2007 HRIA. No heritage resources or features were noted during the pedestrian survey and no new archaeological sites were recorded at this time.

The Riel converter station is the terminal station for Riel Reliability Initiative Project site and is currently being developed under The Environmental Act licence granted in April 2009.

3.6.7 Northern Ground Electrode Site

HRIA of the Northern Ground Electrode Site focused on the electrode ring, and connecting transmission line. Ground-truthing of the electrode ring site was impeded a large pond covering a quarter of the proposed ring and much of the surrounding area was water saturated muskeg. No heritage resources were noted during the survey of the electrode ring. The transmission line that will connect the northern ground electrode to the Keewatinoow Converter Station was examined via pedestrian survey and shovel testing. Observation of the area indicated that the transmission line ROW had been previously cleared although revegetation was in progress. As at the electrode site location, the general terrain did not contain any attributes associated with optimal site location. The hummocky ground surface

and extensive marsh covered the majority of the ROW. Approximately, six kilometres of the ROW was covered by pedestrian survey, no heritage resources were noted during the investigation. A number of areas along the ROW were previously examined by NLHS in 2010 during the Conawapa Borrow Area investigation and therefore were not re-examined.

3.6.8 Southern Ground Electrode Site/Lines

The preferred southern electrode location SES1c was selected in December 2010 and therefore archaeological survey for the HRIA did not occur until the summer of 2011 because of ground conditions and required land-owner permission. HRIA of the Southern Ground Electrode The results of the survey revealed an agriculturally modified landscape with no heritage resources. No heritage concerns exist for the southern ground electrode.

3.6.9 Borrow Areas and Excavated Material Placement Areas

The Keewatinoow borrow areas are identical to those for the Conawapa Generation Project. As these borrow areas have been previously assessed through that project by NLHS in 2009 and 2011, it was deemed unnecessary to duplicate the study. The paucity of heritage resources in all borrow areas suggests that there are no heritage concerns at present.

3.6.10 Preferred Route Access Roads

The access routes for the BPIII Final Preferred Route were not available at the time of the 2010 field investigations. Once these areas have been identified, they will require monitoring during pre-construction and construction activities. An effort will be made to use existing access roads thus reducing the possibility of impacting known heritage resources. If project design plans change and incorporate new access roads or staging areas, field investigations will occur. This will be discussed further under Mitigation and Monitoring.

3.6.11 Roving Camps

Roving or temporary mobile camps will be located at unknown locations along the transmission line. These camp locations should not be established within 100 m of known archaeological sites or in areas identified by ATK as of heritage or cultural value or potential site locations identified through the predictive model. Because of the nature of archaeological sites many are not known until clearing and soil removal take place. Therefore camp locations should be identified prior to set up and these areas should be assessed by the project archaeologist before the camp is established.

3.7 Results of the Environmental Heritage Assessment

The results of the heritage assessment of the PPR and FPR indicate that there are vast areas that were inaccessible due to swamp and wetlands, private lands and on-going modification of the route a new information became available. Some areas originally investigated no longer fall within the FPR ROW. New areas have been identified as a result of the selection of the FPR and to date these have not been assessed from a heritage resources perspective. The restricted access to the majority of lands in the southern part of the study area prevented a thorough field assessment of existing sites as well as those areas identified

through orthographic photos and predictive modelling. Accessibility of lands in the northern half of the study area due to environmental conditions limited the field investigations. A total of 57 registered archaeological sites were identified along the FPR (Appendix 5). The sites range in cultural chronology from Palaeo-Indian (*ca.* 11,000 – 7,500 ya) to Recent Historic (*ca.* 50 ya). Twelve sites were considered to be multi-component meaning that they contained more than one cultural occupation for example, Archaic and Late Woodland or Late Woodland and Early Historic. Four Palaeo-Indian sites were identified within the 3 mile buffer of the Bipole III FPR. Ten sites represented the Archaic Period, 17 from the Woodland Period and 27 were recorded as unidentifiable Pre-European Contact. The Historic Period occupation component was represented by an additional six sites. Seven sites were not identifiable to any time period (Table 3.7-1).

A single, undated burial site (DjLj-Y1[2]) was recorded in the provincial database and is located within the 3 mile buffer approximately 10 km south of Starbuck and 4.3km north of Brunkild, MB. A skull and mandible were recovered in a shallow depression, no other remains were identified. The human remains were reported by an unnamed informant to the HRB in 1986. No additional information regarding this burial is found in the database.

Thirty seven provincially-designated heritage sites were noted to be located within the three mile buffer of the PPR. These designated sites consist of heritage buildings considered to represent important landmarks in Manitoba's history and included churches, schools, commercial buildings, historic trails, ferry crossings, railway stations and associated buildings as well as architecturally important houses (Appendix 5). This number includes 16 Commemorative Plaques and two municipal sites which have been identified within the Bipole III - 3 mile buffer zone of the Final Preferred Route (Table 3.7-2). In addition, 19 Centennial Farms are also located within the Bipole III 3mile buffer of the Final Preferred Route (Table 2.2-3).

[2] The Y within the Borden designation identifies that the site was not investigated and confirmed by the Historic Resources Branch. This form of designation is not used now.

Table 3.7-1, Frequency of Cultural Affiliations of Registered Archaeological Sites within 3 Mile buffer of the PPR.

Cultural Affiliation by Site	Frequency of Cultural Affiliation
PALAEO-INDIAN	1
PALAEO-INDIAN; ARCHAIC; WOODLAND	3
ARCHAIC	2
ARCHAIC; WOODLAND	5
TERMINAL WOODLAND	3
WOODLAND	4
WOODLAND; RECENT HISTORIC	3
PRECONTACT	26
PRECONTACT; HISTORIC	1
LATE HISTORIC	1
RECENT HISTORIC	1
UNDETERMINED	7
Grand Total	57

Table 3.7-2, List of Plaques, Municipal Sites and Centennial Farms located within the 3 Mile buffer of the preferred route.

ID Number	Name of Designated Site	Nearest Town	Type
PLAQ1930	Hiebert Heritage Cemetery	Niverville	Plaques
PLAQ1228	Tracy School	Elm Creek	Plaques
PLAQ1468	St. Benoit School	St. Claude	Plaques
PLAQ229	Columbine School	Haywood	Plaques
PLAQ2357	St. Claude Cenotaph	St. Claude	Plaques
PLAQ178	Landmark Park	Landmark	Plaques
PLAQ1702	Lavenham School District #742	Rossendale	Plaques
PLAQ374	Ferris School District	Rossendale	Plaques
PLAQ841	Nora School District #1551	Westbourne	Plaques
PLAQ103	Big Grass Marsh - Ducks Unlimited	Langruth	Plaques
PLAQ1700	Griffith School	Harcus	Plaques
PLAQ17	Alonsa Village School	Alonsa	Plaques
PLAQ1554	Nativity of the Mother of God Ukrainian Catholic Church	Volga	Plaques
PLAQ814	Mossey River, commemoration to the First Settlers	Winnipegosis	Plaques
PLAQ214	Church of the Nativity of the Blessed Virgin Mary	Winnipegosis	Plaques
PLAQ849	Red Deer River, Northern Manitoba	Baden	Plaques
M76	Moffat Barn	Lakeland	Municipal Site
M81	Grace Evangelical Lutheran Church	Langruth	Municipal Site

Table 3.7-3, List of Centennial Farms located within the 3 Mile buffer of the preferred route.

ID Number	Name of Designated Site	Nearest Town	Type
CF12	Leppky Family Farm	Tourond	Centennial Farm
CF19	Stott Family Farm	Ste. Agathe	Centennial Farm
CF26	Wiebe Family Farm	Niverville	Centennial Farm
CF33	Hochfeld Holsteins	New Bothwell	Centennial Farm
CF36	Goertzen Family Farm	New Bothwell	Centennial Farm
CF37	Enns Family Farm	New Bothwell	Centennial Farm
CF39	Laurent Family Farm	St. Claude	Centennial Farm
CF40	Jobin Family Farm	St. Claude	Centennial Farm
CF41	Laurent Family Farm	St. Claude	Centennial Farm
CF77	Delf Family Farm	Rathwell	Centennial Farm
CF96	Hudson Family Farm	Dugald	Centennial Farm
CF97	Thomsen Family Farm	Dugald	Centennial Farm
CF105	Van Slyck Family Farm	Dugald	Centennial Farm
CF106	Gourley Family Farm	Edwin	Centennial Farm
CF107	Murray Family Farm	Dugald	Centennial Farm
CF112	Gourley Family Farm	Edwin	Centennial Farm

ID Number	Name of Designated Site	Nearest Town	Type
CF122	Pallister Family Farm (Pallister Farm Ltd.)	Edwin	Centennial Farm
CF149	Coubrough Farms	Bagot	Centennial Farm
CF485	Sosnowski Family Farm	Winnipegosis	Centennial Farm

These areas are outlined in the ESS table located in Appendix 5.

4 EXISTING ENVIRONMENT

4.1 Data/information sources

As noted above, the Provincial Inventory of Archaeological Sites provided the initial data base for the heritage and cultural resources. These data were plotted on GIS maps so that site distribution and frequency of site type could be observed. These data also fed into the ranking of existing archaeological sites and predictive modeling. Ranking was especially important as the weighted values determined which of the proposed routes would have the least impact on known heritage resources. In addition to the base data provided by the provincial inventory, federal and municipal commemorations were searched. Finally, published and unpublished archaeological and heritage and archival literature were examined and any sites that were noted to have a Borden number were cross referenced with the provincial inventory to ensure accuracy of the data base.

4.2 Major sources

4.2.1 Data/information gaps/deficiencies

During the cross-referencing process, numerous sites discussed in archaeological reports which were assigned with Borden numbers were noted to be absent from the provincial inventory or in the wrong geographical location. A list of these sites was made and data was forwarded to the Historic Resources Branch to rectify the provincial record. However, not all sites were able to be verified by report information or ground-truthing, therefore it is unknown how many other sites are erroneous or missing.

Information gaps regarding heritage resources were those areas not accessible during the 2010 or 2011 field investigations. These areas were unable to be accessed for ground-truthing purposes because land owner permission was pending; additional areas were inaccessible due to high water levels and/or thick forest; access to Crown lands was impeded by the necessity to cross private lands, and Crown lands were fenced and leased as

pastureland. Refinement of the FPR was ongoing throughout the heritage resource investigation process including modifications to the FPR after the fieldwork for the project was concluded in the fall of 2010. Route changes that occurred after the field season in 2010 were then subject to desktop assessments only which used the predictive model attributes and orthographic photo analysis.

Through the ESS, ATK information was included in the site selection; however only that information collected through the fifteen ATK team-led workshops with 19 communities was included in the assessment; GIS data from the self-directed ATK studies were not available. This may have resulted in the omission of heritage sites important to these communities within the Study Area.

4.2.2 Implications of gaps/deficiencies

Gaps or deficiencies in the data created an incomplete data set. Further, given the nature of heritage resources and the fact that routing changes continued to occur after the field work, areas not originally identified as route were not investigated. Moreover, the subsurface nature of many archaeological sites is such that heritage resources and found human remains may not be discovered until the time of actual construction activities with the removal of overburden and top soils. Certain sites not conforming to predictive model attributes such as the two Keewatinoow Converter Station archaeological sites HdKl-01 and HdKl-02 may have been omitted through field investigations. GIS data were not available from the self-directed study communities and were not able to be included in the Bipole III archaeological inventory since there were no geo-referencing points by which to map the sites.

4.2.3 Actions taken/to be taken

The development of heritage resources protection plans (HRPP) for the various components of the project will assist in ensuring that heritage resources and found human remains that may be discovered during the project (clearing and construction and operation and maintenance, and decommissioning) are dealt with in a timely and respectful manner according to a prescribed protocol that is supplementary to provincial legislation. The HRPPs will set out the process of handling the discovery of heritage resources, and allows for training for all project construction employees in the identification and awareness of heritage resources.

Continued heritage investigations for the access roads, roving/mobile camps, and areas highlighted in the Environmental Site Selection (ESS) table at risk were unable to be conducted and will have to be incorporated into the monitoring component of the project once licensing is granted. On-going monitoring of the clearing, construction, and operations and maintenance process in the remaining areas identified in the ESS table will also occur as the project progresses.

Review of the self-directed reports and follow-up with communities that have identified areas to obtain specific geographical locations of heritage sites will assist in adding to the ESS table and may provide mitigation options.

4.3 Existing Environmental Description

4.3.1 Existing Cultural and Archaeological Environment

The existing cultural environment is composed of six Aboriginal groups and a non-Aboriginal population of many different ethnic backgrounds. While this characterization focuses on the Aboriginal component, heritage resource and heritage resource designated sites , such as Ukrainian homesteads, churches, early industry (mining and forestry), national defence (Pinetree & Mid-Canada lines), and the railway that celebrate the colonial and historic period of provincial growth are present.

At present time the four main Aboriginal cultures within the Bipole III Transmission Study area are: Cree [or Ininew] (Swampy & Rock); Ojibwa [or Anishinaabe] (Saulteaux), Siouan (Dakota) and Métis (Red River, Country born and self-identified). Further to the north-west and at Churchill resides Manitoba's Dene [Edethenedeli dene/Chipewyan] (Sayisi Dene & Ho'tle dene). A small Inuit population has been documented for the Manitoba Coastal area. These two northerly Aboriginal groups are not within the study area and are exempt from this study. Tangible cultural heritage, (artifacts) are noted in tables and figures that follow.

The ancient cultural setting, that is, before European contact presents a complex record of ongoing mobility and movement of human populations who adapted to changing climatic and resource conditions.

The earliest sites are generally least understood because there is little concrete evidence to draw from. The further back in time the age of the site, the less likely that organic materials such as leather, wood, bone and plant material will be found intact. All that usually remains of these very ancient sites is inorganic artifacts such as stone tools. Occasionally bone, leather and plant remains are found in various states of decay; these can provide specific evidence of cultural practice and inference regarding worldview. More recent occupations (i.e. the proto and post-European periods) contain a wider range of organic, inorganic and in the case of post-European sites, manufactured materials such as glass, beads, and metal objects.

For the purpose of this characterization, the cultural sequencing of the study area was arranged chronologically, beginning with post-glacial conditions. A general description of each main cultural period was described. Further to this a frequency distribution map and chart identified the locations and number of sites within each cultural period.

4.3.2 Heritage Environmental Components

As alluded to in Section 2.1, the nature of deglaciation some 12,000 years ago (ya) and the subsequent development of glacial Lake Agassiz determined the physical boundaries of early

human occupation in the study area (Figure 4.3-1). The location of tangible cultural heritage (artifacts and features) in Manitoba coincided with post-glacial conditions that licensed successive migrations of wildlife (plants and animals) into previously inaccessible lands. Once the physical condition of natural resources stabilized, human populations quickly took advantage of the new and emerging landscape. Subsequent fluctuations in climatic conditions also contributed to later movements of people throughout the study area.

Post-glacial features for example, beach ridges associated with the former Tyrrell Sea and glacial Lake Agassiz, eskers and moraines provided early travel routes for both wildlife and humans. Deltaic deposits, such as the Upper Assiniboine Delta resulted from glacial meltwater outwashes. The upper edge of this delta is marked by the southern part of the Campbell Beach Ridge, also referred to as the Arden Ridge which extends from Arden to Treherne. To the north in the Swan River area water levels reached back as far as the upper Campbell forming beaches between 9,900 and 9,300 ya as a result of isostatic rebound. The step-like formations that followed the rapid dewatering of Lake Agassiz caused "large-scale landslides along the east side of Porcupine Hills and parts of Duck Mountain" (Nielsen: 1988:45). The warming trend of the Hypsithermal created a grassland environment across the plains. The formation of these features and subsequent climatic changes were very important to the initial movement of human populations. The pursuit of mega fauna gradually transitioned into a seasonal round based on big game hunting and in all likelihood gathering of plants. Moraines, such as the Pas Moraine, formed less than 10,000 ya provided an important east-west passage of both wildlife and human populations.

Five major water ways transect the proposed Bipole III Transmission Line: Burntwood, Grass, Saskatchewan, Assiniboine and Red rivers. Together these rivers drain a substantial portion of the interior, all of which empty into Hudson Bay via the Nelson River. In addition, a vascular network of numerous secondary rivers, streams and creeks connect these major water bodies. These interlacing river systems played a significant role in the movement of human populations and ideas in all directions. The archaeological record confirms this by the distribution of like tools, exotic tool-making stone, pottery designs, and cultural expression in the way of pictographs, petroforms and burial practices that are to be found between the two termini of the proposed transmission line.

New ideas and technologies quickly spread through the network of intricate waterways and ancient trails to new locations where they were modified and improved upon according to local need. For example, the ceramic tradition considered to have been introduced into the area approximately 2000 years ago, quickly spread throughout the boreal forest from the south-east and south. From the producers of this tradition emerged the predecessors of today's Ininew (Cree) and Anishinaabe (Ojbiwa) inhabitants. Other ceramic traditions

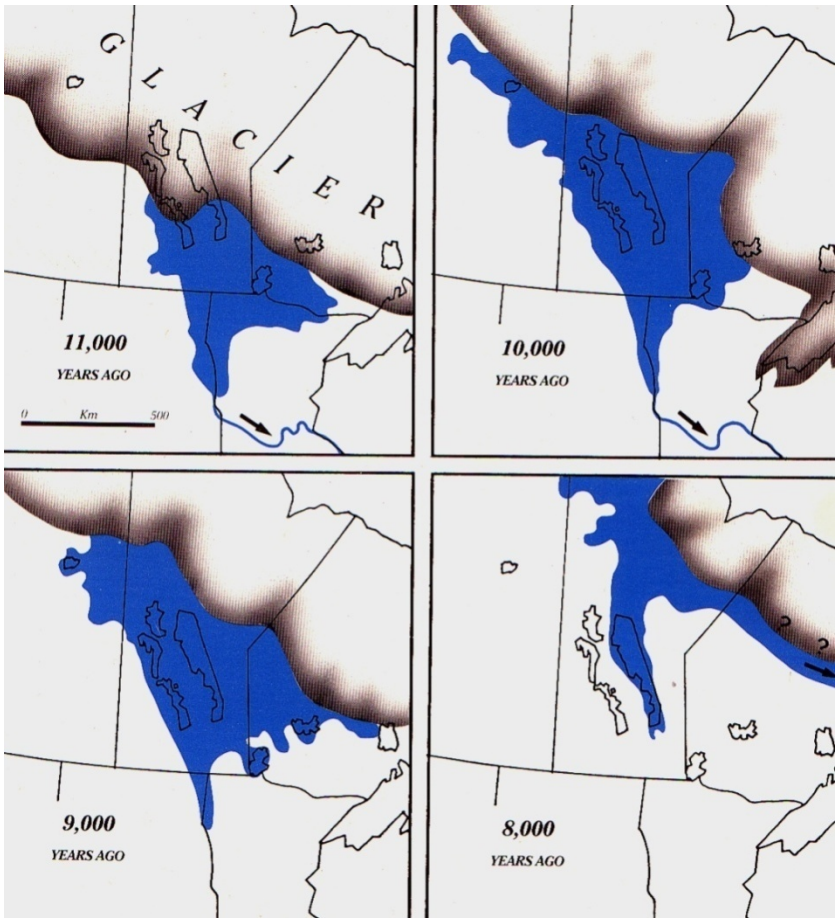

Figure 4.3-1, Stages of Glacial Lake Agassiz following deglaciation. (Copied from Teller 1984)

associated with Assiniboine and Siouan of the Parkland and Prairie, as well as faraway cultural traditions also add to the complexity of cultural occupations. Attribute analysis and C14 dating illustrate the changing ceramic technology in both form and function over time. The same applies to the vast array of tools and weapons that have been recovered from archaeological sites. Through diffusion and independent invention tool form and function was modified according to local needs.

Cultural Sequencing

Manitoba's heritage is loosely divided into two periods – Pre-European contact and Historic. These are briefly described below. The cultural site distribution maps illustrate only those sites within the Bipole III study area, and do not include sites outside the boundary. These maps are based on the Historic Resources Branch heritage inventory that was made available at the time of request for data.

Pre-European Contact Period

The pre-European contact period represents time before the initial contact of indigenous people with Europeans. Generally, this period begins with evidence of the first people who explored the region during the post-glacial emergence of habitable lands. This occurred at different geographic and temporal locations. The pre-European period is divided into three categories which are based on association with hallmark technologies: the Palaeo/Plano Period (ca. 12,000-6,500 ya); the Archaic (Western Intensive Diversification) Period (ca. 8,500 to 2,500 years ago); and the Woodland Period (ca. 2,000 – 300 ya). The frequency of cultural sequencing within the various ecosystems that the alternative routes transect is noted below in Table 4.3-1:

Table 4.3-1, Frequency of cultural sequencing within the various ecosystems of the Bipole III alternative routes area.

Pre-European Contact	Undetermined	Paleo	Archaic	Woodland	Taltheilei[3]	Total
Boreal Plains	538	89	196	275	0	1098
Boreal Shield	285	3	47	233	3	571
HB Plains	27	0	0	0	0	27
Prairie	490	79	230	289	0	1088

Palaeo/Plano Period (ca. 12,000 – 6,500 ya)

While some of the earliest archaeological evidence, namely Clovis/Folsom is to be found in the southwest corner of the province (ca. 12,000 ya) (Table 4.3-2). For the Bipole III study area early evidence of occupation by small bands of First Nations is located mainly along the west side of the province above the Campbell Beach Ridge, an important shoreline of glacial Lake Agassiz and a cultural marker. Referred to as Palaeo-Indian, the archaeological evidence suggests a widely scattered distribution of settlement by people bearing a signature technology. The artifacts associated with this earliest tradition range from fluted-, to later stemmed- and lanceolate- spear heads (Figure 4.3-2). Few fluted points have been found in Manitoba. Projectile points found above the Campbell Beach ridge are stemmed; this typology is rarely found below the Campbell strandline (Pettipas 1996:45).

[3] Taltheilei culture represents the earliest Dene occupation in northwestern Manitoba.

Table 4.3-2, Palaeo/Plano Period (ca. 12,000 - 6,500 ya). (Copied from Manitoba Heritage Network 1998).

