Training Options that would Increase Employment Opportunities for Local People in Resource Extraction Projects in Northern Communities

FINAL REPORT

Prepared for:

Manitoba Research Alliance on Community Economic Development in the New Economy

Submitted by:

Emerge Knowledge Design Inc.
Nancy LeBlond
Sasha Brown

November 2004

EXECUTIVE SUMMARY

In December 2003, the Manitoba Research Alliance on Community Economic Development in the New Economy commissioned the consulting team of Emerge Knowledge Design Inc. to study training opportunities within the mine reclamation industry. During the course of this research, it became clear to the research team that there were not enough employment opportunities for northerners associated with such a narrow focus. The study team expanded the research to activities that could apply to a broader field of employment in the resource extraction industry, but were also applicable to mining and reclamation.

Methodology

The research methodology used in this project included extensive internet and literature scans, followed with interviews with government, industry, Aboriginal and educational representatives. A brief demographic overview of northern Manitoba was provided in order to understand the current levels of employment and education. Case studies of mine reclamation projects were included to determine job type and skill level required. As northern Manitoba is 68% Aboriginal (First Nation, Metis and Inuit), the study team also reviewed case studies of industry-Aboriginal partnerships in mineral and other resource industries in Canada. This provided concrete examples of what has been successful elsewhere.

As a result of the above research on occupation and employment opportunities, the study team summarized several categories of training programs within which most employment opportunities would fall. These categories are heavy equipment operators, designated trades, natural resource management and environmental monitoring. The training programs offered in Manitoba and other western provinces, as they relate to those four categories, were presented in some detail. Possible government funding that could be accessed in the development of training programs was also provided.

Based on this research, the study team offers some conclusions and recommendations for policy makers to consider as planning for training options in the north moves ahead.

Conclusions and Recommendations

Education

Conclusion

According to 2001 Census data, northern Manitoba is primarily a young population group with inadequate education levels and skills to enter the workforce. A large percentage of this group is Aboriginal.

Recommendations

1. It is essential to develop strong partnerships with First Nation and Metis organizations to assist in achieving higher educational attainment, developing workforce training programs and long-term employment.
2. Many northern communities want to have access to basic skills training within their own community. Government needs to continue to develop partnerships with community colleges and community-based organizations

for additional **community-delivered** programs aimed at young adults and adults, in communities currently not serviced. These programs should include:

- basic literacy and numeracy skills,
- academic upgrading,
- employability/job readiness skills,
- testing and assessment programs, and
- technical training directly linked to high demand occupations and local employment opportunities (that are cross-sectoral in nature)

3. There is a critical need for flexibility in programming, and more sensitivity to, and inclusion of Aboriginal culture and knowledge in program delivery. Tailoring training delivery options to meet northern and rural needs will produce greater success rates.
4. Many pre-project training programs and other employment initiatives require Grade 12 math and literacy skills, or equivalent. This can be an issue in relation to the educational level achieved by many northern and Aboriginal people who may no be able to meet this requirement. It is strongly recommended that more effort be directed to upgrading the level of education attained in order to meet these pre-project training programs. Examples such as the Aboriginal Training Program recently announced (November 2, 2004) is an excellent first step in this regard.
5. The option of using Distance Education could be explored for the northern and/or Aboriginal audience. If this was to be implemented, it has been proven to be critically important to have a support person/mentor within the community. Equally important, the communities must be equipped with upgraded and reliable technology for delivery of the programming (internet, computers, audio-video conferencing, etc.) Partnership with Keewatin Community College, University College of the North, Manitoba Metis Federation and others would seem to be the best course of action.

Conclusion

As Aboriginal students move through the school system, it is very important to capture their interest in life-long learning at an early stage.

Recommendation

1. The partnerships described above need to develop a desire for life-long learning, in addition to specific skill training programs within all northern communities.

Supply and Demand

Conclusion

Current levels of unemployment, coupled with the large numbers of northern youth entering the labour force suggests the need for having an accurate and up to date demand and supply analysis of skills (hard and soft) that are required by various key resource industries.

1. Government and education/training institutions need to work with communities to identify their emerging training needs and skill gaps; work with industry (Manitoba Hydro, forest and mining companies) to design

needs assessments and training programs, and encourage industry to be a full partner in providing on-the-job training and co-operative training within communities.

2. Government and education/training institutions need to offer a broad spectrum of training opportunities – including community-oriented value added jobs (non-timber forestry products; ecotourism); basic industrial training through to journeyman apprenticeship training (heavy equipment operator/mechanic; carpentry; electrician, etc.); as well as scientific and professional college/university opportunities whose delivery is more regional in nature (The Pas, Thompson, Brandon and Winnipeg).
3. Policy makers need to link high demand occupations in the north, such as Construction Electrician, Carpenter and Heavy Duty Equipment Mechanics and Operators, with high demand occupations within Aboriginal communities (Carpenters, Heavy Duty Equipment Operators), and the institutions such as UCN that will deliver the training.
4. To achieve better success in retaining and graduating participants, training needs to be community based.
5. Programs that offer training in skills that are transferable between industries will lead to longer term employment.
6. Training programs need to have goals and targets that are measurable and realistic, with opportunities for evaluation and revision.
7. There is also the need for government and educational institutions to respond to future growth in the environmental industry, particularly as it relates to environmental assessment and management; environmental technician/technologist; and engineering technician/technologist.

Private Sector Involvement

Conclusion

As has been shown in Saskatchewan and Alberta, industry has taken a lead role in developing training initiatives with northern and Aboriginal communities within the mining, oil and gas and forestry sectors. This has resulted in the development of many successful businesses. While these businesses were initially started to serve a specific industry or company, many have grown to service the broader community.

Recommendation

1. Government and industry should look for opportunities for northern and Aboriginal businesses to gain greater contract work to support the mining, forestry and hydro industries.
    - Forintek's recent wood technology initiative is an exciting example of future business development in the forestry industry.
    - Another recent example is the establishment of an Aboriginal Chamber of Commerce. Government should assist in the establishment of a northern-based Aboriginal business incubator.

Site Reclamation programs

Conclusions

Over the course of this research the study team has found that currently most mine reclamation work is done at the engineering and technician level to develop closure plans; followed by site work by heavy equipment operators and construction companies. Environmental monitoring post-closure is part-time and seasonal.

The field of site remediation and reclamation is evolving as governments (provincial and federal) come to grips with cleaning up orphaned and abandoned mine sites through new legislation. The current regulatory environment also requires new and existing mines to develop closure plans concurrently with operational planning. This will involve progressive site reclamation and environmental monitoring, in addition to post-closure reclamation work.

Recommendations

1. This provides an opportunity for northerners to be employed on several levels: reclamation engineers; technician/technologists; consultants doing environmental assessment; and contractors involved in heavy equipment operation and decommissioning work.
2. The government could investigate using the Mining Community Reserve Fund for training and employment programs involved in mine reclamation and remediation targeted at northern residents.
3. Currently there is a Prospector Training Program – the government could investigate whether developing a similar program for Site Reclamation/Remediation is feasible. This would be in keeping with the MB Minerals Guideline which encourages Aboriginal partnerships "by enhancing education and training skills in the local workforce and helping to strengthen the province's mining industry" (Source: www.gov.mb.ca/itm/mrd/busdev/advantage/adv-pdfs/9adv-policy.pdf (Examples can be found in Saskatchewan and Alberta and may be transferable to the Manitoba mining situation.)

Environmental programming

Conclusion

The environmental sector is said to be one of Canada's growth industries, and thus can provide an opportunity for northern residents with employment. Programs can be developed around traditional industries such as mining and mine reclamation, forestry and hydro development that include an environmental focus.

Recommendations

1. Groups such as KCC, University College of the North, Aboriginal organizations and industry have the opportunity to work together in developing and delivering this type of programming in the north.

Conclusion

There is also the opportunity for northern Manitobans for value-added programming which blends seasonal part-time employment with traditional activities such as fishing, hunting and trapping.

Recommendations

1. Expand value-added programs such as the non-timber forest products and ecotourism initiatives of KCC.
2. Encourage and assist in the creation of businesses that could tie into environmental assessment and monitoring activities; tree planting/landscaping; and value-added wood technology (such as the Forintek initiative).

Table of Contents

EXECUTIVE SUMMARY i
1. Overview 1
2. Methodology 1
3. Background 1
3.1 The Regulatory Situation 1
3.2 Demographic Overview of Northern Manitoba 3
3.2.1 Population 3
3.2.2 Education 4
3.2.3 Employment 5
3.3 Overview of Existing Natural Resource Sector Employment in Northern Manitoba 6
3.3.1 Mining 6
3.3.2 Hydro 8
3.3.3 Forestry 8
3.3.4 Trapping 9
3.3.5 Summary Profile of Employment Opportunities 9
4. Case Studies – Reclamation and Mining Projects 13
4.1 Hope Brook Mine, Newfoundland 13
4.2 SOAB Creek Mines, INCO, Thompson 14
4.3 Bluebell Mine, B.C. 15
5. Case Studies – Industry/Aboriginal Partnerships in Resource Extraction Sectors 16
5.1 Falconbridge, Raglan Agreement 17
5.2 Syncrude Canada Ltd., Alberta 17
5.3 Mistissini Cree – Quebec 19
5.4 Ekati Diamond Mine - Northwest Territories 20
5.5 Northern Saskatchewan Multi-Party Training Plan 22
5.6 Saskatchewan's TEAM plan for Forestry 25
5.7 Manitoba Hydro 25
5.8 La Paix des Braves (The Peace of the Braves), Quebec 27
6. Training and Educational Programs 28
6.1 Heavy Equipment Operator 29
6.2 Basic Industrial Training and Designated Trades 33
6.2.1 Basic Industrial Training 33
6.2.2 Designated Trades 34

6.3 College and University Natural Resource Management 35
6.4 Additional Environmental Programs outside the scope of Reclamation and/or Restoration 42
6.4.1 Assiniboine Community College (ACC) 42
6.4.2 Value-added Forestry Programs 42
6.5 Educational Institutions Located in Northern Manitoba 44
6.5.1 University College of the North 45
6.5.2 Atoskiwin Training and Employment Centre of Excellence 46
6.5.3 Manitoba Metis Federation 46
6.5.4 Assembly of Manitoba Chiefs 47
7. Effectiveness of Distance Education in Remote and Northern Communities 49
7.1 Introduction 49
7.2 Barriers 49
7.3 Best Practices 50
7.4 Contribution to the Community 50
8. Funding Programs 51
9. Conclusions and Recommendations 57
9.1 Education 57
9.2 Supply and Demand 58
9.3 Private Sector Involvement 59
9.4 Site Reclamation programs 59
9.5 Environmental programming 60

Figures

Figure 1 – Northern Manitoba Population by Age Group (2001) 3
Figure 2 – Aboriginal Population in Manitoba (2001) 4
Figure 3 – Comparison of Education Levels in Manitoba and the North (2001) 4
Figure 4 – Employment Trend in Northern Manitoba (1991 – 2001) 5
Figure 5 – Labour Force by Industry for Northern Manitoba (1991 – 2001) 6
Figure 6 – Manitoba's Mineral Production 7
Figure 7 – Manitoba Hydro-Electricity Sales 8
Figure 8 – Workforce by Job Category for BHP Billiton 21
Figure 9 - Saskatchewan Multi-Party Training Plan Phase I (1993-1997) 22
Figure 10 - MPTP I and II Enrolments vs. Number Finishing Course 23
Figure 11 - MPTP Students Employed as of Dec. 2003 by Position 24

Tables

Table 1 – Education and Employment Requirements for Several Occupations in the Natural Resource Extraction Industry (The source of this information can be found at Manitoba Job Futures (http://mb.jobfutures.org).) 10
Table 2 – Employment Opportunities within the Resource Extraction Industry 12
Table 3 - Heavy Equipment Operator and/or Heavy Equipment Mechanic Training offered in Saskatchewan and Manitoba 30
Table 4 – Manitoba Apprenticeship Trades 34
Table 5 – Reclamation and Natural Resource Management Programs offered at Institutions in Western Canada 38
Table 6 – Examples of Funding Programs 52

Appendices

Appendix A – Manitoba Census Divisions
Appendix B – High Demand Skills
Appendix C – Position by Skill Ranking (BHP Billiton)
Appendix D – Courses by Training Category
Appendix E – Adult Learning Centers in the North

1. Overview

Resource extraction projects generally, and mining operations in particular, create disturbances in the natural environment that require remediation and restoration. Historically, land reclamation requirements have been limited in scope and inconsistently applied, leading to hundreds of abandoned sites with no closure plans in place. New standards in Canada call for the reclamation of abandoned sites, and progressive reclamation as part of new and existing operational planning, right from the beginning of the process.

Emerge Knowledge Design Inc. was contracted by the Manitoba Research Alliance on Community Economic Development in the new Economy to undertake a research initiative as part of this three year project. The original focus of this research was training opportunities within the mining reclamation industry. During the course of the research, it became clear to the research team that there were not enough employment opportunities for northerners associated with such a narrow focus. Thus the focus expanded to activities that could apply to a broader field of employment, but were also associated with mining and land reclamation.

The scope of this research provides a broad overview of various resource industry opportunities, and is not intended to provide an in-depth analysis. The information presented in this report provides some preliminary focus and conclusions for policy makers to consider as various government initiatives move forward.

2. Methodology

The research methodology used in this project included extensive internet and literature scans, and interviews with government, industry and educational representatives in the following areas:

- Northern Manitoba demographics as they relate to employment opportunities
- Case studies of reclamation and mining projects to determine job type and skill level required
- Case studies of industry-Aboriginal partnerships in the mineral and resource extraction sectors
- Existing land reclamation training programs, environmental monitoring programs and heavy equipment operator and other trades
- Effectiveness of distance education in remote and northern communities (issues, barriers and solutions)
- Possible government funding that could be accessed in the development of training programs.

3. Background

3.1 The Regulatory Situation

In Manitoba, the 1999 Mine Closure Regulation 67/99 requires new and existing mining operations to submit a closure plan to the Department of Industry,

Economic Development and Mines for review by a technical committee. The closure plans include details on numerous aspects of rehabilitation and closure, including:

- Prior use and condition of the site
- Current conditions and activities on the site
- Site infrastructure, mining processes, and use and disposal of contaminants
- Decommissioning process, including nature of end use of the site and all rehabilitation work required
- Costs involved in the rehabilitation work
- Monitoring program post-closure
- Annual reporting procedure for closure activities

Northern Manitoba has many orphaned and abandoned mine sites widely scattered across the province. "Orphaned" sites are un-rehabilitated sites where the mining company no longer exists and ownership of the site now rests with the Crown. "Abandoned" sites are those where the mining company exists but does not have the financial ability to rehabilitate the site. When these sites were originally in operation and then closed, there was no environmental legislation in place to address environmental remediation. "The responsibility for management and rehabilitation of these sites now rests, at least in part, with the Crown."[1]

Manitoba has two parallel funding programs to address orphaned and abandoned mines sites. As these programs are recent in nature, they have only started to address the environmental remediation of abandoned and orphaned mine sites.

Orphan/Abandoned Mine Site Rehabilitation Program

- Industry, Economic Development and Mines
- $1million over 4 yrs. 2000-2004
- Focus on "public safety issues such as open stopes (holes) and shafts, scattered debris, stability of tailings dams & retention structures, appropriate fencing & signage."
- Work will include capping & closure of mine shafts

Source: *The Metals Industry in Manitoba.* www.gov.mb.ca/itm/mrd/mtf/mintaskforce.html

Human and Environment Health Risk Assessment

- Manitoba Conservation
- $1million over 4 yrs. 2001-2005
- Focus on ensuring that "remedial measures proposed are scientifically sound and that measures taken to properly 'manage' the sites are based on the risk to the environment and to the health of the residents."
- Work will include air & water quality testing, and environmental assessments

Source: *The Metals Industry in Manitoba.* www.gov.mb.ca/itm/mrd/mtf/mintaskforce.html

The province has targeted sites that represent the greatest need for remediation from a safety and environmental concern. They have identified 250 sites

[1] Province of Manitoba, "The Metals Industry in Manitoba," *Manitoba Industry, Economic Development and Mines,* < http://www.gov.mb.ca/itm/mrd/mtf/mintaskforce-m.html> (January 2004).

considered to be hazardous, with 25% of those being in northern Manitoba. Five specific sites in northern Manitoba that are receiving assessment are the Lynn Lake Sherritt Gordon (nickel) mine, the Sherridon (copper/zinc) mine north of Flin Flon, the Baker Patton Mine, the God's Lake Gold Mine and the Snow Lake Arsenopyrite stockpile.[2] These sites are part of remediation efforts by the government.[3]

3.2 Demographic Overview of Northern Manitoba

This section of the report provides some background information about the population, economics and education levels in Northern Manitoba. In this report, 'Northern Manitoba' refers to Census Divisions 19, 21, 22 and 23. Refer to Appendix A for a map of the Manitoba Census Divisions.

3.2.1 Population

According to 2001 census data, the population of Northern Manitoba is 82,445, or approximately 7% of Manitoba's total population. As shown in Figure 1, the greatest number of Northern Manitobans fall into the 5-14 and the 25-44 age categories. This indicates that there are a large number of people already within the labour force age group and that there are a large number of youth who will be entering the labour force within the next five to ten years. Training programs that focus on the age groups with the greatest population could result in the greatest benefit for the people of Northern Manitoba.

Figure 1 – Northern Manitoba Population by Age Group (2001)

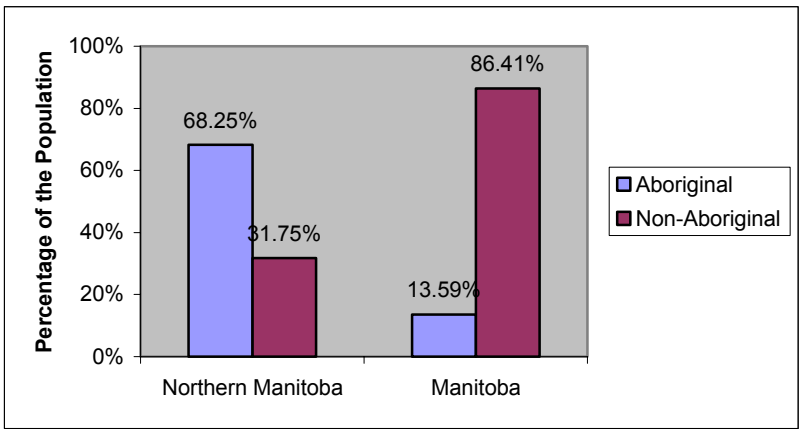
Northern Manitoba has a high percentage of Aboriginal people – 68% according to 2001 Census data. As illustrated in Figure 2, this is significantly different than the Aboriginal population in all of Manitoba. Ethnic origin and culture therefore should be reflected in the development of training programs for people in Northern communities. If training programs are not designed for their target audience, their chance of success is greatly diminished.

