Phase 1 - Bay of Fundy, Nova Scotia including the Fundy Tidal Energy Demonstration Project Site

Mi'kmaq Ecological Knowledge Study

Membertou Geomatics Consultants
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Executive Summary

This Mi'kmaq Ecological Knowledge Study, also commonly referred to as MEKS or a TEKS, was developed by Membertou Geomatics Consultants for the Nova Scotia Department of Energy and Minas Basin Pulp and Power Co Ltd on behalf of the Fundy Ocean Research Centre for Energy (FORCE). In January 2008, the Province of Nova Scotia announced that Minas Basin Pulp and Power Co Ltd. had been awarded the opportunity to construct a tidal energy testing and research facility in the Minas Basin, known as the Fundy Tidal Energy Demonstration Facility. This Facility will be managed by a non-profit corporation called FORCE.

The objectives of this study are twofold;

- to undertake a broad MEKS study for the Bay of Fundy Phase I Area as it may relate to future renewable energy projects i.e. wind, tidal and wave, specifically in Phase 1 area of the Bay of Fundy (as identified in MGC Proposal - Minas Channel and Minas Basin), and
- to undertake a more focused MEKS review specific to the Fundy Tidal Energy Demonstration Project area which would consider the land and water area potentially affected by the project, identify what is the Mi'kmaq traditional use activity that has or is currently taking place within the Project Site and Study Area and what Mi'kmaq ecological knowledge presently exists in regards to the Project Site and Study Area.

In order for to the Fundy Tidal Energy Demonstration Project to proceed with the implementation of the project, the project proponent must receive required approvals from the involved regulatory departments, which involves the Canadian Environmental Assessment Agency (CEAA) for the federal environmental assessment. The Proposed Project is being assessed under a Joint Federal – Provincial Assessment Process and the Environmental Assessment Document was registered with Nova Scotia Department of the Environment under the NS Environmental Assessment Regulations on June 17,

2009. This MEKS has been developed as a mechanism to ensure that Mi'kmaq traditional knowledge and use of the Study Area is included in the environmental data and considered in the development of the Environmental Management Plan and Environmental Monitoring Plan if the project proceeds.

In order to ensure accountability and ethic responsibility of this MEKS, the MEKS development has adhered to the "Mi'kmaq Ecological Knowledge Protocol". The protocol is a document that has been established by the Assembly of Nova Scotia Mi'kmaq Chiefs, which speaks to the process, procedures and results that are expected of a MEKS.

The Mi'kmaq Ecological Knowledge Study consisted of two major components:

- **Mi'kmaq Traditional Land and Resource Use Activities**, both past and present,
- A **Mi'kmaq Significance Species Analysis**, considering the resources that are important to Mi'kmaq use.

The Mi'kmaq Traditional Land and Resource Use Activities component utilized interviews as the key source of information regarding Mi'kmaq use in the Project Site, Study Area and the Phase I Overall Area. The Project Site is located on the seabed in Minas Passage in the vicinity of Black Rock (west of Cape Sharp) on the Parrsboro (north) side of the Passage which includes the three turbines that will be located due west of Black Rock, approximately 1.25 km from the shoreline which will be installed on the seabed in approximately 30 - 45 m depth at low tide and an on-shore facility in the municipality of the County of Cumberland. The Study Area, is a 10 kilometer radius zone around the Project Site which encompasses Parrsboro and Greenhill, up into the Cobequid Mountains to south west of Lake Road Crooner, over Glasgow Mountain to Port Greville, crossing the Minas Basin and including Blomidon Peninsula from Cape Split to South Scots Bay to Cape Blomidon. The Phase I Overall Area, known as the Phase I

Area, covers a part of the Chignecto Bay, the Bay of Fundy, Greville Bay, Minas Channel, and a large portion of the Minas Basin. This area also included:

- **to the south west:** Berwick, Morden, and Dempseys Corner
- **to the south east:** Hantsport, Horton, Cheverie, and the Avon River
- **to the north east:** Parrsboro, Green Hill, Moose River, New Canaan
- **to the north west:** New Yarmouth, West Apple River, and Advocate harbour.

Numerous interviews were undertaken by the MEKS Team with Mi'kmaq hunters, fishers and plant gatherers, who shared with the team the details of their knowledge of traditional use activities. The interviews were undertaken during the months of June and July 2009, whereby Mi'kmaq were shown topographical maps of the Project Site, Study Area and the Phase I Area. Those interviewed were then asked to identify where they undertake their activities as well as to identify where and what activities were undertook by other Mi'kmaq. All interviews were recorded with permission of the interviewee. If permitted by the interviewee, their information was incorporated into the GIS data. These interviews allowed the team to develop data that reflects the most recent Mi'kmaq traditional use in this area. All interviewee's names are kept confidential and will not be released by MGC as part of a consent form between MGC and the interviewee to ensure confidentiality.

The data gathered was also considered in regards to Mi'kmaq Significance whereby each Species identified was analyzed through the consideration as food/sustenance resources, medicinal/ceremonial plant resources and art/tools resources. These resources were also considered for their availability or abundance in the areas listed above, and their availability in areas adjacent or in other areas outside of these areas, their use, and their importance, with regards to the Mi'kmaq.

This Mi'kmaq Ecological Knowledge Study has also gathered, documented and analyzed the traditional use activities that have been occurring in the Project Site, Study Area and Phase I Area by undertaking interviews with individuals who practice traditional use or know of traditional use activities within these areas and reside in the nearby Mi'kmaq communities.

Project Site:

Based on the data documentation and analysis, it was found that the Mi'kmaq have historically undertaken traditional fishing activities in the Project Site, and that this practice continues to occur today. Commercial Fishing and harvesting activities by members of the Annapolis Valley First Nation was found to have occurred and is still occurring today. Lobster, Mackeral and Herring are currently, and have been in the recent past, fished for commercial purposes while Lobster and Halibut are currently being fished for harvesting.

Study Area:

Based on the data documentation and analysis, it was concluded that the Mi'kmaq have historically undertaken traditional use activities in the Study Area, and that this practice continues to occur today. These activities involve the harvesting of fish species, plants and animals; all of which occurs in varying locations throughout the Study Area and at varying times of the year.

Flounder, Lobster and Mackeral was found to be the most fished species in the Study Area. Halibut, Haddock, Herring, Perch, Periwinkle, Trout, Cod, Clams and Mussels were also found to a somewhat lesser degree. Deer, Rabbit and Partridge were found to be the most hunted species within Study Area. Blueberries, Apples and Strawberry were the most harvested plant species that was found within the Study Area.

Bear, Beaver, Bobcat, Deer, Lynx, Muskrat, Otter, Partridge, Pheasant, Porpoise, Rabbit and Raccoon were found to be hunted within the Study Area with no specific species identified as the majority species harvested. Dulse was the only plant identified that is harvested by the Mi'kmaq in the Study Area.

A historical site, a historical fishing area and a reported burial site was also identified through the interview process within the Study Area.

Phase I Area:

Based on the data documentation and analysis, it was concluded that the Mi'kmaq have historically undertaken traditional use activities in the Phase I Area, and that this practice continues to occur today. These activities involve the harvesting of fish species, plants and animals; all of which occurs in varying locations throughout the Phase I Area and at varying times of the year.

Lobster, Mackeral, Flounder, and *Herring* were found to the most fished species in the area both currently and traditionally. Deer, Rabbit and Partridge were found to be the most hunted species within Phase 1 Area, both currently and traditionally. Blueberries, Apples and Strawberry were the most harvested plant species that was found within the Phase 1 Area.

Several archaeological sites, historical sites, legend areas and a reported burial site were also identified within the Phase 1 Area through the interview process and historical documents.

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1.0 INTRODUCTION

1.1 Membertou Geomatics Consultants

Membertou Geomatics Consultants (MGC) is a Membertou First Nation Company that was developed as a result of the 2002 Supreme Court Marshall Decision. MGC was established as a commercially viable company that could provide its' expertise in the field of GIS Services, Data Base Development, Land Use Planning Services and Mi'kmaq Ecological Knowledge Studies. It is one of many companies established by the Membertou First Nation – Membertou Corporate Division and these companies provide employment opportunities for aboriginal persons and contribute to Membertou's efforts of growth and development. As well, Membertou's excellent management and accountability of their operations is further enhanced by their ISO 9001:2000 certification.

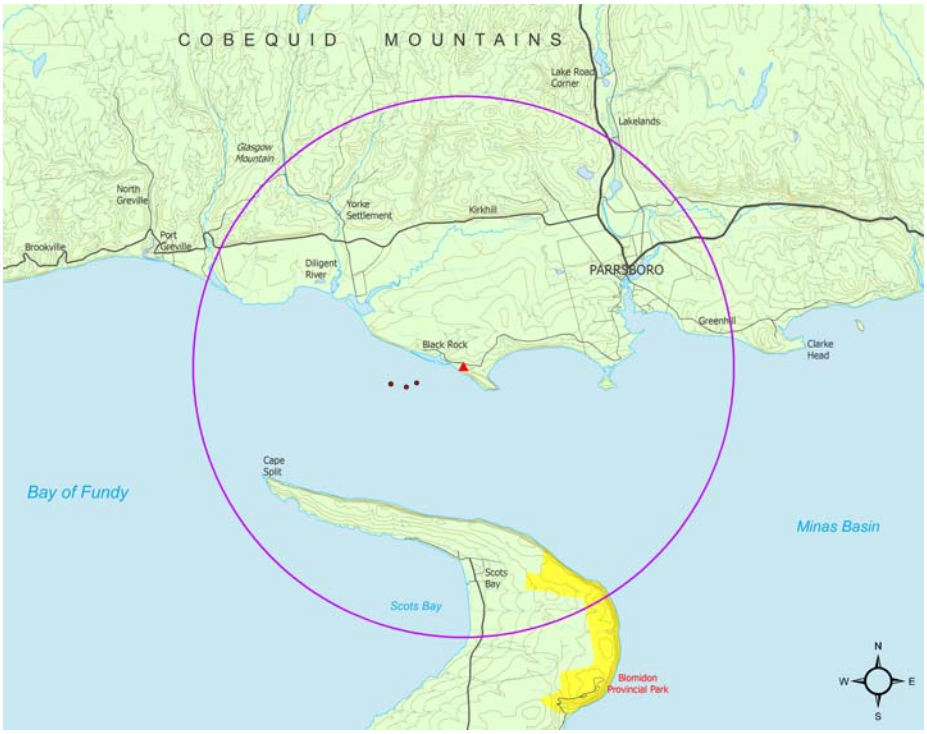
For the development of this MEKS for the Minas Basin Pulp and Power Co Ltd. and the Nova Scotia Department of Energy, MGC brings to the table a team whose expertise and skills with land documentation have developed a sound Mi'kmaq Ecological Knowledge Study. The team skills include expertise within the area of historical Mi'kmaq research, GIS data analysis, Mi'kmaq environmental knowledge and sound Mi'kmaq community connections.

1.2 Fundy Ocean Research Centre for Energy (FORCE) Project

In January 2008, the Province of Nova Scotia announced that Minas Basin Pulp and Power Co Ltd. had been awarded the opportunity to construct a tidal energy testing and research facility in the Minas Basin, known as the Fundy Tidal Energy Demonstration Facility, which will be managed by a

non-profit corporation called Fundy Ocean Research Centre for Energy (FORCE).

The research facility will be located on the seabed in Minas Passage in the vicinity of Black Rock (west of Cape Sharp) on the Parrsboro (north) side of the Passage. Three turbines that will be located due west of Black Rock, approximately 1.25 km from the shoreline which will be installed on the seabed in approximately 30 - 45 m depth at low tide and an on-shore facility in Black Rock, the municipality of the County of Cumberland.



Proposed Site Location

It is expected that the research facility will be constructed and the turbines will be deployed and connected to cables in June of 2010.

The Nova Scotia Department of Energy is also interested in the Bay of Fundy, Phase I Area, for its capacity to generate at least 300 MW of renewable energy (equal to powering about 100,000 homes) and is

exploring the opportunities associated with demonstrating various in-stream tidal energy devices in the Bay of Fundy and monitoring the technology to understand its potential before considering large scale commercial development.

2.0 MI'KMAQ ECOLOGOCAL KNOWLEDGE STUDY SCOPE & OBJECTIVES

2.1 Mi'kmaq Ecological Knowledge

The Mi'kmaq people have a long-existing, unique and special relationship with the land and its' resources which involves the harvesting of resources, the conservation of resources and spiritual ideologies as well. This relationship is intimate in its' overall character, as it has involved collective and individual harvesting of the resources for various purposes, be it sustenance, medicinal, ceremonial and/or conservation. This endearing relationship has allowed the Mi'kmaq to accumulate generations of ecological information and this knowledge is maintained by the Mi'kmaq people and has been passed on from generation to generation, youth to elder, ***kisaku kinutemuatel mijuijij***.

