East Side Road Authority Project 4 All Season Road – Review of EIS

Manitoba Metis Federation

FINAL- June 10, 2016

Shared Value Solutions

62 Baker Street
Guelph ON N1H 4G1
226-706-8888
www.sharedvaluesolutions.com

Shared Value Solutions

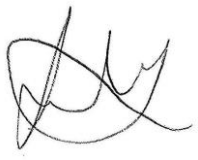
Marci Riel
Manitoba Metis Federation
300-150 Henry Avenue
Winnipeg, Manitoba, R3B 0J7

June 10, 2016

Dear Marci:

It is our pleasure to provide you with our report- "East Side Road Authority Project 4 All Season Road- Review of EIS". The review was conducted by Scott Mackay, MSc, RPP (project director, water resources, environmental management), Melissa Tonge, MSc (project manager, wildlife and terrestrial ecology), Keegan McGrath, MSc (fisheries and aquatic ecology), and Rachel Spiera, MA (socioeconomics and community development). We look forward to continuing to serve you in (topic) matters. Please do not hesitate to get in touch with us if you have any questions or concerns with the enclosed report.

With Best Regards,



Scott Mackay
Managing Partner, Shared Value Solutions Ltd.

Shared Value Solutions

TABLE OF CONTENTS

1.0 INTRODUCTION

Shared Value Solutions Ltd. (SVS) prepared this report on the East Side Road Authority P4 Project on behalf of the Manitoba Metis Federation (MMF) with funding from the East Side Road Authority (ESRA). Shared Value Solutions Ltd. (SVS) was retained by MMF to undertake an environmental and cultural review of the Environmental Impact Statement (EIS) for the P4 Project. SVS consultants with expertise in environmental planning, water resources, aquatic ecology and fisheries biology, wildlife and terrestrial ecology, socioeconomics and community development, and environmental management conducted the review. CVs of all review team members are provided in Appendix A of this report.

We conducted our review with a clear focus on the rights, values, and interests of MMF and its citizens. Our scope of work and intention was not to conduct a comprehensive and holistic review of the EA process and documentation but rather to focus review and comments on the areas where MMF's rights, values, and interests intersect with the project as currently proposed, its potential and residual effects, and the EA process.

This report provides a summary of our review findings, and findings are also provided in the form of a Comment and Response Tracking Table (Appendix B).

2.0 PROJECT DESCRIPTION AND REGULATORY PROCESS

In 2009, the Manitoba Government indicated their commitment to the construction of a network of all-season roads on the east side of Lake Winnipeg north of Manigotagan and Bisset- an area previously only accessible by plane or winter road. Through this network, ESRA aims to link 13 remote First Nation Communities, previously only accessible by winter roads, to each other and to the rest of Manitoba. The purpose of the all-season roads is to provide opportunities for social and economic development, such as improved access to health care for people in that area. In its entirety, the construction of over 1000 km of all-season roads is estimated to take up to 30 years and cost over $3 billion. To oversee this Project, the Government of Manitoba commissioned the Manitoba Floodway and East Side Road Authority. As a first step, ESRA hired SNC-Lavalin to conduct a Large Scale Transportation Network study to identify the preferred all-season road network on the east side of Winnipeg Lake. Its scope was to explore the feasibility, routes, benefits, impacts, costs, and potential partners for the road network. This study was completed in March 2011. At this time, environmental licensing had been obtained for some sections of this road network and construction had begun. Other sections are in the process of environmental approvals and licensing, including the P4 Project.

This review provides specific information as it relates to the P4 Local Project Study Area, as shown in Figure 1. The P4 Project includes the detailed design, construction, and operations and maintenance of

a 94 km all-season gravel road from Berens River First Nation to Poplar River First Nation. The major components of this portion of the East Side Road network includes the following:

- 94 km of two-lane gravel road with a design speed of 100 km/h
- 94 km of new 100m wide Right-of-Way (ROW) to accommodate the road.
- 8 watercrossings of fish-bearing watercourses and 23 watercrossings of non-fish bearing watercourses. These include the following fish-bearing watercrossing methods:
    - Multi-span bridges at the Berens and Etomami Rivers;
    - Clear-span bridges at the North Etomami and Leaf Rivers;
    - Large-diameter (>900 mm) navigable steel arch or reinforced concrete box culverts at Okeyakkoteinewin Creek; and
    - Culverts (minimum 900 mm diameter) at 5 unnamed streams.
- Temporary construction access routes to access camps, staging areas, and quarry/borrow sites.
- 10 temporary construction staging areas of equipment and materials for construction. Petroleum and hydrocarbon materials will be kept in double-walled tanks.
- Up to 4 temporary construction camps for up to 40 workers, to be cleared and graded, and decommissioned after use.
- Construction quarry sites (approx. 13 sites) to provide rock fill, crushed rock, and granular materials for the project, and an unknown number of borrow sites (to provide clay and granular materials for embankment construction).

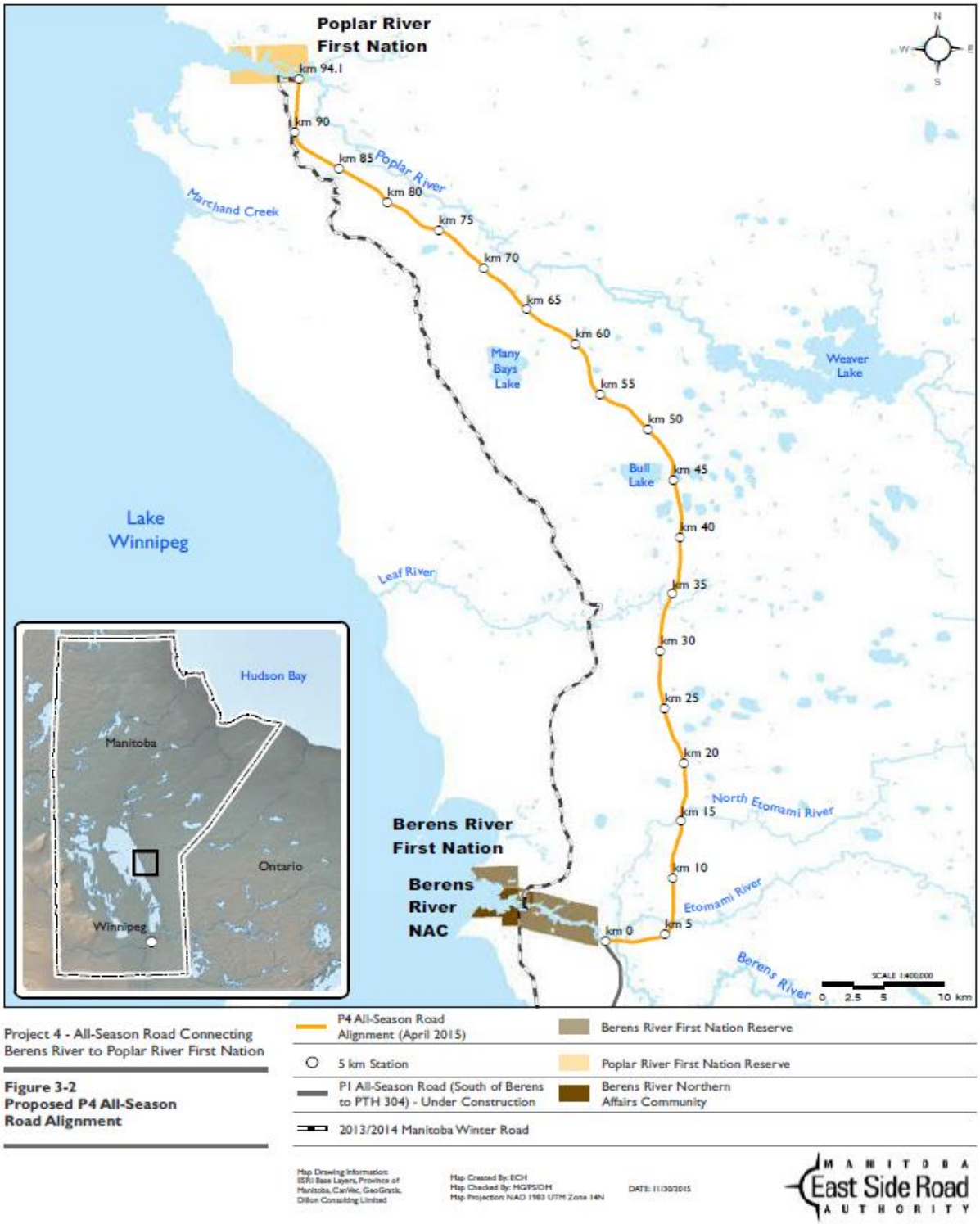


Figure 1: Map of P4 Project route alignment and surrounding area (source: ESRA P4 Project EIS).

Activities during construction and operations and maintenance are shown in Table 1.

The P4 project is subject to a Federal environmental assessment (EA) by Responsible Authority as a result of the project being a "designated project" specifically as a result of the "construction, operations, decommissioning or abandonment…of an all-season public highway that requires a total of 50 km or more of new right of way" (as per the *Regulations Designating Physical Activities* under CEAA, 2012). The EIS is ESRA's submission of an EA report to the Canadian Environmental Assessment Agency, which if approved, will subsequently result in the Agency issuing its own summary report on the project and EA process, as a basis for a decision by the Minister of the Environment to approve or reject the project application or approve it with conditions.

The P4 Project is also subject to Manitoba's *Environment Act* as a Class 2 undertaking, and therefore requires an *Environment Act License* from Manitoba with a related environmental assessment process.

Tables 2 and 3 show additional federal and provincial permits, licenses, and authorizations required, respectively, after and if federal and provincial EA approvals are granted.

All EA and permit processes for the P4 Project involve Crown conduct that has the potential to trigger the Crown's duty to consult and, where appropriate, accommodate the MMF. CEAA 2012 also has specific requirements under Section 5 (c) of the Act for assessing the effects of changes to the biophysical environment on Aboriginal peoples which may be caused by a project, including:

- Effects on current use of lands and resources for traditional purposes
- Effects on health or socioeconomic conditions
- Effects on archaeological or cultural heritage.

Table 1: P4 Project activities expected during construction and operations and maintenance phases of the project. (source: ESRA P4 Project EIS).

Project Component	Project Activities				
	Construction			Operation and Maintenance	
All-Season Road	▪ Clearing right-of-way ▪ Salvaging ▪ Windrowing ▪ Burning ▪ Drilling	▪ Blasting ▪ Excavating ▪ Stockpiling ▪ Grading ▪ Contouring ▪ Filling ▪ Controlling erosion ▪ Producing aggregate	▪ Transporting equipment ▪ Operating equipment ▪ Operating machinery ▪ Operating vehicles ▪ Signing ▪ Refueling	▪ Grading ▪ Operating equipment ▪ Operating vehicles ▪ Maintaining ▪ Producing aggregate ▪ Stockpiling	▪ Controlling vegetation ▪ Controlling dust ▪ Clearing snow ▪ Inspecting
Steel Girder Multi-span Bridges	▪ Minor clearing ▪ Staging equipment ▪ Excavating ▪ Filling	▪ Drilling: testing ▪ Blasting Contouring ▪ Coffer damming ▪ Controlling erosion	▪ Operating equipment ▪ Transportation of bridge materials ▪ Batching concrete ▪ Pouring concrete	▪ Maintaining	▪ Inspecting
Culvert Stream Crossings/ Drainage Equalization Culverts	▪ Excavating ▪ Filling	▪ Contouring ▪ Controlling erosion	▪ Restoring	▪ Maintaining ▪ Inspecting	▪ Steaming ▪ Cleaning
Temporary Crossings over Watercourses	▪ Minor clearing ▪ Excavating ▪ Filling ▪ Contouring ▪ Coffer damming	▪ Controlling erosion ▪ Crossing stream ▪ Operating equipment ▪ Transporting materials ▪ Dismantling	▪ Recycling materials ▪ Removing abutments ▪ Contouring ▪ Controlling erosion ▪ Restoring	▪ Testing for contamination	▪ Inspecting
Temporary Access Areas	▪ Clearing ▪ Grubbing (only for quarries and temporary camps) ▪ Grading ▪ Gravelling	▪ Closing ▪ Restoring	▪ Demobilizing ▪ Restoring	▪ Inspecting	
Temporary Construction Staging Areas	▪ Clearing ▪ Stockpiling materials ▪ Operating equipment	▪ Storing fuels	▪ Dispensing fuels ▪ Demobilizing ▪ Restoring	▪ Testing for contamination	▪ Inspecting
Temporary Construction Camps	▪ Clearing ▪ Operating equipment ▪ Operating generator ▪ Housing workers	▪ Storing foods ▪ Sourcing water ▪ Disposing solid wastes ▪ Disposing liquid wastes	▪ Demobilizing ▪ Drilling ▪ Testing soil ▪ Restoring	▪ Testing for contamination	▪ Inspecting
Quarries and Borrow Areas	▪ Clearing ▪ Grubbing ▪ Excavating ▪ Stockpiling soils	▪ Blasting ▪ Crushing rock ▪ Stockpiling ▪ Operating equipment	▪ Transporting materials ▪ Closing ▪ Restoring	▪ Testing for contamination	▪ Inspecting

Table 2: List of additional federal permits, licenses, and authorizations required for the P4 Project (source: ESRA P4 Project EIS).

Federal Legislation	Rationale/Relevance
Explosives Act (R.S.C., 1985, c. E-17)	▪ Project requires the use and storage of explosives ▪ Manufacture and storage of explosives are regulated under the *Act* which is administered by Natural Resources Canada (NRCan) ▪ Magazine Storage Licence is required from the Explosives Regulatory Division of NRCan
Fisheries Act (R.S.C., 1985, c. F-14)	▪ Project crosses waterways which support fish and fish habitat that are a part of a commercial, recreational, or Aboriginal fishery ▪ Crossings will be installed in accordance with Fisheries and Oceans Canada's 'Measures to Avoid Serious Harm to Fish and Fish Habitat'
Migratory Birds Convention Act, 1994 (S.C. 1994, c. 22)	▪ Migratory birds frequent the Project area and are protected
Species at Risk Act (R.S.C., 1985, c. F-14)	▪ Species at risk inhabit the Project area and are protected
Navigation Protection Act (R.S.C., 1985, c. N-22)	▪ Rivers to be crossed (Leaf River, North Etomami River, Etomami River, Berens River) are "non-scheduled" watercourses ▪ Under the 'opt-in' provision in Section 4 of the Act, ESRA will apply for the assessment and potential approval of proposed works

Table 3: Additional provincial permit, licenses, and authorization requirements for the P4 Project. (Source: ESRA P4 Project EIS)

Provincial Legislation	Associated Regulations, Standards
The Contaminated Sites Remediation Act (C.C.S.M. c. C205)	*Contaminated Sites Remediation Regulation* (105/97)
The Crown Lands Act (C.C.S.M. c. C205)	*Crown Lands Fees Regulation* (130/91) *Vehicle Use on Crown Lands Resource Roads Regulation* (145/91)
The Dangerous Goods Handling and Transportation Act (C.C.S.M. c. D12)	*Dangerous Goods Handling and Transportation Regulation* (55/2003) *Environmental Accident Reporting Regulation* (439/87) *Generator Registration and Carrier Licencing Regulation* (175/87) *Storage and Handling of Petroleum Products and Allied Products Regulation* (188/2001)
The Endangered Species and Ecosystems Act (C.C.S.M. c. E111)	*Threatened, Endangered and Extirpated Species Regulation* (25/98)
The Forest Act (C.C.S.M. c. F150)	*Forest Use and Management Regulation* (227/88 R)
The Heritage Resources Act (C.C.S.M. c. H39.1)	*Heritage Objects Designation Regulation* (160/89) *Heritage Resources Forms Regulation* (99/86) *Heritage Sites Designation Regulation* (122/88 R)
The Highways and Transportation Act (C.C.S.M. c. H40)	*Construction and Surface Maintenance of Access Crossings to Departmental Roads Regulation* (412/88 R) *Declaration of Provincial Roads Regulation* (413/88 R)
The Mines and Minerals Act (C.C.S.M. c. M162)	*Drilling Regulation*, 1992 (63/92) *Quarry Minerals Regulation*, 1992 (65/92)
The Noxious Weeds Act (C.C.S.M. c. N110)	Noxious Weeds Regulation (35/96)
The Public Health Act (C.C.S.M. c. P210)	*Collection and Disposal of Wastes Regulation* (321/88 R) *Protection of Water Sources Regulation* (326/88 R) *Water Supplies Regulation* (330/88 R) *Water Works, Sewerage and Sewage Disposal Regulation* (331/88 R)
The Sustainable Development Act (C.C.S.M. c. S270)	
The Water Protection Act (C.C.S.M. c. W65)	*Manitoba Water Quality Standards, Objectives and Guidelines Regulation* (196/2011)
The Water Rights Act (C.C.S.M. c. W80)	Water Rights Regulation (126/87)
The Wildfires Act (C.C.S.M. c. W128)	Burning Permit Areas Regulation (242/97)
The Wildlife Act (C.C.S.M. c. W130)	*General Hunting Regulation* (351/87) *Hunting Areas and Zones Regulation* (220/86) *Trapping Areas and Zones Regulation* (149/2001) *Wildlife Protection Regulation* (85/2003)
The Workplace Safety and Health Act (C.C.S.M. c. W210)	*Workplace Safety and Health Regulation* (217/2006) *Operation of Mines Regulation* (212/2011)

3.0 MMF RIGHTS AND INTERESTS AND PROJECT INTERACTIONS

The Manitoba Metis Federation ("MMF") is the democratically elected government of the Metis Nation's Manitoba Metis Community and is duly authorized by the members of the Manitoba Métis Community for the purposes of dealing with Manitoba Metis rights, claims, and interests, including conducting consultations and negotiating accommodations. The MMF is made up of seven Regions including the Southeast Region, the Winnipeg Region, the Southwest Region, the Interlake Region, the Northwest Region, the Pas Region, and the Thompson Region. Within each Region are a series of Locals, which are local governments that must have at least nine members to remain active. The P4 Project will largely overlap with MMF's Southeast Region, which includes the following MMF locals within the P4 Project Regional Assessment Area (RAA):

- Berens River
- Bissett
- Manigotagan

Based on results presented in the *Manitoba Metis Land Use and Occupancy Study for the East Side Road Authority Project (May, 2016)* (the MLOUS report) this is a region where the Manitoba Metis Community has a longstanding and well-established record of historic use and occupancy (see Appendix E of the MLOUS report) and ongoing current use, occupancy, and knowledge of the ESRA project area (detailed throughout the MLOUS report). The MLOUS report is included with this report as an appendix for reference (Appendix C). Based on the report's results as well as MMF's constitutionally protected rights and the requirements of CEAA, 2012, we have considered the following MMF rights and interests in our review of the P4 Project EIS:

- Aoviding, mitigating, or accommodating negative impacts to the **current use of lands and resources for traditional purposes** by MMF members.
- Avoiding, mitigating, or accommodating negative impacts to the **health and socio-economic conditions** of MMF members.
- Avoiding, mitigating, or accommodating negative impacts to the **physical, archaeological, and cultural heritage** of Métis peoples in Manitoba.
- Avoiding, mitigating, or accommodating negative impacts to collective MMF **informal and formal socio-cultural and economic systems**.
- Avoiding, mitigating, or accommodating negative impacts to MMF **individual commercial harvesting associated with traditional land-use**.
- MMF members are able to **equitably participate in the economic benefits and opportunities of the project.**
- Through ongoing consultation and specific roles and/or employment, MMF is able to **participate in the environmental (including archaeological/cultural) monitoring and management of the project**.

- MMF is able to **participate in decision-making with respect to the project throughout its lifespan.**

The federal EA process is based on assessing how a proposed project may cause changes to the biophysical environment which in turn cause specific effects, including effects on Aboriginal peoples. We therefore considered these rights and interests in our review of the EIS by focusing on the following issues and sections of the EIS:

Potential Change to the Environment/EIS Section	Potential Primary Effects on MMF Rights and Interests	Pathways to Potential Secondary Effects on MMF Rights and Interests
Aquatic environment-fisheries	Effects on current use of lands and resources for traditional purposes (fishing)	Effects on health and socioeconomic conditions; effects on formal and informal socioeconomic and cultural systems; effects on individual commercial harvesting associated with traditional land-use.
Terrestrial environment-wildlife, terrestrial ecology, SAR*	Effects on current use of lands and resources for traditional purposes (hunting and gathering)	Effects on health and socioeconomic conditions; effects on formal and informal socioeconomic and cultural systems; effects on individual commercial harvesting associated with traditional land-use.
Socioeconomic and cultural environment	Effects on socioeconomic conditions and health; effects on archaeological and cultural heritage; effects on current use of lands and resources for traditional purposes; effects on individual commercial harvesting associated with traditional land-use.	
Physical environment-water quality and hydrology	Effects on health and socioeconomic conditions (drinking water)	Effects on current use of lands and resources for traditional purposes (fishing)
Effects of the environment on the project (project failures due to environmental events)	Effects on socioeconomic conditions and health	
Accidents and malfunctions (spills, explosions, fires)	Effects on socioeconomic conditions and health; effects on archaeological and cultural heritage; effects on current use of lands and resources for traditional purposes; effects on individual commercial harvesting associated with traditional land-use.	

*Species-at-Risk

3.0 REVIEW FINDINGS

Findings of our review of the EIS with respect to the aquatic environment, terrestrial environment, socioeconomic and cultural environment, and other sections of the EIS (physical environment (water), effects of the environment on the project, accidents and malfunctions) are presented below.

3.1 AQUATIC ENVIRONMENT

EIS chapter 8.0 on the aquatic environment was evaluated based on the adequacy of the baseline surveys, risk assessment, mitigation, effects assessment, monitoring, compensation and in meeting the EIS guidelines (March 2015). Moreover, the EIS must demonstrate that the MMF's rights, values and interests are being protected within their traditional territory.

The review and comments on the aquatic environment are based on the following resources used for support and as background info:

- ESRA EIS Chapters 1, 2, 3, 4, 5, 6, 7, 8, and 14
- Appendix 3-2 – Watercourse Crossing Design
- Appendix 3-4 – Erosion and Sediment Control
- Appendix 3-5
- Appendix 8-1 – Aquatic Environment Report
- Appendix 8-2
- Appendix 8-3
- ESRA EIS Guidelines

3.1.1 Summary of EIS Content

The proposed construction of the East Side Road occurs on the east side of Lake Winnipeg. It will connect Berens River First Nation, in the south, and Poplar River First Nation, in the north, with an all season gravel road. The road top will be 8.5 m wide and the ROW will be cleared to 60m. The road will be approximately 94 km in length and cross over 33 watercourses. These crossings are expected to include bridges over Berens, Etomami, North Etomami and Leaf rivers. Culverts with a minimum 900mm diameter will be used for the remaining crossings. A large number of equalization culverts will also be utilized along the roadway to maintain water flow.

The Project is within the Lac Seul Ecoregion which is part of the Boreal Shield Ecozone. The project area is characterized by short, warm summers and cold winters. Precipitation is highest in spring and early summer. The area is mostly flat peatlands (bogs and fens) with rocky uplands of many sizes throughout. Wetlands are typically shallow (<1 m) and drain into the streams, rivers and lakes in the area.

Figure 2: Manitoba Metis Traditional Ecological Knowledge, and Fishing Activity within the Regional Assessment Area of the ESRA P4 Project.

The watercourses in the Project area all flow westward into Lake Winnipeg. The flows of smaller creeks are highly dependant on precipitation and can dry up during periods of low precipitation. These small creeks can provide spawning habitat for large fish such as Northern pike during the spring. More tolerant species (e.g. brook stickleback) may also use this habitat year round. Larger streams and rivers provide a diverse array of habitats and support much more diversity.

Baseline studies have identified 36 fish species, the majority of which are found in Berens River, the largest river in the Study Area. Based on traditional knowledge and other sources of information, there are 42 known fish species in the Study Area. Three species at risk have been identified as potentially occurring within the Study Area- the mapleleaf mussel, shortjaw cisco, and lake sturgeon (Red river, Assiniboine river, and Lake Winnipeg population). The shortjaw cisco is not expected to occur in the Study Area because none of it's preferred habitat is present. The lake sturgeon could potentially utilize the larger rivers such as Berens River for feeding, migration and spawning. The mapleleaf mussel is not previously known from the area but a single individual was identified downstream from a potential watercourse crossing during baseline studies.

The spatial extent of the Study Area for the aquatic environment is subdivided into the three following categories:

Project Footprint (PF) – Those areas where the project activities or components are located. This includes habitat directly affected such as stream crossings and the stream and riparian habitats adjacent to the right-of-way.

Local Assessment Area (LAA) – The area outside the Project Footprint where measurable effects of the project occur. This encompasses areas upstream and downstream that could be affected by Project components or activities.

Regional Assessment Area (RAA)– The area beyond the Local Assessment Area within which cumulative effects may occur.

The EIS used a Valued Ecosystem Components (VECs) approach to assess the effects of the Project. VECs identified in the aquatic environment include harvested fish, fish habitat, and species at risk. These effects on the aquatic environment would occur throughout construction, operation and maintenance phases of the Project. Effects are most likely to occur in proximity to the 33 water crossings along the length of the road, 10 of which are considered fish-bearing streams. This includes the permanent loss of fish habitat associated with the footprint of stream crossings (e.g. culverts and bridges). The predicted residual effects of the project include the permanent loss of 206.5 m^2 of instream habitat and 180 m of riparian zone habitat.

3.1.2 Evaluation

The MMF has an interest in, and rights and traditional stewardship responsibilities associated with fish and fishing- including access to fish for harvesting purposes, the maintenance of aquatic resources overall and the ecosystems that support them, and the quality/safety of the fish for consumption as part of a traditional diet. Adverse impacts on the aquatic environment from the Project could negatively impact the rights and interests of the MMF. Moreover, changes to fish health could have negative consequences on human health for MMF citizens that consume fish as part of a traditional diet. The primary risks to the aquatic environment from the Project are related to:

- The destruction or alteration of fish habitat from construction and operation
- The alteration of water quality from deposition of deleterious substances, runoff, erosion and sedimentation, spills, leaks and malfunctions, snow clearing, and changes to the riparian environment (e.g. clearing of ROW).
- Altered hydrology as a result of project development and water crossings (e.g. perched culverts, improperly sized culverts, channel constriction).
- Cumulative impacts associated with other developments including effects of water level controls associated with hydro electricity, other linear developments such as hydroelectric lines and pipelines, other industrial activities such as forestry, and future developments.

Based on these (and other) risks associated with the project, several issues and concerns were noted. Recommendations for the EIS are provided in the following section.

Issue 1: Collection methods and level of effort for fish community sampling and mussel sampling are unclear. In Appendix 8-1 (page 18) it is stated that: “Fish sampling was conducted within the study reach to confirm fish presence and in Class 1 streams, to determine species use. Gear type was selected based on site-specific conditions and included backpack electrofishing and gillnetting”. However, there is no summary of collection methods or effort provided. For these reasons it is unclear exactly where, when or how much fish sampling occurred. It is unclear whether any lakes in the area were surveyed. These details are critical for determining the adequacy of baseline sampling. Based on the level of detail supplied, it appears likely that the species diversity has not been adequately surveyed.

Issue 2: Data collection for aquatic environmental studies were completed in July 2014. This short study window severely limits the utility of results. They do not represent the seasonal variability nor do they capture year-to-year variation that is important for many characteristics of aquatic environments. This includes physical, chemical and biological characteristics. Examples of aquatic parameters that show variability include water level, flow, precipitation, species diversity, water quality, connectivity and more.

Issue 3: Sampling for Cyprinids and other forage fish species using gillnets is not appropriate in all habitats, particularly areas where there is fast flow or insufficient depth (as is the case in many of the

shallow streams in the Project Area). It is unclear why the Proponent elected to use only gill nets and backpack electrofishing for assessing fish communities.

Issue 4: Connectivity for streams was classified based on the presence of: a defined channel downstream to next major watercourse, permanent or ephemeral barriers to fish passage, and upstream habitat. Barriers were determined "aerially in the field, and by orthophoto analysis" (Appendix 8-1, page 9). Determining barriers without ground assessment in the field is not adequate for determining fish passage. It is possible that barriers assessed using these techniques do not represent actual impediment to passage.

Issue 5: Results for many categories of baseline data collection are poorly represented. They are located in appendices and presented in relation to the watercourse crossing with which they are associated. There are not any summary tables which would facilitate the review and comparison of data.

Issue 6: There has been no baseline assessment of benthic invertebrates (other than mussels). These presence of sensitive families of invertebrates has a strong relationship to water quality and provide information on the suitability of habitat. They are also good candidates for long-term monitoring of water quality. It is unclear why the proponent has elected not to collect any baseline data on benthic invertebrates.

Issue 7: No assessment has been completed of lakes in the Study Area (of which there are several). It is unclear whether these lakes could potentially provide habitat for a wider diversity of fish than has been reported here (e.g. lake trout), particularly shortjaw cisco, a species at risk.

Issue 8: Fish species in the Project Area utilize the streams and rivers in the area to carry out spawning in spring, summer and fall. At these times of the year there are also sensitive life stages (e.g. eggs, larvae, juveniles) that require additional protection. The Proponent has stated that they will avoid construction of crossings however no specific details regarding how this will be accomplished is given.

Issue 9: Residual effects of the project on aquatic VECs were the permanent loss of 206.5 m^2 of instream habitat and 180 m of riparian zone habitat associated with watercourse crossings. However, the clearing of the ROW will create permanent alteration of riparian habitat. This in turn can alter instream habitat through an increase in sedimentation, reduced instream cover, larger fluctuations in temperature and other associated impacts. These residual effects from ROW clearing are not accounted for in Chapter 13 or Appendix 13-1.

Issue 10: Details on specific monitoring of the aquatic environment that will be carried out as part of the follow-up monitoring for the Project are not provided. This is problematic because it is not possible to determine adequacy of monitoring program and secondly because no thresholds have been established at which additional mitigation will be implemented or adaptive management taken.

Issue 11: No details have been provided on any off-setting plan for the permanent destruction of riparian and instream habitat.

Issue 12: For bridge design no minimum setback distance is provided for abutments from the edge of river bank/high water mark. Building abutments within the stream bed can constrict flow causing scouring, erosion and sedimentation.

3.1.3 Recommendations

Based on the description of issues provided above, the following are recommendations for improving the EIS. Should the project be approved, it is expected that all of the recommendations below can be accommodated within the approvals and licensing phase.

Issue 1: Collection methods and level of effort for fish community sampling and mussel sampling are unclear. In Appendix 8-1 (page 18) it is stated that:

"Fish sampling was conducted within the study reach to confirm fish presence and in Class 1 streams, to determine species use. Gear type was selected based on site-specific conditions and included backpack electrofishing and gillnetting".

However, there is no summary of collection methods or effort provided. For these reasons it is unclear exactly where, when or how much fish sampling occurred. It is unclear whether any lakes in the area were surveyed. These details are critical for determining the adequacy of baseline sampling. Based on the level of detail supplied, it appears likely that the species diversity has not been adequately surveyed.

Recommendation 1: The fish collection methodology and results must be provided in greater detail. For each site please include the date(s) of collection, type of survey (gillnet versus backpack electrofishing), effort (i.e. length of reach for electrofishing and time in water for gillnets) and results. Mussel collection methods and results must also provide additional details including date(s) of collection, number of ponar grabs and results for each site surveyed.

Recommendation 2: Additional baseline studies are required to capture the variability of the aquatic environment. Failing that, a much more conservative approach should be adopted particularly as it relates to biodiversity and the presence of species at risk.

Recommendation 3: Justification for the use of electrofishing and gill nets should be given in the EIS. Particularly for small bodied fish. Other alternative methods which may have been more appropriate include beach seines, minnow traps, and hoop, fyke, or trap nets (Portt et al, 2006).

Recommendation 4: Connectivity should be verified with field-based assessments. Alternatively, a conservative approach could be taken whereby no barriers to fish passage are assumed.

Recommendation 5: Summary tables for results of baseline studies should be presented which include results for all watercourse crossing locations. Examples of data that should be presented in this format include: fish habitat quality, channel presence/absence, drained area, connectivity classification, watercourse classification, and water quality.

Recommendation 6: Provide an explanation of why benthic invertebrate monitoring was not conducted.

Recommendation 7: Baseline surveys to characterize the physical, chemical and biological environments of lakes within the Study Area are required.

Recommendation 8: DFO guidance for avoiding spring and summer spawning species in the project area suggests no in-stream works occur April 15 – July 15 and September 15 – April 30 (DFO, 2016). Plans should be described for how construction will manage activities so that they avoid work near watercourses during these sensitive windows.

Recommendation 9: Residual effects of clearing for ROW on riparian and instream habitat should be accounted for in assessment of effects and residual effects.

Recommendation 10: Specific programs and parameters that will be monitored should be indicated. Thresholds at which additional mitigation or adaptive management will be triggered should be given.

Recommendation 11: Information on potential offsetting opportunities and activities should be described to compensate for lost and altered fish habitat. A conceptual offsetting plan should be created. This should be planned based on consultation with MMF citizens, government, and draw on documents such as the Proponents Guide to Offsetting (DFO, 2013).

Recommendation 12: Provide details regarding the design of minimum setback for bridge abutments.

3.2 TERRESTRIAL ENVIRONMENT

The following review and comments on the terrestrial environment are based primarily on Chapter 9.0 of the EIS report. Additional resources used for support and as background information include:

- ESRA EIS Chapters: 6.0, 7.0, 13.0, 14.0
- MMF LUOS (include proper reference)
- Appendix 9-1: Wildlife Technical Report
- Appendix 9-2: Vegetation Characterization and Effects Assessment Report
- Appendix 9-3: Botanical and Vegetation Resource Survey Field Report
- Appendix 9-4: Mammal Species List
- Appendix 9-5: Amphibian and Reptile Species List
- Appendix 9-6: Bird Species List
- Appendix 9-7: Terrestrial Species at Risk in the Local Assessment Area
- Appendix 9-8: Breeding Evidence Maps for Selected Bird Species at Risk
- Appendix 9-9: Summary of Potential Construction Effects on Terrestrial Valued Components Prior to Mitigation

- Appendix 9-10: Summary of Potential Operations and Maintenance Effects on Terrestrial Valued Components Prior to Mitigation

3.2.1 Summary of EIS content

The East Side Road Authority P4 project occurs within the Lac Seul Ecoregion, which is part of the Boreal Shield Ecozone (Smith et al. 1998). The project assessment area is largely undeveloped and consists of lakes, rivers, rock outcrops and various forest and wetland communities (i.e., bogs, fens and marshes). The terrestrial environment affected by the Project is generally characterized by black spruce in lowland bog and fen complexes, and jack pine, poplar and white spruce on upland sites.

The linkages between Project activities and the terrestrial environment were evaluated to determine the potential effects of the Project activities on vegetation and wildlife. The spatial extent of the study area for the terrestrial environment was subdivided into three categories and differed between the vegetative environment and the wildlife assessment areas. Spatial boundaries for the wildlife assessment areas were larger than the spatial boundaries for the vegetation assessment areas, to encompass the movements and home ranges of wide ranging species of interest.

Table 4: Assessment areas considered between Project activities and the terrestrial environment.

Study Area	Vegetation Assessment	Wildlife Assessment
Project Footprint (PDA)	The physical space or directly affected area on which the Project components or activities are located. The Project Footprint is the footprint of the proposed Project, which includes the 94.1 km gravel surface road, bridge and culvert crossings, granular borrow areas, new right-of-way, rock quarries and temporary access trails, bridges, camps and staging areas.	The physical space or directly affected area on which the Project components or activities are located. For the terrestrial environment as it relates to wildlife, this area includes the 94.1 km gravel surface road, new right-of-way, bridge and culvert crossings, rock quarries, granular borrow areas and temporary access trails, bridges, staging areas and camps.
Local Assessment Area (LAA)	The area within which Project effects are measurable and extend beyond the Project Footprint. For the vegetation assessment, this area was designated as 1 km on either side of the proposed all-season road, including rock quarries, borrow areas and access routes.	The area within which Project effects are measurable and extend beyond the Project Footprint. For the terrestrial environment as it relates to wildlife, the Local Assessment Area was defined as a 5 km buffer on either side of the proposed all-season road route. This area was selected as it encompasses animal movements in the local area.
Regional Assessment Area (RAA)	The area beyond the LAA, which may be described in terms of administrative boundaries (e.g., municipalities; ecodistricts), within which most indirect and cumulative effects would occur. For	The area beyond the LAA within which most indirect and cumulative Project effects may occur. For the purposes of the environmental assessment of potential regional effects on wildlife, a Regional Assessment Area was selected to encompass the

	vegetation, the Regional Assessment Area was designated as the area within five kilometres on either side of the proposed all-season road route.	majority of the species of interest and their movements in the region. This Regional Assessment Area includes the area contained within 5 km south of Manigotagan, northwards to 5 km north of Poplar River, east to the Manitoba/Ontario border and west to the edge of Lake Winnipeg.

Vegetation: Terrestrial baseline conditions were characterized in the proponents' application by means of field and desktop surveys. The characterization of vegetation included a description of the Ecological Land Classification (ELC), physical environment (including the influence of fire and provincial fire history for the region), landscape level vegetation, local flora and ATK gathered from First Nation communities. Within the RAA, 11 vegetation classes were identified and were comprised mainly of bog and fen complexes including: tall shrub; different types of wetlands, coniferous, broadleaf and mixedwood forests; water; and exposed land. Thirty-six traditionally important plant species with edible, medical, or cultural value to local First Nation communities were identified in the LAA. Vegetation species of traditional importance to Metis peoples were not evaluated or considered.

No species listed by the Manitoba Endangered Species and Ecosystem Act (MBESEA), the federal Species at Risk Act (SARA) or the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) were observed during field investigations. Although 1 lichen species, the flooded jellyskin (*Leptogium rivulare)* is a Species at Risk (Environment Canada 2013) and may occur within the RAA. In addition, 40 species of conservation concern are expected to occur within the vegetation RAA. Of the potential species, four species are ranked very rare (S1) and 15 species are ranked rare (S2) by the Manitoba Conservation Data Centre (MCDC 2015). The remaining species range from S1 to S4 on a subnational basis, but are not globally rare. The most frequently observed species in the vegetation LAA was black spruce, followed by Labrador tea, bunchberry, and velvet-leaved blueberry.

The primary effects of the project on vegetation which were assessed include:

- Loss or alteration of vegetation in the PDA due to clearing vegetation
- Introduction and spread of non-native and invasive plant species during construction, operations and maintenance.
- Loss or impairment of vegetation in the PDA from accidental release of fuels or hazardous substances during construction, operations and maintenance.
- Loss or impairment of desirable plant species in the PDA from herbicide application during construction and maintenance.
- Increased risk of forest fires in the LAA from the accumulation of slash during clearing and construction activities.

Wildlife: The wildlife review was based on a review of historical information, published literature, field surveys, desktop analyses, habitat modelling, collaboration with government agencies and incorporation of ATK by First Nation communities. species of traditional importance to Metis peoples were not evaluated or considered. Wildlife species of traditional importance to Metis peoples were also not evaluated or considered.

Wildlife species and populations in the wildlife LAA reflect species characteristic of boreal forest habitats. A total of 43 mammal species were identified during baseline surveys, a number of which are harvested or trapped by local communities. Four mammal Species at Risk (SAR) were identified to be potentially present in the LAA including: boreal woodland caribou (*Rangifer tarandus*), little brown myotis (*Myotis lucifugus)*, northern myotis (*Myotis septentrionalis*) and wolverine (*Gulo gulo*). In addition, a total of 14 species of herpetiles were documented, one of which is a SAR in the LAA, the common snapping turtle (*Chelydra serpentina*). Lastly, over 220 bird species have the potential to be present in the LAA at varying times of the year, of which two Species of Conservation Concern (SOCC) were observed during baseline surveys: the common nighthawk (Chordeiles minor) and the olive-sided flycatcher (*Contupus cooperi)*.

The primary effects of the project on Wildlife which were assessed include:

- Temporary sensory disturbance which may cause wildlife to be displaced from existing areas of habitat use;
- Loss, alteration or fragmentation or existing habitat
- Increased possibility of vehicle/wildlife collisions;
- Increased mortality or changes in distribution due to changes in hunting access and predation pressures
- Introduction of disease/parasitism

The EIS for P4 used a Valued Ecosystem Components (VECs) approach to assess the effects of the Project on vegetation and wildlife. VECs identified in the terrestrial environment includes vegetation communities, plant species of cultural significance to First Nation communities, ungulates (moose and caribou), furbearers, ecologically sensitive wildlife sites, migratory birds and herpetiles. Effects on the terrestrial environment would occur throughout construction, operation and maintenance phases of the Project. Effects are most likely to occur for wide ranging wildlife species, such as moose and caribou. In addition, the permanent loss of wetland habitats associated with the project footprint, will result in the permanent loss of 317 ha of wetland habitats, and 615 ha of terrestrial habitats.

3.2.2 Evaluation

The Manitoba Metis community have interest in, historic land use, current occupancy and traditional rights associated with the terrestrial environment, including access to these habitats for harvesting, and the quality and availability of medicinal plants and country foods for consumption as part of their

traditional culture and diet. Adverse impacts on these habitat types from the Project has the potential to negatively impact the rights and interests of Metis citizens.

Varying phases of the project will inevitably have a low to moderate impact on the terrestrial environment and wetlands in the LAA, and wildlife in the RAA through the direct destruction of habitat types as they are overprinted by the project and secondary effects such as sensory disturbance and fragmentation effects. As such, some elements of the project continue to remain unresolved from the Manitoba Metis communities' perspective.

Comment 1: Section 2.3 of the EIS Guidelines specifies that in reference to Aboriginal engagement, that the proponent must provide a description and analysis of how changes to the environment caused by the project will affect Aboriginal peoples which includes First Nations and Metis (CEAA 2015). The scope of the assessment presented however does not include consultation and inclusion of Metis values, rights and interests, even though there is demonstrated current and historic Metis occupancy and land use in the RAA (Shared Value Solutions 2016, Figure X). In accordance with the Agency's technical guidance, impacts to traditional rights and interests of local indigenous communities must be considered by the proponent in the terrestrial assessment. The EIS should identify and clearly explain how gaps in the knowledge and understanding of the Manitoba Metis peoples' traditional knowledge and land use would affect conclusions regarding the significance of residual effects (EIS Guidelines, Part 1, Section 4.2).

Comment 2: The current assessment does not consider the residual effects associated with permanent wetland removal from road construction, potential quarries and other associated infrastructure (Table 9.15/9-46). Rather, the effects assessment describes the establishment of vegetation that will be re-established in the RAA along the decommissioned winter road in place of irreversible wetland loss (Table 9.13/9-44). The residual effects should characterize changes in wetland land cover classifications as irreversible, as it has not been proposed that off-sets for these ecosystems will be created, and it is unlikely that the function and community of these ecosystems will return as wetlands. Consequently, the determination of significance as they relate to other criteria (e.g., migratory birds, aquatic mammals, herpetiles, wild rice, weekay) which are dependent on wetlands, may need to be revised.

Comment 3: 2 species of conservation concern were identified, arethusa and one-spike cotton-grass, ranked as rare by the MBCDC, and a stand of older growth jack pine mixed forest, aged at 104 years were identified during field surveys (Appendix 9-3 Botanical and Vegetation Resource Survey Field Report [part 1] 4.4.3/26).

Comment 4: Vegetation baseline sampling was only conducted over a 7-day period (June 12-18) over one year (2015). Baseline sampling was not conducted multi-seasonally (i.e., summer, fall) or annually which would provide a more comprehensive assessment of potential impacts to native vegetative species and country foods (Appendix 9-3 Botanical and Vegetation Resource Survey Field Report [part 2] no section/5).

Figure 3: Manitoba Metis Traditional Ecological Knowledge, Mammal Harvesting and Vegetation Gathering within the Regional Assessment Area of the ESRA P4 Project.

Comment 5: The cumulative affects assessment for Boreal Woodland Caribou is only negligibly below (34.3% - 34.7%) the disturbance threshold of 35% identified by Environment Canada (2012) when All-Season Roads were included in the Habitat Disturbance Calculation for 2015-2025. While we appreciate the efforts taken, given the unpredictable nature of fires and that they are expected to be the largest contributor of disturbance, that caution and long-term monitoring/follow-up studies (13.6/13-17) for this species should continue for the Atikaki-Berens Management Unit (13.3.3/13-15). The limitations on the degree of anthropogenic disturbance allotted within this designation area should be an important factor of consideration for potential future cumulative effects on caribou**.**

Comment 6: We appreciate ESRA's proposal and commitment to the restoration, re-vegetation and re-naturalization of its construction areas with native plant species. However, there is little detail provided for the follow-up inspection and reporting on the success of restoration/remedial work. Therefore, we cannot adequately review ESRA's re-vegetation strategy and potential success (Appendix 3-6: ESRA's Native Seed Mix for Revegetation 1.1.0/4).

Comment 7: It is identified in GR 130.19 that no construction is to occur within 100m of an eagles' nest, heron rookery or other sensitive wildlife area without prior approval from the Contract Administrator and ESRA (Appendix 5-4: ESRA's GR130s Environmental Protection Specifications GR130.19 Wildlife/21)**.**

Comment 8: Chapter 14 identifies general monitoring and follow-up programs, and Appendix 5-2: Framework for ESRA's Environmental Management Plan refers to a Wildlife Monitoring Plan (Appendix G-Part B) (2.6.4/12). There is no Appendix G identified in the list of EIS documents for Project 4 – All-Season Road on the CEAA registry. Chapter 14 identifies general follow-up and monitoring studies that will be implemented for Caribou, Moose and Furbearers, but specific applicability to migratory birds and avian species of cultural importance (e.g., Bald Eagle) is not specified. Monitoring and follow-up programs pertaining to migratory birds and other species of cultural importance should also be described to provide clarity on the appropriateness and effectiveness of proposed measures.