---

[2] Government of Manitoba. "Province to Begin Process of Rehabilitating Abandoned Mines in Northern Manitoba". *News Release* 18 July 2001. < http://www.gov.mb.ca/chc/press/top/2001/07/2001-07-18-02.htm > April 2004.

[3] Mining Task Force Update. Communication with G. Jennissen, MLA Flin Flon, 7 April 2004.

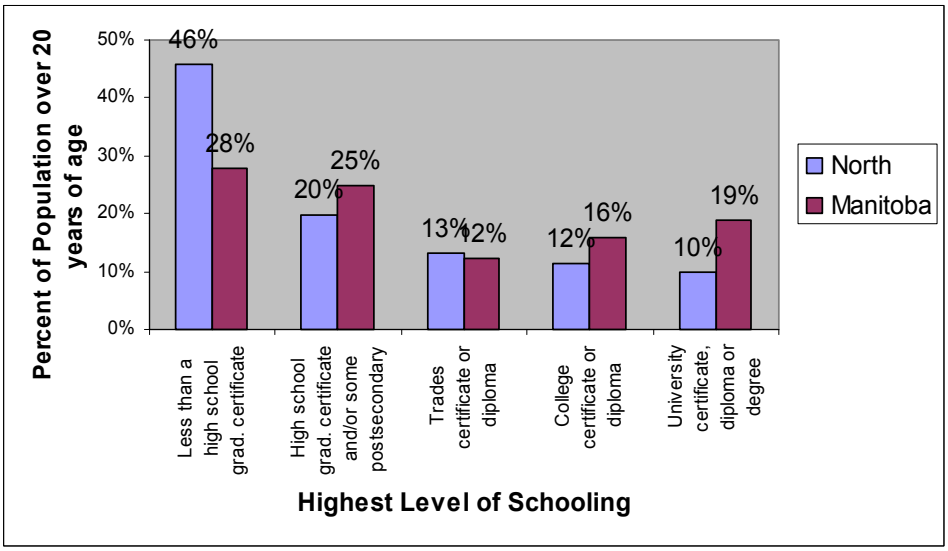
Figure 2 – Aboriginal Population in Manitoba (2001)



3.2.2 Education

According to 2001 Census data, 46% of Northern Manitobans over 20 years of age have not completed high school. Provincially this figure is at 28%. Conversely, 19% of Manitobans have graduated with a university certificate, diploma or degree but only 10% of Northern Manitobans have received this same level of education. As shown in Figure 3, residents of the North are less educated on average than residents in the rest of Manitoba. Lower education levels may make it more difficult for Northerners to attain a job, which has a negative effect on economic development and socio-economic conditions in the North.[4]

Figure 3 – Comparison of Education Levels in Manitoba and the North (2001)



[4] University of Saskatchewan, "Evaluation of the Multi-Party Training Plan for the Northern Labour Market Committee," *Business Advisory Services, College of Commerce, University of Saskatchewan*, 1993 – 1998, < http://collections.ic.gc.ca/training/frame/pdf.htm> (24 February 2004).

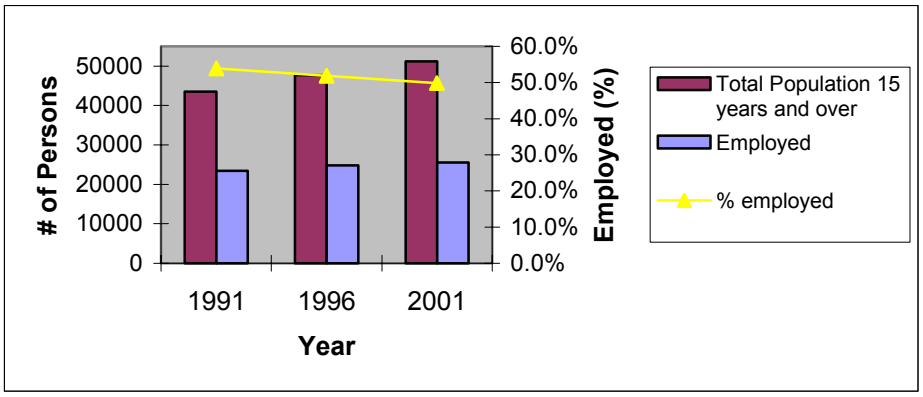
3.2.3 Employment

> "Western Canadians, Aboriginal and non-Aboriginal alike, who have less than a high school diploma are the least likely to participate in the labour force, and those who do participate are also the most likely to be unemployed." (Canada West Foundation, *Working Towards Parity: Recommendations of the Aboriginal Human Capital Strategies Initiative.* Building the New West Report #24, February 2004)

The labour force age group (15 – 64 years of age) in Northern Manitoba is approximately 51,205 people (2001 census statistics). This represents 62% of the overall population. However, not all of those who are in the labour force age group are participating in the labour force. Approximately 50% of the labour force age group is employed.[5] As shown in

Figure 4, the total population 15 years of age and over has increased between 1991 and 2001. The number of people that are employed has also increased from 1991 to 2001. However, the percentage of people that are employed has slightly declined since 1991.

Figure 4 – Employment Trend in Northern Manitoba (1991 – 2001)



As illustrated in

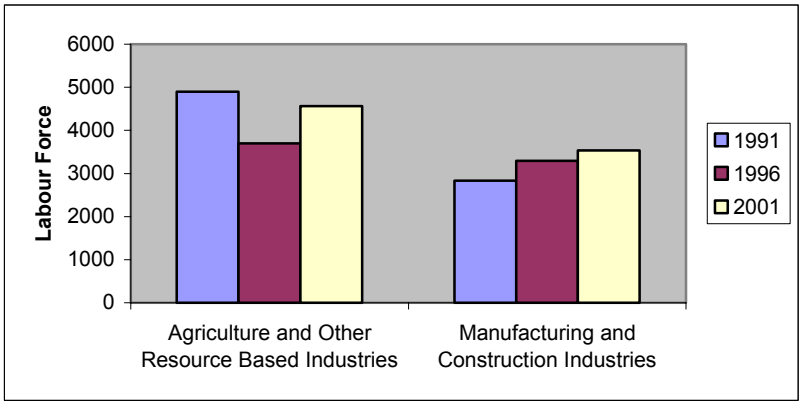
Figure 5, between 1991 and 2001 there has been a slight decrease in the number of people employed in agriculture and other resource based industries (with a larger decrease between 1991 and 1996). However, it is important to note that this category includes: agriculture; fishing and trapping; logging and forestry; and mining, quarrying and oil well industries. According to the 1991 and 1996 statistics provided by the Northern Regional Profile[6] there was a significant decline in the labour force employed in mining (including milling), quarrying and oil well industries. In 1991 there was a labour force of 4000 in this industry and by 1996 it had declined to 2710 (these statistics were not available on the public website for 2001 Census data). There has been a slight increase in the labour

[5] It should be noted that "…the employment rate is defined as the percentage of the labour force age group that is employed, either full-time or part-time." (University of Saskatchewan)

[6] Province of Manitoba, "Labour Force" *Manitoba Community Profiles – Northern Regional Profile*, < http://www.communityprofiles.mb.ca/cgi-bin/region/labour.cgi?id=4> (1 March 2004).

force involved in manufacturing and construction industries. Between 1991 and 1996 this increase occurred in the manufacturing industries.

Figure 5 – Labour Force by Industry for Northern Manitoba (1991 – 2001)[7]



The statistics presented in this section indicate that a large percentage of the population of Northern Manitoba is young aboriginals. Also, in general, the education levels in the North are lower than elsewhere in the province. Any training programs that are made available to people in Northern Manitoba should address these issues. Training programs should consider the target audience, the skills that are necessary to obtain employment and the overall job market. Section 3.3 provides some background information on the existing natural resource sector employment opportunities available in Northern Manitoba.

3.3 Overview of Existing Natural Resource Sector Employment in Northern Manitoba

A brief overview of existing natural resource sector employment in northern Manitoba is provided to give a current picture of the key resource extraction industries operating in the north. This overall view illustrates the need for flexibility in employment options across the various sectors, as no single sector is currently booming.

3.3.1 Mining

Mineral exploration continues in northern Manitoba with expenditures estimated between $20 and $25 million. Exploration centres on gold, heavy rare earth metals, nickel and kimberlite/diamond potential. Gold exploration has increased partly due to the rise in gold prices to around $400 US per ounce – a figure said to be required to re-open gold mining in the Bissett region.[8]

Production however is declining. According to the 2003 Manitoba Budget Papers, mineral production declined 17.1% in 2001 and 4% in 2002. Figure 6 illustrates Manitoba's mineral production from 1998 to 2002:[9]

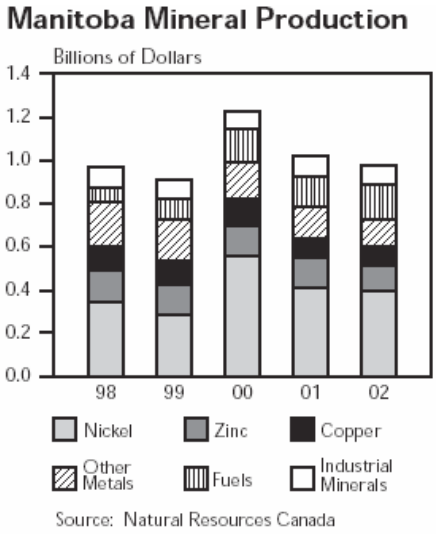
---

[7] All statistical data is courtesy of Statistics Canada. Breakdown of industries is based on categories as defined by the publicly available 2001 census data. Further breakdown was not provided in data available on the public website for 2001.

[8] Government of Canada. *Labour Market Review for Northern Manitoba, September – December 2003.*

[9] The 2003 Manitoba Budget Papers: Manitoba Economy. Available on-line: <http://web3.gov.mb.ca/finance/budget03/papers/index.html> (Feb. 2004).

Figure 6 – Manitoba's Mineral Production



The declining performance of some of the metals has resulted in some mine closures. Bissett's Harmony Gold mine ceased production in 2001, and was placed in "care and maintenance mode". Hudson Bay Mining and Smelting (HBMS) closed the Ruttan Mine in Leaf Rapids in June 2002. At their Flin Flon operations, HBMS closed the Callinan Mine (formerly the South Main mine) in December of 2003. Employees were transferred to the Triple 7 mine. At Snow Lake, the Kinross/New Brittania mine was to be closed in September 2004. A last minute influx of cash from the provincial government has delayed the closure to potentially August 2005.[10] Although nickel production fell slightly in 2002, nickel is still Manitoba's most important mineral, "accounting for 40.5% of the province's total value of mineral production".[11] Inco plans to bring nickel concentrate from their Voisey's Bay operation in Labrador to Thompson in 2006 for processing.[12]

According to Manitoba's Job Futures for miners, employment prospects for 2004-2008 are said to be limited, with a declining trend due to the increase in technology within the industry. Mining employment (including milling), quarrying and oil well industries declined from 4,000 in 1991 to 2,710 in 1996.[13] There are no statistics specific to the mine reclamation industry on levels of employment in northern Manitoba.

---

[10] Leah Janzen, "Snow Lake gets reprieve – Province gives cash to keep mine open", Winnipeg Free Press, 17 February 2004.

[11] The 2003 Manitoba Budget Papers: Manitoba Economy.

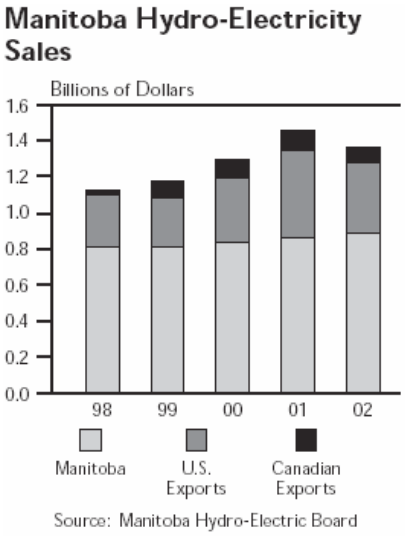
[12] Government of Canada. *Labour Market Review for Northern Manitoba, September – December 2003.*

[13] Government of Manitoba, Department of Intergovernmental Affairs Community Profiles. Northern Regional Profile: Labour Force. Available on-line: <http://www.communityprofiles.mb.ca/cgi-bin/region/index.cgi?id=4> (Feb. 2004).

3.3.2 Hydro

Manitoba Hydro currently has a generating capacity of greater than 5,000 MW. Sales of hydro-electricity declined in 2002 by 6.6%, mostly as a result of low water flow for power generation. As Figure 7 illustrates, previous years showed clear growth in sales.[14] Under an agreement with Xcel Energy out of Minnesota, Manitoba Hydro will be exporting 500 MW of electricity commencing in 2005. This has the potential of producing $1.7 billion in revenue over the 10 year contract.[15]

Figure 7 – Manitoba Hydro-Electricity Sales



Hydro has numerous **potential** development projects for northern Manitoba in the works, from dams to transmission lines. These include the Wuskwatim generating station on the Burntwood River (200 MW); the Keeyask (Gull) generating facility (650 MW) with associated transmission line linking northern Manitoba to the south (possibly on the East Side of Lake Winnipeg); and the Conawapa generating facility (1,400 MW) with associated transmission line linking the generating facility with Ontario's power grid.

Employment opportunities for the very near future are limited while the projects proceed through various review processes. Once the projects are approved, Hydro is forecasting 26,000 person years of direct/indirect employment.[16] More details on Hydro's Pre-Project Training Initiative are found in Section 5.7

3.3.3 Forestry

The softwood lumber dispute has led to an overall downturn in this industry. Under the current proposal, Canadian producers must limit exports to 3l.5% of the US softwood lumber market, down from the previous level of 34%. Direct

[14] The 2003 Manitoba Budget Papers: Manitoba Economy.

[15] The 2003 Manitoba Budget Papers: Manitoba Economy.

[16] Sapergia, Debbie. Power Point Presentation on the Northern Development Strategy. Manitoba Advanced Education and Training. http://www.keewatincc.mb.ca/news/Northern%20Manitoba%20Development%20Strategy.ppt

consequences have been job losses for 125 employees at Tolko's The Pas sawmill in May 2003, with concern over further job reductions.[17]

On a more positive side, on March 12, 2004 the governments of Manitoba and Canada announced a partnership with Forintek Canada Corporation – a non-profit wood products research company – to establish a Value-Added and Wood Technology Program in the province.[18] Oscar Lathlin, Manitoba Minister of Aboriginal and Northern Affairs stated that a focus of the program is to "enhanc[e] opportunities for Aboriginal and northern communities in the wood products sector [through] job creation and business development in the north."[19] A Forintek Industry Advisor will locate in The Pas in order to encourage Aboriginal and northern participation in wood manufacturing. This may include identifying opportunities for establishing Aboriginal businesses such as sawmills and value-added businesses. Training would be coordinated through Conservation's Sustainable Forestry initiative. Forintek's Program "will assist wood product manufacturers to overcome technical obstacles to take advantage of market opportunities in the wood products sector."[20] This program is in the formative stage, with details on the type of manufacturing and job creation yet to be determined.

3.3.4 Trapping

Trapping continues to be a viable small industry for northerners. An estimated half million dollars was made by trappers in 2003 at the Thompson Trapper's Festival. "Trapping is a major cash provider for many people in northern communities and they see it as a value, not only to the economy but to the environment as well."[21]

3.3.5 Summary Profile of Employment Opportunities

Forestry, mining, hydro and trapping are the major resource extraction industries that may have employment opportunities available in Northern Manitoba. This section focuses on occupations related to forestry, mining and/or Hydro development. Table 1 provides a summary of some of the skills and education required for these types of positions. Table 2 provides information on the wage range that could be expected for these positions and whether or not the prospects are good (over the next few years) for each occupation.

---

[17] Government of Canada. *Labour Market Review for Northern Manitoba, September – December 2003.* Human Resources Development Canada. http://www.mb.hrdc-drhc.gc.ca/lmi/current/nman.shtml#top (February 2004).

[18] Government of Manitoba, "Canada-Manitoba Economic Partnership Establishes Forintek's Value-Added and Wood Technology Program in Manitoba". *News Release* 12 March 2004, < http://www.gov.mb.ca/chc/press/top/2004/03/2004-03-12-07.htm > 6 April 2004.

[19] Government of Manitoba. *News Release* 12 March 2004.

[20] Backgrounder to Government of Manitoba *News Release* 12 March 2004.

[21] Government of Canada. *Labour Market Review for Northern Manitoba, September to December 2003.*

Table 1 – Education and Employment Requirements for Several Occupations in the Natural Resource Extraction Industry (The source of this information can be found at Manitoba Job Futures (http://mb.jobfutures.org).)