The assortment of Mi'kmaq Ecological Information which is held by various Mi'kmaq individuals is the focus of Mi'kmaq Ecological Knowledge Studies (MEKS), also commonly referred to as Traditional Ecological Knowledge Studies (TEKS). When conducting a MEKS, ecological information regarding Mi'kmaq/Aboriginal use of specific lands, waters, and their resources are identified and documented by the project team.

Characteristically, MEKS have some similar components to that of an Environmental Impact Assessment; yet differ in many ways as well.

Among its' purpose, Environmental Assessments seek to measure the impact of developmental activity on the environment and its' resources. This is often done by prioritizing significant effects of project activities in accordance with resource legislation, such as *Species at Risk.* Mi'kmaq Ecological Knowledge Studies are also concerned with the impacts of developmental activities on the land and its' resources, but MEKS do so in context of the land and resource practices and knowledge of the Mi'kmaq people. This is extremely important to be identified when developing an environmental presentation of a Study Area as Mi'kmaq use of the land, waters and their resources differs from that of non Mi'kmaq. Thus, the MEKS provides ecological data which is significant to Mi'kmaq society and may add to the ecological understandings of the Study Area.

2.2 Mi'kmaq Ecological Knowledge Study Mandate

In April 2009, Membertou Geomatics Consultants (MGC) was awarded a contract to undertake a Mi'kmaq Ecological Knowledge Study for Minas Basin Pulp and Power Co Ltd. (on behalf of FORCE) and the Nova Scotia Department of Energy. In January 2008, the Province of Nova Scotia announced that Minas Basin Pulp and Power Co Ltd. had been awarded the opportunity to construct a tidal energy testing and research facility in the Minas Basin, known as the Fundy Tidal Energy Demonstration Facility Project. This project will require the documentation of key environmental information in regards to the project activities and its possible impacts on the water, land and the resources located here.

MGC proposed to assist with the gathering of necessary data by developing an MEKS which will identify Mi'kmaq traditional land use activity within the Study Area and in surrounding areas within a 10 kilometer radius, as well as the Phase I Area. The proposed MEKS would identify, gather, and document the collective body of ecological

knowledge which is held by individual Mi'kmaq people. The information gathered by MGC is documented within this report and presents a thorough and accurate understanding of the Mi'kmaq peoples land and resource use within the Study Area and Phase I Area.

MGC understands that this study will be included in the Environmental Assessment that will be submitted to the regulators by the project proponents and will be used as a primary indicator identifying Mi'kmaq traditional land and resource use within the Study Area and Phase I Area.

However***, it must be stated that this MEKS is not intended to be used for Consultation purposes by government and/or companies or to replace any consultation process that may be required or established in regards to Aboriginal people. As well, this report cannot be used for the justification of the Infringement of S.35 Aboriginal Rights that may arise from the project.***

2.3 Mi'kmaq Ecological Knowledge Study Scope & Objective

This MEKS will identify Mi'kmaq ecological information regarding Mi'kmaq traditional land, water and resource use within the Project Site, Study Area and Phase I Area. The data that the study will gather and document will include use from both the past and present time frame. The final MEKS report may also provide information that will identify where the proposed project activities may impact the traditional land and resource of the Mi'kmaq. If such, possible impact occurrences are identified by the MEKS then the MEKS will also provide recommendations that should be undertaken by the proponent. As well, if the MEKS identifies any possible infringements with respect to Mi'kmaq constitutional rights, the MEKS will provide recommendations on necessary steps to initiate formal consultation with the Mi'kmaq. Finally, through the development of this

MEKS for the FORCE Project, Mi'kmaq ecological knowledge and traditional land, water and resource use will be identified for those parties that are considering the proposed project.

2.4 MEKS Study Area

In January 2008, the Province of Nova Scotia announced that Minas Basin Pulp and Power Co Ltd. had been awarded the opportunity to construct a tidal energy testing and research facility in the Minas Basin, known as the Fundy Ocean Research Centre for Energy (FORCE) Project.

The research facility will be located on the seabed in Minas Passage in the vicinity of Black Rock (west of Cape Sharp) on the Parrsboro (north) side of the Passage. Three turbines will be located due west of Black Rock, approximately 1.25 km from the shoreline and will be installed on the seabed in approximately 30 - 45 m depth at low tide and an on-shore facility in the municipality of the County of Cumberland. This area is will be referred to as the Project Site within the MEKS.

The MEKS will also include an adjacent Study Area. The Study Area, is a 10 kilometer radius zone around the Project Site which encompasses Parrsboro and Greenhill, up into the Cobequid Mountains to south west of Lake Road Crooner, over Glasgow Mountain to Port Greville, crossing the Minas Basin and including Blomidon Peninsula from Cape Split to South Scots Bay to Cape Blomidon.

The MEKS will also include a Phase I Area. The Phase I area, which covers a part of the Chignecto Bay, the Bay of Fundy, Greville Bay, Minas Channel, and a large portion of the Minas Basin. This area also included:

- **to the south west:** Berwick, Morden, and Dempseys Corner

- **to the south east:** Hantsport, Horton, Cheverie, and the Avon River
- **to the north east:** Parrsboro, Green Hill, Moose River, New Canaan
- **to the north west:** New Yarmouth, West Apple River, and Advocate harbour.

3.0 METHODOLOGY

3.1 Interviews

As a first step to gathering traditional use data, the Membertou Geomatics team initiated dialogue and correspondence with four (4) Mi'kmaq communities. Discussions occurred regarding the identity of individuals who undertake traditional land use activities or those who are knowledgeable of the land and resources and an initial list of key people was developed by the team. These individuals were then contacted by the MGC team members and interviews were scheduled.

For this MEKS, twenty (20) interviews were undertaken by the project interviewers whereby thirty three (33) individuals provided information in regards to past and current traditional use activities. Interviewees resided within or were from the communities of L'sitkuk (Bear River First Nation), Annapolis First Nation, Gloosecap First Nation, and Millbrook First Nation, with the majority of the interviewees residing from the communities of Annapolis First Nation and Gloosecap First Nation. All of the interviews that were completed following the procedures identified within the Mi'kmaq Ecological Knowledge Protocol (MEKP) document. Prior to each interview, interviewees were provided information about the MEKS including the purpose and use of the MEKS; the non-disclosure of their personal information and the future use of the traditional use information they provided.

Interviewees were asked to sign a consent form, providing permission for Membertou Geomatics to utilize their interview information within this MEKS. During each interview, Individuals were provided maps of the Study Area and asked various questions regarding Mi'kmaq use activities, including where they undertook their activities or where they knew of

activities. When they did such activities or when activities they knew of were done, and what type of resource they utilized or were aware of. Interviews were audio recorded, when permission was granted by the interviewee. This assisted with the data accuracy checks and allowed for a comparison of audio data with the information documented on the maps, providing further assurance to the accuracy of the information gathered. Also, when required, interviews were conducted in the Mi'kmaq language.

3.2 Literature and Archival Research

With regards to this MEKS, various archival documents, maps, oral histories and published works were reviewed in order to obtain accurate information regarding the past or present Mi'kmaq occupation of the Study Area. Documents reviewed include various microfilms within Nova Scotia Archives and Records Management, online documents, research papers and numerous published books. A complete listing of the documents that were referenced is outlined within the *Sources Cited* section.

3.3 Field Sampling

Site visits were undertaken by the Project Manager, along with a Mi'kmaq Ecological Knowledge holder from the Mi'kmaq community of Membertou. Site visits were undertaken over a three (3) day period, which consisted of a walk through of the Project Site, noting and identifying any particular plant species growths, animal habitats or other land and/or water areas of importance.

Plant species of Juniper, Beech Sage, Cat Tails, Wild Roses, Blueberries, Raspberries, Strawberries, and Blackberries were found throughout the Project Site.

Wild Rose

Other species identified included Alder and Apple trees. Habitat areas and signs of Deer and Beavers were identified during the site visits.

4.0 MI'KMAQ LAND, WATER AND RESOURCE USE

4.1 Overview

The Mi'kmaq Land, Water and Resource Use Activities component of the MEKS provides relevant data and analysis in regards to Mi'kmaq traditional use activities that are occurring or have occurred within the Study Area and Phase 1 Area. It identifies what type of traditional use activities are occurring, it provides the general areas where activities are taking place and it presents an analysis regarding the significance of the resource and the activity as well.

The Mi'kmaq traditional use activities information that is provided by interviewees is considered both in terms of "Time Periods" and in regards to the "Type of Use" that the resource is being utilized. The Time Periods that the MEKS team differentiates traditional use activities by are as follows:

"Present" – a time period within the last 10 years
"Recent Past" – a time period from the last 11 – 25 years ago
"Historic Past" – a time period previous to 25 years past

The "Type of Use" categories include spiritual use, and sustenance use, such as fishing, hunting or medicinal gathering activities.

Finally, the study analyzes the traditional use data in consideration of the type of land and resource use activities and the resource that is being accessed. This is the Mi'kmaq Significant Species Analysis, an analysis which ascertains whether a species may be extremely significant to Mi'kmaq use alone and if a loss of the resource was to occur through project activities, would the loss be unrecoverable and prevent Mi'kmaq use in the future. This component is significant to the study as it provides

details as to Mi'kmaq use activities that must be considered within the environmental understanding of the Project Site, Study Area and Phase I Area.

By analyzing the traditional use data with these variables, the MEKS thoroughly documents Mi'kmaq traditional use of the land and resources in a manner that allows a detailed understanding of potential effects of project activities on Mi'kmaq traditional use activities and resources.

4.2 Limitations

By undertaking documentation research and interviews with Mi'kmaq traditional activity users, this study has identified Mi'kmaq Traditional Use activities that continue or have occurred in the Study Area and Phase I Area. This has allowed the study to identify traditional use activities in a manner that Membertou Geomatics believes is complete and thorough, as required by the MEKP. Historical documents within public institutions were accessed and reviewed and individuals from four (4) Mi'kmaq communities were interviewed. The information provided from these interviews, has been undertaken with key Mi'kmaq community people, identified initially by the MEKS team, who are involved and are knowledgeable regarding traditional use activities. Through the documentation review and the interview process, the MEKS team is confident that this MEKS has identified an accurate and sufficient amount of data to properly reflect the traditional use activities that are occurring in the Study Area.

However, because the MEKS process is highly dependant on the information that is provided to the team and by only several Mi'kmaq traditional activity users and not all Mi'kmaq traditional activity users, there is always the possibility that some traditional use activity may not have

been identified by the MEKS. It should also be noted that because the MEKS is highly dependant on the information provided within the interview process, this MEKS has followed Section 4 – MEKS methodology of the MEKS protocol.

4.3 Historical Review Findings

Post Glacial

Successive glaciers have flowed over the region and this landscape for a period of 2 million to 10,000 years ago. Glaciers flowed into valleys and cut into the valley walls while it ground elevated landscapes and bedrock into a mix of material ranging from boulders to fine sand and silt. The last glaciation was the Wisconsinian Glaciation of a period of 75,000 to 10,000 years ago and the landscape that remains today is the material left by that last melting ice sheet. *(1)*

During the last melting period of approximately 20,000 to 10,000 years ago, sea levels and the land elevation fluctuated with depression and the rebound of the landscape by the ice as well as the erosion, transport and deposit of material by the released water during melting. Land bridges between the islands in the Gulf of St. Lawrence and the Bay of Fundy appeared and disappeared. The shoreline of the Atlantic region that is recognizable today was established approximately 3000 years ago. *(1)*

These sea level fluctuations and acidic soils leave little evidence of early peoples in the region and therefore difficult to determine their past. However, a seasonal caribou hunting encampment dating to approximately 10,600 years ago was discovered in Debert, N. S., approximately 77 km east of Black Rock. The Paleo-Indian encampment at Debert is believed to be close to a Caribou trail of the time. *(1)*

Early peoples would follow or wait for caribou herds to migrate through the river valleys moving north and south across the Cobequid Mountain from Chignecto Bay to Minas Basin and along the shore of Cobequid Bay to summer ranges in the Truro and Debert areas. *(25)* The Black Rock area is located near such a travel route for both man and animal. The geographic importance of the area is derived from close proximity to Parrsboro or "Awokm" (crossing over point) in Mi'kmaq. The Parrsboro area is the start-end of the Cumberland Pass (Parrsboro Route) and is the least distance for crossing the Minas Basin before Economy Point and Cobequid Bay. *(25)* Travelling north along the Parrsboro Route, the route follows a river valley and chain of lakes where the traveler can then branch to follow forking river valleys to the Northumberland shore through Springhill or over the "Boars Back" ridge to the River Hebert and onward to Chignecto Bay.