Comment 9: Critical Habitat for Flooded Jellyskin lichen is defined in the Recovery Strategy (Environment Canada 2013), although it is not understood how it was evaluated or considered in the EIS as per the requirement outlined in Section 79 of the Species at Risk Act (SARA)**.**

Comment 10: Project description does not provide details on the rate of traffic during construction and the operations have of the project.

3.2.3 Recommendations

We provide a number of recommendations with what we understand to be important to and required by the Manitoba Metis community to understand the extent to which their rights, values and interests are impacted by the proposed Eastern Side Road Authority P4 project.

Recommendation 1a: Review the Technical Guidance for Assessing the Current Use of Lands and Resources for Traditional Purposes under the Canadian Environmental Assessment Act, 2012. For all Aboriginal requirements, the EIS should include the Manitoba Metis community as a potentially affected Aboriginal group (EIS Guidelines, Part 2, Section 5.1). Ensure that all Manitoba Metis Traditional Land Use relevant to Project 4 is considered and integrated throughout the EIS.

Recommendation 1b: Provide a description and analysis of how expected changes to the terrestrial environment as a result of the Project, will affect traditional land use for Metis peoples, including impacts on hunting, trapping and gathering activities.

Recommendation 2a: Provide a revised assessment of change in wetland function and connectivity that identifies and describes the irreversible loss of wetlands anticipated from the project. Include the permanent loss of wetlands associated with the road development, potential quarries, and ancillary facilities such as camps and access roads.

Recommendation 2b: Include maps and a description to explain all existing and proposed quarry sites, camps and access roads.

Recommendation 3: Describe why these species of conservation concern, and why the old-growth forest community type was not carried forward in the effects assessment.

Recommendation 4: Conduct multi-season (summer, fall) baseline terrestrial surveys so as to provide a comprehensive measure of site characteristics and an accurate representation of the site community potentially affected by the Project.

Recommendation 5: Take a cautionary approach to long-term monitoring and potential cumulative impacts of future projects on the Boreal Woodland Caribou population in the Atikaki-Berens Management Unit.

Recommendation 6a: Consider incorporating floral species into the proposed native grass seed mix which would enhance habitat/forage for other wildlife species, particularly for pollinators (Appendix 3-6: ESRA's Native Seed Mix for Revegetation).

Recommendation 6b: Undertake targeted consultation with Metis community members for the revegetation of the P4 roadside, and the decommissioning of the winter road to support traditional land-use as quickly as is feasible.

Recommendation 6c: Pursue opportunities to build Metis capacity and knowledge in the reclamation, monitoring and management of the Project.

Recommendation 7: Provide examples under what expected scenarios that approval would be given by the Contract Administrator and ESRA for which construction may resume within the 100m set-back distances.

Recommendation 8a: Describe the monitoring and follow-up programs for potential effects to migratory birds and wildlife species of cultural significance, including objectives and any monitoring

measures (i.e., thresholds) that will be implemented to verify the predictions of effects and evaluate the effectiveness of the proposed mitigation measures. If follow-up programs and management plans are not required, please provide reasoning.

Recommendation 8b: Provide solid commitments as to which mitigation measures will be implemented and the decision making criteria for selecting a particular mitigation measure. Mitigation measures presented in Chapter 14 of the EIS uses non-specific language and describes measures to be employed 'as needed'.

Recommendation 9: Describe associated critical habitat for Flooded Jellyskin as per the requirement outlined in Section 79 of the Species at Risk Act (SARA). Based on the identification of critical habitat in the recovery strategy, conduct habitat suitability modelling to assess the potential impacts of project related effects on species occurrences and the extant population. Section 79 of the SARA requires that all adverse effects be identified and that measures be taken to avoid or lessen those effects and monitor them. Associated measures should be considered in a way that is applicable to the recovery strategy.

Recommendation 10: Provide the Manitoba Metis community with expected vehicular traffic estimates for the construction phase of the project, and predictions of traffic volume during the operations phase of the project.

3.3 SOCIO-ECONOMIC AND CULTURAL

3.3.1 Summary of EIS Content

The socio-economics and culture study area of the ESRA P4 EIS (Ch.10) includes:

- Berens River First Nation, the Berens River Northern Affairs Community (NAC) and Poplar River First Nation in the Local Assessment Area (LAA); and
- Bloodvein First Nation; Little Grand Rapids First Nation; Little Grand Rapids Northern Affairs Community; and Pauingassi First Nation in the Regional Assessment Area (RAA); and
- Other Northern Affairs communities (NAC) such as Princess Harbour and Little Grand Rapids.

The socio-economic and cultural baseline conditions describe standard socio-economic data sets derived by Statistics Canada 2010 Census however focuses exclusively on the communities of Berens River First Nation, the Berens River Northern Affairs Community (NAC) and Poplar River First Nation.

The sections on traditional knowledge and land use reflect the First Nation social, economic and cultural ties to the land with a primary focus on these values held by the Berens First Nation and the Poplar River First Nation.

There were five valued components (VCs) selected upon which to conduct the effects assessment of socio-economic and cultural values:

1. Tourism
2. Hunting, trapping, fishing and gathering
3. Travel routes
4. Culture, heritage, and archaeological resources
5. Human health and safety

The effects assessment identified the following seven areas of effects on socio-economic and cultural values:

1. Tourism
2. Recreational hunting
3. Commercial fishing and trapping
4. Traditional hunting, trapping, fishing and gathering
5. Travel routes
6. Cultural, heritage and archeological resources
7. Human health and safety

Tourism effects: are predicted to include adverse effects during construction: a temporary decrease in interest and access to tourism and recreational areas in the LAA (with mitigations, the residual effects are predicted to be low in magnitude). During operations, predicted positive effects include an increase in tourism to the RAA and a potential adverse effect of reduced waterways for access (however no residual effect is predicated after mitigations).

Hunting, trapping, fishing and gathering: there are eight potential effects identified that will affect these values as a result of wildlife and habitat disturbance during construction:

1. Reduced hunting success for traditional resources
2. Reduced licensed hunting effects
3. Reduced commercial and traditional use trapping success
4. Reduced land access to hunting, trapping, fishing and gathering resource use areas
5. Reduced access to major waterways associated with fishing activities
6. Loss or impairment of areas for berry picking and cultural/medicinal plant gatherings

A comprehensive list of mitigations are proposed to address these effects and in turn, all effects are described as temporary and not significant (see page 10-57).

Overall, the EIS states that effects will be avoided or reduced to a minimum on these values during construction as a result of First Nations (Berens and Poplar River) input into the routing design, buffer zones, access route management and site remediation using native plants and seeds.

During the operations and maintenance of the road, there are three positive effects identified related to increased access to harvesting areas. Two negative effects include a decreased in traditional harvesting success due to an increase in no-resident hunting pressure increases and impeded access to waterways due to water crossings.

Travel routes: an adverse effect of reduced access to land and waterway travel routes was identified for the construction phase. After mitigations (e.g. community engagement, detours, and special provisions) temporary or limited reduced access was identified (low level effect).

During operation and maintenance, two effects were identified as being low level and included:

1. Temporary blockage of access to land and waterway travel routes traversed by the proposed all-season road route in the LAA during maintenance activities; and
2. Temporary disruption of traditional land and resource use activities due to blockage of access to travel routes bisected by the Project during maintenance activities

The EIS states that with mitigations implemented (see Table 10.13), substantial changes to travel routes in the LAA are not likely.

Culture, heritage and archeological resources: loss and damage of known and unknown cultural, heritage and archaeological sites and objects in the LAA is the one adverse effect identified for construction. This is predicted to be 'low in effect' as route design has avoided disturbance to known values in the area. After mitigations (see Table 10.14) no residual effects are predicted. No effects are predicted during operations and maintenance.

Human health and safety: there are two aspects of health and safety effects considered in the EIS:

1. To workers, from working heavy machinery and equipment during construction in a remote area away from medical facilities; and
2. To community members, from potential issues related to using the lands and effects to drinking water quality, air quality, or noise exposure levels as a result of construction related activities and ecological interactions.

Key activities that may trigger these effects through release of air borne and deleterious substances to watercourses range from blasting, equipment and camp staging, site clearing, vehicle use, to accidents and malfunctions.

Changes in the quality of wild foods consumed by harvesters and community members may also be experienced as a result of Project construction and operations and maintenance activities.

After mitigations (as described in chapters addressing wildlife, fish, air quality, water quality, noise, and accidents and malfunctions), the effects assessment identifies no residual or 'significant' effects as each indirect effect considered, on their own, are deemed 'low risk' and 'low level'.

During operations, two negative potential effects were identified:

1. Increased risk to health and safety of all-season road users and trail users from accidents and collisions due to: road, ditch, culvert and bridge maintenance activities and snow clearing activities
2. Increased risk to health of community members due to: changes in drinking water quality; changes in air quality; changes in noise exposure; and changes in the availability or quality of country foods.

One positive effect to health and safety of people in the region was identified and entailed improvement to the health and safety of road and trail users due to the decommissioning of the existing winter road, removal of ice crossings and provision of alternative to summer water travel via fishing boats.

3.3.2 Evaluation

Lack of accurate Manitoba Metis representation: social, economic and cultural interests

In general, the ESRA socio-economic and cultural effects assessment provides a substantive overview of potential direct and indirect effects on socio-economic values as a result of project interactions with the bio-physical environment. There are several references to the Metis community members that occupy and/or use the lands and resources within the study area (from the MMF 2011 TKLU study conducted for P1) however the EIS does not fully reflect the MMF or Manitoba Metis communities' socio-economic existing baseline conditions as they relate to this phase and segment of the ESRA project in terms of geographic area, values, and interests.

The information about the Metis that is referred to in the baseline sections does not carry forward into the assessment of socio-economic and cultural effects on the diverse populations that live on and use the lands surrounding the P4 project study area, in particular, consideration of land disturbance related socio-economic effects to Metis land users and residents in the LAA and the RAA.

For instance, in the 2016 MLOUS Report conducted by the MMF (included in Appendix C of this report), 23 areas of economic significance were identified: 12 trapping; six commercial fishing; three gathering (two wild rice and one blueberries); one cultural site; and one hunting site. Ten Metis individuals have economic dependencies that are tied to the land from land use supplemental income generating activities. Overall, the 2016 study indicates a strong socio-economic connection between Metis people and the land through which the proposed P4 segment of the road is being developed. These interests and implications of effects on these socio-economic interests as a result of the road's construction and operations phases are not discussed nor assessed.

Missing Socio-economic and Cultural Valued Components, Indicators and Social Project Interactions

Also lacking from the effects assessment from the MMF's perspective is an analysis of potential economic effects beyond the ones discussed that focus exclusively on tourism. Economic indicators of interest include employment and income, and economic development as it relates to revenue generation potential through increased demand in goods and services required to build and operate the road, and business development to service road users.

There is an overall lack of analysis of potential positive effects/benefits and in turn, proposed socio-economic enhancement measures to ensure that socio-economic benefits are realized by communities impacted by the road, in particular, the Metis.

The source of this omission is a methodological issue and related to the value components (VCs) selected as well as the project activities selected for interaction consideration. Missing in the socio-economics and cultural effects assessment methodology is consideration of human and social project component interactions with socio-economic and cultural VCs. Currently, the project activities identified include exclusively physical aspects of the project's development during construction and operations (i.e., the activities that cause land disturbance and bio-physical environmental impacts). In order to adequately capture the social and economic effects that support cultural and community well-being, human and social aspects of the project are the needed relevant components to consider in the context of socio-economic impacts assessments. This would include:

1. Human resources: employment and training (increase in local jobs and skills development (positive effects); increase in transient non-resident workers in local communities (negative social effects)
2. Capital expenditures: income and revenue (increased spending from workers' individual income and revenue generated by suppliers of goods and services to support the road's development and operations (positive effects)

Economic implications of the proposed P4 project are of both concern and interest to the Metis however they reflect other socio-economic indicators beyond tourism – such as impacts to subsistence economy as a result of the new road breaking up hunting, trapping and fishing grounds and increase access to these harvesting areas because of the new road. Other Metis economic interests not considered through the effects assessment include employment and income generated through the construction, operations and potential for business development connected to the road.

The rationale for the selecting the second VC (Hunting, trapping, fishing and gathering) for the effects assessment states: "First Nations' rights to hunting and fishing are protected under Treaty No. 5 (Government of Canada 2013)" (page 10-44); however, this does not reference Metis rights to these same land use activities.

Furthermore, the rationale for selecting human health and safety as a VC is exclusively based on CEA guidelines (indicating) "… that the EIA should describe how changes to the environment potentially caused by the Project will affect human health "(page 10-45). This VC is critical for the Metis, yet does not reflect broader values related to health and wellbeing that are not necessarily directly land related, such as existing health and social issues facing the Metis communities in the region, access to health and social services and how these aspects of the Metis population health will change as a result of the project (either as adverse effects or positive effects).

Erroneous assumptions and missing information on Metis land use and other socio-economic interests

When referring to the Metis, certain aspects of land use and socio-economic connections to the land are acknowledged in the EIS. However, the minimal acknowledgement of these connections is not carried forward into the effects assessment. Moreover, incorrect statements and assumptions have been made regarding the applicability of information gathered from the MMF's 2011 TK and Land Use study regarding Metis traditional knowledge and land use in the wider ESRA study areas, and does not reflect the Metis land use values as described in the 2016 MLUOS Report Study Area which encompasses the road's construction zone and includes a 25km buffer to the north and south. It is bound on the west by Lake Winnipeg and the Manitoba/Ontario Provincial boundary to the east. Although land uses were concentrated toward the southern boundary of the ESRA Study Area, there is a fair amount of fishing and hunting activity by MMF citizens in the areas north of Manigotagan up to Seymourville, Bloodvein, Berens River and Poplar River, as well as a fair amount east of Manigotagan toward Bissett and beyond to the Manitoba / Ontario border.

To illustrate how the extent to which Metis socio-economic and cultural ties to the land were not fully reflected within the ESRA EIS, the following summarizes the results of the MMF's MLOUS Report. These examples are based on only a small sample of the Metis population in the area yet are indicative of the breadth and far reaching socio-economic and cultural ties to contemporary Metis land uses surrounding the project:

1. Hunting: 318 Metis hunting spots were mapped within in the ESRA Study Area
2. Trapping: 16 Metis trapping locations were mapped in the ESRA Study Area
3. Gathering: 118 Metis plant and natural material gathering locations were mapped in the ESRA Study Area
4. Fishing: 122 Metis fishing locations were mapped within the ESRA Study Area
5. Travel and Occupancy: A total of 29 Metis routes and 60 Metis overnight locations were mapped within the ESRA Project Study Area.
6. Cultural, heritage and archaeological resources: 41 locations of cultural importance to the Metis were mapped within the ESRA Study Area.

Metis socio-economic concerns and interests

The EIS did not fully capture the extent of the Metis' socio-economic concerns and interests. For example, the most frequent economic activities that Métis community members reported in the 2016 MLOUS Report included the management of a cultural or occupancy-related business, trapping, and commercial fishing. Some Metis citizens expressed that they use harvested wild foods to help decrease the amount of money that they spend on groceries. Some of these participants also said that they prefer harvested wild foods because they felt they were healthier for themselves and their families. Harvested wild foods were also a convenience factor for some participants, as it decreased the number of times that they had to visit the grocery store. Participant's economy, overall feeling of well-being, and perceptions of health were expressed as being connected to the consumption and harvesting of wild foods.

In addition to the information gaps in the ESRA EIS described above, concerns and interests specifically concerning socio-economic values and interests, Metis community members – in the 2016 TK and Land Use Study – have expressed numerous concerns and interests that are not considered within the EIS such as any impacts form the project that would alter or harm the socio-economic well-being of the Metis people. Some of the MLOUS study participants highlighted the permanent nature of the effects this project will have, not only on the land, but on the Metis people. One of the most common themes expressed by study participants was how the construction of the road could potentially lead to increased traffic and use of the area for a variety of purposes including tourism and harvesting. The potential for pollution and drugs to be brought in to the area more readily was also mentioned as a concern. This confirms the need for socio-economic VCs and indicators that reflect a wider definition of "health and wellbeing" in the effects assessment process.

3.3.3 Recommendations

Given the demonstrated historic and current Metis occupancy, land use and socio-economic and cultural connection to the ESRA study area as a place of 'Metis community' and given that a relatively large number of Metis people supplement their income through land use activities in the area and impacts to the environment could impact the economy of the Metis community, the impacts to Metis from a land use and socio-economic perspective must be considered in depth by ESRA.

There are three general categories of recommendations for addressing Metis socio-economic and cultural issues and opportunities as result of this review. These include: issues pertaining to additional information being required to fully capture the Metis community's specific values and interests (both those socio-economic values that are tied to the land and those that reflect non-land based values); the effects assessment methodology; and socio-economic mitigation, management, monitoring and/or enhancement.

1) Socio-economic baseline information required to assess effects on Metis citizen

It is suggested that additional up to date information be included regarding the Metis's currently existing social, economic, cultural and health conditions in the ESRA study area. Additionally, a description of what interests or initiatives that the Metis have in the region surrounding the project. For instance, in addition to specific social and health concerns, a description of the various economic and commercial interests the Metis have in relation to the ESRA project's activities to capture both the potential negative and potential positive effects on these interests.

In regards to land and resource related socio-economic values, the Manitoba Metis, as illustrated in its *Metis Land Use and Occupancy Study Report* (Shared Value Solutions, 2016), have a wide range of social, economic and cultural interests to protect and promote. As such, when referring to land and resource uses within and around the ESRA study area, it is imperative that baseline information and assessment of effects specifically on the Metis's direct and indirect land and resource use activities in the project's PDA, LAA and RAA are referred to (e.g., hunting, trapping, fishing, guide outfitting, plant/berry harvesting and socio-cultural significant areas for camping and events).

2) Effects assessment methodology

Consideration and assessment of socio-economic and cultural implications of predicted effects of the project's activities on land and resource access and use in the PDA, LAA and RAA in relation to Metis interests is required.

Supporting this requirement is the need for valued components and indicators to be used in the assessment of effects that capture the broader values of economic resilience and community health and wellbeing as espoused by the Metis (as described in the sections above).

A key interest for the Metis is sustainable community economic development and part of the MMF's sustainability criteria is having a means to ensure that all short, medium and long term economic benefits are realized as a result of the Project's development through meaningful involvement and consultation regarding the socio-economic aspects of the project.

3) Socio-economic mitigation, management, monitoring and/or enhancement measures

It is suggested that specific terms be included within the framework of a **socio-economic management or monitoring plan** that evaluates long term socio-economic and community well-being indicator changes including Metis employment workforce representation; economic development; socio-cultural changes within the community; and any other indicators as identified by MMF representatives.

To ensure that such a plan is designed in a way that is relevant and accountable, a **community advisory committee** made up of community partner representatives including those from the MMF is

recommended to guide decision making concerning the long term socio-economic monitoring of the project throughout construction and operations.

Similar to the environmental mitigation and management plans included in the EIS, a management and monitoring plan for the social, economic and cultural effect indicators need to be accounted for regardless of whether effects were found to be "significant" or not. Significance in the context of the EIS exclusively considers adverse (mostly environmental) effects however the proponent's commitment to social responsibility requires tracking in order to meet the socio-economic aspects of the “contribution to sustainability” test applied in other federal EAs such as:

- Economic costs and benefits – Does the Project provide net economic benefits to the Metis people of Manitoba?
- Social and cultural costs and benefits – Does the Project contribute to community and social well-being of all potentially affected people? Is it compatible with their cultural interests and aspirations?
- Fair distribution of costs and benefits – Are the benefits and costs of development fairly distributed among potentially affected people and interests?
- Present versus future generations – Does the Project succeed in providing economic and social benefits now without compromising the ability of future generations to benefit from the environment and natural resources in the Project area?
- The extent to which the Project makes a positive overall contribution towards the attainment of ecological and community sustainability, at both the local and regional levels;
- The effort made to enhance positive effects of the Project on the physical, biological and human environment, as well as mitigation of adverse effects; and
- How the planning, design and operation of the Project will strengthen local and regional capacities and opportunities to achieve a sustainable future.

Without specific socio-economic indicators, identification of target communities, and an accountability mechanism, potential socio-economic benefits generated by the Project's activities may not be realized by certain communities.

3.4 OTHER RELEVANT EIS SECTIONS

We reviewed other sections of the EIS which we deemed to be relevant to this review, but which addressed topics for which there is the potential for perhaps less direct or certain effects on MMF from the P4 Project. These include:

- Physical environment- with a focus on water quality and hydrology

- Effects of the Environment on the Project- which deals with potential extreme or lower probability natural events which may indirectly cause a partial or complete failure of project works that leads to environmental effects.
- Accidents and Malfunctions- with a focus on potential spills to surface water, and explosions or fires due to the project which may impact Metis land-use, health and safety, or socioeconomic conditions. The Environmental Protection and Sustainable Development section was also reviewed to understand how environmental protection and emergency response planning might address accident and malfunction potential and response.

3.4.1 Evaluation

Physical Environment- Water Quality and Hydrology

There is a connection between potential changes to the quality of surface water and/or the alteration of natural drainage patterns as a result of the project, and effects on Metis rights and interests due to fishing and drinking water uses of surface water in the project study areas. We have therefore focused on matters which may effect these aspects of the physical environment, and have the following comments:

Issue 1- Hydrological baseline data is virtually nonexistent for major waterbodies and no predictive modeling or inferential studies of watershed hydrology or ice jam potential based on historic data or future climate change scenarios appears to have been conducted. This makes it difficult to understand whether conceptual major watercourse crossing designs are adequate and appropriate, and to in turn understand whether these designs are likely to avoid environmental effects on erosion and scour potential as a mitigation strategy. This also has implications for the pre-mitigation effects screening process shown in Appendix 7-1 in that the magnitude and frequency ratings assigned do not appear to be based on adequate baseline data.

Issue 2- The Berens River Northern Affairs Community (NAC) drinking water source is listed as being on Lake Winnipeg yet is located at the mouth of the Berens River at Lake Winnipeg. There are two treatment plants on the north and south side of the mouth of the river. This is important with respect to the potential for water quality impairments as a result of the road to effect drinking water for Metis people living in the Berens River NAC.

Issue 3- Soil erosion potential was not discussed at all in the physical environment section, either in the effects assessment or the existing environment subsections. Soil erosion potential within the runoff catchments of fish bearing water crossings should be assessed to inform construction-based and permanent water quality effects mitigation and design-based effects avoidance measures. It should also inform the assessment of potential effects on water quality during both construction but also chronically during the operations and maintenance phase.

Effects of the Environment on the Project

Failure of road infrastructure at water crossings due to floods or ice jams is a concern for effects on downstream uses by MMF citizens. Road and bridge washouts or scouring by major ice jams may effect water quality and aquatic resources, or may cause traffic accidents leading to spills to water or affecting the safety of MMF citizens using the road.

1. Issue 1 listed above is also equally applicable for the appropriate design of water crossing infrastructure to pass plausible extreme events within the long intended lifespan of the project under future climate change-driven flood scenarios.

Accidents and Malfunctions

Potential spills to surface water, and explosions or fires due to the project have the potential to impact Metis land-use, health and safety, or socioeconomic conditions. These effects may arise during both the construction phase and operations and maintenance phases.

Issue 4- Beyond the requirements of meeting provincial or federal standards for hazardous goods transportation, there is no clear mitigation, avoidance, or monitoring/inspection strategies for how the proponent will ensure fuels, lubricants, other hydrocarbons, herbicides, and explosives will be transported during construction and operations and maintenance phases to minimize the potential for spills and explosions.

Issue 5- Traffic rate predictions by traffic type are not included in the EIS as an evidence basis for assessing the risk of accidents which may lead to spills, fires, or explosions during the construction or operations and maintenance phases, and therefore the requirement for mitigation and monitoring or inspection.

Issue 6- There are no clear mitigation measures or commitments to ensure appropriate setbacks of construction staging areas from watercourses/waterbodies, nor to the use of environmentally friendly hydraulic fluids in heavy construction machinery when working around water during the construction phase.

Issue 7- The Project Description section of the EIS suggests that only mechanical vegetation management will be used to manage vegetation during the operations and maintenance phase of the project, while in the Accidents and Malfunctions section of the EIS a mention is made of the limited use of herbicides. No details are provided on the timing of such use, its application relative to waterbodies/watercourses, and the appropriate transportation/storage/handling of herbicides including in any construction staging areas (if used while such areas are still in operation).

Issue 8- There is no indication that security personnel will be stationed at construction staging areas to ensure that accidents and malfunctions, especially fires or explosions related to the storage of explosives, do not occur.

Issue 9- The Environmental Protection and Sustainable Development section of the EIS has few details aside from committing to the development of construction and operations phase Environmental Management and Protection Plans and related procedures. It does not provide an adequate level of detail on specific plan measures in order to determine whether key risks of accidents and malfunctions occurring near water or causing fires or explosions which may affect MMF rights and interests will be effective.

Other

Issue 10- The P4 Project is very likely to enable and facilitate other development in the RAA over time, potentially leading to cumulative (in this case, additive) environmental effects on terrestrial and aquatic environments, and MMF rights and interests. While the nature, magnitude, and distribution of such development is very difficult to predict, it is important that MMF have an influential role in how such development occurs in the area due to the potential for impacts on its rights and interests.

3.4.2 Recommendations

The following recommendations are intended to address the issues outlined above:

Recommendation 1- Conduct additional baseline studies or predictive modeling to characterize and assess the potential for periodic and/or climate change-induced precipitation or snowmelt/ice breakup to generate significant flooding or ice jams which may imperil the road and watercrossing infrastructure at watercrossings, or may require design modifications to minimize the likelihood of ice scour, ice jams, or increased erosion potential. Incorporate this characterization and assessment into the effects assessment, impact management, significance determination, and follow-up program planning of the EIS in both the Physical Environment and Effects of the Environment on the Project sections.

Recommendation 2- Correct information about the Berens River NAC water supply location and incorporate implications for the effects assessment and impact and risk management into the EIS.

Recommendation 3- Characterize and assess soil erosion protection within the runoff catchments for the road of all fish-bearing streams, and incorporate this into the effects assessment, impact management, significance determination and follow-up program aspects of the Physical Environment (surface water) and Aquatic Environment sections of the EIS for both construction and operations and maintenance phases of the project.

Recommendation 4- Provide clear and specific mitigation, avoidance, or monitoring/inspection strategies for how the proponent will ensure fuels, lubricants, other hydrocarbons, herbicides, and explosives will be transported during construction and operations and maintenance phases within the project RAA to minimize the potential for spills and explosions.

Recommendation 5- Provide appropriate and defensible evidence-based traffic rates by traffic type and incorporate these estimates into a risk assessment for accidents and malfunctions leading to significant spills, explosions, or fires within the project LAA during both construction and operations and maintenance phases of the project.

Recommendation 6- The proponent should commit to ensuring 120m setbacks of construction staging areas from all waterbodies/watercourses, and to requiring the use of environmentally friendly, biodegradable hydraulic fluids in all contractors' construction equipment working within 30m of a fish-bearing waterbody/watercourse.

Recommendation 7- The proponent should commit to the use of mechanical vegetation management methods only in the ROW.

Recommendation 8- The proponent should commit to the use of security personnel at all explosive storage areas during the construction phase.

Recommendation 9- The proponent should commit to providing MMF detailed information about environmental management, protection, and inspection plans and procedures prior to the completion of the design phase and before construction begin on the P4 Project, and consulting with MMF about the adequacy of such plans and procedures in protecting MMF's rights and interests. Alternately, MMF should request that the regulator ensure this is a condition on the approval of the federal EA.

Recommendation 10- Manitoba and Canada should commit to meaningfully consulting and involving MMF in future planning, licensing, and monitoring of development in the RAA, and providing an ongoing and influential role in this capacity.

4.0 SUMMARY AND RECOMMENDATIONS

4.1 SUMMARY OF FINDINGS

We have conducted a focused review of the P4 Project EIS based on our understanding of MMF rights and interests, and potential project interactions with the environment that may lead to effects on MMF's rights and interests as described in Section 3.0 of this report. In our review, we have provided 36 specific comments on the P4 Project EIS, and related recommendations to address them in the areas of the aquatic environment, terrestrial environment, socioeconomic and cultural environment, physical environment (water), effects of the environment on the project, and accidents and malfunctions. These comments have focused on all aspects of the EA process including baseline studies and scoping, the effects assessment, impact management measures, significance determination, and follow-up. In general, we have identified inadequacies with respect to baseline studies, failure to appropriately consider and include Metis people and effects on Metis rights and interests, insufficient information to

support mitigation and effects assessment results, and insufficient environmental protection planning and follow-up program information to understand the role these systems will play a supporting role in avoiding, mitigating, and monitoring environmental effects.

4.2 RECOMMENDATIONS

We put forward the following recommendations as potential means of addressing issues/comments raised in our review:

1. Establishing a forum and process with Manitoba and Canada where issues regarding the Project can be brought forward, discussed, and addressed throughout the life of the Project (including the provision of capacity funding to MMF to support this process).
    - The first deliverable of such an arrangement could be the resolution of issues raised this report, and the development of a list of environmental and socioeconomic commitments to MMF in relation to the project which could be included in the EIS.
2. Manitoba and Canada should get on with the work of direct, meaningful consultation with MMF to ensure that its legitimate concerns are understood and reflected in the Project EIS. This should include a plan for enhanced and ongoing engagement and consultation with Metis citizens for the construction and operations of the project, in addition to the decommissioning of the winter road. An annual report should be submitted to MMF which summarizes the implementation and results of consultation and engagement activities.
3. Manitoba and Canada should engage with MMF with the view to concluding an agreement that would ensure the Project provides a net economic benefit to the Manitoba Metis Community, as it has done for other Aboriginal communities in the region.
4. MMF and the proponent should develop agreements to support MMF's participation in environmental and cultural monitoring and reclamation of the winter road throughout the life of the project. This may also require:
    - Training, involvement, employment of MMF environmental and cultural monitors for all phases of the project;
    - Involvement in emergency preparedness planning and appropriate notifications and consultations in the event of a significant accident or malfunction.
5. Manitoba and Canada should commit to meaningfully consulting and involving MMF in future planning, decision making, licensing, and monitoring of developments that were enabled or encouraged by the Project—in particular in the RAA for the P4 project. Manitoba and Canada should provide the MMF an ongoing and influential role in this regard.

5.0 REFERENCES

Bond, W.K., Cox, K.W., Herberlein, T., Manning, E.W., Witty, D.R., and You, D.A. (1992). Wetland evaluation guide issues paper, no. 1992 – 1. Retrieved from www.env.gov.bc.ca/wld/documents/WEG_Oct2002_s.pdf

Canadian Environmental Assessment Agency (CEAA). (2015). Guidelines for the preparation of an environmental impact statement. Project 4 – All-season Road Connecting Berens River and Poplar River First Nation Manitoba Floodway and East Side Road Authority. Retrieved from http://www.ceaa-acee.gc.ca/050/document-eng.cfm?document=101260#_Toc415043243

Ducks Unlimited Canada. (2015). Field guide of boreal wetland classes in the Boreal Plans Ecozone of Canada [online version]. Retrieved from http://www.ducks.ca/resources/industry/field-guide-of-boreal-wetland-classes-in-the-boreal-plans-ecozone-of-canada/

Environment Canada. (2012). *Recovery strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada.* Retrieved from http://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_caribou_boreal_caribou_0912_e1.pdf

Environment Canada. (2013). Recovery Strategy for the Flooded Jellyskin Lichen (Leptogium rivulare) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. iv + 23 pp.

Fisheries and Oceans (DFO). 2013. Fisheries Productivity Investment Policy: A Proponents Guide to Offsetting. Published by Ecosystem Programs Policy. Fisheries and Oceans Canada. Catalogue Number: Fs23-596/2013E-PDF. ISBN: 978-1-100-22930-0.DFO/13-1905.

Fisheries and Oceans (DFO). (2016). Manitoba restricted activity timing windows for the protection of fish and fish habitat. Retrieved from http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/mb-eng.html

Foster, C., Hamel, C., and Reimer, E. (2004). Occurrences of rare and uncommon calcareous wetland plants surveyed by the Manitoba Conservation Data Centre in 2003. Retrieved from www.gov.mb.ca/conservation/cdc/pdf/rarespecies_survey_2005.pdf

Goldborough, L.G. (2015). The ecology of coastal wetlands around Lake Winnipeg and vegetation loss in Netley – Libau Marsh. Retrieved from http://www.cecmanitoba.ca/resources/hearings/33/Ecology%20of%Coastal%20Wetlands,%20Goldsborough%202151.pdf

Halsey, L., Vitt, D., & Zoltai, S. (1997). Climatic and physiographic controls on wetland type and distribution in Manitoba, Canada. *Wetlands*, *17*(2), 243-262.

Manitoba Conservation Data Centre (MCDC). (2015). Occurrence of species by ecoregion: Lac Seul Upland. Retrieved from http://www.gov.mb.ca/conservation/cdc/ecoreg/lacseul.html

Portt, C.B., G.A. Coker, D.L. Ming, and R.G. Randall. 2006. A review of fish sampling methods commonly used in Canadian freshwater habitats. Can. Tech. Rep. Fish. Aquat. Sci. 2604 p.

Shared Value Solutions. (2016). Manitoba Metis Land Use and Occupancy Study for the East Side Road Authority Project (May, 2016). Produced for the Manitoba Metis Federation.

Shared Value Solutions

APPENDIX A - REVIEW TEAM CVS

Shared Value Solutions

Professional History

Shared Value Solutions Ltd.
Managing Partner,
Guelph, ON
2012-present

AECOM
Senior Consultant
Consultation and
Communications
Guelph, ON
2012

AECOM
Consultation and
Communications Specialist
Guelph, ON
2009 - 2011

University of Guelph
Project Manager/Researcher
Guelph, ON
2008- 2009

Environment Canada
Restoration Programs Officer
Burlington, ON
2001 to 2007

Nadina Community
Futures/Fisheries and
Oceans Canada
Watershed Stewardship
Coordinator
Smithers, BC
1999 to 2000

British Columbia
Conservation Foundation
Project Leader
Smithers, BC
1997 to 1999

Academic Training

M.Sc. Rural Planning and
Development (OPPI-certified).
University of Guelph
2009

B.Sc. (HONS.), Environmental
Science/Physical Geography
Trent University
1996

Scott Mackay, M.Sc., RPP, MCIP
Managing Partner, Shared Value Solutions Ltd.

Summary

Scott is a senior consultant, and is the CEO and CFO of Shared Value Solutions Ltd. As a Registered Professional Planner, and with 17 years of diverse professional experience, he has established a strong environment and natural resource planning and management practice serving governments, Aboriginal communities, and progressive private sector clients. Scott is adept at engaging and advising multi-disciplinary technical and engineering teams, communities, and government decision-makers about complex environmental issues, and decisions about how to respond to or address them. These issues have included cleanup of the Great Lakes, climate change and water management along significant waterways, management of nuclear waste, assisting First Nations communities to plan for the improvement of community infrastructure, and sustainable and equitable development of infrastructure and resources in the North. As a consultant, Scott has recently led a literature review for the Canadian Environmental Assessment Agency on the consideration of Aboriginal Traditional Knowledge in Federal EAs, conducted and led numerous environmental peer reviews related to mining and infrastructure development in Northern Ontario and Manitoba on behalf of Aboriginal communities, provided environmental assessment advice to the Ontario Ministry of Transportation on the project implications of the Magnetawan First Nation traditional land-use study for the Highway 69 Four-Laning project, and advised Public Works and Government Services Canada and Parks Canada on socioeconomic and environmental considerations of changes to their water management infrastructure on the French River and Trent-Severn waterways.

Specialties

Environmental planning and impact assessment, Aboriginal consultation and the Duty to Consult, environmental peer reviews, traditional knowledge/traditional land-use studies, social research, qualitative research, ethnography, community engagement, public participation, stakeholder analysis, risk communications, issues management, natural resources management, watershed management.

Experience

Managing Partner/Senior Consultant

Shared Value Solutions Ltd., Guelph ON – [July, 2012-present]

Managing partner and senior practitioner involved in all aspects of business development, client relations, project management, and project delivery.

- *Métis Nation of Ontario, Environmental Reviews and Impact Assessments for Gold Mine Environmental Assessments and Closure Plans [2013-present]*

Led environmental, socio-economic, and cultural reviews of the EAs and Closure Plans for major Ontario gold mine project proposals (New Gold Rainy River, IAMGold,Coté Gold, Prodigy Magino Gold) including the development of Métis-specific effects assessment and mitigation frameworks and results based on traditional land-use studies. Worked with MNO representatives and their legal advisors to develop MNO negotiation strategy for bilateral agreements with mine proponents. Also represented MNO at meetings with mine proponents and Crown regulatory agencies, and made plain-language presentations of review findings and implications to Métis citizens at community meetings.

- *Manitoba Métis Federation (MMF), Environmental Reviews and Impact Assessments for Major Projects [2014-present]*
  Led environmental, socio-economic, and cultural reviews of the EAs and Environmental Protection Plans (EPPs) for major project proposals (Manitoba Hydro Bipole III transmission line, Enbridge Line 3 oil pipeline replacement and NEB process) including the development of Métis-specific effects assessment and mitigation frameworks and results based on traditional land-use studies. Worked with MMF representatives and their legal advisors to develop MMF negotiation strategy for bilateral agreements with proponents. Also represented MMF at meetings with proponents, and made plain-language presentations of review findings and implications to Métis citizens at community meetings and to the MMF Board of Directors.
- *Canadian Environmental Assessment Agency, Aboriginal Traditional Knowledge in Environmental Assessment [2014-present].* Project director and lead researcher for a literature review synthesizing knowledge about the gathering and consideration of Aboriginal traditional knowledge in environmental assessments in Canada and internationally, to inform training and operational policy development specific to CEAA 2012. Also involved conduct of a series of related workshops about the results of the review for Agency headquarters, legal, and regional staff.
- *Constance Lake First Nation, Pagwa Radar Site Preliminary Site Investigations [2014].* Working under subcontract to lead consultant. Project lead for community knowledge and land-use interviews and analysis, and scan for funding sources for follow-on phases of work for the cleanup of an abandoned 1950s-era cold war radar site (Pinetree Line).
- *Pimicikamak First Nation, Victory Nickel Minago Project Traditional Land-Use Study and Archaeological and Environmental Review [2014].* Project director and senior environmental planner. As well as conducting environmental reviews and impact assessments incorporating traditional land-use study results, also worked with Pimicikamak representatives and their legal advisors to develop negotiation strategy for bilateral agreements with proponents, and represented the client at meetings with proponents and Crown regulatory agencies.
- *Constance Lake First Nation, Community-Based Water Management Action Plan [2013 – present]*
  Developing a community-based water management plan to assist the First Nation with managing their new well water supply for current needs and future community development goals, and developing strategies for the restoration of Constance Lake. Involves community meetings, youth workshops, and coordination and facilitation of a Community Liaison Committee.
- *Aroland First Nation, Peer Review of White Tiger Mining Marshall Lake Exploration Project Environmental Management Plan (EMP)- [2012]*
- *Atikameksheng Anishnawbek First Nation, Consultation Protocol Development- 2013*
  Developed a general proponent/Agency Consultation Protocol and organizational implementation strategy for the Protocol. Included community member, staff, and elected official interviews; a cross-Canada scan of example protocols and agreements from other communities, and consultations with Chief and Council and the community-at-large through meetings, workshops, and a community feast.
- *Confidential Transmission Company Client, East-West Tie Transmission Line Designation Filing Process (Ontario Energy Board)- Strategic Advice and Assistance- Public and Aboriginal Consultation- 2012-2013.*
- *Taykwa Tagamou Nation, Technical Review of Wanatango Falls Hydropower Class EA. [2013-present].*
- *Taykwa Tagamou Nation, Permitting Phase Peer Reviews and Ongoing Consultation Assistance for the Detour Lake Gold Mine- [2012-present]*
  Senior environmental planner and peer review team coordinator for review of mining company's major post-EA permit applications, closure plan amendments, and environmental management systems; provided ongoing consultation assistance and capacity-building advice to Chief and Council including input on the formation of a new environmental management committee involving three First Nations and the proponent.

- *Atikameksheng Anishnawbek First Nation, Peer Review of KGHM International Closure Plan for Victoria Advanced Exploration Project- [2012]*
  Senior environmental planner and peer review team coordinator for review of mining company's closure plan for large advanced exploration project in the Sudbury area.
- *Atikameksheng Anishnawbek First Nation, Peer Review of Cliffs Chromite Project Individual EA Terms of Reference*

  Senior environmental planner and peer review team coordinator for review of mining company's Terms of Reference for an Individual EA for a large mining project and related infrastructure (integrated transportation/power corridor, smelter) in the Ring of Fire area, Northern Ontario and Sudbury, Ontario (smelter location).
- *Peer Reviews and JPR EA Panel Review Hearing Assistance- Marathon PGM and Copper Project, [2012-present]*
  Senior environmental planner and peer review coordination lead- providing strategic advice and input on the client's consultation process with the mining project proponent in a Joint Panel Review EA, participation in panel review hearings as a representative of the client, and conducting technical reviews of EA-related documents and reports on the client's behalf.
- *Walker Industries Ltd., New Landfill Site Individual EA Public Consultation, [2011-present]*
  Project manager and senior consultant for planning and designing the public and aboriginal consultation processes for an Individual EA on a proposed private-sector waste management project, providing strategic advice and assistance to the client during the EA process on public consultation, conducting stakeholder analyses, and managing public consultation and stakeholder relations data.
- *AECOM Canada Ltd., Magnetawan First Nation Traditional Knowledge and Land-use Study- Highway 69 Expansion Project [2012-2013]*
  Environmental planner and study team member on a study to determine past and current land-use, and potential Aboriginal and Treaty rights impacts and EA mitigation measures for MTO's Highway 69 Expansion project.

Senior Consultant - Consultation and Communications - Environment
AECOM (formerly Gartner Lee Limited), Guelph ON [2012]
A senior consultant role involving all aspects of business development, client relations, project management, and leading project teams.

- *Nuclear Waste Management Organization (NWMO), Coordination and Integration of Community Well-Being Assessments and Engagement. [2012]*
  Project manager and strategic advisor for stakeholder and Aboriginal community engagement for a $1.1 million project to coordinate and integrate a team of field consultants conducting Community Well-Being studies as part of a national NWMO siting process for medium and high-level nuclear waste.
- *Municipality of Chatham-Kent, Longwoods Bank Stabilization Class EA- First Nations Consultation. [2012]*
  Leading the notifications and consultation process with First Nations communities as part of a municipal Class EA to stabilize a bank of the Thames River below a significant municipal roadway.
- *Traditional Knowledge Study and Peer Reviews- Marathon PGM and Copper Project, [2011]*
  Project manager and team lead for conducting a Traditional Knowledge study involving video interviews and a participatory land-use and occupancy mapping process, providing strategic advice and input on the client's consultation process with the mining project proponent in a Joint Panel Review EA, and conducting technical reviews of EA-related documents and reports.
- *Taykwa Tagamou Nation, Technical Review Advice and Assistance- Detour Lake Gold Mine Permitting Phase [2012-present]*
  Project manager, team lead, and key client liaison for technical reviews and advice, involvement in ongoing consultation activities, and the provision of strategic capacity-building services to assist the client with participating in consultation associated with the permitting phase of a large gold mine.
- *Walker Industries Ltd., New Landfill Site Individual EA Public Consultation, [2011-present]*
  Task lead for planning and designing the public and aboriginal consultation processes for an Individual EA on a proposed private-sector waste management project, providing strategic advice and assistance to the client during

the EA process on public consultation, conducting stakeholder analyses, and managing public consultation and stakeholder relations data.

- *Ministry of Northern Development and Mines, Lingman Lake Mine Site Rehabilitation Aboriginal Rights Impacts Study. [2011-2012]*
  Working as part of a team of Aboriginal consultation and conflict resolution specialists, conducted a study of Aboriginal rights impacts and mitigation strategies as part of planning for rehabilitation of an abandoned mine site in northwestern Ontario. Contributed to study design, organized and conducted meetings and telephone interviews with Aboriginal community representatives, reported on study results, and liaised with and provided advice to Ministry staff.

Communications and Consultation Specialist - Environment
AECOM (formerly Gartner Lee Limited), Guelph ON [2009-2012]
An intermediate-level consulting position involving all aspects of proposal writing, project management, client liaison, and project delivery.

- *Traditional Knowledge Study and Peer Reviews- Marathon PGM and Copper Project, 2011-present*
  Project manager and team lead for conducting a Traditional Knowledge study involving video interviews and a participatory land-use and occupancy mapping process, providing strategic advice and input on the client's consultation process with the mining project proponent in a Joint Panel Review EA, and conducting technical reviews of EA-related documents and reports.
- *Taykwa Tagamou Nation, Technical Review Advice and Assistance- Detour Lake Gold Mine Permitting Phase*
  Project manager, team lead, and key client liaison for technical reviews and advice, involvement in ongoing consultation activities, and the provision of strategic capacity-building services to assist the client with participating in consultation associated with the permitting phase of a large gold mine.
- *Walker Industries Ltd., New Landfill Site Individual EA Public Consultation, [2011-present]*
  Task lead for planning and designing the public consultation process for an Individual EA on a proposed private-sector waste management project, providing strategic advice and assistance to the client during the EA process on public consultation, conducting stakeholder analyses, and managing public consultation and stakeholder relations data.
- *Ministry of Northern Development and Mines, Lingman Lake Mine Site Rehabilitation Aboriginal Rights Impacts Study. [2011-2012]*
  Working as part of a team of Aboriginal consultation and conflict resolution specialists, conducted a study of Aboriginal rights impacts and mitigation strategies as part of planning for rehabilitation of an abandoned mine site in northwestern Ontario. Contributed to study design, organized and conducted meetings and telephone interviews with Aboriginal community representatives, reported on study results, and liaised with and provided advice to Ministry staff.
- *HudBay Minerals, Childrens' Lead Exposure Communications and Outreach Program- Flin Flon, [2010-2012]*
  As project manager and team member, used a community-based social marketing approach to design and manage programs (hand-washing, safe renovations) related to the reduction of lead exposure in children in Flin Flon, Manitoba as part of implementation of a human health risk management plan. Included conducting qualitative community-based research (key informant interviews, focus groups), and developing a program evaluation framework.
- *Ontario Power Authority, Program Materials for Aboriginal Community Energy Planning, [2010-2011]*
  As part of a team of communications and community development specialists, developing materials (fact sheets, analytical tools, application forms, planning/decision-support tools) for a province-wide Aboriginal Community Energy Planning program.
- *Ontario Power Authority, Research on Aboriginal Community Energy Plans for First Nations and Metis Communities, [2010]*
  As part of a team of program development and evaluation specialists, researched and developed a province-wide program delivery model for Community Energy Planning for Aboriginal communities, including strategies to incorporate traditional knowledge and values and to engage the community in the planning process.