	Conservation and Fishery Officers	**Electrical Power Line and Cable Workers**	**Heavy Equipment Operators**	**Heavy-Duty Equipment Mechanics**	**Silviculture and Forestry Workers**	**Underground Production and Development Miners**	**Construction Millwrights & Industrial Mechanics (except Textile)**
Education Level	Diploma or certificate	Apprenticeship trade	Certificate	Apprenticeship trade	Diploma may be required	May require high school and/or college	Apprenticeship trade
Example Titles	Conservation Officer Fish and Wildlife Officer Forest Ranger Nature Resource Officer	Apprentice lineperson Cable installer/ splicer Power line technician/ patroller	Operator of: backhoe, bulldozer, excavator, grader, loader, etc.	Mechanic for: construction equip., mobile logging or mining equip., etc.	Forestry Crew Person Silviculture Worker Saw (Clearing, spacing and thinning) operator	Blaster/Driller Hoist operator Miner Shaft Inspector Mining Machine Operator	Construction millwright Maintenance millwright Millwright apprentice
Skills and Abilities Needed	Good health Interpersonal skills Problem-solving skills Communication skills (oral and written) Basic computer skills Teamwork skills	Interest in operating electrical systems Mathematical and mechanical abilities Good hearing Good eyesight Hand-eye coordination Communication skills Willing to	Interest in operating mechanical equipment Hand-eye coordination Distance and depth perception Physically fit Able to read instructions and grade plans Basic	Interest in machinery and engines Physical strength Verbal communication skills Creative approach to problem solving Good hearing, vision and sense of smell	Physical strength Get along with other team members Safety awareness Communication skills Problem-solving skills Mechanical aptitude for repair Recordkeeping	Interest in operating machinery Ability to work in closed spaces Physical strength Basic measuring and calculating Concern for safety Basic computer	Knowledge of computerized machinery Physical strength Verbal communication skills Mathematical/ mechanical aptitude Ability to work in cramped spaces Interest in keeping up to date

	Conservation and Fishery Officers	Electrical Power Line and Cable Workers	Heavy Equipment Operators	Heavy-Duty Equipment Mechanics	Silviculture and Forestry Workers	Underground Production and Development Miners	Construction Millwrights & Industrial Mechanics (except Textile)
		upgrade skills continuously	measurement mathematics		skills	skills	
Employment Requirement	One to three year college program in Renewable Resources Management On-the-job training and courses	Completion of secondary school Trade certification is available through on-the job training at Manitoba Hydro	Some secondary school education Experience in operating other equipment	Completion of secondary school Completion of 4 year apprenticeship or work experience with some training	Completion of secondary school May require completion of college WHMIS[22] or TDG[23] Certificates may be required	High school diploma may be required May require training in mine technology	Completion of secondary school Completion of 4 year apprenticeship or work experience with some training
Education/ Training	Diploma in Natural Resources Management Technology from Keewatin Community College Masters degree in Natural Resource Management from U of Manitoba	Power Line Training Program from Manitoba Hydro Trades Training Centre	On the job training or through training programs offered by employers, manufacturers or unions	Senior 4 or equivalent Four levels of apprenticeship training Students over 19 years of age may qualify as a mature student without entrance requirements	Diploma in Natural Resources Management Technology from Keewatin Community College Masters degree in Natural Resource Management from U of Manitoba	Employers provide on-the-job training (orientation, safety, etc)	Senior 4 or equivalent Apprenticeship Training Winnipeg Technical College offers an Industrial Maintenance Technician Program

[22] WHMIS = Workplace Hazardous Materials Information System

[23] TDG = Transportation of Dangerous Goods

Table 2 – Employment Opportunities within the Resource Extraction Industry

Occupation	Wage Range Starting/Average ($/hr)	Job Prospects	Employment Level (MB)	Employment Level (North)
Conservation and Fishery Officers	$12.82 - $22.56	Limited	200	56 (28%)
Electrical Power Line and Cable Workers	$9.86 - $21.63	Good	585	480 (82%)
Heavy Equipment Operators	$13.34 - $22.84	Good	2325	326 (14%)
Heavy-Duty Equipment Mechanics	$11.55 - $25.40	Good	2150	430 (20%)
Silviculture and Forestry Workers	$11.23 - $22.13	Limited	175	108 (62%)
Underground Production and Development Miners	$14.90 - $31.35	Limited	680	88 (13%)
Construction Millwrights and Industrial Mechanics (except Textile)	$11.78 - $26.62	Good	1330	279 (21%)

Source: This information can be found at Manitoba Job Futures (http://mb.jobfutures.org).

The job market should be considered when designing training programs and identifying training opportunities in order to increase the probability that graduates will find meaningful employment. According to the *Report on High Demand Occupations in Manitoba, January 2004,* the following high demand occupations (with NOC classification) are identified for northern Manitoba[24]:

- Mechanical Engineer
- Construction Electrician
- Carpenter and Plumber
- Heavy Duty Equipment Mechanic
- Heavy Equipment Operator

Several of these are also listed as needed occupations in Aboriginal communities, with the addition of Project Management skills. This report also lists High Demand Skill sets which are required in a variety of jobs and occupations. Appendix B lists the skill sets relevant to the resource extraction industry.

[24] Government of Manitoba. *Report on High Demand Occupations in Manitoba, January 2004,* Advanced Education and Training, <http://www.edu.gov.mb.ca/aet/docreports/hdo_en_2004.pdf> (12 March 2004).

4. Case Studies – Reclamation and Mining Projects

In keeping with the original project's focus on mining and reclamation, the following three case studies have been chosen. This brief overview looks at different types of mines, scale of mining and different types of environmental impact and remediation plans.

4.1 Hope Brook Mine, Newfoundland

The Hope Brook Mine was an open pit and underground gold mine operated by BP Canada Inc. from 1987 to 1991, and Royal Oak Mines Ltd. from 1992 to 1997. The mine site is located in a remote area of Newfoundland with no road access. The closest community is 15 km away. When Royal Oak Mines went into receivership in 1999, the Government of Newfoundland took over ownership and closure of the mine site.

Hatch Associates, an environmental engineering firm filed a closure update report in September 2000 which included 18 months of decommissioning work, followed by 12 months of effluent treatment. Direct involvement of the government would be limited to taking periodic water samples, and site inspections of the fencing and tailings dam once the reclamation is finished.

Phase I decommissioning started in September 2001 and was managed by Denison Environmental Services (Elliot Lake, Ontario) and Innova Quest Inc. (St. John's, Nfld.). Activities included:

- Treating and monitoring effluent
- Moving waste rock and heap leach material into the open pit to eliminate acid mine drainage from these sources
- Raising tailings dams to ensure an adequate cover is maintained over exposed tailings to minimize acid generation.[25]

Phase II is the final stage of reclamation. A contract was awarded to Eastern Demolition and Recyclers Ltd. of St. John's in August 2003. This next phase of activities was to include:

- Demolition of on-site buildings
- Clean-up of contaminated soil and rock fill
- Capping of mine shafts
- Construction of security fencing around the open pit
- General site rehabilitation.[26]

This Phase is 80% complete. The work force was made up of 34 local people from Burgeo and Port au Basques employed as equipment operators, labourers and camp support personnel. There is very little treatment such as seeding as the site is comprised of mostly granite outcrops.

---

[25] Werniuk, Jane. "Back to Nature", *Canadian Mining Journal*, December 2001.

[26] Government of Newfoundland Press Release, August 4, 2003. "Hope Brook Tender Contract Awarded". Available online: http://www.gov.nf.ca/releases/2003/mines&en/0804n03.htm .

4.2 SOAB Creek Mines, INCO, Thompson

Soab North Mine site is located 67 km. south of Thompson and the South Mine site is 70 km. south of Thompson. Both mines produced nickel ore from 1969-1971 for INCO Thompson, however neither produced mine tailings. Mine closure plans for both sites were submitted to the Manitoba Industry, Trade and Mines department in October 2000 and were approved.

Soab North

The Acres Group provided the engineering work and Saskcon Repair Services Ltd. (Saskatoon) was contracted to do the decommissioning. The local Thompson sub-contractor was Smook Brothers. Prior to the start of work, INCO removed the underground stationery equipment, capped and sealed the mine openings and allowed the mine to flood in 1982, and in 1994 an Acid Rock Drainage (ARD) study was initiated.

During 2001 and 2002, the following activities were completed[27]:

- Buildings and infrastructure was demolished
- Concrete caps on shafts, stopes, etc.
- Surface pipelines were purged & removed; buried pipelines were purged and cut off to remain in-ground
- Hydro poles and transmission lines were removed
- PCBs and contaminated soils were removed
- Mine site, parking lot and roads were scarified and re-vegetated by mechanical seeding or hydroseeding
- Waste rock dumps were graded, contoured and covered with an engineered cover

Monitoring must be done by INCO for 5 years post-closure for physical stability, water quality and vegetation sustainability. Re-vegetation will be monitored in the spring and fall to assess erosion control and vegetation success. Site physical stability will be monitored to verify continued integrity of shaft caps, and a visual inspection of the waste dumps stability will be done. Water quality monitoring includes groundwater and surface water monitoring in the spring and fall. The Soab Creek bed will be sampled once per year. A lysimeter has been installed in the Waste Dump to monitor the waste rock cover's integrity. INCO usually hires a summer student to undertake the water quality monitoring, in conjunction with carrying out community air quality monitoring. The student receives on the job training.

In 2003 an innovative and creative program was carried out in partnership with the Environmental Youth Centre of the Thompson Boys and Girls Club. The partners/sponsors included The Manitoba Metis Federation, Manitoba Education and Training, INCO Ltd., Thompson Neighbourhood Renewal Corporation, and The Thompson Zoological Society. A seven week training course for ten youth at risk was held. Training was provided in:

- Tree planting skills

[27] D. McDonald, Environment Coordinator. *2001 – 2002 Soab North Mine Closure Progress Report*, INCO Ltd., Jan. 26, 2003

- Safe handling and maintenance of tools
- Forestry stewardship
- Compass and GPS use
- Some GIS mapping through the Manitoba Conservation offices
- First Aid and CPR training
- Resume writing workshops

As part of this program, the youth planted over 36,000 trees at the Soab North Mine site, borrow sites and clear cut areas identified by Manitoba Conservation, and specific locations at Paint Lake. It is hoped that this program can be repeated in 2004 for the Soab South Mine site.

Soab South

This mine site is larger than the North site with considerably more infrastructure. In 2001 and 2002 several buildings were demolished and removed; power-lines and poles were removed (except for site lighting); pipelines were removed and PCBs were removed[28]. The 2003 plan included continued building demolition and removal, scrap metal recycling of scrap, abandoned vehicles, steel siding, etc. This work was tendered out, with the winning contractor being Rakowski Cartage and Wrecking Ltd. due to experience and price. The work required specialized equipment and operators using a steel crusher/baler, and extensive blasting work.

Acres has been hired to assess the contamination of the site and to develop remediation plans to deal with any acid generating rock. This is highly technical work carried out by engineers and technologists.

The final phase will include re-contouring the land, adding soil and re-vegetating the site, as well as the same monitoring program as for the North Mine site.

4.3 Bluebell Mine, B.C.

The Bluebell Mine is located on the shores of Kootenay Lake in southeastern B.C. It is currently owned by Teck Cominco Ltd. It was a lead, zinc and silver mine first discovered around 1820, and was operated by various owners until its closure in 1972. Cominco Ltd. acquired the surface and mineral rights in the 1930s and ran a mine and concentrator from 1952 to 1972. "The mine was reclaimed to the standards of the day upon closure. In 1997, Cominco initiated a series of phased investigations to identify potential environmental and public safety issues at the site."[29]

Morrow Environmental Consultants Inc. was hired in 1997 to undertake an Environmental Site Assessment in order to prepare a remedial program to improve the environmental quality of the site. Of particular concern were waste rock dumps, deposits of residual tailings and concentrates in Galena Bay, and deposits of sediments from mine water discharged during the operation of the

---

[28] D. McDonald, Environment Coordinator. *2001-2002 Soab South Mine Closure Progress Report*. INCO Ltd., Jan. 26, 2003

[29] B.J. Donald, W.J. Kuit and N.L. Sandstrom. "Bluebell Mine – Remediation of a Historic Mine Site". *Proceedings of the 25th Annual British Columbia Mine Reclamation Symposium*, Campbell River, B.C., 2001. pg. 182 Available online: http://www.trcr.bc.ca/docs/2001-donald-kuit-sandstrom.pdf

mine. Surface and groundwater quality were also of concern. Extensive sampling of creek, lake and groundwater, fish, soil and sediments was done, followed by analysis and additional environmental monitoring. Morrow also coordinated the work of other consultants on aquatic environmental assessment, beach design, ARD characterization work, mineralogical examination and geophysical surveys.

Phase I of the remedial work was on contaminated soils on the terrestrial portion of the mine site. ARD-generating residual tailings were removed and trucked to Teck Cominco's Sullivan Mine tailings facility for management and treatment. Mine water sediments and waste rock (largely limestone) "were removed from the wet meadow adjacent to the Galena Bay millsite and used to fill a large open pit referred to as 'the Glory Hole'".[30] Remedial work was conducted in the fall/early winter of 2000.

Phase II focused on foreshore remediation of Galena Bay and Bluebell Bay. Excavators removed contaminated material to 0.5m below low water levels at Bluebell Bay and to roughly 2m below low water at Galena Bay. A rip-rap beach was constructed at Bluebell Bay. An engineered self-cleaning beach was built of pit-run gravel to 5m below low water levels, and capped with 1m of angular rock. "At Bluebell Bay, a single floating barrier was used to control the expected small increases in lake water turbidity generated by remedial work. At Galena Bay, two floating silt barriers and a log wave break spanned the bay."[31]

Comprehensive monitoring of water quality – both groundwater and lake and creek water – will be continuing for several years. Re-vegetation plans will also be implemented.

These studies illustrate the high level of technical expertise required in preparing remediation and/or reclamation plans. This is almost always done by engineering consultants such as Acres, AMEC, Golder and Associates etc. who have varied technical knowledge in all aspects of remediation. The case studies also show the skilled occupations found within this type of project, especially demolition, excavation and heavy equipment operation. The on-going water and soil sampling required under mine reclamation regulations can be done by people trained by the mining company, however the work is not full-time or of a continual nature (i.e. sampling done in spring and fall).

5. Case Studies – Industry/Aboriginal Partnerships in Resource Extraction Sectors

As northern Manitoba's population is 68% Aboriginal, the study team looked at cross Canada examples of partnerships between industry and Aboriginal organizations for training and employment. The focus here was not limited to the reclamation phase of a project, but was broadened to include all phases of resource extraction projects.

---

[30] "Case Study – Bluebell Mine: Remediation of a Historic Mine Site". *Teck Cominco Ltd. 2002 Sustainability Report.*
http://www.teckcominco.com/articles/environment/sr2002/part5/blue/bluebell.htm

[31] B.J. Donald et al. pg. 191

5.1 Falconbridge, Raglan Agreement

Falconbridge Limited develops mine sites for various types of metals and minerals. The Raglan Site is a nickel mining and concentrating facility located in the north Nunavik region of Quebec. "A key component in the successful development of the Raglan project is the ongoing partnership with the Inuit community…"[32]

The result of this partnership was the signing of an agreement between Falconbridge and the Inuit community in 1993 that addressed environmental concerns, Inuit employment, training and entrepreneurial issues. It was found that "although many Inuit wished to maintain their traditional hunting and fishing pursuits, many also wished to develop their communities and expand into a wage-based economy that would allow for greater diversification and lower dependence on government employment and benefits."[33] As part of the agreement, Falconbridge provided training to residents in the nearby Inuit community.

Falconbridge developed a two-phase, site specific local training and employment strategy. Phase One consisted of a study that was conducted to evaluate the "…labor potential and local Inuit labor supply."[34] This phase also involved identifying approaches and funding sources for training. Phase Two "…analyzed job descriptions and Inuit labor skills…"[35] Through analysis of the studies it was evident that the largest obstacle was the low basic education level of many of the community people. In order to overcome this, a Regional Training Program was developed to "…provide a range of programs including academic upgrading, languages, orientation and safety, common core mining skills, operations and maintenance, train-the-trainers programs, and trades-leading-to certificate programs."[36] Falconbridge also sponsored mining-related education programs for children in their schools.

The result of these training programs was that there is a higher percentage of Inuit people employed at the Raglan site (approximately 20% of the total workforce). The positions that are held by the Inuit range from heavy equipment operators and truck drivers to custodians and geological assistants.

5.2 Syncrude Canada Ltd., Alberta

Syncrude has steadily built up a partnership relationship with the Aboriginal communities of northern Alberta. Early in the 1990s Syncrude changed its policy to reflect the "position that the local aboriginal community was entitled to share in the opportunities that Syncrude generates."[37] This led to the development of local Aboriginal businesses and contracting work out specifically to those businesses. A $30 million annual target was set in 1992 and achieved in 1994.

---

[32] Sebellin and Ross, "White Paper – The Raglan Project," *Falconbridge: The Raglan Project*. < http://www.sebellin-ross.com/graphics/white%20paper%20-%20Falconbridge.pdf> (February 2004).

[33] Sebellin and Ross, p. 3.

[34] Sebellin and Ross, p. 5.

[35] Sebellin and Ross, p. 5.

[36] Sebellin and Ross, p. 5.

[37] Carter, Jim. "Breaking New Ground: Syncrude's Partnerships with Aboriginal People". *Resource Expo 2002: Business Agreements for Profit.* 3 December 2002. Available online: <http://www.syncrude.com/investors/speeches14.html > 17 March 2004.

By 2001, the value had reached $92 million in business with Aboriginal-owned companies[38]. The range of services included:

equipment operators	construction
mechanical maintenance	electrical expertise
environmental monitoring	tree planting
land reclamation	waste management
custodial services	welding & steel fabrication

Examples of Aboriginal businesses serving the oil and gas industry are many and varied. We provide 3 examples here that show different types of companies that have gone on to be successful in providing services to companies beyond just Syncrude.

E3 Services Inc.

- Owned by members of the Mikisew Cree First Nation
- Started with 12 employees in 1994; by 2001/02 had 110 employees
- Provides construction and maintenance services in the electrical, instrumentation and environmental monitoring fields

Denesolene Environmental

- Operated by the Athabasca Chipewyan First Nation
- Provides waste management & janitorial services
- In 2001, contract work with Syncrude was $2.7 million
- Grew from 7 employees in 1993 to 200 employees in 2002
- Spawned 2 subsidiaries: Canadian Aqua Jetters – high pressure water cleaning of equipment; and Aqua Sonics – ultrasonic technology proprietary to the FN to clean process equipment at Syncrude's upgrading operation. (http://www.aboriginalbiz.com/Portal%20assets/ab_review2002.pdf)

[38] Syncrude's 2002 Aboriginal Review. Available online at: <http://www.aboriginalbiz.com/Portal%20assets/ab_review2002.pdf> 17 March 2004.; and Jim Carter, "Breaking New Ground". December 2002.

Neegan Development Corporation Inc.

- Heavy equipment contractor and construction services in the Fort McMurray area
- Owned by David Tuccaro, an Aboriginal entrepreneur who aims at 80% Aboriginal employment in all his varied companies "to create opportunities for aboriginal people at every level of education and every level of employment" (www.nabacanada.com/Executive.htm)
- Services provided to Syncrude included earth moving, tree clearing & ground excavation
- Grown to serving a variety of clients in the Fort McMurray area
- Currently employs over 100 people, with sales close to $10million.