Although difficult to determine the migrations of early peoples beyond 5000 years BP, there is evidence of the of Paleo-Indians period peoples of 11,000-9,000 years BP. The Paleo-Indian period was followed by Archaic Cultures of 9,000-2,500 years BP including Middle-Late Archaic peoples which were followed by the Woodland (Ceramic) period peoples of 2,550 to 500 years BP. *(37)* Each period of peoples developed diverse hunting, fishing and subsistence patterns while increasingly relying on the sea for food and transport. *(1)*The Woodland period is the last period prior to European contact with Mi'kmaq and Maliseet in the early 1500's. *(2)* Most known Woodland sites are along coastlines and rivers and maintained seasonal rhythms in occupation.

Mi'kmaq established base camps near shellfish beds from fall through to spring while hunting sea mammals, birds and fishing. Land animals such as caribou, moose, deer, bear, fox muskrat, porcupine and otter were hunted from the fall-winter base camps. During summer the shellfish are

not for eating and hunting extends out on the water for birds and sea mammals as well as inland along rivers for fish. *(2)* In areas where large shellfish beds are scarce, large campsites were located in 3 types of locations. Sites at the river mouths on protected bays that supplied flounder and smelts. Sites located along river courses supplied spawning and migrating birds. Upstream locations provided eels and gaspereau. *(2)* Smaller and scattered sites were located only where there was good fishing as there was little hunting of land animals until winter. Seasonal movement between camps usually brought Mi'kmaq to the shores for the warmer seasons and inland to the lakes and forests during winter. *(2)* 17th Century documents indicate that as much as 90 percent of Mi'kmaq diet was derived from the sea with up to 10 months of the year dedicated to coastal sources of food. *(2)*

Tides provided methods of fishing using fish weirs called "nesakun" which were stakes and sticks driven into the bottom of tidal streams or rivers. At high tide the fish swim over the weir where at falling tide the fish are trapped behind the weir. Larger fish were speared in pools or by attracting the fish to at night using birch bark torches and then speared. *(2)*

Winter hunting involved long chases with large game that lasted days before a shot and wounded moose would drop after numerous arrow strikes and chase. The exhausted animal would then be finished by hunters. *(5)*

Mi'kmaq lived and died in the world as they found it without making attempts to change the natural order to suit the Mi'kmaq. Mi'kmaq are part of an interdependent system where everything be it animate or inanimate, has its proper place. Fear was ever present as to not offend spirits and fear of a death at the whim of unknown power. The greatest fear was to upset the natural order intentionally or accidently. Taboos help maintain

the balance with nature. Fur bearing animals were subject to many Mi'kmaq rituals to ensure return of game. No such rituals apply to fish as fish are considered a gift for the taking. *(6)*

Traditional Mi'kmaq territory is called *Mi'kma'ki* and covered an area that extended from the St. John River east to include Cape Breton Island and from the Gaspe' Peninsula, south to the south shore of Nova Scotia. Mainland peninsular Nova Scotia is named *Kmitkinag* by Mi'kmaq and Cape Breton Island is named *Unimaki*. *Mi'kma'ki* is further divided into seven political districts: *(9)*

District (Various Spellings)	***Territory*** *(9)*
Unimaki (9) (Unama'kik) (35)(36)	Cape Breton Island
Esgigeoag (9) (Eskikewa'kik) (35) (Eski'kewag) (36)	Canso-Sheet Harbour
Sipeknekatik (9) (Sipekne'katik) (35) (Sikepne'katik) (36)	Sheet Harbour-Lahave including Minas Basin and Cobequid Bay
Kespukwitk (9)(35)(36)	Southern Nova Scotia, Lahave-Middleton
Pittukewwaq (9) (Epexiwitk) (35) (Epekwitk) (36)	P.E.I
aqq Epekwtk (9) (Agg Piktuk) (35) (Piktuk) (36)	Shediac to Canso Strait
Kespekewaq (9) (Kespek) (35) (Kespe'kewag) (36)	Chaleur Bay to Gaspe Peninsula
Sikniktewaq (9) (Siknikt) (35) (Sikniktewag) (36)	Chaleur Bay to Shediac

Three of these political areas are close proximity to each other and converge to share a portion of the Bay of Fundy and Minas Basin. *Pittukewwaq agg Epekwtk* (P.E.I and Northumberland Strait from Shediac to Canso Strait) territory is only the distance of the width of the Chignecto Isthmus to access the Bay of Fundy. *(9)* Other sources indicate different interpretation of the bonds of Pittukewwaq agg Epekwtk as being separate districts with Pittukewwaq being only PEI and agg Epekwtk being an area between approximately Merigomish Harbour and Canso Strait. *(35)(36)* The

same sources interpret Esgigeoag district as extending from Canso through to St. Margarets Bay and Sipeknekatik as extending northwest through to the Northumberland Strait as shown in Appendix: Map F. *(35)(36)*

Black Rock is located within the political district of *Sikniktewaq* (Chaleur Bay to Shediac) and centered within *Kmitkinag*. (Mainland Nova Scotia) *(9)*

Mi'kmaq could easily travel throughout Mi'kma'ki by canoe and by inland water routes with the shores of Minas Basin as the terminus of many routes crossing Mi'kma'ki. Routes to the Atlantic coast and Chebouctou (Halifax) were via Piziquit River (Avon River) to LeHave River and on to Chebouctou. The Chebenacadie (Shubenacadie) River was west of Piziquit and was an important route accessible to most Mi'kmaq encampments and was the division line between north and south *Kmitkinag*. South of Chebenacadie river had a milder climate, more diverse wildlife and more extensive system of rivers and lakes. A Catholic mission was established along this route near the Stewiacke River in 1720. *(9)*

Black Rock is located near a main route that connected Minas (New Minas) with Chignecto Bay. Mi'kmaq would cross the Minas Basin to *Awokm* (crossing over point) at Parrsboro. They would then and ascend the Parrsboro River to a lake at half distance to Chignecto Bay. After a short portage to the Hebert River it was downstream to Chignecto Bay. *(10)* Chignecto Bay was the starting point for travel deeper into the continent via the Petitcodiac River to the St John River and on to Quebec. Mi'kmaq could travel from Port Royal, Annapolis Basin to Quebec in 10-12 days. *(10)* Ocean travel was also possible with ocean canoes of approximately 28 feet in length. *(9)*

Approximately 90 percent of Mi'kmaq territory was woodlands of mature large conifers including cedars and hemlocks mixed with tracts of hardwoods including large mature oak, elm and ash. The Mi'kmaq territory provided an abundance of wildlife including caribou and moose as well as sea life that included seals, walrus, porpoise and whales. Maliseet territory is generally south and deep inland west of the St. John River and the valley. *(2)*

Settlement

Mi'kmaq encampments, villages or settlements were either favoured summer coastal camps or smaller favoured winter inland camps of loose family groups within an assigned hunting territory. Mi'kmaq concept of land ownership was that Mi'kmaq belonged to the land rather than the land belonging to Mi'kmaq. Families were custodians of the land and preserved it for all Mi'kmaq. *(9)*

European documents and particularly Champlain's maps provide the earliest record of favoured encampments and the following are the observed Mi'kmaq settlements of that time: *(9)*

1607 Map:

Port Rossingnol (Shelburne)
St Mary's Bay
Port Royal
Pubnico (west of Cape Sable)

1612 Map:

St. Margaret's Bay
River Sainte Marie
Cobequit (Truro)

Writings also indicate Mi'kmaq villages at La Heve, Chignecto (Amherst), Pictou and the northern Unimaki (Cape Breton Island). Very early 1688 and 1690 census data indicate Mi'kmaq villages in addition to the above located at Cheboucto (Halifax), Chedaboucto and Canceau (Canso area). *(9)* Additional villages were appended in the 1690 census being that of Jeddore, Antigoniche (Antigonish) and Pubnico and Ministiguesh (Port La Tour) are two villages in the Cape Sable area. *(9)*

Writings also indicate Mi'kmaq villages at: *(9)*

La Heve
Chignecto (Amherst)
Pictou
Northern Unimaki (Cape Breton Island).

Very early 1688 and 1690 census data indicate Mi'kmaq villages in addition to the above located at: *(9)*

Cheboucto (Halifax)
Chedaboucto and Canceau (Canso area).

Additional villages were appended in the 1690 census being that of: *(9)*

Jeddore
Antigoniche (Antigonish)
Pubnico
Ministiguesh (Port La Tour) are two villages
in the Cape Sable area.

The remaining Mi'kmaq settlements identified by the source in the year 1735 are: *(9)*

Unimaki District:

Port Dauphin
Lac Brador (Bras d'Or Lakes)
Cape Breton
Ilse st. Pierre

Sipeknekatik District:

Mouscadabouet (Musquodoboit)

La Heve District:

Mirligueche

Mi'kmaq at the time of European contact may have been geographically restrained to close proximity to their large and immovable kettles comprised of hollowed out hardwood tree trunks. These kettles were happen upon by Mi'kmaq as fallen trees. After numerous cycles of burning and chipping, these kettles were hollowed out and ready to boil large game. Boiling was through a process of heating rocks in a fire and placing in the water within the wood kettle to boil. The process continuously reheated and replaced rocks until the food was done. *(5)*

There are no indications found to date within the early records of any Mi'kmaq favored encampments within close proximity to *Awokm* (crossing over point) at Parrsboro or the Black Rock area. However, a 1748-49 map *L'Acadie* by Gilles Robert de Vaugondy indicates Acadian habitations at Grosse Isle (Partridge Island) adjacent *Awokm* (Parrsboro) and at Cobequit (Truro) as well. The same map also locates Mission de Chebenacadie (Shubenacadie), Pigiguit (Windsor), Le Grand Pray ou Le Mines (Grand Pre\New Minas) Beaubassin (Amherst), and Seganecto (Apple River). *(10)* All these locations with exception to Grosse Isle *Awokm* and *Seganectou* are also known locations of Mi'kmaq favoured encampments. *(9)*

Mi'kmaq camps were shelters constructed of a circle of poles stuck into the ground and fastened together at the top with a hoop. The poles could be covered with sewn birch bark, reed mats or animal skins and the floor was covered with fir boughs. Larger rectangular shelters were also built of

the same materials but using horizontal poles for the top of the rectangular shape. (29)

The land also provided for clothing and ornamentation. Soft animal skins were cut into belted breechcloths which were worn by men and women in the warmer months. As the colder months approached the Mi'kmaq wore skin cloaks over their shoulders or coats with separate sleeves that tied at the back and could be removed on warmer days. Skin leggings tied to the belt were worn by the men during hunts and skins were also skillfully sewn into foot ware. During festive occasions or at times of war, ornamentation of coloured quills, shaped bone, stone, animal teeth, feathers, wood and sea shells were embroidered into the clothing. (29)

All of what the early Mi'kmaq possessed or traded was derived from the land and of their toil and craftsmanship. Tools were developed from bone, stone, wood, antler and later copper of an unknown source. (29) Copper was later derived from the worn out kettles obtained from trade with Europeans. (28)

Pottery was formed from clay with some added grit and layered in coils to form a vessel. The clay was ornamented with designs pressed into the clay using shaped sticks, quills or fingers. (29)These tools is what remains in Mi'kmaq archaeological sites today and the various styles and tool making techniques help identify the appropriate period of sites and the peoples. (29)

Canoes of 18 to 28 feet long and up to 4 feet wide were made of large sheets of birch bark over a beech and cedar wood frame with an inside lined with cedar lath. Seams were sewn with spruce\fir roots on a pointed bone and waterproofed with spruce\fir gum which was chewed by the women into a paste and sealed with fire. Sails of bark, skin, small brush or

spruce\fir bough were used when conditions were right. Canoe shapes varied among Mi'kmaq, Maliseet, Beothuk, Passamaquoddy and Penobscot peoples so that occupants of an approaching canoe could easily identified. (5)(29)

A large Mi'kmaq encampment was located along the Gasperaux River at present day Melanson, Kings County. The Late Archaic-Maritime Woodland site is thought to have been a seasonal camp for the main purpose of fishing spring runs of Gasperaux (Alewife). The site location is within a short distance to sources of both stone and cultural significance. The site dating back 1760 Years BP was abandoned about the time of the arrival of Acadians in the present day Gaspereaux. *(26)*
Another large collection of Mi'kmaq encampment sites was located 17 km up river on the Gaspereau River with the first site discovered at the outlet of Gaspereau Lake with indications of numerous other small sites. The Gaspereau Lake Site is believed to be an earlier site than that of the Melanson Site and being of the Early to Mid-Archaic period. *(28)(39)*

An Archaic site was also discovered along a 0.5km stretch of the southeastern bank of the St. Croix River at St. Croix, Hants Co. N. S. The St. Croix River Site is considered a large site and was believed to be occupied between 3050 to 400 BP. *(34)(39)*