- *Government of Nunavut, Environmental Assessment Training and Capacity Building, [2010-present]*
  Acting as an on-call mentor on training and education in the Environmental Assessment process.
- *Takywa Tagamou First Nation, Detour Lake Gold Mine Federal and Provincial EA Peer Reviews, [2010-2011]*
  Providing advice and assistance on the Aboriginal component of consultations for multiple environmental assessments related to a large gold mining project, including the development of a Consultation Protocol, the conduct and documentation of community interviews and consultations, and a capacity-building workshop for community members on participation in the EA process.
- *Taykwa Tagamou First Nation, Abitibi Canyon Dam Tailrace Maintenance Peer Reviews, [2010]*
  Coordinated and acted as the primary project contact on two peer reviews by an AECOM technical team for TTN, on environmental and socioeconomic impacts and mitigation measures associated with a large dam maintenace project.
- *Public Works and Government Services Canada, Socioeconomic Impact Assessment of the French River Dams, [2009-2010]*
  Conducted a desktop review of socio-cultural (including Aboriginal) and environmental history, issues and conditions as part of assessing the socioeconomic impact of three dams on the upper French River/Lake Nipissing.

Project Manager/Researcher
University of Guelph, Guelph ON [2008 to 2009]

As part of Master's thesis research, managed and delivered a $65 000 OMAFRA-funded research project on collaborative approaches to setting land and water stewardship priorities for Great Lakes rural watersheds.

- Supervised three graduate student field and office staff
- Conducted qualitative research and analysis (semi-structured interviews and focus groups with rural landowners, stakeholder analysis, thematic analysis)
- Designed, organized, and facilitated collaborative planning workshops
- Chaired and coordinated a multi-agency project steering committee (federal, provincial, municipal and NGO participants)

Restoration Programs Officer
Environment Canada, Burlington ON [2001 to 2007]

An environmental program management and planning position involving a range of tasks in support of the implementation of Remedial Action Plans and the development of Lakewide Management Plans in the Great Lakes. Required working effectively in cross-departmental and multi-agency teams, and regular engagement with stakeholders and the general public.

- Designed and led reviews of performance measures and developed monitoring plans for Remedial Action Plans including synthesis of environmental data across a range of issues (water and sediment quality, habitat, and ecosystem change), solicitation and compilation of expert advice, and designing and facilitating stakeholder (industry, NGO, and municipal) consultations.

Represented Environment Canada on numerous steering committees for municipal projects under Remedial Action Plans (Natural Heritage Strategies, wetland assessments, water and wastewater master plans, and Environmental Study Reports (ESRs) as part of Class EAs).

Co-chaired a multiagency committee addressing recreational water quality problems along the Lake Huron shoreline and facilitated regular workplanning and priority-setting meetings.

Prepared briefing notes and supporting materials for ministerial staff on Great Lakes issues.

Championed the acquisition of GIS functionality (software, hardware, and training) and developed a database of Great Lakes geographic data for departmental team.

Watershed Stewardship Coordinator
Nadina Community Futures/Fisheries and Oceans Canada, Smithers BC [1999 to 2000]

An environmental project coordination position as part of a DFO pilot program which involved local coordination of environmental education and outreach efforts, technical and financial assistance to landowners and communities, and projects related to the stewardship of watersheds and fish habitat.

Supervised up to three field and office staff, and managed ecological restoration and fisheries assessment projects up to $50 000 in value.

Partnered with local Aboriginal communities to deliver environmental outreach and capacity-building services.
Coordinated a community board allocating provincial and federal stewardship project funding.

Coordinated and facilitated a multistakeholder community watershed restoration council

Delivered outreach activities with local municipalities and landowners including making presentations at local municipal council and stakeholder group meetings, establishing a public watershed library, and making site-visits with landowners.

Provided verbal and written comments as part of public consultations for Environmental Assessments.

Project Leader
British Columbia Conservation Foundation, Smithers BC [1997 to 1999]

A position involving the management and delivery of projects up to $65 000 in value related to watershed restoration. Included all aspects of proposal writing and budgeting, financial tracking, personnel management, purchasing, client liaison, field work, data analysis, and technical report writing.

- *Wet'suwet'en Hereditary Chiefs, Detailed Fish Habitat, Channel and Riparian Assessment of the Morice River Watershed- Nanika and Lamprey Sub-Basins. 1998-1999*

  Detailed assessment of forestry impacts on fish habitat, stream channels, and riparian areas, and the development of conceptual restoration prescriptions and costs for priority sites.
- *Nadina Community Futures Development Corporation, Detailed Fish Habitat, Channel, and Riparian Assessment of the Mid-Bulkley Watershed. 1998-1999.*

  Detailed assessment of forestry, agricultural, and urban development impacts on fish habitat, stream channels, and riparian areas, and the development of restoration priorities and conceptual restoration prescriptions for priority sites.
- *Department of Fisheries and Oceans, Salmon Habitat Sensitivity Mapping- Bulkley Forest District. 1998.*

  Development of a pilot product to classify and map salmon habitat sensitivity, which linked to DFO's permitting and approval requirements under section 35 of the *Fisheries Act*.
- *BC Ministry of Environment, Lands, and Parks, Water Quality Monitoring Guidebook for Adaptive Management. 1997-1998.*

  Developed workshops and a guidebook for the regional Impact Assessment Biologist for use of a suite of water quality monitoring indicators and methods to support adaptive management of forest practices in sensitive areas.

- *BC Ministry of Environment, Lands, and Parks, Development of GIS Data Standards for Watershed Restoration Projects in Skeena Region. 1997.*

  Developed GIS data standards for contracts administered by the Ministry's local Watershed Restoration Program co-ordinator, and assessed the quality and upgrade options for past contract GIS work done for the program.

Other Training

Managing AECOM Projects, April, 2012
Advanced project management short course

Facilitation, Negotiation, and Conflict Resolution. January-April, 2009
Led by Dr. James Mahone, School of Environmental Design and Rural Development, University of Guelph.

Aboriginal Awareness Training, April, 2003.
Led by Deborah MacGregor, Aboriginal Affairs, Environment Canada

Project Management Essentials, September, 2006.
University of Toronto- Faculty of Applied Science and Engineering Professional Development Centre.

Fostering Sustainable Behaviour: Community-Based Social Marketing, 2007
Workshop led by Doug McKenzie-Mohr and sponsored by Environment Canada.

Professional Affiliations

Full Member - Ontario Professional Planners Institute (November 2012-present)
Certified Shared Value Consultant- Shared Value Initiative, FSG Consultants. (Since 2013)

Melissa Tonge
Wildlife Ecologist, Shared Value Solutions Ltd.

Professional History

Wildlife Ecologist
Shared Value Solutions Ltd.
January 2016 - present

Pollination Research Associate
School of Environmental Sciences,
University of Guelph
February 2015 – January 2016

Forest and Climate Change
Research Associate
School of Environmental Sciences,
University of Guelph
September 2009 – January 2016

Conservation Biologist
Nature Conservancy of Canada
Contractor
September 2010 – September 2012

Ecologist
Ontario Ministry of Natural
Resources
February 2009 – August 2009

Ecosystem Scientist
Pukaskwa National Park,
Parks Canada
October 2006 – August 2007

Species at Risk Biologist &
Awareness Orator
Bruce Peninsula/Fathom Five
National Parks, Parks Canada
March 2005 – September 2006

Wildlife Health Care Technician,
Canadian Cooperative Wildlife
Health Centre, Ontario Vet College
University of Guelph

Overview

Melissa Tonge is an ecologist with a strong background in wildlife sciences and terrestrial ecology. She has 15 years of experience in wildlife biology and GIS research, managing projects ranging from pollinators to polar bears. She has worked with federal and provincial governments, academic institutions, non-profit and private organizations.

Melissa has worked on projects that include assessment of biodiversity and wildlife habitat, analysis or environmental threats and impacts, mapping of sensitive areas, and determination of wildlife movement and ranges. In addition to research projects, she has worked on literature and regulatory reviews, recovery strategies, and technical reports. Melissa is most passionate about work that combines scientific and traditional knowledge to promote and enable ecological conservation.

Specialities

Wildlife and spatial landscape ecology (ecological field sampling, GIS modelling and mapping, literature reviews, outreach and communication initiatives), Species at Risk research and recovery efforts (recovery strategy development, jurisdictional review and public consultation), technical review and consultation.

Selected Experience

Wildlife and Terrestrial Technical Reviews. Assisted in technical review of the Agrium Mine Closure Plan for TTN, and the Sisson Mine CSR for MTI. Completed wildlife and terrestrial environmental review. [2016].

Land Management Technical Guides and Eco-regional Planting Guides for Pollinators, Pollinator Partnership & SVS. Project Lead. Developing content and resources for Manitoulin-Lake Simcoe and Algonquin-Lake Nipissing planting guides. Research and development of technical land management guides for roadsides (highway, municipal) and corridors (hydro, pipeline, other easements) for the enhancement of native and managed pollinator populations. [2016-present].

Status and Trends of Pollinators in Ontario, University of Guelph & Ontario Ministry of Agriculture and Rural Affairs. Research Associate. Contributed to the development of a comprehensive report focusing on the status and trends, agricultural pollination and conservation programs and initiatives for pollinators in Ontario. [2015-2016].

March 2004 – March 2005

Ecological Integrity Monitoring Program Technician, Bruce Peninsula/Fathom Five National Park, Parks Canada
January 2002-August 2002

Eastern Massasauga Rattlesnake Researcher Bruce Peninsula/Fathom Five National Parks, Parks Canada August 2001 – January 2002

Black Bear Field Technician Ontario Ministry of Natural Resources
May 2000 – August 2000

Education

MSc, Environment and Life Sciences Program, Trent University

BSc Honours, Biology and Environmental Science double major, University

Years of Experience

15

Training and Certifications

Beekeeping and Integrated Pest Management (2015)

Chemical immobilization of wildlife (2001)

Forest Ecology & Climate Change, University of Guelph. Research Associate. Collected ecological forest data, developed and reviewed funding proposals, edited scientific journal articles, conducted literature reviews, and produced cartographic maps using ArcGIS software [2009-2015].

Polar Bear & Bogbean Buckmoth Recovery Strategies, Ministry of Natural Resources and Forestry. Author. Responsible for the development of the recovery strategy for Polar Bear and Bogbean buckmoth in accordance with the ESA 2007 for Ontario. Prepared as advice to the government, other jurisdictions and constituencies that may be involved in the recovery of both species. Provided habitat regulation recommendation to the Minister of Natural Resources. Collaborated with scientific and social-science researchers, conservation organizations, aboriginal communities and federal and provincial governments. [2010 - 2012].

Black Bear Management, Pukaskwa National Park. Project Coordinator and Author. Identified issues and concerns surrounding bear management. Coordinated information exchange with bear management agencies, aboriginal and regional communities in order to reduce bear/human conflict situations. Provided recommendations for communicating and increasing awareness to park visitors and the general public of bear management issues. [2006-2007].

Species at Risk Research, Bruce Peninsula & Fathom Five National Parks. Biologist. Developed research and application permits in compliance with the ESA and SARA. Monitored various terrestrial and aquatic Species at Risk (e.g., Massasauga rattlesnake, Queen snake, Eastern Milksnake, Eastern prairie fringed-orchid, Dwarf lake iris, Shortjaw cisco). [2005-2006].

Canadian Cooperative Wildlife Health, Ontario Veterinary College, University of Guelph. Researcher. Collaborated with municipal and governmental health units, and local landowners to target and identify disease outbreaks in wildlife populations. Visited target areas in the field to collect blood and tissue samples.
Performed necropsies and made gross diagnosis. [2004-2005].

Ecological Integrity Monitoring, Bruce Peninsula & Fathom Five National Parks. Biologist. Collected data for the ecological integrity monitoring program including deer browse surveys, rare plant monitoring, frog monitoring, water quality analyses and population trends and hit rate visits to black bear bait stations. As member of national park dive team, dove to assess and monitor zebra mussel population trends on ship wrecks within Fathom Five National Marine park boundaries. [2002].

Massasauga Rattlesnake Research and Reptiles at Risk, Bruce Peninsula & Fathom Five National Parks. Biologist. Captured and handled threatened Eastern Massasauga Rattlesnakes in the field and laboratory to attain genetic and morphological data. Radio-tracked transmitted snakes to gather information on habitat use, gestation sites and thermal temperature regimes. Identified target audiences (landowners, park visitors, schools) and conducted outreach programs to increase awareness and understanding of reptiles at risk in the greater Georgian Bay area. [2001-2002].

Black Bear Research, Ministry of Natural Resources and Forestry. Trapped and tracked black bears within Bruce Peninsula National Park and Chapleau Crown Game Preserve to obtain information on habitat use and population dynamics of both populations. [2000].

Shared Value Solutions

Rachel Speiran, M.A.
Senior Community Development Consultant, Shared Value Solutions Ltd.

Professional History

01/2015 – present, Shared Value Solutions, Senior Community Development Specialist

05/2010 – 12/2014 Speiran Consulting, Community Stakeholder Engagement and Socio-economic Impact Assessment Consultant

2006 - 2010, Rescan Environmental Services Ltd., Socio-economic Scientist and Community Engagement Specialist

2004 - 2006, UBC Centre for Intercultural Communication, Program Manager; Curriculum Designer and Instructor

2002 - 2004, UBC Centre for Intercultural Communication, Instructor

2002 - 2004, UBC, Department of Educational Studies, Teaching Assistant

2000 - 2002, Canadian Outback Adventure Company, Guide; Program Coordinator and Corporate Business Development

Education

MA, Adult Education, University of British Columbia (2004)
BA, Psychology (Environmental Studies minor), University of Victoria (1998)

Years of Experience

13

Overview

For over 13 years, Rachel's work has evolved around social, cultural and economic issues and opportunities related to sustainable community development. After an agro-forestry internship in Paraguay Rachel chose to focus on the community and intercultural aspects of environmental issues and resource development. At the University of British Columbia's Centre for Intercultural Communication she designed programs and applied evaluation methods for international development and cross-cultural relations courses. At Rescan Environmental Services Ltd., she was the firm's first community engagement specialist, where she designed and managed community consultation programs; socio-economic impact assessments; and supported the integration of traditional ecological knowledge into environmental assessments of major mining and energy projects in northern British Columbia - work which she continued with her own consultancy for five years in Ontario and BC until joining forces with Shared Value Solutions.

Currently, Rachel leads projects with the objective of assessing community stakeholder values and integrating multi-stakeholder interests into land and resource management and community development plans. She has conducted socio-economic studies related to mining and oil and gas pipeline projects and links to impacts on traditional land use in Northern Ontario and Manitoba and has conducted technical reviews of socio-economic impact assessments on behalf of the Kitikmeot Inuit in Nunavut for major mining developments with territorial trans-boundary implications. Rachel is certified through the International Association of Public Participation; a member of the International Association of Impact Assessment; and the Society of Intercultural Education, Training and Research.

Specialities

Socio-economic, community well-being and land use impact assessments; cultural diversity and resilience; intercultural relations and communication; sustainable community economic development;

Professional Affiliations

International Association for Public Participation (IAP2)

International Association for Impact Assessment (IAIA)

Society of Intercultural Education, Training and Research (SIETAR)

Training and Certifications

International Association for Public Participation (IAP2) Certificate (2011)

Global Reporting Initiative (GRI) Sustainability Evaluation Certificate (2010)

Non-Violent Communication (NVC) Workshop (2010)

Certificate in Intercultural Studies (2003)

Diversity in the 21st Century Workshop (2003)

Conflict Resolution Workshop (2002)

Workshops, Seminars and Presentations Delivered

Two-Eyed Seeing: Contaminated Site Assessment and Management. St-Lawrence Rivers Institute Symposium. Cornwall, ON (2016)

Guiding Change, Protecting What Matters: Community Based Planning and Impact Assessment for a Western James Bay All Season Road. Northern Planning Conference Presentation. Whitehorse, YK (2016)

Intercultural Competency: Working Effectively Across Cultures – Workshop for University of Concordia's Volunteer

community engagement; adult education; workshop facilitation; curriculum development; project management.

Selected Relevant Experience

Energy East Pipeline Project Environmental and Social Assessment Independent Review. Grand Council Treaty #3. Project Manager and Senior Socio-economic Impact Assessment Reviewer. Manage multi-disciplinary team of reviewers to evaluate adequacy of the ESA and identify impacts to Treaty #3 Aboriginal rights and interests; support Treaty #3 Grand Council in National Energy Board EA review process; community engagement and information sharing regarding the proposed project. [09/2015 – present]

Greenstone Mine Project Environmental Assessment Technical Review. Aroland First Nation. Senior Socio-economic Assessment Reviewer. Evaluated the EA, identified impacts of concern and developed recommendations for addressing Aroland socio-economic issues and interests. [02/2016 – 03/2016]

Sisson Mine Project Draft Comprehensive Study Report and Environmental Assessment Review. Mi'gmawe'l Tplu'taqnn Incorporated (MTI). Senior Socio-economic Assessment Reviewer. Evaluated the EA; conducted information gap analysis of the CSR, identified impacts of concern and developed recommendations for addressing MTI Mi'kmaq community socio-economic issues and interests. [01/2016 – 02/2016]

Line 3 Pipeline Replacement Project Environmental and Socio-economic Assessment Independent Review. Manitoba Métis Federation. Senior Socio-economic Impact Assessment Specialist and Reviewer. Reviewed and evaluated the adequacy of Endbridge's Line 3 pipeline project's ESA and determined implications of impacts to MMF's Aboriginal rights and interests. [06/2015-08/2015]

Mushkegowuk All Season Road Socio-economic Study. Mushkegowuk Council and Morrison Hershfield. James Bay Mushkegowuk Region. Project Manager and Senior Socio-economic Impact Assessment Specialist. Develop and facilitate community wellbeing focus groups and multi-community socio-economic baseline study to support the Phase 2 Feasibility Study for a new road network connecting five west coast James Bay communities to each other, and to Ontario Highway 11. [04/2015-present]

Magino Gold Project Environmental Assessment Third Party Technical Review. Métis Nation of Ontario. Senior Report Reviewer. Conducted a gap analysis of the socio-economic impact assessment for a major mining development in northern Ontario; identified issues and information requirements based on the Métis socio-economic values and baseline study information; made recommendations for study information requirements to represent Métis population surrounding the Project area [01/2015]

Abroad Program. Montréal, QC. Workshop Facilitator (2013)

Multi-stakeholder Engagement and Intercultural Competence: Working Effectively Across Cultures in Global Engineering and Society. Engineers Without Borders, University of Concordia. Montréal, QC. Presenter (2013)

Community Engagement and Community Driven Consulting – Beyond Business as Usual Symposium. McGill University Marcel Desautels Institute for Integrated Management. Montréal, QC. Panelist (2013)

Community Engagement and Participatory Decision-Making: The Human Side of Sustainability – McGill University Marcel Desautels Business Conference on Sustainability. Montréal, QC Presentation (2012)

Aboriginal Engagement, Consultation and Traditional Knowledge in Environmental Assessments – Western Aboriginal Law Forum. Vancouver, BC. Presentation (2009)

Working Together Towards a Better Future – Minerals North Mining Conference. Smithers, BC. Workshop Facilitator (2008)

Exploring Community Engagement in the Mining Industry – Women in Mining Network. Vancouver, BC Workshop Facilitator (2008)

Global Model, Local Needs: Challenges and Opportunities – SIETAR Europa Congress. Nice, France. Presentation (2005)

Games and Experiential Learning: Professional Development for Intercultural Trainers – SIETAR BC.

Ekati Diamond Mine Jay Pipe Extension Project - Socio-economic Impact Assessment Third Party Technical Review and Gap Analysis. Kitikmeot Inuit Association. Cambridge Bay, Nunavut. Senior Report Reviewer. Conducted a gap analysis of the socio-economic impact assessment for a major mining development; identified issues and information requirements based on the Kitikmeot communities' socio-economic values and baseline study information; made recommendations for study modifications and proponent socio-economic monitoring plan commitments in preparation for public hearings. [03/2015]

Back River Gold Project Socio-economic Impact Assessment Third Party Technical Review and Gap Analysis. Kitikmeot Inuit Association. Cambridge Bay, Nunavut. Senior Report Reviewer. Conducted a gap analysis of the socio-economic impact assessment for a major mining development; identified issues and information requirements based on the Kitikmeot communities' socio-economic values and baseline study information; made recommendations for study modifications and proponent socio-economic monitoring plan commitments in preparation for public hearings. [03/2014]

Aboriginal and Regional Government Engagement Program Plan and Socio-economic and Land Use Due Diligence Study for the Larder Lake Mineral Exploration Project. Goldfields Abitibi Exploration Ltd. Larder Lake, Ontario. Advising Consultant and Senior Researcher. Created Aboriginal, land owner and regional government engagement program; provided support for the development and negotiation of community - proponent exploration agreements; conducted socio-economic and land use research to identify social, economic and land use values. [2012-2013]

Aboriginal-Public-Stakeholder Consultation Program Coordination; Socio-economic Impact Assessment for BC Hydro's Northwest Transmission Line. Northwest B.C. Consultation report and project information meeting material coordinator and researcher. Conducted social, economic, cultural and land use research for nine First Nation communities along the transmission corridor; peer reviewed and conducted effects assessment reports; supported the integration of Traditional Knowledge studies and community consultation program results into the project's wider environmental assessment; acted as liaison with discipline leads; project management; proponent; partner consultants; Aboriginal impact and benefit agreement negotiators. [2007; 2009-2010]

Public, Stakeholder and First Nations Consultation Program Coordination and Socio-economic/land use impact assessment for Pacific Booker Mineral's Morrison Mine Project. Northwest BC. Developed consultation program; tracked, monitored and facilitated issue resolution process; coordinated community project information meetings; conducted land owner and user interviews; wrote consultation and socio-economic report for the Project's environmental assessment application. [2007-2009]

Community Engagement and Consultation Program Plan. Researcher and Program Plan for BHP Billiton's Jansen Potash Project.

Vancouver, BC. Workshop Facilitator (2005)

Languages

English (fluent)
French (conversational)
Spanish (functional)

Saskatchewan. River Project. Conducted community, land tenure and use research to support the development of the proponent's consultation program**.** [2009]

Aroland First Nation Socio-economic Impact Assessment, Aroland First Nation, Ontario. Research study plan and methodology consultant. Supported the creation of study methodology and survey questions; conducted report review. [05/2014].

Economics, Community and Services Baseline Study and Impact Assessment for the Meikle Wind Energy Project, Pattern Energy (via Hatfield Consultants). Tumbler Ridge, BC. Researcher. Conducted research to identify economic, community and public services that would be potentially affected by the construction and operations of a wind energy development; assessed effects; developed recommendations for positive socio-economic effect enhancement plans and adverse effect mitigation plans. [2011; 2014]

Inter-disciplinary Socio-economic Baseline study, Impact Assessment and Mitigation planning for the Narrows Inlet Run-of-River Hydroelectric Project (via Robertson Environmental Consulting). Sunshine Coast, B.C. Study Coordinator and Senior Researcher. Coordinated an interdisciplinary team of social and environmental scientists to conduct a socio-economic and land use impact assessment; integrated the issues and interests identified by regional communities into assessment and socio-economic mitigation and benefit enhancement planning. [2011-2012]

Cultural Impact and Impact and Benefit Agreement (IBA) case study and literature review; Cultural Impact Assessment Report for the KSM and Kitsault Gold Mine project Environmental Assessments. (via Rescan Environmental Services / ERM Group) Northwest BC. Senior Researcher and Contributing Report Writer. Reviewed focus group transcripts; identified themes, issues and values regarding Nisga'a Nation values and interests regarding cultural identity and connection to the land as it related to two proposed mining developments; provided third party review for IBA case study report. [2012]

Economics Baseline Study and Impact Assessment for the Wildmare Wind Energy Project, Finavera Renewables (via Teco Natural Resources Group). Chetwynd, BC. Researcher. Conducted research to identify regional economic profile and effects assessment related to the construction and operations of a wind energy development; developed recommendations for positive socio-economic effect enhancement plans and adverse effect mitigation plans. [2010]
First Nations Environmental and Cultural Monitoring Program for Advanced Mineral Exploration Program. Goldfields Exploration Canada. North Central BC. Program Developer, Coordinator and First Nations Liaison. Developed First Nations engagement program; acted as multi-party First Nation liaison; identified values and interests for three communities; developed and coordinated multi-First Nation environmental and cultural monitoring program which included a training and knowledge exchange component between Elders, youth and geologists. [2009]

Third Party Technical Review of Environmental Assessment for Pristine Power's Mackenzie Green Energy Project (Biomass-powered electrical facility). Treaty 8 Tribal Association. Northeast BC. Interdisciplinary Study and Report Coordinator, First Nations and Government Liaison. Coordinated multi-disciplinary technical review of project's environmental assessment; wrote gap analysis and project information requirement report; acted as liaison with Treaty 8 First Nations representatives, the Treaty 8 Tribal Association, and BC Environmental Assessment Office. [2008]

Socio-economic and Land Use Baseline Studies and Impact Assessment; First Nations and Public Engagement Program for Seabridge Gold's Kerr-Sulphurets-Mitchell (KSM) Gold Project. Northwest BC. Conducted social, economic, cultural and land use research for First Nations and non-Aboriginal communities surrounding the proposed project; developed and coordinated First Nations engagement and consultation program. [2008-2010]

Socio-economic and Land Use Baseline Study and Impact Assessment; Community Engagement Program for Pacific Booker Minerals' Morrison Copper Gold Project. Northwest BC. Conducted social, economic, cultural and land use research for First Nations and non-Aboriginal communities surrounding the proposed project; conducted effects assessment on identified socio-economic and cultural valued components; developed recommended socio-economic benefit enhancement and social management plans; developed and coordinated First Nations engagement and consultation program. [2007-2008]

Design, Management and Facilitation of academic, corporate and community intercultural communication training courses for UBC Centre for Intercultural Communication. Vancouver, B.C. Program Manager, Curriculum Designer, Instructor. Managed the Certificate in Intercultural Studies Program; Designed curriculum for, and facilitated, community intercultural and diversity training programs; coordinated corporate intercultural briefing programs for international assignments; facilitated teaching and communication skills courses international teaching assistants; instructed intercultural communication to international corporate executives [2003-2006]

Culture, Communication and Development Course, Certificate in International Development. University of British Columbia's Centre for Intercultural Communication. Course Facilitator. Facilitate course participants through intercultural, communication and critical theories and assignments; guide group discussion regarding the impact of cultural differences, worldviews and power dynamics in development projects and organizations. [2007 - Present]

Keegan McGrath
Environmental Consultant – Aquatics, Shared Value Solutions Ltd.

Professional History

Shared Value Solutions,
Environmental Consultant
February 2016 – Present

McCallum Environmental,
Environmental Coordinator
Sept 2014 – October 2015

Shubenacadie Watershed
Environmental Protection Society,
Project Coordinator
May 2014 – September 2014

Seafood Watch, Seafood and
Aquaculture Analyst
February 2013 – April 2014

Dalhousie University, Teaching
Assistant
January 2012 – April 2014

Fisheries and Oceans, Fisheries
Technician
November 2010 – August 2011

Education

Master of Environmental Studies,
Dalhousie University
BSc, Biology, Carleton University

Years of Experience

4

Overview

Keegan McGrath is an environmental specialist with a background in aquatic biology and environmental science. He has extensive experience working in the field throughout southern Ontario, Nova Scotia and Labrador. Keegan has engaged in research, construction monitoring, stream restoration, electrofishing and wildlife monitoring in a wide diversity of habitats. He has been involved in many environmental assessments projects including hydroelectric dams, transmission lines, highways, mines and wind turbines.

Keegan finished his B.Sc. Biology at Carleton University in 2009 where he studied aquatic behavioural ecology and landscape ecology. Then in 2014 he finished a Masters of Environmental Studies at Dalhousie where he investigated the environmental impacts of salmon aquaculture technologies and agriculture. He has published articles in peer-reviewed journals on fish behaviour and aquaculture.

Keegan is passionate about conservation and resource management. He enjoys working on projects to protect the environment and maximize benefits for all parties.

Specialities

Aquatic biology, wildlife biology, behavioural ecology, Species at Risk, ecological field research, fish habitat assessment, stream assessment, habitat restoration, water quality, community research, community energy planning.

Selected Experience

Environmental Coordination, Construction Monitoring and Mitigation for the Muskrat Falls Hydro-electric Project Transmission Line. Worked with clients to provide environmental services including: wetland delineation/ wetland functional assessments; wildlife surveys (e.g. moose surveys, species-at-risk assessment, electrofishing etc.); environmental construction monitoring (Muskrat Falls Hydro Project); and regulatory compliance and permit approvals.

Shubenacadie Watershed Environmental Protection Society, Stream Restoration Project. Laid out the strategic direction of the summer program and identified and prioritized stream restoration activities in the Shubie watershed. This included stream assessments, construction of in-stream structures, and water quality testing. Supervised two summer students, managed the project budget and coordinated successful public events.

Seafood Watch, Aquaculture Sustainability Assessment. Evaluated the sustainability of aquaculture systems based on scientific literature, government/industry reports and interviews with industry/academic professionals. Participated in a special review of energy use in aquaculture and published the report on farmed rainbow trout in the USA.

DFO, Lobster Population Ecology and Maturity
Working in the population ecology division I studied lobster population dynamics. I conducted field sampling along the coasts of NS, laboratory research, report writing and database management. Working with fisherman I implemented tracking programs and field protocols to collect lobster maturity data.

Student Research Biologist, Carleton University
As part of a research program with the behavioural ecology lab I collected fish (seining, angling, trolling, gillnetting); managed captive fish populations; observed behaviors; and installed/maintained lab equipment. I co-authored key aspects of this research which were published in the *Canadian Journal of Fisheries and Aquatic Sciences*.

APPENDIX B - ISSUE TRACKING TABLE

Comment and Response Tracking Table- Eastern Road Side Authority P4 DRAFT EIS Review (June 10, 2016)

Comment #	EA Section Reference	Issue	Question/Recommendation
AQUATIC ENVIRONMENT			
1	Appendix 8-1/18	Collection methods and level of effort for fish community sampling and mussel sampling are unclear. In Appendix 8-1 (page 18) it is stated that: "Fish sampling was conducted within the study reach to confirm fish presence and in Class 1 streams, to determine species use. Gear type was selected based on site-specific conditions and included backpack electrofishing and gillnetting". However, there is no summary of collection methods or effort provided. For these reasons it is unclear exactly where, when or how much fish sampling occurred. It is unclear whether any lakes in the area were surveyed. These details are critical for determining the adequacy of baseline sampling. Based on the level of detail supplied, it appears likely that the species diversity has not been adequately surveyed.	• The fish collection methodology and results must be provided in greater detail. For each site please include the date(s) of collection, type of survey (gillnet versus backpack electrofishing), effort (i.e. length of reach for electrofishing and time in water for gillnets) and results. Mussel collection methods and results must also provide additional details including date(s) of collection, number of ponar grabs and results for each site surveyed
2	Appendix 8-1	Data collection for aquatic environmental studies were completed in July 2014. This short study window severely limits the utility of results. They do not represent the seasonal variability nor do they capture year-to-year variation that is important for many characteristics of aquatic environments. This	• Additional baseline studies are required to capture the variability of the aquatic environment. Failing that, a much more conservative approach should be adopted particularly as it relates to biodiversity and the presence of species at risk.

Comment #	EA Section Reference	Issue	Question/Recommendation
		includes physical, chemical and biological characteristics. Examples of aquatic parameters that show variability include water level, flow, precipitation, species diversity, water quality, connectivity and more.	
3	Appendix 8-1	Sampling for Cyprinids and other forage fish species using gillnets is not appropriate in all habitats, particularly areas where there is fast flow or insufficient depth (as is the case in many of the shallow streams in the Project Area). It is unclear why the Proponent elected to use only gill nets and backpack electrofishing for assessing fish communities.	• Justification for the use of electrofishing and gill nets should be given in the EIS. Particularly for small bodied fish. Other alternative methods which may have been more appropriate include beach seines, minnow traps, and hoop, fyke, or trap nets (Portt et al, 2006).
4	Appendix 8-1	Connectivity for streams was classified based on the presence of: a defined channel downstream to next major watercourse, permanent or ephemeral barriers to fish passage, and upstream habitat. Barriers were determined "aerially in the field, and by orthophoto analysis" (Appendix 8-1, page 9). Determining barriers without ground assessment in the field is not adequate for determining fish passage. It is possible that barriers assessed using these techniques do not represent actual impediment to passage.	• Connectivity should be verified with field-based assessments. Alternatively, a conservative approach could be taken whereby no barriers to fish passage are assumed.
5	Chapter 8.0	Results for many categories of baseline data collection are poorly represented. They are located in appendices and presented in relation to the watercourse crossing with which they are associated. There are not any summary tables which would facilitate the review and comparison of data.	• Summary tables for results of baseline studies should be presented which include results for all watercourse crossing locations. Examples of data that should be presented in this format include: fish habitat quality, channel presence/absence, drained area, connectivity

Comment #	EA Section Reference	Issue	Question/Recommendation
			classification, watercourse classification, and water quality.
6	Chapter 8.0, Appendix 8-1	There has been no baseline assessment of benthic invertebrates (other than mussels). These presence of sensitive families of invertebrates has a strong relationship to water quality and provide information on the suitability of habitat. They are also good candidates for long-term monitoring of water quality. It is unclear why the proponent has elected not to collect any baseline data on benthic invertebrates.	• Provide an explanation of why benthic invertebrate monitoring was not conducted.
7	Appendix 8-1	No assessment has been completed of lakes in the Study Area (of which there are several). It is unclear whether these lakes could potentially provide habitat for a wider diversity of fish than has been reported here (e.g. lake trout) particularly shortjaw cisco, a species at risk.	• Baseline surveys to characterize the physical, chemical and biological environments of lakes within the Study Area are required.
8	Section 8.2.4	Fish species in the Project Area utilize the streams and rivers in the area to carry out spawning in spring, summer and fall. At these times of the year there are also sensitive life stages (e.g. eggs, larvae, juveniles) that require additional protection. The Proponent has stated that they will avoid construction of crossings however no specific details regarding how this will be accomplished is given.	• DFO guidance for avoiding spring and summer spawning species in the project area suggests no in-stream works occur April 15 – July 15 and September 15 – April 30 (DFO, 2016). Plans should be described for how construction will manage activities so that they avoid work near watercourses during these sensitive windows.

Comment #	EA Section Reference	Issue	Question/Recommendation
9	Chapter 13, Appendix 13-1	Residual effects of the project on aquatic VECs were the permanent loss of 206.5 m^2 of instream habitat and 180 m of riparian zone habitat associated with watercourse crossings. However, the clearing of the ROW will create permanent alteration of riparian habitat. This in turn can alter instream habitat through an increase in sedimentation, reduced instream cover, larger fluctuations in temperature and other associated impacts. These residual effects from ROW clearing are not accounted for in Chapter 13 or Appendix 13-1.	• Residual effects of clearing for ROW on riparian and instream habitat should be accounted for in assessment of effects and residual effects.
10	Chapter 8.0, Chapter 14.0	Details on specific monitoring of the aquatic environment that will be carried out as part of the follow-up monitoring for the Project are not provided. This is problematic because it is not possible to determine adequacy of monitoring program and secondly because no thresholds have been established at which additional mitigation will be implemented or adaptive management taken.	• Specific programs and parameters that will be monitored should be indicated. Thresholds at which additional mitigation or adaptive management will be triggered should be given.
11	Chapter 8.0	No details have been provided on any off-setting plan for the permanent destruction of riparian and instream habitat.	• Information on potential offsetting opportunities and activities should be described to compensate for lost and altered fish habitat. A conceptual offsetting plan should be created. This should be planned based on consultation with MMF citizens, government, and draw on documents such as the Proponents Guide to Offsetting (DFO, 2013).

Comment #	EA Section Reference	Issue	Question/Recommendation
12	Chapter 8.0, Appendix 3-2	For bridge design no minimum setback distance is provided for abutments from the edge of river bank/high water mark. Building abutments within the stream bed can constrict flow causing scouring, erosion and sedimentation.	• Provide details regarding the design of minimum setback for bridge abutments.
TERRESTRIAL ENVIRONMENT			
13	EIS Guidelines Part 1/4.2	Section 2.3 of the EIS Guidelines specifies that in reference to Aboriginal engagement, that the proponent must provide a description and analysis of how changes to the environment caused by the project will affect Aboriginal peoples which includes First Nations and Metis (CEAA 2015). The scope of the assessment presented however does not include consultation and inclusion of Metis values, rights and interests, even though there is demonstrated current and historic Metis occupancy and land use in the RAA (Shared Value Solutions 2016). In accordance with the Agency's technical guidance, impacts to traditional rights and interests of local indigenous communities must be considered by the proponent in the terrestrial assessment. The EIS should identify and clearly explain how gaps in the knowledge and understanding of the Manitoba Metis peoples' traditional knowledge and land use would affect conclusions regarding the significance of residual effects (EIS Guidelines, Part 1, Section 4.2).	• Review the Technical Guidance for Assessing the Current Use of Lands and Resources for Traditional Purposes under the Canadian Environmental Assessment Act, 2012. For all Aboriginal requirements, the EIS should include the Manitoba Metis community as a potentially affected Aboriginal group (EIS Guidelines, Part 2, Section 5.1). Ensure that all Manitoba Metis Traditional Land Use relevant to Project 4 is considered and integrated throughout the EIS. • Provide a description and analysis of how expected changes to the terrestrial environment as a result of the Project, will affect traditional land use for Metis peoples, including impacts on hunting, trapping and gathering activities.

Comment #	EA Section Reference	Issue	Question/Recommendation
14	Table 9.15/9-46 & Table 9-13/9-44	The current assessment does not consider the residual effects associated with permanent wetland removal from road construction, potential quarries and other associated infrastructure (Table 9.15/9-46). Rather, the effects assessment describes the establishment of vegetation that will be re-established in the RAA along the decommissioned winter road in place of irreversible wetland loss (Table 9.13/9-44). The residual effects should characterize changes in wetland land cover classifications as irreversible, as it has not been proposed that off-sets for these ecosystems will created, and it is unlikely that the function and community of these ecosystems will return as wetlands. Consequently, the determination of significance as they relate to other criteria (e.g., migratory birds, aquatic mammals, herpetiles, wild rice, weekay) which are dependent on wetlands, may need to be revised.	• Provide a revised assessment of change in wetland function and connectivity that identifies and describes the irreversible loss of wetlands anticipated from the project. Include the permanent loss of wetlands associated with the road development, potential quarries, and ancillary facilities such as camps and access roads. • Include maps and a description to explain all existing and proposed quarry sites, camps and access roads.
15	Appendix 9-3: 4.4.3/26	Two species of conservation concern were identified, arethusa and one-spike cotton-grass, ranked as rare by the MBCDC, and a stand of older growth jack pine mixed forest, aged at 104 years were identified during field surveys (Appendix 9-3 Botanical and Vegetation Resource Survey Field Report [part 1] 4.4.3/26).	• Describe why these species of conservation concern, and why the old-growth forest community type was not carried forward in the effects assessment.
16	Appendix 9-3 no section/5	Vegetation baseline sampling was only conducted over a 7-day period (June 12-18) over one year (2015). Baseline sampling was not conducted multi-	• Conduct multi-season (summer, fall) baseline terrestrial surveys so as to provide a comprehensive measure of

Comment #	EA Section Reference	Issue	Question/Recommendation
		seasonally (i.e., summer, fall) or annually which would provide a more comprehensive assessment of potential impacts to native vegetative species and country foods (Appendix 9-3 Botanical and Vegetation Resource Survey Field Report [part 2] no section/5).	site characteristics and an accurate representation of the site community potentially affected by the Project.
17	13.6/13-17 & 13.3.3/13-15	The cumulative affects assessment for Boreal Woodland Caribou is only negligibly below (34.3% - 34.7%) the disturbance threshold of 35% identified by Environment Canada (2012) when All-Season Roads were included in the Habitat Disturbance Calculation for 2015-2025. While we appreciate the efforts taken, given the unpredictable nature of fires and that they are expected to be the largest contributor of disturbance, that caution and long-term monitoring/follow-up studies (13.6/13-17) for this species should continue for the Atikaki-Berens Management Unit (13.3.3/13-15). The limitations on the degree of anthropogenic disturbance allotted within this designation area should be an important factor of consideration for potential future cumulative effects on caribou**.**	• Take a cautionary approach to long-term monitoring and potential cumulative impacts of future projects on the Boreal Woodland Caribou population in the Atikaki-Berens Management Unit.
18	Appendix 3-6: 1.1.0/4	We appreciate ESRA's proposal and commitment to the restoration, re-vegetation and re-naturalization of its construction areas with native plant species. However, there is little detail provided for the follow-up inspection and reporting on the success of restoration/remedial work. Therefore, we cannot	• Consider incorporating floral species into the proposed native grass seed mix which would enhance habitat/forage for other wildlife species, particularly for pollinators (Appendix 3-6: ESRA's Native Seed Mix for Revegetation).

Comment #	EA Section Reference	Issue	Question/Recommendation
		adequately review ESRA's re-vegetation strategy and potential success (Appendix 3-6: ESRA's Native Seed Mix for Revegetation 1.1.0/4).	• Undertake targeted consultation with Metis community members for the revegetation of the P4 roadside, and the decommissioning of the winter road to support traditional land-use as quickly as is feasible. • Pursue opportunities to build Metis capacity and knowledge in the reclamation, monitoring and management of the Project.
19	GR 130.19 Wildlife/21	It is identified in GR 130.19 that no construction is to occur within 100m of an eagles' nest, heron rookery or other sensitive wildlife area without prior approval from the Contract Administrator and ESRA (Appendix 5-4: ESRA's GR130s Environmental Protection Specifications GR130.19 Wildlife/21)**.**	• Provide examples under what expected scenarios that approval would be given by the Contract Administrator and ESRA for which construction may resume within the 100m set-back distances.
20	14/*General Comment*	Chapter 14 identifies general monitoring and follow-up programs, and Appendix 5-2: Framework for ESRA's Environmental Management Plan refers to a Wildlife Monitoring Plan (Appendix G-Part B) (2.6.4/12). There is no Appendix G identified in the list of EIS documents for Project 4 – All-Season Road on the CEAA registry. Chapter 14 identifies general follow-up and monitoring studies that will be implemented for Caribou, Moose and Furbearers, but specific applicability to migratory birds and avian species of cultural importance (e.g., Bald Eagle) is not specified. Monitoring and follow-up programs pertaining to migratory birds and other species of cultural importance should also be described to	• Describe the monitoring and follow-up programs for potential effects to migratory birds and wildlife species of cultural significance, including objectives and any monitoring measures (i.e., thresholds) that will be implemented to verify the predictions of effects and evaluate the effectiveness of the proposed mitigation measures. If follow-up programs and management plans are not required, please provide reasoning. • Provide solid commitments as to which mitigation measures will be implemented and the decision making criteria for selecting a particular mitigation measure. Mitigation measures presented in Chapter 14 of the EIS

Comment #	EA Section Reference	Issue	Question/Recommendation
		provide clarity on the appropriateness and effectiveness of proposed measures.	uses non-specific language and describes measures to be employed 'as needed'.
21		Critical Habitat for Flooded Jellyskin lichen is defined in the Recovery Strategy (Environment Canada 2013), although it is not understood how it was evaluated or considered in the EIS as per the requirement outlined in Section 79 of the Species at Risk Act (SARA).	• Describe associated critical habitat for Flooded Jellyskin as per the requirement outlined in Section 79 of the Species at Risk Act (SARA). Based on the identification of critical habitat in the recovery strategy, conduct habitat suitability modelling to assess the potential impacts of project related effects on species occurrences and the extant population. Section 79 of the SARA requires that all adverse effects be identified and that measures be taken to avoid or lessen those effects and monitor them. Associated measures should be considered in a way that is applicable to the recovery strategy.
SOCIO-ECONOMIC AND CULTURAL			
22	10.1 Existing Conditions (Socio-economic and Cultural Environment)	Description of Metis community existing conditions regarding economic, health, cultural identity and other socio-economic and cultural indicators missing	Include description of Metis community's existing socio-economic and cultural environment including population and demographics, cultural identity, economy, community well-being indicators (both land and non-land related)
23	10. 2. 1 Socio-economic and Cultural Effects and Mitigation:	Missing valued components (VCs) and project interactions relevant and required for socio-economic and cultural effects assessment	a) Include economic development and community well-being as individual VCs to capture broader aspects of economic effect and social effect indicators

Comment #	EA Section Reference	Issue	Question/Recommendation
	Valued Components and Project Interactions		b) include human/social project components as key interactions for the effects assessment in addition to the physical components: human resources and capital expenditures
25	10.2.2 Assessment of Potential Effects	Metis baseline information and values (from current EIS nor the 2016 MLOUS Report) not carried forward into the effects assessment	Demonstrate consideration of accurate and up to date information regarding Metis social, economic and cultural values and interest (as they pertain both to the bio-physical environmental and non-land related social values) into the effects assessment
26	10.2.3 Mitigation	Socio-economic management and monitoring plans missing - required to track social, economic and cultural effects of the road over the long term	Include socio-economic management and monitoring plan; community advisory committee; and sustainable community development criteria set for short, medium and long term evaluation
OTHER EIS SECTIONS (PHYSICAL ENVIRONMENT, EFFECTS OF THE PROJECT ON THE ENVIRONMENT, ACCIDENTS AND MALFUNCTIONS)			
27	Section 7.1.4, Physical Environment; Appendix 7-1; Sections 11.2 and 11.5 Effects of the Environment on the Project.	Hydrological baseline data is virtually nonexistent for major waterbodies and no predictive modeling or inferential studies of watershed hydrology or ice jam potential based on historic data or future climate change scenarios appears to have been conducted. This makes it difficult to understand whether conceptual major watercourse crossing designs are adequate and appropriate and to in turn understand whether these designs are likely to avoid environment effects on erosion and scour potential	Conduct additional baseline studies or predictive modeling to characterize and assess the potential for periodic and/or climate change-induced precipitation or snowmelt/ice breakup to generate significant flooding or ice jams which may imperil the road and watercrossing infrastructure at watercrossings, or may require design modifications to minimize the likelihood of ice scour, ice jams, or increased erosion potential. Incorporate this characterization and assessment into the effects assessment, impact management, significance determination, and follow-up

Comment #	EA Section Reference	Issue	Question/Recommendation
		as a mitigation strategy. This also has implications for the pre-mitigation effects screening process shown in Appendix 7-1 in that magnitude and frequency categories assigned do not appear to be based on adequate baseline data.	program planning of the EIS in both the Physical Environment and Effects of the Environment on the Project sections.
28	Section 7.1.4, Physical Environment	The Berens River Northern Affairs Community (NAC) drinking water source is listed as being on Lake Winnipeg yet is located at the mouth of the Berens River at Lake Winnipeg. There are two treatment plants on the north and south side of the mouth of the river. This is important with respect to the potential for water quality impairments as a result of the road to effect drinking water for Metis people living in the Berens River NAC.	Correct information about the Berens River NAC water supply location and incorporate implications for the effects assessment and impact and risk management into the EIS.
29	Section 7.0, Physical Environment; Appendix 7-1	Soil erosion potential was not discussed at all in the physical environment section, either in the effects assessment or the existing environment subsections. Soil erosion potential within the runoff catchments of fish bearing water crossings should be assessed to inform construction-based and permanent water quality effects mitigation and design-based effects avoidance measures. It should also inform the assessment of potential effects on water quality during both constructions but also chronically during the operations and maintenance phase.	Characterize and assess soil erosion protection within the runoff catchments for the road of all fish-bearing streams, and incorporate this into the effects assessment, impact management, significance determination and follow-up program aspects of the Physical Environment (surface water) and Aquatic Environment sections of the EIS for both construction and operations and maintenance phases of the project.