In addition to assisting the establishment and development of Aboriginal businesses, Syncrude has increased their direct employment of Aboriginal people from 575 in 1997 to roughly 700 in 2001 (10% of their direct workforce; 13% of employees plus contractors).[39] Syncrude requires their employees to have attained Gr. 12 or the General Equivalency Diploma, and pass a pre-employment test. To assist Aboriginal and northern candidates seeking employment, Syncrude participates in the following preparatory programs[40]:

- Community Co-Operative Apprenticeship
- High School Registered Apprenticeship
- Gr. 12 Career Preparation Program
- Aboriginal Accounting Internship
- ATC Apprenticeship Program

In addition, Syncrude along with other oil sands developers, Alberta-Pacific Forest Industries, and the provincial and federal governments signed a Capacity Building Agreement in 1999 with the Athabasca Tribal Council. The agreement was about building partnerships between Aboriginal people, industry and government on issues such as the environment, employment and training, and human and physical infrastructure[41].

5.3 Mistissini Cree – Quebec

The Mistissini Cree signed an agreement with Inmet Mining Corporation in regards to the Troilus Lake Mine. The Troilus Lake Mine is a gold and copper mine located on traditional Cree hunting ground in Northern Quebec. The agreement, which was signed in 1994, allowed Inmet to "…proceed with the construction phase of the project."[42] One of the conditions of the agreement was that employment opportunities would be provided for Cree workers. This included "a minimal workforce target of 25 percent Crees, training measures and an employment liaison office."[43]

---

[39] Syncrude's 2002 Aboriginal Review.

[40] Syncrude's 2002 Aboriginal Review.

[41] Jim Carter, "Breaking New Ground", December 2002.

[42] Sub-committee of the Intergovernmental Working Group on the Mineral Industry, "Report on Aboriginal Participation in Mining," *Eighth Annual Report – Increasing Knowledge*, July 1997, < http://www.ainc-inac.gc.ca/ps/nap/aboparmin8_e.PDF> (February 2004).

[43] Sub-committee on the Intergovernmental Working Group on the Mineral Industry, July 1997.

Some of the measures that have been taken to ensure that this agreement is successful include (as described in the 'Report on Aboriginal Participation in Mining'):

- Modifying job descriptions to eliminate language and education barriers that may handicap the Crees;
- Adapting the job interview process to fit the Cree culture and historical realities (including language barriers and lower levels of education);
- "Crees were given first consideration when they met the employment requirements";
- Heavy Equipment Courses and an off-road truck driving course were offered in 1996.
- A work schedule has been developed that will allow Cree workers to pursue traditional activities (the first group work a 4/3 schedule (four days on and three days off) and the second group work a 7/7 schedule).[44]

"The Mistissini/Inmet agreement provides a proven blueprint of employment and opportunities for others to follow. …it is proof that economically viable, socially and environmentally responsible development can co-exist with Aboriginal people on their traditional land."[45]

5.4 Ekati Diamond Mine - Northwest Territories

Operated by BHP Billiton Diamonds (BHPB), the Ekati Diamond Mine is located in the Northwest Territories (approximately 300 kilometres northeast of Yellowknife and 200 kilometres south of the Arctic Circle). Northern resident and Northern Aboriginal resident employment targets were set by BHP Billiton as part of a Socio-Economic Agreement. As of July 2003, Northern residents represented 55.3% of the total employment while indigenous Northern Aboriginal residents represented 28.4% of the total employment.

According to the BHP Billiton Annual Report on Northern and Aboriginal Employment, positions fall into four basic job categories. These categories are:

1. Professional: "Work for the position requires a university degree, e.g. Accountant, Engineer, Geologist".
2. Skilled: "Work for the position requires a College/Technical School diploma, certification in specialized trades, e.g. Surveyor, Technician, Administrative Assistant."
3. Semi-skilled: "Work for the position requires a GED and related work-experience, e.g., Equipment Operator."
4. Unskilled: "Work for the position is non-specialised; GED is preferred, e.g., Helper."[46]

---

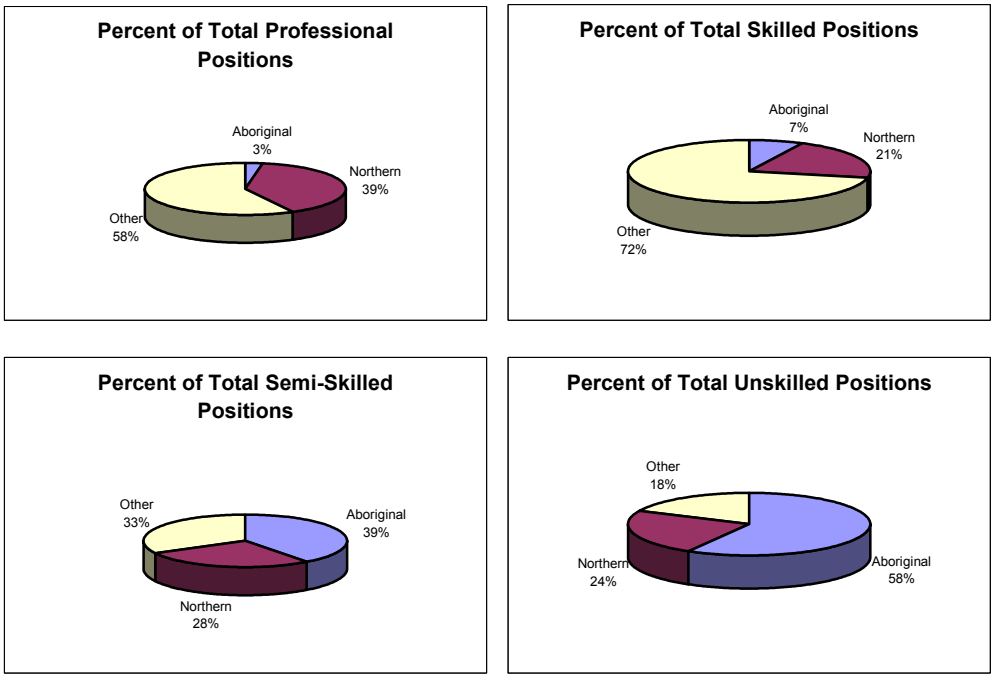
[44] Sub-committee on the Intergovernmental Working Group on the Mineral Industry, July 1997

[45] Carole Belhumeur, "The Troilus Lake Mine – Co-operation Produces Successful Relationship," *Native Journal* 6, no. 2 (February 1997): 17.

[46] BHP Billiton, "Annual Report on Northern and Aboriginal Employment – 2002 Operational Phase," *BHP Billiton Diamonds Inc*, 2002, < http://ekati.bhpbilliton.com/docs/2000SEAReportEmployment.pdf> (February 2004).

As illustrated in Figure 8 the majority of the jobs that are held by northern and northern Aboriginal residents are in the semi-skilled and unskilled labour category. BHBP has found that they are "…not able to find a sufficient number of qualified Northern or indigenous Northern Aboriginal Residents who have the right skill-sets to fill many of the Professional and Skilled positions."[47] Refer to Appendix C for a listing of position titles and skill ranking (according to BHP Billiton Diamonds Inc.).

Figure 8 – Workforce by Job Category for BHP Billiton



However, there has been an increase in the number of Northerners holding semi-skilled jobs because of employee successes in training and education programs that are supported by BHP Billiton. One such program is the Workplace Learning Program which provides employees with an opportunity to upgrade their literacy skills. Some essential skills that are enhanced through this program include: reading, writing, math and oral communication.[48] Upgrading these skills also helps to make it possible for workers to succeed at correspondence or trades courses. BHP Billiton also provides support for students in Apprenticeship and Post Secondary Studies by offering scholarships, co-op and summer positions. The goal of these training programs is to provide "…a culture of learning founded on principles of respect and co-operative learning."[49]

[47] BHP Billiton, 2002.

[48] BHP Billiton, "Workplace Learning Program," *Ekati Diamond Mine*, < http://ekati.bhpbilliton.com/docs/WorplaceLearning.pdf> (February 2004).

[49] BHP Billiton, "Workplace Learning Program".

5.5 Northern Saskatchewan Multi-Party Training Plan

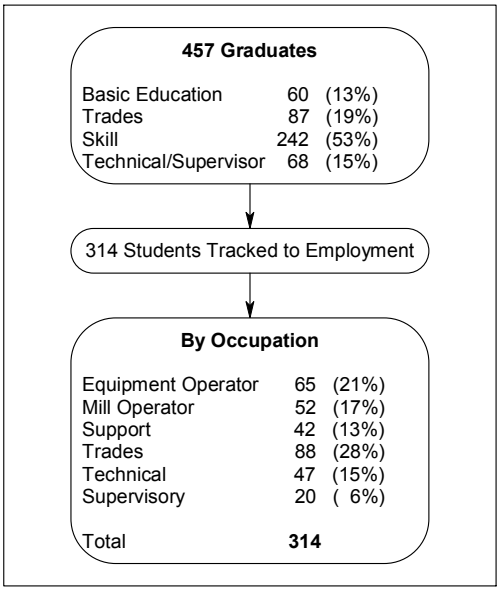
Northern Saskatchewan's Multi-Party Training Plan (MPTP) had its origins in northern Saskatchewan's Human Resource Development Strategy of the mid 1980s. While this strategy was a significant step forward for northerners to gain employment in the mining sector,

> it had become apparent that effective training for apprenticeship and other high-skill positions in the mining industry could not be offered through programs developed for one mining operator at a time.[50]

Collaboration amongst all involved groups was necessary. This led to the development of MPTP I by the Mineral Sector Steering Committee, a sub-committee of the Northern Labour Market Committee. The Saskatchewan Office of Northern Affairs took the lead guidance role in the consensus-building process; and the mining industry took the lead in the Steering Committee. "Collaboration among northern Aboriginal authorities – First Nation and Métis – was the key to achieving a viable partnership."[51]

There were 710 people who entered the training program between 1993 and 1997. Of those, 562 people completed training programs and 457 achieved graduation. Figure 9 illustrates the training programs of the graduates, and those who found employment.

Figure 9 - Saskatchewan Multi-Party Training Plan Phase I (1993-1997)



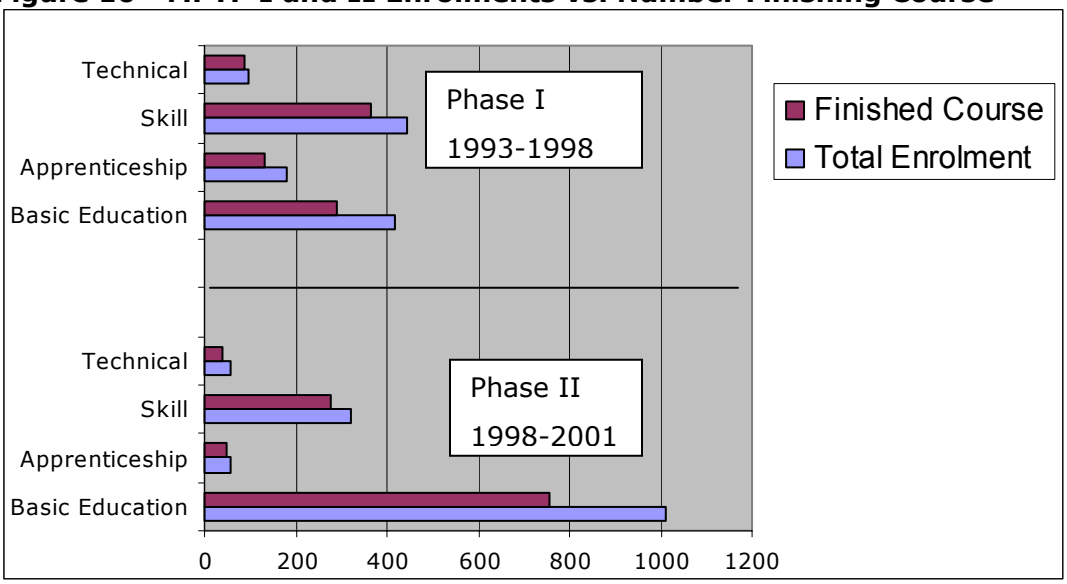
(Source: Northern Labour Market Committee. *Summative Evaluation of the Multi-Party Training Plan 1993-1998.* Business Advisory Services, College of Commerce, University of Saskatchewan. http://collections.ic.gc.ca/training/frame/execontents.html)

[50] Northern Saskatchewan Mineral Sector Steering Committee. *Report on Multi-Party Training Plan Phase II.* 26 February 2003, pg. 5

[51] Northern Saskatchewan Mineral Sector Steering Committee. February 2003.

Due to the success of MPTP I, a Second Phase (MPTP II) was developed as a continuation of the process. The focus of Phase II was broadened to include greater emphasis on Basic Education, preparation for employment and workplace education. Figure 10 shows a comparison between Phases I and II for Enrolments vs. Numbers Finishing the courses. (It should be noted that enrolment does not equate to individuals, as several people enrolled in more than one program.) For a list of courses in the various training categories, please refer to Appendix D. It is evident that technical training, skill training and apprenticeship training enrolments have declined, while Basic Education training increased significantly. According to Saskatchewan Learning, as of December 10, 2003, approximately 70% of the enrolments were in the Basic Education and Workplace Education programs. Phase I and Phase II had the same success rate of 77% of those enrolments who finished their courses.

Figure 10 - MPTP I and II Enrolments vs. Number Finishing Course



(Source: Northern Labour Market Committee. *Summative Evaluation of the Multi-Party Training Plan 1993-1998.* Business Advisory Services, College of Commerce, University of Saskatchewan. p.15. http://collections.ic.gc.ca/training/frame/execontents.html)

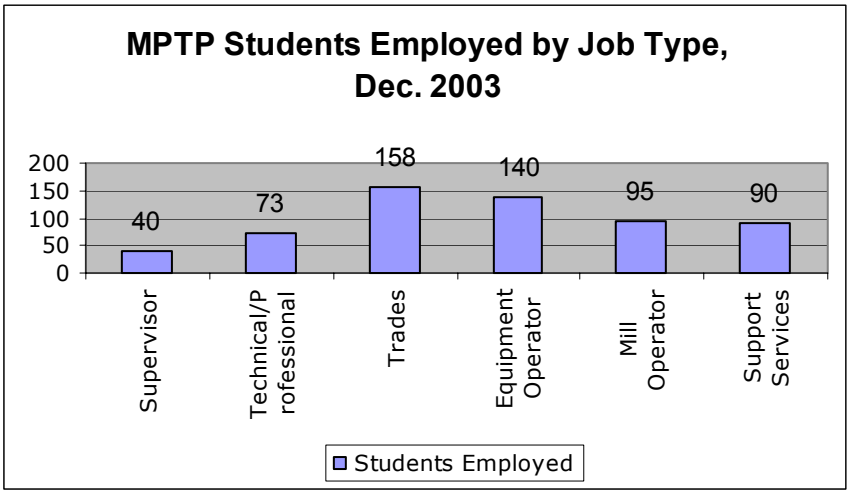
Over the 10 year period of these MPTP programs, 1,935 individuals undertook some form of training. Of those, 1,062 individuals (about 55%) were successful in finding employment at mines, with construction trades or with mine contractors. Of those, 596 were still working at the end of 2003[52]:

- 314 northern employees with mines; 108 non-northern employees with mines
- 105 with mining contractors
- 15 with construction companies, and
- 54 with other employers

[52] Saskatchewan Learning, Northern Region Office, La Ronge. *Report on Multi-Party Training Plan: For the Mineral Sector Phase I and II.* 1 March 2004. There was also a downturn in the mining industry as a whole during this second phase, which also contributed to a lower percentage of individuals finding and retaining employment.

Figure 11 shows the breakdown of these 596 people by job position.

Figure 11 - MPTP Students Employed as of Dec. 2003 by Position



(Source: Saskatchewan Learning, Northern Region Office, La Ronge, *Report on Multi-Party Training Plan Phase I and II.* 1 March 2004.)

As listed in the Report on Multi-Party Training Plan Phase I and II, some general conclusions include:

- Workers from Northern Saskatchewan form 51% of the total workforce, up from 42% in 1992 (before MPTP)
- 82% of the northern workforce is estimated to be of Aboriginal ancestry, reflecting the demographics of the region. The Aboriginal workforce has increased to an estimated 700 workers, making up 42% of the total workforce at mine sites in northern Saskatchewan.
- 1,213 training certificates were awarded in apprenticeship, technical, and skills training and in academic and workplace upgrading. A further 1,477 of those enrolled completed their courses, resulting in an overall graduation/completion rate of 83%.
- Since MPTP commenced in 1993, the proportion of northern mining company workers has grown in all skill categories.[53]

In October 2003 Phase III was agreed on, with a further $13.7 million to be spent on the training plan, provided by 14 partnering agencies: Apprenticeship and Trade Certification Commission; Northlands College; Prince Albert Grand Council; Meadow Lake Tribal Council; Methy Pathways Board Inc.; Northcote Métis Development Corporation; Métis Employment and Training (Beauval); Jim Brady Employment and Training Centre; Cameco Corporation; Claude Resources Inc.; COGEMA Resources Inc.; Saskatchewan Learning; Saskatchewan Northern Affairs; and Saskatchewan Community Resources and Employment.[54]

---

[53] Saskatchewan Learning, Northern Region Office, La Ronge, 1 March 2004.

[54] Government of Saskatchewan News Release. October 8, 2004. "Third Five-Year Multi-Party Training Plan Agreement Signed". http://www.gov.sk.ca/newsrel/releases/2003/10/08-782.html

Phase III will include more emphasis on school-focused initiatives to improve students' academic success in northern schools. It was also recommended that more effort be put on increasing the number of northerners involved in various Trades due to the nature of flexibility and mobility of skills; and to efforts to support, educate and mentor emerging northern enterprises through the establishment of a Business Development Centre in the North.