These early encampment sites were located within close proximity of known chalcedony sites of Scots Bay and White Rock Formation west of Gaspereau Valley. These crystal formations are also known as Chert were valuable for tools and weapons that required a sharp edge. *(39)* Two known Mi'kmaq chalcedony gathering sites are located at Davidson Cove and Clam Cove, on the shores of Scots Bay. (33)(34) The Mid to Late Woodland Period sites earliest occupations are 2170 BP for Clam Cove and 1540 BP for the Davidson Cove Site. The Davidson Cove site is

believed to be a workshop site where the stones were worked into tools and weapons.(33) The Clam Cove Site has evidence of a shell heap typical of an occupied site. (34)

Period	Site Location	Occupation Time Frame	Source
Post-Contact Mi'kmaq 1600-Present	Within Text	Within Text	-
Maritime Woodland Period 2,500-500 Years BP	Avonport Site: *Burial or Cache Site* Davidson Cove: *Chalcedonies Site* Clam Cove: *Chalcedonies Site* St. Croix Site: *0.5km River Bank* Melanson Site: *24 hectare Large Site*	Later Than 1600 AD 1540 (+/- 110) Years BP 2170 (+/- 140) Years BP 3050-400 Years BP 1760-500 Years BP	(28) (33) (34) (34) (26)
Archaic Period 9,000-2,500 Years BP	St. Croix Site: *0.5km Long River Bank Site* Gaspereau Lake: *Numerous sites*	Earliest 3050 Years BP Early to Mid Archaic	(34) (38)(39)
Paleo-Indian Period 11,000-9,000 Years BP	Debert: *9 hectares* Belmont: *20 hectares*	10,600 Years BP 10,600 Years BP	(32) (32)

Table 1: Archaeological Sites

An additional Mi'kmaq archeological site has been located near the shore of the Minas Basin\Avon River, north of Avonport and southeast of Oak Island point. The Avonport site is believed to be either a burial site or cache due to the nature of artifacts found. *(28)*

Early Mi'kmaq burials were at common burial ground sites. The deceased was covered in a soft skin or beaver robe and bound with their legs against their chest and touching the chin. The hole was lined with fir and

cedar boughs and gifts of weapons, snowshoes, utensils, beads and clothing to accompany them into the land of souls where previously deceased friends and family awaited. (5)(29) The nature of early Mi'kmaq was to compete for the best gift given and they gave the very best of what they had. (5)The quality of the gifts was such that they sometimes deprived themselves of the necessities for survival.

A Post Contact site and long time encampment was located at the "Pine Woods" northwest and across the river from Kentville. This encampment of traditional bark shelters was there until at least mid 1800's when Camp Aldershot was established and absorbed the "Pine Woods" area. (*27*)(30) The present day Cambridge I. R. 32 is located approximately 11 km up river from the former Pine Woods encampment and was established in the period of 1880 to 1924. (*31*)

Acadian history indicated that Acadian Habitations were located near known Mi'kmaq encampments in the early 1700's if not for assistance in survival in a new land, for protection as New England Privateers rarely ventured into Mi'kmaq encampment areas. After the Treaty of Utrecht in 1713 privateers were eliminated from the area around 1720, Acadian Habitations then moved farther away from Mi'kmaq encampments. *(10)*

Grosse Isle (Partridge Island) was a little different from typical Acadian habitation locations. The soils are not as suitable for agriculture as other available locations. Grosse Isle was important as a travel route and terminus for those arriving by boat from across the Minas Basin on route from Piziquit and Les Mines and on to Chignecto and Beaubassin. A regular ferry service run by two Acadian brothers existed between Grosse Isle and Piziquit (Avon River) and La Mines (New Minas) in the 1730's. *(24)* After the deportation of the Acadians in 1755 and subsequent return of some Acadians pledging allegiance to the English Crown, the same

Acadian brothers received permission by the English to continue to operate a regular ferry service in 1764. *(24)* A short time later in 1776 the ferry service was operated by English Loyalist Settlers as a condition of large land grants in the Partridge Island (Parrsboro) area. *(C25)*

Most of the locations of the Historical Review findings of this report as related to the Project Site, Study Area and Phase 1 Area are shown in Appendix: Map H.

Place Names

The land and the resources available within Mi'kmaq developed a culture that grew from a vast knowledge of their natural environment. Mi'kmaq place names can convey this knowledge to others with place names indicating geographic references, danger, or presence of natural resources. *(2)*

The following is a list of known Mi'kmaq place names surrounding Minas Basin: *(12)*

Spensor Island	*Wochuck*	Small kettle or pot (Klu'skap legend)
Parrsboro	*Awokun*	Portage or Cross over point
Moose River	*Kesegwichk*	Current flows swiftly
Partridge Island	*Pulowecha Munegoo*	Partridge_ (13)

Medicines

Sickness among Mi'kmaq was rare prior to arrival of Europeans. When Mi'kmaq were ill they were treated with herbal medicines usually drank as tea. Most all Mi'kmaq had medicinal knowledge because treatments had to be prepared quickly and there were those who were particularly good curers. Injuries were more common than illness. Mi'kmaq could set broken bones and sprains were wrapped in eel skins which dried into elastic like

bandages. Fir balsam was used to stop bleeding. Reoccurring diseases were thought to be caused by someone bewitching the victim. In these cases a “puoin” was asked to help remove the curse usually in the as an inanimate object that when removed and destroyed relieved the victim of their anxiety. *(3)* The most used Mi’kmaq remedy was to have a sweat once a month or more often. After as much sweat as could be tolerated, the Mi’kmaq would leave the sweat lodge and jump in water or snow, returning refreshed. *(5)*

Mi’kmaq Legends

Mi’kmaq Spirituality (Mi’kmaq Ktlamsitasuti) belief is that all life is created by Kij-Niskam, an all powerful being. All living things have a spirit that is to be respected. *(36)*

Mi’kmaq imagine the beginnings of all life and their stories explained the elemental forces of nature as well as explaining why animals look and act as they do. Since all they possess and eat is provided by the living things that they know so well that Mi’kmaq had a great respect for life and thought of these living things as entities that they could communicate with. *(3)*

Mi’kmaq stories and oral traditions are an efficient way to pass on to generations important information through stories or teachings of the Mi’kmaq past, customs and where the Mi’kmaq fit into the world. Mi’kmaq stories are circular with no beginning, middle and end. Mi’kmaq circular stories can focus on certain aspects for days. *(7)*

Mi’kmaq believe that different peoples descended from different ancestors and that the Mi’kmaq origins are within the region of Mi’kmaq traditional territory. *(2)* Kij-Niskam created Klu’scap with divine powers to live among

the Mi'kmaq and he taught them all they needed to survive. *(29)* Klu'skap is a prominent divine being in Mi'kmaq legends and the Bay of Fundy area is prominent in Klu'skap legends.

The following excerpts from legends explaining Klu'skap's role the origins of the Bay of Fundy landscape:

> *In former days, water covered the whole Annapolis Valley and Cornwallis River until Klu'skap cut out a passage at Cape Split and at Annapolis Gut and thus drained off the pond and left the bottom dry. Long after this the valley became dry.* *(2)*
>
> *In cutting open the beaver dam at Cape Chignecto, a small piece of the earth floated away and Klu'skap changed it into a moose and set his dogs on it. The moose took to the Bay and made off whereupon Klu'skap turned him back into land as Isle of Holt (Ile Haute) and fixed him there. He changed the dogs into rocks which can be still seen today.* *(2)*
>
> *Klu'skap thought highly of his grandmother and his reward for her was to turn her to stone. Klu'skap turned her to stone to be remembered and seen by other Tribes. He threw a blanket over her shoulders and said "you sit there until I come again" Klu'skap's grandmother sits at Cape Split, looking out waiting for his return at the end of time.* *(11)*
>
> *Klu'skap's camp was located at the point at Advocate Harbour. There was a beaver dam from Spencers Island to Blomidon about nine miles across. Klu'skap being a great hunter wanted to kill one of the beaver for food. He set his trap on the Blomindon side and*

staked down his trap with the two stakes seen at Cape Split as stone today. (11)

When at his old camp at Advocate Harbour, Klu'skap got his drinking water at Parrsboro from a lake called Kul'skap Lake. One day he saw a partridge getting the water. Not having a bow and arrow he chased it with a stick to Cobequid Bay. The partridge waded out into the water where Klu'skap could not reach it. He says "now I am going to leave you as a landmark. You will be an island and your feathers will become trees. This is the origin of Partridge Island at Parrsborro. (11)

At the time of arrival of Europeans, Klu'scap spent his last winter with the Mi'kmaq at Cape d'or explaining that because of the arrival of the White men he must leave for his home in the far west and promised to return when the Mi'kmaq needed him. *(29)*

Klu'scap had prophesied a great war and a vision of an elder chief of LaHave warned that involvement with the European Monarchs must be avoided at all costs. The vision inspired a solution that the Mi'kmaq unite with the Holy Roman Empire for protection from the Monarchs and to maintain their independence and lifestyle. *(39)*

Subsistence Foraging

Mi'kmaq had an intimate knowledge of the ecology of their territory and fit their lives to seasonal cycles of the vegetation and animals and fish. Due to climate conditions, agriculture for food was a risk for Mi'kmaq. *(2)* Highly mobile Bands consisting of several related families would assemble at favorite camp sites. In the fall and winter small groups of 10-15 people would disperse for winter hunting. *(2)*

It was the duty and responsibility of the chief of each political district to assign the hunting territories to families and any changes were made in the presence of the Council of Elders which met in the spring and fall of every year. (29) Hunting districts of approximately 200-300 square miles were assigned to families. *(2)*

The districts were usually surrounded lakes and rivers and were passed on to sons unless there were no sons where the district was then assigned to another family. *(4)* The Mi'kmaq respected the boundaries of the assigned territories and only took from the land what they needed for the family to survive thereby preserving game and fish for the family's future survival. (29)

The Hunting Territories within the Phase 1 study area are shown in Appendix: Map G and corresponding families are listed below: *(4)*

Parrsboro Band:
45 John Williams Shulie Lake and River
Windsor Band:
26 John Ferris Kenneticook River Valley
25 Joe Brooks Uniacke Lake
23 Tom Phillips Ponhook and Caribou Lakes
22 Frank Penhall Lakes South of Windsor
Annapolis Band:
21 Ellick Morris Gaspereau Lakes
20 Abe Hood Mill Creek and Sand River

Table 2: Family Hunting Areas

The hunting territories of the mainland Nova Scotia were interior territories that encompassed the watersheds of interior lakes and rivers as Mi'kmaq did most their game hunting during colder months of the year when they moved inland from the summer coastal camps. (4)(29)

The warmer months were times of abundance with surrounding areas of coastal camps providing fish, shellfish, fowl and eggs. Offerings were made to spirits but the Mi'kmaq rarely stockpiled enough food for the entire winter. They brought with them from the coast smoked and sun-dried seafood, dried and powdered hard boiled eggs. Berries were boiled and formed into cakes were sun-dried. Grease and oils from boiled marrow and fat were stored and transported in animal bladders. Root vegetables such as *segubun* (wild potato) which was similar to today's sweet potatoes and wild nuts were also part of the winter food supply. (29)

Due to climate conditions, agriculture for food was a risk for Mi'kmaq *(2)* Therefore Mi'kmaq rarely planted and harvested food and later preferred to trade with Europeans for bread, dried peas and beans. However, some small plots at certain locations on the south shore of Nova Scotia such as Jordan Bay and Islands within the Roseway River were being cultivated at the time of European contact. (29) Mi'kmaq may have cultivated a tobacco which was a precious luxury for Mi'kmaq. *(2)*

When fish, game and plants within the proximity of an encampment became scarce, the Mi'kmaq moved the encampment miles away to a new location with the women being responsible for breaking camp, transporting and setting up the next camp. (5)(29)

When a moose was taken, the hunter would take only the heart and organs back to the camp to feast and share with friends. The women were dispatched to retrieve the meat by following a trail of broken branches left

by the hunters. The women dressed the moose and cut up the meat at the kill site and then carried it back to the camp to share. The meat was shared among all the families with the hunter usually receiving the least share of the kill. (29)

Known hunting districts of the Minas Basin and Chignecto Bay include Shulie Lake and River northwest of the Black Rock Project Site. The same source also indicates an “Indian Village” approximately west along the shore between Parrsboro and Diligent River and nearer to Diligent River. Other districts in the region include the Kennetcook River Valley, Panuke Lake and Caribou Lake (St. Croix River), Lakes south of Windsor (Avon River), Mill creek and Sand River and Gaspereau Lakes. *(4)* In addition to the “Indian Village” west of Parrsboro, documents also indicate “Indian Villages” located at Kentville, Windsor and Truro. *(4)*