Time Line	Geographical Regions			
	Prairies	Forest	Subarctic	Arctic
5,000 B.C 6,000 B.C 7,000 B.C 8,000 B.C	Western Plano	Eastern Plano	Northern Plano	
9,000 B.C 10,000 B.C	Folsom Clovis			

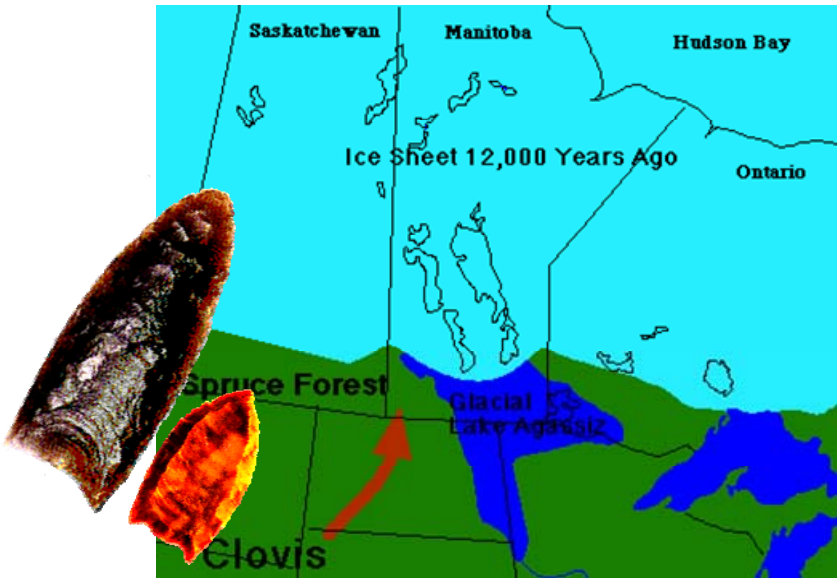

Figure 4.3-2. Earliest human populations in relation to the early stage of glacial Lake Agassiz (Courtesy of Manitoba Heritage Network 1998).

Late Palaeo/Plano points of the lanceolate tradition are found both above and below the Campbell strandline suggesting in-migration of new people pursuing long-horned bison (bison antiquus). With the diminished Lake Agassiz and emerging moraines such as the Pas Moraine a wider distribution of artifacts representing this time period is noted pointing to high mobility throughout the region.

Dates for Plano occupations are interesting since evidence of this cultural period can be found in the far northwestern corner of the province, along the western edge and in the south-eastern part of the province. Meyer (1983) has suggested that northern Plano were an off-shoot of western Plano people who gradually moved northwards in pursuit of long-horn bison, eventually transitioning into a later Archaic tradition.

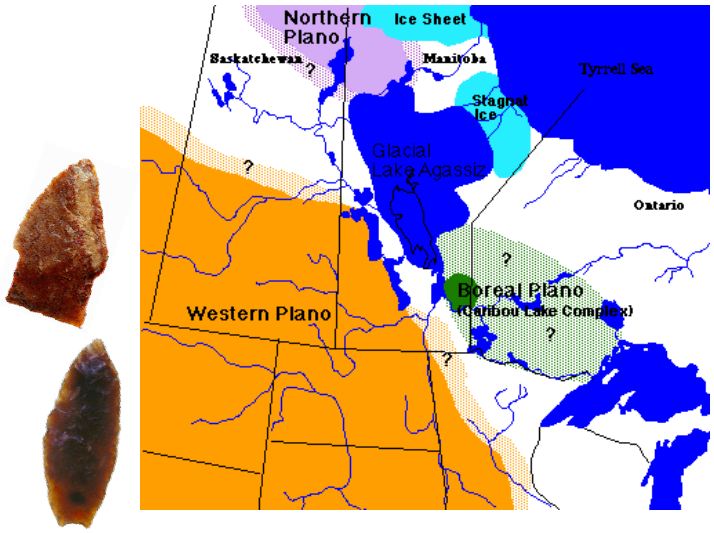

Figure 4.3-2, Distribution of Boreal, Western and Northern Plano (Map courtesy of Manitoba Heritage Network 1998).

Excavated Western Plano sites in Manitoba include the Duck River (ElMb-5 ElMb-10) and TeePee (EjMf-1) sites in the Swan River Valley (Provincial Archaeological Site Inventory). Other evidence of Palaeo-Indian found within the Bipole III study area is limited to surface finds of two types of projectile points: stemmed and unstemmed (lanceolate).

Presently, 171 Palaeo/Plano sites are located within the Bipole III study area. Because of post-glacial conditions and climatic events many sites representing this period of human occupation may be deeply buried under slumped river banks or former sand dunes.

Archaic (Western Diversification) Period (ca. 8,500 to 2,500 years ago)

The Archaic Period brought with it a new set of technologies and diversification of subsistence economy. Throughout the some 8,000 years of this period, notable changes to the toolkit occurred (Table 4.3-3). The earliest absolute evidence of the Archaic Period in

Manitoba is found on the Plains and along the southeastern edge of the Precambrian Shield around the Winnipeg River. The spread of the Archaic traditions after 8,000 ya may have been in response to climatic changes brought about during the Atlantic episode when drought conditions prevailed. A little over 6,800 ya a second climatic event, the eruption of Mount Mazama (Crater Lake) in Oregon may have contributed to animal and human migrations. Interestingly, the resulting ash fall from this eruption created an important geological and archaeological time marker; archaeological remains below the ash lens date earlier than the volcanic eruption while the artifacts above the lens date to after the event.

Table 4.3-3, Archaic (Western Diversification) Period (ca. 8,500 to 2,500 ya) (Copied from Manitoba Heritage Network 1998).

Time Line	Geographical Regions			
	Prairies	Forest	Subarctic	Arctic
1000 B.C.	Pelican Lake			
2000 B.C.				Pre-Dorset
3000 B.C.	McKean Oxbow	Old Copper		
4000 B.C.			Shield Archaic	
5000 B.C.				
6000 B.C.	Logan Creek			

As a result of the changing climate and drier conditions the grasslands in the southwestern portion of the province expanded approximately 150 km to the north and 80 km to the east of their previous distribution (Manitoba 1984:48). Tall grasses of the Central Plains to the south were replaced by short grass prairie not suitable for bison. Because of the environmental changes the herds moved north and west to more favourable regions in south and central Manitoba prairies. Riverine resources provided sustenance for both animal and human populations. The Swan River Valley for example, offered shelter, vegetation, and strategic vantage points for observing bison herds (Gryba 1977). The Red River Valley also presented similar advantages and may have served as the central conduit through which the movements of peoples and technologies into the region first occurred.

Evidence of people representing this cultural period is found throughout the study area. Four hundred and seventy-three (473) Archaic sites are currently recorded. As noted above

climatic changes some 8,500 years ago are considered to be the motivating force behind increased movement of human populations and a diversification of technologies and subsistence pursuits. In the south, Plains Archaic people may have developed out of the earlier Plano tradition, although it is possible that a new population replaced the former big game hunters (Forbis 1992, Gryba 1980). Occupation dates for the south are slightly earlier than those in north and north-central Manitoba. Ancient burials and campsites from this time period are attributed to a people simply referred to as Archaic which denotes their antiquity. The most prominent weaponry of this period was the dart point and a device called an atlatl or "spear extender". This innovative technology provided greater thrust and accuracy when used with a spear shaft and dart point notched dart points, such as Logan Creek and Oxbow appear to have been more popular at this time.

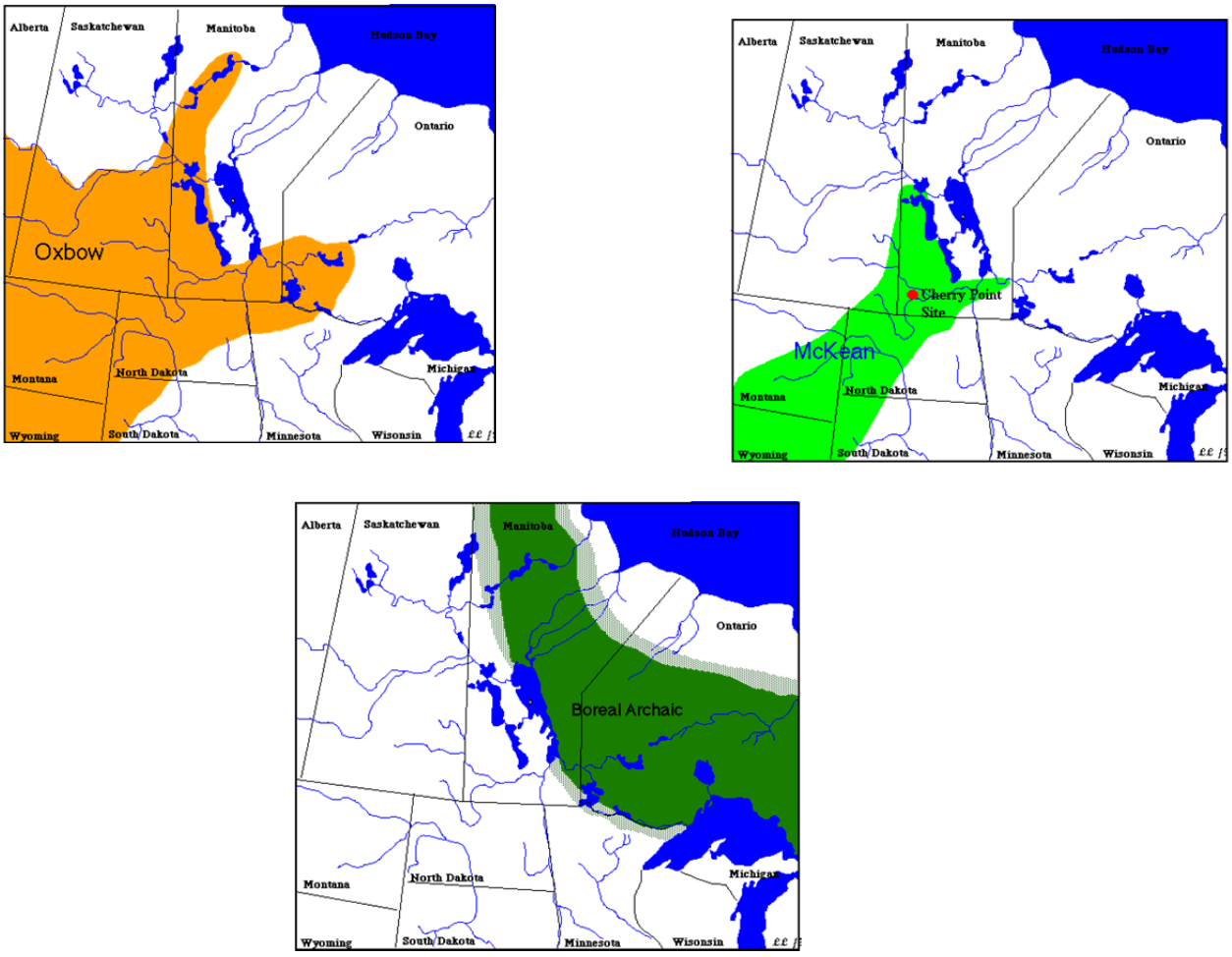

Figure 4.3-4, Archaic cultural distributions in Manitoba (Map courtesy of the Manitoba Heritage Network 1998).

Both types of projectiles have been found at the northern end of Cedar Lake, in association with the former course of the Saskatchewan River (the Minago River to the Nelson River) (Figure 4.3-5).

The Shield Archaic tradition of the northern boreal forest and subarctic region is considered to have developed as early as 6,500 years ago. It was distributed throughout the southern Northwest Territories (Keewatin district), northern Saskatchewan, northern and eastern Manitoba, and northwestern Ontario. Sites on the tundra are well represented in the Northwest Territories, which has been suggested as a possible origin (Wright 1972, 1976). Sites in the Manitoba subarctic are rare and have been found mainly in the southeast.

Figure 4.3-5, Logan Creek and Oxbow projectile points found at Cedar Lake (Photos courtesy of NLHS).

Nearby, human remains excavated from an eroding burial pit - the Cedar Lake burial (FjMa-5), were dated at ca. 3,400 BP (NLHS 2002; Hoppa 2003; Brock University 2004). Faunal remains found at nearby archaeological sites indicated that early human populations relied on a range of large and small mammals, birds and fish for their nutritive requirements. As well, the size and shape of stone tools indicated specialized tools for different occasions.

Northern archaeological evidence from the Gull Lake area and lower Nelson River suggested that by 5,000 ya the Nelson River system had developed into a well-established travel route supporting small bands of seasonally subsistent people. Projectile point forms suggest that there may have been movement of human populations from the northwest (Southern Keewatin area) into the Canadian Shield around the same time that people from the Plains and Boreal Forest were extending their range of movement northwards. Unfortunately most of the organic material culture of this time period has disintegrated over time. However, occasional organic finds illustrate evidence of a viable culture. For example, the Victoria Day Site on Three Point Lake in northern Manitoba has revealed the largest collection of bone tools to date (Syms n.d). Forty-three bone and antler harpoons were recovered from a burial site which dated to ca.4,150 ya, slightly 700 years earlier than the Cedar Lake burial, FjMa-5.

The relationship between the natural environment and cultural groups is evidenced by the types of food remains found at campsites; how people related to other aspects of their

ecosystem can only be inferred through the traditional knowledge base of First Nations within the study area.

The few, isolated Archaic period discoveries to date suggest a low human population density between 6,500 and 2,000 years ago as compared to areas to the southeast, southwest, and northwest.

According to the Manitoba Heritage Network (1998), "the appearance of the Oxbow complex marks the beginning of the Late Plains Archaic". Around 5,000 ya there appears to be a substantial increase in the number of Oxbow-related sites and a noticeable rise in population, possibly due to the ameliorating climate and increased and more reliable food resources.

Following on the heels of the Oxbow complex, the McKean complex appears to have originated within the Desert Tradition centered in the American Great Basin and diffused in a northeasterly direction, including contiguous areas of Montana, the Dakotas, Saskatchewan and Manitoba. Manitoba sites are concentrated in the Swan River Valley in the southwestern corner of the province and the area around Rock Lake in south central Manitoba (Syms 1970:127). Surface finds and an excavated site in Whiteshell Provincial Park indicate that McKean people were also using the southern Boreal Forest/ Shield regions.

Either contemporaneously or shortly thereafter, a new style of projectile point appeared (Figure 4.3-6. The distribution of these well-crafted projectiles is similar to Oxbow and McKean. Pelican Lake points are found mainly in the northern prairies and indicate large and mobile populations who seasonally moved between sheltered forested valleys in winter and open prairie in summer. There is also a representation of this technology found in northern Manitoba and in the Boreal Forest. There appears to be a correlation between the seasonal movement of bison herds and people of the Pelican Lake complex.

The Shield Archaic tradition of the northern boreal forest and subarctic region is considered to have developed as early as 6,500 years ago and was distributed throughout the southern Northwest Territories (Keewatin district), northern Saskatchewan, northern and eastern Manitoba, northwestern Ontario and east along the Boreal Shield. Sites on the tundra are well represented in the Northwest Territories, which has been suggested as a possible origin (Wright 1972, 1976). However, recent geo-archaeological research in the North Lake Superior Basin suggests a movement of people into northwestern Ontario around the same time period (Hamilton 2000).

Figure 4.3-6 Typical Pelican Lake projectile point. (Photo courtesy of NLHS).

In addition to the Archaic occupations in the north the archaeological evidence of Palaeo-Inuit[4] indicates a relatively recent occupation along the western coast of Hudson Bay (about 3,500 years). In Manitoba the distribution of Palaeo-Inuit sites suggests that the ancient people belonging to this cultural group were adapted to a seasonal maritime subsistence associated with Hudson Bay. To date 36 Palaeo-Inuit sites have been identified in northern Manitoba. These can be further categorized as 24 Palaeo-Inuit sites (non-descript) 6 Pre-Dorset sites and 6 Dorset sites. The Hudson Bay, a diminution of the former Tyrrell Sea which extended up to 100 km inland at its maximum extent, presents excellent examples of both the Pre-Dorset (3500-2500 BP) and Dorset (2500-1000 BP) phases of Palaeo-Inuit occupation. Much of the evidence is to be found in the Churchill Manitoba area, namely the Churchill West Peninsula (Nash 1969, Meyer 1977, Petch 1988, 1995, Hodgetts 2007). However, sites have been identified near the North Knife River estuary (Giddings 1956, Nash 1969), 15 Mile Esker (Petch 1995), Twin Lakes (Nash 1969, Petch 1993) south of the former rocket range, Shamattawa River (Anon.). In Saskatchewan, Palaeo-Inuit has been found at Black Lake (Minni 1976). These deep inland sites offer evidence of a highly mobile

[4] **Whereas** the Inuit Circumpolar Council (ICC) was founded to promote the rights and interests of Inuit at an international level, as well as to promote the unity of Inuit across four countries; and
Whereas the International Labour Organization Convention 169 on Indigenous and Tribal Peoples and other international conventions recognize the rights of an indigenous people to self-identify; and
Whereas the ILO 169, the UN Declaration of Rights of Indigenous Peoples, and other international conventions promote the rights of indigenous peoples to full realization their social and cultural identity, their customs and traditions; and
Whereas ICC and other Inuit organizations have consistently self-identified as "Inuit" in the context of international matters; and
Whereas the term "Eskimo" is not an Inuit term, and is not one that Inuit have themselves adopted; and
Whereas the scientific, research, and other communities have used inconsistent terms when referring to Inuit; and
Whereas some members of the scientific community have reached out to ICC seeking guidance on how the term "Inuit" should be used in their research and published literature;
Let it therefore be resolved that the research, science, and other communities be called upon to use the term "Inuit", instead of "Eskimo" and "paleo-Inuit" instead of "paleo-Eskimo" in the publications of research findings and other documents. Passed by ICC Executive Council at the meeting in Nuuk September 29th, 2010

people who may have divided their subsistence practices between the land and along a sea coast that was much further inland than today. The Keewatinoow Converter Station sites (HdLk-01 and 02 fit into the Tyrrell Beach Ridge gravel islands concept

In the Churchill area an archipelago of rocky quartzite and gravel islands emerged from the receding sea. These islands provide the best evidence of Palaeo-Inuit and Inuit occupation in Manitoba some 3,500 years (Meyer 1977, Petch 1995Hodgetts 2007, Hodgetts & Eastaugh 2006). Further Fischer (pers. comm. 2010) confirmed his field investigations east of Churchill as historic Inuit and Petch and Kroker identified additional sites and recovery of a bone needle during HRIA investigations for the proposed Akjuit Aerospace Project (Kroker and Petch 1993). Kroker also identified a Palaeo-Inuit site upstream of the Limestone River and recent excavation of the Pointe West Site on Clarke Lake (NLHS 2010) revealed a double-notched point which was positively identified as belonging to the Dorset Phase of Palaeo-Inuit (ca 2500-1000 BP). The finding of Palaeo-Inuit sites at the Keewatinoow Converter Station is an important addition to the archaeological record. No evidence of later Thule or historic Inuit was found at this site.

Woodland People (ca. 2,000 to 300 years ago).

The Woodland period ushered in new technologies and perhaps in-migrating groups of people with new languages and customs (Table 4.3-4). Two major innovations at this time were the bow and arrow and Native clay ceramics. Over time both of these technologies evolved into a number of different forms.

During the Initial Woodland period (ca. 2,000 to 1,000 years ago) a ceramic vessel style referred to as Laurel was introduced (Figure 4.3-7). About 1,000 years ago (Terminal Woodland period ca. 1,000 to 300 years ago) ceramic vessels underwent changes in form and design. Vessel types called Selkirk, Clearwater Lake Punctate and Blackduck emerged at this time (Figure 4.3-8). Each had its signature attributes. Other vessel forms from far afield geographic locations such as the Plains and Eastern Great Lakes indicate possible trade networks and alliances. The range of stone and bone tools indicates that people were making use of a wider range of local resources during the course of their seasonal round and this may have been responsible for groups settling into areas that could have been considered as traditionally used lands.

Two early groups of people, bison hunters, referred to as Besant and Sonota dominated the prairie landscape. Archaeological sites such as the Richards Kill Site, a bison pound, and the Avery Site, a campsite, are examples of the Initial Woodland on the Plains. In southwestern Manitoba, the Avonlea culture reflected important contacts and influences from Saskatchewan and Alberta. In northern Manitoba, groups of people may have moved into the boreal forest from the southeast, assimilating their language and traditions.

Table 4.3-4, Woodland Period ca. 2,000 to 300 years ago (Modified from Manitoba Heritage Network 1998)

Time Line	Geographical Regions			
	Prairies	Forest	Subarctic	Arctic
1700 AD 1600 AD 1500 AD 1400 AD 1200 AD 1000 AD	Plains Blackduck	Selkirk Blackduck Blackduck		Thule
800 AD 600 AD 400 AD 200 AD 1 AD 200 BC	Avonlea Besant/ Sonota	Laurel	Late Taltheilei Middle Taltheilei	Dorset

In Manitoba, the Besant culture is the earliest representation of the Woodland tradition on the northern Plains. The Native peoples who developed it arrived in the Province approximately 2,000 years ago and were the first inhabitants of the local prairie to manufacture and use ceramics. Like the other Plains peoples, Besant groups were heavily dependent upon bison hunting and practiced a form of social organization that relied on group cohesiveness to prepare bison jumps and pounds and to butcher the bison they killed. Side-notched atlatl dart points were fashioned using local stone as well as Knife River Flint and other materials imported from the south (Walde, Meyer and Unfreed 1995:18). Important sites that exemplify the phase include the Richard's Kill Site (Hlady 1967), a bone-filled grassy hollow used to confine bison for slaughter, and the Avery Site (Joyes 1969) in southern Manitoba, where cut marks on bone provide evidence of meat processing.

For a short time, another distinct Aboriginal Plains culture, Avonlea (A.D. 500-800), co-existed with Besant-Sonota on the prairies and reflected a similar subsistence strategy. Interestingly, Besant-Sonota groups continued to use the atlatl for hunting, while the Avonlea utilized and developed the new bow and arrow technology. The finely crafted side-notched Avonlea points are smaller and more refined than Besant or Sonota forms and are considered to represent a clearly distinct tradition. The presence of Avonlea people in Manitoba is concentrated primarily along the western edge of the province, where they are often found along with Beasant-Sonota tools. Avonlea people appear to have restricted their movements mainly to southern Saskatchewan, and Alberta where greater frequencies of this tradition have been identified (Figure 4.3-9).

Figure 4.3-7, Example of Middle Woodland ceramics (Laurel) found within the Bipole III study area.

Figure 4.3-8, Examples of Late Woodland ceramics (Clearwater Lake, Blackduck and Selkirk) found within the Bipole III study area.