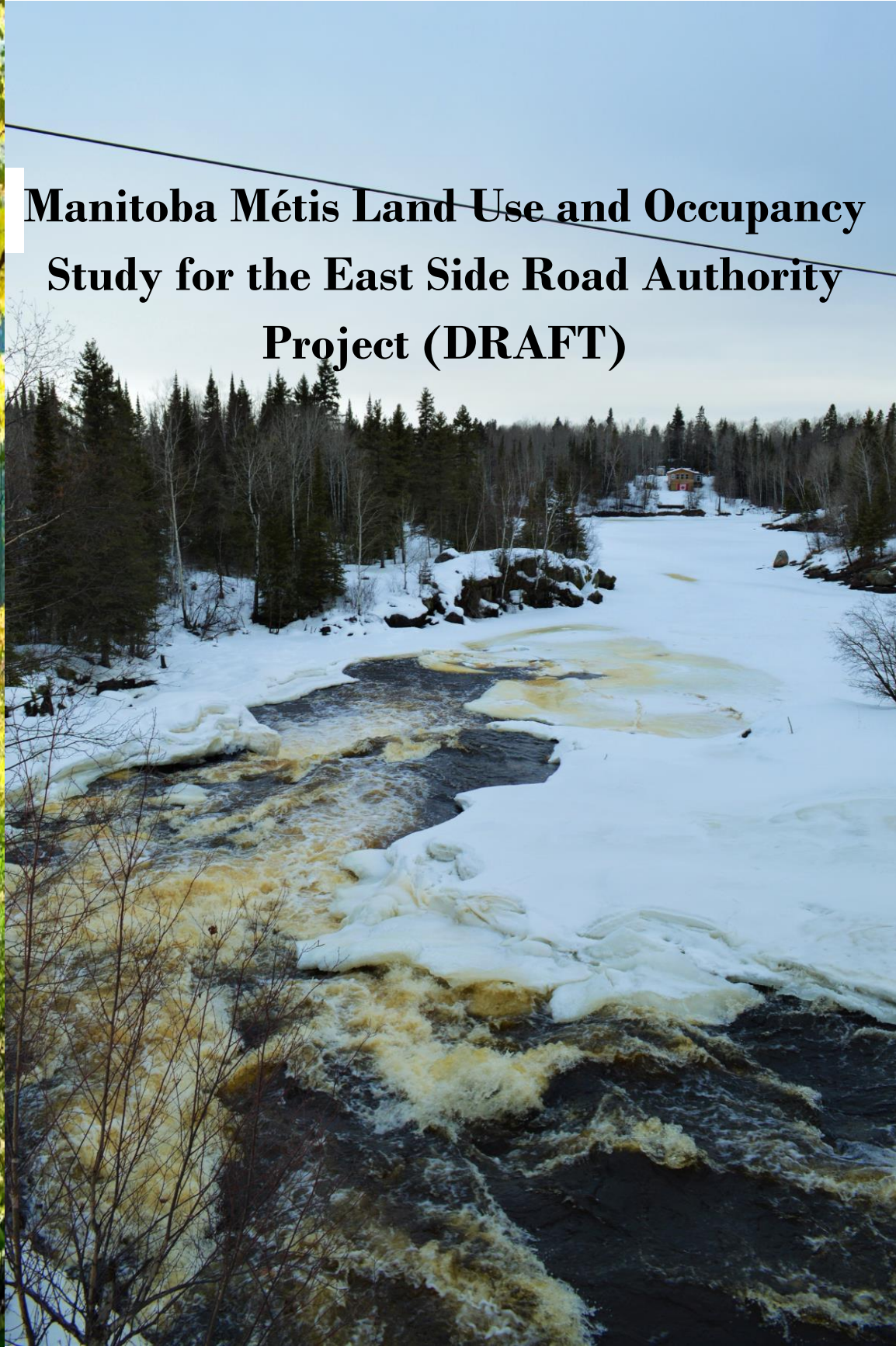
Comment #	EA Section Reference	Issue	Question/Recommendation
30	Section 12.0, Accidents and Malfunctions	Beyond the requirements of meeting provincial or federal standards for hazardous goods transportation, there is no clear mitigation, avoidance, or monitoring/inspection strategies for how the proponent will ensure fuels, lubricants, other hydrocarbons, herbicides, and explosives will be transported during construction and operations and maintenance phases to minimize the potential for spills and explosions.	Provide clear and specific mitigation, avoidance, or monitoring/inspection strategies for how the proponent will ensure fuels, lubricants, other hydrocarbons, herbicides, and explosives will be transported during construction and operations and maintenance phases within the project RAA to minimize the potential for spills and explosions.
31	Section 12.0, Accidents and Malfunctions	Traffic rate predictions by traffic type are not included in the EIS as an evidence basis for assessing the risk of accidents which may lead to spills, fires, or explosions during the construction or operations and maintenance phases, and therefore the requirement for mitigation and monitoring/inspection.	Provide appropriate and defensible evidence-based traffic rates by traffic type and incorporate these estimates into a risk assessment for accidents and malfunctions leading to significant spills, explosions, or fires within the project LAA during both construction and operations and maintenance phases of the project.
32	Section 3.0 Project Description; Seciton 5.0 Environmental Protection and Sustainable Development	There are no clear mitigation measures or commitments to ensure appropriate setbacks of construction staging areas from watercourses/waterbodies, nor to the use of environmentally friendly hydraulic fluids in heavy construction machinery when working around water during the construction phase.	The proponent should commit to ensuring 120m setbacks of construction staging areas from all waterbodies/watercourses, and to requiring the use of environmentally friendly, biodegradeable hydraulic fluids in all contractors' construction equipment working within 30m of a fish-bearing waterbody/watercourse.

Comment #	EA Section Reference	Issue	Question/Recommendation
33	Section 3.0 Project Description; Section 12.0 Accidents and Malfunctions	The Project Description section of the EIS suggests that only mechanical vegetation management will be used to manage vegetation during the operations and maintenance phase of the project, while in the Accidents and Malfunctions section of the EIS a mention is made of the limited use of herbicides. No details are provided on the timing of such use, its application relative to waterbodies/watercourses, and the appropriate transportation/storage/handling of herbicides including in any construction staging areas (if used while such areas are still in operation).	The proponent should commit to the use of mechanical vegetation management methods only in the ROW.
34	Section 3.0 Project Description; Section 12.0 Accidents and Malfunctions	There is no indication that security personnel will be stationed at construction staging areas to ensure that accidents and malfunctions, especially fires or explosions related to the storage of explosives, do not occur.	The proponent should commit to the use of security personnel at all explosive storage areas during the construction phase.
35	Section 5.0, Environmental Protection and Sustainable Development	The Environmental Protection and Sustainable Development section of the EIS has few details aside from committing to the development of construction and operations phase Environmental Management and Protection Plans and related procedures. It does not provide an adequate level of detail on specific plan measures in order to determine whether key risks of accidents and	The proponent should commit to providing MMF detailed information about environmental management, protection, and inspection plans and procedures prior to the completion of the design phase and before construction begin on the P4 Project, and consulting with MMF about the adequacy of such plans and procedures in protecting MMF's rights and interests. Alternately, MMF should

Comment #	EA Section Reference	Issue	Question/Recommendation
		malfunctions occurring near water or causing fires or explosions which may affect MMF rights and interests will be effective.	request that the regulator ensure this is a condition on the approval of the federal EA.
36	General comment	The P4 Project is very likely to enable and facilitate other development in the RAA over time, potentially leading to cumulative (in this case, additive) environmental effects on terrestrial and aquatic environments, and MMF rights and interests. While the nature, magnitude, and distribution of such development is very difficult to predict, it is important that MMF have an influential role in how such development occurs in the area due to the potential for impacts on its rights and interests.	Manitoba and Canada should commit to meaningfully consulting and involving MMF in future planning, licensing, and monitoring of development in the RAA, and providing an ongoing and influential role in this capacity.

APPENDIX C- MMF MLOUS REPORT- EAST SIDE ROAD AUTHORITY PROJECT

Manitoba Métis Land Use and Occupancy Study for the East Side Road Authority Project (DRAFT)



Report to the Manitoba Métis Federation, May 2016

Shared Value Solutions

62 Baker Street
Guelph, Ontario
N1H 4G1, Canada
P: 226-706-8888
www.sharedvaluesolutions.com

Contents

Tables

Figures

About the Authors

Nichole Fraser MacDonald, Leah Culver, and Keegan McGrath from Shared Value Solutions Ltd. authored this report. Biographies for each of the authors is provided below.

Nichole Fraser MacDonald, M.Sc., Project Director and Senior Researcher
The Lead Researcher and Project Director for this study, Nichole Fraser MacDonald, has a B.A. in Psychology from Mount Allison University, and an M.Sc. in Rural Planning and Development from the University of Guelph. Nichole has more than 13 years of experience designing and conducting community-based research projects, and has been carrying out land use and occupancy and oral history work with First Nation and Métis communities in Ontario and Manitoba for seven years. Her work has been used to identify community values and interests, determine potential impacts to way of life, and identify appropriate mitigation and accommodation for major infrastructure developments in the mining and energy sectors. Formerly an Aboriginal Consultation and Communication Specialist at AECOM, she left to establish Shared Value Solutions Ltd. in 2012. Nichole is a 2011 recipient of the Consulting Engineers of Ontario Award for Aboriginal Traditional Knowledge achievements.

Leah Culver, M.A., Project Manager and Researcher
Leah Culver is a Sociocultural Anthropologist and Human-Environment Consultant. She holds an M.A. in Public Issues Anthropology and International Development and a B.A. in International Development. She has five years of experience conducting qualitative research projects, including Traditional Knowledge and Oral History projects with First Nation and Métis communities in Manitoba and Ontario, qualitative based program evaluation, socioeconomic impact assessments, Community Energy Planning, GIS, Water Footprint Assessments, and designing and conducting human-environment relationship research in Kenya and Paraguay. Leah is a strong advocate for community-based and community-led participatory research and believes in the power of people's stories to bring broader meaning to current issues. Leah is a member of the American Anthropological Association.

Keegan McGrath, B.Sc., MES, Researcher and Aquatic Biologist
Keegan McGrath is an Environmental Specialist with a background in aquatic biology and environmental science. Keegan finished his B.Sc. Biology at Carleton University in 2009 where he studied aquatic behavioural ecology and landscape ecology. In 2014 he completed a Masters of Environmental Studies at Dalhousie where he investigated the environmental impacts of salmon aquaculture technologies and agriculture. He has been involved in environmental assessment projects on hydroelectric dams, transmission lines, highways, mines and wind turbines, and has field experience in southern Ontario, Nova Scotia and Labrador. Keegan has also been involved in carrying out land use and occupancy and impact assessment studies with First Nation and Métis clients in Manitoba and Ontario.

Cameron Stewart with N4 Construction and **Steve Gautreau**, an independent consultant, provided mapping and Geographic Information Systems (GIS) support for the project. Cameron and Steve have both worked extensively on Métis land use and occupancy studies.

Jessica Steiner and Meaghan Langille of Shared Value Solutions provided support in data analysis.

Definition of Terms

Land use: Defined generally as hunting, fishing and gathering, and the use of sites and resources for cultural and ceremonial purposes.

Occupancy: Defined generally as the settlements, movements, and sites associated with Indigenous peoples.

Indigenous Knowledge or Traditional Knowledge: (IK or TK) as the body of knowledge shared by Indigenous peoples and held by and transmitted between Indigenous representatives, which supports traditional land-use for the benefit and well-being of Indigenous peoples. The Manitoba Métis Federation prefers to use the term Métis Knowledge to specify the body of knowledge possessed by the Métis as a distinct people.

Traditional Ecological Knowledge: (TEK) People come to understand the ecology of their surrounding environment through years of firsthand experience and inherent cultural understandings of relationships between humans, animals, lands, and waters. People also come to understand the ecology of their environment through teachings that have been passed down through relations or within a community.

Map Biography: The methodology for this TKLUS is based on the best-practice map biography technique pioneered by Terry Tobias in his manual *Living Proof: The Essential Data-Collection Guide for Indigenous Use and Occupancy Map Surveys* (2009). The map biography is the standard data collection method for land use and occupancy studies. A map biography is an interview process in which a person provides an account of their life on the land and water, including places they have travelled, stayed, and gathered resources. In some cases, as with some of the Traditional Ecological Knowledge data provided in this TKLUS, respondents indicate places that they have not used personally, but about which they have knowledge from family or other members of the community (Tobias, 2009).

Oral History: Oral history is commonly collected as complimentary material to a map biography. This is essentially the respondent's qualitative land use and occupancy knowledge that doesn't lend itself as well to being recorded on a map. It could include details about the social, economic, cultural or environmental importance of a location, species, or land-based activity, as well as legends and stories that have been passed down. Oral history is used to bring depth to land use and occupancy research and increase shared understanding about the values of the participants.

Current use: for the purpose of this study was within the lifetime of the oldest study respondent who was born in 1938. Therefore, current use and occupancy would be any that occurred within the past 78 years. This definition is adopted from the "living memory recall interval" from Tobias (2009) which covers the time period from the participants' earliest memories to the moment of the interview. This definition is useful for establishing a baseline of use in an area in advance of development or change.

Historic use: has been used to define use and occupancy that occurred outside the life time of the respondents (i.e. more than 78 years ago) and/or access areas and cultural sites that the respondents defined as historic.

Executive Summary

Overview

This Métis Land Use and Occupancy Study (MLUOS) was conducted by Shared Value Solutions Ltd. (SVS) on the East Side Road Authority Project (ESRA Project or "the Project") to provide a basis for ongoing discussions between the MMF and the proponent and regulators in regard to the development of the proposed network of all-season roads.

The proposed Project is for approximately 1,100 km of all-season roads to connect communities on the north and east sides of lake Winnipeg. The Project is estimated to take up to 30 years and cost $3 billion CAN dollars. The development of this project has been broken up into several major components, the first of which have already begun and includes 156 km from provincial highway 304 to Berens River.

Due to the size and scope of this Project, there are several expected environmental and socioeconomic impacts. These range from spills and impacts on water quality, to effects on land use and economic and cultural resources.

Objectives

The objectives of the MLUOS study were to:

- Demonstrate the nature of the current and historic Manitoba Métis community's land use and occupancy and interests in the ESRA Project Study Area
- Contribute to an understanding of current environmental and socioeconomic conditions near the proposed Project
- Provide an indication of how the land use and occupancy and interests of the Manitoba Métis community may be impacted both positively and negatively by the ESRA Project
- Help develop a better understanding of the effects of the Project on the environment
- Inform the cumulative effects assessment
- Provide information to be used to inform future generations of the Manitoba Métis community

Information was collected from 18 Manitoba Métis community members using semi-structured qualitative interviews. The results of these interviews showed 965 current and historic land use, occupancy, and locations of Traditional Ecological Knowledge (TEK) in the Study Area. For this reason, the construction of the east side road is expected to have many long-term consequences for the Métis people who live in and use the areas being developed.

Results

The following is a break down of the 965 locations that were mapped through the ESRA MLUOS:

- 10 Métis birth places, 2 marriage sites, and 15 Métis residences were mapped within the ESRA Study Area, some for the respondent and some for Métis family members.
- 29 access routes and 60 overnight locations were mapped within the ESRA Project Study Area.

- 41 locations of cultural importance to the Métis were identified in the Study Area. These included places that are still used and places that were considered to be historic.
- 318 hunting spots where participants have hunted for large game, small game, and birds were mapped.
- 122 fishing locations were identified by participants in the Study Area. The most frequently mapped fish species were walleye, pike, yellow perch, and bass.
- 16 trapping locations were mapped within the ESRA Study Area. These included entire trap lines, specific trapping sites, and routes along which trapping occurred.
- 118 locations for the gathering of plants and natural material were mapped within the ESRA Study Area.
- 72 locations where plants, animals and other resources had been processed on the land were mapped. The most common processing types were field dressing of large game, quartering of carcases, skinning carcasses, and butchering meat from animals.
- 55 locations of knowledge transfer were mapped by participants in the ESRA Study Area.
- 23 locations were identified as being economically important. A total of 10 of the 18 participants said that land use activities had helped to supplement their income and/or the income of their family. This included areas of commercial fishing, trapping, gathering (for wild rice and blueberries), and other cultural activities.
- 70 Traditional Ecological Knowledge locations were mapped within the ESRA Study Area. The categories of TEK that were most frequently mentioned by participants included fish spawning areas, mammal seasonal habitat, bird habitat, reptiles and amphibian habitat, and wild rice areas.
- 14 locations for changes were also mapped within the ESRA Study Area. The most frequent changes that were observed in the area include: a decrease in the mammal population, a decrease in vegetation population and habitat, and a decrease in water quality.

Conclusions

Construction of the East Side Road is a large-scale project that is likely to have long-term consequences for people who live in and use the Project Study Area. Individuals within the Métis community experience environmental conditions first-hand as users of the land. Impacts from the ESRA Project may negatively affect current land use and contribute to cumulative effects felt by these individuals. These environmental effects are intertwined with socio-economic aspects of Métis life.

Based on the findings of these interviews, SVS concludes the following:

- The Manitoba Métis community demonstrated historic and ongoing **occupancy** in the ESRA Project Study Area as evidenced by birth places, residences, and marriage sites mapped for respondents and their family, as well as the presence of a number of MMF government Locals in Manigotagan, Bissett, Seymourville, Berens River, and Poplar River.

- The current and historic Manitoba Métis community demonstrated **use** in the ESRA Project Study Area. This includes a variety of land-use from hunting, fishing, gathering and trapping, to travelling on and staying out on the land, and gaining/sharing knowledge.
- There is a long-standing connection to the ESRA Study area as a place of "Métis community", in particular with evidence of historic Métis presence in Manigotagan, Bissett, Seymourville, Berens River and Poplar River.
- A relatively large number of Métis people supplement their income through land use activities in the area – impacts to the environment could impact the economy of the Métis community.
- The Métis community has valuable TEK that should be used, now and on an ongoing basis in the future, to inform the development of the East Side Road so that impacts are mitigated.
- Participants expressed concerns that the development of the East Side Road will alter socio-economic conditions in both positive and negative ways. A more fulsome land use study, as well as a socio-economic baseline study should be completed to understand these potential impacts further.

SVS believes that the findings of this report demonstrate Manitoba Métis community occupancy and use in the more northern parts of the ESRA Project Study Area and that further research with Métis populations in Seymourville, Berens River, Poplar River, Matheson Island, and Pine Dock areas to assess land use and occupancy and establish a socio-economic baseline, should be funded before any additional development moves forward with the East Side Road Project.

In order to understand and address the full extent of impacts the East Side Road may have on Métis way of life in the Study Area, an ongoing working relationship between ESRA and the MMF will be required at each phase of the project's development. This relationship will assist in identifying values and concerns, as well as mitigating and prescribing protection measures and/or compensation/ accommodation measures. To ensure that ongoing consultation is as meaningful as possible, the rights, interests, and values of the Métis people in the entire Project Study Area must be considered.

1. Introduction

Shared Value Solutions Ltd. (SVS) prepared this report on the *Métis Land Use and Occupancy Study for the East Side Road Authority Project* (ESRA MLUOS) on behalf of the Manitoba Métis Federation (MMF) with funding from the East Side Road Authority (ESRA). **This Study may not be used or replicated for any other purpose without the written authorization of the MMF.**

1.1. Background & Context

This ESRA MLUOS study was conducted to provide a basis for ongoing discussions between the MMF and with the East Side Road Authority (ESRA) in regard to the development of its proposed network of all-season roads ("the Project").

The MMF is made up of seven Regions including the Southeast Region, the Winnipeg Region, the Southwest Region, the Interlake Region, the Northwest Region, the Pas Region, and the Thompson Region. Within each Region are a series of Locals, which are local governments that must have at least nine members to remain active. A map of the Regions and Locals can be found in **Error! Reference source not found.**.

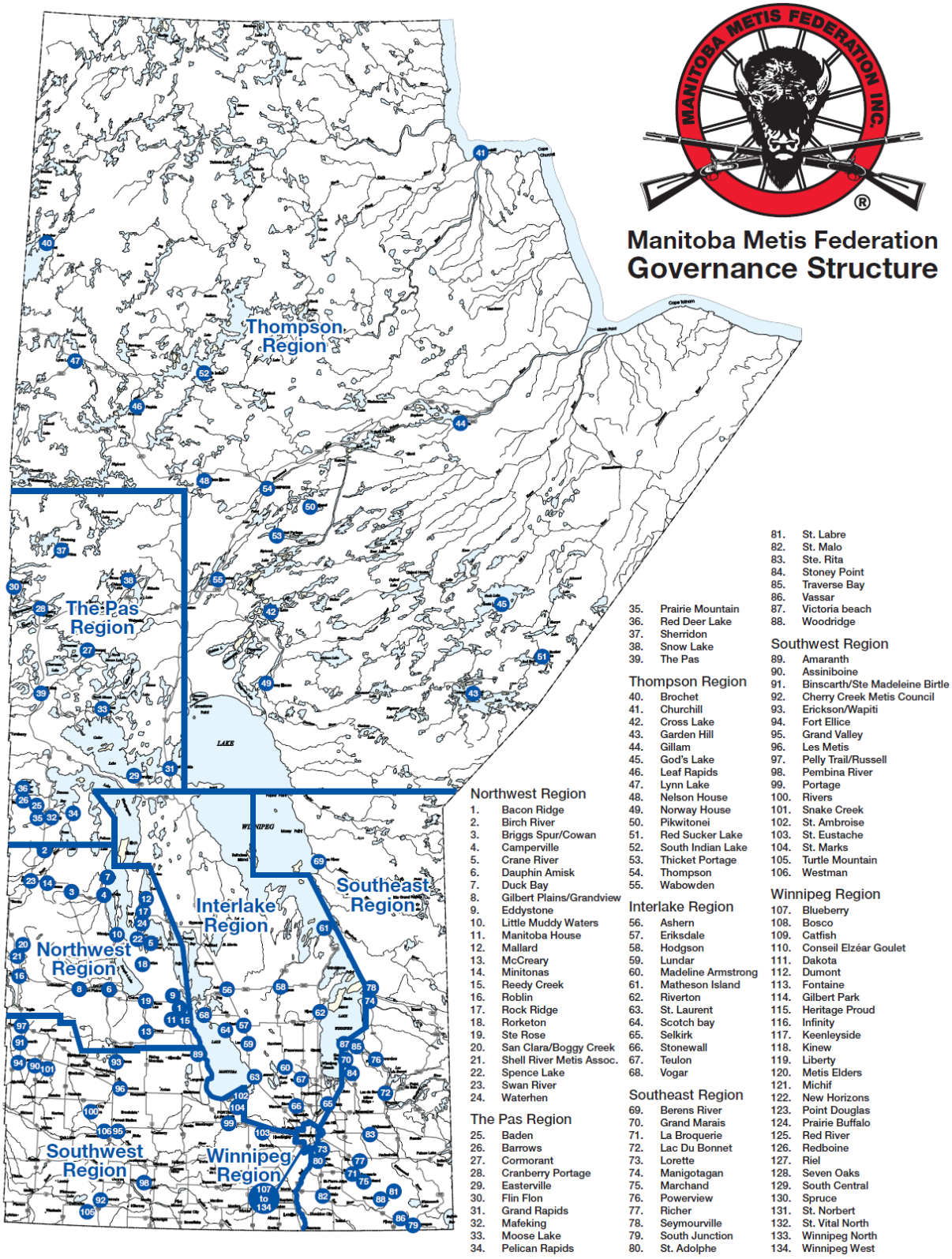
The ESRA Project will largely overlap with MMF's Southeast Region. This is a region were the Manitoba Métis Community has a longstanding and well established presence, as is set out in greater detail in Appendix E.

SVS has background information on the ESRA Project included below. This was developed using materials found online predominantly from the East Side Road Authority website (www.eastsideroadauthority.mb.ca/index.html).

1.1.1. Quick Road Facts

- Approximately 1,100 km of all-season roads being proposed for development
- Could take up to 30 years to complete
- Estimated cost of approximately $3 billion
- Construction will take a staged approach, gradually improving the winter road system, to extend the season. Ultimately roads will be improved to achieve all-season status.
- ESRA says that it is coordinating with local communities to identify priorities for immediate benefits.

Figure 1. Manitoba Métis Federation Governance Structure



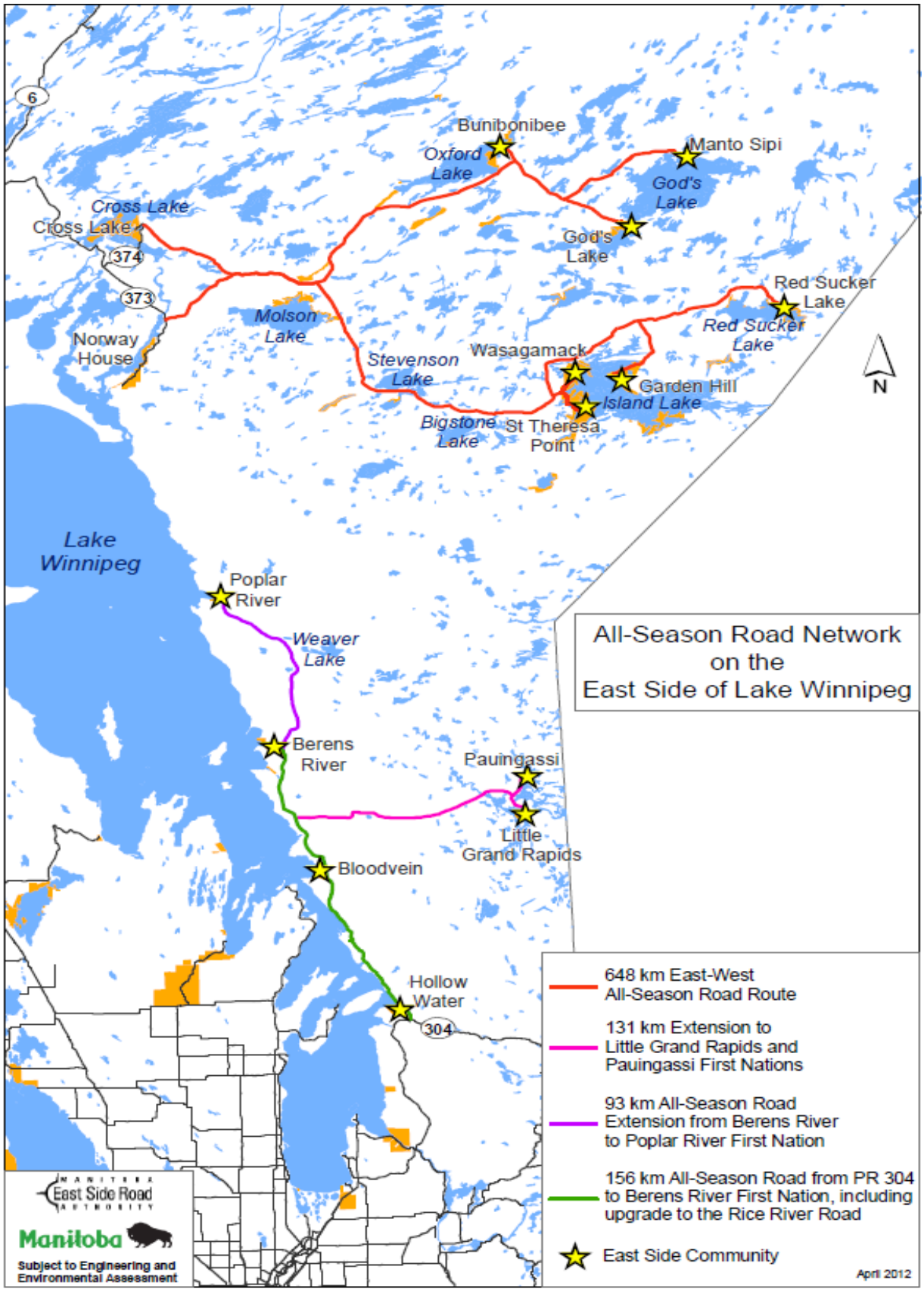
1.1.2. Details About the East Side Road Initiative

In 2009, the Manitoba Government indicated their commitment to the construction of a network of all-season roads on the east side of Lake Winnipeg. Through this network, ESRA aims to link 13 remote First Nation Communities, previously only accessible by winter roads, to each other and to the rest of Manitoba ().

The purpose of the all-season roads is to provide opportunities for social and economic development, such as improved access to health care for people in that area. All together, the construction of over 1000 km of all-season roads is estimated to take up to 30 years and cost over $3 billion. To oversee this Project, the Government of Manitoba commissioned the Manitoba Floodway and East Side Road Authority.

As a first step, ESRA hired SNC-Lavalin to conduct a Large Scale Transportation Network study to identify the preferred all-season road network on the east side of Winnipeg Lake. Its scope was to explore the feasibility, routes, benefits, impacts, costs, and potential partners for the road network. This study was completed in March 2011. At the time of this MLUOUS Study, environmental licensing had been obtained for some sections of this road network and construction had begun. Other sections were in the process of environmental approvals and licensing.

Figure 2. Proposed All-Season Road Network on the East Side of Lake Winnipeg



The major components of the east side road network will include the following:

- A 156 km all season road from Provincial Road 304 to Berens River. **Construction on this section has already begun**, with approval from both provincial and federal governments.
- A 94 km all-season road extension from Berens River to Poplar River (Project 4 or P4) which is **undergoing a federal Environmental Assessment at the time of this study**.
- A 131 km all-season road connecting Paungassi River and Little Grand Rapids First Nation to the Provincial Road 304 (Project 7A or P7A). This includes a 38 km section from Paungassi FN and Little Grand Rapids FN to the Little Grand Rapids Airport, which is **undergoing environmental licencing through Manitoba Conservation at the time of this Study.**
- A 648 km route connecting several First Nations northeast of Lake Winnipeg to Provincial Road 373. These sections of the road Project are **in the planning, design, and consultation stages, which will continue from 2016 over the next 20 years.**

1.1.3. Predicted Alterations to the Environment from the Project

Some of the potential effects of constructing all-season roads on the east side of Lake Winnipeg resulting from construction activities or incidents include, but are not limited to, the following:

- Spills, leaks, accidents or malfunctions and the associated impacts on water, soil, wetlands, wildlife, and human populations
- Loss of vegetation from clearing activities
- Erosion of and sedimentation of streams and waterways
- Changes to water quality, quantity or flow
- Changes to wetland health
- Impacts to wildlife (mammals, fish, birds, insects, reptiles and amphibians) quality, quantity and distribution from disturbance or habitat loss/degradation/fragmentation
- Impacts or disturbance to traditional land-use activities such as hunting, fishing, gathering
- Air and noise emissions (Effects on wildlife and human populations)
- Effects on archaeological, cultural heritage resources and spiritual sites
- Increased human populations due to influx of temporary workers and tourists
- Effects on access to and function of traditional hunting routes, traplines, trails and water routes
- Effects on traditional hunting and trapping areas
- Effects on traditional fishing waters

1.2. Study Objectives

The information gathered through the ESRA MLUOS, together with information gathered through past Métis land use and occupancy studies in the area east of Lake Winnipeg, is meant to help achieve the following objectives:

- Demonstrate the nature of the current and historic Manitoba Métis community's land use and occupancy and interests in the ESRA Project Study Area
- Contribute to an understanding of current environmental and socioeconomic conditions near the proposed Project
- Provide an indication of how the land use and occupancy and interests of the Manitoba Métis community may be impacted both positively and negatively by the ESRA Project
- Help develop a better understanding of the effects of the Project on the environment
- Inform the cumulative effects assessment
- Provide information to be used to inform future generations of the Manitoba Métis community

1.3. Scope of the ESRA MLUOS Study

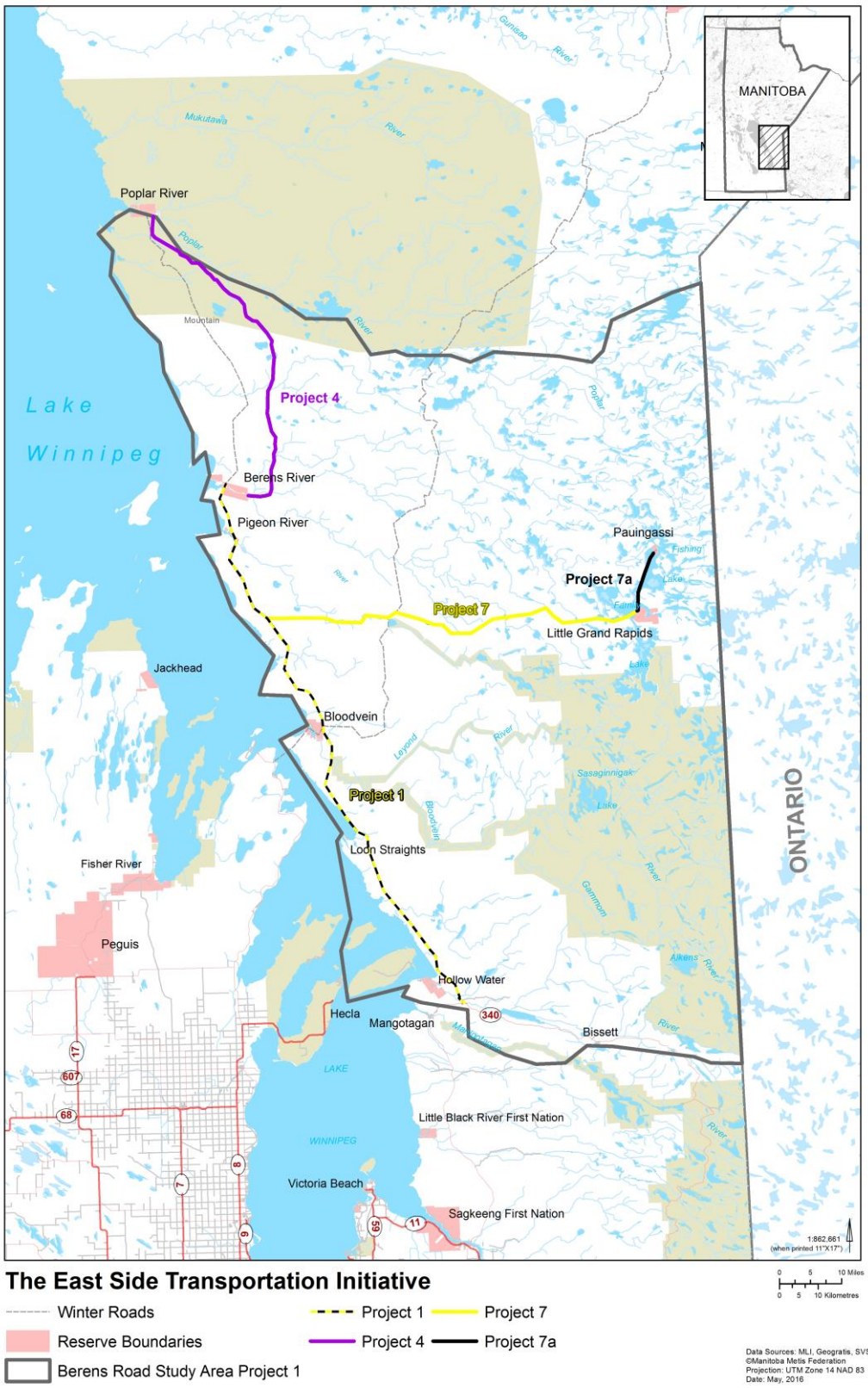
This section of the report describes the geographic and temporal scope of the ESRA MLUOS.

1.3.1. Geographic Scope of the ESRA MLUOS

The construction area for the new ESRA all-season road system stretches from Provincial Road 304 (near Hollow Water First Nation) in the south, to Poplar River in the north (SNC Lavalin, 2011).

SVS, together with the MMF, selected the ESRA MLUOS Study Area ("the Study Area") which encompasses this construction zone and includes a 25km buffer to the north and south. It is bound on the west by Lake Winnipeg and the Manitoba/Ontario Provincial boundary to the east. The Study Area of the ESRA MLUOS is outlined in .

Figure 3. The Study Area



1.3.2. Temporal Scope

The ESRA MLUOS examined both historic and current Manitoba Métis community use and occupancy.

The definition of "current use" for the purpose of this study was within the lifetime of the oldest study respondent who was born in 1938. Therefore, current use and occupancy would be any that occurred within the past 78 years. This definition is adopted from the "living memory recall interval" from Tobias (2009) which covers the time period from the participants' earliest memories to the moment of the interview. This definition is useful for establishing a baseline of use in an area in advance of development or change.

"Historic use" has been used to define use and occupancy that occurred outside the life time of the respondents (i.e. more than 78 years ago) and/or access areas and cultural sites that the respondents defined as historic.

1.4. Study Team

Shared Value Solutions (SVS) is a consulting firm based in Guelph, Ontario, Canada that specializes in traditional land use and occupancy studies, translating study results to support environmental assessment processes, and community negotiations with proponents. Our researchers hold graduate degrees in land use planning, cultural anthropology, geography, and ecology among other relevant fields. SVS research teams always include senior team members.

MMF representatives were also involved in undertaking this research. Marci Riel, Hydro Coordinator at the MMF was the key client contact for SVS in relation to the Study. A staff person from the MMF accompanied the SVS team in the field to assist with completing oral history interviews and to liaise with respondents. Cam Stewart of N4 Construction, an MMF economic development organization, was subcontracted to provide GIS mapping support, and to develop all of the maps as part of this report.

2. Methodology

The land use and occupancy information for the ESRA MLUOS was collected through a map biography and oral history process.

2.1.Map Biography and Oral History

The map biography and oral history focused on the collection of the following information:

- Hunting and trapping sites
  - Important fishing species, locations, and spawning areas
  - Vegetation and important plants gathered, including medicines and food plants
  - Locations where harvested materials were processed by the participant for consumption
  - Culture and heritage resources, sacred sites, archaeological sites, areas of economic importance, other special sites, and contemporary gathering places
  - Important travel routes
  - Overnight sites including cabins, other types of structures, and camping sites
  - Areas where knowledge sharing occurred with Métis people on the land
  - Information about the ecology and habitat in the Project Study Area
  - Métis perceptions of the Project's impacts on the rights, culture, and interests in the Study Area

2.1.1. Map Biography and Oral History Participants

SVS worked with the MMF to develop criteria for the interview participants. Participants with the following criteria were sought:

- Manitoba Métis Federation citizens,
- have lived in the Study Area or who travelled from other parts of Manitoba to harvest there,
- had knowledge of the land within the Study Area,
- were hunters, fishers, trappers, plant harvesters, and other land users,
- had knowledge of sensitive environmental sites within the Study Area,
- had a family or community connection to the land within the Study Area (e.g., family homes, cultural gathering places, recreational use of the area),
- people with knowledge of medicines or others with spiritual or cultural knowledge as it related to the land,
- depended on the land for their livelihood (i.e., made an income from the land), and

- were from a variety of age groups (from elders to young people who use the land), family backgrounds, and from both genders.

Based on these criteria, MMF Community Liaisons arranged and confirmed interviews.

A total of 18 people took part in "in studio" interviews in February and March 2016 and two of these participants also took part in semi-structured interviews in the field (details of the interview methodology are provided below in 2.1.3). The 17 male and one female participants ranged in age from 39 - 78 years of age with an average age of 60.

No pre-test interviews were conducted, as the map biography and oral history surveys were built using established protocols and study design from previous projects conducted with and by the MMF.

2.1.2. Tools for the Map Biography and Oral History

SVS prepared a data collection toolkit that included the following: a permission form, an overview of the ESRA Project, an interview record form, a Land Use and Occupancy Interview Guide, and a mapping methods manual (see Appendices B to F for the documents included in the Study toolkit).

In addition to this toolkit, the items used for each map biography and oral history interview included two laptops per interview, ESRI ArcGIS software (GIS), ESRA study area shape files, Microsoft Access software, audio and video recording equipment, SD cards, USB memory sticks, and two back-up hard drives. Also included was a master data management document where all interviewed participants were recorded along with the status of data back-up, and a 2' x 3' hard copy map showing the ESRA road routes through the Study Area.

2.1.3. Map Biography and Oral History Procedure

Interviews were completed with one individual at a time, though in some cases the participant brought a family or friend with them to observe. The study team briefed the respondents on the Project, its objectives and on how the data would be used at the beginning of each interview. They then reviewed a permission form with participants and invited them to sign consent to being audio and video recorded and to allow their information to be used for the purposes of the study (see Appendix C for the permission form). All 18 participants consented to audio and video recording.

Interview teams consisted of two individuals. The interviewers used a data collection manual and guide to help in applying a standard map biography process consistently with each participant (See Appendix D). Interviews focused on the participants' direct experiences, defined as "current use", but included information on "historic use" for family members from whom they were directly descended.

During the map biography interviews, respondents were asked about the areas that they had hunted, fished, trapped, gathered or used the land for other traditional practices in the Study Area to the east side of lake Winnipeg, specifically focusing on the Study Area. One member of the interview team marked features (points, lines and polygons) identified by the respondents on the map directly on a computer using GIS. Descriptive data for each mapped feature was entered by the second interviewer into a customized Microsoft Access database.

In addition, a series of oral history questions were asked. The objectives of the oral history questions were to enhance and verify the findings of the land use and occupancy interviews, to collect information

on individual's perceptions of the east side road (concerns, hopes etc.), as well as to draw out aspects of current and historic land uses and land occupancy that pertain to the Manitoba Métis's social, economic and/or cultural identity, well-being and sustainability.

The GIS computer screen was video recorded during the mapping exercise to allow for post-interview verification. The respondents themselves were then video recorded during the oral history to provide a video record of the interview that could be used for future communication. A separate audio file of the interview was made to provide a back-up.

Participants received a $150 honorarium for their participation and travel expenses were reimbursed.

Quality Assurance (QA) measures were taken in data gathering, back-up, and analysis. Senior SVS consultants provided training on the map toolkit to junior staff prior to going into the field and reviewed all tools and deliverables. Following the interviews, SVS conducted a review to ensure that the data entered in the Microsoft Access database was aligned with the data entered in GIS. SVS also conducted QA checks on the written transcripts to ensure accuracy.

The data for this report was analyzed by identifying several broad thematic categories based on the questionnaire. The results of the oral history interviews were analyzed to understand participants' concerns and thoughts on the Project. The results were also analyzed to identify areas and events of significance for MMF in the Project Study Area and to help establish some baseline of socio-cultural/ socio-economic context and conditions. Transcripts were reviewed and direct quotes were coded into subcategories so that a few of the most representative quotes could be included in this report.

The geographic data was processed to create several maps which depict the land use of the respondents. To identify specific land uses in the Study Area and directly adjacent lands, maps were categorized by type of land use (e.g. wildlife harvesting/ processing, plant and natural material harvesting, cultural sites and occupation areas, access routes, trap lines, and a variety of traditional ecological knowledge maps), as well as maps which focus on the Project Study Area. Confidentiality and Informed Consent of Participants

SVS obtained informed consent from all participants and committed to the MMF that the research team would take all reasonable measures to safeguard confidential information and would not disclose or share any information that it obtained through its work without the approval of MMF at any time during or after completion of the ESRA MLUOS. This commitment was communicated to Study participants in writing through a permission form and verbally by SVS consultants, who read the permission form aloud to participants (see Appendix C).

