



PROJECT: **First Nation Land Management Regime:
Environmental/Engineering Challenge**

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Abstract

Several First Nations in Saskatchewan and Manitoba opted to join the First Nation Land Management (FNLM) Regime. The FNLM Regime operates under the Framework Agreement on First Nation Land Management, which was ratified by Canada in 1999. The main goals of the FNLM Regime are to facilitate the creation of a streamlined and enhanced economic development climate on Reserve lands while maintaining a high level of environmental protection and stewardship. Under the FNLM Regime member Nations are able to manage and protect their own lands and exercise their inherent sovereignty over their land and natural resources.

Select Saskatchewan and Manitoba First Nations retained PINTER & Associates Ltd. (PINTER) to assist with required environmental engineering assessment and remediation of Reserve land. PINTER also provided engineering expertise, technical consultation, direction and assistance to our clients regarding the development of Reserve specific environmental regimes, an Environmental Management and Protection Program (EMPP) and environmental protection and assessment legislation.

Overall client goals included enhanced protection and management of their land, resources and people while encouraging and facilitating economic development on Reserve. PINTER completed a Phase I Environmental Assessment (ESA) on 18 Reserves to identify potential impacts. Phase II ESAs to delineate suspected impacts and Phase III remediation to clean up impacts were carried out. Thorough community engagement and evaluation of community environmental goals and priorities was imperative and formed the foundation for planning environmental management and protection structures on Reserve.

An Environmental Management and Protection Program (EMPP) was planned and developed for member Nations in part using information gathered from client community engagement. Developing and establishing a consistent vision and direction to both on and off Reserve individuals for the protection and preservation of the natural environment and resources was paramount. The EMPP that PINTER developed arranges for administration, education, monitoring and enforcement of the First Nation's environmental regime. PINTER also met the client's goal to assist with development of an environmental protection and assessment Law regime. PINTER harmonized the client's EMPP with their Law regime to ensure that community priorities were met, while facilitating sustainable economic development on Reserve land and protecting and preserving both the environment and traditional culture.

First Nation Land Management Regime: Environmental/Engineering Challenge

1. Introduction

Select First Nation communities across Canada have chosen to join the First Nation Land Management (FNLM) Regime. The FNLM Regime was established following the signing of the Framework Agreement on First Nation Land Management in 1996 and ratification of the Agreement in 1999. Reasons for joining the FNLM Regime vary among Nations; however, there are a few underlying goals that apply to almost all member Nations. The FNLM Regime allows members Nations to assume control over the management and protection of their land and natural resources. This process is one of the first of its kind in Canada to provide such autonomy to First Nation communities. Member Nations are able to exercise their inherent sovereignty over their land by joining the FNLM Regime.



A strong focus of the FNLM Regime is enabling First Nations to develop a system for enhanced economic development and entrepreneurialism. FNLM Regime First Nations are able to eliminate/reduce known environmental impacts on Reserve lands, develop environmental protection and Law Regimes and create an enticing economic development climate on Reserve lands. Taking control of their lands and resources while exercising and reinforcing each First Nation's sovereignty through an environmental protection and assessment Law regime is a first in Canada.

1.1. Project Clients

Several First Nation clients within Saskatchewan and Manitoba retained PINTER to assist with their FNLM Regime development. PINTER assisted a total of eleven member Nations on various aspects of the development. The following four Nations have provided their consent to be included and referenced in our application for consideration of a 2015 Canadian Consulting Engineering Award.

1. Muskoday First Nation, Saskatchewan
2. Whitecap Dakota First Nation, Saskatchewan
3. Kinistin Saulteaux Nation, Saskatchewan
4. Opaskwayak Cree Nation, Manitoba

There are currently a total of 108 First Nations, across Canada, signed on to the Framework Agreement and FNLM Regime. There are numerous other Nations that have expressed interest in the process and Regime that are waiting to join.

1.2. Project Goals

PINTER was retained to provide technical engineering expertise and legal framework guidance. PINTER's expertise was used to successfully carry out Environmental Site Assessments (ESAs) and site remediation of each

First Nation Reserve. PINTER also provided consultation and direction to each Nation on development of environmental and economic policy and Law development. PINTER assisted each Nation's legal counsel in review and development of a Law regime to regulate the business and development activities on Reserve lands.