The hallmark of the Woodland Period in the Boreal Forest is the appearance of native ceramics manufactured of local clays. The technique of pottery making was introduced into the northern Shield regions by native peoples from the Eastern United States and in Manitoba this tradition spread northward as far as Southern Indian Lake and as far west as Sturgeon Weir River, Saskatchewan. The Aboriginal ceramic industry was only one component of complex culture that was adapted to the forest. In Minnesota, sites containing Laurel pottery were located on the northern edge of an area that saw the development of horticulture, the construction of burial and ceremonial mounds, and the proliferation of trade networks. At the Wanipigow Site, east of Lake Winnipeg, pottery making and wild rice harvesting provide detailed evidence of Laurel subsistence activities and culture patterns.

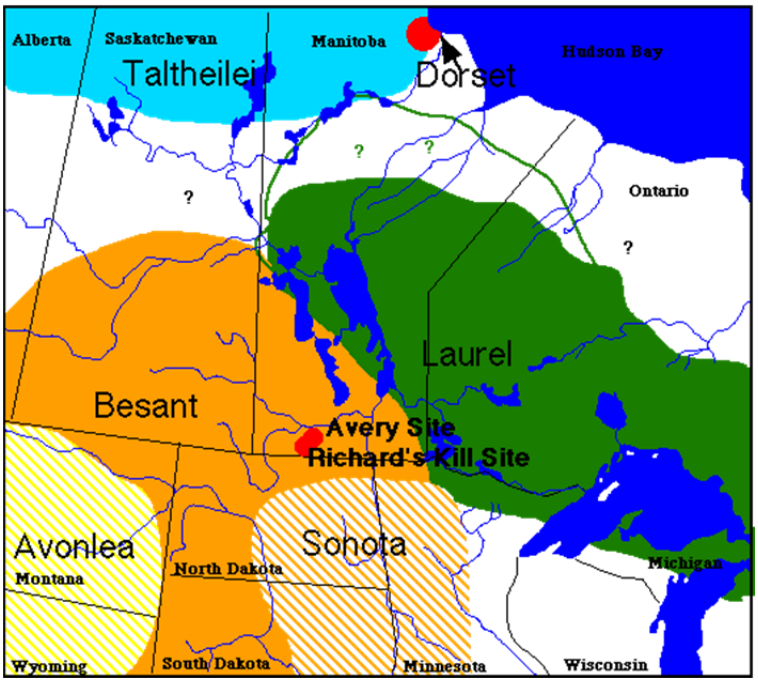

Figure 4.3-9, Distribution of Middle Woodland Period cultural groups. (Map courtesy of the Manitoba Heritage Network 1998).

A total of 797 Woodland sites are currently registered within the Bipole III alternative routes study area. The frequency of culturally identifiable sites suggests a steady increase in populations over the course of several thousands of years (Figure 4.3-10).

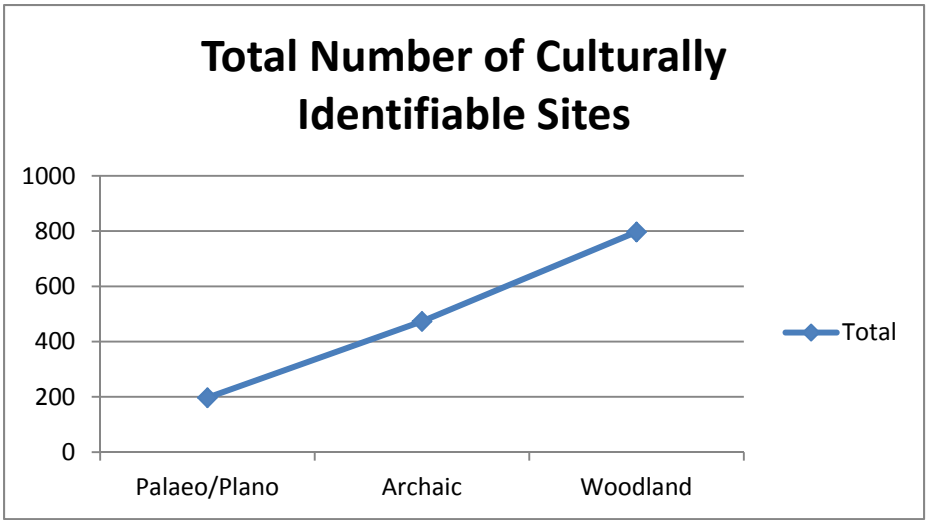

Figure 4.3-10, Frequency of culturally identifiable pre-European archaeological sites suggesting steady rise in population over several thousands of years.

The Historic Period

For Manitoba, contact between the First Nations and Europeans began in the 1700s with French explorations from the east through the Winnipeg River area, the British from the north via the Hayes River, and possibly some diffused influence from the Spanish via Mexico and the central plains.

The archaeological record for this period follows two somewhat parallel paths: European and Historic Aboriginal. The introduction of European trade goods such as copper pots, muskets, steel goods and trade beads caused substantive changes to aspects of the Aboriginal subsistence economy. These trade items were rarely discarded and were re-used or modified into other useful implements and decoration. Historic Cree sites in northern Manitoba indicate that while fur trade activities caused modification of the subsistence seasonal round, the essence of Cree culture remained rooted in tradition. For instance, the seasonal round of resource and social activities followed much the same course as the pre-European period. The fluidity of movement between kin and clan-related locations illustrates not only band autonomy but also a sense of comfortableness in many different ecological settings. Hints of this exist in tracing the movements of both Cree and Ojibwa onto the plains in the summer and back into the forest in the winter (Figure 4.3-11).

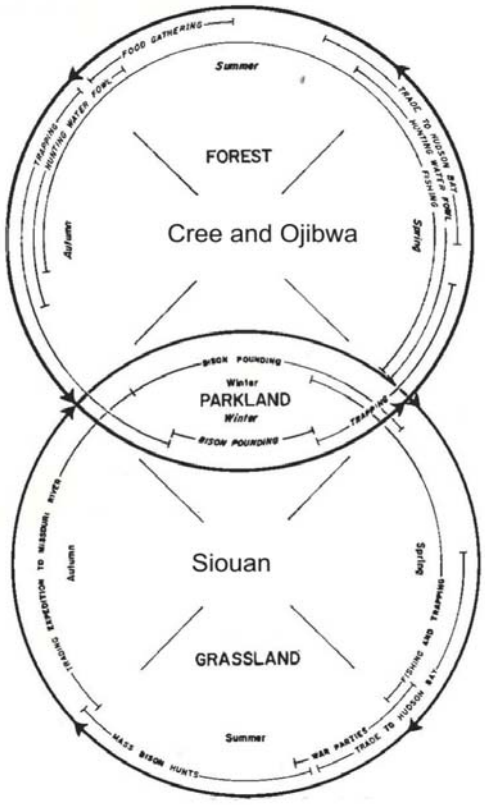

Figure 4.3-11, Seasonal round of movements between the prairies and forest (Modified from Ray 1974).

Aboriginal architecture is not well represented in the archaeological record. Variations of log tents and structures could provide much needed detail regarding the day-to-day routine of family social groups. The ethnographic record suggests that a variety of structural arrangements existed and these depended on season and availability of resources.

Explorers and fur traders were the earliest Europeans to arrive in the study area. Henry Kelsey made the first recorded European voyage to the interior of Manitoba from Hudson Bay in 1690 (Badertscher 1982: 1). Between 1690 and 1692 Kelsey passed through the area near The Pas at least four times (Dawson et al 2002: 27). Following Kelsey's historic journey, in the 18th century, a number of Hudson Bay Company surveyors such as Samuel Hearne, Peter Fidler, and David Thompson explored areas along the Burntwood, the Saskatchewan, and the Assiniboine Rivers. A number of fur trade posts were established through these early exploratio

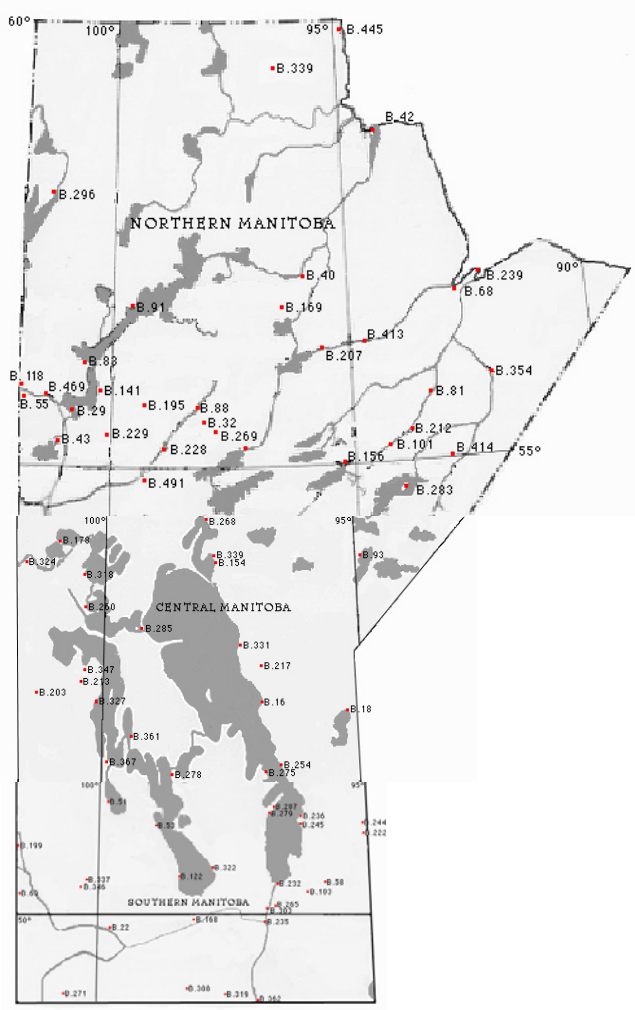

Figure 4.3-12, Known trade posts in Manitoba (Copied from HBCA website)

Soon after the formation of the HBC, the French entered Manitoba, interested in the fur trade and imperialistic expansion. Between 1682 and 1713 the English and French battled

for control over posts; various forts were razed, captured and changed hands throughout this period.

In 1779 after merging with several smaller fur companies, the North West Company (NWCo) was established and became a new source of competition for the HBC. Trade posts sprang up throughout western Manitoba as the Hudson's Bay Company, North West Company and smaller fur trade businesses wrestled for control of fur supplies along major transportation routes. Competition between the fur traders increased and rival posts dotted lakes and river systems.

As the fur industry progressed from its earliest days the relationship between the indigenous people and fur trade indentured servants strengthened with the intermarriage of the two groups through country marriage (*marriage á la façon du pays*). From these country marriages emerged a new culture. In the north, the children of such marriages were referred to as "*country born*", while those of French/Indigenous birth were identified as Metis.

By 1811, amidst fierce competition between the NWC and the HBC plans were in place for the establishment of a settlement in the Red River Valley. Lord Selkirk of Scotland, a philanthropist and supporter of the peoples' cause was granted a tract of land referred to as the District of Assiniboia. In that same year an advance party of labourers comprised of Scots, Irishmen and Orkneymen wintered on the banks of the Nelson River near Gillam Island. The following year they journeyed up the Hayes River to the Red River Valley to establish a settlement for the Scots who had been forced from their homes during the Clearances in the highlands of Scotland.

The Red River Settlement faced many physical, social and political challenges but eventually a series of parish river lots were created along the Red and Assiniboine rivers, paving the road for the establishment of the City of Winnipeg (Figure 4.3-13). Parish lot systems were also created for other important riverine areas such as the Saskatchewan and Winnipeg rivers, although not to the extent as in Winnipeg.

The confederation of Canada in 1867 led to the founding of the Dominion Land Surveys of 1870s. The DLS system incorporated the province of Manitoba under a section, township, and range system of land classification. Numerous settlers purchased land through these government surveys. Settlers flooded into the province and changed the cultural landscape of the study area considerably. In 1880 the Canadian Pacific Railroad arrived in southwestern Manitoba and facilitated access to and from communities along the rail line and provided a new method of transporting agricultural goods to Winnipeg, eastern Canada and the United States.

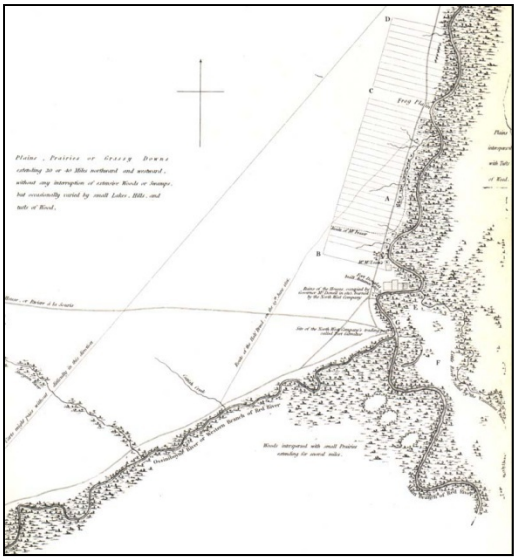

Figure 4.3-13, Parish lots along the Red and Assiniboine rivers (Warkentin & Ruggles 1970)

With the development of the rail line, came the establishment of villages and towns and, shortly thereafter, the organization of municipal governments. Several buildings from this Late Historic time period are now provincially or municipally designated historic sites (NLHS 2001a: 23).

Beginning in 1871, regional groups of First Nations were under pressure to take Treaty with the Federal Government. Between 1871 and 1910 five treaties and one Adhesion to Treaty Five were signed in Manitoba (Figure 4.3-14).

Distribution of Heritage Resources Throughout the Study Area

Because of the vastness of the study area the distribution of archaeological sites first by ecozone (Hudson Bay Lowland, Boreal Forest, Parkland and Prairie) and then by transmission line segment for the three alternative route corridors took place.

As expected the distribution of early Palaeo points was located above the Campbell beach Ridge. Late Palaeo/early Plano sites were widely spread throughout the lower half of the overall study area, that is, south of The Pas, while sites in the northern half occur mainly on the western edge of the study area. Archaic period sites were distributed along major waterways and suggested in migration of both Shield and Plains Archaic influences. The widespread distribution of Woodland archaeological sites throughout the Boreal and northern Parkland ecozones suggested rapid movement of ideas and/or people from the southeast. The southern Parkland and Prairie ecozones indicated movements of Plains people from the south and west. Site distribution was in keeping with earlier bison-hunting people and was considered to represent diffusion of changing technology rather than new people.

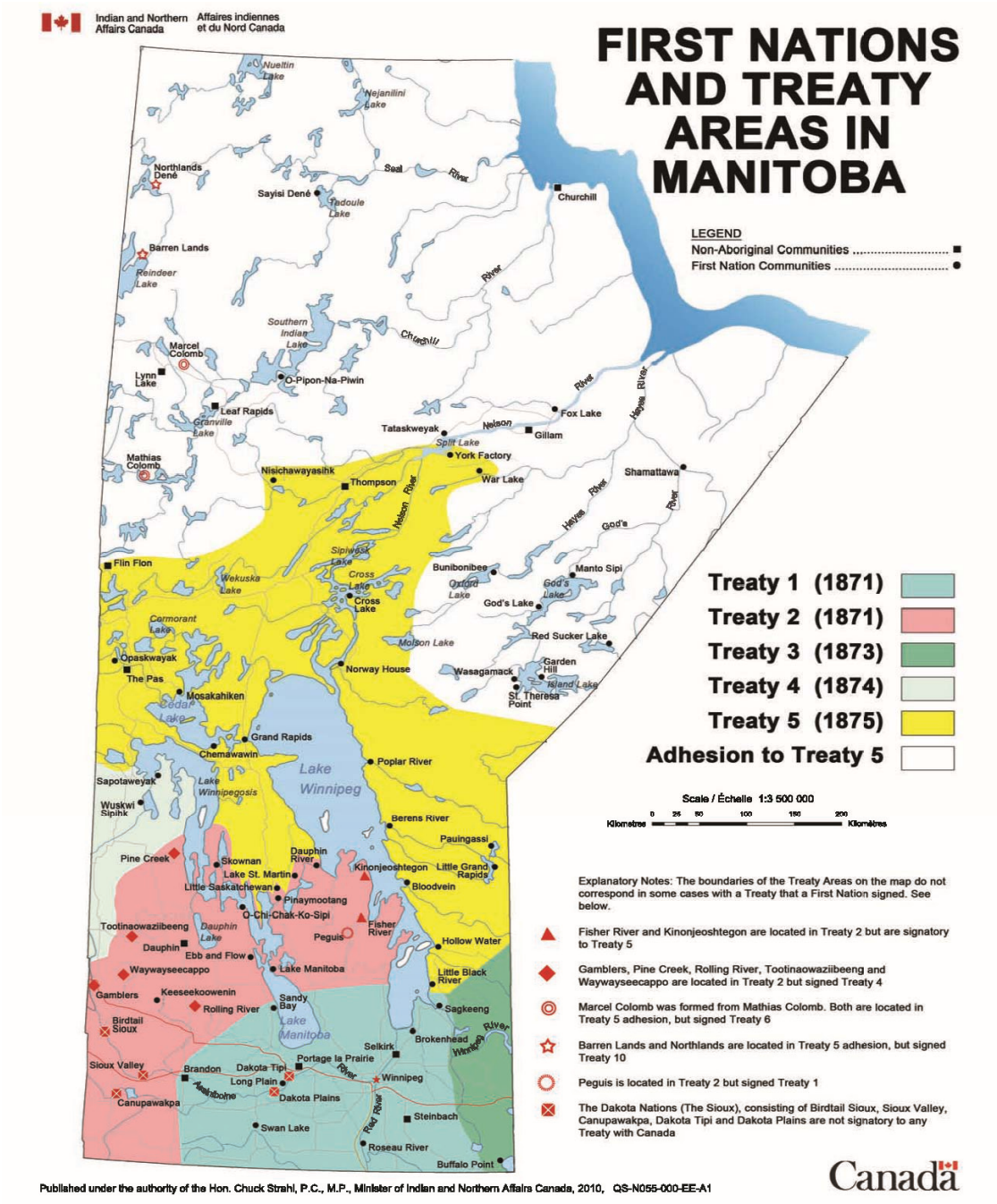

Figure 4.3-14, Map of Treaty boundaries within Manitoba.

However, the presence of late Woodland period pottery, consistent with proto-Anishinaabe, at the Stott Site at Brandon, the Narrows Site at the Manitoba Narrows, and at Lake Dauphin illustrate a much broader range of Woodland-related people who accessed prairie resources such as bison on a seasonal basis. Bison are also known to have had a much larger range than that of the historical period. Bison bone has been found at archaeological sites within the Interlake, and pictographs on the Bloodvein River at the Ontario/Manitoba border depict bison.

The Aboriginal content of the Historic Period has not been effectively identified and many sites that are noted as Historic (general) or fur trade may well belong to the Historic Aboriginal category. The historic development of Manitoba is well represented within the Bipole III study area.

Further to the general archaeological inventory, the federally, provincially and municipally designated sites, as provided by the Historic Resources Branch indicates that the historic period is well represented. However, few designations have been made to Aboriginal sites.

4.3.3 Valued Environmental Components

Heritage resources are non-renewable resources and are considered a valued environmental component (VEC) based on their status as defined under Manitoba's Heritage Resources Act (1986) and because of their intuitive value. As described at the outset of this report all heritage resources are protected by *The Act*. Their intrinsic value lies in the fact that they are the tangible records of Manitoba's history.

4.3.3.1 Description

The Heritage Resources VEC includes categories of: (i) heritage site, (ii) heritage object, and/or (iii) any work or assembly of works of nature or of human endeavour that is of value for its archaeological, palaeontological, pre-historic, historic, cultural, natural, scientific or aesthetic features, and may be in the form of sites or objects or a combination thereof: (Heritage Resources Act 1986:3). Abandoned burials and found human remains are further protected by Manitoba's *Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains* (1987).

4.3.3.2 Environmental indicators

As with other environmental components heritage resources have certain indicators that can be viewed, categorized and measured. However, since all heritage resources are protected under The Act the ranking of heritage resources based on a valuation process does not determine the level of effort that is afforded to sites during the HRIA process. Sites that rank high are flagged as high priority sites since the contents of the site will possess more archaeological detail than one which is ranked as low priority.

5 ENVIRONMENTAL EFFECTS ASSESSMENT

5.1 Environmental effects identification/assessment

5.1.1 From literature

The archaeological, historical and oral narrative records provided general and specific knowledge of the cultural history of the preferred route.

According to the provincial heritage site database 94 registered sites are located within the 3-mile buffer of the FPR ROW. The sites consist of Archaeological sites, Centennial Farms, Municipal Sites, Provincial sites, and Commemorative Plaques. These sites can range in size from an isolated find within an area of >1m to complex settlement sites in areas < 100m. Since all heritage sites and objects are protected equally under the Heritage Resources Act, all findings receive the same protection. However, complex sites which contain evidence of settlement or burial sites are considered to be high priority sites because of their interpretive value in defining history and their cultural sensitivity.

The inventory of heritage resource sites was ranked according to weighted values assigned to the particular alternative route segments during the alternative route evaluation (Table 3.3-4) In addition the predictive model identified certain environmental areas that had the potential for archaeological site location.

In addition to the existing inventories, the Aboriginal Traditional Knowledge (ATK) workshops that were conducted at participating communities provided invaluable knowledge regarding the cultural use and value of specific tracts of land and additional locations of heritage resources that were not recorded in the provincial inventory. Also, local knowledge regarding heritage resources was brought to light at some open houses and this was added to the heritage resources data base.

5.1.2 From Study Results

The following discusses the effects of the Bipole III project on heritage resources along the preferred route of the transmission line and the Keewatinoow and Southern Converter Stations. The North and South Ground Electrodes sites were not ground truthed, although a characterization study for the general areas was conducted. Investigative archaeological survey in areas that were accessible by foot or helicopter identified one archaeological site.

An Environmentally Sensitive Site (ESS) table was developed based on a 3-mile buffer of the FPR. Included in the table were all known heritage sites which have been designated by the Historic Resources Branch of Manitoba Culture, Heritage and Tourism.

All heritage sites within the 3 mile buffer of the FPR were added to the ESS table as they have potential of being disturbed through the project construction and implementation processes. There are a total of 94 registered heritage sites within the 3 mile buffer of the

FPR. Avoidance is highly recommended as they are provincially registered sites and as such are protected by the Historic Resources Act (1986).