2.2. Data Management

Great care was taken to ensure that quality data was gathered and that useable footage was recorded with back-up video cameras and audio recorders to create redundancy in the data. As a result, a large amount of data was collected through the interviews from multiple modes including GIS files, Microsoft Access database entries, video files of the GIS screen and the participant, back-up audio recorder files, as well as hard copy permission forms and interview record forms. This large amount of information had to be managed in an organized manner to ensure that the MMF's data was protected at all times.

To achieve this objective, the research team developed and followed a data management and storage process. This protocol involved having one team member who was solely responsible for the management and back-up of all files. The data manager used a master data management sheet to record all interviews and the status of data storage on an ongoing basis (Appendix E). Data was always backed up in at least two locations.

2.3.Study Limitations

2.3.1. Limited Budget for the ESRA MLUOS

The budget provided by the East Side Road Authority to the MMF to complete the ESRA MLUOS was very minimal, particularly when taking in to account the size of the Project. This led to a number of limitations described below, including difficulty with reaching remote members of the Métis community further north in the study area, and a lack of funds to conduct an appropriate validation process with the community.

2.3.2. Sample Size Issues

Participants in this study were strategically identified by the MMF to provide a cross-section of the Métis population that uses and/or lives in the Project Study Area. A total of 18 interviews were completed as part of this Study with a focus on citizens who had current use or whose family had historic use of the area. This number of participants provided a relatively small sample size of the overall Métis population. This small sample size was due in large part to the limited funds and short timeline in which to complete the land use study.

Despite the noted sample size limitations set out in this report, SVS is of the position that the Study provides a reasonable representation of the Manitoba Métis community's patterns of land use and occupancy within the southern portion of the Study Area. The Study is not, however, a statistically representative sample of the population of Métis land users across the Province of Manitoba or within the Study Area and cannot be relied upon as such. In particular, with additional funding and time for further research, a more comprehensive representation of Métis land use and occupancy could be recorded in the more northern portions of the Study Area in order to meet the MMF's objectives as laid out in Section 1.2 of this report.

2.3.3. Mapping Issues

As part of the map biography process used for the ESRA MLUOS, digital maps were displayed to participants on laptop computers using Geographic Information System (GIS) software called ArcGIS. Participants were asked to look at the computer screen with the interviewer and identify the location(s) of land use and occupancy as prompted by each interview question. Most of the participants were able to recall specific locations, direct the interviewer to that location on the map, and verify that the interviewer had recorded the location correctly. Some participants had difficulty reading and verifying locations using the computer-based map software due to vision problems, difficulty communicating, or difficulty understanding and/or relating to the maps.

The research team assisted participants with perspective on the digital map by providing a large paper map with town names and the boundaries of the Study Area for cross-referencing. Those with vision

problems were assisted by the interviewer pointing to locations on the paper map and reading the surrounding place names in order to orient the participant. Some participants brought a friend or family member to assist them if they had difficulty with vision or communication.

It should also be stated that slight inaccuracies may be found on the maps. For example, in a few cases, a fishing point may appear to be on land, or a hunting point to be in the water. This is a common mapping issue that can occur when data is mapped using one scale and/or one set of base maps and reported using another scale and/or set of base maps.

2.3.4. Interviewer, Participant and Study Biases

Both the interviewer and the interviewee have inherent biases that can impact any research study. Interview bias can stem from the social setting of the interview, perceived power imbalances between interviewer and interviewee, the comfort of the interviewer or interviewee, or the physical location of the interview. SVS and MMF took the following steps to decrease interviewer bias and mitigate the effects that it may have on the research Project:

- Scheduled interviews through MMF staff as much as possible in order for them to explain the study objectives to citizens in advance
- Informed participants of the interview process again at the beginning of the interview
- Provided opportunity for questions to be asked and answered
- Made conscious choices of the plain language wording of questions asked and used a standard interview methodology and questionnaire
- Limited the use of leading questions or statements
- Where possible, conducted interviews in MMF community spaces to offer a familiar setting
- Took breaks when needed to ensure interviewer and interviewee stayed alert and focused

In addition to the strategies above, SVS also applied methodologies of Terry Tobias (2009). This methodology is discussed further in the Methodology section of this report. An important aspect of the Tobias approach to note here, however, is the Data Diamond. The Data Diamond is a mapping approach that ensures the map biography survey focuses on facts. To ensure that mapping data is as accurate as possible, a total of four use-and-occupancy facts need to be collected for the areas mapped (Tobias, 2009:47). These facts are:

1. By a respondent and/or others (Who)
2. Engaged in an activity (What)
3. At some point in time (When)
4. At a specific location (Where)

The Data Diamond can be used to improve map accuracy by helping respondents recall as many details as possible. SVS used detailed maps to help participants orient themselves, thereby producing more accurate mapping data as a way to support participant recall.

2.4.5 Validation Not Conducted

SVS carried out Quality Assurance (QA) checks on the data that was collected as part of this study using the Data Diamond approach described above to assist with validating the results. To also have

participants validate their own transcripts and maps, ensure they properly capture the information that they provided, and to review and comment on composite maps, would be best practice.

Given the short timelines associated with the ESRA MLUOS, community validation was not able to be conducted before this report was finalized. It is SVS's understanding that community validation will take place as part of the ongoing consultation that the MMF is carrying out with the community on the ESRA Project.

3. Results

This section includes aggregate results from the study participants. The results are presented in the following categories:

- Places of Occupancy of the MMF Study Participants
- Land Use of the MMF Study Participants
- Traditional Ecological Knowledge of MMF Study Participants
- Changes Observed by MMF Study Participants
- Potential Cumulative Effects
- MMF Study Participant Opinions and Input to the ESRA Project

All of the sub-sections include a thematic map, or in the case of the sub-section on Traditional Ecological Knowledge, two thematic maps, of the participants' composite land use and occupancy that were plotted during the map biography process carried out for this Study.

Where appropriate, the maps are labelled with unique identifiers that are linked to a corresponding table that provides descriptive data about the points, polygons, or lines on the maps. The unique identifiers for each feature are a combination of the respondents' PIN and GIS IDs used during the mapping process.

Each sub-section also provides a summary of the findings, which is then explained further through accompanying quotes that came directly from the interviewees' transcripts. The ESRA MLUOS participants' knowledge and opinions strongly inform the analysis and conclusions using this approach.

Métis Historic and Familial Connection to the ESRA Study Area

Many of the participants reported that the lands and waters in the ESRA Study Area are an historically important part of the Métis community and a few participants expressed how they would harvest with their grandparents in the same places that they harvest today. Some examples are included in the quotes below:

> *"My great-grandmother was a medicine woman in her day. I have a few friends that are medicine people today, that are Métis. And, and I hope with time that maybe somebody in my family will become that person again. And I hope my grandchildren have the opportunity or my great-grandchildren. So, I think the land is very important to all of Métis people as well as my family. And my family has participated in every level of things from the St. Rita area to the Bloodvein area. We've hunted, fished, harvested wood. My great-grandmother harvested all, all the berries and I harvested berries too, but she harvested all the plants to make medicines."*

> *"I come here as a young man, I was 13, 14 years old. And I spent the majority of my young life in this community, in Manigotagan. And I tried, I learned lots from here, I always tried to listen to the elders of the community at the best of times cause they were our educators as well as they were interesting to listen to. They had lots of really neat stories about fishing, hunting and what they did and how they moved along the river systems and did what they did. So I always paid attention to that. And I thought that was an interesting ordeal. Uh, the, the elders uh, showed us how to fish, hunt and gather. […] Manigotagan will always be a special place to me for simple reason is, I, as a young man I was accepted so strongly into this community, and they always*

respected me right til today. And that's an important part of everything in life is being respected and giving respect in return."

"Part of my Métis community? It's a beautiful area to be preserved, I mentioned something about the Marchands point where they have a beach there that, better than Grand Beach, anything we have its miles and miles of solid white sand with dunes of sand in the back."

"It's probably about four, four to five generations that lived in this area here. My, on my parents' side…And we've used the land mostly for, for sustenance and for gathering. All, all kinds of different things. Like for homes and that. Our first home was built of logs out of this area. So, it means a lot to me. It's, it's very dear to my heart."

[Referencing lands to the East of Lake Winnipeg] "*Well, first of all it's home to me, right? We lived here sorry, all my life I've been attached to this area, coming here. The spot we're on right now is my grandfather's homestead. So it's got a great name to me personally and just, I don't know. We. there's lots of land, like we all burn wood here still and it's not by we can't afford to, we chose to, right? I love that. It's good that, I see it changing. Like I said, it's are connection is, like when our parents were here it's home, right? So, whenever I'm somewhere else this is where I consider my home."*

It was clear from these quotes that the land and waters have been, and are still used for sustenance by Métis people in the ESRA Study Area. Where this information was captured, it has been included in the tables, maps, and qualitative analysis throughout this report.

3.1.Métis Places of Occupancy

3.1.1. Métis Birth Sites, Residences and Marriage Locations

Participants were asked to point out personal and family birth places, residences, marriage locations, and places where their family members may have historically received scrip[1]. A total of 10 Métis birth places, two marriage sites, and 15 Métis residences were mapped within the ESRA Study Area, some for the respondent and some for Métis family members (see Table 1), which demonstrates a historic and ongoing occupancy of the area by the Manitoba Métis community.

Table 1. Métis Occupancy Locations

Type	Respondent	Family
Birth place	3	7
Marriage site	1	1
Residence	13	2

[1] Scrip refers to "A certificate entitling the holder to acquire possession of certain portions of public land" (Oxford English Dictionary, 2015). A system of scrip was implemented throughout Manitoba in the 1870s. When the land became part of Canada, rather than negotiating with the Métis on a collective basis – as the treaties did for indigenous communities – scrip was utilized for the Métis, whereby individual Métis were offered land or money in exchange for their Aboriginal rights.

displays the birth, residence, and marriage locations mapped by participants in the ESRA Study Area. It is evident that the southern portion of the ESRA Study Area, especially near Manigotagan, have been and continue to be important areas for Métis occupancy. There were a few places of occupancy reported further north including a birth place approximately 20km north of Manigotagan, a Métis residence at Berens River, and a Métis residence at Poplar River.

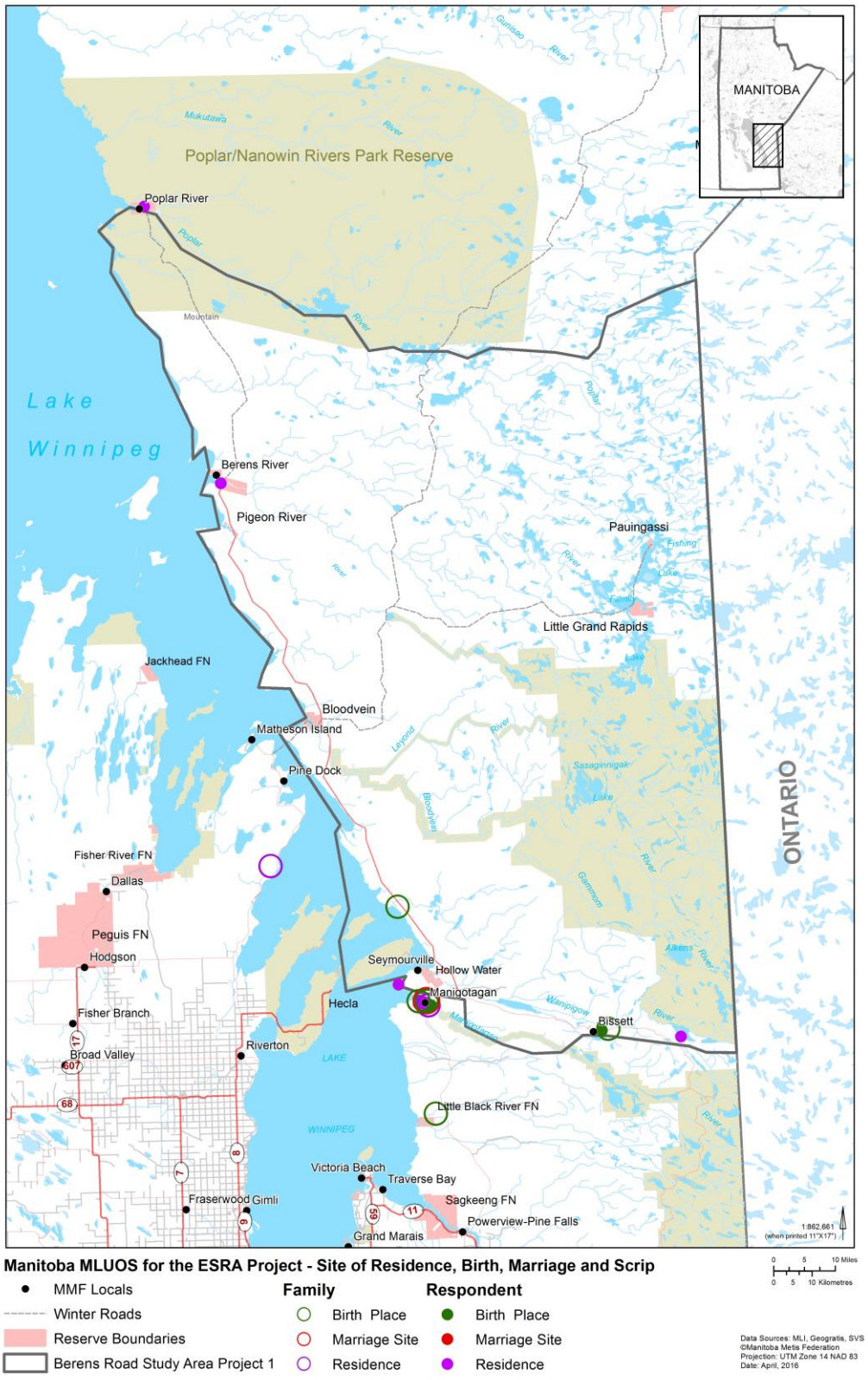
3.1.2. Métis Locals

It is also important to point out the presence of the Métis Locals at Manigotagan, Seymourville, Berens River, Bissett, and Poplar River[2], as well as across the Lake Winnipeg channel at Matheson Island and Pine Dock, which have winter road access to the ESRA Study Area. These can be found both in **Error! Reference source not found.** above and in below.

The MMF's website (2016) explains that "within each Region are various community-level "Locals" which are administered by a chairperson, a vice-chairperson, and a secretary-treasurer. A Local must have a minimum of nine members and meet at least four times a year." The presence of the Locals, which must have a minimum of nine members to remain active, also demonstrates current Métis occupancy at Manigotagan and north in the ESRA Study Area to Seymourville and Berens River.

[2] Note that at the time of this Study, SVS was informed that the Bissett and Poplar River Locals were active, but had not yet been updated on the Governance Structure map.

Figure 4. Métis Occupancy Locations



3.1.3. Métis Access Routes and Overnight Locations

Participants identified routes and trails that they use to access hunting, fishing, trapping, gathering, and other land use areas as well as places where they stay overnight on the land. A total of 29 routes and 60 overnight locations were mapped within the ESRA Project Study Area. The results are summarized below.

Boat Landing (2 locations): Participants reported two locations that they use for boat landing in the ESRA Study Area.

Land Route/Trail (9 Locations): Participants reported nine locations of land routes or trails that they use in the ESRA Study Area. One of these was identified as a historic land route/trail.

Portage (7 Locations): Participants identified seven locations of portage routes that they use in the ESRA Study Area.

Water Route/Trail (6 Locations): Participants identified 6 locations in the ESRA Study Area that have use for traveling across waterways or bodies.

Active Cabin/Bush Camp (9 Locations): Participants identified Nine locations in the ESRA Study Are that are used as active cabins or bush camps.

Commercial Accommodation and Campground (4 Locations): A total of four commercial accommodation and campground locations were mapped by participants in the ESRA Study Area.

Other Overnight Site (7 Locations): Participants mapped seven sites of overnight locations that did not fit into the other categories. These sites, within the ESRA Study Area, include logging camps, game warden cabins, and cottages that participants used when spending time out on the land.

Temporary Structure (34 Locations): Participants identified 32 current locations and two historic locations where they stay out on the land in temporary structures (e.g. tents, lean-tos etc.).

Historic Access Route/Portage (5 Locations): In the ESRA Study Area, participants identified five access routes and/or portage routes that they consider to be historic.

Historic Occupation/Camp/Cabin (6 Locations): In the ESRA Study Area, participants reported six locations of occupation, camps, or cabin sites that are historic.

and **Error! Reference source not found.** show where each of these routes and overnight sites are located. Table 2 provides an explanation of each mapped feature linked to the map by a unique PIN_GISID.

Figure 5. Current & Historic Overnight Locations

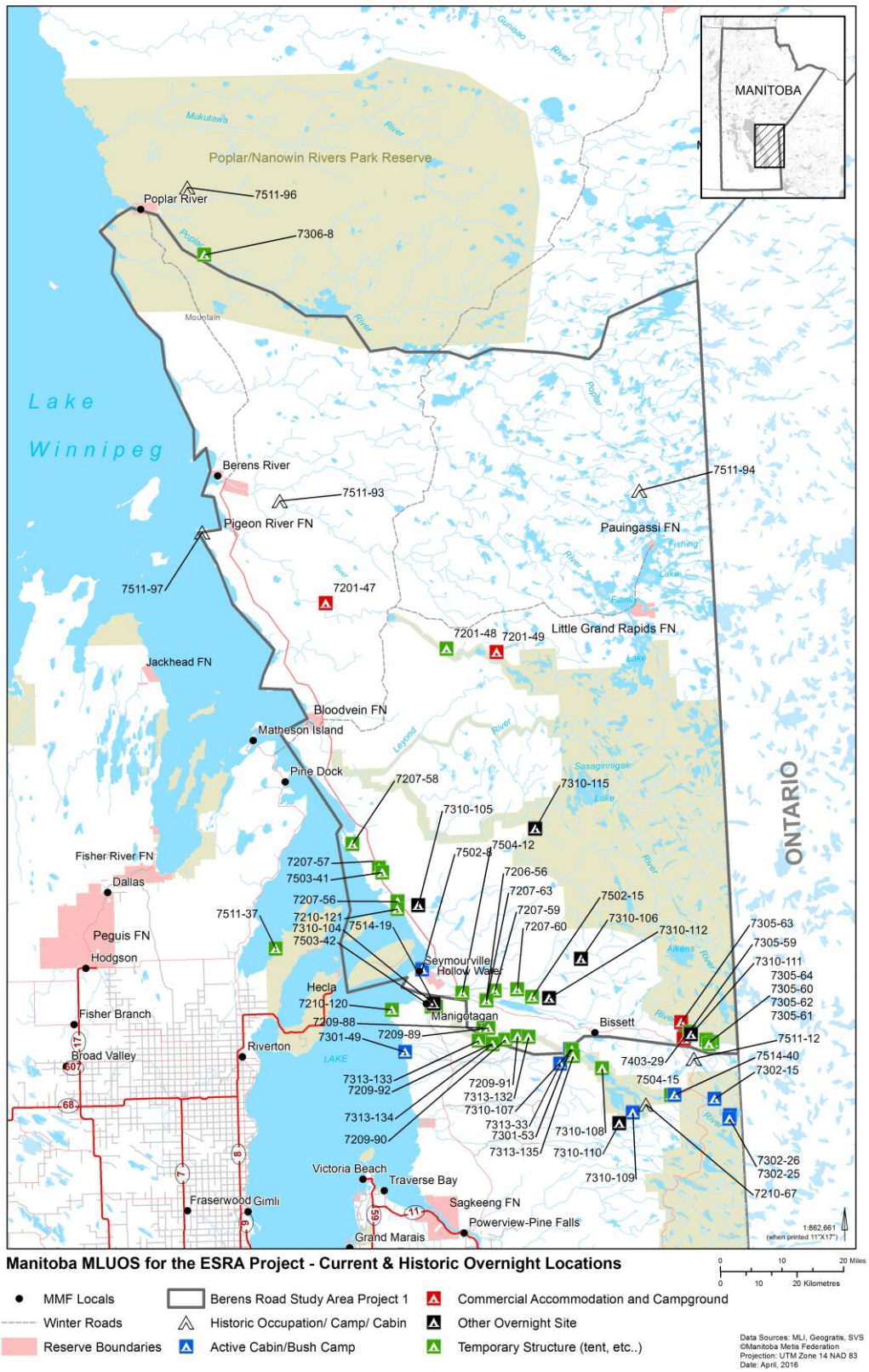


Figure 6. Current & Historic Access Routes

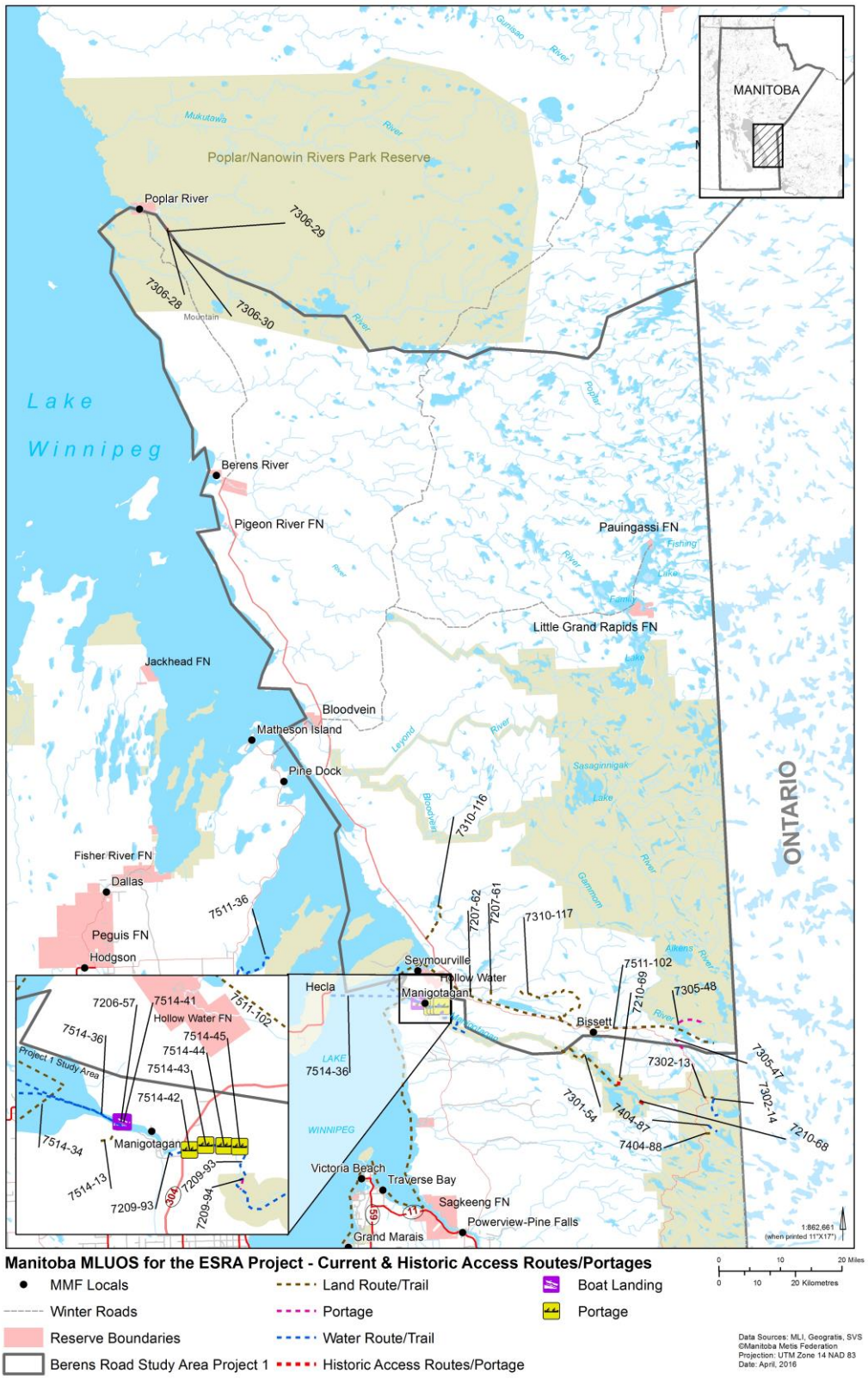


Table 2. Current and Historic Access Routes and Overnight Locations - Type and Frequency

PIN_GISID	Category	Type	Other
7206-57	**Access routes**	Boat landing	
7207-61	**Access routes**	Land route/trail	
7207-62	**Access routes**	Land route/trail	
7209-93	**Access routes**	Water route/trail	
7209-94	**Access routes**	Portage	
7210-68	**Access routes**	Historic access routes/portage	
7210-69	**Access routes**	Historic access routes/portage	
7301-54	**Access routes**	Land route/trail	
7302-13	**Access routes**	Land route/trail	
7302-14	**Access routes**	Water route/trail	
7305-47	**Access routes**	Portage	
7305-48	**Access routes**	Portage	
7306-28	**Access routes**	Historic access routes/portage	
7306-29	**Access routes**	Historic access routes/portage	
7306-30	**Access routes**	Historic access routes/portage	
7310-116	**Access routes**	Land route/trail	
7310-117	**Access routes**	Land route/trail	
7404-87	**Access routes**	Water route/trail	
7404-88	**Access routes**	Land route/trail	
7511-102	**Access routes**	Land route/trail	
7511-36	**Access routes**	Water route/trail	
7514-13	**Access routes**	Land route/trail	
7514-34	**Access routes**	Water route/trail	
7514-36	**Access routes**	Water route/trail	
7514-41	**Access routes**	Boat landing	
7514-42	**Access routes**	Portage	
7514-43	**Access routes**	Portage	
7514-44	**Access routes**	Portage	
7514-45	**Access routes**	Portage	
7310-109	**Overnight locations**	Active cabin/bush camp	
7313-33	**Overnight locations**	Active cabin/bush camp	
7301-49	**Overnight locations**	Active cabin/bush camp	

PIN_GISID	Category	Type	Other
7514-40	**Overnight locations**	Active cabin/bush camp	
7301-53	**Overnight locations**	Active cabin/bush camp	
7302-26	**Overnight locations**	Active cabin/bush camp	
7302-25	**Overnight locations**	Active cabin/bush camp	
7302-15	**Overnight locations**	Active cabin/bush camp	
7502-8	**Overnight locations**	Active cabin/bush camp	
7201-49	**Overnight locations**	Commercial accommodation & campground	
7305-59	**Overnight locations**	Commercial accommodation & campground	
7305-63	**Overnight locations**	Commercial accommodation & campground	
7201-47	**Overnight locations**	Commercial accommodation & campground	
7511-12	**Overnight locations**	Historic occupation/ camp/ cabin	Lake& creek named after grandparents
7511-96	**Overnight locations**	Historic occupation/ camp/ cabin	Historic family dwelling
7511-94	**Overnight locations**	Historic occupation/ camp/ cabin	Historic ancestors' dwelling
7511-93	**Overnight locations**	Historic occupation/ camp/ cabin	Site of ancestors' residence
7210-67	**Overnight locations**	Historic occupation/ camp/ cabin	
7511-97	**Overnight locations**	Historic occupation/ camp/ cabin	Historic family dwelling
7310-106	**Overnight locations**	Other overnight site	Logging camp
7310-115	**Overnight locations**	Other overnight site	Logging camp
7310-112	**Overnight locations**	Other overnight site	Logging camp
7310-111	**Overnight locations**	Other overnight site	Logging camp
7310-105	**Overnight locations**	Other overnight site	Logging camp
7310-110	**Overnight locations**	Other overnight site	Logging camp
7310-104	**Overnight locations**	Other overnight site	Logging camp
7207-58	**Overnight locations**	Temporary structure (tent, etc..)	
7209-91	**Overnight locations**	Temporary structure (tent, etc..)	
7209-90	**Overnight locations**	Temporary structure (tent, etc..)	
7209-89	**Overnight locations**	Temporary structure (tent, etc..)	
7209-88	**Overnight locations**	Temporary structure (tent, etc..)	
7504-15	**Overnight locations**	Temporary structure (tent, etc..)	
7511-37	**Overnight locations**	Temporary structure (tent, etc..)	Tent site
7207-63	**Overnight locations**	Temporary structure (tent, etc..)	

PIN_GISID	Category	Type	Other
7207-59	**Overnight locations**	Temporary structure (tent, etc..)	
7207-57	**Overnight locations**	Temporary structure (tent, etc..)	
7207-56	**Overnight locations**	Temporary structure (tent, etc..)	
7209-92	**Overnight locations**	Temporary structure (tent, etc..)	
7201-48	**Overnight locations**	Temporary structure (tent, etc..)	
7210-119	**Overnight locations**	Temporary structure (tent, etc..)	
7514-19	**Overnight locations**	Temporary structure (tent, etc..)	
7206-56	**Overnight locations**	Temporary structure (tent, etc..)	
7207-60	**Overnight locations**	Temporary structure (tent, etc..)	
7305-62	**Overnight locations**	Temporary structure (tent, etc..)	
7313-134	**Overnight locations**	Temporary structure (tent, etc..)	
7313-135	**Overnight locations**	Temporary structure (tent, etc..)	
7503-42	**Overnight locations**	Temporary structure (tent, etc..)	
7313-132	**Overnight locations**	Temporary structure (tent, etc..)	
7504-12	**Overnight locations**	Temporary structure (tent, etc..)	
7502-15	**Overnight locations**	Temporary structure (tent, etc..)	
7313-133	**Overnight locations**	Temporary structure (tent, etc..)	
7305-61	**Overnight locations**	Temporary structure (tent, etc..)	
7403-29	**Overnight locations**	Temporary structure (tent, etc..)	Tent site
7310-108	**Overnight locations**	Temporary structure (tent, etc..)	
7210-121	**Overnight locations**	Temporary structure (tent, etc..)	
7210-120	**Overnight locations**	Temporary structure (tent, etc..)	
7503-41	**Overnight locations**	Temporary structure (tent, etc..)	
7305-64	**Overnight locations**	Temporary structure (tent, etc..)	
7310-107	**Overnight locations**	Temporary structure (tent, etc..)	
7306-8	**Overnight locations**	Temporary structure (tent, etc..)	Camp site for hunting
7305-60	**Overnight locations**	Temporary structure (tent, etc..)	

3.1.4. Métis Cultural Sites

Respondents identified locations they knew of that were important to the Métis community or to themselves. These locations included places that are still used and places that may be considered historic. In total, participants identified 41 locations of cultural importance to the Métis within the ESRA Study Area. Métis Cultural Site data collected in the ESRA Study Area is shown in **Error! Reference source not found.**.

Table 3 can be used to identify what each of the specific cultural sites is, as well as the frequency that each cultural site was mapped within the ESRA Study Area. That information is also summarized below.

Burial Sites (9 Locations): A total of nine burial sites were mapped by participants within the ESRA Study Area.

Contemporary Gathering Place (7 Locations): Seven contemporary gathering places were mapped by participants in the ESRA Study Area.

Important Landscape Feature (1 Location): One participant mapped an area that they consider to be an important landscape feature in the ESRA Study Area.

Recreational Area (4 Locations): Participants mapped four locations in the ESRA Study Area where they use the land for recreational use.

Former Village (1 Locations): One location was mapped in the ESRA Study Area as a former village site.

Métis Historic Site of Significance (6 Locations): A total of six locations were identified in the ESRA Study Area that participants considered to be of significance to Métis history in the area. These locations included old structures that were used by Métis communities in the past.

Historic Trading Post or Hudson Bay Company Post (9 Locations): Nine places were identified that were considered to be historic trading posts or places that were owned by the HBC in the ESRA Study Area.

Other Cultural Sites (4 Locations): Participants mapped a total of four locations in the ESRA Study Area that they identified as cultural sites not included in the other categories. These sites include places of picnics, memorials or cairns, etc.

Figure 7 Cultural Sites

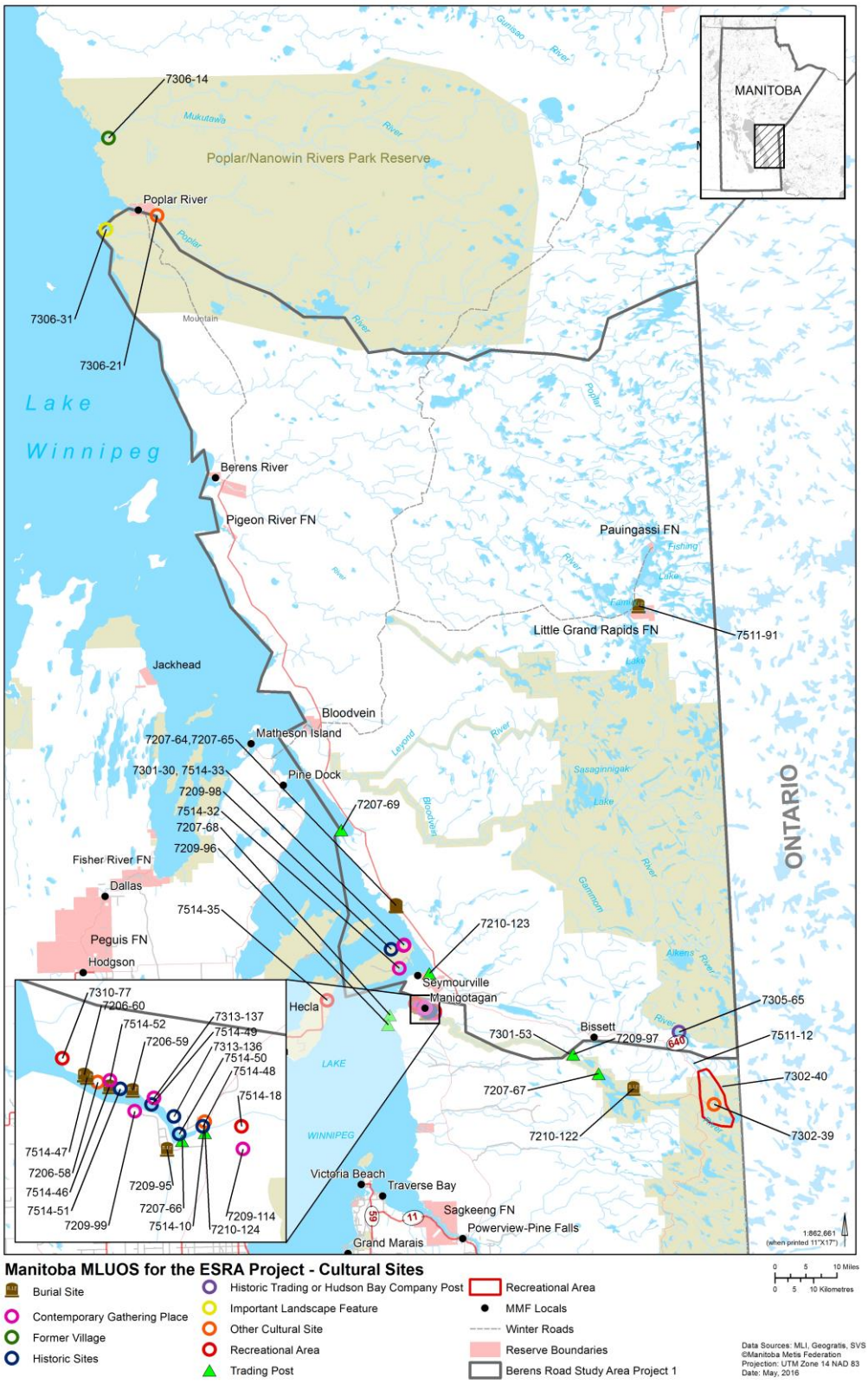


Table 3. Cultural Sites - Type and Frequency

PIN_GISID	Type of cultural site	Other
7206-59	Burial site	
7210-122	Burial site	
7207-65	Burial site	
7511-91	Burial site	
7206-60	Burial site	
7209-95	Burial site	
7514-46	Burial site	
7514-47	Burial site	
7207-64	Burial site	
7301-30	Contemporary gathering place	
7313-137	Contemporary gathering place	
7514-52	Contemporary gathering place	
7514-32	Contemporary gathering place	
7514-33	Contemporary gathering place	
7209-114	Contemporary gathering place	
7209-99	Contemporary gathering place	
7306-14	Former village	
7209-98	Historic event site	
7313-136	Historic site	
7514-48	Historic site	Old mill turbine site
7514-49	Historic site	Old dock
7514-50	Historic site	Slabs in the water from old dock or sawmill
7514-51	Historic site	Old hotel site
7305-65	Historic trading or Hudson Bay company post	
7306-31	Important landscape feature	
7514-18	Recreational area	
7514-35	Recreational area	
7302-40	Recreational area	
7310-77	Recreational area	
7210-123	Trading post	
7207-66	Trading post	
7207-67	Trading post	
7207-68	Trading post	
7207-69	Trading post	
7209-97	Trading post	
7209-96	Trading post	
7210-124	Trading post	
7302-39	Other cultural site	Cairn for mother's father

PIN_GISID	Type of cultural site	Other
7514-10	Other cultural site	
7306-21	Other cultural site	Favorite picnic site for family
7206-58	Other cultural site	Site used for raising horses

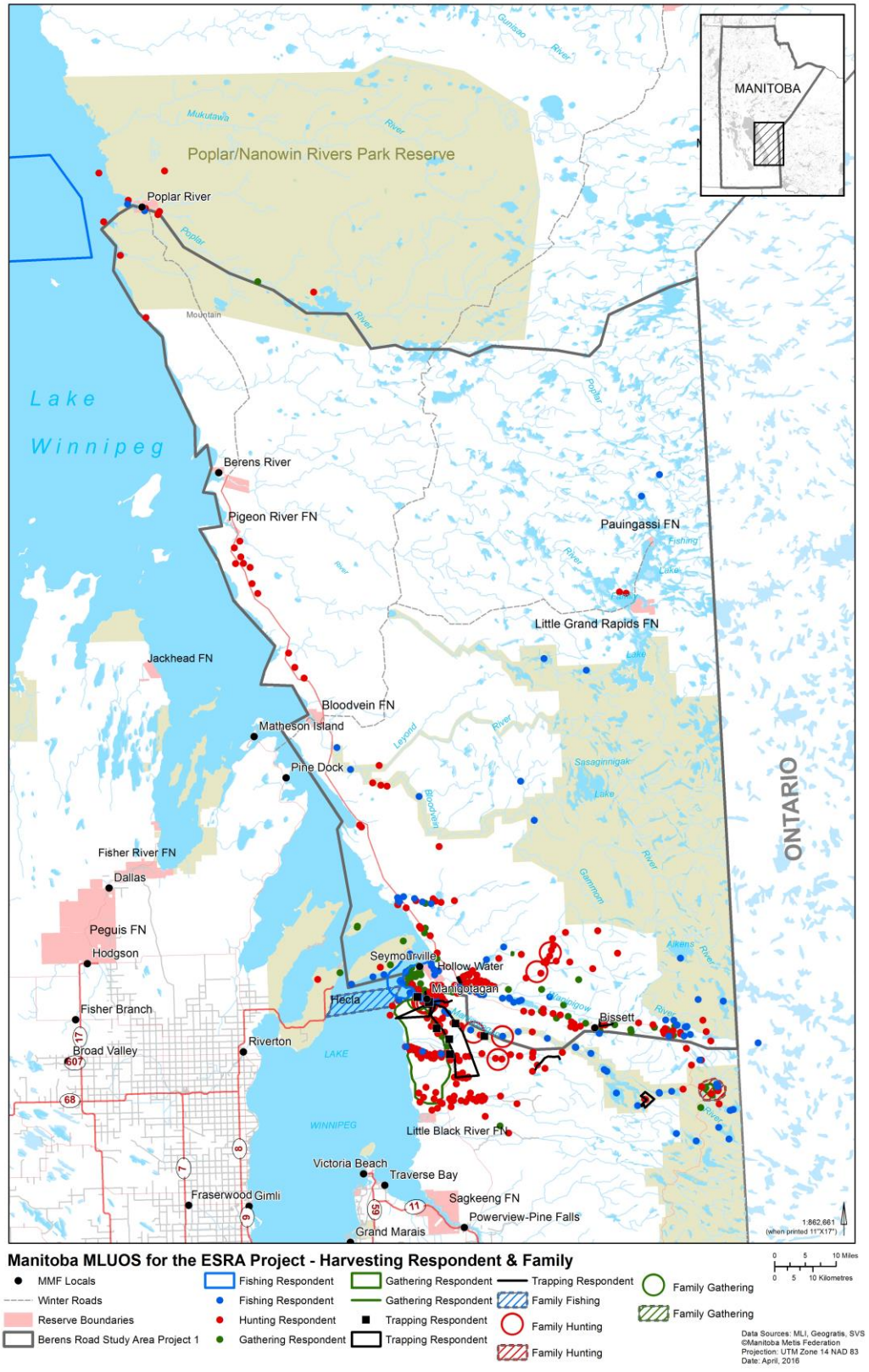
3.2.Métis Land Use Activities

Respondents identified locations in the ESRA Study Area where they used the land for harvesting activities including hunting, fishing, trapping, and gathering.

It should be noted that the numbers and maps below display only a snap-shot of participants' land use. In many instances, participants noted that they had harvested multiple types of species in one area or in multiple areas for a single species. When this occurred, they were asked to identify a small number of specific sites to demonstrate the geographic extent of their use. With the time restrictions of each interview, it was not possible to map a lifetime of land use for each participant. It cannot, therefore, be assumed that these numbers represent the total number of harvesting locations or kill sites of participants.

All harvesting data mapped within the ESRA Study Area is displayed in **Error! Reference source not found.**. Similar to the findings on Métis occupancy, the land-use mapped was concentrated toward the southern boundary of the ESRA Study Area, though there has been a fair amount of fishing and hunting activity in the areas north of Manigotagan up to Seymourville, Bloodvein, Berens River and Poplar River, as well as a fair amount east of Manigotagan toward Bissett and beyond to the Manitoba / Ontario border.

Figure 8 Harvesting (Hunting, Fishing, Trapping, Gathering)



3.2.1. Hunting

A total of 318 hunting spots were mapped within the ESRA Study Area. Of these, 309 sites were indicated as sites where participants have hunted for large game, small game, and birds. The most frequently mapped harvested species were moose, grouse, white-tailed deer, and duck. The other nine hunting sites were locations where participants' immediate family members have hunted for moose and white-tailed deer.

Table 7 provides a more detailed summary of the frequency with which each hunted species was mapped in the ESRA Study Area and shows the seasons that the species were reported to have been harvested at those sites.

Table 4. Hunting

Species	# of harvesting sites (respondents)	# of harvesting sites (family)	Winter	Spring	Summer	Fall
Crane	1					X
Duck	21			X		X
Goose	12			X		X
Grouse	82		X			X
Other upland bird	24					X
Ptarmigan	1		X			
Black bear	12			X	X	X
Moose	95	6	X	X	X	X
White-tailed deer	53	3	X	X	X	X
Wolf	2		X			
Beaver	1			X		
Coyote	1		X			
Rabbit	4		X	X	X	X

3.2.2. Fishing

Study participants reported fishing at 122 mapped locations. At some of these locations, only one species was caught, while at others multiple species were caught. For example, participants' reported catching walleye at 110 of 122 fished locations and pike at 53 of 122 locations. The most frequently mapped fish species were walleye, pike, yellow perch, and bass. Table 5 shows the frequency of each

fish species mapped within the ESRA Study Area and shows the seasons that the species were reported to have been fished at those sites.

Table 5. Fishing

Species	# of harvesting sites (Respondents)	Winter	Spring	Summer	Fall
Bass	33	X	X	X	X
Burbot	6		X	X	X
Carp	6		X	X	X
Catfish	24	X	X	X	X
Goldeye	4			X	
Pike	53	X	X	X	X
Lake whitefish	8	X	X	X	X
Mooneye	2		X	X	X
Walleye	110	X	X	X	X
Sauger	12		X	X	X
Sucker	12		X	X	X
Trout	3	X	X	X	X
Yellow perch	31	X	X	X	X
Other	3		X	X	X

3.2.3. Trapping

A total of 16 trapping locations were mapped within the ESRA Study Area. These included entire trap lines, specific trapping sites, and routes along which trapping occurred. Table 6 shows the number of times each fur bearer was identified as having been trapped in the trap line areas. The fur bearers most frequently trapped by participants were beaver, weasel, and marten.

Table 6. Trapping

Species	# of harvesting sites (respondents)	Winter	Spring	Summer	Fall
Beaver	8	X	X	X	X
Fisher	4	X	X	X	X
Fox	5	X	X		X
Lynx	5	X	X		X
Marten	7	X	X	X	X
Mink	3	X	X	X	
Muskrat	5	X	X	X	X
Otter	3	X	X		X
Rabbit	2	X	X		X
Squirrel	1		X	X	
Weasel	7	X	X		X

3.2.4. Gathering

A total of 118 locations for the gathering of plants and natural material were mapped within the ESRA Study Area. Study participants reported on the plants and other resources gathered at each of these sites. In total there were 226 data points of gathering (unique combinations of resource type and location). Of these, 217 were points where participants identified gathering themselves and nine where the gathering was done by immediate members of the participant's family.

The most frequently gathered resources mapped by participants were blueberries, raspberries, trees (primarily spruce), and Saskatoon berries. The most frequently mapped items that participants identified their immediate family having gathered were blueberries, Saskatoon berries, and raspberries.

Table 7 provides a more detailed summary of the types of resources mapped and the things participants used them for.