Each client had varying specific objectives for this project, but the overall goals of each First Nation were similar and included the following:

- Assessment, identification and remediation of environmental impacts on Reserve land to provide a "clean slate" for Nations ahead of receiving control back of their lands.
- Engaging the community to determine environmental and economic priorities and also to identify traditional practices and customs that relate to environmental stewardship.
- Development of a comprehensive environmental management and protection regime.
- Development of an environmental assessment and protection Law regime on Reserve.
- Development of a sustainable and enticing economic development climate on Reserve.

2. Project Components

2.1. Environmental Site Assessments

PINTER utilized its technical and environmental engineering expertise to complete the required Environmental Site Assessments for each Reserve. Completion of ESAs for entire Reserves is a first in Canada. The environmental assessment included a Phase I assessment, Phase II investigation and delineation work and the Phase III Remediation of identified impacts on Reserve lands. Through the FNLM Regime process First Nation clients were to receive control of their lands in as close to pre-impact condition as possible.

2.1.1. Phase I ESA

PINTER, in 1999, was commissioned to carry out the first of 18 ESAs for Saskatchewan First Nations at the Muskoday First Nation (Muskoday) Reserve. In carrying out the ESAs, innovative techniques were developed to obtain community engagement, coordinate collection of historical information from many sources including oral history, to carry out site inspections (keeping cultural sensitivities in mind), to manage the information and data, to prioritize sites for further work and to put the outcome into perspective for the First Nation clients. PINTER



visited almost every building, development and assessed each septic system on Reserve. Each active and historical dumpsite and ravine dump, all fuel storage sites, historical bluestone pit (fence post treatment) operations, vehicle salvage yards, agricultural chemical storage location and culturally significant sites was visited, visually assessed and catalogued as part of the Phase I ESA. Every yard was visited and visually assessed during the process; typically several hundred residences exist on Reserve. PINTER developed and implemented an innovative "fly over" technique to observe Reserve lands from the air. There was an enormous amount of information to organize, assess, confirm or refute and utilize (orders of magnitude above the need of a typical Phase I) to develop environmental priorities and direction for each community.

The ESA results needed to be presented to the community to allow each community to decide whether or not to proceed further with the process. Contrary to typical ESAs this project had to consider cultural mores, taboos and sensitivities as well as develop an efficient method of obtaining historical information from the community including seniors and elders.

2.1.2. Phase II ESA

The majority of the Phase I ESAs that PINTER completed were followed up by the completion of limited and detailed Phase II ESAs. A prioritized list of potentially impacted sites on Reserve based on Phase I ESA findings was developed.

A variety of environmental contaminants were encountered during Phase II ESA work. Contaminants included Petroleum Hydrocarbons (PHCs), copper sulfate, metals, dioxins and furans, livestock waste and human waste effluent, agricultural chemicals, mould and fungus, asbestos, mercury, and polychlorinated biphenyls (PCBs), etc..



PINTER employed a variety of techniques during Phase II ESA work including environmental drilling and soil sampling, groundwater monitoring well installation and groundwater sampling, test pit excavation, surface water sampling and hand auger soil sampling. While each sampling technique was not unique applying them all in one project to make the investigation efficient and cost effective required

innovation. Assessment and delineation of identified impacts occurred to provide clients with a thorough understanding of the environmental liability these impacts posed and to assist in developing remediation priorities and cost estimates for cleanup.

2.1.3. Phase III ESA

Once identified environmental impacts were delineated and quantified, remediation of impacts was carried out. PINTER utilized a variety of recognized environmental engineering remediation methods to cleanup identified impacts on Reserve lands. Reserve land was remediated to Federal Canadian Council of Ministers of the Environment (CCME) and Health Canada guidelines for both soil and groundwater impacts.



Both in-situ and ex-situ remedial techniques and processes were employed to remediate identified impacts on Reserve lands. Excavation and on-site remediation of PHC impacted soils via land-farming techniques was done at numerous locations. PINTER decommissioned historic community solid waste disposal sites and cleaned up smaller household dumpsites. Efforts were made to

return Reserve land to back to pre-impact conditions, while working within available Federal funding constraints for each First Nation. Remediation of impacts on Reserve land helped to enhancing sustainability and empowers each community to take responsibility for their future actions without the interference of adverse per-existing environmental conditions. The ESAs and remediation of legacy sites provided context and examples to First Nation Band Councils of negative environmental impact. It increased their understanding and sophistication of proper environmental stewardship and practices.