The Great Dying

Although the Mi’kmaq welcomed or at least tolerated Acadian settlement, they had regular contact with Acadians and Mi’kmaq paid a terrible price. Mi’kmaq had no immunity to European diseases such as smallpox and common flues and colds devastated the Mi’kmaq population. Hardest hit by disease were Mi’kmaq populations were encampments near Acadian Habitations. *(9)* The Mi’kmaq of the Bay of Fundy and Eastern Atlantic Coast were most impacted by European disease. *(9)*

Between 1611 and 1760 there were seven references to Mi’kmaq populations impacted by contagious disease but not all identifying the disease or the impact. The most notable references concern the Epidemic of 1616-1618 where a source states that Mi’kmaq population was reduced to approximately 2,000 from 15,000. *(2)* In 1746 a French expeditionary force landed at Cheboucto (Halifax). Reports from Annapolis Royal

indicate that at least 100 Mi'kmaq died in each village of Chebenacadie, Unimaki and Abeqweit of disease attributed to the same French expeditionary force. *(9)*

Mi'kmaq mortality rates of up 66-75 percent were reported among the impacted Mi'kmaq villages. *(10) (2)* One source reported approximately 4000 Mi'kmaq died in 1746 alone. *(19)* Upon realizing the dangers of contact with Europeans the relationship between Mi'kmaq and Acadians changed where Mi'kmaq limited their contact to as little that was necessary for trade. Fewer Mi'kmaq attended and then quickly left after obligatory feasts and distribution of gifts from the King of France. *(9)*

It is difficult to determine what the Mi'kmaq population was prior to European contact. An estimate may be possible when derived from death records and counts combined with mortality rates of known diseases. One source states that Mi'kmaq and European contact was gradual and the Mi'kmaq population was sufficient enough to quickly repopulate after epidemics. However, the 1746-48 Epidemic killed most of the Mi'kmaq repopulation gains and weakened the Mi'kmaq at the time of expansion of English settlers on Mi'kmaq territory. *(9)* In 150 years of European contact, it is estimated that 75 percent of the Mi'kmaq population was wiped out. *(3)*

Mi'kmaq survivors of the epidemics found the great losses upset traditional economies and interdependence among Mi'kmaq groups. *(2)* Traditions were lost with those who died and the survivors were adopting European ways to cope. *(3)* They became dependent on European goods and became market hunters and traded furs for the goods they became dependent upon. Overhunting and competition for hunting territories caused conflicts until the yields became less and the Mi'kmaq who borrowed on credit accumulated debilitating debts. *(2)* Competition with European hunters and loss of Habitat may have also contributed to

depletion of Mi'kmaq traditional game. By the early 1670's, Mi'kmaq were able to shoot 7-8 geese in a day with a musket compared to the 1 goose per day using traditional hunting methods and weapons. *(5)* Reference is made in a letter from an English settler at Fort Lawrence to family in England of the "great quantities of deer moose taken" during the winter of 1776. The same letters refer to a "famine on the land" from 1774-1780 and the desperate condition of the Mi'kmaq as they "will part with anything" in trade for the goods for which Mi'kmaq had become dependant. *(22)*

The late1700's was a critical time in Mi'kmaq history when the Mi'kmaq population was decimated by disease and Mi'kmaq way of life was disappearing. It was at this time that England encouraged settlement on Acadian lands that had been abandoned after the Acadian Deportation in 1755. The New England Planters arrived between 1760 and 1766 and began to occupy former Acadian farms. *(14)* Mi'kmaq and Acadian place names were replaced with English names. At this time, the Acadian brothers resumed the ferry service from Partridge Island (Parrsboro) with the Crown's permission. The Planters arrived in the Black Rock\Parrsboro area in 1776 with the Partridge Island land grants and with conditions that a ferry service be maintained between Partridge Island and Windsor (Fort Edward) for mostly military purposes. *(14)*

A second wave of approximately 1000 English settlers known as the Yorkshire Migration arrived in Nova Scotia between 1771 and 1776. The Yorkshire Emigrants were recruited from northern England to occupy Acadian farms and increase British presence among the planters and republican sentiments. The Yorkshire Emigrants landed at Fort Cumberland (Amherst) in 1772 and some settled the area of Yorkville. *(17)*

American Revolution was fought and won by the Americans and Loyalists (citizens loyal to England) and British soldiers and officers were looking for

land and British protection. These Loyalists arrived in large numbers between 1783 and 1784 and founded numerous new Cumberland settlements. *(23)* The earliest grants to the Planters were concentrated around the harbour including Partridge Island itself and at the mouth of the Partridge River. *(15)*

The land grants to the Loyalist and the Scottish-Irish emigrants that followed was wide spread throughout Nova Scotia and most all remaining lands in Nova Scotia and the Black Rock\Parrsboro area were granted to Emigrants. *(16)*

The Mi'kmaq traditional territories were granted away to these successive waves of emigrants. During these times of emigrant settlers Mi'kmaq were not granted title to land but rather were granted "Licenses of occupation during pleasure". The land was owned by the Crown and reserved for particular Mi'kmaq Bands. The first of these licenses in Nova Scotia was granted in the 1780's and locations were typically coastal and ravine sites long frequented by Mi'kmaq. In 1820 the reserve system was started and each county was instructed to set aside lands near sites frequented by Mi'kmaq. A number of reserves of approximately 1000 acres each were planned for each county of Kings, Hants and Cumberland. This produced little action and it was the Mi'kmaq themselves that pushed for reserve lands. However, what the Mi'kmaq received was not always of their choosing and if their reserve was good land, it was subject to encroachment by settlers. *(2)* Today the reserves are Horton I. R. 35 and Cambridge I. R. 32 in Kings County; St. Croix I. R.34 in Hants County; Franklin Manor I.R. 22 in Cumberland County.

There was no evidence found to date of a Mi'kmaq coastal site issued by licenses of occupation nor coastal reserve other than a marker on a 1914 map by Frank Speck indicating an Indian village west of Parrsboro. *(4)*

Inland, the Crown Land Maps shows approximately 1000 acre Reserve near and west of the Herbert River, northwest of Halfway River (Newville Lake). *(16)* A.F. Church's 1873 Map indicates an "Indian Grant" in the same approximate location as the Reserve shown on the Crown Land Map. However, Church's map also shows an "Indian Village" on the western shore of Halfway River Lake (Newville Lake).The name scribed within the Indian village on the map is that of P. Toney. *(19)* The "Indian Village" location today is approximately the same location as Newville Lake Park. The "Indian Grant" on Church's map is today Franklin Manor I.R. No. 22 located approximately 5km northwest of the former Halfway River Lake Indian Camp.

It is possible that the above "Indian Village" is the subject of a Specific Claim by Paq'tnkek First Nation regarding unlawful granting of 250 acres without surrender in 1827. *(20)* The Crown Land Index Sheet 50 shows a date icon of 1827 at the site on the western shore of Newville lake. *(21)*

The A. F. Church indicates several dwellings along the shore at Black Rock labeled with names of Phinney, one Jenkes and at least two Bowden. *(19)*

The only other references found to date concerning Mi'kmaq in the Black Rock\Parrsboro area are letters of Petition to the province concerning relief and assistance for distressed Mi'kmaq. The following is a list of documents concerning Mi'kmaq in the Study Area from 1801 to 1859: *(18)*

Letter from J. Ratchford to G.H. Monk seeking relief for Mikmaq in area. Date 1801.
Commission of Public Records R1 vol.430 no.89

> Mi'kmaq intending to stay around the area lakes and ponds of Parrsboro for trout and Muskrat. They have killed only 4 large mammals in past two years.

Letter from Monk to Wallace enclosing letter from Ratchford. Date 1801
Commission of Public Records R1 vol.430 no.90

Letter from R.B. Dickson to C. Tupper requesting relief for Mikmaq of Parrsborro District. Date 1857.
Commission of Public Records R1 vol.431 no.96
"eleven to 12 families totaling 48 souls on the Parrsboro Road"

Letter from Rev. Townsend to Chernley regarding bearers of letters. Date 1859.
Commission of Public Records R1 vol.431 no. 102

Petition of P. Babial, P. Toney and J.Paul to Gov. LeMarchant requesting relief for Mi'kmaq at Parrsboro. Date 1857.
Commission of Public Records R1 vol.431 no. 106
"seven families" "encamped in Parrsboro for winter" "in destitute situation"

Items of expenditure regarding relief of Mi'kmaq. Date 1846.
Commission of Indian Affairs M15 vol.3 no. 86

Correspondence concerning relief for Parrsboro Mi'kmaq. Date 1845
Commission of Indian Affairs M15 vol. 3 no. 90

Appeal to J. Howe from P. Blake concerning relief for sick Mi'kmaq man Thomas Bones. Date 1855
Commission of Indian Affairs M15 vol.5 no.65

Report of F. Carrole of Parrsborro on expenditures for Mi'kmaq. Date 1856
Commission of Indian Affairs M15 vol. 6 no. 18

Petition of the inhabitants of Town of Parrsboro for money for the Mi'kmaq. Date 1857
Commission of Indian Affairs M15 vol. 6 no. 21

Petition of Dr. A. Tupper of Parrsboro for care of Mik'maq. Date 1857.
Commission of Indian Affairs M15 vol.6 no. 24

Petition of the Overseers of the Poor for Eastern Township of Parrsboro expenditures. Date 1858
Commission of Indian Affairs M15 vol.6 no. 49

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There were no sources found to date concerning when and why the Mi'kmaq generally left the Parrsboro surrounding area. There was a period beginning in the early 1800's when Mi'kmaq were encouraged to remain in a single location. Attempts were made to introduce Mi'kmaq to farming and centralizing Mik'maq on large reserves such as Indian Brook I. R. 14 located at Shubenacadie, East Hants Co. (2) However, the Franklin Manor I. R. 22 maintains a Mi'kmaq presence in the area and waits for future opportunities.

4.4 Mi'kmaq Traditional Use Findings

Mi'kmaq traditional use data was gathered for the proposed demonstration facility and the area required for the underwater turbines, referred to as the Project Site. For the purposes of this MEKS, data was also gathered by the team from the Study Area, which is a 10 kilometer radius zone around the Project Site that encompasses Parrsboro and Greenhill, up into the Cobequid Mountains to south west of Lake Road Crooner, over Glasgow Mountain to Port Greville, crossing the Minas Basin and including Blomidon Peninsula from Cape Split to South Scots Bay to Cape Blomidon.

The data gathered for this MEKS was drawn from one primary source; that being Mi'kmaq individuals who reside in the surrounding Mi'kmaq communities and those who are familiar with or undertake traditional use activities. This data was acquired through interviews with informants that allowed the study team to identify the various traditional use activities, resources and areas that are currently or have been used by the Mi'kmaq. Interviewees were asked to identify traditional and current use in an area, referred as the Data Collection Area and also known as the Phase 1 area,

which covers a part of the Chignecto Bay, the Bay of Fundy, Greville Bay, Minas Channel, and a large portion of the Minas Basin. This area also included:

- **to the south west:** Berwick, Morden, and Dempseys Corner
- **to the south east:** Hantsport, Horton, Cheverie, and the Avon River
- **to the north east:** Parrsboro, Green Hill, Moose River, New Canaan
- **to the north west:** New Yarmouth, West Apple River, and Advocate Harbour.

These interviews took place in June and July, 2009.

To easily identify the traditional use data findings of this study, the data gathered has been categorized into three (3) large geographic areas. The first category is the Data Collection Area. Secondly is the Project Site – which is the area that has been identified by the proponent as the location of the proposed turbine locations and operation facility. And finally, the third area is that of lands the fall within a ten kilometer radius of the Project Site, called the Study Area.

Based on the data that was gathered by the study team, it is apparent that Mi'kmaq traditional use activities are occurring in the various land and water areas throughout the Study Area. The majority of the activities that the study has documented occur ***currently***, with approximately 65% of all activities occurring currently and recently. Approximately 35% of documented activities have occurred within the ***historical past.***

Data Collection Area (Phase 1 Area)

All data collected from interviewees for the purpose of this MEKS will be considered for the analysis of traditional and current use in this area.

Fishing:

A large portion of the reported fishing activities occurs, or has occurred, in the larger bodies of waters such as the Bay of Fundy, the Minas Channel, the Minas Basin, the Chignecto Bay, and along the shores of these bodies of water, with just above 70% of areas identified by informants as having fished there, or have known of someone fishing there currently, or in the past. **Lobster**, **Mackerel**, **Flounder**, and **Herring** were found to the most harvest species in the area.

Lobster was identified as the most harvested species. Four (4) Lobster fishing areas were identified along the coast from Brookville, in the Greville Bay, to Clarke Head, east of Parrsboro. Thirteen (13) areas were identified in waters that spanned from Cape Split, on the Blomidon Peninsula, to offshore near Morden, Kings County. Some of the areas identified in these waters had been identified as being fished in for several decades by our informants with most dating back to the 1950's. Two (2) other areas were identified, with one being near Isle Haute, in the Bay of Fundy south west off the coast of Cape Chignecto, and the second in the waters of Chignecto Bay off the coast near Apple Head and Cape Capstan. Almost all the lobster areas recorded were reported as being fished there recently.