5.6 Saskatchewan's TEAM plan for Forestry

Following the success of the mineral multi-party plan, a Training-to-Employment Assessment Model (TEAM) was established for the Forestry sector. In 1994 the Forestry Training Sub-committee was formed as a working partnership between the forestry industry, government agencies, Northlands College and the Woodland Campus of the Saskatchewan Institute of Applied Science and Technology (SIAST). This Sub-committee allocates roughly $1 million of funding on training and other initiatives in the forestry sector[55]. Some of the training or employment initiatives supported to date include[56]:

- Vocational forestry worker program at Cumberland House – 12 students/$45,000
- Sawmill training at Dillon – 30 participants/$50,000
- Non-traditional curriculum material for forestry heavy equipment training – 70 participants/$48,000
- Mechanical harvesting and log building construction at Buffalo Narrows – 8 participants/$60,000
- Supervisory training, mechanical harvesting, log hauling and sawmill technician training in La Ronge and area – 20 participants/$188,000

Examples of some of the core training initiatives found within the TEAM plan include:

- Orientation to employment and life skills
- Academic upgrading, including math, science, computer and technologies
- Pre-employment skill development
- Mill operation
- Apprenticeship and trades
- Safety
- Supervisory department
- Office, clerical skills and accounting
- Management and Administration; Marketing and Communication

5.7 Manitoba Hydro

Hydro development in northern Manitoba could also be a significant source of training and employment opportunities if the current proposed network of dams at Wuskwatim, and Keeyask (and potentially Conawapa) proceed to the development stage. In anticipation of this, a partnership between Manitoba

---

[55] Aboriginal Human Resource Development Council of Canada. October 2001. *Training-to-Employment Assessment Model: A Human Resource Model to Increase Aboriginal Participation in the Forestry Sector.* Prepared by Kitsaki Management Limited Partnership. http://www.ahrdcc.com/en/view.php?page=the_first_forestry_multi-partner_training_strategy

[56] Aboriginal Human Resource Development Council of Canada. October 2001.

Hydro, the Government of Canada and the Government of Manitoba on a Hydro Pre-Project Training Initiative is being developed.[57] The aim is to prepare over 800 northern Manitobans, particularly First Nations and Aboriginal people, to be qualified to compete for potential construction-phase jobs through skill development training and long-term capacity building. The categories of jobs include:

- Designated trades: Carpenters, Electricians, Iron Workers, Millwrights, Plumbers/Pipefitters and Heavy Duty Mechanics[58]
- Non-designated trades and Construction Support: Clerical, Catering, Heavy Equipment Operator, Skilled Labourer, Security Guards, Equipment Sector and Teamsters[59]
- Professional/Technical: Civil Engineering Technician, Management and Accounting Skills, etc.

The emphasis would be on community-based training through partnerships with public and private organizations such as community Adult Learning Centers, Keewatin Community College, Carpenters Union, Teamsters Union, Manitoba Heavy Construction Association etc. The training delivery model would provide a continuum of life skills and training:

- Life skills, literacy skills and academic upgrading
- Special Mature Student High School Diploma
- Career and employment planning
- Trades, apprenticeships and support services training
- Professional and technical training

The Pre-Project Training Initiative would also assist northern Manitobans in completing the work experience requirement to work on dam construction, through partnerships with local communities and employers. For example, Hydro requires that employees who wish to work on dam construction have a minimum of 2 years work experience for non-designated trades.

A Pre-Project Training Initiative fund is targeted at $60 million, $38 million of which is confirmed: Hydro ($20 million); Government of Manitoba ($10 million); Government of Canada – Western Economic Diversification Fund ($5 million); and INAC (over $3 million).

In May of 2004, the Government of Canada announced that $22 million (over the next four years) would be contributed towards the Manitoba Hydro Northern Training and Employment Initiative. The agreement made states that a training consortium[60] will "deliver the training and skills development that will enable Aboriginal peoples in northern Manitoba to acquire transferable skills and take

---

[57] Government of Manitoba Press Release. "Province Announces $10 Million for Hydro Development Training", March 13, 2003. http://www.gov.mb.ca/chc/press/top/2003/03/2003-03-13-05.html

[58] Government of Manitoba, Advanced Education and Training, Power point presentation. Available on-line: www.keewatincc.mb.ca/news/Northern%20Manitoba%20Development%20Strategy.ppt

[59] Government of Manitoba, Advanced Education and Training

[60] The Wuskwatim and Keeyask Training Consortium includes: Nisichawayasihk Cree Nation, Tataskweyak Cree Nation, War Lake Cree Nation, Fox Lake Cree Nation, York Factory First Nation, Manitoba Metis Federation, Manitoba Keewatinowi Okimakanak, Manitoba Hydro and the Province of Manitoba.

advantage of hydroelectric development employment opportunities throughout the province's north."[61] The remainder of the funding is currently awaiting federal government review.

5.8 La Paix des Braves (The Peace of the Braves), Quebec

Signed on February 7, 2002 la Paix des Braves is an agreement between Quebec and the Quebec Cree Nation. This nation to nation agreement will last for 50 years and "…will ensure a new phase of economic, social and community development in the James Bay region."[62] This agreement has three purposes:

- "the establishment of a nation-to-nation relationship between Quebec and the Crees;
- the economic and community development of the Cree nation;
- and the efficient management of the natural resources of the Nord-du-Quebec region."[63]

This agreement involves several industries in the natural resource extraction sector including: hydroelectric development, forestry and mines. La Paix des Braves addresses each sector individually however, there are some common themes across sectors such as inclusion of Crees in feasibility studies and decision making processes, and trying to provide greater opportunity for employment of local peoples.

One example is the agreement with Hydro Quebec. La Paix des Braves outlines three major agreements with Hydro Quebec: the development of the Eastmain project (hydroelectric development), the involvement of Crees in environmental and social impacts assessment and a Cree Employment Agreement. The Employment Agreement aims to create 150 permanent positions for Cree by 2017. The positions would be primarily in four disciplines: automation electronic technician, telecommunications technician, apparatus electrician and apparatus mechanic.[64]

Information on the effect of La Paix des Braves agreement on other resource extraction sector industries can be found in the summary and technical sheets.[65]

---

[61] Government of Manitoba New Release. "Government of Canada announces funding for the Wuskwatim & Keeyask Manitoba Hydro Northern Training and Employment Initiative under the Aboriginal Skills and Employment Partnership Program," (18 May 2004).

[62] Secretariat aux affaires autochtones, "Historic Agreement Between Quebec and the Crees: The Peace of the Braves Opens the Way to New Cooperation and a new Era of Prosperity for the James Bay Region," *Quebec Portal*, 7 February 2002, < http://www.cex.gouv.qc.ca/w/html/w2057002.html> (10 March 2004).

[63] Michel Letourneau, "Speech given during the European Tour," *Ministry of Native Affairs and the Development of Northern Quebec*, (16 November 2002), < http://www.cpsu.org.uk/downloads/Discours%20L%e9tourneau-Eng.PDF> (10 March 2004).

[64] Hydro Quebec, "Presentation given on Cree-Hydro-Quebec Agreements", Presented at the *Old Relationships or New Partnerships: Hydro Development on Aboriginal Lands In Quebec and Manitoba* Conference, University of Winnipeg (23 February 2004).

[65] Available online at: http://www.cex.gouv.qc.ca/w/html/w2057002.html

6. Training and Educational Programs

> "Aboriginal Canadians will constitute an increasing proportion of the regional labour force over the coming years and, given that many indicators forecast an upcoming labour shortage in western Canada, ensuring that Aboriginal Canadians possess the educational training and skills necessary to compete successfully in the labour force is one of western Canada's most important challenges."
>
> (Canada West Foundation, *Working Towards Parity: Recommendations of the Aboriginal Human Capital Strategies Initiative.* Building the New West Report #24, February 2004.)

A review of the literature and Stats Canada data (as discussed in Section 3.2) indicates that many northern Aboriginal, Metis and First Nation people lack necessary academic and employability skills to enter a variety of training programs. Manitoba Advanced Education and Training (MAET) provide significant funding for Adult Learning Centres (ALC) scattered throughout the province (see Appendix E for a list of northern ALCs). These centres offer basic literacy and numeracy skills training, S1 – S4 programming, Prior Learning Assessment and Recognition, and Learner Support Services such as counselling, computer skills, resume writing and education and employment planning services.[66]

Those who have mastered or completed essential skills training, or have completed S2 through S4 education, may wish to pursue some type of specific employment training. Based on the information provided in Section 3.3 there are several opportunities in natural resource extraction industries. Examples of occupations available in mining, forestry and/or hydro were detailed in Table 1, Section 3.3.5.

By looking at these occupations and other employment opportunities identified through interviews and case studies, the study team summarized several categories of training programs within which most employment opportunities would fall. These categories are heavy equipment operators, designated trades, environmental monitoring and natural resource management. The focus on trades and equipment operators was recently highlighted in the Canada West Foundation report, *Tools of the Trade: An Inventory of Education and Skills Development Programs in Western Canada.*

"The data indicated that skills shortages are of the greatest concern to associations representing occupations in the Health and Trades, Transport and Equipment Operators categories."[67]

Some of the institutions that offer these types of programs are summarized in the following sections.

---

[66] Manitoba Advanced Education and Training. Detailed information is available online at: http://www.edu.gov.mb.ca/aet/all/index.html.

[67] Brunnen, Ben. Canada West Foundation. *Tools of the Trade: An Inventory of Education and Skills Development Programs in Western Canada.* Building the New West Project Report #38. November 2004, p.12. Available at: www.cwf.ca

6.1 Heavy Equipment Operator

Certificate programs for Heavy Equipment Operators (HEOs) and Heavy Duty Equipment Mechanics are offered at several educational institutions in Saskatchewan and Manitoba. In Manitoba, the Manitoba Heavy Construction Association also offers a training program for HEOs. The institutions and/or organizations that offer these programs are typically located in urban centres however, where the course is offered may be flexible. Additionally, Anokiiwin Training Institute is an Aboriginal-owned private vocational school that offers training programs that are community based, using the community's own equipment for both heavy equipment operator training, and maintenance. Table 3 provides a summary of some of the organizations that offer heavy equipment operator and/or mechanic training in Saskatchewan and Manitoba.

Training programs for heavy equipment operators typically take four to six weeks to complete. Heavy duty equipment mechanics programs can take significantly longer as they are usually an apprenticeship program. Most training programs require that students have a class 5 driver's license. Some programs also require the completion of specific high school courses. Refer to the referenced websites for more information on the admission requirements for each program.

These types of training programs offer a lot of hands-on instruction. As a result, the courses can be expensive (high fees are associated with rental of equipment). In order to reduce the cost of these courses, partnerships may be formed with organizations or communities. For example, in 2003 the Manitoba Metis Federation (MMF) partnered with Split Lake First Nation in order to offer the HEO course to 18 students (half were MMF students, half were Split Lake students). This program has been successful in placing all of the students with companies to complete on-the-job training.

Heavy equipment operators and mechanics are high demand occupations in Northern Manitoba. In order to try and address this demand, community-based Apprenticeship-training partnerships have been developed with aboriginal communities. Information about the partnerships that are occurring now or that are scheduled in the future is available from Manitoba Advanced Education and Training.[68]

One benefit of completing heavy equipment operator and/or mechanic training is that graduates have been successful in finding employment in several different industries including mining, forestry and construction.

[68] Addition information about Apprenticeship programs is available from Manitoba Advanced Education and Training (http://www.edu.gov.mb.ca/aet/learners/apprentices.html).

Table 3 - Heavy Equipment Operator and/or Heavy Equipment Mechanic Training offered in Saskatchewan and Manitoba

School/ Organization	Location	Program	Type of Program	Length of Program	Courses and Skills	Potential Jobs
Saskatchewan Institute of Applied Science and Technology (SIAST)	Prince Albert, SK (Woodland Campus)	Heavy Equipment Operator[69]	Applied Certificate Program OR Statement of Achievement	6 weeks (180 hours) – Applied Certificate 4 weeks (100 hours) – Statement of Achievement	Specialty courses offered in: backhoe, crawler tractor, excavator, front end loader, motor grader, motor scraper, and skid steer loader	Employment operating heavy equipment in the construction industry, pipeline and oil patches, forestry industry or rural municipalities
	Saskatoon, SK (Kelsey Campus)	Heavy Duty Equipment Mechanic[70]	Apprenticeship	4 year apprenticeship term 8 weeks/year – training at SIAST	Focus is on on-the-job training	During the apprenticeship training is provided under the supervision of a certified journeyperson
Saskatchewan Indian Institute of Technologies	Various locations located throughout SK	Heavy Equipment Operator[71]	Applied Certificate Program	Four to eight weeks depending on requirements of the client	Heavy Equipment Operations Preventative Maintenance Safety Orientation	Employment with First Nations and private contractors in a variety of operations using heavy equipment
Manitoba Heavy	Based in Winnipeg	Heavy Equipment	Certification	4 weeks	Provides training on: rubber tire/track loader,	Sidewalk, road or highway

[69] Additional Information on the Heavy Equipment Operator Program at SIAST is available online at http://www.siast.sk.ca/siast/educationtraining/appliedcertificate/industrialapplied/heavyequipop.htm

[70] Additional Information on the Heavy Duty Equipment Mechanic Program at SIAST is available online at http://www.siast.sk.ca/siast/educationtraining/apprenticeship/index.htm

[71] Additional Information on the Heavy Equipment Operator Program at the Saskatchewan Indian Institute of Technologies is available online at http://www.siit.sk.ca/PDFfiles/HeavyEquipOp.pdf

School/ Organization	Location	Program	Type of Program	Length of Program	Courses and Skills	Potential Jobs
Construction Association	(may offer at other locations in the province)	Operator Training[72]	Program		crawler tractor, hydraulic excavator, motor scraper, motor grader and compaction equipment	construction Sewer and watermain installation and repair Excavation works Subtrade work related to construction of bridges Crushing and aggregate work
Anokiiwin Training Institute	Winnipeg – offers community -based, custom training programs	Heavy Equipment Operator; Heavy Equipment Maintenance[73]	Custom designed program delivered in the community	2 – 6 months	Depends on the type of equipment available in the community	Heavy equipment operators; skills for preventative and on-the-job maintenance of community equipment
Keewatin Community College	The Pas, MB or Thompson, MB	Heavy Duty Mechanics[74]	Certification Program (Certificate of Attainment)	10 months	Offers courses that will aid in working on off-road trucks, construction and forestry equipment	Maintenance and repair of equipment Sales Parts departments Services writers and advisors
Winnipeg Technical	Winnipeg, MB	Heavy Duty Mechanics[75]	Apprenticeship	10 months	Courses related to heavy duty mechanics	Service and repair vehicles, machinery and equipment in

[72] Additional Information on the Heavy Equipment Operator Training offered by the Manitoba Heavy Construction Association is available online at http://www.mhca.mb.ca/shep/heot.htm

[73] Additional information on both programs offered through Anokiiwin Training Institute is available on line at: http://www.anokiiwin.com/learn/Training/CourseInfo.html

[74] Additional Information on Heavy Dutch Mechanics Training offered by Keewatin Community College is available online at http://www.keewatincc.mb.ca/Academic_Calendar_2003.pdf

School/ Organization	Location	Program	Type of Program	Length of Program	Courses and Skills	Potential Jobs
College						transportation, construction and agricultural industries
Red River College	Winnipeg, MB	Heavy Duty Equipment Mechanic[76]	Certificate Program	One year	Courses related to how to service and repair heavy duty equipment. May count as one level of training towards a four year apprenticeship program.	Repair heavy mobile equipment in construction, agriculture or transportation sectors
Assiniboine Community College	Brandon, MB	Heavy Duty Equipment Mechanic[77]	Apprenticeship	Four year apprenticeship (min. 1800 hours per level)	Related to how to service and repair heavy duty equipment.	Heavy duty equipment repair shops, major trucking and/or equipment providers

[75] Additional Information on the Heavy Duty Mechanics Training offered by Winnipeg Technical College is available online at http://www.wtc.mb.ca/index.cfm?pageID=57

[76] Additional Information on the Heavy Duty Equipment Mechanic Training offered by Red River College is available online at http://me.rrc.mb.ca/Catalogue/PrintProgramInfo.asp?ProgCode=IX

[77] Additional Information on the Heavy Duty Equipment Mechanic Training offered at Assiniboine Community College is available online at http://public.assiniboine.net/xDefault.aspx?tabid=61&mid=375&prgField=Description&prgID=%2059

6.2 Basic Industrial Training and Designated Trades

6.2.1 Basic Industrial Training

Keewatin Community College (KCC) at The Pas offers a **Basic Industrial Skills** program to introduce students to a variety of industrial jobs, at an entry-level position. Students wishing to enter this program should have Senior 3, English 30S and Pre-Calculus 30S, Applied Mathematics 30S or Consumer Math 30S or equipment (exceptions may be made for mature students). The program is a one year (36 week) full-time certificate program and includes a 4 week work experience placement. The program is split between 50% theory and 50% hands-on experience. Students would be able to apply for entry-level employment in the mining, forestry, hydroelectric and other resource-based industries. Details are available in KCC's Calendar, available at: http://www.keewatincc.mb.ca/Academic_Calendar_2003.pdf, Section 10.5 Basic Industrial Skills. Check with KCC to learn when the program will be offered.

The Manitoba Heavy Construction Association offers a 4 week **Skilled Labour** program that combines ½ day classroom training and ½ day hands-on training for entry level employment in the heavy construction industry. This program can be offered in northern communities. The skills covered include:

- Hand and Power Tools
- Workplace Safety and Health
- Environmental Awareness
- Shoring/Trenching
- Soils & Erosion Control
- Flagperson Training
- Load Securement
- Intro to Blueprints
- Stakes, Grades and Slopes
- Diesel/Gasoline Engines
- Basic Construction Math
- Worksite Violence, Harrassment & Conflict
- Life Skills
- Worksite Communication & Resume Writing
- Intro to Heavy Equipment Operation
- Hearing Conservation
- WHMIS
- TDG
- Fall Protection
- Ladder Safety
- Confined Entry
- Productivity
- Back Safety

Source: Manitoba Heavy Construction Association (www.mhca.mb.ca/shep/heot.html).

For entry into this program, students should have a minimum of Grade 10 or have functioning math, reading and comprehension at a Grade 10 level.

6.2.2 Designated Trades

Manitoba has 50 designated trades where students receive apprenticeship training. Detailed information is available through Manitoba Advanced Education and Training – Apprenticeship (www.edu.gov.mb.ca/aet/apprent/apprenticeshiptrades/mbtrades.html). Entrance requirements vary by the type of trade, however most require Senior 4 and all apprentices must be at least 16 years of age.

Some of the trades relevant to resource extraction industries are included in Table 4 as taken from the above website.