2.2. Community Engagement

PINTER worked together with First Nation land managers, land department staff, operational staff, and community members, elders and Chief and Council to collect and organize Nation specific environmental information. Community engagement was an essential component of the entire process. In the ESA stage information was solicited from the community through their project manager, surveys sent home with school children, meetings with seniors and elders, interviews with guides and project team meetings.

Development of an environmental regime and Law regime needed to be rooted in Nation specific traditions, practices and culture to ensure that the community take ownership and adhere to enacted regimes. Community environmental goals and priorities were solicited, gathered, organized and prioritized to help direct environmental regime and Law development.

The first task in this process was to obtain the information from the community the second and more challenging task was to report back and provide the results of the investigations in a manner that could be easily understood. This was accomplished with not only the written technical report but also through meetings and presentations to the community both on and off reserve.

Education and awareness of this process and the implications of First Nation control, management and protection of their own lands was expressed to each community throughout the engagement process. A particular focus was placed on educating youth and also on leveraging knowledge and experiences from elders. The youth are the next generation of leaders and each Nation wanted to ensure that their culture and traditions were preserved into the future.

2.3. Environmental Management and Protection Program

Once First Nation's assume control over their lands they have the daunting task of developing a comprehensive environmental protection framework and environmental Law regime. Each Nation is tasked with managing and directing business development, utilization of natural resources and protection and assessment of their lands. Management and operation of an environmental regime is a complex undertaking that involves many stakeholders and affects both on and off Reserve residents. The mechanism chosen by our First Nation clients was an Environmental Management and Protection Program (EMPP).

EMPPs are essentially operational guides for First Nations that incorporate all aspects of a Nation’s environmental protection and Law Regime. The foundation for each EMPP is comprised of the environmental knowledge gained during the ESA process, gathered community environmental goals and priorities, each Nation’s traditional knowledge and practices and the First Nation’s Land Code. Figure 1 illustrates the various components that make up an EMPP.

The integration of each component with one another and to ensure they work together in lock step with existing First Nation policy and future environmental law is a complex task. Additional complications include ensuring that community priorities and goals are met while working within Federal and Provincial government mandates.

Opaskwayak Cree Nation (OCN), located in Manitoba, is one of few progressive First Nations across

Canada that has developed a comprehensive EMPP and Environmental Law Regime. OCN is currently working toward implementation and operation of their EMPP and Environmental Law regime completed, with PINTER's assistance, in 2015/2016.