Mackerel had been identified by the informants as another fish species fished in Data Collection Area. Six (6) areas were identified as Mackerel fishing areas in waters along the coast from near Morden, to near Race Point, between Halls Harbour and Baxters Harbour. In the Minas Basin

from Lower Blomidon, near the Blomidon Provincial Park, to Wolfville, and then down through the Avon River to Windsor, another six (6) areas of Mackerel fishing was identified. Finally, in the Minas Channel and Scots Bay area, that spans from Bennet Bay, through to Scots Bay and Cape Split, around to Cape Blomidon, and within the Minas Channel from Diligent River to east of Clarke Head, there were six (6) Mackerel areas identified. The majority of Mackerel fishing done in these areas described above is being fished currently, with over half of the areas reported by informants described as such. The remaining areas were identified as either being fished in the recent past, or historical past, with a few informants dating their fishing of this species back to the 1930's through to the 1950's. In all identified timeframes, nearly all the informants who identified Mackerel fishing in these areas had said this fishery was used primarily for a food source and/or bait, with the exception of one area along the coast from Ogilvie to Halls Harbour.

Flounder fishing areas were identified to occur within the Minas Basin from Lower Blomidon, to Wolfville, down to the Avon River through to Windsor, to Cheverie Point, and up to and including Clarke Head to Five Islands near the Five Islands Provincial Park, with seven (7) areas identified, as well as along the coast from Ogilvie to Scots Bay up to Cape Split with another seven (7) areas also identified. There were also two (2) areas that could be described as within the entirety of the Bay of Fundy spanning an area west of Cape Split, and Diligent River, to Advocate Bay and down to Margaretsville, that had been marked as Flounder fishing areas. All informants who indicated they had fished Flounder in these areas are fishing these areas presently, and have been doing so for decades with a few informants dating their fishery back to the 1950's and mid 1980's. The one exception is one informant who indicated it was her Great Grandfather who had reportedly fished in the early 1900's. However, all informants had indicated that all fishing areas, and

throughout all timeframes, this fishery was used for harvesting a food source/ceremonial purpose.

Herring was identified as primarily being fished along the coast, and slightly offshore from Ogilvie to about Race Point, between Halls Harbour and Baxters Harbour with seven (7) areas being recorded. Areas within the Minas Basin near Wolfville to Medford, down to the Avon River, there were three (3) areas of herring fishing activity identified. One (1) area each in Scots Bay to Baxters Harbour, and waters off the shores of Apple Head, and as well as waters from Diligent River to Clarke Head had Herring fishing activity. All areas recorded were still being fished presently, with some of these areas being identified as being fished continuously for decades by the informants.

Other species that were fished within these waters described above, but to a slightly lesser extent than the three previously mentioned are Bass, Clam, Cod, Eel, Gaspereau, Haddock, Halibut, Mussel, Perch, Periwinkle, Pollock, Salmon, Scallop, Shad, Shrimp, Smelt, and Trout.

The remaining areas identified occurred in more inland areas such as streams, ponds, rivers, and lakes, of the Data Collection Area.

In areas from Canning, Wolfville, Centreville to Waterville and Berwick that include waterways such as the Cornwallis River, Habitant River, and the Pereaux River, and various other smaller rivers, brooks and streams along the way. In this area, the most fished species is **Trout** with fifteen (15) areas identified by informants as areas they have fished. The majority of the fishing is being fished Currently, with a few areas identified as a fishing area decades in the past. This species is harvested as a food source. Other species fished in this area, but to a lesser extent than trout, are Bass, Carp, Dogfish, Eel, Flounder, Gaspereau, Haddock, Halibut,

Herring, Mackerel, Mussel, Periwinkle, Pollock, Salmon, Smelt, Shad, and Sturgeon. The vast majority of fishing in this area is done for harvesting purposes.

Hunting:

Through analyzing the data collected by interviewees, the majority of hunting done in the Phase 1 area occurs primarily on the land in the southern portion of Phase 1 area, which include: Cape Split, down to Wolfville and Hantsport, west to Margaretsville, back towards Scots Bay.

Throughout the entire area, however, it was found that **Deer**, **Rabbit**, and **Partridge** were the most common species to be hunted, or known to be hunted, by those informants who were interviewed.
Deer was hunted primarily in large areas in the southern portion of the Phase 1 area, with a larger concentration of deer hunting occurring in areas surrounding the Cambridge Reserve such as Coldbrook, Cambridge, Waterville, Buckleys Corner, Ross Corner, and Lakeville. There was also one hunting area between Halfway River and New Canaan. There was a total of eighteen (18) Deer hunting areas identified throughout the Phase 1 area.

Approximately 77% of these hunting areas area currently being used, with some of the currently used areas being hunted in as far back as the 1940's, according to data collected. In every Deer hunting area, the species was hunted as a food source for either the informant's family, or community.

Rabbit was hunted throughout the entire area located in the southern portion of Phase 1 area, and again concentrations of Rabbit hunting areas occurring in areas surrounding Cambridge Reserve such as Coldbrook, Cambridge, Waterville, Buckleys Corner, Ross Corner, and Lakeville.

There was also one hunting area between Halfway River and New Canaan. There were a total of sixteen (16) areas identified as rabbit hunting areas throughout the Phase 1 area.

The majority of Rabbit hunting areas are still being hunted in currently with approximately 81% of the areas were identified by the informants as such. Almost all of the occurrences of Rabbit hunting were used as a source of food with a very small number hunted for Recreation, or for fur and/or oil.

As with Deer, and Rabbit, **Partridge** was primarily hunted in the southern portion of land in the Phase 1 area, with concentrations in areas surrounding Cambridge Reserve. There was also one hunting area between Halfway River and New Canaan. In total, there were eleven (11) Partridge areas identified.

Approximately 81% of the areas identified as Partridge hunting areas are being used currently, and a large majority of the species hunted here are being used as a food source.

Plants:

Through analyzing the data collected by interviewees, the majority of plant gathering in the Phase 1 areas occurs primarily in areas surrounding Cambridge Reserve, extending west to Dempseys Corner, north to Ross Corner, and East to New Minas areas.

Throughout the entire Phase 1 area, **Blueberries**, **Strawberries**, and **Apples** were the most common species to be gathered, or known to be gathered, by those who were interviewed.

Other species gathered throughout the Phase 1 area, although to a slightly lesser degree are Chokecherries, Dulse, Golden Thread, Ash,

Sweet Grass, Spruce, and Raspberry, as well as other plants used for food, medicine, tools, and crafts.

According to data collected, **Blueberries** were gathered primarily in areas surrounding Cambridge Reserve extending west to Dempseys Corner, North to Ross Corner, and east to New Minas areas. Other areas identified as to having gathered Blueberries is an area surrounding East Margaretsville, with one (1) area recorded, an area surrounding Cambridge, Hants County, with one (1) area recorded, and from Lakelands to Halfway River, with one (1) area recorded. Throughout the entire Phase 1 area, there were ten (10) blueberry gathering areas identified.

Half of areas used for Blueberries are used currently, with some dating back as far as the 1940's, while the other half of the areas identified were used in the historic past were informants had recorded discontinuing use as late as the 1970's.

Strawberries were identified as being harvested primarily in areas surrounding Cambridge Reserve, extending west to Dempseys Corner, north to Ross Corner, and east to New Minas areas. Other areas identified where this gathering was occurring were Gaspereau to Wolfville to Hantsport with one (1) area recorded, surrounding Cambridge, Hants County, with one (1) area recorded, and from Lakelands to Halfway River, with one (1) area recorded. Throughout the Phase 1 area, there were ten (10) strawberry gathering areas that were identified by the informants.

A majority of these areas are being used presently, with around 40% of the areas were reported to be gathered in during the recent or historic past, with some areas dating back around the 1940's to as recent as the late 1980's.

Apples were identified as being harvested primarily in areas surrounding Cambridge Reserve, extending west to Dempseys Corner, north to Ross Corner, and east to New Minas areas. Other areas identified where this gathering was occurring were Gaspereau to Wolfville to Hantsport with one (1) area recorded, surrounding Cambridge, Hants County, with one (1) area recorded, and from Lakelands to Halfway River, with one (1) area recorded. Throughout the Phase 1 area, there were ten (10) Apple gathering areas that were identified by the informants.

A majority of these areas are being used presently, with around 40% of the areas were reported to be gathered in during the recent or historic past, with some areas dating back around the late 1930's to as recent as the late 1980's.

Project Site – Demonstration Facility and Underwater Turbine location

The area previously defined as the Project Site (the proposed demonstration facility and underwater turbine locations) as well as locations in the immediate vicinity (>500 metres) of the Project Site will be considered when analyzing traditional use activities.

Fishing:

Fishing was found to be a traditional use activity that continues to occur throughout the Project Site. Species that have been identified include that of **Lobster**, **Mackerel**, **Herring**, and **Halibut**.

Lobster is the fish species that the study documented with the most traditional use activity, with **two (2)** areas being identified as that where Lobster is harvested, and one (1) area for a **Lobster Nursery**. These

areas span along the coast from Port Greville, to Parrsboro, to Clarke Head, and out into the Minas Basin, and all include the area where the turbines area proposed to be built.

Mackerel was another species identified as to being harvested in the Project Site. **Two (2)** areas were identified by the informants in the Project Site: From Diligent River to Parrsboro to offshore into the Minas Basin; and in the Minas Basin north of Blomidon Provincial Park, around Cape Split, and into Scots Bay. Both areas came through the Project Site. Informants also identified areas in which **Halibut** and **Herring** were fished either within the Project Site, or in areas very close to it. It should also be noted that many of the informants had brought up concerns that both commercial fisheries and harvesting/ceremonial fishing would be disrupted by both the construction and the turbines themselves.

Hunting

There were no areas identified by the informants that indicated they had hunted within the Project Site.

Plants

There were no areas identified by the informants that indicated they had gathered plants within the Project Site.

Study Area – Parrsboro, Black Rock, Diligent River, Port Greville, the Minas Basin, and including areas of the Blomidon Peninsula

As mentioned previously, the MEKS data is also drawn from the Study Area which encompasses any area in a ten (10) kilometer radius from the Project Site.

Fishing

From the data gathered, the study found that **Flounder, Lobster,** and **Mackerel** are the species of fish that are most harvested by Mi'kmaq in the surrounding areas.

Seven (7) Flounder, **six (6) Lobster** fishing areas, and **four (4) Mackerel** fishing areas, was identified by the study. The majority of the fishing areas for these species are found in the Minas Basin along the coast from Clark Head (east of Parrsboro) to Port Greville, within Scots Bay, and from Blomidon to Wolfville to Hantsport. Other fish species were also identified as being harvested, although to a somewhat lesser degree, including **Halibut, Haddock, Herring, Perch, Periwinkle, Trout, Cod, Clams, and Mussels.** All of these resources are primarily harvested by Mi'kmaq for food, with trout being a common food source for the Mi'kmaq.

Hunting

The study identified hunting activities occurring in the Study Area with no specific species identified as the majority species harvested.

Within the Blomidon Peninsula from Cape Split to South Scots Bay (and continuing south west out of the Study Area) species identified from the study as being hunted were **Bear**, **Beaver**, **Bobcat**, **Deer**, **Lynx**, **Muskrat**, **Otter**, **Partridge**, **Pheasant**, **Porpoise**, **Rabbit**, and **Raccoon**.

Plants

With regards to traditional plant gathering activities, the study identified **Dulse** as the only plant identified that is harvested by the Mi'kmaq in the Study Area**.** There were **two (2)** areas identified as areas **Dulse** were gathered: Along the shores of Scots Bay from Cape Split to Bennett Bay (and beyond outside the scope of the Study Area); and along the coast from Port Greville to west of Diligent River. This plant species is primarily utilized as a food source and supplement.

4.5 Mi'kmaq Significant Species Process

In order to identify possible project activities which may be of significance to the Mi'kmaq with regards to traditional use of the Study Area, the project team undertakes a number of steps in order to properly consider the MEK data. This involves three main components: Type of Use, Availability, and Importance.

Type of Use

The first component of analysis is the "Type of Use" of the resource which involves the categorization of the resource. All resources are placed into various general categories regarding the **Type of Use.** The category headings are Medicinal/Ceremonial, Food/Sustenance, and Tool/Art. These general headings are used so as to ensure further confidentiality with respect to the resources and the area where they are harvested. As well, the total number of instances where a resource harvest has been documented by the study is quantified here as well.