Table 4 – Manitoba Apprenticeship Trades

Manitoba Apprenticeship Trades				
Provincially Certified Trade	**Level**	**Total annual hours (on-the-job & technical training)**	**Technical Training (weeks)**	**Place of Delivery**
Industrial Electrician	4	1600	10-8-8-10	KCC
Industrial Mechanic	4	1600	8-8-8-8	KCC
Industrial Welder	3	1600	8-8-8	ACC
Machinist	4	1800	9-8-8-4	RRC
Heavy Duty Equipment Technician	4	1800	8-8-6-4	ACC
Truck & Transport Mechanic	4	1800	8-8-6-4	RCC
Carpenter	4	1800	8-8-8-8	RRC, ACC,KCC
Construction Electrician	4	1800	8-8-8-10	RRC,ACC
Ironworker	3	1800	8-8-8	RRC

ACC: Assiniboine Community College, Brandon

KCC: Keewatin Community College, The Pas

RRC: Red River College, Winnipeg

Community-based Aboriginal Apprenticeship Training

Manitoba's Advanced Education and Training (MAET) is also involved in developing community-based Aboriginal Apprenticeship Training programs in partnership with communities, technical colleges and other government departments. The program has focused on delivering "relevant training for short and long term human resource needs as well as to address immediate housing shortages."[78] First Nation Band Councils sponsor apprentices to receive technical training and on-the-job experience within their home community. The Apprenticeship Branch arranges and pays for the delivery of the course; and the

[78] Manitoba Advanced Education and Training. *Aboriginal Apprenticeship Training.* <http://www.edu.gov.mb.ca/aet/apprent/training_certificationprograms/aboriginalprograms.htm >

local Band provides tools, equipment and classroom/shop space. Examples of current partnerships include[79]:

- Carpentry certification at Pequis First Nation – 10 apprentices have completed Levels 1 and 2, and are currently in Level 3.
- Eleven apprentices in Norway House have completed their Level 4 Carpentry. Several others are working on their construction electrician apprenticeship training in Norway House.
- Seven apprentices are working on their Level 1 Plumber in St. Theresa Point First Nation.

The apprenticeship training programs link training with real-time employment opportunities for the apprentices to gain the necessary hours of experience required to move from level to level.

The provincial government recently announced an expansion of this program on November 2, 2004. Nine Aboriginal communities are working in partnership with the government in providing apprenticeship training on-site in the trades of carpenter, plumber and construction electrician.[80] The University College of the North is overseeing the delivery of this training program.

" [T]he province wants to ensure as many Aboriginal and northern Manitobans as possible are qualified to work on planned capital projects such as the expansion of the Red River Floodway and construction of northern generating stations."[81]

6.3 College and University Natural Resource Management

Throughout Canada there are a number of educational institutions that offer courses in reclamation and natural resource management. The skills that are obtained through these programs could be used in reclamation projects related to mining or other resource industries. Table 5 provides a summary of several examples of reclamation and natural resource management programs that are offered in Western Canada[82]. All of these programs are offered at the post-secondary level and require a high school diploma for entry (refer to referenced websites for a list of the pre-requisites for each program as some offer flexibility for mature students). Two years is the minimum time commitment for most of

---

[79] MAET. *Aboriginal Apprenticeship Training.*

[80] Manitoba Government Press Release. November 2, 2004. "Apprenticeship Training Programs Help Prepare Aboriginal Manitobans for Employment".

[81] Ibid.

[82]NOTE: a number of universities throughout western Canada offer general environmental degrees. Several institutions in Manitoba offer general environmental degrees including:

- Applied Environmental Studies Program (joint BSc/Diploma Applied Science Program with Red River College and the University of Winnipeg)
- Environmental Studies at the University of Winnipeg (BA and BSc programs)
- Environmental Science/Studies at the University of Manitoba (Bachelor of Environmental Science, Bachelor of Environmental Studies)
- Environmental Science at Brandon University (streams in Resource Management, Physical Sciences and Biodiversity)

These programs are not discussed here because they do not provide students with specific on-the-ground reclamation skills.

these programs and several, including the one at Red River College, take more than two years to complete. Courses offered are related to environmental quality and reclamation of sites. Skills that are learned through these courses can then be applied in various types of positions including reclamation technician, environmental technologists and soil and water technologists. Graduates can be found working in government and private industry positions.

Most of the programs summarized in Table 5 require the student to relocate to the community where the college and/or university is located, with the exception of the Restoration of Natural Systems program (University of Victoria) and the Integrated Resource Management program (SIAST) which is offered through Distance Education. The program at the University of Victoria offers courses as on-campus immersion courses, evening courses and distance education. However, this program is designed for professionals or people looking for a career change (if the student has no environmental background, they may be required to take additional biology and/or geography courses outside of the program) and therefore may not be suited for students with only a basic education.

One of the major benefits of taking a diploma and/or certificate course in natural resource management is that graduates have successfully found employment in various positions with different industries. This type of program can provide students with skills that may be transferable between industries and thus does not restrict the employment opportunities strictly to mine reclamation jobs. Many of these programs also allow the student to receive credit towards further education at Universities.

A program directed specifically to Aboriginal people is the Building Environmental Aboriginal Human Resources (BEAHR) - a joint effort to "address the gaps in environmental education and employment, thereby influencing greater participation of Aboriginal people in the environmental sector".[83] This project is relatively new (2003) and involves several initiatives[84]:

- Employer's Guide: to assist with recruitment and retention of Aboriginal employees.
- Environmental Monitors: document the skills, knowledge and attitudes of an Environmental Monitor and ensure they are transferable across Canada. National occupational standards will be the final result of this initiative.
- BEAHR Centre of Excellence: following the Institute for Tribal Environmental Professionals at Northern Arizona University, BEAHR is hoping to develop the first National Aboriginal Community-Based Environmental Training program in Canada.
- BEAHR School and Work Program: BEAHR is looking at partnering with colleges and Aboriginal communities to provide technician/technologist level environmental training. The training would include traditional

[83] Aboriginal Human Resource Development Council of Canada and the Canadian Council for Human Resources in the Environment. *Building Environmental Aboriginal Human Resources: Round Table Discussion Paper.* Available on line: http://www.ahrdcc.com/en/pdf/BEAHR(dp).pdf <February 2004>.

[84] BEAHR website contains details on all of their programming. http://www.beahr.com

ecological knowledge and a 4-8 month work term, in addition to existing environmental programs.

- Aboriginal EnviroCareers: an environmental job/career website for Aboriginal people to use in pursuing an environmental practitioners career.
- Contact information: BEAHR
  Suite 1450 – 700 4th Ave. SW
  Calgary, AB T2P 3J4
  (403) 233-0748
  Email: info@beahr.com

Table 5 – Reclamation and Natural Resource Management Programs offered at Institutions in Western Canada

School	Location	Program	Type of Program	Length of Program	Related Courses	Potential Jobs
Kwantlen College	Greater Vancouver, BC	Environmental Protection Technology[85]	Diploma Program	Two years (includes two paid co-op work terms).	Water and Soil Sampling Health and Safety of Contaminated Sites	Environmental Technologists (in industry or government)
University of Victoria	Victoria, BC	Restoration of Natural Systems Program[86] – Division of Continuing Studies	Diploma or certificate program (diploma if enrolled in the university, certificate if enrolled in the program only).	Two years if done through full-time study (normally require 2 years of university study before entering diploma program). Part-time study may take up to six years.	Field Study and Practicum in Environmental Restoration Mining Reclamation Soil Conservation and Restoration	Involved in restoration projects.
Olds College	Olds, Alberta	Land and Water Resources Diploma[87]	Diploma Program	Two years.	Land Reclamation Major Reclamation: Soils Reclamation: Vegetation	Land Reclamation Technician Reclamation Officer Research Technician Environmental Consultant
Lethbridge community	Lethbridge, AB	Environmental Assessment	Diploma Program	Two years.	Soil Resources	Environmental Technician

[85] Additional Information on the Environmental Protection Technology Program is available online at http://plaza.kwantlen.ca/sites/enviprot.nsf

[86] Additional Information on the Restoration of Naturals Systems Program is available online at http://www.uvcs.uvic.ca/restore/about_uvic.cfm

[87] Additional Information on the Land and Water Resources Diploma is available online at http://www.oldscollege.ca/careers/programs/Land_Water.asp

School	Location	Program	Type of Program	Length of Program	Related Courses	Potential Jobs
College		and Restoration[88]			Site Reclamation	Soil Technologist Environmental Compliance Officer Water Survey Technologist Resource Management Technician Pollution Prevention Officer
Lakeland College	Vermilion, AB Campus	Environmental Conservation and Reclamation[89]	Diploma Program.	Two years.	Revegetation Management Reclamation Compliance/ Field Methods Conservation and Reclamation Practicum	May be employed in: petroleum, mining, forestry and agriculture sectors. Reclamation Inspector Environmental Consultant Reclamation Technician
	Vermillion, AB Campus	Natural Resources Technology[90]	Diploma Program.	Two years.	Watershed management Field Skills	Field specialists – in the natural resource management field.
SK Institute of Applied Science and	Palliser Campus, Moose Jaw	Environmental Engineering[91] Technology	Diploma Program	One and a Half years schooling plus 8 months of	Environmental Monitoring Site Assessment and	Environmental Consultant Site Remediation and

[88] Additional Information on the Environmental Assessment and Restoration Program is available online at http://www.lethbridgecollege.ab.ca/dept/ENVISCI/ear.html

[89] Additional Information on the Environmental Conservation and Reclamation Program is available online at http://www.lakelandc.ab.ca/calendar/AcademicYear20042005/EnvConservationReclamation.html

[90] Additional Information on the Natural Resources Technology Program is available online at http://www.lakelandc.ab.ca/calendar/AcademicYear20042005/NaturalResources.html

School	Location	Program	Type of Program	Length of Program	Related Courses	Potential Jobs
Technology (SIAST)				co-op program	Remediation Groundwater and Soils Analysis Waste Management	Reclamation Environmental Auditing Environmental Engineering Consultants
SIAST	Woodlands Campus, Prince Albert and through Distance Education	Integrated Resource Management[92]	Diploma	One and a half years	Aboriginal Resource Rights Fish, Aquatic and Wildlife Management	Fish and Wildlife Technicians Park Interpreters
Red River College	Winnipeg, MB	Environmental Protection Technology (Department of Civil/CAD Technology)[93]	Diploma Program	32-month Co-operative education program.	Environmental Analysis Health and Safety	Employment with consulting engineering firms, resource-based industries, construction companies, inspection and testing agencies, governments and crown corporations.
Keewatin Community College, MB	The Pas, MB	Natural Resources Management Technology[94]	Diploma Program	Two Years	Various resource disciplines and field skills Environmental	Employed as technicians in government or private organizations – fisheries, wildlife, parks

[91] Additional Information on the Environmental Engineering Technology Program is available online at http://www.siast.sk.ca/siast/educationtraining/oncampusprograms/7261/5677/5851/index.shtml

[92] Additional Information on the Integrated Resource Management Program is available online at http://www.siast.sk.ca/siast/educationtraining/oncampusprograms/7263/5628/5854/index.shtml

[93] Additional Information on the Environmental Protection Technology Program is available online at http://www.rrc.mb.ca/civilcad/0304civilcadinformation.pdf

[94] Additional information on the Natural Resource Management Technology Program is available on line at http://www.keewatincc.mb.ca/Academic_Calendar_2003.pdf

School	Location	Program	Type of Program	Length of Program	Related Courses	Potential Jobs
					Assessment Fisheries, Wildlife and Forestry Management	Natural Resource Officers Environmental Technicians
Northlands College	Several campuses in SK	Forestry Training Programs[95]	Dependent upon the program	Dependent upon the program	Offered in response to employment needs of the industry. Areas that training may be offered in include: Integrated Resource Management Forest Ecosystem Management Conventional/ Mechanical Harvesting Supervisory Skills Tree Planting 1A Professional Driver (Log Haul) Small Scale and Portable Sawmill Operation and Maintenance	
Northlands College	Various campuses in SK	Mine Training[96]	Dependent upon the program	Dependent upon the program. Delivered in partnership with SIAST, NAIT, and SAIT. Facilitated through the Multi-Party Training Plan.	Exploration Technician Training Trades and Vocations Academic Preparation for Employment	Courses prepare northerners for occupations in all phases of the mining sector

[95] Additional Information on the Forestry Training Programs is available online at http://www.northlandscollege.sk.ca/page17.html

[96] Additional Information on Mine Training is available online at http://www.northlandscollege.sk.ca/page19.html

6.4 Additional Environmental Programs outside the scope of Reclamation and/or Restoration

During the course of the research, a number of other value-added environmental programs, not specific to reclamation, were identified. This section provides a brief summary of some environmental programs that are offered in Manitoba. If students are interested in this type of training, they could conduct further research into similar programs that are offered in other provinces.

6.4.1 Assiniboine Community College (ACC)[97]

GIS Environmental Technologies (G.E.T.)

ACC offers a GIS Environmental Technologies diploma program. This is a two-year diploma program in which students will learn to use GIS, remote sensing and GPS equipment. The course provides opportunity for field work and hands-on learning. Students are also required to complete a co-op term (usually completed between year one and year two). Graduates of this program may find employment in the resource management sectors including agriculture, forestry, watershed management, etc. Further information on the G.E.T. program at ACC is available online. (http://public.assiniboine.net/xDefault.aspx?tabid=60&mid=375&prgField=Description&prgID=%2058)

Land and Water Management

Land and Water Management at ACC is a two-year diploma program. This program focuses on environmental monitoring and management in an agricultural context but the skills may also be transferable to other resource industries. Students are also required to complete a co-op term. Some particularly relevant skills that are acquired through this course include: environmental monitoring, fisheries management, soil science, GIS and remote sensing. Further information on the Land and Water Management program is available online. (http://public.assiniboine.net/xDefault.aspx?tabid=61&mid=375&prgField=Description&prgID=%2063)

6.4.2 Value-added Forestry Programs

Through the course of the research a couple of value-added programs related to forestry were identified. These programs could lead to employment that would supplement people's traditional lifestyles.

Non-timber Forest Products

The Northern Forest Diversification Centre in The Pas, MB has developed two value added programs for local people to generate supplemental income from local resources – non-timber forest products and ecotourism. Non-timber forest products (NTFP) are defined as "all goods derived from forests of both plant and animal origin other than firewood"[98] Examples of this include mushrooms,

---

[97] Additional Information about Assiniboine Community College is available online at http://public.assiniboine.net/

[98] Northern Forest Diversification Centre. Non-timber Forest Products program. www.nfdc.ca

berries, floral greens, medicinal herbs, crafts and landscaping products. The Centre provides a 2 week training course interspersed with field training, and is delivered in the community. "Since 2001, the NFDC has carried out community-based training in eight communities."[99] The training focuses on two areas:

- harvesting guidelines including safety and bush skills, ecological awareness, and handling of harvested products; and
- developing a business including assessing opportunities, managing a business, marketing products (existing and future), and planning for success.

> "The NTFP industry may provide another option for community economic development with the creation of a group of individuals trained and motivated to develop their own businesses or cooperate in a community venture." (NTFP Program: www.nfdc.ca/ntfpprogram.htm)
>
> - NTFP can add value to the work communities are currently involved in.

Examples of products developed for sale include walking sticks and canes, natural wreaths, several flavours of wild harvested teas, and natural bird feeders. These can be viewed on the Centre's website: www.nfdc.ca. Under the Canada-Manitoba Economic Partnership Agreement the Centre received $1.2 million in funding to "continue to link the growing demand for non-timber forest products with the need to create sustainable economic development opportunities for residents of remote communities."[100] The Northern Forest Diversification Centre also provides long-term support to people who have graduated from this training.

Eco-Adventure Tourism Program

This program is offered in conjunction with Keewatin Community College in The Pas, MB. It is a flexible program composed of five different sub-programs. A student has the option of taking one specific program they are interested in or a combination which ultimately leads to an Eco-Adventure Tourism Diploma.

- Heritage Interpreter Credential: five courses based on the Heritage Interpreter Standards of the Canadian Tourism Human Resource Council and the MB Tourism Education Council. This can be taken at The Pas campus, or could be delivered in a community.
- Outdoor Guide Certificate: nine courses based on the Outdoor Adventure Guide Standards of the above cited Councils. This can be taken at The Pas campus, or could be delivered in a community.
- Eco-Adventure Tourism Certificate: 18 courses – all courses covered in the above two programs, with additional study on flora, fauna, business planning, sustainable tourism etc. This program is available at The Pas

[99] Manitoba Government News Release, "The Pas' Northern Forest Diversification Centre Receives Three-Year Funding," 10 November 2004.

[100] Manitoba Government News Release, "The Pas' Northern Forest Diversification Centre Receives Three-Year Funding," 10 November 2004.

campus from September to April; however alternative delivery of some of the courses within a community is possible.

- Tourism Business Development Certificate: 16 courses – several of the same courses as the Eco-Adventure certificate, with the addition of bookkeeping and financial management, entrepreneurship, eco-lodge operation & management, tour packaging and marketing, and human resource management. This program is available at The Pas campus from September to April. Some of the courses are available through on-line distance education and/or correspondence; and some of the courses may be deliverable within a community setting.
- Eco-Adventure Tourism Diploma: this is a two-year diploma that combines the Eco-Adventure Tourism Certificate and the Tourism Business Development Certificate. Students can complete these certificates separately, or over the course of two years, jointly.

All of these programs are based on the premise of Ecotourism which promotes recreational use without disturbing wildlife. Some of the courses related to these programs are also available through a variety of formats including in-class and correspondence. Graduates of these programs can seek employment with lodges and tourism operators, First Nation and Metis businesses, etc. More information on each of these programs is available at www.keewatincc.mb.ca/ecotourism.

6.5 Educational Institutions Located in Northern Manitoba

Existing and Proposed[101]

Currently Keewatin Community College (KCC) is the key post-secondary institution located in the North. As discussed throughout this section there are a number of programs offered at KCC that could be applicable for employment in resource based industries. These range from trades to natural resource management technician, to value-added programs such as eco-tourism. For further information, refer to the KCC website (http://www.keewatincc.mb.ca/).

However, there are two other training and/or educational centres that are to be established within the next several years. Programs related to resource-based industries (as discussed in this report) could be offered through these institutions. Or, if a new educational institution is to be developed then the programs that are offered by existing schools should be considered so as not to duplicate programs. The 1999 report "Creating Our Future – Report of the Aboriginal Education and Training Committee"[102] repeatedly made the point that:

> "Training is likely to be more relevant, and students are more likely to succeed, where training is industry-based or where there are significant industry-based components."

[101] There are several Winnipeg-based educational and training facilities. These were not included in this study as the focus was on education and training located in Northern communities.

[102] BEMA Training and Management Consulting Group Inc. "Creating Our Future: Report of the Aboriginal Education and Training Working Committee to the Aboriginal Economic Development Task Force", p.24. March 1999.