Additional items added to ESS table include "Areas of Concern" based environmental characteristics selected through predictive model attributes derived by NLHS (see Appendix II for qualitative attribute types) as well as areas identified through the preferred route overflight, the 2010 field surveys and ortho photo assessment using the Orientis database. These areas have been identified as containing potential for heritage resources or culturally sensitive areas but as yet have not been verified. There are 194 "Areas of Concern" that fall within the 3 mile buffers that were added to the ESS table. Areas included in the ESS table are features such as waterbodies, abandoned buildings, land features such as groves of trees and trails. While 194 areas comprising the "Areas of Concern" list seems to be significant, a number of initial areas from the predictive model were able to be eliminated based on the aerial survey and field surveys.

A third component of the ESS table of selected areas were areas identified through the Bipole III ATK interviews which were chosen for their value in understanding the cultural landscape. An ATK component is included in site selection. ATK information was initially gathered from communities who participated in ATK workshops for the Bipole III Transmission Project. Culturally sensitive and/or heritage sites were identified through the interview process and plotted using GIS technology. A total of 30 areas based on the ATK component were added to the ESS table. Types of ATK added to the ESS table included traditional and ongoing use areas, historic and traditional trails, historic buildings, burial locations, and archaeological resource areas.

The number of ESS sites that were considered as VEC's and which require further investigation, monitoring and/or mitigation currently stands at a total of 318 locations, which includes existing heritage sites, potential sites and ATK derived areas.

5.1.2.1 FPR Transmission Line Route – NORTHERN SECTION from Keewatinoow to The Pas

The following are existing heritage sites as well as environmentally sensitive sites identified through field survey, ATK, and desktop analysis that are found within the 3-mile buffer of the transmission line route from The Pas northward to the Keewatinoow Converter Station.

- 15 existing archaeological sites occur between the proposed Keewatinoow Converter Station and The Pas.
- There are 69 environmental areas of concern north of The Pas.
- There are seven (7) ATK derived points, lines, and polygons that fall within the between the proposed Keewatinoow Converter Station and The Pas.

The ESS that fall within the 66 metre right-of-way (ROW) route have a greater potential to be affected by project installation components (see Table 4.1-1:). Ground disturbing

activities have the potential to affect heritage resources whether they are known heritage sites or areas with potential for heritage resources.

Hydro towers may impact existing or unknown heritage resources during installation. Right-of-way clearing will impact existing heritage resources and unknown heritage resources within the 66 m buffer.Northern Converter Station/Ground Electrode/Collector Lines/Borrow Areas.

5.1.2.2 FPR Transmission Line Route – Southern Section from The Pas to Winnipeg

The following lists the number of existing heritage sites as well as environmentally sensitive sites identified through ATK and desktop analysis registered are found within the 3-mile buffer of the FPR from The Pas southward to Winnipeg.

- 42 Archaeological sites
- 19 Centennial Farms
- 2 Municipal Sites
- 16 Commemorative Plaques
- There are 125 environmental sensitive sites that are of concern a total of 125 occur south of The Pas and within the 3 mile buffer of the FPR.
- There are 23 ATK derived points, lines, and polygons that occur within the southern half of the BPIII study area FPR 3-mile buffer between the Riel Converter Station and The Pas.

ESS that fall within the 66 metre right-of-way (ROW) route have a greater potential to be affected by project installation components (see Table 5.3-1). Any ground disturbing activities have the potential to affect heritage resources whether they are known heritage sites or areas with potential for heritage resources.

Towers may impact existing or unknown heritage resources during installation. Right-of-way clearing will impact existing heritage resources and unknown heritage resources within the 66 m buffer.Northern Converter Station/Ground Electrode/Collector Lines/Borrow Areas.

5.1.2.3 Keewatinoow Converter Station

Two archaeological sites were documented during the field investigation for the Keewatinoow Converter Station. These sites are part of the ESS table archaeological sites HdKl-01 and HdKl-02. The first site is a series of stone features that may represent burials; the second site is a collection of lithic flakes and possible tent rings that may be the remains of an ancient campsite and stone tool production workshop.

Subsequent field investigations were undertaken in the summer of 2011 to identify the extent of the sites and establish the boundaries of the sites to avoid impacts during construction of the converter station.

The heritage assessment of the Keewatinoow Main Camp, Managers Camp and associative facilities occurred during the summer of 2011 and did not reveal heritage resources.

However the camp areas did have evidence of recent resource use in the form of a tent frame and plastic ammunition casings.

5.1.2.4 Southern Converter Station

During field investigations related to the Riel Sectionalization in 2007, two pre-European contact sites were identified (Table 6.1-1). Both sites were considered to be of low priority because the sites had been subject to continuous agricultural activities over the past century (NLHS 2008). The sites were included in the ESS table as a registered archaeological site. The sites were monitored in 2009 with no further heritage resources noted. Based on the in-field results by the project archaeologist during the overflight in June 2010, it has been determined that the sites have been impacted by the Riel Sectionalization Project.

Table 5.1-1, Archaeological sites located near the location of the southern converter station.

Borden Number	Archaeological Survey Methods	Cultural Affiliation	Site Type	Artifacts Recovered
DlLf-10	Pedestrian Survey	Undetermined Pre-European Contact	Undetermined	-Lithic scraper Biface -Lithic flakes
DlLf-11	Pedestrian Survey	Undetermined Pre-European Contact	Undetermined	-Lithic flakes

5.1.2.5 Northern Ground Electrode Site

Currently the selected ground electrode site NES6, does not impact existing heritage sites. Field studies in August 2011 investigated the northern ground electrode and associated transmission collector line. The general physical environment is composed of muskeg and swamp, minimal areas were found that conformed to favourable predictive model characteristics such as gravel ridges. Shovel testing was implemented in these areas but had negative results. . The nearest site is a Pre-European Contact lithic workshop located 5.1km south of the electrode site.

5.1.2.6 Southern Ground Electrode Site

Currently the selected ground electrode site SES1c does not impact existing heritage sites since no archaeological field investigations have occurred in this area. The nearest site is located 2.7km south. On July 21st 2011 archaeological investigations of the proposed southern ground electrode (dc land ring) for the Riel Converter Station and Bipole III Transmission Line were carried out. At the time of the survey the proposed site of the southern ground electrode was under a crop of soybeans. A pedestrian survey (2km) of the 350 metre (diameter) ring location was conducted around the circumference and north-south

transects were carried out. No heritage resources, including historic structural features were noted.

5.2 Mitigation measures

Clearing and Construction Phase

The best form of mitigation is avoidance; however, this may not be possible in some areas. Activities during the construction phase of the Project that cause disturbance to the ground surface have the greatest potential to disturb *in situ* heritage resources, in particular the area of structures; borrow/quarry sites, and access roads.

For those areas that were inaccessible because of land ownership issues, archaeological survey will occur once permission is given to access the land. Furthermore, specific project component areas will require special mitigation measures as outlined below.

Mitigation measures will be developed through a Heritage Resources Protection Plan (HRPP) as part of the larger Environmental Protection Plan (EnvPP). The HRPP is a step-by-step instructional guideline designed to address heritage resource issues that arise during the construction phase. This will ensure that provincial legislation and any additional requirements are fully observed. The Project Archaeologist will advise and provide field support should any heritage concerns be presented.

Increased human traffic due to the Project may have an adverse effect on known and unknown heritage resources. Key mitigation measures will involve education and awareness of Project and construction workers as to the nature of heritage resources and management of any heritage resources that may be encountered.

In the event that previously unknown heritage resources are unearthed or exposed during construction, the terms of the HRPP and *The Act* will prevail. In addition, the *Policy Concerning the Reporting, Exhumation and Reburial of Found Human Remains* will be followed should human remains be discovered. This includes partial bone elements, digits and teeth. The Project Archaeologist will be contacted and provide instruction. When needed, the Project Archaeologist will arrive on-site to confirm the find and will conduct salvage collection with site documentation. If burials or human remains are encountered all construction in the vicinity must halt and the Project Archaeologist must be contacted immediately. *The Policy Concerning the Reporting, Exhumation and Reburial of Human Remains* will then take precedence.

Key mitigation during any additional construction activities will require a heritage assessment by the Project Archaeologist. Regular communication with the Project Manager will be required throughout the course of construction.

Because of the nature of archaeological sites and heritage resources, and because many of the areas that were identified for field investigation could not be accessed any heritage resources

that are encountered during the various components of the Bipole III Transmission Project must be reported to the Project Archaeologist as they are found.

This is especially important since many areas within the southern portion of the study area were not accessible because most of the FPR crosses private land. Other Crown land areas were inaccessible since private lands would have had to be crossed in order to conduct investigations. Still other lands were inaccessible to helicopter landing; those areas where there was potential helicopter manoeuvrability were flooded by the exceptionally high water levels.

5.2.1 Keewatinoow Converter Station

As noted in 5.1.2.3 mitigative measures that were recommended by the Fox Lake Cree Nation Elders were put in place immediately because of the potential for burial sites. At HdKl-01 this entailed

- erecting a snow fence around the parameter of the site;
- posting signage at the four openings of the snow fence;
- clearing deadfall and debris from the site;
- declaring the site an off-limits area;
- planning to direct excess water flow from drilling for water away from the site; and
- conducting geophysical survey of the potential burial sites

At HdKl-02, a site impacted by construction of a winter road,

- barricades of cut trees were placed at the north and south ends of the site, a permanent barrier is required; and
- the northwest extension of the site was identified as a no-go zone for equipment

5.2.2 Transmission Line

Although no heritage materials were recovered during the HRIA field investigation of the Bipole III transmission line a recommendation is made that water crossings along larger rivers be examined prior to and during construction of the line. These major rivers were important as gateways to the northwest during all cultural periods and there have high potential for the discovery of heritage materials. No heritage resources were identified along the southern route of the Bipole III transmission line FPR. However, much of the route was not assessed due to land owner permission constraints. A number of areas were selected for inclusion in the ESS table and should be investigated and/or monitored prior to and during the construction phases.

5.2.3 Environmentally Sensitive Sites

Protection measures for the sensitive sites has been identified for existing sites as well as those areas that have the potential for heritage resources in the ESS table provided in Appendix 6. The most important mitigation measure for existing heritage resource is avoidance. For those areas that have a high potential for heritage resource these will require pre-project monitoring.

5.3 Residual effects on Heritage Resources

There may be some residual effects of the project on specific sites; however because of inaccessibility to areas of the preferred route it is difficult at this time to determine what the residual effects may be. Additional field work is required to determine areas of concern within the various components of the Project. The terms of the Environmental Protection Plan and the HRPP will be designed to mitigate any residual effects to heritage resources that may occur as a result of the construction phase of the Bipole III Project. A recommendation is made that monitoring of surface and sub-surface activities associated with the construction phase at areas of concern be conducted by the Project Archaeologist.

There is the potential for certain project components and activities to affect known and unknown heritage resources. These include:

Table 5.3-1. List of Project Components and Activities Likely to Affect the Heritage Environment

Construction of converter station facilities	Line clearing
Drilling	Access roads to line centre
Site clearing	Brush clearing
Subsurface excavation for footings	Temporary camps
Collector lines	Tower construction
Spoil piling	Foundation preparation
Equipment and machine storage	River crossing preparations
Access roads to converter station	Temporary ice roads
Grading	Equipment storage areas
Cutting	Bailey bridges
Borrow areas	
Excavation	
Gravel piling	
Gravel sorting	
Re-landscaping	

Specifically,

1. Clearing of trees with dislodgement of heritage resources within tree roots
2. Grading for access roads across land features may cut through heritage resources sites

3. Drilling for foundations and potable water sources which may dislodge or change the provenience of heritage resources
4. Excavation of soils that may contain heritage resources and/or burials
5. Borrow/Quarry excavation of gravel pits and destruction of rock features that may contain heritage resources and which may be culturally sensitive
6. Spoil piling of excavated soils, rock etc. which may damage unknown or known heritage resources below surface.
7. Subsurface excavation for footings and other structures.

The effects noted above may impact may impact heritage and cultural resources by:

- Permanent disturbance/destruction of heritage resources and burial sites. During the course of construction many of the heritage resources that are currently recorded may be irreparably disturbed or destroyed.
- Permanent loss of future heritage resources data. The loss of heritage resources and burial sites may occur instantly with little time to record pertinent data.
- Permanent loss of heritage objects or sites. Heritage objects and sites are non-renewable resources and loss of same will result in an incomplete historical record.
- Permanent changes in the interpretive capacity of the region will reduce the ability to provide a complete record of Manitoba's history.
- Permanent loss of cultural landscapes and the ability of the local people to orally recount history may have an effect on the culture and spirituality of First Nations, Metis and other interested cultural groups.

5.3.1 Residual Effects – BPIII Project Components

The important activities related to the BPIII Project that are likely to have a measurable effect on heritage resources are those that:

- Consist of sub-surface disturbance including activities related to weakening the stability of ground soils which may result in erosion and exposure/displacement of heritage resources from their original context;
- Access roads to the ROW;
- Staging areas for heavy equipment;
- Flooding of shorelines for winter road access crossings;
- Temporary campsites and associated facilities; and
- Tower footing construction

The construction and operation/maintenance of the proposed Project which may have potential measureable effects are identified as follows:

Construction/Installation

- Transmission line ROW clearing may disturb ground sub-surface and *in situ* heritage resources.
- Clearing activities may remove vegetation creating an unstable soil environment and surface runoff; this may resulting displacement of exposed archaeological remains;
- Activities related to access areas relative to exploratory studies may disturb *in situ* heritage resources;
- Activities related to the installation of footings for towers may disturb *in situ* heritage resources;
- Construction of access roads may disturb *in situ* heritage resources;
- Construction of access roads may result in increased entry into environmentally sensitive areas.
- Borrow areas activities and associated access roads may disturb sub-surface and *in situ* heritage resources.

Maintenance

Activities related to routine transmission line maintenance may result in disturbance to environmentally sensitive areas.

Access to archaeological sites via transmission line access roads may encourage vandalism and "potting" of archaeological sites or potential areas.

Decommissioning

Should transmission lines be decommissioned at some future date, Manitoba Hydro has tentatively identified acceptable means for environmentally restoring sites and rights-of-way. Current methods of decommissioning of transmission lines entail dismantling of the structures and all structure components, as well as removal and salvage of insulators, conductors and ground wires.

Based on the longevity of existing Bipoles I and II, the Bipole III HVdc transmission line is expected to be in service for at least fifty years. Other identified transmission facilities (i.e., northern collector lines and southern transmission link) are also expected to have a service life of at least fifty years. In the event that transmission lines are taken out of service the specific methods and procedures for decommissioning and salvage will be adjusted to meet the regulatory and legislative requirements in place at the time.

All decommissioning activities will require that non-impacted areas will not be developed. Thus known and unknown heritage resources will not be impacted.

Mitigation of Residual Effects

Mitigation measures for existing or documented heritage resources will be:

- Avoidance

- Cordon off discovered sites with fencing/barriers for protection to allow for continuation of Bipole III activities.
- Controlled collection of artifacts by the Project Archaeologist with data recording
- Salvage excavation with data recording,
- Monitoring of areas deemed to be heritage environmentally sensitive sites from. These may include extant buildings that meet the criteria of a heritage resources site, stone features, foundation features, burial sites and all other heritage resources sites that are described in *The Act* (1986)
- Undocumented sites may be mitigated through the ESS table which includes environmental areas of concern based on predictive modeling of micro landscape attributes; the presence/absence of attributes can be used to identify lands with greater or lesser archaeological potential. These environmental areas of concern as highlighted in the ESS table may be mitigated through on-site monitoring. In areas of ESS concern field engineers must confirm footing locations prior to construction. Monitoring of these locations will occur based on further analysis of the location.
- There is the potential for heritage resources in areas to be discovered in areas that have not been identified in the ESS table. Transmission line activities may have measurable effects on these heritage resources. Mitigation for this occurrence will be the presence of Environmental Officers who have received basic training in artifact identification. All project employees must receive and be familiar with the protocol regarding the discovery and reporting of heritage resources. An HRPP within the Environmental Protection Plan will address chance-finds made during construction and minimize future inadvertent impacts.

Significance of Residual Effects

Table 5.3.1-1 provides a summary of residual effects related to heritage resources for the Bipole III Project and includes the identification of anticipated residual effects with respect to the VEC by project component, their importance, magnitude, extent, duration, frequency, and a determination of their significance. With respect to heritage resources, the main residual effect of the Bipole III Project is the potential discovery of unknown heritage resources particularly during the construction phase of the Project.

Table 5.3.1-2. Summary of Residual Effects Related to Heritage Resources

VEC	Project Component	Direction	Ecological Importance	Societal Importance	Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Residual Effect	Significance
Heritage Resources	HVdc Transmission Line & ac Collector Lines	Negative	n/a	High	Low	Project footprint	Short-term	Small	Not reversible	Potential discovery of unknown heritage sites	Not Significant
	Keewatinoow Converter Station & Facilities	Negative	n/a	High	Low	Project footprint	Short-term	Small	Not reversible	Potential discovery of unknown heritage sites	Not Significant
	Riel Converter Station	No residual effects									
	Ground Electrode & Line (north)	Negative	n/a	High	Low	Project footprint	Short-term	Small	Not reversible	Potential discovery of unknown heritage sites	Not Significant

0

5.3.2 Cumulative Effects – BPIII Project Components

Cumulative Effects Assessment is carried out using residual environmental effects (i.e. what effect remains after the application of mitigation measures for the proposed project).
The cumulative effect for the Bipole III Transmission Project includes the following projects which are, or will be, in close proximity to the BPIII Project:

- Wuskwatim Transmission Line
- Wuskwatim Generation Station
- Proposed Keeyask Generation Project
- Potential Conawapa Project
- Offset Lake activities as part of the Keeyask Adverse Effects Agreements with KCN
- Forestry Developments including logging roads and cut-blocks
- Mineral exploration and mining
- Tourism and outfitting activities
- Established snow machine trails

The most critical impact for heritage is the cumulative loss of archaeological sites and cultural landscape as various project infrastructure increases and collects in centralized areas. Expanding project areas now become accessible with the construction of access roads and transmission line corridors. Increased and unmonitored access may have measurable effects to heritage resources. With this cumulative loss, the value of remaining archaeological resources increases. This valuation could affect future development. Follow-up/monitoring

A program of follow-up monitoring at specific archaeological sites such as HdKl-01 and HdKl-02 and other heritage sites that are identified during construction activities will be implemented. Monitoring and follow-up are important processes required to verify the environmental assessment and to ensure that the strategies proposed are implemented and effective. The EnvPP and HRPP will provide a detailed plan of follow-up and monitoring of known and discovered heritage resources during the construction phase. Long-term project effects will be addressed through on-going monitoring after the project commences and will assist in developing a baseline for future projects. Recommended follow-up includes existing archaeological sites in proximity to the ROW.

6 CONCLUSIONS

The heritage resource assessment for the Bipole III Transmission Project initially focused on identifying the existing environment and current record of archaeological sites. The route selection and SSEA process identified a preferred route that took into account the least potential effects on existing heritage resources. The FPR was determined to contain the least amount of interactions with known heritage resources in comparison to the alternative routes. Within the FPR, heritage resources that occur within the ROW are recommended for avoidance; however, when it is not possible to avoid these sites, mitigative measures have been identified. Mitigation measures will vary from site to site due to the nature of the heritage resource, but are usually in the form or site removal (excavation) or localized protection.

The scale of the project and tight time lines resulted in a greater reliance on desktop studies and predictive modelling than normally would have occurred. These assisted in identifying potential areas for undiscovered heritage resources. The ESS that were identified (Appendix 6) will be included in the EnvPP. The ESS table contains 318 areas including existing heritage resource sites that will require assessment and mitigation during the clearing and construction phase and on-going monitoring during operations and maintenance and future decommissioning. Potential negative effects to heritage resources can be mitigated if assessment and monitoring protocols outlined in this document are followed and if the proponent develops a heritage resource protection plan.

Gaps to the heritage assessment for the BPIII Project include issues of the location of existing sites in the Provincial heritage resource database, lack of accessible areas for field survey and ground-truthing, and on-going modifications to the route and ancillary facilities which may continue to occur during and after project licensing.

HRPPs will be developed in conjunction with the proponent to determine appropriate actions for the mitigation of heritage resources and to protect unidentified heritage resources during and after project completion for all components of the project.

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8 Glossary of Terms

Atlatl: A spear-thrower or throwing board that increases the thrust of a spear in increasing the length of the lever arm; made by many groups in North America and all over the world.

Attribute analysis: Is a method based on the isolation and examination of individual characteristics (decorative techniques, rim profiles, body shape) which are then synthesised to give some specific information that is being looked for.

Attributes: A quality or characteristic inherent in or ascribed to an object

Bison pound: A physiographic feature or a specially constructed enclosure into which bison were driven to be slaughtered.

Blackduck: An archaeological culture and ceramic style beginning about ca.1,200 years ago and continuing until European contact in the boreal forests of northern Ontario, northern Minnesota and Manitoba.

Campbell Beach Ridge: An extensive sand and gravel ridge, most evident in south-western Manitoba that was once the eastern and westerns shores of Lake Agassiz (ca.11, 100-10,900).

Clearwater Lake Punctate: a lake approximately l7 km north of The Pas, Manitoba which has given its name to a distinctive Late Woodland pottery type as well as to the complex and phase within which it occurs.

Covariability: Is the measure of how much two variables change together.

C14 dating: Radio carbon dating is a radiometric dating method that uses the naturally occurring radioisotope carbon-14 (found in all organic objects) to estimate the age of materials up to about 60,000 years.

Decision-making process (DMP): The cognitive process resulting in the selection of a course of action among several alternatives.

Emic: Term used by Anthropologists and others in social sciences to refer to an account of human behaviour or belief within one's own culture.

Eskers: An esker is a ridge of gravel and sand emplaced during glacial melt by the deposition of sediments from melt-water rivers flowing on the ice or beneath a glacier.

Etic: Term used by Anthropologists and others in social sciences to refer to an account of human behaviour or belief by an observer in terms that can be applied to other cultures.

Ethnographic analogy: Interpreting the use or meaning of an archaeological site or artifact based on observations and accounts of its use by related historic and/or living people.

FPR – Final Preferred Route

Geographic information system (GIS): Also called a geographical information system or geospatial information system is any system that captures, stores, analyzes, manages, and presents data that are linked to locations.

Hypsithermal: The period about 4000 to 8000 years ago when the Earth was apparently several degrees warmer than it is now.

Interaction: A kind of action that occurs when two situations cross each other. In the case of transmission lines and heritage resources it suggests possibility of interference of one situation on the other.