Availability

After the data is considered by the Type of Use it is then considered in accordance with its' availability: This involves considering whether the

resource is abundant in the Study Area or whether it is rare or scarce. Based on the information that is provided to the team from the ecological knowledge holders and/or written literature sources, the availability of the resource is then measured in regards to other water or land areas that are outside of the Study Area. This measuring is primarily done in the context to the areas adjacent to the Study Area, and if required, other areas throughout the province are also considered. By proceeding in this manner, the study can provide an opinion on whether that resource may be **rare, scarce** or **abundant**.

The data is classified in accordance with following:

Rare – only known to be found in a minimum of areas, may also be on the species at risk or endangered plants list
Common – known to be available in a number of areas
Abundant – easily found throughout the Study Area or in other areas in the vicinity.

This allows the study team to identify whether a resource being destroyed by the proposed project activities will affect the traditional use activity being undertaken.

Importance

The final factor the MEKS team considers when attempting to identify the Significance of a resource to Mi'kmaq use is whether the resource is of major **Importance** to Mi'kmaq traditional use activities. This can be a somewhat subjective process, as any traditional resource use will be of importance to the individual who is acquiring it, regardless if its' use is for food or art or regardless if the resource is scarce or abundant. However, to further identify the importance; the MEKS team also considers the frequency of the use by the Mi'kmaq; whether the resource is commonly used by more than one individual, and finally the actual use itself. These

factors support the broad analysis of many issues in formulating an opinion on significance and supports identifying whether the loss of a resource will be a significant issue to future Mi'kmaq traditional use, if it is destroyed by the project activities.

4.6 Mi'kmaq Significance Species Findings

This MEKS identified numerous resource and land/water areas within the Project Site and Study Area that continues to be utilized by the Mi'kmaq people.

Type of Use

The study identified the following:

TYPE OF USE	NUMBER OF AREAS	NUMBER OF SPECIES
Food/Sustenance	48	31
Medicinal/Ceremonial	1	1
Tools/Art	0	0

Availability

No rare plants were identified during the site visit. Other various plant and tree resources documented within this MEKS, such as blueberries, sweet grass, and apples, can be classified as common, as their availability in the Study Area is sound, and as well they are found throughout many other areas of Nova Scotia. No other fishing or hunting activities identified species that were on the Nova Scotia Species at Risk list, and considered **Common**. It should, however, be noted that **Moose** had been identified as been hunted in areas outside of the Study Area historically by the Mi'kmaq. Mainland Moose is a species on the Nova Scotia Species at Risk list, and is considered **Rare.**

With regards to food resources, the resource that this study identified as most prevalent for use were those of **Lobster**, **Flounder**, and **Mackerel**, with seventeen (17) fishing areas identified in the Study Area. Many other resources were also identified for traditional use activity as well, including numerous fish species and some small mammals, with a small majority occurring in the Blomidon Peninsula. However, when considering the **Project Site** and its immediate surrounding, **Lobster** and **Mackerel** fishing are the key traditional activities that this study identified.

Importance

While stated above, it is worth noting again that assigning an importance designation for any activity done by Mi'kmaq can be a subjective process, and all activities are considered ways of preserving the Mi'kmaq way of life.

Various fishing activities, both commercial and sustenance, were recorded as having the highest amount of use within the Study Area historically and currently. Species identified as being harvested – again, both commercially and for sustenance- the most were Lobster, Flounder, and Mackerel. Loss of any species or destruction of habitat occurred during the project could have a significant impact on Mi'kmaq use, considering the relatively high number of instances these species have been recorded as being harvested.

During one interview, one informant had identified two areas near the Project Site identifying historic settlements and known historic fishing areas near Diligent River. There is also a possible burial site in this area as well.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This Mi'kmaq Ecological Knowledge Study has gathered, documented and analyzed the traditional use activities that have been occurring in the Project Site, Study Area and Phase I Area by undertaking interviews with individuals who practice traditional use or know of traditional use activities within these areas and reside in the nearby Mi'kmaq communities.

The Project Site which is located on the seabed in Minas Passage in the vicinity of Black Rock (west of Cape Sharp) on the Parrsboro (north) side of the Passage. The Study Area is a 10 kilometer radius zone around the Project Site which encompasses Parrsboro and Greenhill, up into the Cobequid Mountains to south west of Lake Road Crooner, over Glasgow Mountain to Port Greville, crossing the Minas Basin and including Blomidon Peninsula from Cape Split to South Scots Bay to Cape Blomidon. The Phase 1 Area covers a part of the Chignecto Bay, the Bay of Fundy, Greville Bay, Minas Channel, and a large portion of the Minas Basin. This area also included:

- **to the south west:** Berwick, Morden, and Dempseys Corner
- **to the south east:** Hantsport, Horton, Cheverie, and the Avon River
- **to the north east:** Parrsboro, Green Hill, Moose River, New Canaan
- **to the north west:** New Yarmouth, West Apple River, and Advocate harbour.

The information gathered was then considered in regards to species, location, use, availability and frequency to further understand the traditional use relationship that the Mi'kmaq maintain with the Project Site, Study Area and Phase I Area.

<u>Project Site:</u>

Based on the data documentation and analysis, it was found that the Mi'kmaq have historically undertaken traditional fishing activities in the

Project Site, and that this practice continues to occur today. Commercial Fishing and harvesting activities by members of the Annapolis Valley First Nation was found to have occurred and is still occurring today. Lobster, Mackeral and Herring are currently, and have been in the recent past, fished for commercial purposes while Lobster and Halibut are currently being fished for harvesting.

Study Area:

Based on the data documentation and analysis, it was concluded that the Mi'kmaq have historically undertaken traditional use activities in the Study Area, and that this practice continues to occur today. These activities involve the harvesting of fish species, plants and animals; all of which occurs in varying locations throughout the Study Area and at varying times of the year.

Flounder, Lobster and Mackeral was found to be the most fished species in the Study Area. Halibut, Haddock, Herring, Perch, Periwinkle, Trout, Cod, Clams and Mussels were also found to a somewhat lesser degree. **Deer, Rabbit** and **Partridge** were found to be the most hunted species within Study Area. **Blueberries, Apples** and **Strawberry** were the most harvested plant species that was found within the Study Area.

Bear, Beaver, Bobcat, Deer, Lynx, Muskrat, Otter, Partridge, Pheasant, Porpoise, Rabbit and Raccoon were found to be hunted within the Study Area with no specific species identified as the majority species harvested. **Dulse** was the only plant identified that is harvested by the Mi'kmaq in the Study Area.

A **historical site, a historical fishing area** and a reported **burial site** was also identified through the interview process within the Study Area.

Phase I Area:

Based on the data documentation and analysis, it was concluded that the Mi'kmaq have historically undertaken traditional use activities in the Phase I Area, and that this practice continues to occur today. These activities involve the harvesting of fish species, plants and animals; all of which occurs in varying locations throughout the Phase I Area and at varying times of the year.

Lobster, Mackeral, Flounder, and ***Herring*** were found to the most fished species in the area both currently and traditionally. **Deer, Rabbit** and **Partridge** were found to be the most hunted species within Phase 1 Area, both currently and traditionally. **Blueberries, Apples** and **Strawberry** were the most harvested plant species that was found within the Phase 1 Area.

Several **archaeological sites, historical sites, legend areas** and a reported **burial site** were also identified within the Phase 1 Area through the interview process and historical documents.

RECOMMENDATION # 1:

In consideration that the Mi'kmaq undertake fishing activity, for commercial and harvest, directly within the Project Site where the turbines are to be built as well as in various locations throughout the Study Area, it is recommended that the proponent meet with the Assembly of Nova Scotia Mi'kmaq Chiefs to determine possible future steps to be taken in regards to Mi'kmaq use of the area.

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APPENDIXES

Map A
Mi’kmaq Traditional and Current Use Areas

MEKS:

Fundy Ocean Research Centre for Energy

Mi'kmaq Traditional and Current Areas

Legend

- Proposed Turbines
- Study Area
- Mi'kmaq Cultural Areas
- Gathering Areas
- Hunting Areas
- Fishing Areas
- Project Site
- Reserve Land

Disclaimer

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Traditional uses mapped out are a sampling of traditional knowledge held by those interviewed and should not be interpreted as an absolute measure of Mi'kmaq ecological knowledge and land use.

Scale 1:200,000

0 2 4 8

Kilometers

Cartographic Design by
Craig Hodder
craighodder@membertou.ca
Projection: NAD83 UTM Zone 20

Version 2 9 September 2009

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N
W E
S

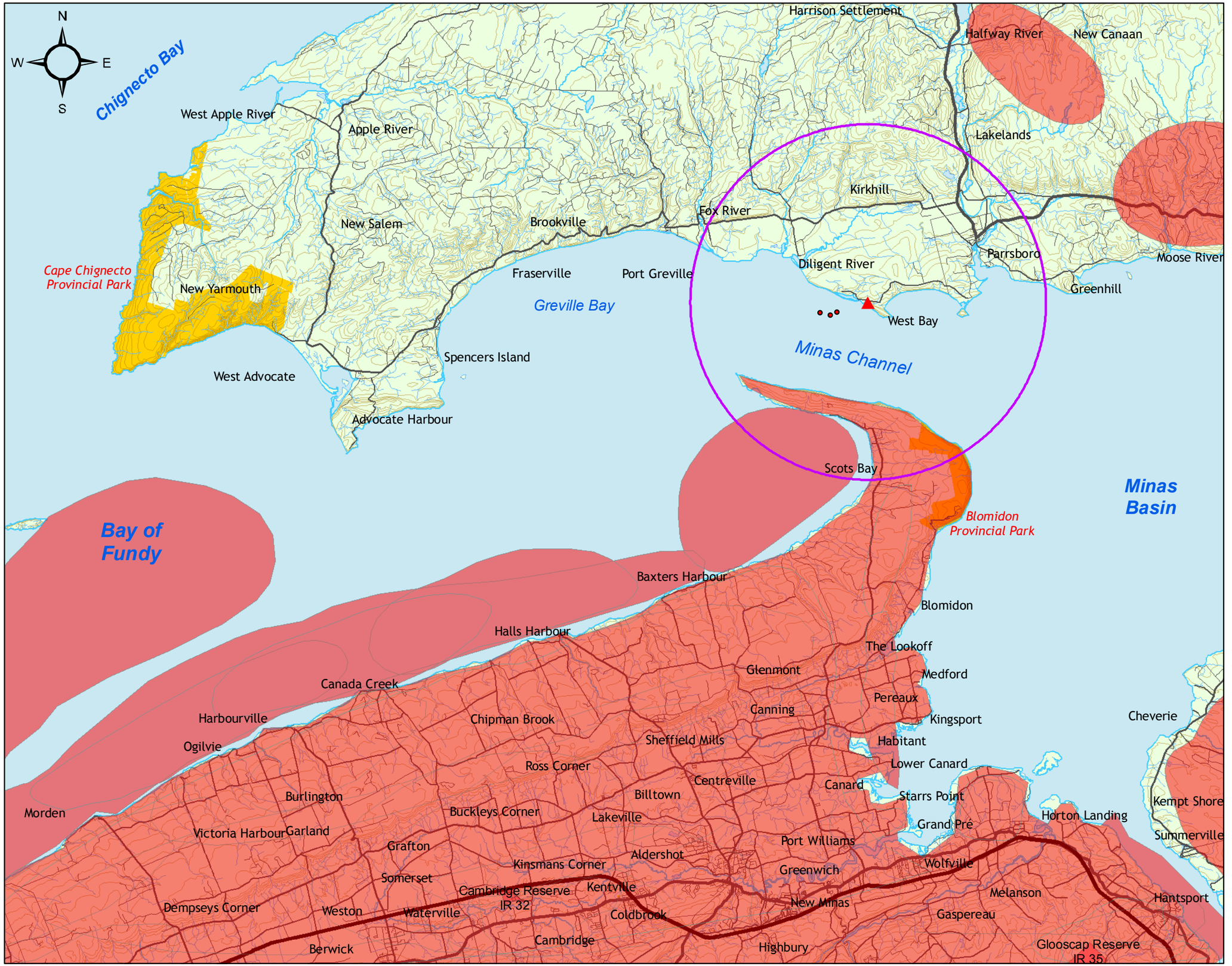
Chignecto Bay
West Apple River
Apple River
Harrison Settlement
Halfway River
New Canaan
Lakelands
Kirkhill
Fox River
Brookville
New Salem
Cape Chignecto Provincial Park
New Yarmouth
Fraserville
Port Greville
Diligent River
Parrsboro
Moose River
Greenhill
Greville Bay
West Bay
Minas Channel
Spencers Island
West Advocate
Advocate Harbour
Scots Bay
Minas Basin
Blomidon Provincial Park
Bay of Fundy
Baxters Harbour
Blomidon
Halls Harbour
The Lookoff
Glenmont
Medford
Canada Creek
Pereaux
Canning
Harbourville
Chipman Brook
Kingsport
Cheverie
Ogilvie
Sheffield Mills
Habitant
Ross Corner
Lower Canard
Centreville
Canard
Billtown
Starrs Point
Burlington
Kempt Shore
Morden
Buckleys Corner
Lakeville
Horton Landing
Grand Pré
Victoria Harbour
Garland
Port Williams
Summerville
Grafton
Aldershot
Kinsmans Corner
Wolfville
Greenwich
Somerset
Melanson
Cambridge Reserve IR 32
Kentville
Hantsport
Dempseys Corner
Weston
Waterville
New Minas
Coldbrook
Gaspereau
Cambridge
Berwick
Highbury
Glooscap Reserve IR 35