Table 7. Gathering

	Frequency		Seasonality				Purpose						
Species	# of harvesting sites (respondents)	# of harvesting sites (family)	Winter	Spring	Summer	Fall	Arts / crafts	Construction	Ceremonial	Medicinal	Food	Heating	Economic
Birch	1	0	X		X	X						X	
Blueberries	51	2			X	X				X	X		X
Burdock	5	0			X					X	X		
Choke cherries	9	0			X	X					X		
Clover	2	0			X					X	X		
Cranberries	7	0			X	X				X	X		
Fiddleheads	4	0		X	X					X	X		
Mint	1	0			X					X			
Mushrooms	3	0		X	X	X					X		
Ginger, wild	5	0	X	X	X	X				X			
Other plant	28	0	X	X	X	X	X			X	X		
Pin cherries	2	0			X						X		
Poplar	5	1	X		X	X						X	
Raspberries	18	2			X	X				X	X		
Rat root	11	0	X	X	X	X				X			
Rice, wild	7	0				X					X		X
Red willow	1	0	X	X	X	X				X			
Roots	4	0			X					X	X		
Saskatoon berries	13	2			X	X				X	X		
Spruce	13	1	X	X	X	X				X		X	
Strawberries	9	0			X	X					X		
Other wood/trees	17	1	X	X	X	X			X	X	X	X	
Rocks	1	0					X						

3.2.5. Processing the Harvest

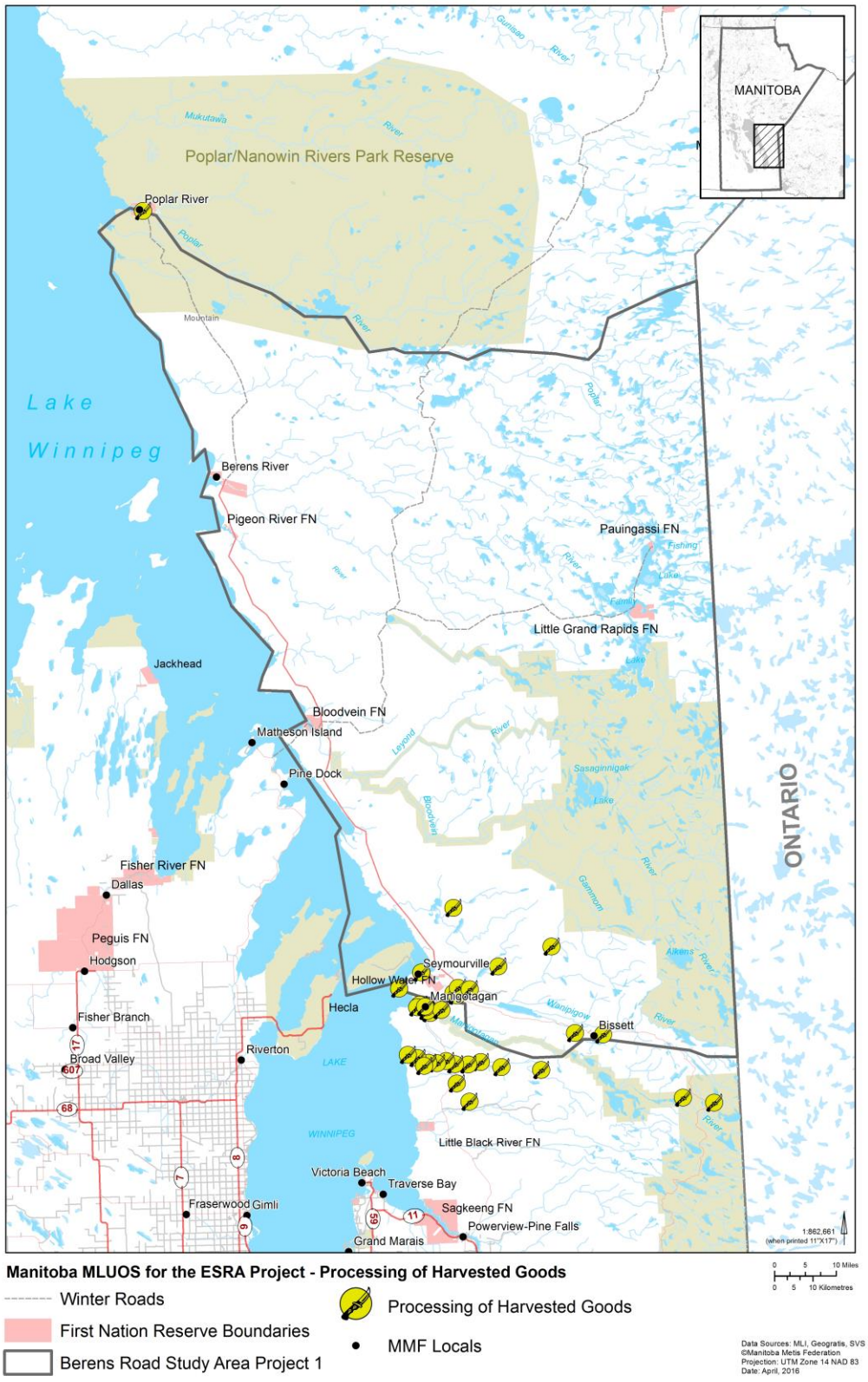
Study participants were asked how and where they process (i.e. prepare or treat using a special method) the plants and animals that they harvest from the land. A total of 72 processing locations were mapped. The most common processing types were field dressing of large game, quartering of carcases, skinning carcasses, and butchering meat from animals.

Table 8 provides a more detailed summary of the types of processing and the frequency of which it was mapped. **Error! Reference source not found.** shows the locations of processing mapped by participants.

Table 8. Processing

Type of Processing Areas	# of processing sites (Respondents)
Field Dress	24
Quarter	20
Skin	10
Butcher	7
Smoke	2
Dry	2
Preserve	3
Other	4

Figure 9. Processing



3.2.6. Knowledge Transfer Locations

ESRA MLUOS participants identified locations on the map where they had learned about aspects of their Métis culture and/or traditional land use activities. They were also asked to identify places where they have passed on knowledge of their Métis culture and/or traditional land use activities to other Métis people. A total of 55 locations of knowledge transfer were mapped by participants in the ESRA Study Area. Of these, 23 were sites where participants had passed on knowledge, and 32 were sites where participants received or learned knowledge.

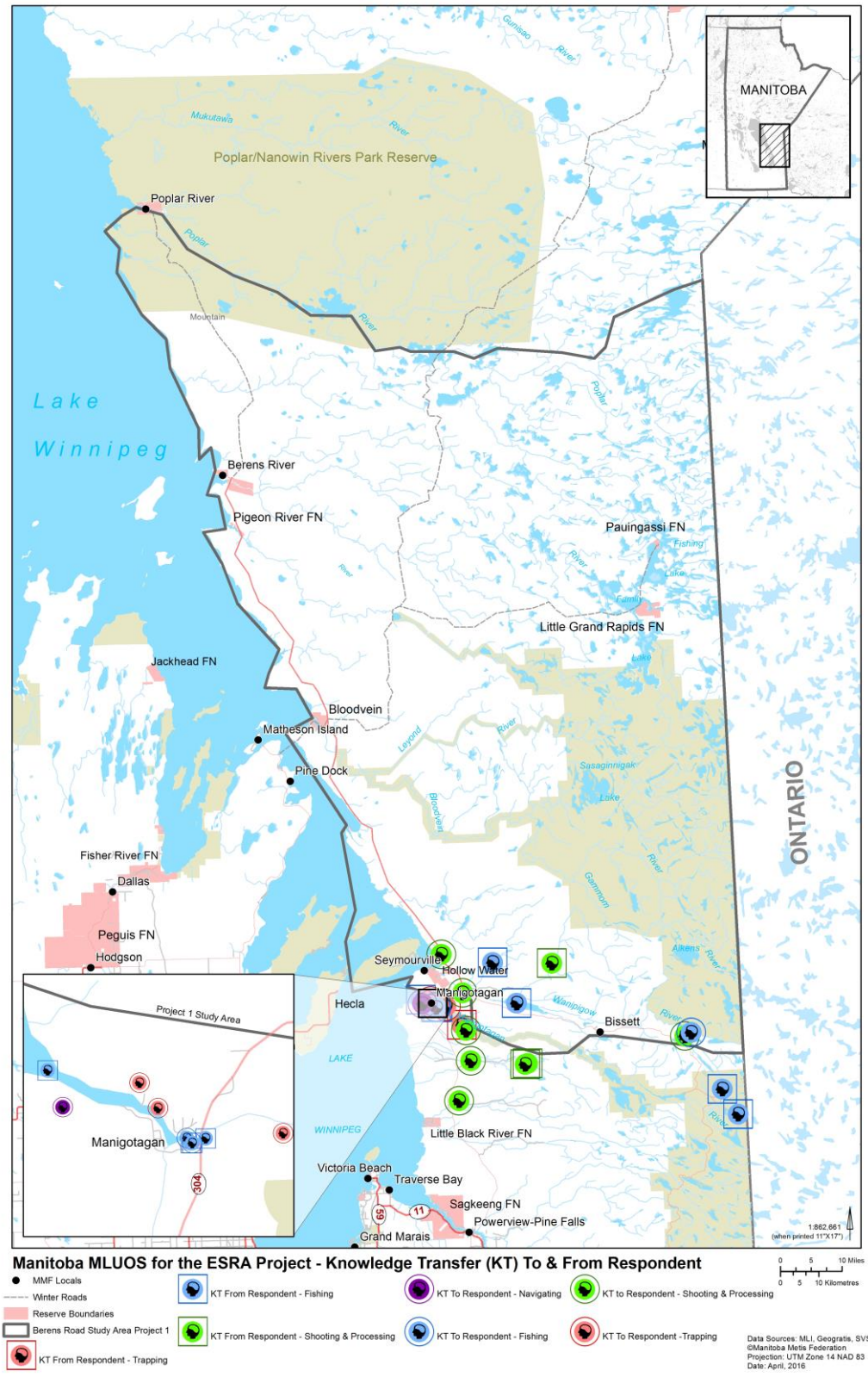
The most common type of knowledge that participants passed on to others was how to catch and process fish. The most common type of knowledge that participants received was how to shoot and process large game, followed by other types of knowledge transfer, including gathering and processing plants.

Table 9 provides a more detailed summary of the types and frequency of knowledge transfer. shows the locations of knowledge transfer.

Table 9. Knowledge Transfer

Type of Knowledge Transfer	# knowledge transfer sites (Respondents)	# of knowledge received sites (Respondents)
shoot and process large game	4	6
fishing and fish processing	10	4
hunting and processing birds/waterfowl	5	3
navigating lands and waters	0	3
set up camp	0	0
trapping and furbearer processing	1	3
Other Knowledge Transfer	3	13

Figure 10. Knowledge Transfer



3.2.7. Areas of Economic Significance

Métis people's use of the land for economic purposes was examined as part of this study. Respondents indicated areas where they had personally used the land for economic purposes and also identified locations where their parents or grandparents had used the land as part of their livelihood. There were 23 locations identified as being economically important for participants. This included areas of fishing, trapping, gathering, hunting, and other cultural activities.

Error! Reference source not found. outlines the areas of economic significance that were mapped for the ESRA Study Area. The types of economic activities that respondents reported most frequently having accessed the land for were trapping, gathering plants and natural materials for sale, and commercial fishing. The most frequent economic activities that Métis family members were reported to have taken part in included the management of a cultural or occupancy related business, trapping, and commercial fishing.

All of the areas of economic significance that were mapped in the ESRA Study Area can be found in Table 10 with unique PIN_GISID labels that can be linked to specific sites on the map.

Through the oral histories, participants also discussed that harvesting and consumption of wild foods was part of their personal economy. Some participants expressed that they use harvested wild foods to help decrease the amount of money that they spend on groceries. Some of these participants also said that they prefer harvested wild foods because they felt they were healthier for themselves and their families. Harvested wild foods were also a convenience factor for some participants, as it decreased the number of times that they had to visit the grocery store. One participant stated that 70% of the protein they consumed was in the form of harvested wild foods. Another participant expressed how consuming and harvesting wild foods allowed them to feel connected to the way that their ancestors lived.

Participant's economy, overall feeling of well-being, and perceptions of health were expressed as being connected to the consumption and harvesting of wild foods. The quotes below indicate participant's socioeconomic connection to the lands and waters in the ESRA Study Area.

> *"To me it's the chance to provide food to my family that I've harvested, I've gathered myself, and I know where it's from, and I know how its processed, and I like the fact that I can give to my family something that is good for us, and kind of echoes the days of the, the preparing of the pemmican and you know all that, living off that land and all that."*
>
> *"Other food—like, animals that I've shot just for food, you know? Which it does supplement to a certain extent. But I prefer the wild game to tame meat. Tame meat is full of chemicals. They don't spray anything here in this area, you know? Like chemicals. As far as I know.".*
>
> *Sometimes, probably cost me, well you'll do, you know, you'd take all your meat home and that and that would save you from buying meat so I guess it would be a form of supplementing your income, like, you know like ducks and geese and moose and fish and everything, you don't have to walk in Safeway and buy whatever."*
>
> *"My protein probably 70 percent is either moose or fish or [partridge/grouse]. You know what I mean?"*

Figure 11. Areas of Economic Significance

Table 10. Areas of Economic Significance Type and Frequency

PIN_GISID	Category	Type
7514-10	**Cultural occupancy**	Other cultural site
7209-108	**Fishing**	
7209-57	**Fishing**	Bass, catfish, pike, mooneye, pickerel, sauger, sucker, yellow perch
7306-22	**Fishing**	Whitefish, pickerel
7313-92	**Fishing**	Pickerel
7313-93	**Fishing**	Pickerel
7313-94	**Fishing**	Pickerel
7302-27	**Hunting**	Moose
7301-31	**Plants and natural materials**	Blueberries
7301-48	**Plants and natural materials**	Wild rice
7301-52	**Plants and natural materials**	Wild rice
7209-51	**Trapping**	Beaver
7209-52	**Trapping**	Beaver, fisher, marten, mink, muskrat, squirrel
7209-53	**Trapping**	Beaver
7209-54	**Trapping**	Beaver
7209-55	**Trapping**	Beaver
7210-92	**Trapping**	Beaver, fisher, fox, lynx, marten, mink, muskrat, otter, weasel
7301-18	**Trapping**	Muskrat
7301-19	**Trapping**	Beaver
7301-20	**Trapping**	Muskrat, otter, weasel
7313-89	**Trapping**	Fox, lynx, marten, weasel
7313-90	**Trapping**	Fox, lynx, marten, weasel
7313-91	**Trapping**	Fisher, marten, weasel

3.3. Traditional Ecological Knowledge of Study Participants

The Métis people who have inhabited, harvested, and otherwise used the land in the ESRA Study Area throughout their lifetime are able to provide specific insight about potential environmentally sensitive species and habitats. This knowledge is gained from first hand use and occupancy or can be shared among the community. It is essential to understanding the potential environmental effects of any future developments as participants may have knowledge of specific habitats, plants, etc. that may not exist in the available literature or through local resource management agencies. This information is defined as "Traditional Ecological Knowledge" (TEK) for the purpose of this study.

Study participants shared their TEK as it relates to the lands, waters, and animals of the ESRA Study Area. A total of 70 TEK locations were identified within the ESRA Study Area. The categories of TEK that were most frequently mentioned by participants included fish spawning areas, mammal seasonal habitat, bird habitat, reptiles and amphibian habitat, and wild rice areas.

All of the TEK in the ESRA Study Area that was mapped as part of this study can be found in Table 11. The results with PIN_GISID labels that correspond to the table are mapped in **Error! Reference source not found.** and **Error! Reference source not found.**.

Bird Habitat (13 locations): Participants reported bird habitat for duck species (mallard, wood), bald eagle, golden eagle, grouse (ruffed grouse, sharp-tail grouse, spruce grouse, commonly referred to as "bush or prairie chickens"), pelicans, gulls, cormorants, and loons. The most commonly reported bird habitat was for grouse.

> [On learning about grouse from his Father] "*So, you know, just as an example […] we used to go hunting grouse in the late evening along the trail where there were poplars. And, I would have been looking on the ground for grouse, you looking up in the trees. Because, at that time of the season, grouse go up in the trees and they climb out on the limb of the poplar to eat the bugs. And just after the, the leaves have fallen, and there's still a bud on the poplar, and that's what they use for food.*"

Mammal Migration Route (2 locations): Participants shared their knowledge of migration routes for moose and deer.

Mammal Seasonal Habitat (16 locations): Participants reported important seasonal habitat areas for deer, moose, woodland caribou, fox, beaver, black bears, cougar and lynx. Moose were the most commonly discussed species and most sites were associated with rutting, calving and over-wintering. Participants identified sixteen locations as seasonal habitat for mammals within the ESRA Study Area.

> [referring to Owl Lake] "*We have shot moose up there in the winter but this is mostly a fall spot, like in the rut there's about, I don't know, eight-day window when they're full rut.*"
>
> "*So there's moose habitat there, huge moose habitat. It used to be at one time […] they'll go right up to the top of the lake, you know … they'll come down to say James Bay, hit the lake and come all the way down, right […] I've just seen them along the shore in the boats […] Well in the summertime, they come to the water, right. The bugs drive them out of the bush. So in the winter, they'll go inland for the feed.*"

> *"Atikaki Park, that's, they go there because of the remoteness up there. The caribou are mostly a solitary animal. They land there, like the Precambrian shield, they like the geography of it and the food they can get from there. They're more of a lichen or they have a different type of dietary system. So they follow that. Once you start developing something like that it's going to disrupt their feeding, their feeding program and affect them eventually."*

Plant Habitat (3 locations): Participants identified important plant habitat for strawberry and dragon's-mouth orchid.

> [On habitat for dragon's mouth orchid, east of Bissett] *"I look over to the side, and right there, right beside me, is this thing called a Dragon's Mouth. It's a purpley-pink and it's got a big lip that sticks out the bottom; that's why they call it a dragon's mouth. It's a beautiful plant, right? In the middle of nowhere! And there's me, pulling muskeg out of my nostrils, you know? And I go, "Wow!" You know? So I got back to Winnipeg, told some people, and they brought me to one of the meetings, and I talked to them, and they said, "That's a Dragon's Mouth! Could you GPS it?" 'Cause it's on the outskirts of its living habitat, you know? Which they like to document those, because those are the tough ones, the ones that can survive on the outskirts."*

Reptiles and Amphibian Habitat (6 locations): Participants identified habitats for turtles (snapping, mud), garter snakes, and frogs. Many participants could identify specific locations or areas they had seen snakes or turtles, though they were not always able to identify the specific species. Habitat for turtles was identified most frequently.

> [Snapping turtles near the falls in Manigotagan] "*They actually a couple, well, quite a few years back, they laid eggs right in the, the building that's on the corner there? He had a big pile of, of ah… rock and gravel. And all of a sudden the rocks all coming alive, eh? And all these little baby turtles, snapper turtles started coming out."*

Salt Lick (5 locations): Participants identified the locations of several salt licks throughout the Study's Geographic Scope and indicated that moose use these areas frequently.

> [on salt licks] "*you can see lots, you get into them area twice the size of this house and it's down that deep, you know, where they've been eating the mud and then there's one on the, the third, on the Manigotagan, on the, coming out of Happy Lake, on the Moose River"*

Fish Spawning Area (17 locations): Participants identified fish spawning locations for walleye, northern pike, sucker, and sturgeon. Walleye was the fish species most commonly connected to fish spawning sites. Spawning sites were usually associated with mouths of rivers, small streams, and creeks.

> *"Cause in the marsh the water will be, when the ice goes out the water will be warming up, warming up there first. So, they'll be coming in and spawning in any little creek or little lakes here where the water warms up first they'll start spawning there.*"

Wild Rice (6 locations): Participants identified the locations of six wild rice areas.

> *"I know there's wild rice growing up river from the store, like if you went up along the shore there could be some wild rice and some people I know, I remember seeing them in a canoe actually doing some traditional type of you know […] we ate a lot of wild rice growing up."*

Other Important Habitat (2 locations): Participants shared their knowledge of sites or areas that did not necessarily fall into one of the categories outlined above.

Figure 12. Traditional Ecological Knowledge (1) – Spawning Areas, Reptiles, Amphibian, and Other Habitat

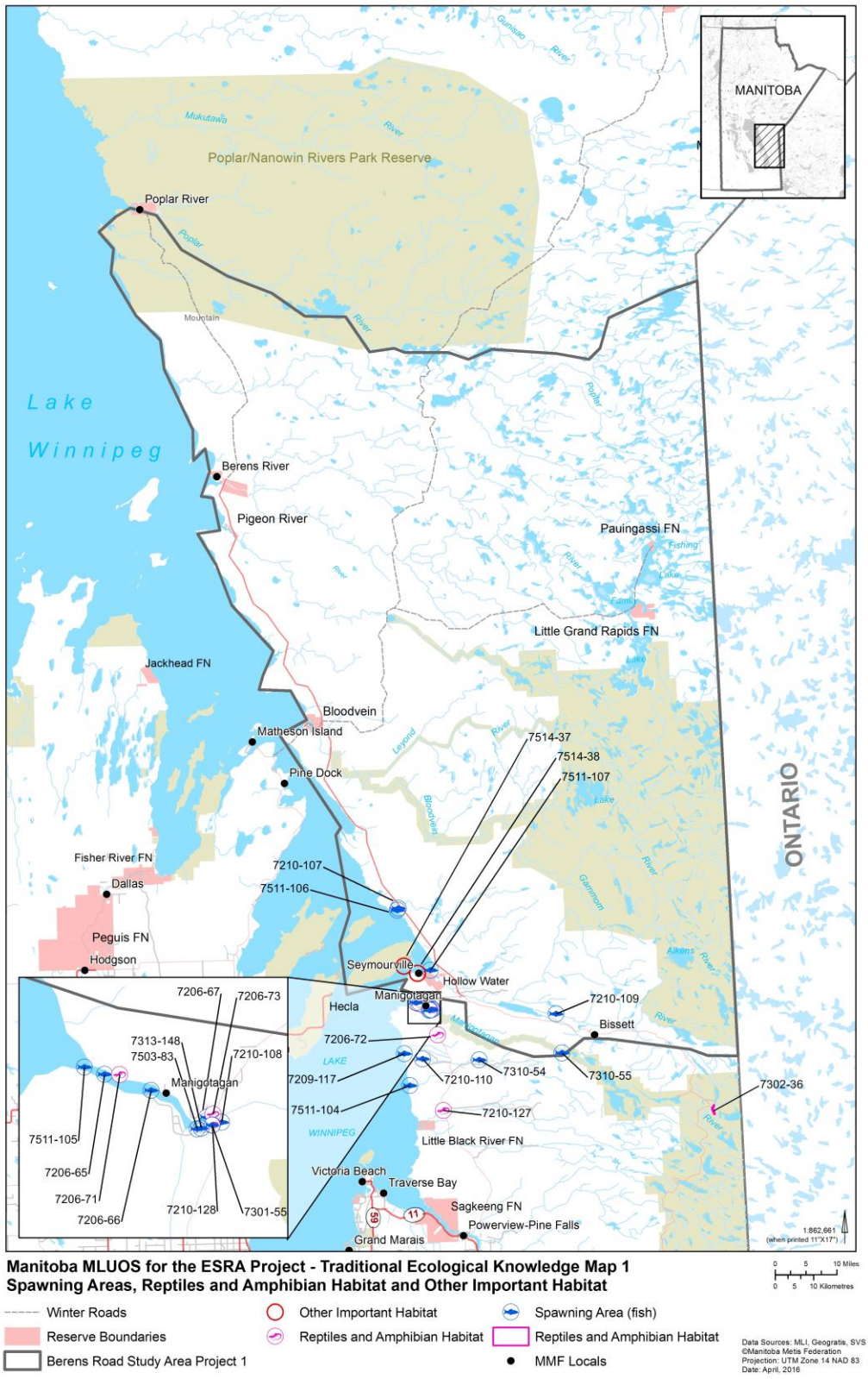


Figure 13. Traditional Ecological Knowledge (2) - Bird Habitat, Mammal Migration & Habitat, Salt Licks, Wild Rice

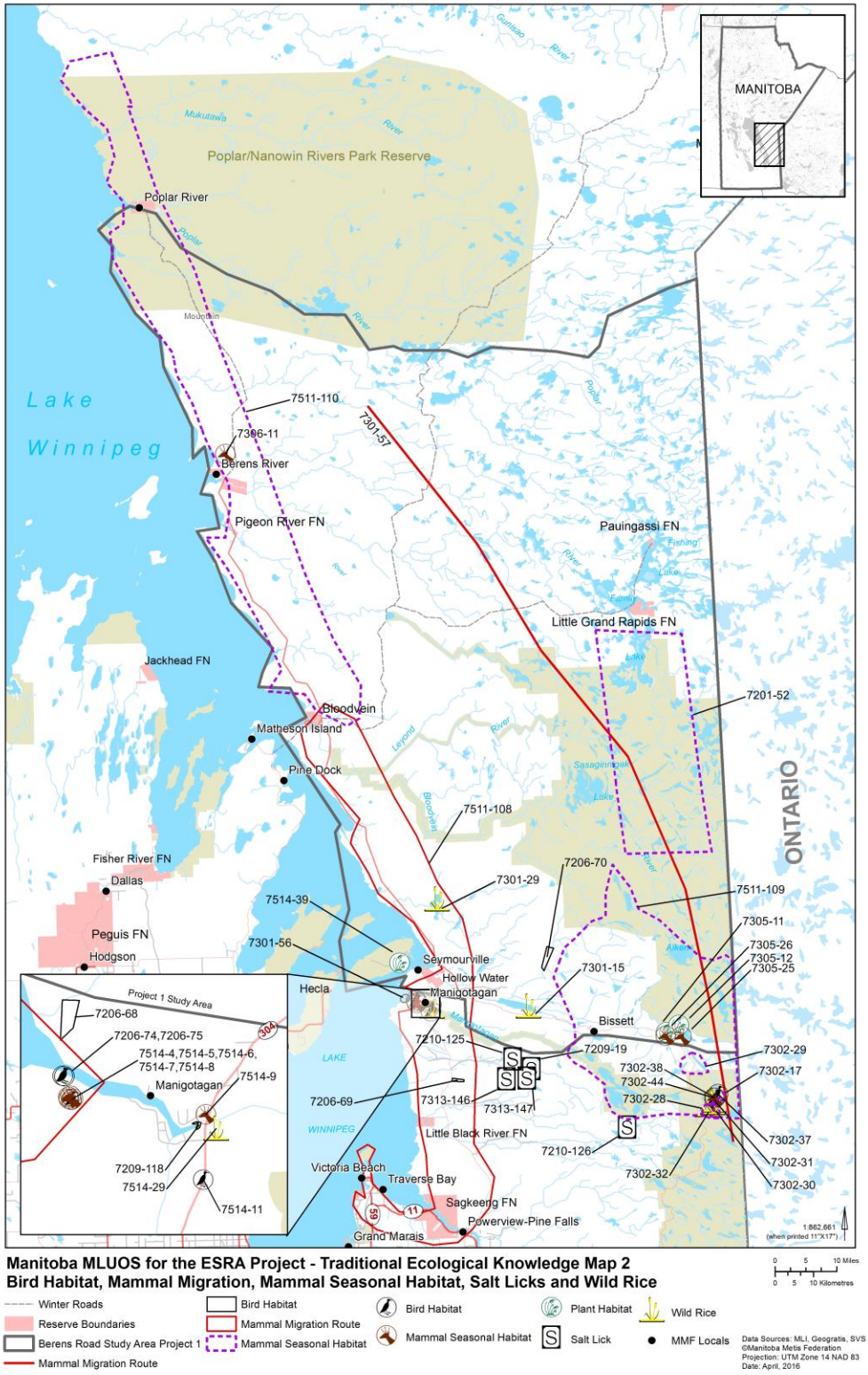


Table 11. Traditional Ecological Knowledge Type and Frequency

PIN_GISID	Type	TEK species or habitat
7201-52	Mammal seasonal habitat	Moose
7206-65	Spawning area (fish)	Pickerel
7206-66	Spawning area (fish)	Pickerel
7206-67	Spawning area (fish)	Pickerel
7206-68	Bird habitat	Grouse
7206-69	Bird habitat	Grouse
7206-70	Bird habitat	Grouse
7206-71	Reptiles and amphibian habitat	Garter snakes
7206-72	Reptiles and amphibian habitat	Garter snakes
7206-73	Reptiles and amphibian habitat	Snapping turtle
7206-74	Bird habitat	Golden eagle
7206-75	Bird habitat	Bald eagle
7209-117	Spawning area (fish)	Pickerel
7209-118	Bird habitat	Waterfowl habitat
7209-19	Salt lick	Moose
7210-107	Spawning area (fish)	Suckers and pickerel
7210-108	Spawning area (fish)	Suckers and pickerel
7210-109	Spawning area (fish)	Pickerel and suckers
7210-110	Spawning area (fish)	Suckers and pickerel
7210-125	Salt lick	
7210-126	Salt lick	Moose
7210-127	Reptiles and amphibian habitat	Snapping turtles, mud turtles, painted,
7210-128	Reptiles and amphibian habitat	Snapping turtles
7301-15	Wild rice	
7301-29	Wild rice	
7301-55	Spawning area (fish)	Pickerel, mullet
7301-56	Bird habitat	Pelicans, gulls, cormorants
7301-57	Mammal migration route	Woodland caribou
7302-17	Mammal seasonal habitat	Moose
7302-28	Mammal seasonal habitat	Moose habitat
7302-29	Mammal seasonal habitat	Moose
7302-30	Wild rice	
7302-31	Wild rice	
7302-32	Wild rice	
7302-33	Bird habitat	Mallards, wood duck,
7302-34	Bird habitat	Loons
7302-35	Mammal seasonal habitat	Beavers
7302-36	Reptiles and amphibian habitat	Frogs
7302-37	Bird habitat	Bald eagles
7302-38	Bird habitat	Bald eagle
7302-44	Mammal seasonal habitat	Cougar
7305-11	Plant habitat	Dragons mouth orchid

PIN_GISID	Type	TEK species or habitat
7305-12	Plant habitat	Dragons mouth orchid
7305-25	Mammal seasonal habitat	Lynx
7305-26	Mammal seasonal habitat	Lynx
7306-11	Mammal seasonal habitat	Woodland caribou
7310-54	Spawning area (fish)	Pickerel
7310-55	Spawning area (fish)	Pickerel
7313-146	Salt lick	Moose
7313-147	Salt lick	Moose
7313-148	Spawning area (fish)	Suckers
7503-83	Spawning area (fish)	
7511-104	Spawning area (fish)	Walleye and pike
7511-105	Spawning area (fish)	Sturgeon, walleye, pike
7511-106	Spawning area (fish)	Walleye and pike
7511-107	Spawning area (fish)	Sturgeon, walleye, pike
7511-108	Mammal migration route	Travel and winter habitat for caribou and their calves
7511-109	Mammal seasonal habitat	Calving habitat
7511-110	Mammal seasonal habitat	Moose
7514-11	Bird habitat	Prairie chickens
7514-29	Wild rice	
7514-37	Other important habitat	Silica sand
7514-38	Other important habitat	Silica sand
7514-39	Plant habitat	Strawberries
7514-4	Bird habitat	Prairie chickens
7514-5	Mammal seasonal habitat	Bears
7514-6	Mammal seasonal habitat	Moose
7514-7	Mammal seasonal habitat	Deer
7514-8	Mammal seasonal habitat	Fox
7514-9	Mammal seasonal habitat	Bears

3.4.Changes to the Lands and Waters

Participants were asked to discuss any changes they observed over time in the ESRA Study Area. This information can be used to establish an environmental and socio-cultural baseline of conditions. It can also provide potential insight into sensitive species/habitat in the area, cumulative impacts to already impacted areas and areas/species that may require future mitigation measures.

A total of 19 changes at 14 locations were mapped within the ESRA Study Area. The most frequent changes that have been observed in the area include:

- A decrease in the mammal population
- A decrease in vegetation population and habitat
- A decrease in water quality

Table 12 contains all of the changes that were mentioned by participants within the ESRA Study Area. All of the changes that were mapped in the ESRA Study Area can be found in **Error! Reference source not found.**.

Table 12. Changes Type and Frequency

PIN_GISID	Type	Changes
7302-45	Decrease in population	Fish population
7305-66	Decrease in population	Snail and clams
7305-67	Increased occurrence	Algae blooms
7310-119	Decrease in population/health	Mammal health, mammal population, vegetation habitat, vegetation health, vegetation population
7310-41	Unspecified change	Cultural site change
7310-90	Decrease in population	Vegetation population
7313-138	Unspecified change	Occupation site change
7514-12	Decrease in population	Bird population
7201-19	Decrease in habitat/population	Mammal habitat, mammal population
7206-76	Decrease in quality	Decrease in water quality
7206-77	Decrease in population	Mammal population
7206-78	Increase in population	Mammal population
7206-79	Negative change	Access route
7209-119	Decrease in population	Mammal population

Figure 14. Changes

3.5. Cumulative Effects

Cumulative effects are environmental, socio-cultural, or economic changes caused by the interaction of project related impacts with natural or human activities, combining and accumulating over time. The term most often refers to accumulated effects of separate industrial developments that cause observable changes to the land and the way that people relate to and use the land. The impact of cumulative effects will depend on the context within which they occur and they can be exacerbated by human-induced phenomena (e.g. climate change, habitat fragmentation, invasive species, economic recession etc.) and natural changes (e.g. el Niño, wildlife population cycles, disease etc.) (Gunn & Noble, 2012).

Study participants were asked about pre-existing conditions in the environment, existing developments, or future developments that could contribute to cumulative effects. Inference about potential cumulative effects, related to the East Side Road can also be derived from the changes participants have observed in the ESRA Study Area over their lifetime.

Some participants were able to express their concerns about cumulative effects. Often these concerns were related to specific developments such as pulp industry and forestry, cottages, and impacts of other industrial projects.

Pulp Industry and Over-Harvesting Impacts*:*

> *"Pollution, and like you know the pulp companies coming, and pulped them all out and opened the whole country right up eh. That's why, our, like I still hunt here, local guys hunt, but everybody else comes in, but the guys can't do any serious hunting, come in anybody, come in and shot a moose or deer standing along the, all the pulped up areas or whatever, and then the pollution into your rivers eh. And lots of it, you know, that's all caused by the over, whatever, I guess over harvesting of the trees or something or, of the land eh That's all I can figure."*

> *"When cleared, when the paper mills was in Prime Falls they clear-cut a lot of those spots up there. Which is actually kinda nice cause when I was working up there we went through Blood Veins territory and Blood Vein didn't let them cut in there. So there's like monster, beautiful trees in there. Everywhere else is clear cut. They clear, the mill did as much as it could at the end. You know you're leaving in five years, you take everything you can. And they did that. From a business point of view you would, right? But when you driving through the middle of the bush and you're looking at giant open space it's ugly. You know?"*

Cottage Development Impacts:

> *"Since the cottages, the cottages came in it all changed. That use to be our hunting area for the chickens and the ducks and the geese, in that area. We had to find different areas to hunt."*

> *"Oh, especially Wallace Lake. (Exhaling) Major change from the cottages. There's 67 cottages there, I think. There used to be a certain kind of snail. You don't see it anymore. You don't see any snails anymore. The one type was gone for quite awhile, and then (pssht) none. Very few clams. There used to be clams everywhere. It's pollution. People are putting their poop in the lake."*

Previous Impacts of Industrial Development:

> [Berry gathering spots in the Manigotagan area] *"I've been gathering here since I was a kid. And then there's one up in this area but they bulldozed it not too long ago for the hydro line."*
>
> [Spraying broadleaf] *"And it was, it, it made, it made a phenomenal impact on the whole area. Like the moose even landed up with liver diseases -and so on and so forth for awhile. So you know those kind of things were all an impact on all of the area. So there you go. Good job. That had a major impact on the whole area."*

3.6. Concerns for Potential Environmental Effects

Study participants mentioned a variety of concerns for potential environmental effects related to construction and operation of the East Side Road. Concerns for potential socio-economic effects are discussed in the next section. Some quotes that depict the overarching nature of the concerns of participants include:

Concerns about wide-spread changes to the environment:

> "*Well, it's gonna have a huge impact because, like I told you before, this is the most undeveloped region in Canada. Once that road goes through, I'm not against progress, but once that goes through, you're gonna see the cottages, the mining industry coming, the destruction of the land, the forest, the medicines, everything is gonna be gone. But you know, it's gonna be, but leave protected areas where, you know, like the medicines, the forest, the breeding grounds for the moose, the deer, leave them, like you know.*"

Concerns about spills and pollution:

> *"Well, here's another quick example. Okay they're building the roads, right. Everyone sees the machinery and everything. But they don't see the oil being dumped from the oil changes. They don't see the garbage in the ditches, right. So I think they should really … portray that in these camps that go. Just because you're in the middle of nowhere doesn't mean you can throw your garbage, or sewage, or anything in these, these … what they would call 'muskeg' right, you know. I've seen it myself and I just, I talked to people about it and they just …"*
>
> *"Yeah, I sure do. Like, it's a boreal forest, right. And, I've been to northern Ontario and stuff on the great lakes and I've seen what happened to their boreal forest. Nothing but wind farms, houses, all the animals are gone, right, the pollution, light pollution and everything. So, I think certain parts of the world should be left as it is, you know? That's how I feel about things.*

Participants voiced fears related to the impacts on the environment from increased access and traffic. Some felt that the road would allow people from other places to more easily access the area for activities such as tourism and hunting. These environmental concerns were both generalized to the Project overall and specifically related to species such as caribou and moose.

Concerns about impacts to large mammals from increased traffic:

> *[ESRA] : "Well this is hunting ground, but when you put a road the first thing that happens is animals will go close to the road because it's an open area. So there's going to be hunting pressure for sure, like the area, there's moose and caribou, mostly the caribou that I'd be worried about. Anytime you have a road, and that's the area where the woodland caribou roam. So if they build a permanent road, because on the winter road there's not that much traffic but on the permanent road you'll have one hell of a lot."*
>
> *"I think it's important though, to mention caribou, woodland caribou are disappearing. As soon, I'm really worried that if they open up that place to roads, I'd be very very worried about the woodland caribou disappearing. Maybe not in my lifetime but I'm positive in my children's, well maybe not, my grandchildren which I have six of them, in my grandchildren's lifetime the woodland caribou would disappear. And roughly when they start building those roads. As soon as you open up roads you open up access to hunting and there's not that many left."*

3.7.Concerns for Potential Socio-Economic Effects

Several study participants expressed concerns over the potential socio-economic effects associated with the project. These include any impacts form the project that would alter or harm the socio-economic well-being of the Métis people.

Some respondents highlighted the permanent nature of the effects this project will have, not only on the land, but on the Métis people. One of the most common themes expressed by participants was how the construction of the East Side Road could potentially lead to increased traffic and use of the area for a variety of purposes including tourism and harvesting. The potential for pollution and drugs to be brought in to the area more readily was also mentioned as a concern.

Concerns about impacts as a result of increased access:

> *[*On ESRA*] "Well there will be a lot more tourists you know, and there will be a lot more roads too eh I think our life will be changed drastically too."*
>
> *"Like, with roads comes everything, right. You know. For instance, like, we'll just say it. Drugs come on those roads. Hunters come on those roads. Pollution. Garbage in the ditches, right. You know, so that's how I feel. I know you can't stop change, right, but you can try to … how can I say it. You can try to educate people on, you know, the best thing to do for everybody."*
>
> *"bout the road, like I was saying before it's going to put traffic there. Just a that's why I asked if you had some people from that area because according in Manigotagan there […] they are not very - they don't want that road. It's going to bring in traffic and its gonna, bring people for hunting, for picking up blue berries and stuff that they do when no bodies around but now it's going to crowd up. They've been trapping, trapping going to affect those guys that have block trapping in the trapline. Though that's all really that I know because from the people that I talked to there."*

Respondents emphasized the lack of consultation with Métis people on the Project to date. This sentiment is reflected in the following quote:

Concerns about inadequate consultation:

> [on the East Side Road] *"I'm not very satisfied at how they treated the Métis people so far in this ordeal. They've left us out. I live in Pine Falls and they said that, I, I own a major construction company and they told me straight out that I was not to participate in the East Side Road because I wasn't from there. But yet, I own property on the north side of the river and they still won't acknowledge me saying that I'm from the north side of the river. They said everything south of the river was not eligible to part of this. I don't know. I'm a Métis person. I spent my whole life in this part of the country, I've logged it, I've mined it, I've done camping, hunting, fishing. You know what? I strongly believe they should respect us as well as our wishes in this general area. I'm not saying that we should control it, but I'm saying that they should respect us. They should ask us at least for our say in it. They should ask us for their help and knowledge of it. You know there's a lot of people benefiting by what's transpiring and it ain't the Métis people there."*

Not all potential impacts of the Project described by respondents were negative. Some participants expressed optimism and described potential positive impacts associated with the East Side Road. These were associated with employment for local people and increased access to goods and services for communities along the road.

Potential positive impacts – access to goods and possibility for employment:

> *"I guess challenges could be more development, if they're people like, mining and those kind of things, they could bring more pollution. But benefits, I mean, their winter road, it's, it's, it's not the same anymore. We know the winters are going shorter. This year was probably a, a horrible year to try and open the winter road to get goods up north, 'cause it just wasn't cold enough and so it's, it's almost a necessity I think to actually build something because it's just not viable to live there if you have to fly everything in kind of thing, to do it so it's probably good and bad, you know?"*

> *"Well, another good thing, it's given some employment to the local people up there, and here too. Some from Hollow Water, they've worked on it. And they're supposed to push that through to—I'm not sure, but I think Poplar River. It's going that far, I think ... to Poplar*."

4. Conclusions – Potential Impacts of the Project on MMF Interests

The construction of the East Side Road is a large-scale project that is likely to have many profound and long-term consequences for people who live in and use the Project Study Area. To explore land use and occupancy of the Manitoba Métis community in the ESRA Study Area, SVS conducted a series of mapping and oral history interviews.

The summary data highlights the issues that repeatedly emerged through the study's interviews. While many of the issues identified in this report were not universal to all interviewees, definite patterns and consistency emerged in some important locations and topics. Based on the findings of these interviews, SVS concludes the following:

- The Manitoba Métis community has demonstrated historic and ongoing **occupancy** in the ESRA Project Study Area as evidenced by birth places, residences, and marriage sites mapped for respondents and their family. There was a larger concentration of Métis occupancy mapped in the area near Manigotagan and along the southern boundary of the Study Area.
- The current and historic Manitoba Métis community has demonstrated **use** in the ESRA Project Study Area. This includes a variety of land-use from hunting, fishing, gathering and trapping, to travelling on and staying out on the land and gaining/sharing knowledge. This use is concentrated on the more southern boundary of the Study Area, but there was also a fair amount of use mapped north as far as Poplar River and east as far as the Manitoba / Ontario border.
- Individuals within the Métis community are connected to the land in the ESRA Study Area through their family history and current use. They experience environmental conditions first-hand and have noted impacts from other developments (e.g. transmission lines, cottages) and human activities. New impacts from the Project may negatively affect land use and contribute to cumulative effects felt by these individuals.
- Due to their connection with the land, the Métis community has valuable TEK that can be used to inform the development of the East Side Road so that impacts are mitigated. By consulting with the Métis, the ESRA will gain a better appreciation of the potential impacts of the Project and thus manage them more effectively.
- Métis land users occasionally supplement their income through land use activities. This primarily includes fishing, gathering, and trapping. For this reason, impacts to the environment from the development of the East Side Road can have direct consequences on the economy of the Métis community.
- Participants expressed concerns that the development of the East Side Road will alter socio-economic conditions. This is a part of Canada that has historically had poor access to and from the rest of Canada (Winnipeg Free Press, 2012). The ESRA Project is set to fundamentally alter this connection, potentially bringing in unwanted changes from tourism, traffic, pollution, and drugs. The consequences of this are difficult to assess but their consideration, through the completion of a fulsome Métis-specific socio-economic baseline study, is crucial for the mitigation of problems.

- Study participants expressed interest in the potential for positive socio-economic effects the community may experience as a result of the Project's development through employment and new road accessibility. Socio-economic enhancement measures and socio-economic management plans developed between MMF and the proponent would support (and increase the certainty of) the realization of these potential community benefits.

The demonstrated land use by the Métis community in the ESRA Study Area will be valuable both now and in the future for the MMF and for any project proponents planning to undertake projects within the ESRA Study Area. The data will help show where impacts of development could be most pronounced and make it easier for projects to be designed to avoid and mitigate impacts and decide whether accommodations are required. More immediately, it can be used by both the Métis and the ESRA in discussions regarding the development of the East Side Road to reduce potential negative impacts to Métis land use and occupancy, and maximize benefits to the Métis community.

The budget provided by the East Side Road Authority to the MMF to complete the ESRA MLUOS was very minimal, particularly when taking in to account the size and complexity of the Project. As such, only 18 interviews were completed as part of this Study. Thus, the data included in this report represents the land occupancy and land use information gathered from a sample-set of the Métis population within the ESRA Project's Study Area. SVS is of the opinion that the Study results provide an indicative representation of MMF citizens' knowledge and use of land and resources within and surrounding the ESRA Project Study Area. However, the data should not be considered comprehensive nor completely inclusive of all Métis land use and occupancy, or values and opinions of the Manitoba Métis community. Based on the Study's sample size and methodology for the selection of interviewees, SVS is of the opinion that inferences or extrapolations should be made with caution for the wider Manitoba Métis community population's occupancy and use of land and resources within the Study Area.

In particular, there is a potential gap in the research in the more northern parts of the Study Area. The combination of some land use activity mapped for respondents and their families, the presence of Métis Locals (local level MMF government bodies), and anecdotal reports from the respondents that there are historic and current Métis settlements in Seymourville, Berens River, Poplar River in the north, and Matheson Island and Pine Dock to the west, indicate that there are Métis people who use and occupy parts of the ESRA Project Study Area that were not mapped comprehensively for this study.

SVS believes that the findings of this report demonstrate Manitoba Métis community occupancy and use in the more northern parts of the ESRA Project Study Area and that further research to understand 1) the use and occupancy of those Métis citizens and 2) the socio-economic baseline of the community with Métis populations in Seymourville, Berens River, Poplar River, Matheson Island and Pine Dock areas should be funded before any additional development moves forward with the East Side Road Project.