Isostatic rebound: The rise of land masses that were depressed by the huge weight of ice sheets during the last glacial period.

Laurel: A Middle Woodland culture of the central Subarctic associated with distinctive coarsely tempered conoidal pots and burial mounds.

Mega fauna: In terrestrial zoology, megafauna are "giant", "very large" or "large" animals, big game animals, some of which are now extinct.

Model: A representation or group of attributes of a system that allows for investigation of the properties of the system with predictions of future outcomes.

Moraines: A moraine is a landform composed of an accumulation of sediment deposited by or from a glacier and possessing a form independent of the terrain beneath it. Moraines are composed primarily of till, an unsorted mixture of clay, silt, sand, pebbles, cobbles and boulders, deposited directly from a glacier.

Palaeo-Indian: A general term referring to either the earliest inhabitants of North America, or the most ancient of the three stages or periods in North American prehistory. These peoples are defined as hunters of big game animals, some of which are now extinct.

PPR – Preliminary Preferred Route

Proxy (ies): A function authorized to act as a substitute for another

Second prairie level: This plain rises somewhat above the level of the Manitoba Lowland and has an average elevation of about 600 m (2,000 ft) above sea level. The eroded east-facing edge of this higher plains area is called the Manitoba Escarpment. The escarpment, which is a steep cliff, is capped by material left by the glaciers and is breached at several points by broad river lowlands. It occurs as a series of hilly uplands identified from south to north as the Pembina Mountains, Riding Mountain, Duck Mountain, and the Porcupine Hills.

Selkirk: An archaeological culture of Ontario, Manitoba and Saskatchewan from about ca.1,150 years ago to the Historic Period; the people were boreal hunters and fishers, apparently ancestral to the Cree.

Shapefiles: This is a popular geospatial vector data format for geographic information systems (GIS) software.

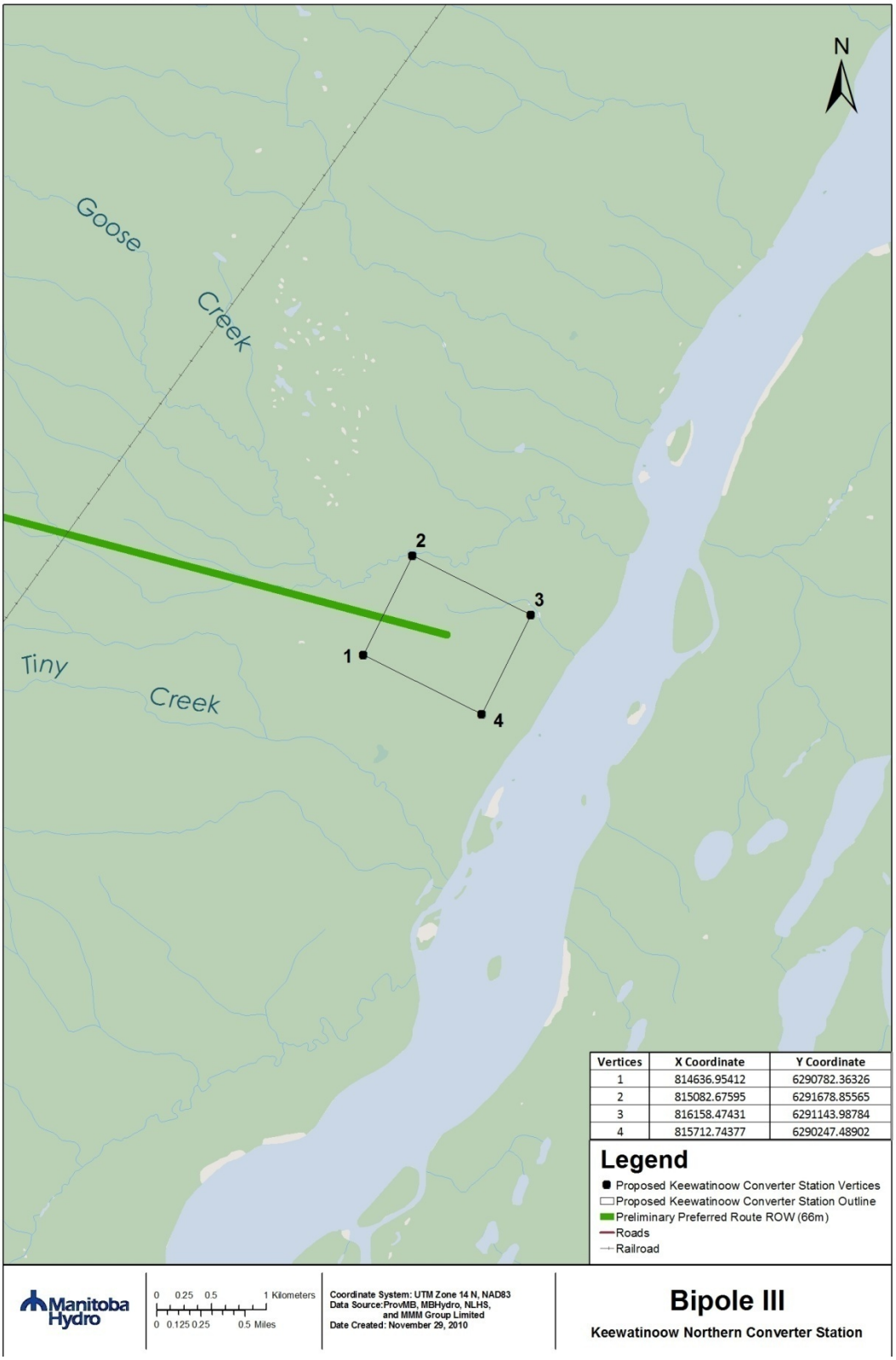
Tyrrell Sea: The Tyrrell Sea, named for Canadian geologist Joseph Tyrrell, is another name for prehistoric Hudson Bay, namely as it existed during the retreat of the Laurentide Ice Sheet.

Worldview: Is the fundamental cognitive orientation of an individual or society encompassing natural philosophy; fundamental, existential, and normative postulates; or themes, values, emotions, and ethics.

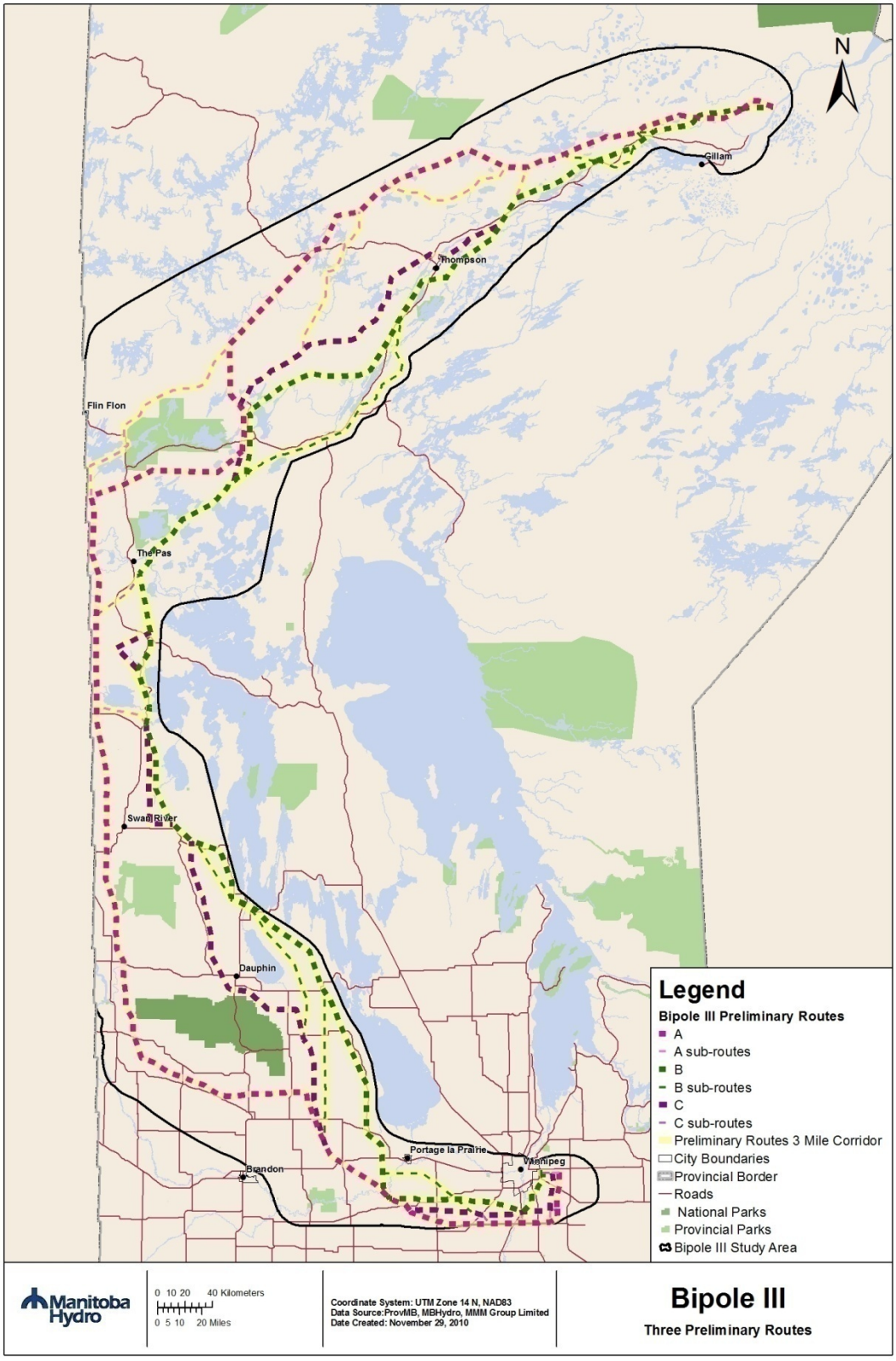
9 Appendices

9.1 Appendix 1

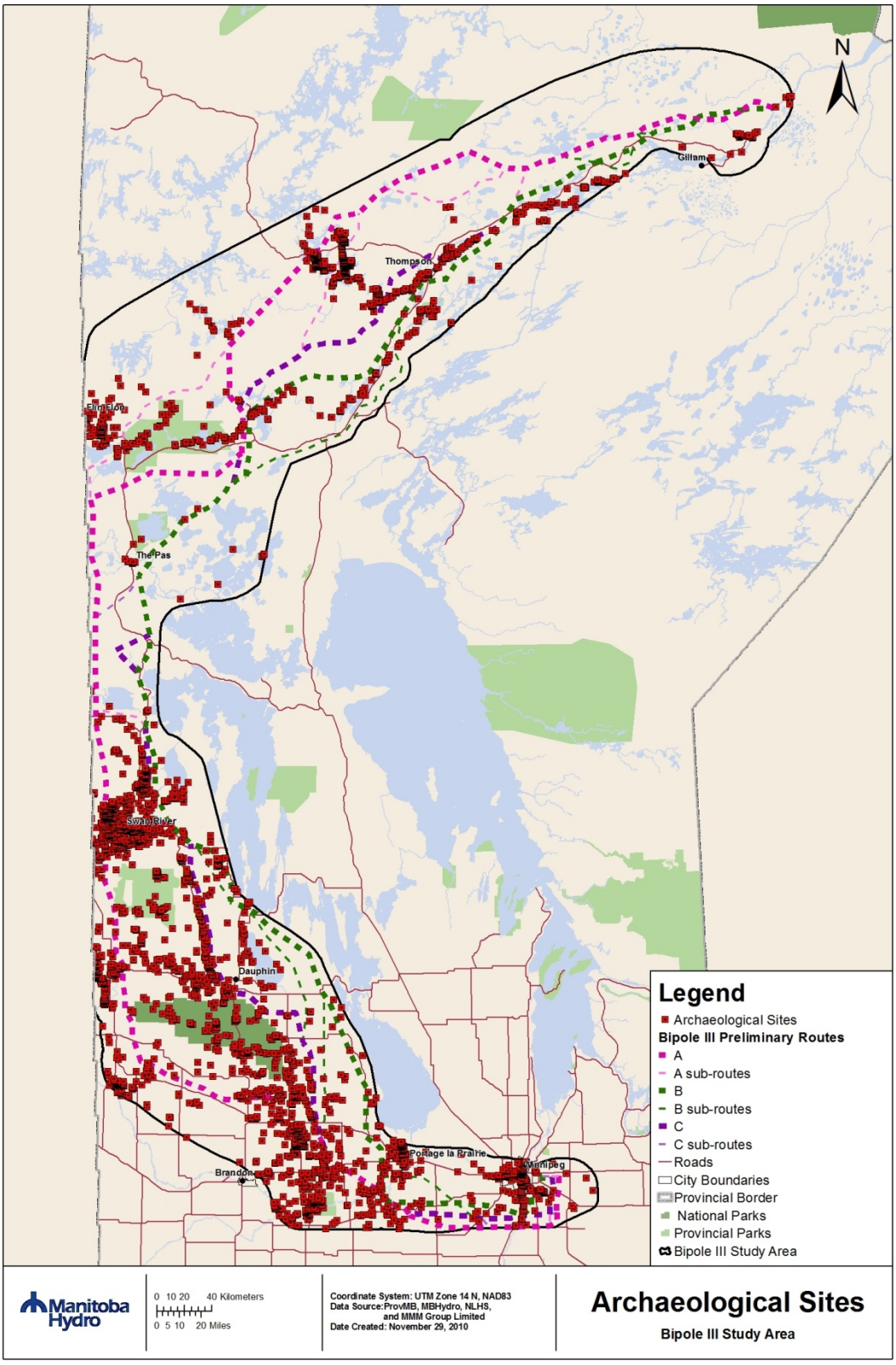
Map 1: Bipole III Study Area



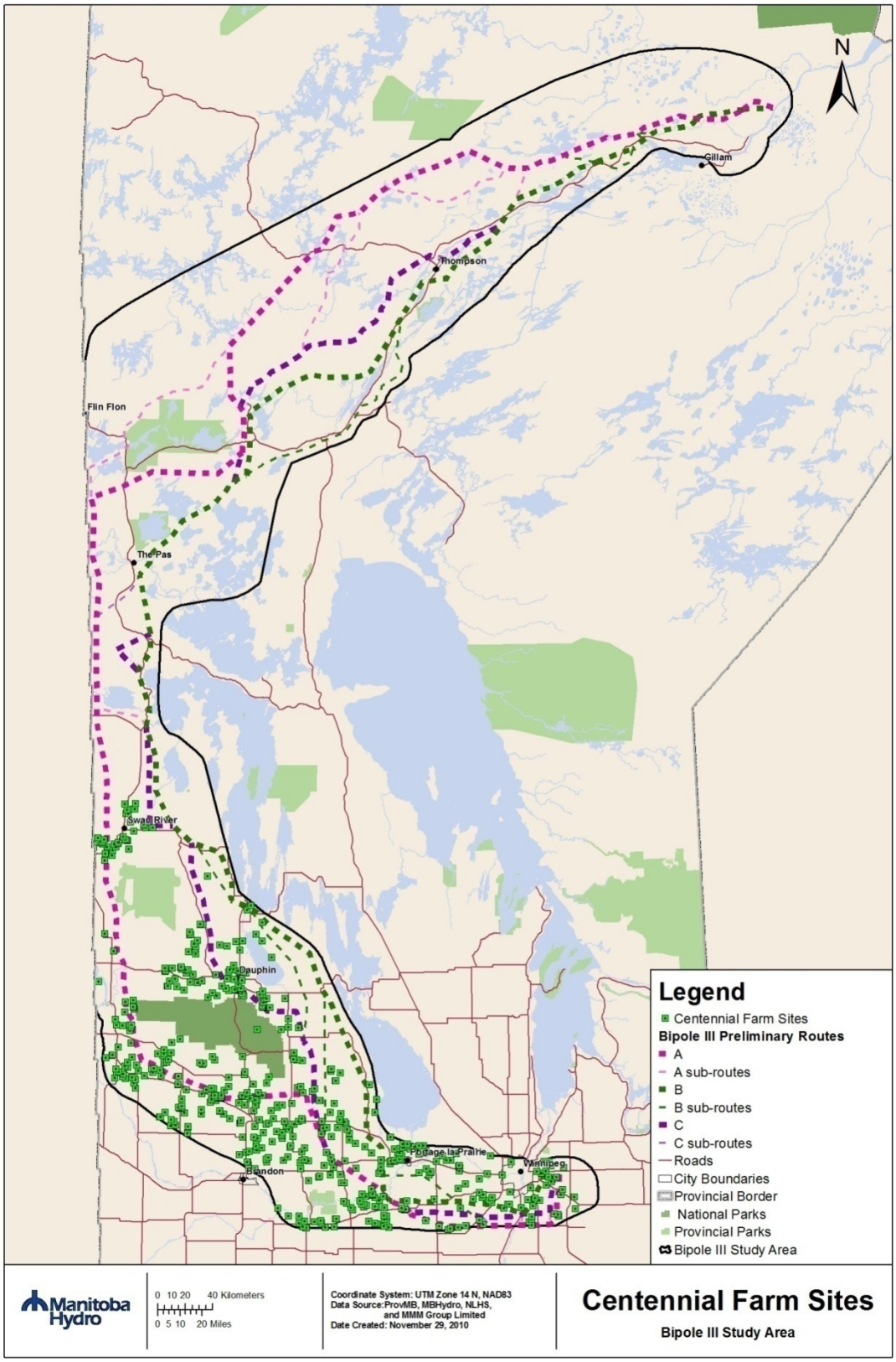
Map 2: Location of the Proposed Keewatinoow Converter Station



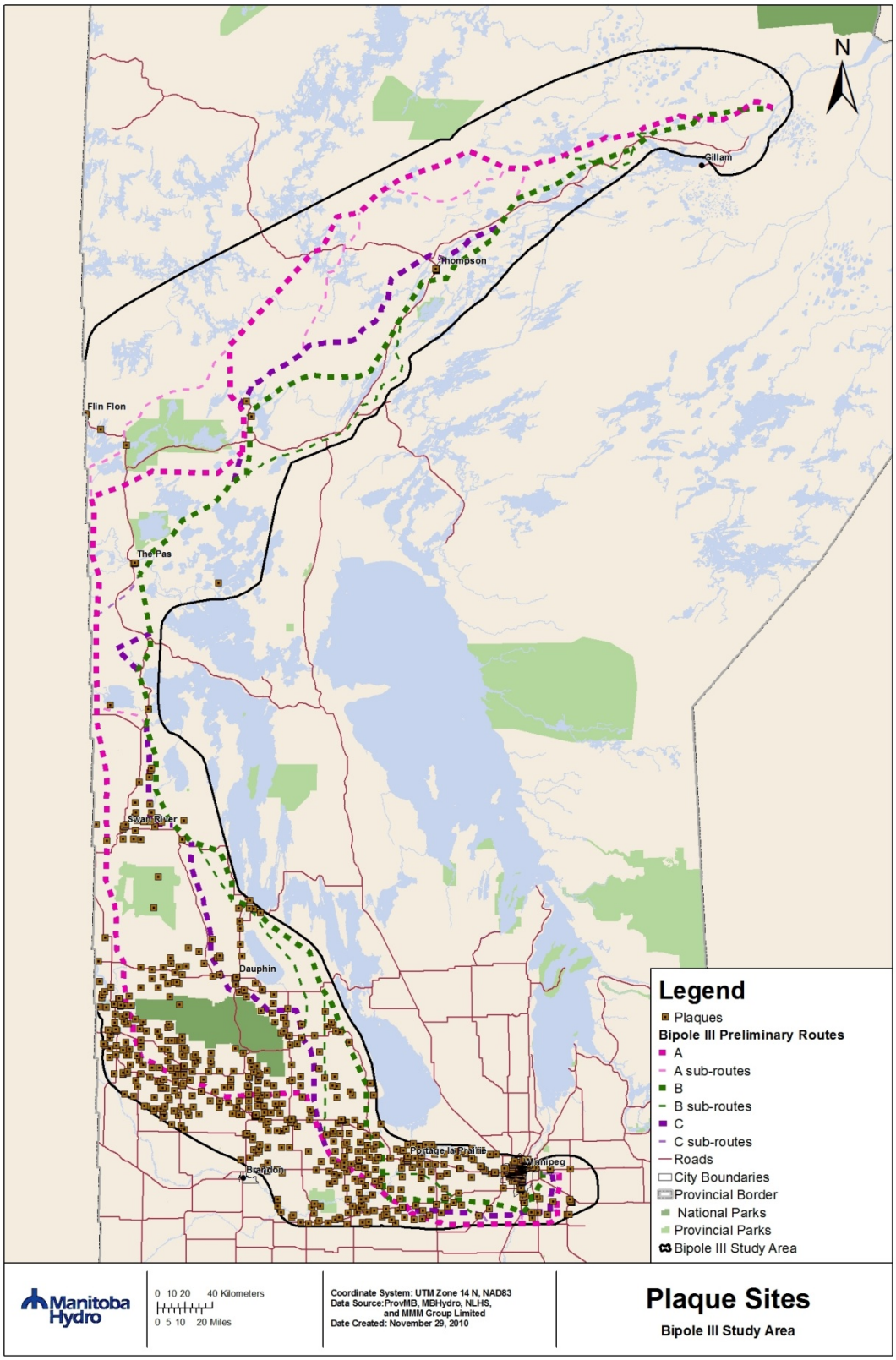
Map 3: Location of the Three Preliminary Routes for Bipole II