Map B
Mi’kmaq Traditional and Current Hunting Areas

MEKS:

Fundy Ocean Research Centre for Energy

Mi'kmaq Traditional and Current Hunting Areas



Legend

- Proposed Turbines
- Project Site
- Hunting Areas
- Reserve Land
- Study Area

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Map C
Mi’kmaq Traditional and Current Fishing Areas

MEKS:

Fundy Ocean Research Centre for Energy

Mi'kmaq Traditional and Current Fishing Areas

Legend

- Proposed Turbines
- Project Site
- Fishing Areas
- Reserve Land
- Study Area

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Chignecto Bay
West Apple River
Apple River
Harrison Settlement
Halfway River
New Canaan
Lakelands
Kirkhill
Fox River
Brookville
New Salem
Cape Chignecto Provincial Park
New Yarmouth
Fraserville
Port Greville
Greville Bay
Diligent River
Parrsboro
Moose River
Greenhill
West Bay
Minas Channel
Spencers Island
West Advocate
Advocate Harbour
Scots Bay
Bay of Fundy
Minas Basin
Blomidon Provincial Park
Baxters Harbour
Blomidon
Halls Harbour
The Lookoff
Glenmont
Medford
Canada Creek
Pereaux
Canning
Kingsport
Harbourville
Chipman Brook
Cheverie
Ogilvie
Sheffield Mills
Habitant
Ross Corner
Lower Canard
Centreville
Canard
Starrs Point
Burlington
Billtown
Kempt Shore
Morden
Buckleys Corner
Lakeville
Horton Landing
Grand Pré
Victoria Harbour
Garland
Port Williams
Summerville
Grafton
Aldershot
Kinsmans Corner
Wolfville
Greenwich
Somerset
Cambridge Reserve IR 32
Kentville
Melanson
Hantsport
Dempseys Corner
Weston
Waterville
Coldbrook
New Minas
Gaspereau
Berwick
Cambridge
Highbury
Glooscap Reserve IR 35

Map D
Mi’kmaq Traditional and Current Gathering Areas

MEKS:

Fundy Ocean Research Centre for Energy

Mi'kmaq Traditional and Current Gathering Areas

Legend

- Proposed Turbines
- Project Site
- Gathering Areas
- Reserve Land
- Study Area

Disclaimer

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Scale 1:200,000

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N W E S

Chignecto Bay
West Apple River
Apple River
Harrison Settlement
Halfway River
New Canaan
Lakelands
Kirkhill
Fox River
Brookville
New Salem
Cape Chignecto Provincial Park
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Greenwich
Somerset
Cambridge Reserve IR 32
Kentville
Melanson
Hantsport
Dempseys Corner
Weston
Waterville
Coldbrook
New Minas
Gaspereau
Cambridge
Berwick
Highbury
Glooscap Reserve IR 35

Map E
Mi’kmaq Traditional and Current Cultural Areas

MEKS:

Fundy Ocean Research Centre for Energy

Mi'kmaq Traditional and Current Cultural Areas

Legend

- Proposed Turbines
- Project Site
- Mi'kmaq Cultural Areas
- Reserve Land
- Study Area

Disclaimer

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Scale 1:200,000

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Chignecto Bay
West Apple River
Apple River
Harrison Settlement
Halfway River
New Canaan
Lakelands
Kirkhill
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Grafton
Port Williams
Aldershot
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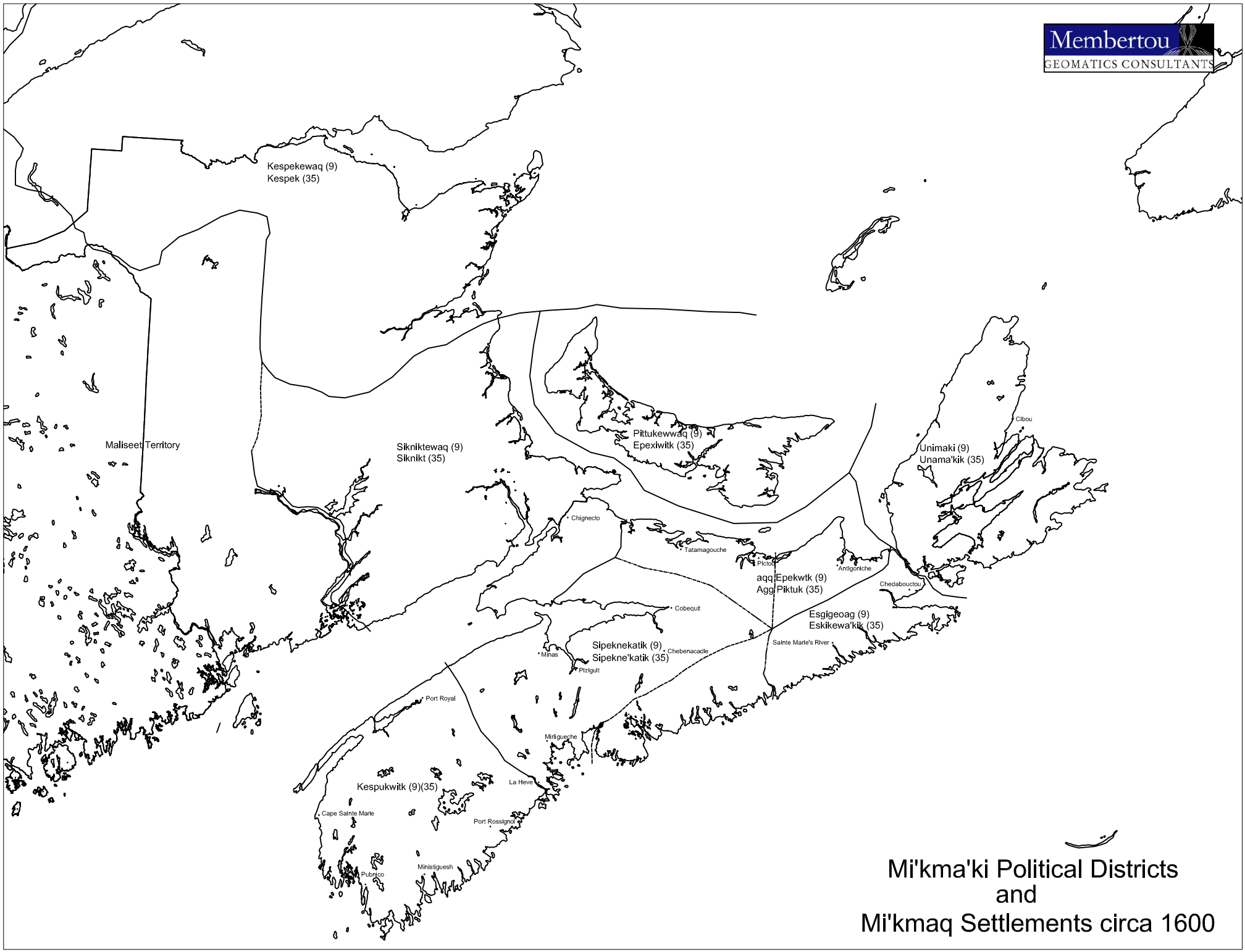
Greenwich
Cambridge Reserve IR 32
Kentville
Melanson
Hantsport
Dempseys Corner
Weston
Waterville
New Minas
Coldbrook
Gaspereau
Berwick
Cambridge
Highbury
Glooscap Reserve IR 35

Map F
Traditional Mi’kmaq Political Districts and Mi’kmaq Settlements Circa 1600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Cobequit
Esgigeoag (9)
Eskikewa'kik (35)
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Sipeknekatik (9)
Sipekne'katik (35)
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Chebenacadie
Piziguit
Port Royal
Mirliguesche
Kespukwitk (9)(35)
La Heve
Cape Sainte Marie
Port Rossignol
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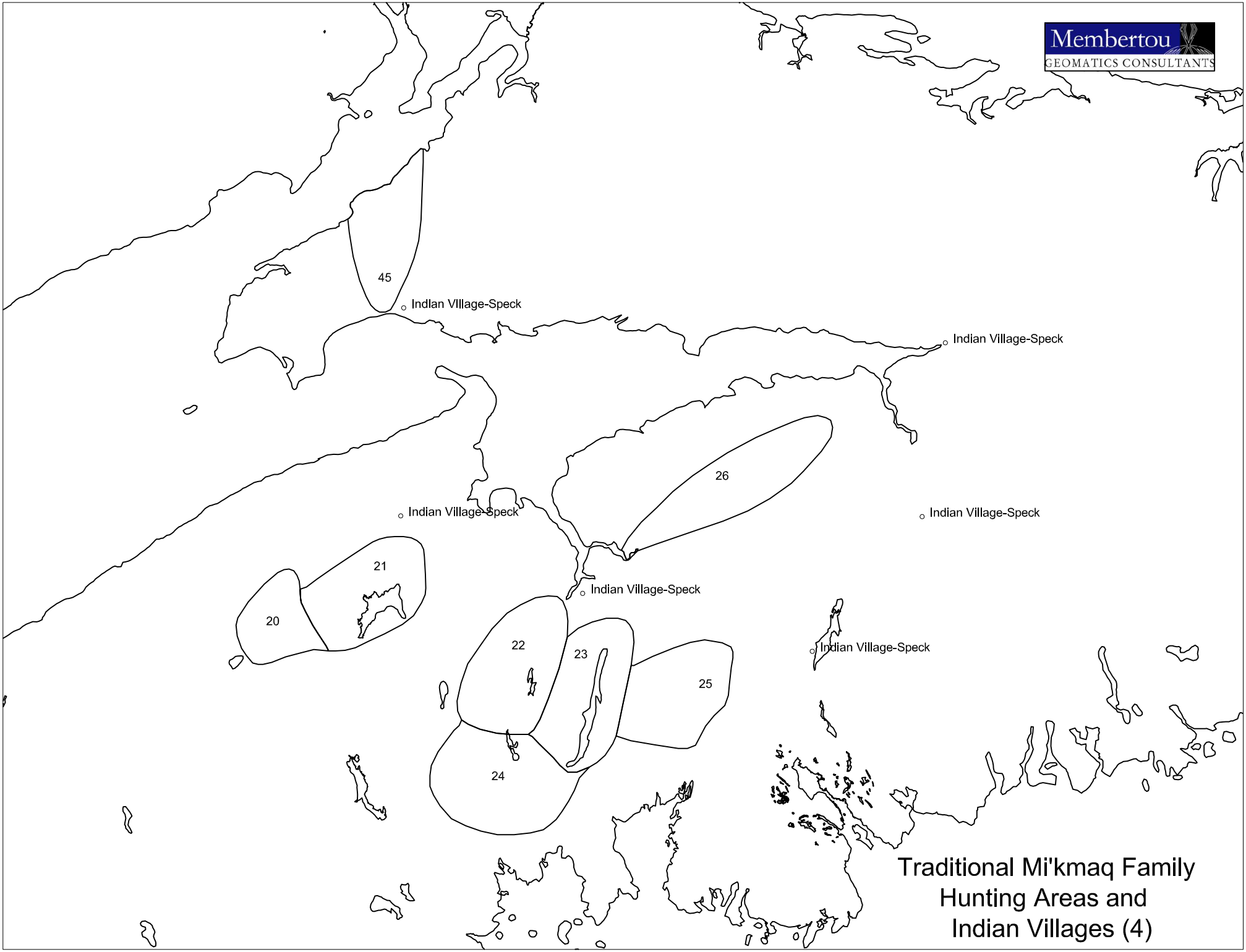
Mi'kma'ki Political Districts
and
Mi'kmaq Settlements circa 1600

Map G
Traditional Mi’kmaq Family Hunting Areas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24
Traditional Mi'kmaq Family
Hunting Areas and
Indian Villages (4)

Map H
Historical Review Findings Locations

MEKS:

Fundy Ocean Research Centre for Energy

Mi'kmaq Historical Review

Legend

- Accadian Settlements (40)
- Mikmaq Settlements (9)
- Mikmaq Camps (19)(27)
- Archaeology Records (28)(32)(33)(34)
- Indian Villages (4)
- Hunting Territories (4)

Mikmaq Political Districts

- Mikmaq Political Districts (9)
- Mikmaq Political Districts Variation (35)(36)
- Mikmaq Political Districts Variation

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