6.5.1 University College of the North

The University College of the North is a post-secondary institution that will offer "a comprehensive range of post-secondary education options including developmental, trade, career, technical and undergraduate degree programs."[103] In order to guide the future direction of the College, a consultation team traveled throughout communities in the North in the fall of 2002, seeking input from residents of the North. The result was the Report of the Consultation on Post-Secondary Education in Northern Manitoba titled "University College of the North – Recommendations and Action Plan".[104] Some of the key principles included in this Report are that the UCN be learner-centered; be focused on community and northern development from a cultural, economic and environmental perspective; and be regionally and community based. It was also recommended that the UCN should absorb the existing Keewatin Community College and Inter-Universities North once the legislation, currently in its second reading, is passed.

In addressing the issue of community economic development, the Report states:

> "Strengthening and expanding the technical/vocational offerings now available in the north will enable the UCN to produce the capacity for the growing labour market demands that accompany economic development projects [such as hydro]."[105]

UCN will also provide northerners with a regional institution that will grant University degrees. Initial indications are that the UCN will develop 1st year programs that lead to a Bachelor of Arts and/or Science degrees, with other programs to follow in the future. Programming focus however will be community driven. For example, if northerners suggest there is a need for an environmental engineering technician/technology program to meet the needs of various industries operating in the north, then the UCN can investigate programming requirements. Thus there is an opportunity for developing environmental or resource management programming within the purview of the UCN, if a case can be made.

The Implementation Team recently held a Symposium for Northern Manitobans in The Pas on March 23-24, 2004 to "bring together Elders, Northern Manitoba residents, scholars and KCC faculty and staff to explore possibilities for UCN programming, courses of study and research."[106] The results of this Symposium will be available later in the spring of 2004. Since the time of the original research for this project (spring 2004), UCN was officially created on July 1, 2004 through the University College of the North Act. More details can be found at www.ucn.mb.ca .

UCN will be offering a new 10-week Prospector Training Program in the spring of 2005. This is jointly sponsored by the provincial Department of Industry,

---

[103] Government of Manitoba, "New Legislation Proposed to Increase Educational Opportunities in the North", *Press Release,* 3 March 2004. <http://www.gov.mb.ca/chc/press/top/2004/03/2004-03-03-03.html >

[104] Manitoba Advanced Education and Training, *University College of the North Recommendations and Action Plan.* Report of the Consultation on Post-Secondary Education in Northern Manitoba. March 2003. < http://www.edu.gov.mb.ca/aet/ucn/documents/UCN_recommendations_actionplan.pdf >

[105] Manitoba Advanced Education and Training, *UCN Recommendations and Action Plan*. March 2003. p.9.

[106] University College of the North. "Honouring the Voices of Northern Manitoba". Notice. < http://www.edu.gov.mb.ca/aet/ucn/documents/ucn_symposium_article.pdf >

Economic Development and Mines, Assembly of Manitoba Chiefs, UCN, the Mining Association of Manitoba, and Indian and Northern Affairs Canada.

> "Individuals who complete the program will have a basic understanding of:
>
> - Bush and wilderness survival, safety and navigation skills
> - Prospecting, claim staking and exploration techniques
> - Government regulations, guidelines and funding supports
> - Business and property development skills."[107]

6.5.2 Atoskiwin Training and Employment Centre of Excellence

A partnership between Nisichawayasihk Cree Nation (based in Nelson House, MB) and Indian Affairs and Northern Development has resulted in plans to build a "state-of-the art training facility and business incubator on-reserve."[108] This centre will provide First Nation workers with "…better access to the practical skills and training required to fully participate in today's modern economy."[109] According to the Indian and Northern Affairs Canada Press Release, the programs that would be offered by the centre include:

- Literacy and upgrading;
- Security and catering;
- Labour and rebar work;
- Skilled trades;
- Heavy Equipment Operating;
- Truck driving;
- Clerical skills;
- Women in Trades and Technology

The centre would also offer business support services such as:

- Accounting;
- Business Plan Writing;
- Computer Services;
- Graphic Design;
- Market Analysis;
- Human resource support;
- Legal assistance;
- After-care services and mentoring.

Indian and Northern Affairs Canada (INAC) have provided over $3 million towards the development of this centre. Further information is available from INAC.

6.5.3 Manitoba Metis Federation

The Manitoba Metis Federation (MMF) is in a unique position of offering education and skills training to Metis, Inuit and non-status youth and persons with disabilities in northern Manitoba due to their organizational structure. Under the

---

[107] Prospector Training Program Overview. September 13, 2004 News Release. Available at: http://www.ucn.mb.ca/default.asp

[108] Indian and Northern Affairs Canada, "Atoskiwin Training and Employment Centre of Excellence to Live Up to its Name at Nisichawayasihk Cree Nation," *News Release*, 4 April 2003, <http://www.ainc-inac.gc.ca/nr/prs/j-a2003/2-02266_e.html > (18 March 2004).

[109] Indian and Northern Affairs Canada, p. 1.

Metis Human Resource Development Agreement (which MMF is a signatory), MMF has 7 Local Management Boards (LMBs) "which are responsible for the Employability Improvement Initiatives assumed in their regions."[110] There are 3 LMBs in the north – Thompson, The Pas and the Northwest. Each LMB has autonomous decision-making authority to offer training programs in their region. Through their Provincial Recruitment Initiative, some of the programs listed on MMF's website include[111]:

- Labour Market Partnerships: To support community efforts to identify labour market needs in the community which includes identifying the types of programs and services required to address these needs.
- Project-based Training: To assist individuals facing labour market difficulties to obtain specific occupational training to improve their employability needs.
- Job Opportunity Agreements: To work in partnership with employers to support long-term employment development opportunities at the local level, by creating work experience and labour market development activities.
- Single seat applications: To assist individuals to access training leading to employment through a cost sharing arrangement.

Some of the groups or industries that MMF has partnered with in providing candidates for employment include the Armed Forces Recruitment, Maple Leaf Foods, Manitoba Hydro, and Manitoba Emergency Services College. MMF is committed to determining the needs within an industry and ensuring a good fit with MMF candidates. They are looking to find long-term employment options for their people and provide a "one-stop shop" for interested employers.

6.5.4 Assembly of Manitoba Chiefs

While technically not an educational institution, the Assembly of Manitoba Chiefs (AMC) is a key organization involved in providing education and training to First Nation communities in northern Manitoba. In June 1999 the AMC signed a 5 year agreement with HRDC as part of the Aboriginal Human Resources Development Strategy Agreement (known as AHRDA). The AMC is one of 79 AHRDA holders across Canada who delivers labour market programming. Two key objectives of the Strategy are:

1. "To enable Aboriginal groups to deliver a wider range of human resource programs; and
2. To enable Aboriginal organizations to assist clients to prepare for, obtain and maintain employment."[112]

The Labour Market Program is one of 5 program areas of the AHRDA, and includes the following goals[113]:

- To help unemployed First Nation individuals start their own businesses or become self-employed;

---

[110] Manitoba Metis Federation. *Human Resources Development Training.* <\http://www.mmf.mb.ca/pages/hrdt.htm >

[111] Manitoba Metis Federation website: < http://www.mmf.mb.ca/pages/hrdt.htm >

[112] Human Resources Development Canada. *Assembly of Manitoba Chiefs, Aboriginal Human Resources Development Strategy Annual Report, 2002/2003.* p.11

[113] Human Resources Development Canada, *Assembly of Manitoba Chiefs*, p.11

- To provide unemployed First Nations with employment opportunities through which they can gain work experience to improve their long-term employment prospects;
- To help unemployed individuals obtain new skills;
- To support organizations that provide employment assistance services to the unemployed;
- To support employers, employee or employer associations, community groups and communities in developing and implementing strategies for dealing with labour force adjustments and meeting human resource requirements;
- To support research and innovative projects to identify better ways of helping First Nations people prepare for, return to or keep employment and be productive participants in the labour force;
- To support the development and implementation of labour market development programs that are tailored to address the special employment needs of First Nations.

AMC entered into several sub-agreements with First Nation delivery agents to deliver specific training initiatives. For example, Norway House Cree Nation provided community-based training in management (partnered with KCC); Water Treatment Plant Operator (partnered with RRC); and Carpentry Apprenticeship training for 12 candidates to obtain their Journeyman status. All 12 candidates graduated from the program and were employed. Peguis First Nation provided a 32 week Forest Harvesting Training initiative to 12 participants, all of whom completed the program. Peguis also provided Heavy Equipment Training to 15 individuals – all of whom graduated and found employment.

The training offered through the AHRDA covers a very broad spectrum from management and administrative, to daycare workers, to heavy equipment operators and various trades. In the 2002/2003 fiscal year, 43 Manitoba First Nation communities participated. Overall, 3,183 individuals completed their training. This represents 63% of the total number of people enrolled in AHRDA training through AMC. Of those who completed their training, 70% found employment.[114]

A key element of AHRDA has been the local control over program design and delivery of training programs by First Nation authorities and communities. "This has resulted in capacity building to develop effective public administration, completion of training interventions, employment results, and savings to income support programs."[115] AMC also firmly believes that private sector partnerships are a key element in the long-term provision of training programs for First Nation clients.

[114] HRDC, *Assembly of Manitoba Chiefs,* p.21

[115] HRDC, *Assembly of Manitoba Chiefs,* p.12

7. Effectiveness of Distance Education in Remote and Northern Communities

7.1 Introduction

People living in remote and rural communities in the North do not have access to the same educational opportunities and programs as people living in urban centres in the South. A smaller population base and larger physical distance between communities means that people in Northern communities do not have easy access to campus-based institutions. One way to address this is by offering residents access to education through distance education programs. A review of available literature related to the effectiveness of distance education was performed. Before summarizing the information obtained, it is necessary to define distance education.

> Distance education is a mode of instruction in which a physical and time separation between instructor and student normally exists and thus one in which other means of curriculum delivery and two-way communication, including the printed word, teleconference, computer mediated communication and others, are used to bridge barriers and meet the needs of students.[116]

Effective distance education programs can be an asset to a community. However, in order for a program to be successful it must be carefully designed with consideration given to the students involved and to the environment.

7.2 Barriers

McMullen and Rohrbach[117] (2003) identified a number of potential barriers that are common to distance education programs across Canada. These barriers include:

1. Politics – Decisions that are made by the educational institutions, the band and/or the provincial and federal governments may have political motivation and this could have an impact on the education program.
2. Curriculum and Delivery Models – Distance education courses that are offered through Southern educational institutions are often geared towards students in the South. When designing programs, the needs of the students should be considered as remote communities often have a different culture than students from urban centres.
3. Perception of Distance Education – Some students have been unsuccessful in previous distance education programs and as a result, there may be some reluctance to try another program.
4. Access to Reliable and Appropriate Technology - The trend in distance education is towards using technology to deliver the courses to students. For example, telephone, radio, video or internet connections are typical delivery methods. These delivery methods may be a barrier because some

---

[116] Bill McMullen and Andreas Rohrbach. *Distance Education in Remote Aboriginal Communities: Barriers, Learning Styles and Best Practices* (Prince George: College of New Caledonia Press, 2003). Also available online at: http://www.cnc.bc.ca/mackenzie/BookDistanceEducationinRemoteAboriginalCommunities.htm .

[117] Bill McMullen and Andreas Rohrbach, 2003.

Northern communities do not have reliable access to this type of technology. In order to make a course effective, students must have reliable access to the course material. The method of delivery should be considered when designing a course of study.

5. Cost – Courses should be priced to be accessible to students so that the cost does not become a barrier.
6. Student Independence – Without encouragement and continuous interaction from the educational institution, students may lack motivation to complete courses. An on-site staff member could work as a tutor and a mentor. McMullen and Rohrbach[118] (2003) found that providing an on-site facilitator resulted in higher success rates in many cases. Lockwood and Gooley (2001) also suggest that "…peer dialogue, social interaction and collaboration are powerful supports for learning."[119] Tutoring and mentoring services can often make students feel like they are a part of the educational community, which can result in higher completion and success rates.

7.3 Best Practices

The barriers described in Section 7.2 should not dissuade educational institutions from offering distance education to Northern communities. By identifying these potential barriers ahead of time, it is possible to overcome these barriers by designing the course in response to the needs of the student and the environment.

Some ways to overcome these barriers, as described in McMullen and Rohrbach (2003)[120], include: On-site support, incorporation of the Northern culture, providing prompt feedback to students, building relationships between the instructors and the students, ensuring that there is reliable access to the appropriate technology, ensuring that the students feel like they are a part of the school and by soliciting government support of the programs. There are many examples of successful distance education programs in remote and/or aboriginal communities in the North. Success rates can be increased by addressing the needs of the students and the communities.

Most of the southern-based distance education programs do not address the labour shortages in fields such as mining, hydro development and various trades. They are focused on either university degrees, health care or teaching. As such, this report does not provide details on distance education programming at University of Manitoba and others; rather focuses on programming aimed at filling the identified labour shortages in trades etc.

7.4 Contribution to the Community

Distance education could offer residents in the North access to education that they may otherwise not have. Education programs could be offered that provide students with the skills and training that they require to find employment within their community. Education successes and job opportunities can lead to a sense

---

[118] Bill McMullen and Andreas Rohrbach, 2003.

[119] Fred Lockwood and Anne Gooley, editors. *Innovation in Open and Distance Learning – Successful Development of Online and Web-Based Learning* (London: Kogan Page Limited, 2001).

[120] Bill McMullen and Andreas Rohrbach, 2003.

of pride within the community. Encouraging residents to become lifelong learners will "…contribute to the social cohesion and economic development of communities by fostering a learning culture to underpin economic activity and quality of life for all."[121]

8. Funding Programs

This section of the report provides some examples of funding programs that could be used to assist in the development and implementation of training programs. Also, other sections of this report have outlined existing post-secondary education opportunities that students may wish to take advantage of. Table 6 provides some examples of programs that could be used to implement training programs.

Through the interviews that were conducted throughout this study, it became apparent to the research team that partnerships could also provide funding opportunities. Partnering with existing associations and/or institutions could make offering training programs more feasible. For example, both Keewatin Community College and the Manitoba Metis Federation expressed a keen interest in partnering with other groups in order to offer resource-related training programs in the future.

[121] Fred Lockwood and Anne Gooley, 2001.

Table 6 – Examples of Funding Programs

Program	Funding Available	Programs Funded	Additional Information	Contact
Aboriginal Skills and Employment Partnership (ASEP)	The total funding for this program is $85 million over the next five years (2003-2008). It is meant to complement the AHRD Strategy	Funds are available for partnerships between employers and Aboriginal representatives from communities that are affected by resource-based projects. Projects may include: northern mining, oil and gas, and hydro development.	HRDC administers this program. "…help finance Aboriginal training-to-retention plans for major economic developments and resource-based projects."[122]	Ken Donnelly, Assistant Director, Aboriginal Relations Office Tel: (819) 956-8860 Fax: (819) 994-3297 Email: ken.donnelly@hrdc-drhc.gc.ca Further information available online: http://www.hrsdc.gc.ca/en/cs/comm/news/2003/031003.shtml
Aboriginal Human Resources Development Strategy (AHRD)	In 1999, a 5yr. $1.6billion strategy was announced to expand employment opportunities for Aboriginal people in Canada.	Aboriginal associations receive most of their funding through this program for training, skills upgrading and literacy programs, and employment initiatives.	5 Agreements were signed with the Assembly of First Nations, the Inuit Tapirisat of Canada, the Metis National Council, the Congress of Aboriginal Peoples and the Native Women's Assoc. of Canada. Today there are 79 ARHA holders who distribute training and employment programming.	http://www17.hrdc-drhc.gc.ca/ARO-BRA/ARO.cfm In Manitoba, the Assembly of Manitoba Chiefs, (204)987-9570 and the Manitoba Metis Federation, (204)586-8474 are the 2 organizations who would serve northern communities.
Community Economic Development	"…is designed to provide long-term employment and business development opportunities to First Nations and Inuit by giving them the means to		Management of this program has been devolved to INAC's	Indian and Northern Affairs Canada Winnipeg, MB

[122] Government of Canada, "Government of Canada Announces Aboriginal Skills and Employment Partnership Program," *News Release*, 3 October 2003, < http://www.sdc.gc.ca/en/cs/comm/news/2003/031003.shtml > (6 April 2004).

Program	Funding Available	Programs Funded	Additional Information	Contact
Program (CEDP)	effectively manage skill development programs, economic institutions and business enterprises."[123]		regional offices.	(204) 983-4928 Further information is available online http://www.ainc-inac.gc.ca/ps/ecd/ps/cedp_e.html
Resource Partnerships Program (RPP)	Will fund up to 90% of the cost of partnership conceptualization.	This program will fund various types of activities including: the conceptualization of partnerships, human resource and skills training needs analyses and planning, etc.	"Projects must be related to large-scale resource developments in the areas of mining, forestry, energy development, resource-based tourism, fisheries or agriculture."[124]	It is recommended that applicants submit a statement of intent before submitting a full application. Application information is available online at: http://www.ainc-inac.gc.ca/ps/ecd/ps/rpp_e.html
First Nations Forestry Program	Varies depending on the project.	Funding is aimed at meeting four objectives: "to enhance the capacity of First Nations to sustainably manage their forest lands; to enhance the capacity of First Nations to operate and participate in forest-based development opportunities and their benefits; to advance the knowledge of First Nations in sustainable forest management and forest-based development; and, to enhance the institutional capacity of First Nations at the provincial and territorial level to support their participation in the forest-based economy."[125]		Further information and application forms are available online (http://www.fnfp.gc.ca/index_e.php) Jack Smyth, Canadian Forest Service (613) 947-7380 email: info@fnfp.gc.ca

[123] Government of Canada, "Community Economic Development Program," *Indian and Northern Affairs Canada*, March 2004, < http://www.ainc-inac.gc.ca/ps/ecd/ps/cedp_e.html> (31 March 2004).

[124] Government of Canada, "Resource Partnerships Program (RPP)," *Indian and Northern Affairs Canada*, December 2003, < http://www.ainc-inac.gc.ca/ps/ecd/ps/rpp/res0_e.html> (31 March 2004).

[125] Government of Canada, "About the First Nations Forestry Program," *First Nations Forestry Program*, December 2002, < http://www.fnfp.gc.ca/index_e.php> (31 March 2004).