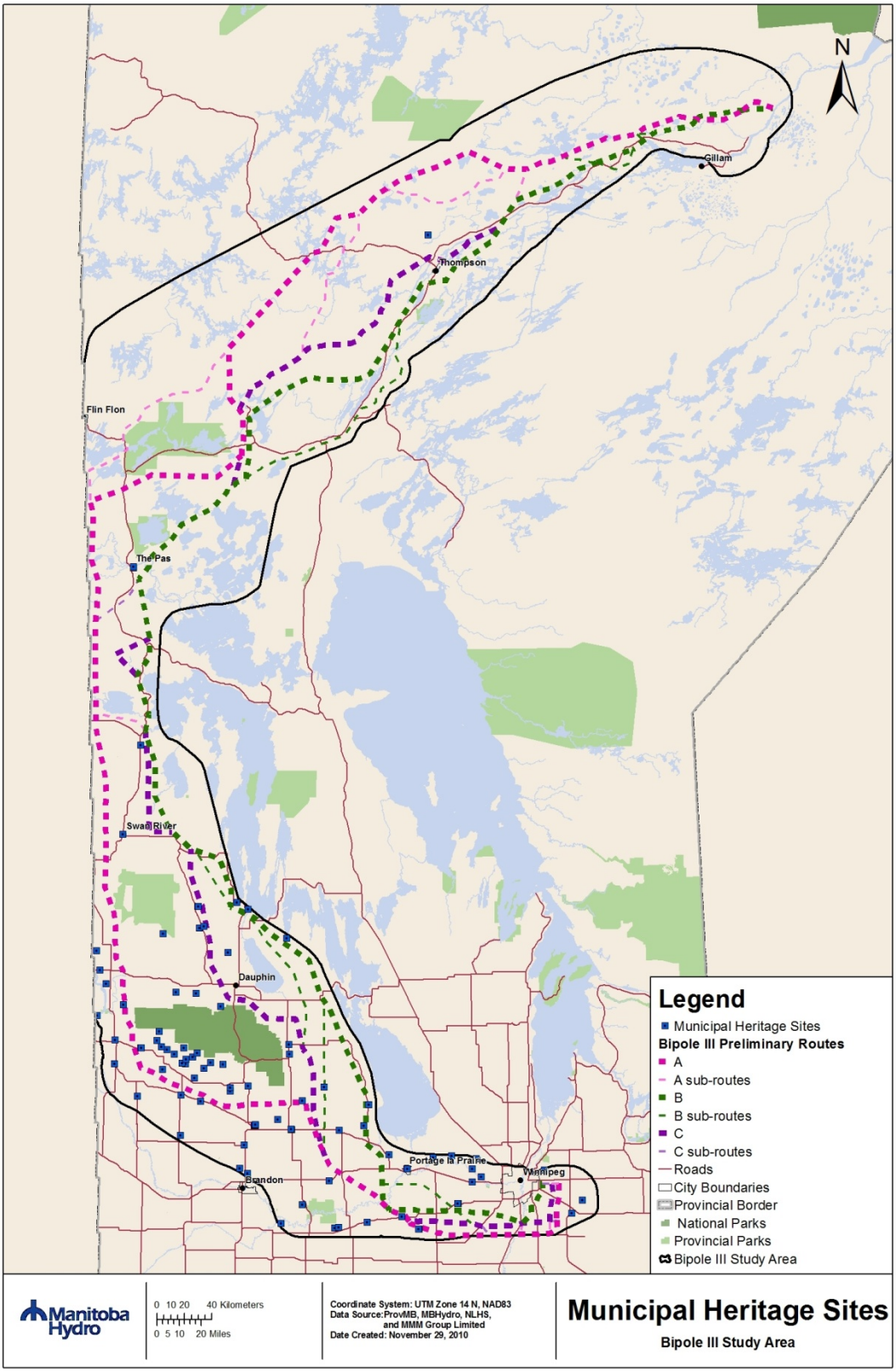
Map: 4 Documented Archaeological Sites within the Bipole III Study Are



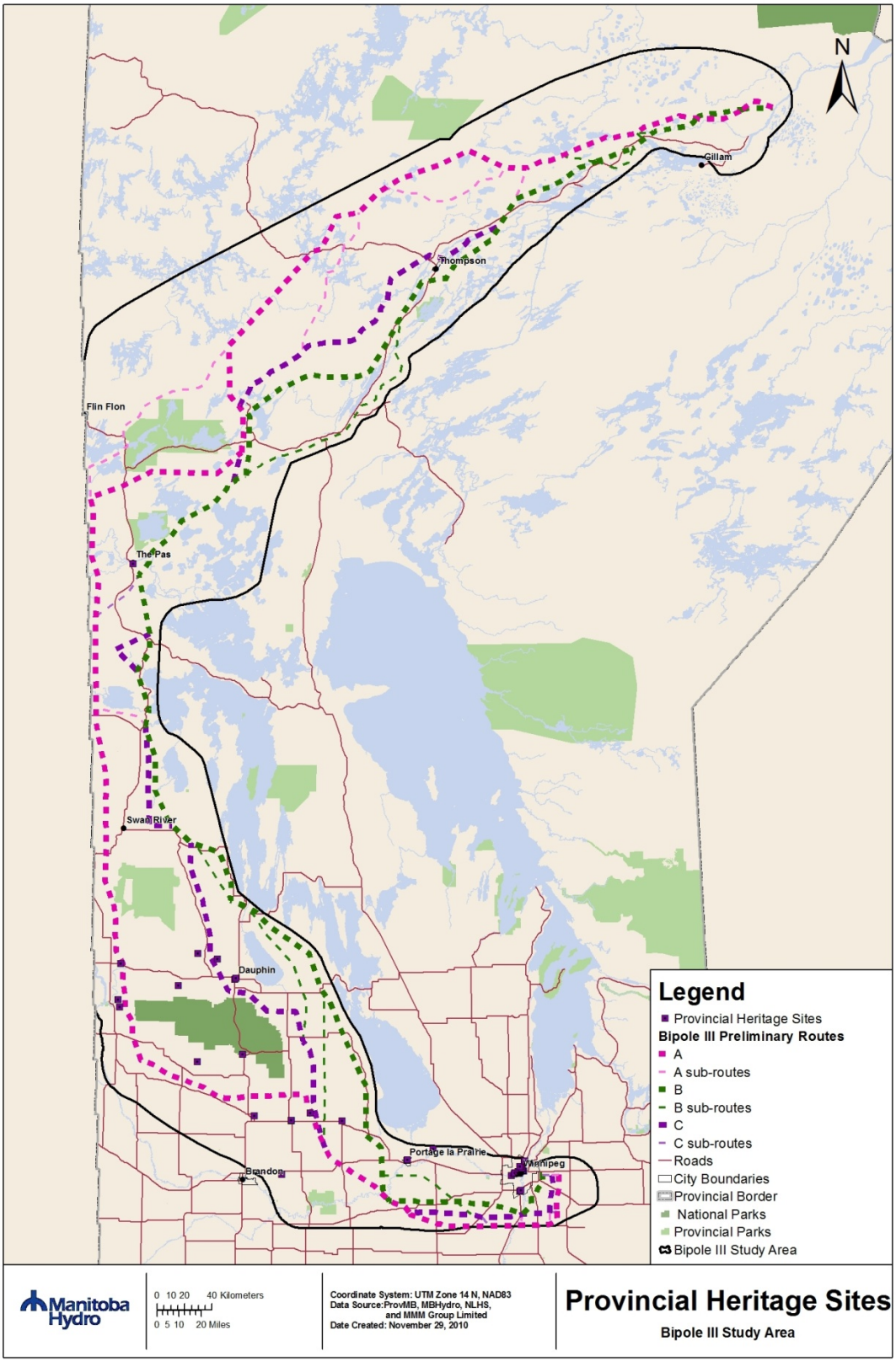
Map 5: Documented Centennial Farm Sites within the Bipole III Study Area



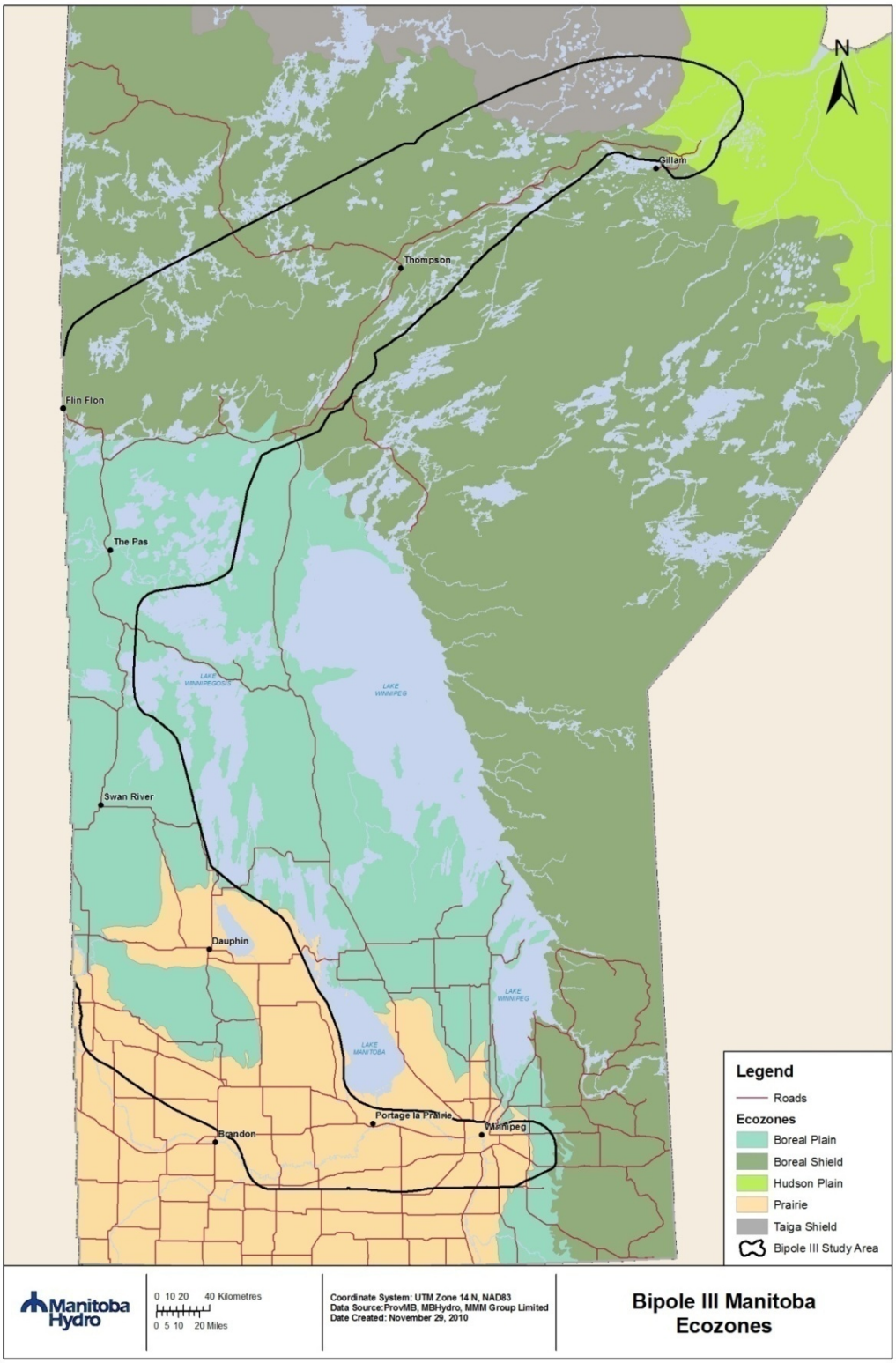
Map 6: Documented Plaque Sites within the Bipole III Study Are



Map 7: Documented Municipal Heritage Sites within the Bipole III Study A



Map 8: Documented Provincial Heritage Sites within the Bipole III Study Area



Map 9: Ecozones of Manitoba within the Bipole III Study Area

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9.3 Appendix 3: Application of the Predictive Model to the Bipole III Transmission Line

The foundation for archaeological predictive modeling follows the premise that particular physiographic attributes in association with economic and cultural characteristics will contribute to determining the location of archaeological sites. Predictive modeling in archaeology creates efficient and effective analyses of geographic territories prior to field investigations by identifying attributes that are associated positively and/or negatively to previously known site locations (Dalla Bona 1993; 1994a; 1994b; 1994c; Hamilton et al. 1994; Hamilton 2000).

To examine the entire length of the proposed Bipole III transmission line, the existing archaeological record for the alternate routes through northern, western and southern Manitoba was acquired. Aerial photographs and 1:50,000 NTS maps were studied for vegetative patterning and topographical features as well as physical environmental variables such as distance from water, water body convergence, aspect and slope, areas of low, moderate, and high potential for presence of archaeological sites were identified. From these data a valuation process was established and a predictive model was developed using ten variables where specific areas were flagged for field investigation.

OVERVIEW

The predictive model employs ethnographic analogy5 to integrate historic and current culturally-based behaviour to archaeological sites. Predictive modeling examines preferences (decision-making abilities) made by people within their environmental surroundings in order to select a suitable location to meet their particular requirements (i.e., a campsite, workshop, subsistence purposes, or settlement). The choices made are linked to specific tangible attributes where each attribute is sub-divided into a series of weighted classes. The weight of each class is based on a sliding scale from the most optimal choice of each environmental attribute (n=5) to the least optimal (n=0). The resultant value of each attribute is then tallied and the total of all attribute values determine the level of potential of the specific area to contain an archaeological site. The higher the total values for a location, the greater the potential to contain an archaeological site.

The Inductive Method is applied to this study, utilizing the Weighted Ranking Analysis approach to predict potential site location. The Inductive Method makes use of existing archaeological and geographic knowledge to forecast trends that are intuitive and/or associative. This method is based on sampling of areas similar to a given area under investigation and is therefore data driven and more accurate than the alternative (Deductive Method). The Inductive Method seeks correlations between known archaeological site locations and features of the modern environment; which is also known as pattern recognition. Essentially, this method uses evidence of choices by past humans for

[5] Ethnographic Analogy - Interpreting the use or meaning of an archaeological site or artifact based on observations and accounts of its use by related historic and/or living people.

site location and applies the data to predict the probability of locating archaeological sites. Conversely, the Deductive Method is based on predicting human behaviour and focuses on how people make choices for land occupation and use. The Deductive Method is a more generalized research tool that is more effective in explaining why archaeological sites are situated where they are recorded. Models using the Deductive Method are generally more difficult to create and validate (Dalla Bona 1993, 1994a; Hamilton 2000).

The Weighted Ranking Analysis approach for the Local Study Area combined cultural, environmental and economic attributes into a weighted ranking system where specific attribute classes were expected to provide greater influence over site selection than other classes. The attributes were environmentally based and each attribute class was assigned a numeric value in conjunction to importance to site choice for known archaeological sites. For example, the optimal aspect (direction facing) for a site was southeast (value = 5) while the least favourable was northwest (value = 0). These values have been adapted and modified from predictive modeling developed by Kvamme (1992) and by values assigned to assessment by the Province of Manitoba Historic Resources Branch (1990).

APPLICATION OF THE PREDICTIVE MODEL TO THE NORTHERN MANITOBA SEGMENT OF BIPOLE III

The application of variables to the Northern Manitoba section utilized environmental and geological features, as well as the presence/absence and proximity of previously identified heritage sites. Ten physiological and variables were selected and employed in the predictive model when applied to the Project: proximity to potable water; soil types; slope; vista; aspect; geographic features; water systems, water body convergence, proximity to documented heritage sites and elevation. The following is a description of each of the ten variables and of the valuation placed on components of each variable.

Northern Manitoba Attribute List

Proximity to potable water

a) Access to potable water is a necessity for survival – provides hydration and food as well as allows easier access to subsistence and other primary resources.

b) Use of waterways for transportation was important to past cultures (especially in the Boreal Forest). The rivers and lakes were the highways of the past.

Weighted values for proximity to potable water are:

1-20m from water = 5

21-30m from water = 4

31-40m from water = 3

41-50m from water = 2

51-100 m from water = 1

101+m from water = 0

Soil Types

Studies based on previous archaeological and soils mapping have indicated that human preference for occupation areas may be associated with specific soil types. The presence of certain vegetative growth and drainage in conjunction with the soil types is also a factor in site preference. The soil types are based on wet land classification (based on soils data collected for Bipole III).

Weighted values for soil types are:

Mineral deposits including organics = 5

Fen or bog = 4

Open fen= 3

Wooded to forested fen = 2

Wooded to forested bog= 1

Other soil types (i.e.) marsh, swamp, open water = 0

Slope

Relatively flat surfaces for human occupation are preferred. The higher the degree of slope the less potential for human occupation. Areas with less than a 5° slope are most optimal.

Weighted values for Slope are:

0º- 1º slope = 5

2º - 3º slope = 4

3º - 5º slope = 3

6º - 9º slope = 2

10º+ slope = 0

Aspect

Represents the foremost direction that a site faces; North/South/East/West. Southeastern exposure appears most optimal while northwestern exposure represents the least desirable. First Nation

Elders identified southeastern facing locations as preferred areas because of protection from prevailing winds and warmth of the sun (southern exposure).

Weighted values for Aspect are:

Southeastern facing = 5

South facing = 4

East facing or Southwest facing = 3

West facing = 2

North or northeast facing = 1

Northwest facing = 0

Vista

Measuring the visual range from a site 0° to 359°. Useful for defensive purposes or searching for game. Past site clearing of vegetation is known to have occurred in order to maintain an optimal vista which may not be reflective of the present environment.

Weighted values for Vista are:

359 – 270º vista = 5

269 – 180º vista = 4

179 - 90º vista = 3

89 – 45º vista = 2

44 – 1º vista = 1

Less than 1º vista = 0

Geographic features

Features such as promontories, peninsulas; islands and/or elevated plateaux were considered to be optimal areas for habitation and activity. Eskers6 and beach ridges were valued features used by humans past and present for overland travel, as well as resource and subsistence procurement. Oxbows represent ancient river meanders that have been cut off the main river channel creating a u-shaped lake of standing water or dry riverbed.

[6] Eskers - ridges of stratified sand and gravel created during glacial melting

Weighted values for Geographic Features are:

Point = 5

Island, Beach Ridge or Esker = 4

Plateau or Oxbow = 3

Flat = 2

Bay = 1

Marsh = 0

Water systems

The majority of known archaeological sites in northern Manitoba are located on water bodies, (lake, river, and creek). If transportation and subsistence strategies were primarily based on access to water bodies, then habitation sites would be in close proximity to these water bodies as well. The larger bodies of water will have a larger weighted value (i.e.) a lake is weighted higher than a creek. First Nation Elders have noted that most seasonal travel occurred along water bodies.

Weighted values for water systems are:

Lake = 5

River = 4

Creek = 3

None = 0

Water body convergence

The archaeological record has demonstrated that higher frequencies of heritage sites are located at the confluence of two or more water bodies such as lake to river. The larger the two converging water bodies, the higher the weighted value.

Weighted values for water convergence are:

Lake to river = 5

River to river = 4

Creek to lake = 3

River to creek = 2

Creek to creek = 1

None = 0

Proximity to Documented Heritage Sites

When site data is available, the presence of heritage sites in proximity to the study area increases the probability that undocumented sites exist in the area. Areas where little to no prior previous archaeological work had been conducted would exhibit a low value in this attribute.

The archaeological record has demonstrated that the occupation of a specific region by past peoples will produce several heritage sites within that region as per seasonal migration, land use and occupancy requirements. The closer the study area is in proximity to known heritage sites the greater probability that more sites are present in the study area and therefore, the higher the weighted value.

Weighted values for proximity to documented heritage sites are:

Less than .5km = 5

>.5km to 1km = 4

>1km to 2km = 3

>2km to 5km = 2

>5km to 10km = 1

Greater than 10km = 0

Elevation

Elevated areas represent accessible dry land above the water table that contains well-drained soils optimal for occupation and activity. Features such as mesas or level terraces provides relief from the surrounding low lying swamps, bogs, marshes, etc; typical in northern Manitoba. Heritage sites located on eskers and beach ridges (geographical features category) are examples of occupation and land use of elevated areas by past peoples.

Weighted values for elevations are:

Greater than 300m = 5

250m to 300m = 4

200m to 249m = 3

150m to 199m = 2

149m to 100m = 1

Less than 100m = 0

APPLICATION OF THE PREDICTIVE MODEL TO THE SOUTHERN MANITOBA SEGMENT OF BIPOLE III

The application of variables to the southern Manitoba section utilized environmental and geological features, as well as presence/absence and proximity of previously identified heritage sites. Ten physiological and variables were selected and employed in the predictive model when applied to the Project: proximity to potable water; soil types; slope; vista; aspect; geographic features; water systems, water body convergence, proximity to documented heritage sites and elevation. Due to large fluctuations in topography, soil types, elevation, and water systems between northern and southern Manitoba; two attribute lists were created to optimally capture the characteristics of site probability. The following is a description of each of the ten variables and of the valuation placed on components of each variable.

Southern Manitoba Attribute List

Proximity to potable water

a) Access to potable water is a necessity for survival – provides hydration and food as well as allows easier access to subsistence and other primary resources.

b) Use of waterways for transportation was important to past cultures. The rivers and lakes were the highways of the past.

Weighted values for proximity to potable water are:

1-20m from water = 5

21-30m from water = 4

31-40m from water = 3

41-50m from water = 2

51-100 m from water = 1

101+m from water = 0

Soil Types

Studies based on previous archaeological and soils mapping have indicated that human preference for occupation areas may be associated with specific soil types. The presence of certain vegetative growth and drainage in conjunction with the soil types is also a factor in site preference. The soil types are based on wet land classification (based on soil data collected for Bipole III).

Weighted values for soil types are:

Mineral deposits = 5

Fen or bog = 4

Open fen= 3

Wooded to forested fen = 2

Wooded to forested bog= 1

Other soil types (i.e.) marsh, swamp, open water = 0

Slope

Relatively flat surfaces for human occupation are preferred. The higher the degree of slope, the less potential for human occupation. Areas with less than a 5° slope are most optimal.

Weighted values for Slope are:

0º - 1º slope = 5

2º - 3º slope = 4

3º - 5º slope = 3

6º - 9º slope = 2

10º+ slope = 0

Aspect – Represents the foremost direction that a site faces; North/South/East/West. Southeastern exposure appears most optimal while northwestern exposure represents the least desirable. First Nation Elders identified southeastern facing locations as preferred areas because of protection from prevailing winds and warmth of the sun (southern exposure).

Weighted values for Aspect are:

Southeastern facing = 5

South facing = 4

East facing or Southwest facing = 3

West facing = 2

North or northeast facing = 1

Northwest facing = 0

Vista – Measuring the visual range from a site 0° to 359°. Useful for defensive purposes or searching for game. Past site clearing of vegetation is known to have occurred in order to maintain an optimal vista which may not be reflective of the present environment.

Weighted values for Vista are:

359 – 270º vista = 5

269 – 180º vista = 4

179 - 90º vista = 3

89 – 45º vista = 2

44 – 1º vista = 1

Less than 1º vista = 0

Geographic features – Features such as promontories, peninsulas; islands and/or elevated plateaux were considered to be optimal areas for habitation and activity. Eskers and beach ridges were valued features used by humans past and present for overland travel, as well as resource and subsistence procurement. Oxbows represent ancient river meanders that have been cut off the main river channel creating a u-shaped lake of standing water or dried riverbed.