In order to understand and address the full extent of impacts the East Side Road may have on Métis way of life in the Study Area, an ongoing working relationship between ESRA and the MMF will be required at each phase of the project's development. This relationship will assist in identifying values and concerns, as well as mitigating and prescribing protection measures and/or compensation/accommodation measures. To ensure that ongoing consultation is as meaningful as possible, the rights, interests, and values of the Métis people in the entire Project Study Area must be considered.

Bibliography

ESRA. (2016, April 20). East Side Road Authority. Retrieved from http://www.eastsideroadauthority.mb.ca/index.html

Gunn, J., Noble, B. (2012). *Critical Review of the Cumulative Effects Assessment Undertaken by Manitoba Hydro for the Bipole III Project*. Public Interest Law Centre. Winnipeg, Manitoba.

Manitoba Métis Federation (Retrieved May 2, 2016). *Government Structure*. Available at: www.mmf.mb.ca/government_structure.php

Oxford English Dictionary (2015). Definition of Scrip. Retrieved from http://www.oxforddictionaries.com/definition/english/scrip

SNC Lavalin (2011) *East Side of Lake Winnipeg. Large Area Transportation Network Study*. Final Report SNC Lavalin. Winnipeg, Manitoba.

Tobias, T. (2009). Living Proof: The Essential Data Collection Guide for Indigenous Use and Occupancy Map Surveys. Vancouver: Ecotrust Canada and Union of British Columbia Indian Chiefs. 467 pp.

Winnipeg Free Press. (2012). Remote road connects the dots in the Province. Retrieved from http://www.winnipegfreepress.com/local/remote-road-connects-the-dots-in-province-160935255.html

Appendix A: East Side Road Authority Project Overview Handout

East Side Road Authority (ESRA)

Project Overview

The information provided in this document is intended to be an overview of The East Side Road Authority's proposed network of all-season roads ("ESRA", "the Project"). This information is being provided to inform Manitoba Métis Federation (MMF) citizens about the project so that they can make informed comments about the potential impacts on the environment, people, the economy, and general human health and safety.

Shared Value Solutions consultants have developed this overview from materials found online predominantly from the East Side Road Authority website (http://www.eastsideroadauthority.mb.ca/index.html). We will do our best to inform you based on this information, but we are not experts in road construction or ESRA project details. *If you have any questions about this information, we can record those and include them in our report.*

Quick Road Facts

- Approximately 1,100 km of all-season roads
- Could take up to 30 years to complete
- Estimated cost of approximately $3 billion
- Construction will take a staged approach, gradually improving the winter road system, to extend the season. Ultimately roads will be improved to achieve all-season status.
- ESRA says that it is coordinating with local communities to identify priorities for immediate benefits.

Details About the East Side Road Initiative

In 2009 the Manitoba Government indicated their commitment to the construction of a network of all-season roads on the east side of Lake Winnipeg. This network would link 13 remote First Nation Communities, previously only accessible on winter roads, to each other and to the rest of Manitoba (Figure 1). The purpose of the all-season roads would be to provide opportunities for social and economic development, such as improved access to health care for people in that area. **All together the construction of over 1000 km of all-season roads is estimated to take up to 30 years and cost over $3 billion.** To oversee this project the Government of Manitoba commissioned the Manitoba Floodway and East Side Road Authority (hereafter referred to as East Side Road Authority, ESRA).

As a first step, ESRA hired SNC-Lavalin to conduct a Large Scale Transportation Network study to identify the preferred all-season road network on the east side of Winnipeg Lake. Its scope was to explore the feasibility, routes, benefits, impacts, costs, and potential partners for the road network. This study was completed in March 2011. **As of February 2016, environmental licensing has been obtained for some sections of this road network and construction has begun**. **Other sections are in the process of environmental approvals and licensing.**

The major components of the east side road network include:

- A 156 km all season road from Provincial Road 304 to Berens River. Construction on this section has already begun, with approval from both provincial and federal governments.
- **A 94 km all-season road extension from Berens River to Poplar River (Project 4 or P4)** which is currently undergoing a federal Environmental Assessment**.**
- **A 131 km all-season road connecting Paungassi River and Little Grand Rapids First Nation to the Provincial Road 304 (Project 7A or P7A).**
    - **This includes a 38 km section of this from Paungassi FN and Little Grand Rapids FN to the Little Grand Rapids Airport (Project 7A or P7A),** which is currently undergoing environmental licencing through Manitoba Conservation.
- **A 648 km route connecting several FN north-east of Winnpeg lake to Provincial Road 373**. These sections of the road project are in the planning, design, and consultation stages.

Project Timeline

- Construction has begun on the road section connecting Berrens River FN to PR 304.
- P4 - A provincial and federal Environmental Assessment is underway for the section connecting Berens River FN to Poplar River FN.
- P7A - A provincial Environmental Licensing is currently underway for a 38 km section from Paungassi FN and Little Grand Rapids FN to the Little Grand Rapids Airport
- 2016 – 2035 - Ongoing design, consultation, licensing, and construction

Predicted Alterations to the Environment for the Project:

(Resulting from construction activities or incidents)

Potential effects of constructing all-season roads on the east side of Lake Winnipeg include:

- Spills, leaks, accidents or malfunctions and the associated impacts on water, soil, wildlife and human populations
- Loss of vegetation from clearing activities
- Erosion of and sedimentation of streams and waterways
- Changes to water quality, quantity or flow
- Changes to wetland health
- Contamination of soil, water or wetlands (related to spills or leaks)
- Impacts to wildlife (mammals, fish, birds, insects, reptiles and amphibians) quality, quantity and distribution from disturbance or habitat loss/degradation/fragmentation
- Impacts or disturbance to traditional land-use activities such as hunting, fishing, gathering, Air and noise emissions (Effects on wildlife and human populations)
- Effects on archaeological and cultural heritage resources

Potential Human Health, Cultural and Land-use Effects

Predicted human health, cultural and land-use effects of constructing all-season roads in this area include:

- Effects on traditional land-use due to major spill(s) or accident(s) causing contaminants to enter surface waters.
- Increased human populations due to influx of temporary workers and tourists
- Effects on access to and function of traditional hunting routes, trap lines, trails and water routes
- Effects on archaeological and cultural heritage sites

- Effects on cultural, ceremonial and spiritual sites
- Effects on traditional hunting and trapping areas
- Effects on traditional fishing waters

The information gathered in this study that SVS is conducting on behalf of the MMF will be brought together with information gathered in past studies to demonstrate how the land use of MMF citizens may be impacted by the ESRA's projects. The information you share will also:

- Help develop a better understanding of the effects of the project on the environment,
- Inform the cumulative effects assessment
- Contribute to an understanding of current environmental and socioeconomic conditions near the proposed project

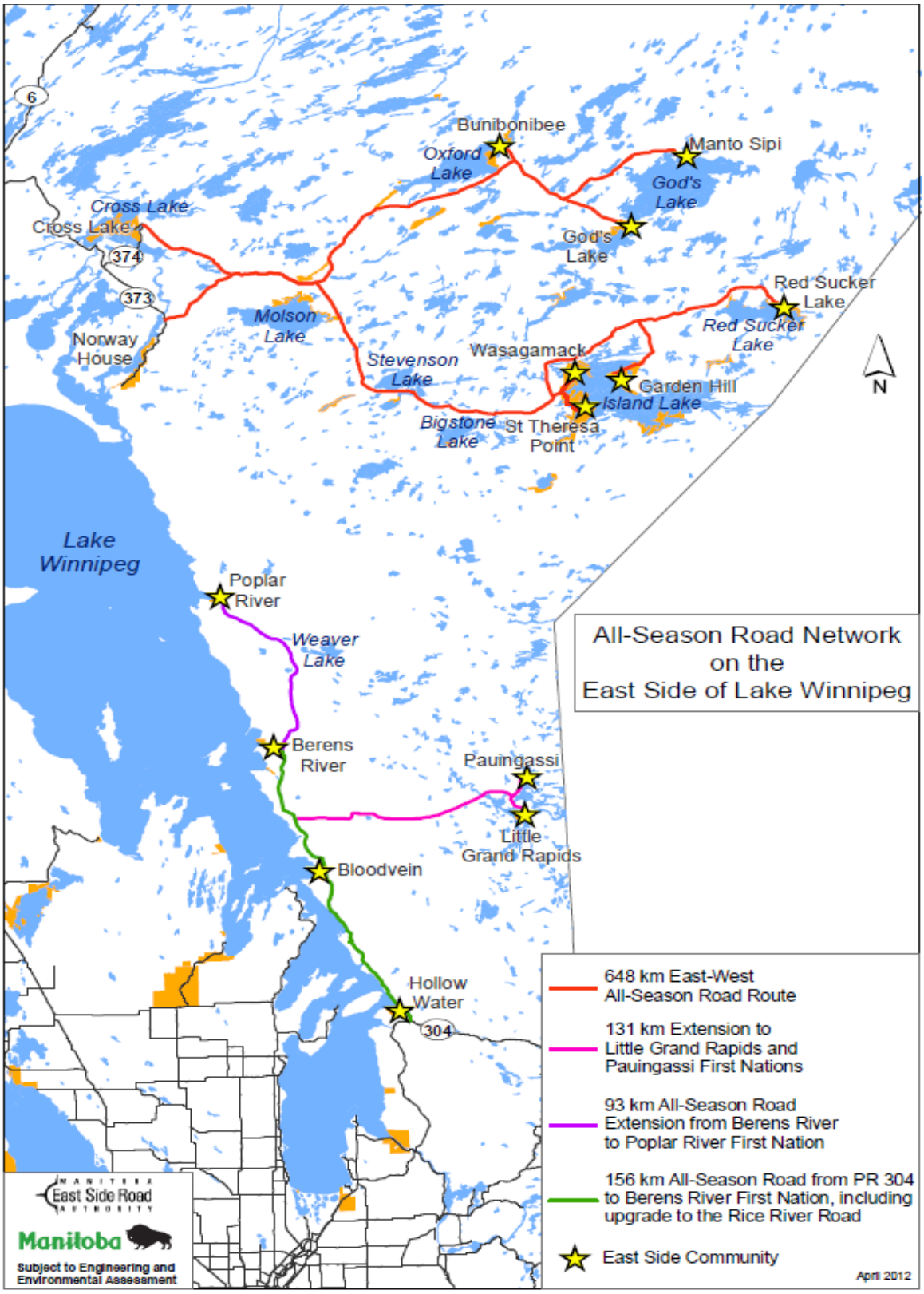


Figure 1. Map of ESRA projects showing potential routes for different sections of all-season road.

Appendix B: Permission Form

PIN#_____

Manitoba Métis Federation
2016 Manitoba Métis Traditional Territory
Land Use and Occupancy Study

Shared Value Solutions ("SVS") has been hired by the Manitoba Métis Federation ("MMF") to undertake a Land Use and Occupancy Study with Métis citizens who harvest and/or use the land in the areas east and north of Lake Winnipeg and/or whose families have lived in this area. The funding for this project is provided by Indigenous and Northern Affairs Canada.

The knowledge you share during this study will be used by the MMF to help understand where Métis citizens are using the land and where you and your family used to and continue to live and use the land. This information may help the MMF to show the current and historic presence of Métis citizens on the land and may be used to advocate for Métis rights and interests in negotiations or in legal or regulatory proceedings.
The final result of your interview will be a map showing areas where you and your family have used and continue to use the land. Once the study is finished you will be provided with a copy of your map and a transcript of the interview that you complete with us. Information from this interview will be brought together with information from other Manitoba Métis citizens. Maps will be produced that do not identify you or your name specifically, but will show all of the information collected from Manitoba Métis together. Those aggregate maps will be shared with MMF, who may use these maps in presentations and negotiations with government bodies or other organizations.

We would like to audio and video record your interview with your permission. The recording will be used to develop the written transcript of this interview and quotes will be used in the final report presented to the MMF. It may also be used to verify your responses or for other purposes by the MMF which would be distributed outside of the MMF, such as for presenting the results to government or other organizations. The video may be used to put together short clips that show you and other Manitoba Métis citizens sharing stories about using the land and/or Métis identity. Please note that you can decline to be video recorded, but video of the GIS computer screen and an audio recorder will need to be used.

I, _____ (print name) agree to the terms described above and have discussed and

resolved any concerns I have prior to consenting to this interview.

Signature _____

Witness _____

Date _____

The MMF is also requesting permission to review your MMF Membership genealogy for the purposes of further exploring where Métis people lived and used the land. By giving the MMF permission to do this, you are acknowledging that you understand that MMF staff members will be looking into census, archival, and historic records related to your MMF Membership genealogy.

If you agree to this request please sign and date below:

I, _____ (print name) agree to the terms described above and give the MMF permission to look into my MMF Membership genealogy.

Signature _____

Witness _____

Date _____

Appendix C: Land Use and Occupancy Interview Guide

2016 Manitoba Metis Traditional Territory Lands Use and Occupancy Study

Map Biography Interview Guide

Prepared by

Shared Value Solutions

PREAMBLE

Together we will be undertaking a mapping exercise (what we call a map biography and oral history interview) to show locations on the land where you have harvested, lived and camped and to record other aspects of your way of life. We also want to map your parents' and grandparents' use of the land, whether these be locations that you went out on the land with them or places that they told you about or you heard about through family stories. If there is time, we would like to map other places that your extended family has used the land. All land use can be for personal or economic purposes.

We recognize that mapping a lifetime of you and your family's land use could take days, and because we only have a short time together we are asking that we focus first on the areas north and east of Lake Winnipeg and then later on other areas that are significant to you. The purpose of this Study is to show current and historical Metis people's use within regions that are currently outside of the recognized Métis Harvesting Zones.

With your permission, we will record this interview using audio and video recordings so that a transcript and a short Metis historic land use video can be prepared. The final result of your interview will also include a map showing areas where and how you have and continue to use the land. Once the work has been completed you will be provided with a copy of the mapping you complete with us today in addition to your transcript.

Information from this interview will be brought together with information from other Métis citizens in a report that may be used by the MMF to advocate for the collective rights of the Manitoba Métis Community, including in legal or regulatory proceedings, but in particular in efforts to expand the current Metis Harvesting Zone boundaries and in negotiations with project developers. Maps will be produced that do not identify you or your name specifically, but will show all of the information collected from the MMF together. This information will be used by the MMF to better understand the current and historic land use of their citizens.

Note: For interviews occurring in Winnipeg and Manigotagan:
The results of this study will also be used to demonstrate Métis rights and interests to the East Side Road Authority.

Review permission form

START-MARKER

[If permission form completed:]

Start audio & video recorders and read following statement for the transcript.

My name is _____ and today is _____, 2016.

[Primary Interviewer's name] [E.g. September 17th]

It is _____o'clock.

I have just reviewed the permission form with _____ that she/he has signed. [Name of Interviewee]

We are undertaking a land use and occupancy and oral history survey in _____.
[Location of interview]

Other interviewers who are present include _____, _____, and _____.

Observing the session are _____, _____.

Geographical locations will be recorded using GIS and descriptive information will be recorded on a laptop with a customized Microsoft Access Database.

Personal Information and Residences **(Spend 5 Minutes Max)**

Use [ACCESS] to record responses.

Interviewer does the following prior to asking the first question:

1. *On Interview Record Form: Interviewee name, Interview #, Date, Interviewee PIN and Location of interview. Interviewer Name and PIN.*
2. *In GIS, record the Interviewee PIN.*
3. *In ACCESS enter the Interviewee PIN, Interviewer PIN and name.*

I am going to start this interview by asking you some questions about yourself and your family.

The reason I am asking you the following questions is to help us understand Métis community connections to different geographic areas both within and outside of the current Metis Harvesting Zones.

If there is a question that you do not feel comfortable answering or don't know the answer, please let me know by just saying "can we move on to the next question".

Residences

1. Can you tell me your full name?

2. Can you tell me what year you were born?

3. Where are you currently living? (please provide closest town or city) **(Note: map this feature and enter data in Access)**

    a. How many years have you lived at the place you just mentioned?

4. Where did you spend most of your childhood? **(Note: map this feature and enter data in Access)**

5. What other places have you lived? By places, I mean different towns etc. not if you moved from one home to another within the same town **(Note: if people lived in more than 2 other places, map only those 2 they lived the longest or that they consider the most significant and enter data in Access)**

6. Are you married? Is your spouse Métis? Can show me on the map where you were married? **(Note: map this feature and enter data in Access)**

Preamble to Personal Land Use Activities, Culture, and Traditional Knowledge

We are now going to start documenting your personal land use over the course of your lifetime, as well as any knowledge or information you have about the historic or contemporary Métis way of life, and/or knowledge about the land, waters, animals, fish, and plants in the landscapes that you are familiar with.

Some of the kinds of land use activities we'd like to hear about if they apply to you include:

- Harvesting animals, fish and plants for food
- Locations where you have shot/killed moose, deer, caribou, bear, elk or other large game
- Commercial and personal fishing spots
- Trapping furbearers for sale (commercial trapping)
- Gathering flora or fauna for medicine, arts/crafts, heating, construction, etc.
- Places where you stay overnight while on the land (e.g. cabin, campsite)
- Routes and access points you use to get to the places that we map (e.g. portages, trails, etc.)

Some of the other kinds of information we'd like you to share with us include:

- Historic or cultural sites or places (e.g. historic trails or portage routes, places where Métis citizens historically would gather together, Métis burial sites, historic residences, trading posts, or perhaps sacred/spiritual sites)
- Important animal, fish or plant habitats (e.g. fish spawning place, moose calving place, rare plant growing area)
- Changes to the land over time

I am interested in the seasons that you have done these activities in and also whether it was done in the last year or before.

Each time you identify a place on the map we will be asking you to show us exactly where to draw the boundaries, line or point and then asking you a series of questions about that particular place we've just drawn on the map.

Individual's Hunting **(Spend 15 Minutes Max)**

I am now going to ask you questions about where you have harvested different kinds of animals –mammals and birds. For this part of the interview we only want to map places where you killed animals to feed your family or community, not for any type of commercial or barter purposes unless you took some home to eat (those we will map later). We are going to map these specific locations using points on the map.

7. Do you hunt? Can you tell me which of the following animals you hunt (not trap or snare) to feed yourself or your family?

Large Mammals
- o Moose
- o Woodland Caribou
- o White-Tailed Deer
- o Mule Deer
- o Black Bear
- o Wolf
- o Elk
- o Other Mammal

Small Furbearers
- o Badger
- o Beaver
- o Coyote
- o Fisher
- o Fox
- o Lynx
- o Marten
- o Mink
- o Muskrat
- o Otter
- o Porcupine
- o Rabbit
- o Wolverine
- o Other Furbearer

Birds
- o Crane
- o Duck
- o Goose
- o Grouse
- o Ptarmigan
- o Bird Eggs
- o Other Upland Bird
- o Other Waterfowl

REMEMBER: Large Game sites can only have one time period associated with them! You can ask questions that make data entry more efficient – e.g. asking if participants harvest an animal the same time every year will decrease interviewee burnout from having to answer a question over and over again.

For each point mapped ask the following questions:

a. Have you done this activity within the last year? (**Note: pick appropriate time period in Access.**)
b. What season did you harvest here? (**Note: can ask "what season you generally harvest the species" at the beginning to avoid interviewee burn out, but must enter in Access for every point**)
c. Who did you harvest this with? (**Note: Can ask at the beginning to avoid burn out "Who do you normally go hunting with? Are they family or friends? Are they Metis? Do you hunt with these people all the time or do you ever go hunting with other people? but must enter in Access for every mapped feature)**

Probing Questions (map these additional features if relevant)

d. How do you access this area? Do you stay out on the land overnight when you hunt here? (**Note: Map a separate point for overnight locations and choose relevant tab in Access**)
e. How did you process the animal? And where did you process the animal **(Note: Map a separate point for processing and choose Processing option in Access)**

Individual's Trapping **(Spend 10 Minutes Max)**

Have you ever trapped for personal or commercial use? *(if no, skip to next section)*
I am now going to ask you questions about where you harvested different kinds of animals to sell the fur. We are going to map these specific locations on the map. For these questions, we are only mapping locations you have used personally as a trapper or trapper helper. **(NOTE: if they trapped for commercial purposes click used for economical purposes in Access otherwise will default to personal use)**

8. Do you trap? If yes, can you please show me a location on the map?
9. From the list below can you identify which species you trapped at this location?
    - Bear
    - Beaver
    - Coyote
    - Fisher
    - Fox
    - Lynx
    - Marten
    - Mink
    - Muskrat
    - Otter
    - Rabbit
    - Raccoon
    - Squirrel
    - Weasel
    - Wolf
    - Wolverine
    - Other furbearer

For each trapping feature mapped ask the following questions:

a. Have you done this activity within the last year? (**Note: pick appropriate time period in Access.**)
b. What season did you harvest here? (**Note: can ask "what season you generally trap that species" at the beginning to avoid interviewee burn out, but must enter in Access for every point**)
c. Who did you go to your trapline with? (**Note: Can ask at the beginning to avoid burn out "Who do you normally go trapping with? Are they family or friends? Are they Metis? Do you trap with these people all the time or do you ever go trapping with other people? but must enter in Access for every mapped feature)**

Probing Questions (map these additional features if relevant)

d. How do you access this area? Where do you stay when you are trapping? (**Note: Map a separate point for overnight locations and choose relevant tab in Access**)
e. How did you process the animal? And where did you process the animal **(Note: Map a separate point for processing and choose Processing option in Access)**

10. Have you ever trapped anywhere else or on other traplines? ***[NOTE: If yes, then ask questions above again]***

Individual's Fishing **(Spend 15 Minutes Max for Commercial and Personal Fishing)**

11. Do you ever do personal fishing or commercial fishing? **(NOTE: if they trapped for commercial purposes click used for economical purposes in Access otherwise will default to personal use)**

Commercial Fishing:

Have you ever fished commercially? *(if no, skip to next section)* I am now going to ask you questions about where you harvested different kinds of fish for commercial use. We are going to map these specific locations using polygons on the map. For these questions, we are only mapping locations you have used personally.

12. Can you show me where you commercially fish and which species you fish there?

Bass	Lake Whitefish
Burbot	Mooneye
Bait Fish	Pickerel/Walleye
Cisco	Sauger
Carp	Sucker (Longnose and White)
Catfish (Channel and Brown Bullhead)	Trout (Rainbow and Lake)
Goldeye	Yellow Perch
Jackfish/Pike	Other Fish
Lake Sturgeon	

Ask for each commercial fishing point mapped:

a. Have you done this activity within the last year? (**Note: pick appropriate time period in Access.**)
b. What season did you commercial fish here? (**Note: can ask "what season you generally fish" at the beginning to avoid interviewee burn out, but must enter in Access for every point**)
c. Who did you go fishing with? (**Note: Can ask at the beginning to avoid burn out "Who do you normally go commercial fishing with? Are they family or friends? Are they Metis? Do you fish with these people all the time or do you ever go fishing with other people? but must enter in Access for every mapped feature)**

Probing Questions (map these additional features if relevant)

d. How do you access this area? Where do you stay when you are commercial fishing? (**Note: Map a separate point for overnight locations and choose relevant tab in Access**)
e. How did you process the fish? And where did you process the fish **(Note: Map a separate point for processing and choose Processing option in Access)**

Personal Fishing:

I am now going to ask you questions about where you harvested different kinds of fish. For this part of the interview we want to map only places where you killed fish to feed your family or community, not for any type of commercial or barter purposes unless you took some home to eat. We are going to map these specific locations using points on the map. For these questions, we are only mapping locations you have used personally.

13. Can you show me where you fish for yourself or to provide for your friends and family? Can you tell me which species you fish?

Bass	Lake Whitefish
Burbot	Mooneye
Bait Fish	Pickerel/Walleye
Cisco	Sauger
Carp	Sucker (Longnose and White)
Catfish (Channel and Brown Bullhead)	Trout (Rainbow and Lake)
Goldeye	Yellow Perch
Jackfish/Pike	Other Fish
Lake Sturgeon	

Ask for each personal fishing spot:

a. Have you done this activity within the last year? (**Note: pick appropriate time period in Access.**)
b. What season did you fish here? (**Note: can ask "what season you generally fish" at the beginning to avoid interviewee burn out, but must enter in Access for every point**)
c. Who did you go fishing with? (**Note: Can ask at the beginning to avoid burn out "Who do you normally go personal fishing with? Are they family or friends? Are they Metis? Do you fish with these people all the time or do you ever go fishing with other people? but must enter in Access for every mapped feature)**

Probing Questions (map these additional features if relevant)

d. How do you access this area? Where do you stay when you are fishing for personal use? (**Note: Map a separate point for overnight locations and choose relevant tab in Access**)
e. How did you process the fish? And where did you process the fish **(Note: Map a separate point for processing and choose Processing option in Access)**

Individual's Gathering **(Spend 15 Minutes Max)**

14. Do you ever gather plants or natural materials? Can you tell me which species you harvest? Can you show me some of these places on the map?

- o Asparagus
- o Wild Bergamot
- o Birch
- o Blueberries
- o Burdock
- o Cattails
- o Cherries
- o Choke Cherries
- o Clover
- o Cranberries
- o Drinking water
- o Fiddleheads
- o Leeks
- o Mint
- o Mushrooms
- o Wild Ginger
- o Nuts
- o Wild Onion
- o Other Plant
- o Pin Cherries
- o Plantain
- o Poplar
- o Raspberries
- o Rat Root
- o Rocks
- o Wild Rice
- o Red Willow
- o Roots
- o Sage
- o Saskatoon Berries
- o Seneca Root
- o Soil
- o Spruce
- o Strawberries
- o Sumac
- o Sweet Grass
- o Syrup
- o Thistle
- o Other Wood/Trees
- o Other Plant

Ask for each mapped feature:

a. What did you use these gathered materials for? ***(NOTE: ask for the following uses)***

o Arts/Craft o Construction Plant/Natural Material o Ceremonial/Medicinal Plant o Cash/Wage Income Plant/Natural Material o Drinking Water	o Clay/Soil/Rocks (Earthen Material) o Edible or Food Plants o Fire Wood o Other Plant or Natural Material

b. Have you done this activity within the last year? (**Note: pick appropriate time period in Access.**)

c. What season did you gather here? (**Note: can ask "what season you generally fish" at the beginning to avoid interviewee burn out, but must enter in Access for every point**)

d. Who did you go gathering with? (**Note: Can ask at the beginning to avoid burn out "Who do you normally go gathering with? Are they family or friends? Are they Metis? Do you gather with these people all the time or do you ever go out with other people? but must enter in Access for every mapped feature)**

Probing Questions (map these additional features if relevant)

e. How do you access this area? Where do you stay when you are gathering? (**Note: Map a separate point for overnight locations and choose relevant tab in Access**)

f. How did you process the materials you gathered? And where did you process the materials you gathered? Do you preserve them, dry them, etc.? **(Note: Map a separate point for processing and choose Processing option in Access)**

Knowledge Transfer **(Spend 15 Minutes Max)**

15. Who taught you how to use the land? Were they Métis?

16. Can you show me some of the areas on the map where you remember being taught certain harvesting techniques by other Metis people? **(Note: use the following list as prompt only if the person cannot think of any examples themselves, do not need to ask every question)**
    - Places where you learned how to shoot and process moose, caribou or other large game
    - Places where you learned various techniques for fishing and processing fish
    - Places where you learned how to navigate the lands and waters
    - Where you learned how to set up camp
    - Other

Ask for each mapped feature:

a. What did you learn here?
b. Have you done this activity within the last year? (**Note: pick appropriate time period in Access.**)
c. What season were you taught this technique?
d. Who taught you this technique at this spot?

Probing Questions (map these additional features if relevant)

e. How did you access this area? Where did you stay when you were out learning this technique? (**Note: Map a separate point for overnight locations and choose relevant tab in Access**)

17. Do you teach your children, or other Métis people, about using the land? For example, have you taught anyone else how to hunt or process animals? Can you show me where you have done this on the map?

Ask for each mapped feature:

a. What specifically did you teach someone at this location?
b. Have you done this activity within the last year? (**Note: pick appropriate time period in Access.**)
c. What season did this happen?
d. Who did you teach this technique to at this spot?

Probing Questions (map these additional features if relevant)

e. How did you access this area? Where did you stay when you were out on the land? (**Note: Map a separate point for overnight locations and choose relevant tab in Access**)

Overnight Locations

(Spend 10 Minutes Max, possibly less time if have already comprehensively mapped overnight locations in association with features in previous sections)

18. Are there any places where you stay out on the land overnight? If yes, can you please describe this location? **(Note: use the following list as prompt only if the person cannot think of any examples themselves, do not need to ask every question)**

    - Active Cabin/Bush Camp
    - Commercial Accommodation (including commercial camp grounds)
    - Temporary Structure (e.g. tent, lean to)
    - Other overnight site

Ask for each personal fishing spot:

a. Have you done this activity within the last year? (**Note: pick appropriate time period in Access.**)
b. What season did you go here?
c. Who did you go with?

Access Routes

(Spend 10 Minutes Max, possibly less time if have already comprehensively mapped overnight locations in association with features in previous sections)

19. Are there any other access routes that you use? **(Note: use the following list as prompt only if the person cannot think of any examples themselves, do not need to ask every question)**
    - Boat Landing
    - Historic Access Routes/Portage
    - Portage
    - Land Route/Trail
    - Water Route/Trail
    - Other Access Feature

Ask for each mapped feature:

a. Have you done this activity within the last year? **(NOTE: pick appropriate time period in Access)**
b. Which season did you go here?
c. Who did you go with?

Probing Questions (map these additional features if relevant)

a. Where did you stay when you were out on the land? (**Note: Map a separate point for overnight locations and choose relevant tab in Access**)

Cultural Sites **(Spend 15 Minutes Max)**

20. Do you know of or use any sites that are important to yourself or others in the current or historic Metis community – places that would be considered culturally important? **(Note: use the following list as prompt only if the person cannot think of any examples themselves, do not need to ask every question)**

    - **Burial Sites:** What I mean by this is places where Métis people were buried, either in church cemeteries or elsewhere, perhaps places where Métis people were buried in the bush.
    - **Métis historic significant sites:** What I mean by this is places where large numbers of Métis people would congregate and live out on the land, places where Scrip signings or battles occurred, or any other specific locations that have been used for generations by Métis people.
    - **Historic Trails or Access Routes**: Any trails/access routes that are significant to the Métis people.
    - **Buffalo jump sites**: By this I mean a cliff formation that Métis people historically used in order to hunt and kill bison.
    - **Contemporary gathering place**: By this I mean places currently used by Métis community members to gather together for recreation, feasts, annual events, etc.?
    - **Important landscape features:** By this I mean places that are especially valued because of their beauty, their elevation, unique plant or rocks etc.
    - **Spiritual/Ceremonial/Sacred site:** By this is mean any sites used by Métis people for spiritual, ceremonial or sacred purposes such as fasting camps or sweat lodges.
    - **Trading post:** By this I mean any historic trading posts used by Métis people (e.g. Hudson Bay or Northwest Company Posts or other company trading posts?)
    - **Recreational areas:** By this I mean areas on the land that you use for recreation such as swimming, hiking, bird watching, snow shoeing, or just walking.
    - **Other cultural site:** By this I mean any other cultural sites used by or that are important to Métis people.

Ask for each mapped feature:

a. Have you gone to this place yourself? If so, was it within the last year? **(NOTE: pick appropriate time period in Access)**
b. Which season did you go here?
c. If you visit this place, do you ever visit with other Métis people? Who?

21. Do you remember visiting any special areas when you were a child? Can you tell me more about that? (**Note: map features and ask all of the same questions above for each mapped feature**)

22. Do you take your children out on the land? Where do you go? Can you tell me more about that? (**Note: map features and ask all of the same questions above for each mapped feature**)

Other Land Use

23. Are there other areas where you use the land? E.g. for Agricultural purposes ,For cattle ranching, raising horses, etc.?

Ask for each mapped feature select the appropriate tab in Access:

a. Have you done this activity within the last year? **(NOTE: pick appropriate time period in Access)**
b. Which season did you use the land in this way?
c. Who did you do this activity with?

Historic Family Use **(Spend 30 Minutes Max)**

We would like to map as many locations that we can that reflect your knowledge of your family's use of the land, any activities that provided economic benefit, and any areas where you know your family has spent time on the land. The purpose of this is to show your Métis family's presence on the land. These could include areas where you went with your family or areas where you family told you they had been. First I am going to ask you questions about your parents. Afterward I will ask you questions about your grandparents.

Parent and Grandparent Occupancy, Scrip, Marriage, and Death Sites **(10 Minutes Max)**

24. Can you tell me which side of your family you trace your Métis heritage on?

25. Did any of your Metis parents, grandparents, great grandparents or other family use the area north and/or east of Lake Winnipeg at any point in their lives? If yes, can you show me those places on the map? **(Note: map only for those family members who were A) Metis and B) lived in the areas north and/or east of Lake Winnipeg)**

26. Mother: **(Note: If their mother was Metis, ask these questions. If not, we will not map their information at this time given time constraints.)**

    a. Can you tell me your Mother's name and where she was born or spent most of her childhood years
    b. Can you tell me any other places you know of where your mother has/had lived?
    c. Was your mother married? Can you show me on the map where she was married?
    d. Is your mother still alive? If yes, can you show me on the map where she currently lives? If not, can you show me on the map the place where she passed on?

27. Father: **(Note: If their father was Metis, ask these questions. If not, we will not map their information at this time given time constraints.)**

    a. Can you tell me your Father's name and where he was born or spent most of his childhood years?
    b. Can you tell me any other places you know of where you father has/had lived?
    c. Was your father married? Can you show me on the map where he was married?
    d. Is your father still alive? If yes, can you show me on the map where he currently lives? If not, can you show me on the map the place where he passed on?

28. Mother's parents:

    a. Were your grandparents on your mother's side Metis? (**Note: if both were Metis, choose one to start with and map both individually. If they were not Metis, we will not map their information at this time given time constraints**)
    b. What were their names
    c. In what year were they born? Can you show me this place on the map?

d. Do you know other places where they lived north and/or east of Lake Winnipeg? Can you show me these places on the map?
e. Were they married? Can you show me where they got married?
f. Are they still alive? If yes, can you show me on the map where they currently live? If not, what year did they pass on? Can you show me this place on the map?

29. Father's parents:

    a. Were your grandparents on your father's side Metis? (**Note: if both were Metis, choose one to start with and map both individually. If they were not Metis, we will not map their information at this time given time constraints**)
    b. What were their names
    c. In what year were they born? Can you show me this place on the map?
    d. Do you know other places where they lived north and/or east of Lake Winnipeg? Can you show me these places on the map?
    e. Were they married? Can you show me where they got married?
    f. Are they still alive? If yes, can you show me on the map where they currently live? If not, what year did they pass on? Can you show me this place on the map?

30. Did any of your great grandparents live in or use the land north and/or east of Lake Winnipeg? **(Note: If no, move on to next section of the interview guide)**

    a. Were they Métis? (**Note: if more than one were Metis, choose one to start with and map all individually. If they were not Metis, we will not map their information at this time given time constraints**)
    b. What were their names
    c. In what year were they born? Can you show me this place on the map?
    d. Do you know other places where they lived north and/or east of Lake Winnipeg? Can you show me these places on the map?
    e. Were they married? Can you show me where they got married?
    f. Are they still alive? If yes, can you show me on the map where they currently live? If not, what year did they pass on? Can you show me this place on the map?

31. Did you have other family who has lived north and/or east of Lake Winnipeg? Can you show me where they have lived?

    a. Were they Métis? (**Note: if more than one were Metis, choose one to start with and map individually. If they were not Metis, we will not map their information at this time given time constraints**)
    b. What were their names
    c. In what year were they born? Can you show me this place on the map?
    d. Do you know other places where they lived north and/or east of Lake Winnipeg? Can you show me these places on the map?
    e. Were they married? Can you show me where they got married?
    f. Are they still alive? If not, what year did they pass on? Can you show me this place on the map?

32. Do you have knowledge about your family scrip location or knowledge of family scrip records?

    a. Who received scrip?
    b. Can you show me any places they received scrip on the map?
    c. What year was that (approx. year is fine)

Parent's use of the land **(10 Minutes Max)**

33. Can you show me any places where you know your parents have hunted, gathered, fished or gone out overnight on the land north and/or east of Lake Winnipeg? These could be places you visited with your family, or places that they have told you about.

34. Can you show me any places where your parents benefitted economically from the land? These could be places where they worked as a logger, commercial trapper or fisher, or places where they gathered plants for sale?

35. Can you show me any other significant family sites north and/or east of Lake Winnipeg? These could be homesteads, traplines, fishing areas, places where your family would gather or places where Métis community members would gather.

Grandparent's use of the land **(10 Minutes Max)**

36. Can you show me any places where you know your grandparents have hunted, gathered, fished or gone out overnight on the land north and/or east of Lake Winnipeg? These could be places you visited with your family, or places that they have told you about.

37. Can you show me any places where your grandparents benefitted economically from the land? These could be places where they worked as a logger, commercial trapper or fisher, or places where they gathered plants for sale?

38. Can you show me any other significant family sites north and/or east of Lake Winnipeg? These could be homesteads, traplines, fishing areas, places where your grandparents would gather or places where Métis community members would gather.

For people with ESRA Study Area knowledge only. If not, skip to next section.

Traditional Ecological Knowledge **(Spend 10 Minutes Max)**

We'd like you to show us the locations of important animal, fish and/or plant habitat that you have personal knowledge about.

Spawning Areas:

39. Are you aware of any fish spawning habitat areas? If so, where is the place located?

Ask for each feature mapped:

a. Which fish species use this spawning area?
b. Which season is this a spawning ground?

Wetlands

40. Are you aware of any wetlands? If so, where is this place located?

Ask for each feature mapped:

a. Is there a particular season this is most important?

Mammal Seasonal Habitat:

41. Are you aware of any seasonal habitat for mammals (moose, elk, deer, caribou, bear, bats etc.)? If so, where is the place located? For example a place where animals go to calve or give birth, a yarding area, a wintering area, a migration route, or a rutting area?

Ask for each feature mapped:

a. Which species is this place/area important for?
b. Is there a particular season this is important habitat?

Bird Habitat:

42. Are you aware of any waterfowl, upland bird habitat or other bird areas? (e.g. migration stop-overs, nesting, staging, mating areas) Can you show me on the map where these places are?

Ask for each feature mapped:

a. Which species of bird use this area?
b. Why do you think this place is good for stop-over, nesting, staging or mating?
c. What time of the year is this place used for bird habitat?

Reptiles & Amphibians:

43. Are you aware of any important reptile or amphibian areas? (E.g. nesting, mating areas for turtles, frogs, salamanders, snakes, and/or tadpole areas, etc.)

Ask for each feature mapped:

a. Which species are you discussing?
b. What time of the year is this place used by the species?
c. Why do you think this place is good for this species?

Salt Licks:

44. Are you aware of the locations of any salt or mineral licks that animals use? If so, can you show me where the salt lick is located and what animals you have seen using it.

Ask for each feature mapped:

a. What species of animal use this salt lick?

Plant Habitat:

45. Are you aware of the locations of any important plant habitat (e.g. flowers, grasses, medicinal/ceremonial plants trees, etc.) that you DON'T harvest? If so, can you show me where these are/were located? What type of plant is this?

Species at Risk:

46. Are there any species at risk that you are aware of? If so – what species? Can you share what you know and show on the map where this is?

Other Important Habitat:

47. Is there any other kind of important habitat for animals/fish/plants that we haven't discussed?

Ask for each feature mapped:

a. What type of species use this area?

Changes **(Spend 5 Minutes Max)**

48. Have you noticed any changes to the land and water in the area north and/or east of Lake Winnipeg? **(Note: use the following list as prompt only if the person cannot think of any examples themselves, do not need to ask every question)**
    a. Have you noticed any changes to the quality and/or quantity and/or distribution of any of the animals that you hunt?
    b. Have you noticed any changes to the quality and/or quantity and/or distribution of any of the animals that you trap?
    c. Have you noticed any changes to the quality and/or quantity and/or distribution of any of the fish that you harvest?
    d. Have you noticed any changes to the quality and/or quantity and/or distribution of any of the plants that you gather?
    e. Have you noticed any changes to the quality and/or quantity and/or distribution of any of the overnight locations or access routes that you use?
    f. Have you noticed any changes to the quality and/or quantity and/or distribution of any of the plant or animal habitats that we have mapped? (E.g. spawning areas, mammal migration routes/habitats, wild rice habitat, plant habitat, etc.)
    g. Have you noticed flooding anywhere where flooding didn't used to happened?
    h. Have you noticed any areas where water has dried up?
    i. Have you noticed any changes to any roads or trails that you use only use in the winter?
    j. Have you noticed any blue green algae or other signs of water quality issues?

Ask for each mapped feature:

a. When did you first notice this change? **(NOTE: pick appropriate time period in Access)**
b. Is there a particular season associated with this change?
c. What do you think caused this change?

CLOSING QUESTIONS

49. Do you feel that the data shown here represents everything that we've talked about today? Is every area that we've discussed actually on the map? (**Note: Show the participant the full map. If no and you have time, map more features. If you don't have more time, make note of the gap for future interview**)

50. Do you feel that the areas that we've mapped in today's interview provides a fair snap shot of your overall knowledge and land use?

Oral History **(Leave yourself 25 Minutes for OH)**

(ASK FOR ESRA AND POWLEY)

NOTE: BREAK AND RESET THE ROOM FOR ORAL HISTORY

Key Questions on Cultural Connections to the Land (10 min)

51. Can you tell me about your family's connection to the areas north and/or east of Lake Winnipeg?
    c. What does this area mean to you?
    d. Has your family's connection to this area changed at all over time? If so, please explain.
    e. Did anyone in your family receive scrip in the areas north and/or east of Lake Winnipeg? If so, where and can you tell me what you know of the story?
52. Are one of these locations the place you would consider the location of your Métis community? Can you explain?
53. Can you tell me about any traditions that you or your family have participated in north and/or east of Lake Winnipeg? (E.g. are there Métis gatherings that you go to? Ceremonies that you participate in?)
54. Can you share with me your thoughts on the Métis people and how the land has provided for them in the past north and/or east of Lake Winnipeg?
55. Can you share with me whether you have seen any changes to the land in the areas north and/or east of Lake Winnipeg?
56. Do you, or does anyone in your family supplement their income through harvesting activities? If so, please explain
57. Can you tell us a bit about your memories and/or experiences of these places? Or any stories/teachings attached to this/these places?

Key Questions to ask ONLY FOR PEOPLE WHO HARVEST IN OR LIVE IN THE AREA THAT WILL POTENTIALLY BE IMPACTED BY ESRA (Note: READ THE PROJECT DESCRIPTION) (10 min)

58. What are your opinions on the East Side Road Authority project?
59. What, if any, impacts do you believe the development of new roads will have on you and your family?
60. Are you familiar with any other developments in the ESRA study area (such as existing road developments, logging, mineral exploration, pulp and paper, and other infrastructure)?
    a. Have these developments had any effects on or changed your ability to access the land and/or waters or harvest in these areas?
    b. Have these developments effected the environment and ecological features in the area? (Habitat, numbers of species, health of species, etc.)
    c. When did they start? How long did they last? How severe were they? What were the implications? Why do you think that?
61. If you could say anything to the East Side Road Authority about its development of the new roads, what would it be?

Extra Questions on Identity (if you have time)

62. Did you always know you were Metis when you were growing up?
    a. Why or why not?
63. Can you tell us about what harvesting means to you as a Métis person?
64. Who do you harvest with? Are they also Métis? [if yes] What does it mean to you to harvest with other Métis?

Extra Questions Specific to Land Use (if you have time)

65. Can you tell me how you learned about being out on the land?
    a. a. Do you have a favorite story about being out on the land (hunting, fishing, gathering, or otherwise being on the land)? Can you share this with us?
    b. Did your parents or other relatives or ancestors use the land as part of their way of life or livelihood? And can you share some stories you may know with us?
66. If you trap, what do you do with the meat, pelts, or hides of the animal? What is for food? Sale? Or to give away?
    a. Do you have a favorite story about trapping? Can you share this with us?
    b. Did your parents or other relatives or ancestors trap as part of their way of life or livelihood? And can you share some stories you may know with us?
67. Would you like to share any other story about being out on the land?
68. Imagine it is the future, can you tell me what you would like to see with regards to land use and Métis people? For your Métis family? For other Métis?

69. **Who else do you think we should interview for this study? Can you tell me their names?**

END-MARKER

When interview is over read the statement below before turning off audio and video recorders.

My name is_____and today is_____, 2016.
[Primary Interviewer's name] *[E.g. February 25th]*

I have just completed the land use and occupancy survey with_____.

It is _____ o'clock.

Other interviewers who were present include_, _____. Observing the session were___,

Appendix D: Mapping Methods Manual

Manitoba Métis Federation

Métis Land Occupancy and Use Study (MLOUS)

Draft Data Collection Manual for Map Biography and Oral History Interviews

Prepared by

Shared Value Solutions

This manual will outline the protocol and procedures for both the questionnaire and mapping portions of the interview.

The methods presented in this manual are adapted from Terry N. Tobias (2009), *"Living Proof: The essential data collection guide for indigenous use-and-occupancy map interviews"* and are based on SVS's past experience with land use and occupancy studies.

Setting up for the Interview

1. Set up GIS and Reference Map

- ☐ If available, hang/tape the reference map on to the wall or an easily visible place (where it won't be in the way).

2. Set up AUDIO and VIDEO recording equipment

Camera, Audio, Lighting

- ☐ **Camera** – Set up on tripod and plug into wall/extension cord. Make sure each camera has a new and initialized SD card and record the SD card number on the interview record form.

- ☐ **Lighting** – Set up light on tripod, add umbrella – adjust accordingly

- ☐ **Camera Mics**– Set up mics with the receiver attached to the audio input on the camera and the transmitter and mic ready for the participant. Use the headphones to test the sound.