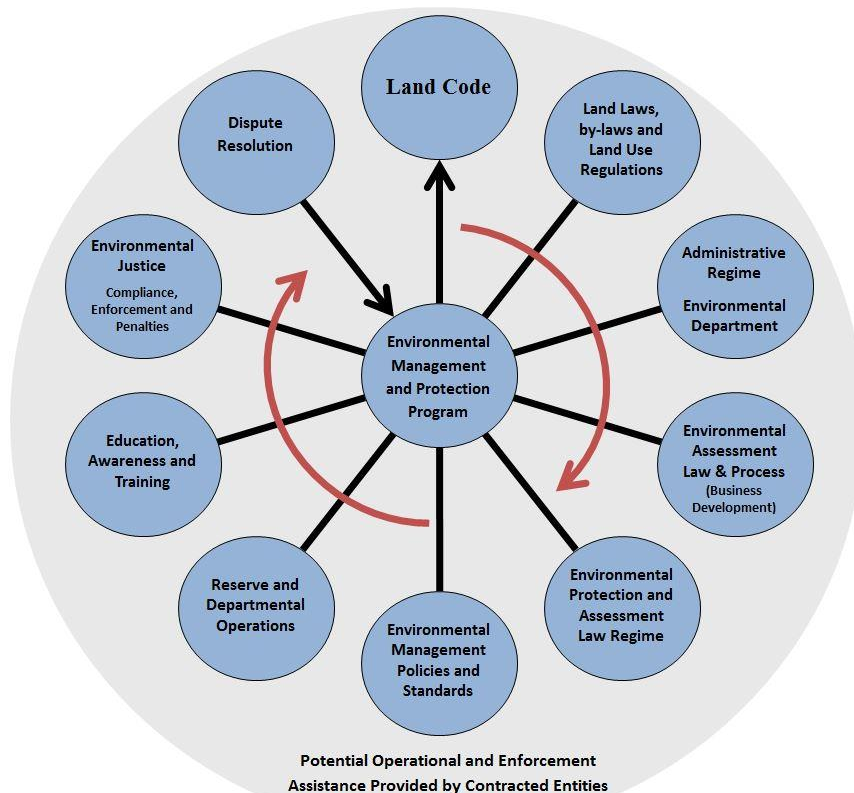


FIGURE 1: EMPP COMPONENTS

2.4. Environmental Assessment and Protection Law Regime

First Nations under the FNLM Regime are required to develop an environmental protection and assessment Law regime to regulate and manage economic development and resource utilization on Reserve land. Nations have basically three options for Law regime development including: full adoption of provincial legislation, hybrid-adoption of provincial legislation or development of unique Nation-specific Laws and regulations. There are positives and negatives associated with each option and leaders of individual Nations weighed the pros and cons and determined the best choice for their people. PINTER provided technical consultation to each First Nation’s legal counsel during Law development and utilized knowledge and experience with existing Federal and Provincial legislation to advise our clients on the best option to meet their community goals and objectives. PINTER employed considerable effort to harmonize each Nations EMPP with their developed environmental Law regime to ensure continuity between the two processes and facilitate efficient management of each Nation’s environmental regime.

3. Project Highlights

3.1. Innovation

This project and process is in and of itself an innovation; there were no models or previous experience to follow at the start. The Federal Government and member First Nations had a vision in the early to mid 1990's to pass management of Reserve land over to the First Nations. PINTER assisted in developing the process which went through a number of changes along the way. Technical engineering principles involved in environmental assessment, remediation, environmental management systems and development of laws, regulations and guidelines governing the environment and land development were the foundation of this process.

Project challenges included addressing a large variety of environmental liabilities accrued over the years on First Nation land, developing community engagement, meeting First Nation expectations and helping the First Nation develop a land management process. Creation of a streamlined and enhanced economic development climate on Reserve lands while maintaining a high level of environmental protection and stewardship were an important requirement. Existing environmental site assessment techniques were adapted for this larger project and new ones were developed for example the "fly over", soliciting information from the community, incorporating cultural sensitivities while maintaining scientific credibility, etc.

Taking control of their lands and resources while exercising and reinforcing each First Nation's sovereignty through an environmental protection and assessment regime is a first in Canada.

3.2. Complexity

Numerous components to this project spanned several years of assessment and development. Maintaining a consistent approach through governmental mandate changes challenged PINTER and the First Nations. First Nation expectations had to be balanced with Government agency mandates. Working with multiple First Nations simultaneously, each with their own community and environmental issues, perspectives, priorities and political agendas was challenging.

The project includes engineering (Phase I, II and III ESAs and remediation), and policy development (community environmental surveys and engagement, cataloguing community environmental goals and priorities and then developing comprehensive environmental management and protection regimes). Innovative organization and management of large volumes of information for entire Reserve ESAs was carried out. Methods to align and integrate technical environmental and engineering principles with First Nations traditional practices, perspectives and cultural sensitivities were developed.

The project encountered many extraordinary problems, conditions and setbacks throughout its development. Specifically, unique environmental impacts were identified from dump sites, salvage yards, storage tanks, and agricultural chemicals to fence post treatment and copper wire burning. Policy development procedures were developed and redeveloped as the FNLM Regime changed from a prescriptive model to a First Nation directed model and as First Nation expectations were better understood and as those expectations changed over time.

Regular and consistent communication with clients, project stakeholders and legal counsel throughout the project was required to overcome issues and to maintain a clear, focused vision.

3.3. Social and Economic Benefits

An underlying goal for this project and the FNLM Regime is to provide member Nations with the ability to easily and effectively facilitate and manage economic development on Reserve land. The ultimate benefits are vibrant, self-sustaining First Nation communities that contribute to Canadian society and the Canadian economy. There are numerous social and economic benefits to our FNLM Regime member First Nation clients and to surrounding local and provincial jurisdictions. This project and process is based on environmental engineering principles and established environmental policy and Law. The outcome will allow First Nations greater freedom for development on their land, businesses and investment on Reserve and First Nation entrepreneurialism and employment opportunities to Band members. Whitecap Dakota First Nation is a good example providing employment for Band members as well as for residents of the City of Saskatoon on Reserve. They have plans to develop a hotel associated with their world class casino and golf course and to develop a residential subdivision around the golf course for non-band member purchase.