Weighted values for Geographic Features are:

Point = 5

Island, beach ridge or Esker = 4

Plateau or Oxbow = 3

Flat = 2

Bay = 1

Marsh = 0

Water systems – The majority of known archaeological sites in northern Manitoba are located on water bodies, (lake, river, creek). If transportation and subsistence strategies were primarily based on access to water bodies, then habitation sites would be in close proximity to these water bodies as well. The larger bodies of water will have a larger weighted value (i.e.) a lake is weighted higher than a creek. First Nation Elders have noted that most seasonal travel occurred along water bodies.

Weighted values for water systems are:

Lake = 5

River = 4

Creek = 3

None = 0

Water body convergence – The archaeological record has demonstrated that higher frequencies of heritage sites are located at the confluence of two or more water bodies such as lake to river. The larger the two converging water bodies, the higher the weighted value.

Weighted values for water convergence are:

Lake to river = 5

River to river = 4

Creek to lake = 3

River to creek = 2

Creek to creek = 1

None = 0

Proximity to Documented Heritage Sites – The presence of heritage sites in proximity to the study area increases the probability that undocumented sites exist in the area. The archaeological record has demonstrated that the occupation of a specific region by past peoples will produce several heritage sites within that region as per seasonal migration, land use and occupancy requirements. The closer the study area is in proximity to known heritage sites the greater probability that more sites are present in the study area and therefore, the higher the weighted value.

Weighted values for proximity to documented heritage sites are:

Less than .5km = 5

>.5km to 1km = 4

>1km to 2km = 3

>2km to 5km = 2

>5km to 10km = 1

Greater than 10km = 0

Elevation – Elevated areas represent accessible dry land above the water table that contains drier soils optimal for occupation and activity. Features such as terraces provides relief from the surrounding low lying swamps, bogs, marshes, etc; typical in northern Manitoba. Heritage sites located on eskers and beach ridges (geographical features category) are examples of occupation and land use of elevated areas by past peoples.

Weighted values for elevations are:

Greater than or equal to 400m = 5

399m to 350m = 4

349m to 300m = 3

299m to 250m = 2

249m to 200= 1

Less than 200m = 0

Conclusion

All weighted classes of each attribute for both Sections of the Bipole III predictive model were applied to a formula that calculated the total value of a selected area, based on the criterion listed above. For example, the formula for the attribute Water Body Convergence is as follows: =IF(J3="Lake-River",5,IF(J3="River-River",4,IF(J3="Lake-Creek",3,IF(J3="River-Creek",2,IF(J3="Creek-Creek",1, IF(J3="None",0)))))). The results allow in the determination of probability for the presence of heritage sites at each of the chosen test locations. The calculated results were ranked into high (50-35), moderate (34-20) and low probability (19-0).

9.4 Appendix 4: Route A Segments with overlap of Heritage Resources Interactions

Table 9.4-1, Route A & Subroute A Segments with overlap of Heritage Resources Interactions

Heritage Resources	Archaeological Sites	Provincial Heritage Sites	Municipal Heritage Sites	Centennial Farms	Plaques	
Rte. A						Total
A9	16					16
A10	1					1
A11C11	6					6
A15	126	2	2	31	22	183
A17C24	14			4	5	23
A18C25	1		1	3	2	7
A19			2	7	1	10
A20	2				1	3
A21	1			1		2
A22				3		3
A23				2		2
AA2	12					12
AC1	38					38
AC3	5					5
AC4					2	2
AC5				1		1
BA4	6		1	3	5	15
CA3				1		1
Total Route A	228	2	6	56	38	330

Table 9.4-2, Route B & Subroute B Segments with overlap of Heritage Resources Interactions

Heritage Resources	Archaeological Sites	Provincial Heritage Sites	Municipal Heritage Sites	Centennial Farms	Plaques	Total
B Route						
B9	3					3
B10	9				1	10
B11C13G	1					1
B16	1					1
B18	5					5
B19C20	2					2
B21	11					11
B22	2			2	3	7
B23	8		2	4	4	18
B24	6			1	1	8
B25	2			2	3	7
B26	2			2		4
B28	8			1		9
B Sub-routes.						
BA4	6		1	3	5	15
BB2	3					3
BB3	2					2
BB6	8			1	5	14
BC3	1			1	1	3
BC4				1	1	2
Total Route B	80	0	3	18	24	126

Table 9.4-3, Route C Segments with overlap of Heritage Resources Interactions

Heritage Resources	Archaeological Sites	Provincial Heritage Sites	Municipal Heritage Sites	Centennial Farms	Plaques	Total
C Route						
C9	39					39
C10	1					1
C19	46			1	8	55
C21	23		1	15	6	45
C22	6			4		10
C26					2	2
C27	2				1	3
C28	1					1
C30				1	8	9
C31	3			1	1	5
C Sub-routes						
CA3				1		1
CB1				1		1
A11C11	6					6
A17C24	14			4	5	23
A18C25	1		1	3	2	7
AC1	38					38
AC3	5					5
AC4					2	2
AC5				1		1
B11C13G	1					1
B19C20	2					2
BC3	1			1	1	3
BC4				1	1	2
Total Route C	189	0	2	34	37	262

9.5 Appendix 5: City of Winnipeg Designated Historic Sites

Site Name	Address	Recognition Statute	Recognition Date
No. 12 Firehall	1055 Dorchester	City of Winnipeg Act	1983-04-11
St. Michael's Ukrainian Orthodox Church	110 Disraeli	City of Winnipeg Act	2008-03-28
Sterling Cloak Building	110 Princess	City of Winnipeg Act	1985-05-29
Great West Saddlery Warehouse	112-114 Market	City of Winnipeg Act	1990-05-14
Great West Saddlery Building	113 Market	City of Winnipeg Act	1985-11-18
Seven Oaks Museum	115 Rupertsland Blvd	City of Winnipeg Act	1997-03-17
Principal Sparling School	1150 Sherburn	City of Winnipeg Act	1993-12-17
All People's Sutherland Mission	119 Sutherland	City of Winnipeg Act	2004-09-07
Sparling Sales Ltd. Building	120 King	City of Winnipeg Act	1983-03-07
W.M. Ashdown House	121 Kate	City of Winnipeg Act	1988-10-31
Miller and Richard Type Foundry Building	121/123 Princess	City of Winnipeg Act	1999-03-02
Marshall-Wells Building	123 Bannatyne	City of Winnipeg Act	1983-11-14
Upper Fort Garry Gate	130 Main	City of Winnipeg Act	1991-06-13
J.B. Monk Residence	134 West Gate	City of Winnipeg Act	1995-05-23
Marshall-Wells Building	136 Market	City of Winnipeg Act	1987-05-11
Swiss Building	137 Bannatyne	City of Winnipeg Act	1986-12-08
John C. Graham House	137 Scott	City of Winnipeg Act	1989-05-15
Northern Electric Building	140 Bannatyne	City of Winnipeg Act	1985-04-01
MacKenzie Block	141 Bannatyne	City of Winnipeg Act	1993-01-15
Transcona Municipal Offices	141 Regent Ave W	City of Winnipeg Act	1980-07-14
Smart Bag Company Building	145 Pacific	City of Winnipeg Act	2009-01-28
Drake Hotel	146 Princess	City of Winnipeg Act	1979-06-18
Sir Sam Steele School	15 Chester	City of Winnipeg Act	1997-11-12
House of Comoy	150 Princess	City of Winnipeg Act	1979-06-18
Hochman Building	154 Princess	City of Winnipeg Act	1979-06-18
John Duncan McArthur House	159 Mayfair	City of Winnipeg Act	2008-10-02
Inkster House	1637 Inkster	City of Winnipeg Act	1980-09-22
Utility Building	164 Princess	City of Winnipeg Act	1979-06-18
Maison Kittson	165 La Verendrye	City of Winnipeg Act	1983-09-12
Galpern Building	165 McDermot	City of Winnipeg Act	1985-06-24
Ashdown Warehouse	167 Bannatyne	City of Winnipeg Act	1985-09-16
Chatfield Distributors Building	168 Bannatyne	City of Winnipeg Act	1983-11-14
Grange Building	173 McDermot	City of Winnipeg Act	1985-07-15
Toronto Type Foundry Building	175 McDermot	City of Winnipeg Act	1988-08-29
T.W. Taylor Building	177 McDermot	City of Winnipeg Act	1985-07-15
W.F. Alloway Building	179 McDermot	City of Winnipeg Act	1985-06-24

Kilgour Block	181 Bannatyne	City of Winnipeg Act	2000-01-04
CANADIAN PACIFIC RAILWAY STATION	181 Higgins	City of Winnipeg Act	1993-03-02
Ukrainian Cultural Centre	184 Alexander	City of Winnipeg Act	1980-04-21
McClary Building	185 Bannatyne	City of Winnipeg Act	1987-10-01
Union Tower Building	191 Lombard	City of Winnipeg Act	1983-09-12
Cornish Library	20 West Gate	City of Winnipeg Act	1993-01-15
North End Police Substation	200 Charles	City of Winnipeg Act	1990-06-25
Ashdown Store	211 Bannatyne	City of Winnipeg Act	2001-05-23
Young United Church Tower	212 Furby	City of Winnipeg Act	1986-03-03
Lake of the Woods Building	212 McDermot	City of Winnipeg Act	2003-09-04
St. Boniface Fire Hall No. 1	212 Rue Dumoulin	City of Winnipeg Act	1987-09-14
Electric Railway Chambers	213 Notre Dame	City of Winnipeg Act	1987-08-24
Criterion Hotel	214 McDermot	City of Winnipeg Act	1981-04-21
Bedford Building	218 McDermot	City of Winnipeg Act	1983-12-05
Granite Curling Club	22 Mostyn Place	City of Winnipeg Act	1986-09-29
Bate Building	221 McDermot	City of Winnipeg Act	1981-05-19
Nanton Estate Gates	229 Roslyn Rd	City of Winnipeg Act	1981-09-14
Frost and Wood Warehouse	230 Princess	City of Winnipeg Act	2002-09-10
Curry Building	233 Portage	City of Winnipeg Act	1998-11-16
Oldfield, Kirby and Gardner Building	234 Portage	City of Winnipeg Act	2004-10-05
Bathgate Block	242 Princess	City of Winnipeg Act	2004-11-30
Stovel Block	245 McDermot	City of Winnipeg Act	1998-11-16
Sures Building	246 McDermot	City of Winnipeg Act	1983-12-05
St. John's Church	250 Cathedral	City of Winnipeg Act	1988-11-21
St. John's Presbyterian Church	251 Bannerman	City of Winnipeg Act	1989-07-17
Holy Trinity Anglican Church	256 Smith Street	City of Winnipeg Act	2008-06-24
Paris Building	259 Portage	City of Winnipeg Act	1981-01-05
J.W. Harris House	26 Edmonton	City of Winnipeg Act	1998-05-04
Greater Winnipeg Gas Company Building	265 Notre Dame	City of Winnipeg Act	1988-03-29
Maison Bernier	265 Provencher	City of Winnipeg Act	1989-11-29
Scandinavian Mission Church	268 Ellen	City of Winnipeg Act	1987-10-26
Hample Building	271-273 1/2 Portage	City of Winnipeg Act	2008-11-25
Thelma Apartments	272 Home	City of Winnipeg Act	1993-01-15
Birks Building	276 Portage	City of Winnipeg Act	1999-10-26
Metropolitan Theatre	281-285 Donald	City of Winnipeg Act	1997-01-10
R.R. Scott House	29 Ruskin Rd	City of Winnipeg Act	1992-03-09
Garry Block	290 Garry	City of Winnipeg Act	1988-01-04
Public Press Building	290 Vaughan	City of Winnipeg Act	1927-01-01
North West Commercial Travellers'	291 Garry	City of Winnipeg Act	2002-06-27

Association Building			
Bethlehem Aboriginal Fellowship Church	294 Burrows	City of Winnipeg Act	2000-02-29
Massey Building	294 William	City of Winnipeg Act	1983-09-12
Canada Permanent Building	298 Garry	City of Winnipeg Act	1985-12-09
Free Press Building	300 Carlton	City of Winnipeg Act	1998-05-04
St. Michael and All Angels Anglican Church	300 Hugo St North	City of Winnipeg Act	1989-12-04
Congress Apartments	300 River	City of Winnipeg Act	1988-11-21
YMCA Building	301 Vaughan	City of Winnipeg Act	1985-09-16
Portage Village Inn	311 Portage	City of Winnipeg Act	1999-06-02
Princeton Apartments	314 Broadway	City of Winnipeg Act	1997-03-17
Mitchell-Copp Building	315 Portage	City of Winnipeg Act	1997-11-25
William Brown House	3180 Portage	City of Winnipeg Act	2000-02-01
Scott Fruit Company Warehouse	319 Elgin Ave	City of Winnipeg Act	2004-06-08
Western Glove Works	321 McDermot	City of Winnipeg Act	1987-10-26
Fire Hall No. 8	325 Talbot	City of Winnipeg Act	1984-04-16
Peck Building	33 Princess	City of Winnipeg Act	1984-04-16
Marlborough Hotel	331 Smith Street	City of Winnipeg Act	1998-04-06
Henderson Building	332 Bannatyne	City of Winnipeg Act	2005-10-04
Bank of Montreal	335 Main	City of Winnipeg Act	1980-05-07
Earl Grey School	340 Cockburn	City of Winnipeg Act	1981-04-21
Raleigh Apartments	340 Vaughan	City of Winnipeg Act	2005-02-01
Kerr House	351 Assiniboine	City of Winnipeg Act	1989-01-30
McDougall House	3514 Pembina Hwy	City of Winnipeg Act	1988-10-31
Pembina Highway House	3514 Pembina Hwy	City of Winnipeg Act	1984-04-16
Carlton Building	354 Portage	City of Winnipeg Act	2002-09-10
J.C. Falls House	36 Roslyn	City of Winnipeg Act	1994-04-05
New Hargrave Building	361-365 Hargrave	City of Winnipeg Act	2002-02-05
Stovel Printing Building	365 Bannatyne	City of Winnipeg Act	1992-10-01
Warwick Apartments	366 Qu'Appelle	City of Winnipeg Act	1983-08-22
Edmonton Street Duplex	368-370 Edmonton	City of Winnipeg Act	1984-12-19
Dominion Bank Building	378 Main	City of Winnipeg Act	2007-02-27
Ambassador Apartments	379 Hargrave	City of Winnipeg Act	1986-05-05
Sherbrook Pool	381 Sherbrook	City of Winnipeg Act	2001-06-26
Bank of Commerce	389 Main	City of Winnipeg Act	1979-11-07
Fortune Residence	393 Wellington	City of Winnipeg Act	1984-10-22
Uptown Theatre	394 Bannatyne	City of Winnipeg Act	1986-12-03
Bank of Hamilton	395 Main	City of Winnipeg Act	1979-11-07
Calvary Temple Tower	400 Hargrave	City of Winnipeg Act	1985-03-11
Belgian Club	407 Provencher	City of Winnipeg Act	1999-01-05

Waddell Fountain	410 Cumberland	City of Winnipeg Act	1988-05-30
McCormicks Limited Building	425 Henry	City of Winnipeg Act	1988-02-15
Bank of Montreal	426 Portage	City of Winnipeg Act	1989-07-17
Bank of British North America	436 Main	City of Winnipeg Act	1997-08-02
Ryan Bloc	44 Princess	City of Winnipeg Act	1998-09-22
Imperial Bank of Canada	441 Main	City of Winnipeg Act	1997-10-28
Provincial Normal School	442 William	City of Winnipeg Act	1991-07-15
Penrose House	444 Logan	City of Winnipeg Act	1987-09-14
Johnston Terminal Building	45 Forks	City of Winnipeg Act	1988-11-12
Benard House	454 Edmonton	City of Winnipeg Act	1986-05-26
Bank of Toronto	456 Main	City of Winnipeg Act	1984-11-13
Royal Bank of Canada Building	460 Main	City of Winnipeg Act	1997-09-02
Birt's Saddlery	468 Main	City of Winnipeg Act	1984-03-05
Royal Albert Arms Hotel	48 Albert	City of Winnipeg Act	1981-05-19
Macdonald Shoe Store	490 Macdonald	City of Winnipeg Act	1996-03-28
Caron House	50 Cass	City of Winnipeg Act	1981-02-02
Wolseley School	511 Clifton	City of Winnipeg Act	2001-09-04
Wesley Hall	515 Portage	City of Winnipeg Act	2001-05-01
Gregg Building	52 Albert	City of Winnipeg Act	1986-05-26
Khartum Temple (J.H. Ashdown House)	529 Wellington	City of Winnipeg Act	1983-10-19
Robinson, Little and Company Building	54 Arthur	City of Winnipeg Act	2008-02-26
Paterson Block	54 Donald	City of Winnipeg Act	2005-07-05
Wardlow Apartments	544 Wardlaw	City of Winnipeg Act	1999-09-28
Klinic Building	545 Broadway	City of Winnipeg Act	1991-01-23
Glines House	55 Hargrave	City of Winnipeg Act	1989-08-02
St. Boniface Waterworks Water Tower	552 Plinguet	City of Winnipeg Act	1995-11-10
Assiniboine Park Pavilion	55Pavilion Cresent	City of Winnipeg Act	1982-04-05
H.E. Sharpe House	56 Balmoral	City of Winnipeg Act	1990-04-02
Fire Hall No. 3	56 Maple	City of Winnipeg Act	1991-01-28
Greater Winnipeg Water District Railway Station	598 Plinguet	City of Winnipeg Act	1995-11-10
St. Vital Firehall	598-600 St. Mary's	City of Winnipeg Act	1982-06-07
Lilly Apartments	6 Roslyn Road	City of Winnipeg Act	1987-02-16
Julia Clark School	615 Academy Rd	City of Winnipeg Act	1997-10-28
Dingwall Building	62 Albert	City of Winnipeg Act	1985-03-27
DeBary Apartments	626 Wardlaw	City of Winnipeg Act	1998-11-16
Hammond Building	63 Albert	City of Winnipeg Act	1980-07-14
Aikins House (Balmoral Hall School)	630 Westminster	City of Winnipeg Act	1999-09-28
Casa Loma Building	644 Portage Ave	City of Winnipeg Act	1991-02-14

Maltese Cross Building	66 King	City of Winnipeg Act	1997-09-30
Alloway and Champion Bank	667 Main	City of Winnipeg Act	1986-07-28
Lighthouse Mission	669 Main	City of Winnipeg Act	1986-07-28
Bellcrest Apartments	72 Lenore	City of Winnipeg Act	1994-03-01
Independent Order of Odd Fellows Hall	72 Princess	City of Winnipeg Act	1986-09-08
Anvers Apartments	758 McMillan	City of Winnipeg Act	1994-03-01
Earn International Building	78 Princess	City of Winnipeg Act	1998-08-24
Rothesay Apartments	828 Preson	City of Winnipeg Act	1991-03-25
St. Edward the Confessor Roman Catholic Church	836 Arlington	City of Winnipeg Act	1981-05-19
Moyse House	838 Wolseley	City of Winnipeg Act	1986-02-10
Albert Block	86 Albert	City of Winnipeg Act	1984-05-28
Kelly House	88 Adelaide	City of Winnipeg Act	1982-06-07
Western Building	90 Albert	City of Winnipeg Act	1985-01-07
Adelman Building	92-100 Princess	City of Winnipeg Act	1983-09-12
Gates at East Gate, West Gate, Middle Gate	Cornish Ave	City of Winnipeg Act	1988-05-30
Belgian War Memorial		City of Winnipeg Act	1995-04-04
Odd Fellows Temple Facade		City of Winnipeg Act	1985-04-01
Pasadena Apartments	220 Hugo St N	City of Winnipeg Act	1988-12-12
Convent of the Sisters of the Holy Names of Jesus and Mary	432 Joubert St N	City of Winnipeg Act	1989-02-17
Augustine United Church	444 River	City of Winnipeg Act	2008-10-02

9.6 Appendix 5: Federally Designated Historic Sites

Site Name	Address	Recognition Statute	Recognition Date
Hangar 10	10 East	Treasury Board Heritage Buildings Policy	2004-04-22
Former Canadian Northern Railway Station	101 1st Ave W	Hertiage Railway Stations Protection Act	1989-11-01
Postal Station “B”	1048 Main	Treasury Board Heritage Buildings Policy	1989-08-24
Hangar 11	11 East	Treasury Board Heritage Buildings Policy	2007-03-15
Former Canadian Northern Railway Station	126 First	Hertiage Railway Stations Protection Act	1991-06-01
Fire Hall (B-3)	126 Ta-wa-pit Drive	Treasury Board Heritage Buildings Policy	1988-11-17
Fort La Reine National Historic Site of Canada	130 Yellowquill Trail	Historic Sites and Monuments Act	1925-05-15
Doctor’s Residence and Clinic (C5)	140 Ta-wa-pit Drive	Treasury Board Heritage Buildings Policy	1988-11-17
Portage la Prairie Armoury	143 Second	Treasury Board Heritage Buildings Policy	1998-11-12
Staff Residence Building B-15	150 Ta-wa-pit Drive	Treasury Board Heritage Buildings Policy	1988-11-17
Accountant's Residence	154 Columbine Street	Treasury Board Heritage Buildings Policy	1988-08-04
Casa Loma, Building (A2)	154 Wasagaming Drive	Treasury Board Heritage Buildings Policy	1988-11-17
Hangar 16	16 East	Treasury Board Heritage Buildings Policy	2007-03-15
Building 84	17 Wing	Treasury Board Heritage Buildings Policy	1997-11-03
Manitoba Theatre Centre National Historic Site of Canada	174 Market Road	Historic Sites and Monuments Act	2009-04-20
Early Skyscrapers in Winnipeg National Historic Site of Canada	191 Lombard	Historic Sites and Monuments Act	1980-06-16