- ☐ **Digital recorder** – Turn on and check battery life for digital recorder, set on table near maps with microphone end of the recorder facing respondent. A note about digital recorder – if you need to stop the audio recording during an interview press **pause** instead of stop. Pressing pause will keep the interview on one audio file, pressing stop will start a new file. Any time you start, pause, or stop the audio recorder you must remember to state or re-state verbally who you are, who the participant is, the date and what you are doing so that the transcribers know when an interview has started, when it has paused and re-started, and when it has ended.

3. Set up Computer/ACCESS database

Make sure the Access database is properly loaded and ready to have data entered. Make sure that you are using the current database that corresponds with the project you are working on and not an older one.

4. Make sure the following items are readily available:

- ☐ Permission Form
- ☐ Honorarium Form
- ☐ Interview Guide
- ☐ Interview Record Form (you can start to fill this out – e.g. with the SD card numbers)
- ☐ Reference Map
- ☐ **Harvester Survey**
- ☐ Pointer (for interviewee to use as pointer)
- ☐ Ballpoint pen
- ☐ Paper pads

- ☐ Water

5. Organize Interview Space

- ☐ Tidy the room.
- ☐ Turn off phones/ringers.
- ☐ Make coffee, tea, water.

6. Prepare Personal Identification Numbers (PINs)

- ☐ Double check you are using the correct PIN for the respondent. This should be given to you prior to the mapping interview.

Conducting the Interview
(after respondent arrives)

1. Review Honorarium Form

After you have welcomed the interviewee and offered them water/coffee/tea, review the honorarium form and sign the form.

2. Discuss Confidentiality and Sign Permission Form

Ask whether the respondent agrees to have their interview video recorded and note response on the Permission Form and Interview Record Form.

Explain that we MUST audio record the interview.

Let the respondent know that the information provided during the interview will be shared with MMF and may be used for legal purposes by the MMF. The information provided during the interview will be provided WITHOUT NAMES ATTACHED.

In some instances participants may want to read the permission form by themselves, in other instances you may want to read over the permission form with participants. Make sure the respondent understands the arrangement (e.g. audio and video recording, how the data will be presented and stored, etc.)

If the respondent has any concerns, please discuss with them until they are comfortable or decline the interview (write this and any further reasons for declining on Interview Record Form).

3. Identify the Base Map Area Needed

Ask the respondent to look at the reference map and select the area to focus on for the interview (the areas that they use or have used in the past).

4. Make sure the Participant feels ready and comfortable

- Make sure the respondent has pointer.
- Explain that you will be marking features that they identify using GIS.
- Explain that you will be asking the person to use the pointer tip to point out locations and features of the maps as carefully as possible on the computer screen – to ensure precision and accuracy of mapped points.

5. Check and START Recording Equipment

After making sure the respondent is comfortable (seated comfortably, has water/coffee, etc.) re-check and START the recording equipment.

TURN ON and start recording VIDEO

TURN ON and start recording DIGITAL AUDIO – make note of the folder that you are using.

Check Volume on Mics – ask respondent how their trip in was, how their morning was, etc. and check volume on receiver and on video camera.

6. Introduce Land Use and Occupancy Portion of the Session

Start the interview by reading the first TWO pages of the Land Use and Occupancy Interview Guide – PREAMBLE and INTERVIEW START MARKER.

7. Administer Land Use and Occupancy Interview

8. Verbally Anchor Data

For all mapping questions you must verbally anchor every feature you mark on the map to ensure that both the GIS and ACCESS interviewers are entering the same number and for the audio recording.

Read the GIS ID and use of that point out loud so that the recording equipment hears what you are doing, the ACCESS person has confirmation they have recorded it correctly, the mapping person confirms they have written it correctly and the respondent can correct you if you have made an error in location or use/activity. Example: *I have just drawn a Moose hunting site near such and such river/lake/town and labelled it GIS ID 56*.

9. Use Note Pad

Use the note pad to keep track of any loose ends, feedback or important points as you go through the interview.

10. Check recording equipment frequently

Every so-often check that the audio and video are still recording. Keep track of how many minutes you have left on the video so you can be sure to replace the SD card when it runs out of space if needed.

Check the volume levels on the audio equipment.

Check the battery life on all.

11. Close Land Use and Occupancy Interview

Read closing statement before turning off recording equipment.

12. Prepare for Oral History Interview

Provide the interview participant with a chance to break and get water, fresh air, or use the facilities.

Tidy the area of all mapping tools and re-organize the room as needed for the oral history interview.

13. Check and START Recording Equipment again

Frame the camera shot so it is focused on the respondent

After making sure the respondent is comfortable (seated comfortably, has water/coffee, etc.) re-check and START the recording equipment. TURN ON and start recording VIDEO

TURN ON and start recording DIGITAL AUDIO. State your name and the name of the interviewee as soon as you turn on the audio.

Check Volume on Mics – ask respondent how their trip in was, how their morning was, etc. and check volume on receiver and on video camera.

14. Introduce Oral History Portion of the Session

Start the interview by reading the first page of the Oral History Interview Guide – PREAMBLE.

15. Administer Oral History Interview

16. Switch off Recording Equipment

Be sure to read the END MARKER from the interview guide prior to turning off any recording equipment.

Stop recording and power off camera.

Remove SD card and put make sure you give it directly to the Data Manager with all appropriate forms.

Note time stamp on digital audio device and then Stop recording.

Switch off mics.

17. Fill in Interview Record Form

Fill out all sections of the form and write any additional information on the back of the form.

Interview Tips and Tricks – What SVS has learned from past interviews

General Interview Techniques:

- Treat the guide as a guide – get across what needs to be asked, but recognize that asking it in a different way can bring out more data – without bias or leading the interviewee on (see section on Silences below for more on bias and leading questions).
- Introduce yourself – beyond just the preamble. Get related before you start – have small conversations at the beginning. Think about who we are and why we are there, and what participants think.

Silences –

- Do not finish people's sentences, avoid vocal agreement. It's an interview, not a conversation.
- Make space for listening and for people to speak up themselves. If you feel the need, tell people why we are just nodding – i.e. it may seem awkward.
- Using quotes from the transcript for the report is problematic if people are cut off by the interviewer or if the interviewer's opinion or thoughts are interjected.
- Editing video footage for the purpose of presentations or community videos is an issue if people are cut off by the interviewer.
- Inter-cultural communication needs to be considered; sometimes people take longer to respond. It's also basic social science principle: avoid finishing people's sentences, or asking "is this is what you mean", or asking leading questions that can only be answered yes or no. Don't interject your own biases and thoughts – allow for interviewee to finish their sentences and thoughts, leaving the space for it.
- If you really need to give your opinion, wait until the interview is finished and the audio and video devices have stopped recording. Remember that you've got an audience for everything that you say on record – and that audience includes the client and potential future legal proceedings.

High- Level Tips on Community Researcher Training

- Teach Community interviewers how to be objective – when the Community Researcher tells us about people's land-use it brings the data in to question.
- Teach the importance of having people speak about their own land-use - knowing the line.

Ensuring confidentiality of participants

- We have a legal obligation to ensure the confidentiality of our interview participants, by keeping their information protected from other community members and other community researchers.
- Public spaces for interviews aren't appropriate. Make sure we have private rooms for interviews – confirm that we need this with the client when organizing and let client know about our confidentiality protocols.
- Don't say who else is coming to interviews, don't tell people what others said.
- Watch out for 'confirmation bias' (telling the interviewee that you agree with them) validation of concerns can be ok (e.g. "I understand that you are concerned", and instead of agreeing with the interviewee, consider probing (e.g. "can you tell me more about your concern" and "why are you concerned about that").
- Community Researchers should also sign confidentiality agreements.

- Avoid talking about the interviewee's to the SVS research team, the client or anyone else in any detail that could identify them in public places (no names, towns, unique stories, client discussion, etc.)

Daily check-ins

- Are mandatory across teams
- What is working, what else should we be asking, etc.
- Best practice involves trading teams to see how others interview – learning from each other.
- Good communication in your team – don't be shy – e.g "what GIS ID is this?" On the other hand, also be careful when cutting people off for clarification with your buddy about GIS / Access. Ask at the 'right time'.
- Look at transcripts as lesson learning to see how others ask questions and for ideas to elicit responses.

Interviewer Burn out –

- This can be a challenge after many long hours and multiple interviews.
- Avoid "I've heard it all before" and appreciate each interviewees knowledge.
- "Checki your assumptions at the door" Don't assume people's knowledge. e.g. sometimes a person will say "no, I never gathered any XYZ" but then once you ask them the different species or uses they do actually harvest. Ask all questions of all interview participants.

Interacting with Participants

- Be aware of potential power dynamics and avoid creating a divide between interviewer and interviewee. Ask ourselves "do the "characters" we play change the power? E.g. being over-nice, over-accommodating, etc.
- We have language for consultants for us and our industry – trigger and problematic words include: mitigation, recommendation, potentially adverse, acronyms, etc.
- Meet the person where they are at to ensure the flow of the interview remains.
- Talk to the experienced members of your team for ideas on alternative words.
- Don't assume anything. If the participant doesn't seem interested then try different ways of engaging, but don't assume that they are not interested or don't care

Data consistency

- Discuss as a team in advance what is important to say the same way across all interviews and what is okay to ad lib.
- Enter all necessary data fields in ACCESS each time to ensure quality data is collected.

Other tips for conducting good interviews –

- Be curious and caring about what people are telling you about
- Be yourself. People can tell when you are not genuine
- Work on how to pull people back into the interview
- Yes/No questions don't provide good data
- Review preamble friendliness and provide a plain language project description
- Visuals can be very useful tools for communication with interviewees
- Check the status of the project the day before leaving

- Don't rush
- Be aware of your body language and eye contact. Non-verbal cues – reading the interviewee.
- Impressions: Dress – casual, yet neat and tidy.
- Be considerate of people's sensitivity to smells and please do not wear any fragrances.
- Sometimes we ask about challenging topics. For example, when asking people to map changes to the land throughout their lifetime or when asking people to tell us about their family. Solution: Listen. In the case of changes, ask where they were when they first noticed/experienced a change to anchor it geographically. Help people make links to the bigger picture of why their information is so important to collect. In the case of emotional family stories try to just be with the person - be open, empathetic and accepting, and also be aware of your own boundaries so that you do not take on other people's trauma (see below).
- People are nervous to be interviewed and be on camera. By helping the interviewee feel comfortable you can calm yourself and be present.

Grief management

- Some people express emotion.
- We can set our own boundaries to hear their grief, but not take it on
- Talk to your team at breaks about it.

Data Analysis Techniques:

- Quality of the notes – and what the purpose of ACCESS is for each project – e.g. notes are important for analysis – the end result needs to determine what goes in the notes.
- Knowing how the transcripts will be used and the importance of quality quotes.
- Up front discussion/questions – what is the objective of the data? What is the purpose of the study – objectives

Data analysis – use the notes section for analysis.

All team members should do the Access so they know how it works and what to include

Tips for Project Coordinators, Project Managers, and Data Managers

- *Clear roles and responsibilities*- pm and director but also sub leads
- Know the roles from the outset so the responsibilities are allocated and that is determined from the beginning so they are in that head space throughout the process/ project. This enhances the quality of work and has someone owning things from the get go.
- Roles like: data, QA/QC, Report writing, documentary- keep it clear and explicit,
- Check in throughout the project and change when appropriate (communications in your team is key). Be intentional about roles to make it more effective.
- Pre-test? Test of the guide and methodology and tweak post-pre-test- look at how questions land for people, do we need to reorder, is data missing?
- Communication channels- email chains? If you are a core team member it's good
- Running task list messages are useful and being kept in the loop
- Nail down the core team from the get go is key- keep them in the loop as much as possible and getting the roles assigned

Some thoughts from previous projects:

- Take care of yourself in the field (think about and discuss with others what this means to you) – take your breaks

Tips and Tricks about Filming

- The rule of thirds for framing: Visualize in thirds
- Eyes draw us in, put them at the third, nose in the middle of the shot, emotional connection can be done with close up-using the "professional shot"- head and shoulders – too far and lost emotional connection and too close
- Have off to the side/ off centre a bit
- Where is the person looking? Look as close to the camera as possible- as interviewer be close to the camera- with mapping have both people in the frame
- If you're on camera- know you are on camera- be present to that- be responsive to the person
- Best place for camera is eye level
- Angle of camera focuses on the person- interviewee make sure computer doesn't interview with the shot
- Cameras are facial recognition- tap the camera where their face is
- Don't feel bad about the taking the time to get a good shot set up
- Audio is a strong point of ours!- set at -12
- Wireless mic sounds better than wired
- B roll- go for it and don't feel bad going for it
- Doing 10-20 seconds of actions of hands- you can never have too much B roll

Appendix E: The Historic Presence of the Manitoba Métis Community on the East Side of Lake Winnipeg (the "Manigotagan Region")

The Historic Presence of the Manitoba Métis Community on the East Side of Lake Winnipeg (the "Manigotagan Region")

Summary

There is evidence of an historical Métis community in several locations east of Lake Winnipeg prior to effective Euro-Canadian control of that region. These locations include Manigotagan, Fort Alexander, and Berens River, all of which had fur trading posts. The fur trade was critical to the emergence of a Métis population in this region. As stated by the Royal Commission on Aboriginal Peoples:

> Intermarriage between First Nations and Inuit women and European fur traders and fishermen produced children, but the birth of new Aboriginal cultures took longer. At first, the children of mixed unions were brought up in the traditions of their mothers or (less often) their fathers. Gradually, however, distinct Métis cultures emerged, combining European and First Nations or Inuit heritages in unique ways. Economics played a major role in this process. The special qualities and skills of the Métis population made them indispensable members of Aboriginal/ non-Aboriginal economic partnerships, and that association contributed to the shaping of their cultures … As interpreters, diplomats, guides, couriers, freighters, traders and suppliers, the early Métis people contributed massively to European penetration of North America.[3]

Scrip and census data indicate the continuing presence of the Métis populations in these locations through the turn of the 20th century. The high presence of Catholicism in the region also indicates a strong Métis presence. This is evidenced by journals kept by missionaries, as well as known Métis family names found in cemeteries from the mid-1800s onwards.

The Métis populations of the Manigotagan region were interconnected with one another, as well as other Métis populations, including Red River and Fort Alexander. It is therefore highly likely that the interconnected Métis populations of the Manigotagan region formed part of the historic Manitoba Métis Community.

The MMF currently has citizens that live in this region today, and asserts that a significant portion of its members ancestrally connect to the historic Métis families that resided east of Lake Winnipeg prior to effective control.

The *Powley* Test

The Supreme Court of Canada in *R v Powley* set out what is required to prove the existence of a historical Métis community. Evidence must indicate the presence of a distinctive Métis community at the time of effective Euro-Canadian control. The Manitoba Government presumes the date of effective control in the Manigotagan Region to be 1870, and, for the purposes of this narrative, that date is assumed to be correct.

One important kind of evidence for determining the existence of a historic Métis community is demographic evidence, which includes, for instance, the locations of fur trade posts where European/First Nation interaction occurred, mixed ancestry populations identified in fur trade records, the journals and letters of post visitors and explorers, church and missionary records, governmental records such as

[3] As quoted in *R v Powley*, 2003 SCC 43 at p. 215.

censuses or North West Mounted Police reports and correspondence, *etc.* Demographic evidence is crucial for identifying the presence, locations, and concentrations of mixed-ancestry people. This evidence also shows that the modern community has continuity with the historic one. This can be demonstrated through evidence of shared customs, collective identity, and demographic evidence.[4]

It is not enough merely to prove the presence of mixed-ancestry individuals in a region prior to effective control. These mixed-ancestry individuals must have a collective identity in order to be considered a Métis community. A collective identity can be discerned through roles within fur trading post populations (such as niche occupations), rights assertions, identification of the Métis community as distinct from other populations (both self and ascribed), as well as endogamy patterns (the practice of marrying within one's own ethnic group).

Lastly, there needs to be evidence that the historic Métis community shared customs, practices and traditions, such as harvesting practices, cultural activities, *etc.*

The historic narrative set out below for the Métis of the Manigotagan region follows this general structure. First, relevant demographic evidence is described, both pre-effective control, at the time of effect control, and afterwards. Second, evidence speaking to the collective identity of the population is given. Lastly, evidence of shared customs, practices and traditions is outlined.

Demographic Evidence: The Emergence of the Métis in the Manigotagan Area

The Fur Trade

The fur trade was vital to the ethnogenesis of the Métis. The Supreme Court of Canada in *Cunningham* describes this process:

> The Métis were originally the descendants of eighteenth-century unions between European men — explorers, fur traders and pioneers — and Indian women, mainly on the Canadian plains, which now form part of Manitoba, Saskatchewan and Alberta. Within a few generations the descendants of these unions developed a culture distinct from their European and Indian forebears.[5]

As stated in *R v Goodon*, "the Métis community of Western Canada … were a creature of the fur trade."[6]

The fur trade was active in the Manigotagan region from at least the late 1770s. Numerous posts and outposts were established along the waterways of the region, including Lake Winnipeg, the Winnipeg River, and the Berens River. These waterways were crucial transportation networks for the fur trade.

Figure 1 below shows canoe routes, York boat routes, as well as the locations of fur trading posts. It illustrates the level of fur trade activity in the Manigotagan region. **Figure 2,** below, shows how the

[4] *Powley, ibid*, at pp. 209; 224.

[5] *Alberta (Aboriginal Affairs and Northern Development) v Cunningham*, 2011 SCC 37 at para 5.

[6] 2008 MBPC 59 at para 25.

network of water transportation routes through the Manigotagan region fits into the larger fur trading network in 1870.

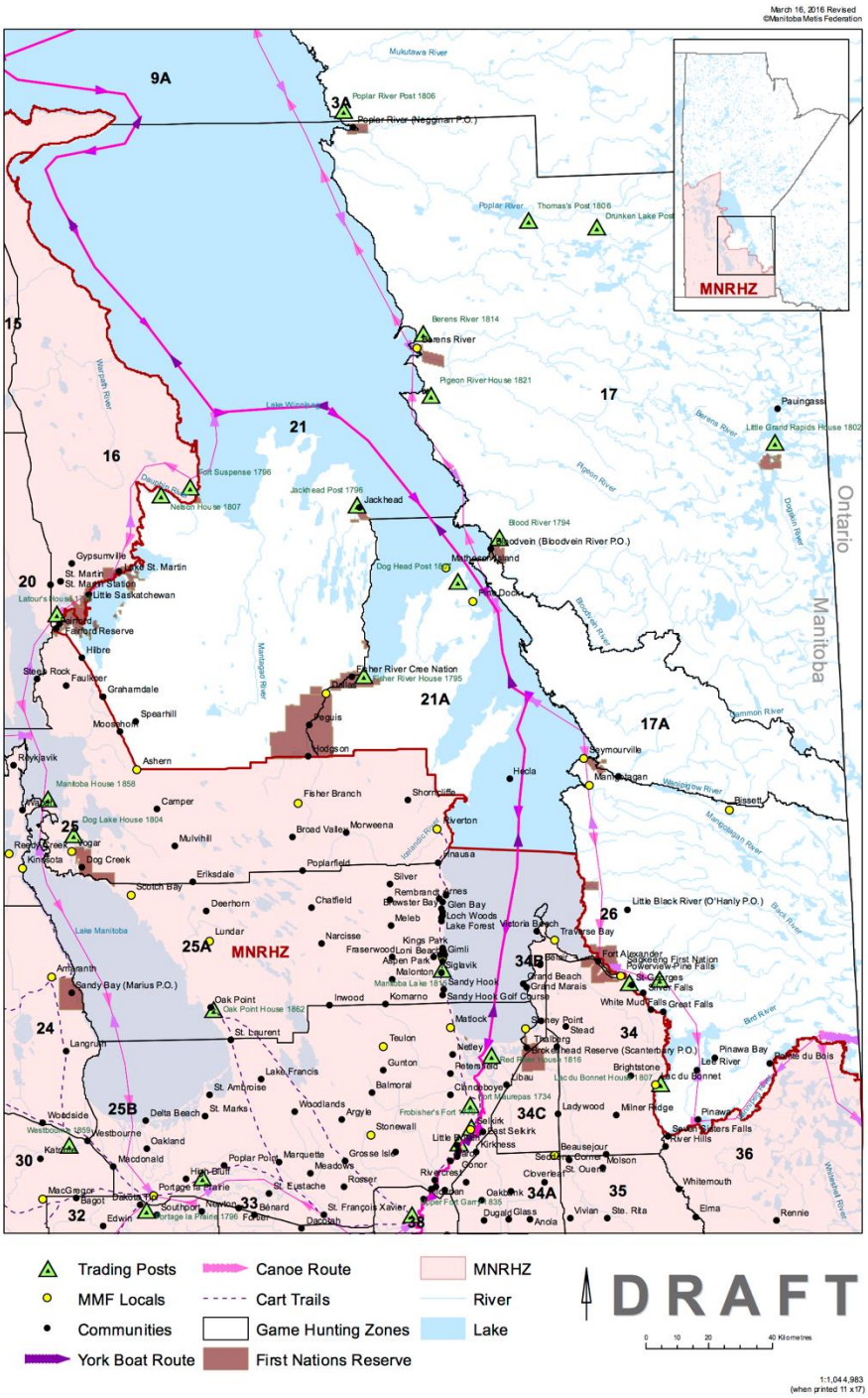


Figure 1

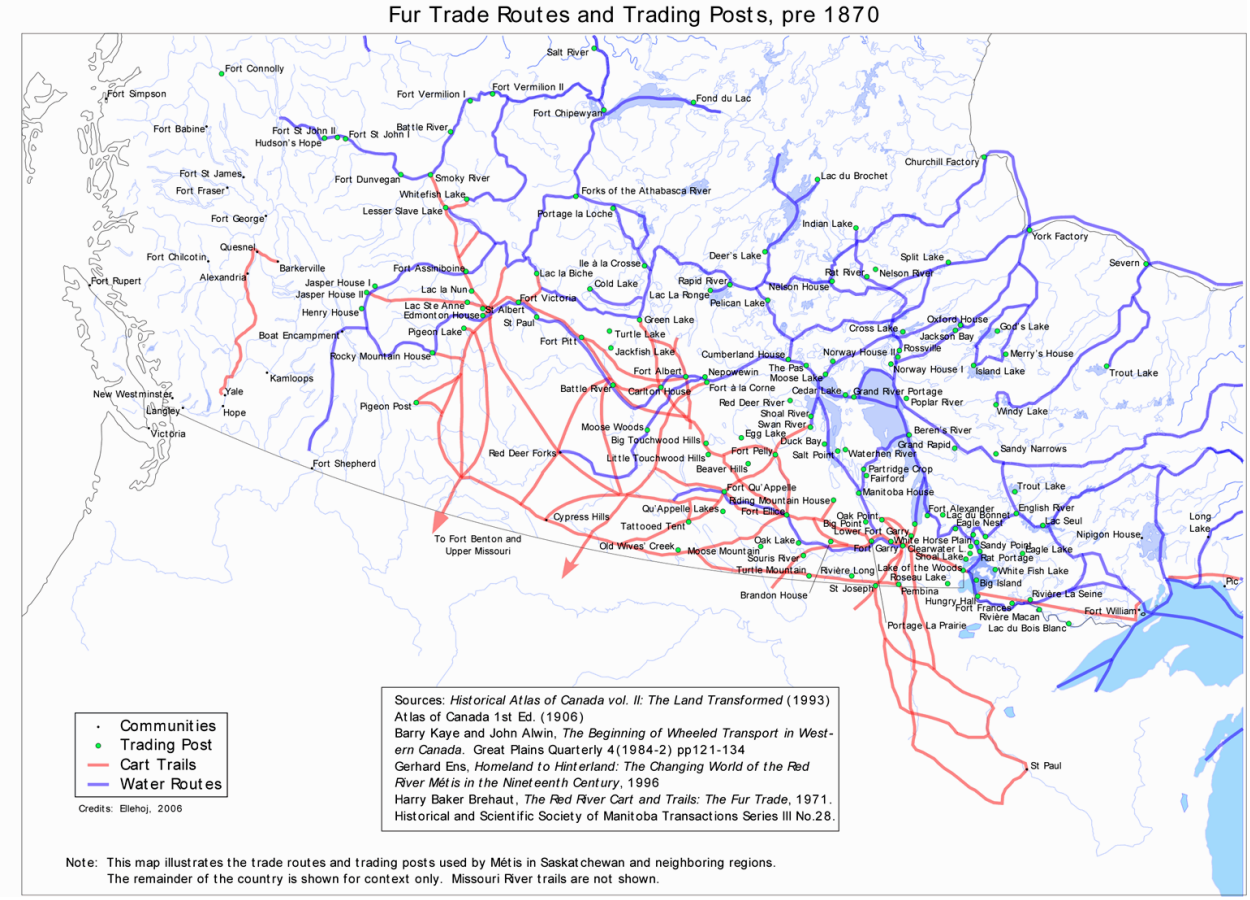


Figure 2

The first fur trading post was established in the Manigotagan region by the French in 1773. It was called Fort Maurepas and was located on the north side of the Winnipeg River.[7]

In 1792, the North West Company ("NWC"), established Fort Bas de la Rivière on the south side of the Winnipeg River. This post served as an important provisioning location, particularly for pemmican, needed to sustain the NWC's canoe brigades. This fort also functioned as the headquarters for the NWC's Lake Winnipeg District.[8]

[7] Dr. Clint Evans, *A History of Métis Activities and Settlement in Eastern Manitoba, 1800-1881*, prepared for Manitoba Conservation and the Constitutional Law Branch of Manitoba Justice (24 April 2009) at p. 13.

[8] *Ibid*, at p. 15.

In 1795, the Hudson's Bay Company ("HBC") opened a short-lived post on the south side of the Winnipeg River; it was abandoned in 1802.[9] The HBC returned to the region in the late 1790s, establishing the Lake Winnipeg Post near Manigotagan (also called "Bad Throat"). HBC's archives include post journals for this post for the 1796-97 season.[10]

The NWC and HBC merged in 1821, keeping the name HBC. The new HBC established Fort Alexander, as well as a post at the mouth of the Berens River, north of Fort Alexander.[11] HBC maintained these posts consistently for a further 50 years, though Fort Alexander experienced a decline in profitability and use until an Anglican mission arrived in the 1850s and revived the community. Through this period, the Berens River post remained small but modestly profitable.[12]

In the late 1880s, the HBC expanded further in the region, establishing the Bad Throat post, south of the Winnipeg Lake post site. HBC archives include account books for this post from 1888-1893.[13]

In addition to these long-term posts, HBC maintained seasonal outposts on the east side of Lake Winnipeg. Berens River and Fort Alexander had a number of seasonal outposts associated with them at various times. In the 1860s and 1870s, the Lac La Pluie District maintained a small post at Eagle's Nest on the Winnipeg River, roughly halfway between Fort Alexander and Rat Portage (near modern-day Kenora). From 1820-1880, the Berens River Post had an outpost in the Little Grand Rapids on the Berens River (just west of the modern-day border with Ontario), that operated sporadically. Another outpost was established at the mouth of the Poplar River (just north of Berens River on the shores of Lake Winnipeg), that operated from the mid 1870s to mid 1880s.[14]

Figure 3, below, provides a visual depiction of the HBC districts in Manitoba. The Manigotagan region was in both the Norway House and Lac la Pluie districts.

[9] *Ibid*, at pp. 14-15.

[10] Public History, Inc., *Manitoba Métis Communities Study Report* (13 Dec 2004) at p. 40.

[11] Evans*, supra* note 5 at p. 18.

[12] *Ibid*, at pp. 13; 18.

[13] Public History, Inc., *supra* note 8 at p. 40.

[14] Evans, *supra* note 5 at pp. 19-20.

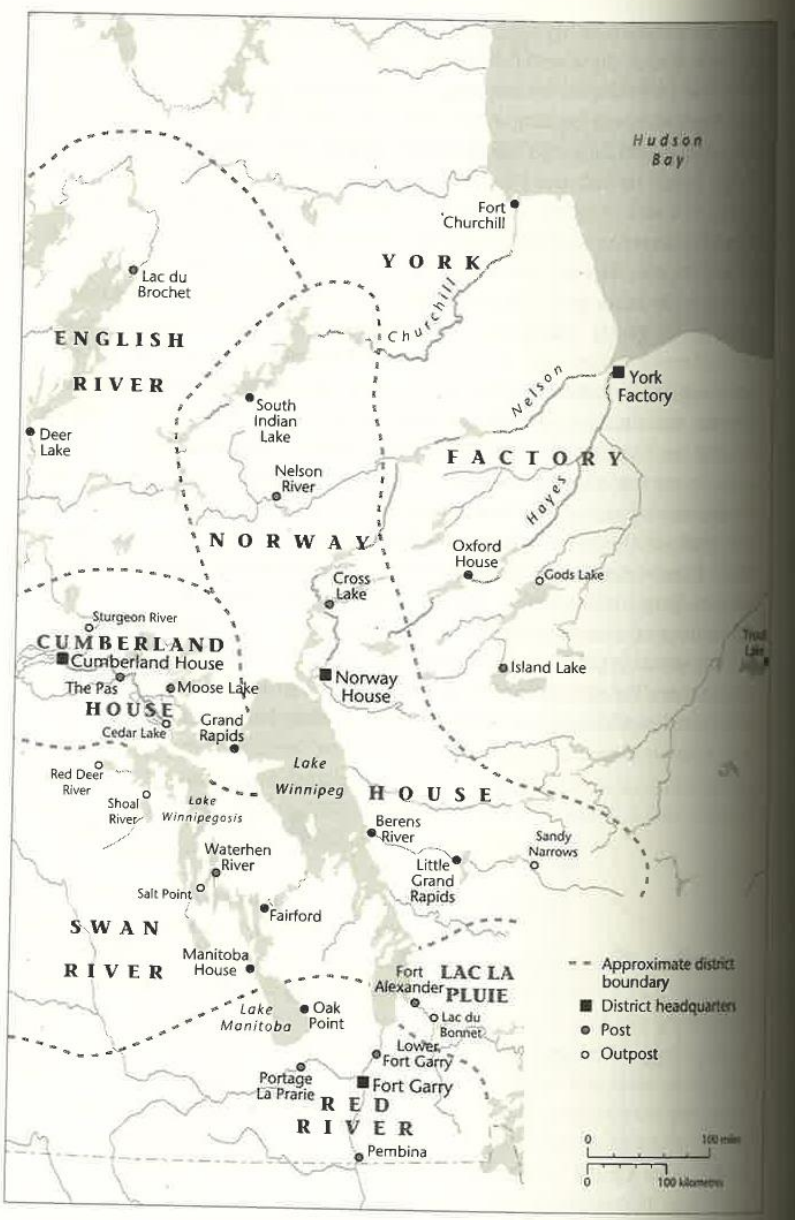


Figure 2.2 Hudson's Bay Company post system in Manitoba, 1870 (HBCA, B.154/k/1)

Figure 3

Population

The historic evidence points to the presence of a Métis population in the Manigotagan region from the early 1800s.

In 1805, NWC trader Alexander Henry estimates that 15 mixed-ancestry people were present in the Lake Winnipeg District, born of the traders and their Indian or mixed-ancestry wives.[15]

In the 1820s, Fort Alexander is recorded to have become a fall fishing site for Red River Métis. In times of economic hardship, some Red River Métis families may have travelled north to access better fishing and hunting resources. This seasonal migration would have contributed to the emergence of Métis populations at Manigotagan, Berens River and Poplar River.[16]

In 1836, Marguerite Primeau, a mixed-ancestry woman, is recorded as being born at Fort Alexander.[17]

In the 1850s, Fort Alexander was part of the Lac La Pluie District of HBC. This District was recorded as employing between 28 and 37 men among its seven or so posts. For the 1854-55 season, nearly 75 percent of the men employed were mixed-ancestry.[18]

In the 1860s, four "Halfbreed" families are recorded as being settled at Fort Alexander. In the following decade, the Red River Expedition journals record that "there are numerous clearances in the vicinity of Fort Alexander where some half-breed farmers have established themselves."[19] In 1873, 22 Métis heads of household were reported in Fort Alexander.[20]

In addition, the historical records indicate a significant amount of freeman activity just to the south and west of the Manigotagan region. Evans states that the likelihood of these freemen visiting the Manigotagan region is high.[21] And indeed, as is further explained below, there are instances of Métis in the Manigotagan region becoming free traders and competing with the HBC.

Métis Surnames in the Region

Métis family names have been identified from grave markers in local cemeteries, with dates of birth beginning in the mid-1800s.

---

[15] Evans, *supra* note 5 at p. 32.

[16] Public History, Inc., *supra* note 8 at p. 41.

[17] Evans, *supra* note 5 at pp. 39-40.

[18] *Ibid*, at p. 35.

[19] *Ibid*, at pp. 56; 58.

[20] *Ibid*, at p. 59.

[21] Dr. Clint Evans, *A History of Métis Activities and Settlement in Manitoba's Southern Interlake Region, 1800-1881,* prepared for Manitoba Conservation and the Constitutional Law Branch of Manitoba Justice (14 March 2008) at p. 24.

Family names from the Catholic cemetery in Manigotagan include: Swain, Boulette, Simard, Wood, Meade, Henrickson, Christenson, Doyle, Phillips, Clark(e), Smith, Quesnel and Courchene.

Family names in the Protestant cemetery in Manigotagan include: Wood, Swain, Black, Bruce, Moore, Meade and Bjork. In nearby Seymourville, family names Bear, Berens, Mackenzie and Seymour appeared.[22]

It is not possible to state with certainty that all of these names were associated with a mixed-ancestry individual or family. This is partially because census data in the region did not begin to include racial identifiers until 1901 (such as "Scotch Breed" or "French Breed"). Censuses differed from region to region in terms of what ethnic information was included. However, many of these names are known Métis family names, and were identified in other nearby regions in the 1901 census as mixed-race. For instance, a sizable family of Swains is recorded as living in St. Clements. St. Clements is found in the Selkirk census district on the south shore of Lake Winnipeg. The Swains are identified as "Cree E.B." (English Breed) in the 1901 census.[23] A family of Bruces is recorded as living in St. Boniface in the Provencher census district, and are identified as "M.F. Cri."[24]

Continuity

Scrip Commissions are valuable sources of information regarding the presence of Métis communities; scrip commissions had no reason to visit areas that did not have a Métis presence.

The records of Half-Breed Scrip Commissions record 13 scrip applications in Fort Berens in the 1870s. [25] Ten land scrip applications are recorded in Fisher River in 1909.[26]

In the year 1900, a visitor to Manigotagan recorded the presence of both Indian and Métis sawmill workers, as well as Métis, Indian and white women in the settlement.[27] This indicates that not only were the Métis distinctive enough to identify, they were established as wage labourers with families in Manigotagan after effective control.

The historic record identifies some early Métis families who settled and resided in the area for many generations. For instance, William Clarke and his wife Sarah Bird settled on a homestead in Manigotagan with their ten children. Although their precise date of arrival at Manigotagan is unknown, they married in 1890 in the region, so they were likely living there by then.[28]

---

[22] Public History, Inc., *supra* note 8 at pp. 43-44.

[23] Government of Canada, *1901 Census*, available online at: http://www.bac-lac.gc.ca

[24] *Ibid*.

[25] Evans, supra note 5 at p. 68.

[26] Frank Tough, *'As Their Natural Resources Fail': Native Peoples and the Economic History of Northern Manitoba, 1870-1930*, UBC Press: 1997 at p. 121.

[27] Public History, Inc., supra note 8 at p. 42.

[28] *Ibid* at pp. 42-43.

Censuses are also valuable sources for identifying the locations of Métis populations. As stated above, however, censuses varied from region to region, and many did not include racial identifiers.

The 1906 census for the Selkirk District, in the subdistrict located to the north of Township 20 and east of Lake Winnipeg (the Manigotagan region), includes a William Clarke, aged 45, his wife Sarah, aged 26, and a number of children ranging from two to fifteen years of age. Given the age of the eldest child, it is likely that Sarah is the second wife and stepmother to at least some of the children. There are no racial categories indicated in this census. While the identification is not positive, it is likely same William Clarke described above.[29]

Researchers found that many of the names from local cemeteries, including those listed in the section above, persisted in the Manigotagan area and appeared in front of houses in the early 2000s.[30]

Manitoba's Department of Agriculture and Immigration reports a sizable Métis population in several communities in the Manigotagan region in 1956 (though this was not a complete survey of all communities). In Berens River, 131 Métis are recorded, 79 Métis in Loon Straits, 82 Métis in Bisset, 173 Métis in Manigotagan, 25 Métis in Lac du Bonnet, 300 Métis in Pine Falls, and 100 Métis in Pine Dock.[31]

Figure 4, below, illustrates information taken from scrip and census records. It demonstrates the presence of Métis in the Manigotagan region in sizable numbers. Most of these populations are concentrated along the former York boat and canoe routes, and are near the previous locations of fur trading posts.

[29] Government of Canada, *supra* note 21.

[30] Public History Inc., *supra* note 8 at p. 43.

[31] The Social and Economic Research Office, *A Study of the Population of Indian Ancestry Living in Manitoba*, prepared for The Department of Agriculture and Immigration, Government of Manitoba, (1959), at pp. 58-64

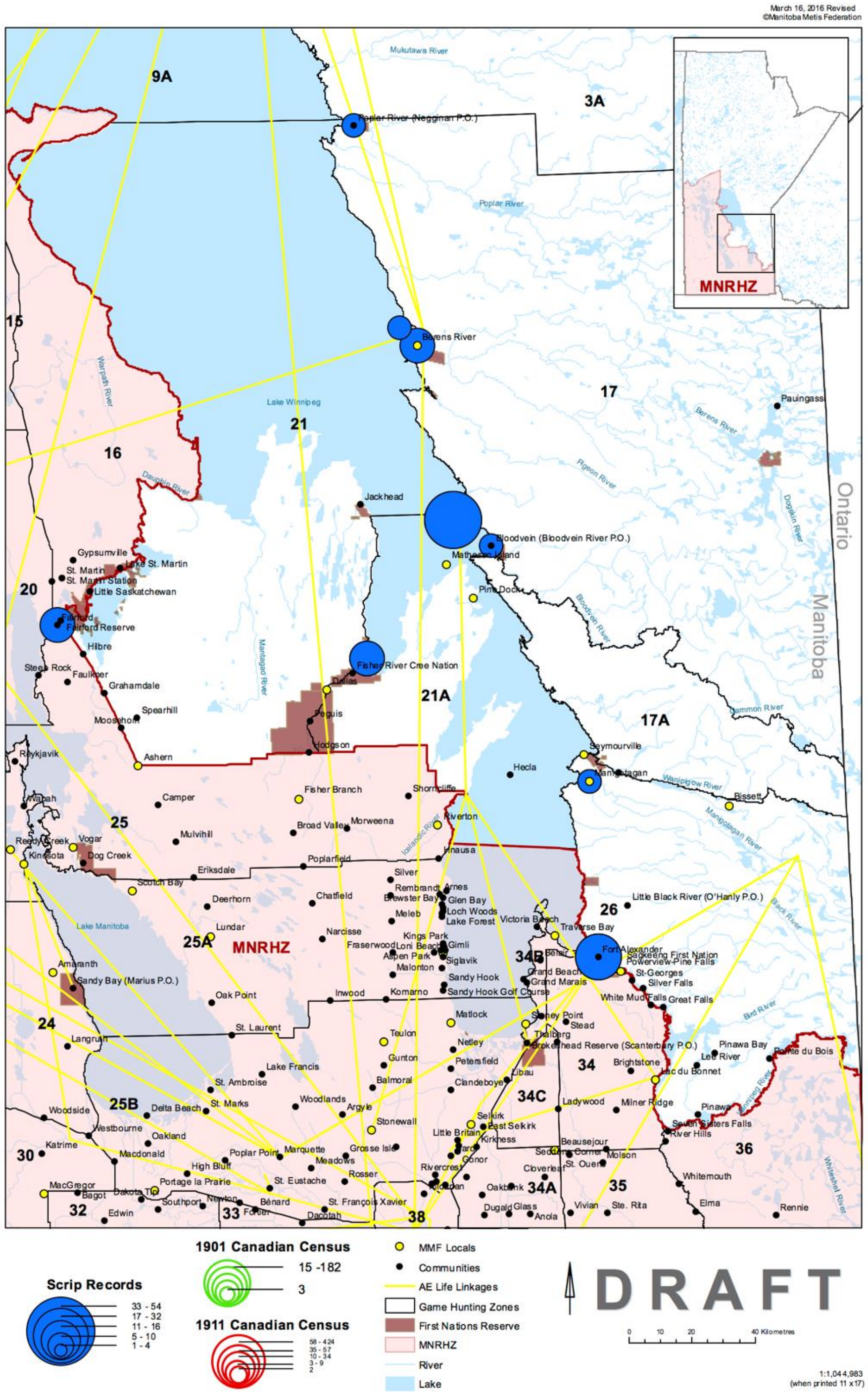

March 16, 2016 Revised
©Manitoba Metis Federation
MNRHZ
Ontario
Manitoba
Lake Winnipeg
Lake Manitoba
Scrip Records
33 - 54
17 - 32
11 - 16
5 - 10
1 - 4
1901 Canadian Census
15 -182
3
1911 Canadian Census
MMF Locals
Communities
AE Life Linkages
Game Hunting Zones
First Nations Reserve
MNRHZ
River
Lake
DRAFT
1:1,044,983
(when printed 11 x 17)

Figure 4

Collective Identity

Religious Observance

Religion can be a vital aspect of identity. Communities are organized around religious observance, and it provides shared interests and common ground for community members.

The majority of the population in the Manigotagan region appears to have been Catholic.[32]

Missionary records indicate the presence of a Métis community in the region. For instance, the Oblate fathers recorded the establishment of mission in the region for "indiennes et métisses" in the 1840s. The Grey Nuns passed through Fort Alexander in 1844, followed by Fathers Pierre Aubert and A. Taché in 1845. According to historic researchers, this suggests that Métis and Indian families were already settled in the region, as missionaries were attracted to areas that had individuals they thought would be amenable to conversion.[33]

In 1876, Fort Alexander became the first Oblate mission in the diocese of St. Boniface to have a resident priest. This priest, named Father Joachim Allard, visited various communities in the surrounding area, including Bad Throat to baptize Métis and First Nations. As late as 1930, the Fort Alexander mission is reported to have served Manigotagan.[34]

Recognition as Distinct from Other Populations

The historical record indicates that individuals, including missionaries, were able to distinguish between Métis and other residents of the Manigotagan region, and did so.

In 1848, Canadian artist Paul Kanes visited the Manigotagan region and wrote about the "Red River Half-breeds" that had migrated to the area.[35]

In the 1870s, missionaries wrote of the Métis as separate from the "indiennes," referring to them as "métisses." Missionaries clearly thought of the two as distinct groups.[36]

A visitor to Manigotagan differentiated between Métis and Indian sawmill workers on sight, as well as Métis, Indian, and white women.[37] These populations must, therefore, have been visually distinct from each other. This may have been the result of styles of dress, patterns of socialized, or other social markers.

---

[32] Public History, Inc., *supra* note 8 at p. 43.

[33] *Ibid*, at pp. 41; 43-45.

[34] *Ibid*, at pp. 41; 45-46.

[35] Evans, *supra* note 5 at p. 42.

[36] Public History, Inc., at p. 41.

[37] *Ibid*, at p. 42

Endogamy

The practice of endogamy – Métis marrying Métis – is one of the markers of collective identity. Very little is known about the marriage practices of the population in and around Manigotagan. Local history suggest that some of the children of William and Sarah Bird married other local Métis.[38]

Rights Assertions

Notably, one of the founders of the Manitoba Métis Federation, Ed Simard, was from the Manigotagan region.[39] This suggests that a continuity of Métis consciousness (a sense of identity as a rights-bearing people) in the region stretching through the 1960s.

Shared Customs, Practices and Traditions

Harvesting

By the 1820s, Fort Alexander had become the site of a fall fishery for Red River settlers. According to one historian, this fishery was extremely important to the Métis when other resources were lacking. Métis families appear to have adopted a seasonal round of harvesting, living seasonally at Fort Alexander to participate in the fishery on Lake Winnipeg. Métis families residing seasonally at Fort Alexander may have continued travelling northward along the eastern shore of Lake Winnipeg to access fish and game.[40]

This may have resulted in migration of some families to the Manigotagan region and environs, and increased the connectivity of the populations of Manigotagan, Fort Alexander, and the Red River settlement.

Harvesting also took place on locations further inland to the east. Researchers concluded that it was reasonable to assume that Métis in the Manigotagan region established themselves near forests, along the shores of Lake Winnipeg, and near Lakes Wanipigow, Manigotagan, and Shallow Lake. The plentiful resources in this area allowed for a combination of seasonal subsistence activities including hunting, trapping, gathering (notably wild rice) and trading.[41]

Niche Occupations

In 1848, Canadian artist Paul Kanes visited the area that observed that the "Red River Half-breeds" had seriously disorganized the HBC's trade at the "posts on the Winnipeg River, Berens River, Manitobah,

[38] *Ibid*, at p. 43.

[39] *Ibid*, at p. 43.

[40] *Ibid*, at p. 41.

[41] *Ibid*, at p. 44.

Fort Pelly, Fort Ellice and on the Swan River." The rise of the free trade movement of the 1840s led to a significant increase in the number of Métis in the Manigotagan area, though these numbers fluctuated seasonally.[42]

Conclusion

The Métis families of the Manigotagan region share a common identity and culture and are connected to the wider Manitoba Métis Community. As with all Métis, these populations are a product of the fur trade. The fur trade was the beginning of the Métis ethnogensis in the region; it provided employment and helped to facilitate the unique semi-nomadic lifestyle of the Métis in the Northwest.

The historical records, as described above, provides evidence for each of the elements set out in *Powley* as necessary to prove the existence of an historical and continuous Métis population in the Manigotagan region.

[42] Evans, *supra* note 5 at pp. 42-45.