First Nations within Canada are poised to become an increasingly large and dynamic demographic. Recent projections by Statistics Canada indicate that the aboriginal population could account for between 4.0 to 5.3% of the Canadian population by 2031. Strong, independent and sustainable First Nation economies not only benefit the First Nations but also Canada as a whole. Our clients will become more self-sufficient, educated and more productive members of Canadian society. The successes of today are the role models for tomorrow.

3.4. Environmental Benefits

The ESAs and remediation of legacy sites provided context and examples to First Nation Band Councils of negative environmental impact. It increased their understanding and sophistication of proper environmental stewardship and practices. Much thought and discussion occurred with respect to what land uses and practices should be allowed, what risks certain actions presented and how the environment on their land should be managed. The remediation portion of the project returned much of the land back to pre-impact conditions enhancing sustainability.

This project provided education, awareness and training to First Nation peoples on the best management of their lands, resources and economic development on their lands. Incorporation of First Nation terms and language into plans and documents was an innovative approach taken. Sustainable commercial and industrial development including regulated extraction and utilization of natural resources is made certain through developed Environmental Assessment (EA) Laws and processes. Existing federal and provincial EA Law and processes were referenced by First Nations during adoption and development of their own EA process.

This nationally recognized EA system and structure helps to ensure that potential impacts to the environment are identified and that steps are taken to properly mitigate the impacts prior to development approval. The environmental protection regimes and environmental Law regimes developed through this project for First Nations are based on recognized environmental engineering principles and established provincial and federal environmental legislation. Nations are required to either meet or exceed existing legislation. The environmental and sustainable

benefits to our client's lands and people, as well as to Canada as a whole, are integral to the sustainable conservation and protection of our country and the natural environment.

3.5. Meeting Client's Needs

Our First Nation clients needed to receive back control of their lands in as close to pre-impact condition as possible. This was to facilitate the First Nation to take responsibility for their future actions without the interference of adverse per-existing environmental conditions. These goals were met through the ESA and remediation components of the project and the environmental management and legal systems development.

Specifically, the three main goals were the elimination/reduction of known environmental impacts on Reserve lands, development of an environmental protection and Law regime, and the creation of a system for enhanced economic development and entrepreneurialism. PINTER completed Phase I ESAs of entire Reserves to identify potential impacts, Phase II ESAs to confirm and delineate suspected impacts and Phase III remediation of impacts.

Information gathered from client community engagement was used to plan and develop an Environmental Management & Protection Program. The EMPP that PINTER developed arranges for administration, education, monitoring and enforcement of the First Nation's environmental Regime. Client goals were met by assisting legal counsel with development of an environmental protection and assessment Law regime.

PINTER harmonized clients' EMPPs with their Law regime to ensure community environmental priorities were met. This will facilitate sustainable economic development on Reserve land and protect and preserve both the environment and traditional culture of each First Nation. Taking control of their own land enhances the First Nation's ability to direct their own destiny, allows them to encourage economic development and entrepreneurialism and exercise their inherent sovereignty.

4. Conclusions

The FNLM Regime is a unique and exciting opportunity for Canadian First Nation communities to assume control and management of their lands and natural resources. Development of environmental legal regimes that facilitate strong and accessible economic climates are also a novel and positive outcome of this process. A model for this process is now established.

PINTER demonstrated through this project that FNLM Regime member First Nations across Canada are willing and able to develop sound environmental protection and management regimes, rooted in recognized environmental engineering principles and traditional culture. PINTER applied technical engineering expertise for Environmental Site Assessment and remediation and innovative, Nation-specific Environmental Management and Protection Program and Environmental Law system development. Benefits include a novel, integrated, Reserve-specific, economic development climate and superior environmental protection measures.

The work completed by PINTER throughout the FNLM Regime process enhances sovereignty, protection and management of land, natural resources and people for each First Nation while facilitating sustainable economic development.