B8-Drill Hall (Korea Hall)	1984 Grant	Treasury Board Heritage Buildings Policy	2004-04-22
Federal Building	269 Main	Treasury Board Heritage Buildings Policy	1990-10-11
Metropolitan Theatre National Historic Site of Canad	291 Donald	Historic Sites and Monuments Act	1991-06-10
VIA Rail/Canadian National Railways Station	380 Hazlewood	Hertiage Railway Stations Protection Act	1992-04-01
Stanley Knowles / Revenue Building	391 York	Treasury Board Heritage Buildings Policy	1999-03-18
McGregor Street Armoury	515 Machray	Treasury Board Heritage Buildings Policy	1994-10-17
Canadian National Railway Station	5th Ave	Hertiage Railway Stations Protection Act	1996-06-01
VIA Rail/Canadian National Railways Station	Fisher Ave E	Hertiage Railway Stations Protection Act	1992-11-01
Former Canadian Northern Railway Station	Inkster Blvd. And Sturgeon Ed	Hertiage Railway Stations Protection Act	1991-06-01
Minto Armoury	Minto Street	Treasury Board Heritage Buildings Policy	1991-05-09
Riding Mountain Park East Gate Registration Complex National Historic Site of Canada	Norgate Road	Historic Sites and Monuments Act	1992-11-06
VIA Rail/Canadian National Railways Station	Railway Ave	Hertiage Railway Stations Protection Act	1992-04-01
Former Canadian Northern Railway Station	Railway St	Hertiage Railway Stations Protection Act	1991-06-01
Bandstand (B9)		Treasury Board Heritage Buildings Policy	1988-11-17
Building 21 (Drill Hall)		Treasury Board Heritage Buildings Policy	1997-11-03
Building 86		Treasury Board Heritage Buildings Policy	1997-11-03
Canadian National Railways Station		Historic Sites and	1992-06-

		Monuments Act	01
Customs Examining Warehouse		Treasury Board Heritage Buildings Policy	1989-05-25
Gate Keeper's Residence (B20)		Historic Sites and Monuments Act	1988-08-04
Golf Clubhouse (B7)		Treasury Board Heritage Buildings Policy	1988-08-04
Grey Owl's Cabin (B21)		Treasury Board Heritage Buildings Policy	1988-11-17
Interpretive Centre B1		Treasury Board Heritage Buildings Policy	1988-11-17
Jamboree Hall, Building B-10		Treasury Board Heritage Buildings Policy	1988-11-17
Park Administration Building		Treasury Board Heritage Buildings Policy	2002-05-16
Red River Floodway National Historic Site of Canada		Historic Sites and Monuments Act	2000-06-16
Royal Canadian Air Force Cottage (B16)		Treasury Board Heritage Buildings Policy	1988-11-17
Superintendent's Residence		Treasury Board Heritage Buildings Policy	1983-03-19
Tennis Clubhouse (B-6)		Treasury Board Heritage Buildings Policy	1988-11-17
Warden's Station Residence No. 1, Building B-18		Treasury Board Heritage Buildings Policy	1985-07-10
Whirlpool Wardens' Residence		Treasury Board Heritage Buildings Policy	1988-08-04

9.7 Appendix 6 Bipole III Environmentally Sensitive Sites

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	CF12	HRB	Leppky Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF19	HRB	Stott Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF26	HRB	Wiebe Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF33	HRB	Hochfeld Holsteins	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF36	HRB	Goertzen Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF37	HRB	Enns Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF39	HRB	Laurent Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF40	HRB	Jobin Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	CF41	HRB	Laurent Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF77	HRB	Delf Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF96	HRB	Hudson Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF97	HRB	Thomsen Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF105	HRB	Van Slyck Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF106	HRB	Gourley Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF107	HRB	Murray Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF112	HRB	Gourley Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	CF122	HRB	Pallister Family Farm (Pallister Farm Ltd.)	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF149	HRB	Coubrough Farms	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	CF485	HRB	Sosnowski Family Farm	Centennial Farm	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	M76	HRB	Moffat Barn	Municipal Site	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	M81	HRB	Grace Evangelical Lutheran Church	Municipal Site	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ1930	HRB	Hiebert Heritage Cemetery	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ1228	HRB	Tracy School	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ1468	HRB	St. Benoit School	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	PLAQ229	HRB	Columbine School	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ2357	HRB	St. Claude Cenatoph	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ178	HRB	Landmark Park	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ1702	HRB	Lavenham School District #742	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ374	HRB	Ferriss School District	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ841	HRB	Nora School District #1551	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ103	HRB	Big Grass Marsh - Ducks Unlimited	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ1700	HRB	Griffith School	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	PLAQ17	HRB	Alonsa Village School	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ1554	HRB	Nativity of the Mother of God Uk.Cath.Church	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ814	HRB	Mossey River, First Settlers'	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ214	HRB	Church of the Nativity of the Blessed Virgin Mary	Plaques	Yes	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	PLAQ849	HRB	Northern Manitoba, Red Deer River	Plaques	YES	Potential disturbance to DESIGNATED Heritage Resource	Avoidance ENSURE TRANSMISSION LINE TOWERS DO NOT DISTURB SITE	Designated Provincial Site
Point	DjLh-2	HRB	SWENSEN SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DjLh-Y1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DjLg-6	HRB	CHURCH SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DjLg-9	HRB	RAT BANK	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DjLo-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	DjLj-Y1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DjLi-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DjLo-12	HRB	RATWELL PECKERS	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DjLo-4	HRB	OLIVIERO SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DjLo-2	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DkLo-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DkLp-3	HRB	DYER	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DkLp-14	HRB	LIGHTNING COW	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DkLp-15	HRB	WATSON TRAIL SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DkLp-7	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DkLp-9	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DkLp-Y1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DkLp-10	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DlLp-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	DlLf-10	HRB	The RS West Site	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DlLf-11	HRB	The RS East Site	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DlLp-5	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DlLp-2	HRB	GOULD #1 SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DlLp-3	HRB	ADAMS SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	DlLp-4	HRB	GOULD #2 SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	EcLq-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	EeLr-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	EjLx-9	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	EkMb-3	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	ElMc-3	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FaMd-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FaMd-4	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FaMd-6	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	FaMe-5	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FbMf-15	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FbMf-18	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FbMf-13	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FcMf-2	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FfMg-3	HRB	McARDLE SALT WORKS	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FfMg-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FfMg-4	HRB	Red Deer River Cottage Development West	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	FfMg-2	HRB	RED DEER RIVER MOUTH SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	GaMe-1	HRB	CORMORANT LAKE PETROFORM SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	GdLt-01	HRB	The Les Phillips (Sky Sailor) Site	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	GlLg-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLf-12	HRB	Granite Steppe Site	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLf-2	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	HaLf-10	HRB	BURNTWOOD EAGLENEST ISLAND SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLf-6	HRB	BURNTWOOD CAMP SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLf-1	HRB	Name Not Available	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLf-8	HRB	JOB FLETT SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLf-7	HRB	NORTH ORR RIVER EXIT SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLf-9	HRB	THREE AND TWO SITE	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLf-13	HRB	Orr Lake Ferry Site	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HaLe-4	HRB	Tobie Savard Site	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HdKl-1	missing HRB	Oasis in a Marsh	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	HdKl-2	missing HRB	Keewatinoow Converter Stn Site	Registered Archaeological Site	Yes	Potential disturbance to Heritage Resource	Site Investigation is Required	Heritage Resource Site
Point	Env1	NLHS Area of Concern	Small creek rivulets in field		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env2	NLHS Area of Concern	Grove of trees		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env3	NLHS Area of Concern	Grove of trees		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env4	NLHS Area of Concern	Old Bridge		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env5	NLHS Area of Concern	Grove of trees		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env6	NLHS Area of Concern	Small creek rivulets in field		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env7	NLHS Area of Concern	POI 5-21 Youville Drain Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env8	NLHS Area of Concern	Small creek rivulets in field		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env9	NLHS Area of Concern	POI 5-20 Manning Canal		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env10	NLHS Area of Concern	Slough and creek rivulets in field		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env11	NLHS Area of Concern	Slough and creek rivulets in field		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env12	NLHS Area of Concern	Small creek rivulets in field		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env13	NLHS Area of Concern	1950s buildings		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env14	NLHS Area of Concern	Tourond Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env15	NLHS Area of Concern	Marsh Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env16	NLHS Area of Concern	Marsh Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env17	NLHS Area of Concern	POI 5-17 Red River east shore		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env18	NLHS Area of Concern	DjLh-Y1 Red River west shore		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env19	NLHS Area of Concern	Old creek bed east of current drain		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env20	NLHS Area of Concern	Grove of trees and old creek bed		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env21	NLHS Area of Concern	Farmhouse		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env22	NLHS Area of Concern	Slough		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env23	NLHS Area of Concern	Creek bed		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env24	NLHS Area of Concern	Slough		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env25	NLHS Area of Concern	Slough and grove of trees		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env26	NLHS Area of Concern	Creek bed		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env27	NLHS Area of Concern	Grove of trees		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env28	NLHS Area of Concern	Grove of trees		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env29	NLHS Area of Concern	DjLo-1		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env30	NLHS Area of Concern	Grove of trees		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env31	NLHS Area of Concern	Grove of trees w trails		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env32	NLHS Area of Concern	Creek bed - tributary to Assiniboine		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env33	NLHS Area of Concern	DkLp-14 in a field 'blowout'		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env34	NLHS Area of Concern	High ridge south of Assiniboine		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env35	NLHS Area of Concern	Assiniboine River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env36	NLHS Area of Concern	Assiniboine River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env37	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env38	NLHS Area of Concern	Slough		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env39	NLHS Area of Concern	Rat Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env40	NLHS Area of Concern	Bagot Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env41	NLHS Area of Concern	Natural portion of Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env42	NLHS Area of Concern	PLAQ841Nora School Plaque		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env43	NLHS Area of Concern	Oxbow of the Whitemud River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env44	NLHS Area of Concern	Whitemud River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env45	NLHS Area of Concern	Abandoned Buildings		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env46	NLHS Area of Concern	Abandoned Buildings		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env47	NLHS Area of Concern	Geddes School Plaque		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env48	NLHS Area of Concern	Creek Near Jarvies Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env49	NLHS Area of Concern	Creek south of Pedro Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env50	NLHS Area of Concern	Creek west of Pedro Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env51	NLHS Area of Concern	Creek near pth 235		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env52	NLHS Area of Concern	High land east of pth 235 identified Oct 12-14		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env53	NLHS Area of Concern	Creek with groves of trees		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env54	NLHS Area of Concern	Abandoned Building		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env55	NLHS Area of Concern	Abandoned Building		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env56	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env57	NLHS Area of Concern	German Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env58	NLHS Area of Concern	Abandoned Building		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env59	NLHS Area of Concern	Creek Bed		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env60	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env61	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env62	NLHS Area of Concern	Abandoned Building		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env63	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env64	NLHS Area of Concern	Abandoned Building		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env65	NLHS Area of Concern	Robinson Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env66	NLHS Area of Concern	Wooden Cross and metal thresher		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env67	NLHS Area of Concern	Abandoned Building		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env68	NLHS Area of Concern	Mossey River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env69	NLHS Area of Concern	High elevation		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env70	NLHS Area of Concern	Wellburns Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env71	NLHS Area of Concern	Bigstone Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env72	NLHS Area of Concern	Bigstone Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env73	NLHS Area of Concern	Garland River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env74	NLHS Area of Concern	Garland River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env75	NLHS Area of Concern	Garland River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env76	NLHS Area of Concern	Duck River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env77	NLHS Area of Concern	South Pine River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env78	NLHS Area of Concern	North Pine River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env79	NLHS Area of Concern	North Pine River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env80	NLHS Area of Concern	North Pine River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env81	NLHS Area of Concern	North branch of North Pine River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env82	NLHS Area of Concern	Wasyliuk Drain		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env83	NLHS Area of Concern	Sclater River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env84	NLHS Area of Concern	North Duck River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env85	NLHS Area of Concern	Duck River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env86	NLHS Area of Concern	Trails		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env87	NLHS Area of Concern	FaMd-01		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env88	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env89	NLHS Area of Concern	Swan River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env90	NLHS Area of Concern	Swan River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env91	NLHS Area of Concern	Swan River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env92	NLHS Area of Concern	Swan River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env93	NLHS Area of Concern	Swan River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env94	NLHS Area of Concern	Dolaine Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env95	NLHS Area of Concern	Dolaine Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env96	NLHS Area of Concern	Dolaine Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env97	NLHS Area of Concern	Dolaine Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env98	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env99	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env100	NLHS Area of Concern	Woody River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env101	NLHS Area of Concern	Former River Bed		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env102	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env103	NLHS Area of Concern	Abandoned Building		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env104	NLHS Area of Concern	Former Creek Bed		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env105	NLHS Area of Concern	Former Creek Bed		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env106	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env107	NLHS Area of Concern	Waywayanagan River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env108	NLHS Area of Concern	Steeprock River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env109	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env110	NLHS Area of Concern	Red Deer River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env111	NLHS Area of Concern	Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env112	NLHS Area of Concern	Overflowing River 3-10		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env113	NLHS Area of Concern	Ralls Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env114	NLHS Area of Concern	Saskatchewan River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env115	NLHS Area of Concern	Mitishto River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env116	NLHS Area of Concern	Mitishto River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env117	NLHS Area of Concern	Mitishto River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env118	NLHS Area of Concern	Halfway River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env119	NLHS Area of Concern	Grass River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env120	NLHS Area of Concern	Partridge Crop Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env121	NLHS Area of Concern	Burntwood River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env122	NLHS Area of Concern	Burntwood River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env123	NLHS Area of Concern	Odei River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env124	NLHS Area of Concern	Odei River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env125	NLHS Area of Concern	Creek Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env126	NLHS Area of Concern	Limestone River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env127	NLHS Area of Concern	Limestone River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env128	NLHS Area of Concern	Limestone River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env129	NLHS Area of Concern	Limestone River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env130	NLHS Area of Concern	Limestone River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env131	NLHS Area of Concern	Limestone River Identified Aug 2010		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env132	NLHS Area of Concern	ATK - Route b/w Thicket Portage & Paint Lk		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env133	NLHS Area of Concern	ATK - Yellow Quill Trail poss crossing of Assiniboine		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env134	NLHS Area of Concern	ATK - Trails to access land by wagon		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env135	NLHS Area of Concern	ATK - Old trail/road north to Kettle Hills - access for picking		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env136	NLHS Area of Concern	ATK - Road access into Kettle Hills		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env137	NLHS Area of Concern	ATK - wagon road used to access land		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env138	NLHS Area of Concern	ATK - Old Machinery possibly related to pulping along old road		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env139	NLHS Area of Concern	ATK - Cabin		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env140	NLHS Area of Concern	ATK - Trapper's cabin		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env141	NLHS Area of Concern	ATK - Homestead		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env142	NLHS Area of Concern	ATK - Camp (small 12 X 14 tent frame)		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env143	NLHS Area of Concern	ATK - Cabins (trapline)		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env144	NLHS Area of Concern	ATK - Cabins (trapline)		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env145	NLHS Area of Concern	ATK - Wekusko School		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env146	NLHS Area of Concern	ATK - Freighting		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env147	NLHS Area of Concern	ATK - Freighting		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env148	NLHS Area of Concern	North Moswak River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env149	NLHS Area of Concern	Hunting River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env150	NLHS Area of Concern	Clay River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env151	NLHS Area of Concern	Possible portage b/w Pukatawakan Lake and Burntwood		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env152	NLHS Area of Concern	Halfway River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env153	NLHS Area of Concern	ATK General Store Ballentine		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env154	NLHS Area of Concern	Camp (hunting, trapping, fishing)		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env155	NLHS Area of Concern	Hawk Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env156	NLHS Area of Concern	Halfway River at Elbow		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env157	NLHS Area of Concern	Clarke Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env158	NLHS Area of Concern	Conlin Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env159	NLHS Area of Concern	Clarke Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env160	NLHS Area of Concern	German Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env161	NLHS Area of Concern	Lake Winnipegosis		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env162	NLHS Area of Concern	Lake Winnipegosis		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env163	NLHS Area of Concern	Spence Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env164	NLHS Area of Concern	Explorers Highroad creek leading to Steeprock		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env165	NLHS Area of Concern	Cormorant Lake shoreline		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env166	NLHS Area of Concern	Frog Creek		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env167	NLHS Area of Concern	North Moose Lake Shoreline		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env168	NLHS Area of Concern	Dyce Lake entire shoreline		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env169	NLHS Area of Concern	Hargrave Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env170	NLHS Area of Concern	Gordon Brown Lake entire shoreline		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env171	NLHS Area of Concern	Gordon Brown Lake entire shoreline		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env172	NLHS Area of Concern	Wintering Lake river leading out westward		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env173	NLHS Area of Concern	Teardrop Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env174	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env175	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env176	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env177	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env178	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env179	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env180	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env181	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env182	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env183	NLHS Area of Concern	Grass River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env184	NLHS Area of Concern	Bryce Lake all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env185	NLHS Area of Concern	Bryce Lake all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env186	NLHS Area of Concern	Bryce Lake all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env187	NLHS Area of Concern	Bryce Lake all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env188	NLHS Area of Concern	Burntwood River all shorelines		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env189	NLHS Area of Concern	Pukatawakan Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env190	NLHS Area of Concern	Pukatawakan Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env191	NLHS Area of Concern	Crying River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Shape	Object_ID	Com_Location	ESS_Name	ESS_Dsc	ESS	Env_Eff	Mit_Meas	Comments
Point	Env192	NLHS Area of Concern	Crying River		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env193	NLHS Area of Concern	Apatowachakamasik Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	
Point	Env194	NLHS Area of Concern	Apatowachakamasik Lake		Yes	potential disturbance to heritage Resources	Requires archaeological investigation. WILL REQUIRE MONITORING IF ACCESS ROADS &/OR TOWERS ARE NEARBY	

Line	138	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	155	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	156	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	158	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	222	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	404	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	453	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	575	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	7887	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	8185	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	8290	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	8341	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	8392	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	15694	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	15970	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	15992	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
	16305	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

16384	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
16805	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
23535	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
23557	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
24019	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
28462	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
31409	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
31418	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
31452	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
31461	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
31863	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
35990	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
36258	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
39321	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
39349	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
39638	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
39649	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

39744	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
39755	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
40459	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
47319	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
47660	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
47833	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
48060	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
48497	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
55174	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
56229	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
62897	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
62904	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
63332	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
63419	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
63427	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
63431	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
63679	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

64070	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
67586	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
67864	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
67986	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
70790	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
71187	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
71282	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
71329	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
71363	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
71378	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
71600	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
78721	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
78789	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
78793	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
79110	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
79114	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
79249	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

79271	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
79888	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
79952	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
86603	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
87086	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
87096	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
87100	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
94450	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
95054	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
99280	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
99489	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102274	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102345	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102689	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102794	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102795	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102805	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

102839	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102864	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102870	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
102885	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
103398	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
110713	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
110759	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
110963	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
118007	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
118014	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
126178	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
126352	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
126363	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
126598	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
130740	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
130954	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
133735	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

134098	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
134286	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
134412	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
134796	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
141719	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
141747	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
141965	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
142230	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
142737	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
149477	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
149535	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
150167	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
150222	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
150235	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
150644	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
157442	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
157581	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

158191	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
158658	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
162419	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
162420	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
165284	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
165691	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
165697	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
166483	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
169899	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
173272	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
173736	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
173766	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
174386	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181040	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181041	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181042	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181043	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

181362	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181371	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181372	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181533	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181543	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181682	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
181744	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
182209	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
188772	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
188778	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
189296	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
189313	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
189314	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
193691	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
196596	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
196662	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
196952	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

197080	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
204378	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
208906	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
209085	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
212027	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
212089	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
212097	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
212437	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
212620	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
212986	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
213272	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
219949	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
219958	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
219985	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
220274	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
220280	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
221043	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

224928	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
227696	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
227702	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
227781	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
228163	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
228239	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
228246	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
228774	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
228872	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
228887	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
228906	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
232669	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
235593	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
236151	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
236152	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
236355	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
236656	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

236657	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
236782	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
243524	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
243554	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
243824	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
243830	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
243836	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
243967	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
244012	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
244631	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
248048	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
251290	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
251340	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
251793	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
251796	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
251908	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
259671	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

259885	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
264018	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
266938	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
267378	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
267410	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
267411	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
267421	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
267608	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
268033	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
268053	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
271793	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
271832	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
274688	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
274692	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
274742	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
274746	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
274752	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

275085	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
275091	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
275235	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
275281	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
275470	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
275825	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
279570	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
282598	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
282880	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
282887	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
282889	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
282891	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283055	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283056	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283061	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283081	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283084	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

283091	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283270	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283276	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283679	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283681	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
283697	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
287650	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
290838	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
291020	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
291032	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
291238	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
291643	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
298761	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
298762	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
298803	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
299429	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
303169	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

306170	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
306171	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
306589	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
306675	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
307332	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
310836	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
314009	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
314426	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
314492	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
314707	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
314708	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
318760	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
321923	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
321952	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
321990	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
322347	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
322422	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

322428	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
322639	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
322778	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
323045	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
323060	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
329797	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
329807	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
330050	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
330282	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
330479	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
334810	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
337639	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
338036	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
338040	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
338045	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
338198	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
338425	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

338831	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
346001	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
346022	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
346079	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
346220	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
346228	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
346615	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
346665	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
346684	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
350380	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
353263	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
353314	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
353733	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
353795	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
353799	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
353814	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
353815	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

354407	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
361662	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
361823	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
362151	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
365793	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
368845	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
369176	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
369273	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
369330	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
369339	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
369494	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
369966	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
376742	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
376743	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
376748	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377063	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377072	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

377168	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377169	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377266	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377270	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377271	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377439	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377440	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
377879	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
384559	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
384569	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
384910	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
385018	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
385080	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
385092	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
385105	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
385130	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
385245	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

385336	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
385742	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
385766	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
392775	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
392784	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
392943	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
392989	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
400062	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
400386	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
404814	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
407784	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
407786	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
408093	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
408213	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
408286	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
408944	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
415613	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

415907	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
415908	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
416084	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
416090	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
416711	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
420424	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
420425	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
420530	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
423502	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
423509	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
423588	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
423923	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
424005	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
424636	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
431297	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
431624	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
431634	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

431635	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
431636	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
431780	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
431878	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
432417	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
432448	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
436169	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
439262	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
439714	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
439762	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
439765	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
439927	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
444168	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
444171	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
447275	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
447302	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
447778	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

447788	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
448280	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
448286	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
448413	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
452156	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
455013	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
455548	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
455749	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
456050	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
462782	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
462840	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
463150	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
463279	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
463343	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
463478	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
464025	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
467848	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

468002	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
471380	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
471547	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
475930	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
478913	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
478970	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
479291	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
479292	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
479702	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
480169	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
483887	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
486866	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
486916	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
487425	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
488007	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
488014	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
491680	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute

494727	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
495204	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
495833	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
495836	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute
499288	Waterbody - River	High Potential for Heritage Resources	Yes	Potenial disturbance to Unknown Heritage Resources	Site Investigation/Monitoring is Required; 100 metre buffer	Predictive Model attribute