Program	Funding Available	Programs Funded	Additional Information	Contact
Economic Partnership Agreement[126]	Canada and Manitoba Government will each commit up to $25 million over four years.	One of the types of programs that will be funded includes programs that help to develop a skilled workforce, and that help in the development of northern Manitoba's human and natural resources (eco-tourism, mining, forestry and fishing projects).	The main priorities of this agreement are to fund projects which will build Manitoba's economy and encourage sustainable growth of Manitoba communities. Eligible applicants include non-profit organizations and post-secondary institutions.	Sue Murray Canada-Manitoba Infrastructure Secretariat (204) 945-8778 1-800-268-4883 suemurray@gov.mb.ca Information is available online at http://www.gov.mb.ca/ia/edpa/./program.html
Western Economic Diversification Fund	WED works in partnership with government, industry and communities to fund a large range of projects. Funding is available for rural and remote communities, and Aboriginal entrepreneurs wanting to start up small to medium sized businesses.	Examples of more recent project funding include: 1. $160,000 for 8 community alternative energy projects in rural and First Nation communities in BC 2. $300,000 for employment placement project in northwest Saskatchewan for the oil-sands industry. 3. $1 million towards Forintek's Value-Added and Wood Technology program in northern Manitoba – job creation and business development – "the program will encourage Aboriginal and northern forestry developments [and] increase value-added processing"[127]		Information is available online at: http://www.wd.gc.ca/default_e.asp
Manitoba Hydro Pre-Project	Target of $60 million. $38 million confirmed. For funding	The funding is to be used to prepare northern Manitobans (particularly First Nations and Aboriginals) to be qualified for construction-phase jobs by		Debbie Sapergia Employment and Training Services Branch, Manitoba

[126] Province of Manitoba, "An Investment in Manitoba: New $50-Million Canada-Manitoba Economic Partnership Agreement Signed," *News Release*, 1 December 2003, < http://www.gov.mb.ca/chc/press/top/2003/12/2003-12-01-05.html> (1 April 2004)

[127] Government of Canada, "Canada Manitoba Economic Partnership Establishes Forintek's Value-Added and Wood Technology Program in Manitoba," *News Release,* 12 March 2004,< http://www.deo.gc.ca/mediacentre/2004/mar12-01a_e.asp > (13 March 2004)

Program	Funding Available	Programs Funded	Additional Information	Contact
Training Initiative	breakdown, see Section 5.7.	providing skill development training.		Advanced Education and Training (204) 627-8134 dsapergia@gov.mb.ca
Manitoba Advanced Education and Training (MAET)	Multi-million dollar portion of the provincial budget.	Some examples of funding initiatives in 2002/03 include[128]: Adult Learning Centres (>$12 million) Apprenticeship and the Aboriginal Community (ex: community based training programs such as carpentry at Norway House and Peguis First Nation) Industry Training Partnerships (>$1 million) RRC, ACC & KCC[129] received >$50 million College Expansion Initiative - $15 million Inter-Universities North - $857,000		Additional information is available online at www.edu.gov.mb.ca/aet/index.html
Northern Development Fund – in SK	Up to $4.15 million is available in loans each year.	Provides grants for marketing, research and development. Also for organizational development and business skills training.	"…established in February 1995 to stimulate and support economic and business development in northern Saskatchewan, and to encourage diversification and job creation."[130]	Regional Development Saskatchewan Northern Affairs Box 5000 La Ronge, SK S0J 1L0 1-800-663-4065 mspreacker@sna.gov.sk.ca
Learning Initiatives Program	Funding may not exceed $300,000 per year.	Supports projects that promote lifelong learning in Canada.	To apply, contact for application and proposal guidelines. This program is currently NOT accepting	Donna Kirby, Director, Learning Strategies and Support Human Resources and Skills Development

[128] Province of Manitoba, "Advanced Education and Training – Annual Report 2002-2003", *Manitoba Advanced Education and Training*, < http://www.edu.gov.mb.ca/ar_aet_0203/parta.pdf> (5 April 2004).

[129] Red River College (RRC), Assiniboine Community College (ACC) and Keewatin Community College (KCC).

[130] Government of Saskatchewan, "Northern Development Fund," *Saskatchewan Northern Affairs*, < http://www.northern.gov.sk.ca/programs/northernaffairs.shtml> (March 2004).

Program	Funding Available	Programs Funded	Additional Information	Contact
		Further information is available online: http://www.hrsdc.gc.ca/asp/gateway.asp?hr=en/hip/lld/lssd/lip/lipdesc.shtml&hs=lxi	proposals for 2004. Any proposals that are received are kept on file for future rounds of assessment.	(819) 953-3831 Email: donna.kirby@hrdc-drhc.gc.ca

9. Conclusions and Recommendations

The following conclusions and recommendations summarize key points of the research undertaken in this report. In many areas, government has already taken a lead role, or has formed strategic partnerships with industry and Aboriginal organizations in providing many valuable training initiatives. The following recommendations are being offered for consideration in the future development and/or enhancement of training programs for northern Manitobans.

9.1 Education

Conclusion

According to 2001 Census data, northern Manitoba is primarily a young population group with inadequate education levels and skills to enter the workforce. A large percentage of this group is Aboriginal.

Recommendations

1. It is essential to develop strong partnerships with First Nation and Metis organizations to assist in achieving higher educational attainment, developing workforce training programs and long-term employment.
2. Many northern communities want to have access to basic skills training within their own community. Government needs to continue to develop partnerships with community colleges and community-based organizations for additional **community-delivered** programs aimed at young adults and adults, in communities currently not serviced. These programs should include:
    - basic literacy and numeracy skills,
    - academic upgrading,
    - employability/job readiness skills,
    - testing and assessment programs, and
    - technical training directly linked to high demand occupations and local employment opportunities (that are cross-sectoral in nature)
3. There is a critical need for flexibility in programming, and more sensitivity to, and inclusion of Aboriginal culture and knowledge in program delivery. Tailoring training delivery options to meet northern and rural needs will produce greater success rates.
4. Many pre-project training programs and other employment initiatives require Grade 12 math and literacy skills, or their equivalent skill sets. This can be an issue in relation to the educational level achieved by many northern and Aboriginal people who may not be able to meet this requirement. It is strongly recommended that more effort be directed to upgrading the level of education attained in order to meet these pre-project training programs. Examples such as the Aboriginal Training Program recently announced (November 2, 2004) is an excellent first step in this regard.
5. The option of using Distance Education could be explored for the northern and/or Aboriginal audience. If this was to be implemented, it has been proven to be critically important to have a support person/mentor within the community. Equally important, the communities must be equipped with upgraded and reliable technology for delivery of the programming (internet, computers, audio-video conferencing, etc.) Partnership with Keewatin

Community College, University College of the North, Manitoba Metis Federation and others would seem to be the best course of action.

Conclusion

As Aboriginal students move through the school system, it is very important to capture their interest in life-long learning at an early stage.

Recommendation

1. The partnerships described above need to develop a desire for life-long learning, in addition to specific skill training programs within all northern communities.

9.2 Supply and Demand

Conclusion

Current levels of unemployment, coupled with the large numbers of northern youth entering the labour force suggests the need for having an accurate and up to date demand and supply analysis of skills (hard and soft) that are required by various key resource industries.

1. Government and education/training institutions need to work with communities to identify their emerging training needs and skill gaps; work with industry (Manitoba Hydro, forest and mining companies) to design needs assessments and training programs, and encourage industry to be a full partner in providing on-the-job training and co-operative training within communities.
2. Government and education/training institutions need to offer a broad spectrum of training opportunities – including community-oriented value added jobs (non-timber forestry products; ecotourism); basic industrial training through to journeyman apprenticeship training (heavy equipment operator/mechanic; carpentry; electrician, etc.); as well as scientific and professional college/university opportunities whose delivery is more regional in nature (The Pas, Thompson, Brandon and Winnipeg).
3. Policy makers need to link high demand occupations in the north, such as Construction Electrician, Carpenter and Heavy Duty Equipment Mechanics and Operators, with high demand occupations within Aboriginal communities (Carpenters, Heavy Duty Equipment Operators), and institutions such as UCN that will deliver the training.
4. To achieve success in retaining and graduating participants, training needs to be community based.
5. Programs that offer training in skills that are transferable between industries will lead to longer term employment.
6. Training programs need to have goals and targets that are measurable and realistic, with opportunities for evaluation and revision.
7. There is also the need for government and educational institutions to respond to future growth in the environmental industry, particularly as it relates to environmental assessment and management; environmental technician/technologist; and engineering technician/technologist.

9.3 Private Sector Involvement

Conclusion

As has been shown in Saskatchewan and Alberta, industry has taken a lead role in developing training initiatives with northern and Aboriginal communities within the mining, oil and gas and forestry sectors. This has resulted in the development of many successful businesses. While these businesses were initially started to serve a specific industry or company, many have grown to service the broader community.

Recommendation

1. Government and industry should look for opportunities for northern and Aboriginal businesses to gain greater contract work to support the mining, forestry and hydro industries.
    - Forintek's recent wood technology initiative is an exciting example of future business development in the forestry industry.
    - Another recent example is the establishment of an Aboriginal Chamber of Commerce. Government should assist in the establishment of a northern-based Aboriginal business incubator.

9.4 Site Reclamation programs

Conclusions

Over the course of this research the study team has found that currently most mine reclamation work is done at the engineering and technician level to develop closure plans; followed by site work by heavy equipment operators and construction companies. Environmental monitoring post-closure is part-time and seasonal.

The field of site remediation and reclamation is evolving as governments (provincial and federal) come to grips with cleaning up orphaned and abandoned mine sites through new legislation. The current regulatory environment also requires new and existing mines to develop closure plans concurrently with operational planning. This will involve progressive site reclamation and environmental monitoring, in addition to post-closure reclamation work.

Recommendations

1. This provides an opportunity for northerners to be employed on several levels: reclamation engineers; technician/technologists; consultants doing environmental assessment; and contractors involved in heavy equipment operation and decommissioning work.
2. The government should investigate expanding the multi-million dollar Mining Community Reserve Fund to include training and employment programs involved in mine reclamation and remediation targeted at northern residents. This fits with the Fund's original purpose of assisting communities upon mine closure.
3. Currently there is a Prospector Training Program – the government could investigate whether developing a similar program for Site Reclamation/Remediation is feasible. This would be in keeping with the MB Minerals Guideline which encourages Aboriginal partnerships "by enhancing

education and training skills in the local workforce and helping to strengthen the province's mining industry" (Source: www.gov.mb.ca/itm/mrd/busdev/advantage/adv-pdfs/9adv-policy.pdf (Examples can be found in Saskatchewan and Alberta and may be transferable to the Manitoba mining situation.)

9.5 Environmental programming

Conclusion

The environmental sector is said to be one of Canada's growth industries, and thus can provide an opportunity for northern residents with employment. Programs can be developed around traditional industries such as mining and mine reclamation, forestry and hydro development that include an environmental focus.

Recommendations

1. Groups such as KCC, University College of the North, Aboriginal organizations and industry have the opportunity to work together in developing and delivering this type of programming in the north.

Conclusion

There is also the opportunity for northern Manitobans to participate in value-added programming which blends seasonal part-time employment with traditional activities such as fishing, hunting and trapping.

Recommendations

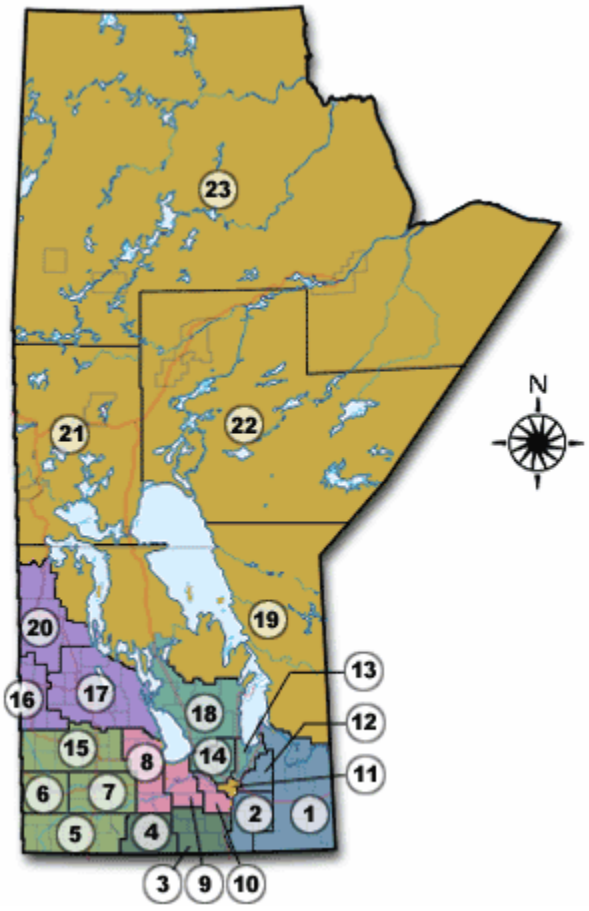
1. Expand value-added programs such as the non-timber forest products and ecotourism initiatives of KCC.
2. Encourage and assist in the creation of businesses that could tie into environmental assessment and monitoring activities; tree planting/landscaping; and value-added wood technology (such as the Forintek initiative).

Appendix A

Manitoba Census Divisions

For the purpose of this report, 'Northern Manitoba' includes Census Divisions 19, 21, 22 and 23 as illustrated below.

1. Census Division 19: North East Manitoba
2. Census Division 21: Flin Flon – North West
3. Census Division 22: Thompson – North Central
4. Census Division 23: Churchill – Northern Manitoba



Source: Province of Manitoba Census Maps[131]

[131] Province of Manitoba, "Census Divisions," *Community Profiles*, < http://www.communityprofiles.mb.ca/maps/census/> (24 February 2004).

Appendix B

High Demand Skills in Northern Manitoba[132]

General Written and Verbal Communication Skills

"Ability to listen, speak and write, in order to transmit or receive information clearly."

Analytical Problem-Solving

"Ability to recognize and define problems, design and implement solutions and evaluate results."

Group Effectiveness, Interpersonal and Teamwork Skills

"Ability to work with others for the purpose of problem-solving, innovation and process improvement."

Time Management

"Ability to schedule and priorize work for self and others and to use time efficiently."

Presentation Skills

"Ability to organize information and communicate through public presentations using a variety of media including overheads and PowerPoint presentations."

Negotiation and Conflict Resolution

"Ability to handle difficult situations, clients and/or co-workers and work out reasonable solutions for all involved."

Technical Reading and Writing

"Ability to read technical documents and manuals as well as write instructions and procedures for a variety of technical processes and protocols."

Supervisory Skills

"Ability to assign and co-ordinate projects, and ensure that the work is done on time and to quality standards. These skills are especially valuable when combined with experience doing the work of those being supervised."

---

[132] Taken directly from: Government of Manitoba. *Report on High Demand Occupations in Manitoba, January 2004,* Advanced Education and Training, <http://www.edu.gov.mb.ca/aet/docreports/hdo_en_2004.pdf> (12 March 2004).

General Computer Skills

"Ability to use various computer applications and programs such as spreadsheets, databases, word-processing and various operating systems. Keyboarding skills."

Environmental Assessment

"Ability to conduct an environmental assessment using a number of inter-related skills including data interpretation, risk assessment and knowledge of hazardous waste handling."

Appendix C

Position Titles and Skill Ranking[133]

Professional Positions

Accountant	Hydrologist
Accountant, Systems and Cost	Manager, Accounting
Advisor, Aboriginal Affairs (Sr)	Manager, Aquatic Sciences
Advisor, Technical	Manager, Construction
Analyst, Human Resources	Manager, Environment
Archaeologist	Manager, Human Resources
Biologist	Manager, Maintenance and Supply
Biologist, Aquatic	Manager, Mining Operations
Chef	Manager, Occupational Health & Safety
Coach, Operating Excellence	Manager, Process Plant
Consultant, Environmental	Manager, Project
Controller	Manager, Sales
Co-ordinator, Aboriginal Employment	Manager, Security
Co-ordinator, Mine Geology	Manager, Technical Development
Co-ordinator, Mine Planning	Manager, Technical Services
Co-ordinator, Mine Production	Manager, Valuation Facility
Co-ordinator, Mine Projects	Metallurgist
Co-ordinator, Misery Development	Nurse
Co-ordinator, Permitting	Photographer
Co-ordinator, Plant Production	Pilot, Helicopter
Co-ordinator, Project	President
EIT, Metallurgist	Service Operations Manager
EIT, Mine Planning	Site Branch Manager
Engineer, Chief	Specialist, Environment
Engineer, Civil Projects	Superintendent
Engineer, Electrical	Superintendent, Electrical
Engineer, Electrical and Communications	Superintendent, Employee Relations

[133] BHP Billiton, "Annual Report on Northern and Aboriginal Employment – 2002 Operational Phase," *BHP Billiton Diamonds Inc*, 2002, < http://ekati.bhpbilliton.com/docs/2000SEAReportEmployment.pdf> (February 2004).

Engineer, Geotechnical	Superintendent, Iron
Engineer, Mechanical	Superintendent, Mining Maintenance
Engineer, Mine Planning	Superintendent, Process Maintenance
Engineer, Mine Production	Superintendent, Safety
Engineer, Mining	Superintendent, Security
Engineer, Projects	Superintendent, Supply & Administration
Engineer, Reliability	Superintendent, Training
Geologist	Surveyor, Canada Land
Geophysicist	Vice President

Skilled Positions

Administrative Assistant	Mechanic, Refrigeration	Technician, Lab
Administrator, Benefits	Millwright	Technician, Logging
Administrator, Camp	Officer, Public Affairs	Technician, Maintenance (Sr)
Administrator, Human Resources	Officer, Pyrotechnics	Technician, Maintenance Services
Administrator, LMS	Officer, Recreation	Technician, Maintenance Services (Sr)
Administrator, Payroll	Officer, Technical Support	Technician, Mechanical
Advisor, Development	Painter	Technician, Mechanical Services (Sr)
Advisor, Safety	Partsman	Technician, Mine Production
Analyst, Network	Pipefitter	Technician, Mining
Analyst, Systems	Planner	Technician, Mining Maintenance
Assistant, Engineering	Planner, Maintenance	Technician, Mining Maintenance (Sr)
Assistant, Warehouse	Planner, Mining Maintenance	Technician, NDT
Baker	Planner, Process Maintenance	Technician, Plant Production
Blaster	Plumber	Technician, Plant Production (Sr)
Bodyman	Programmer	Technician, Pollution
Boiler Operator	Roofer	Technician, Project

		Engineering
Boiler Operator, Chief	Sorter, Diamond	Technician, Safety
Buyer	Sprinkler / Fitter	Technician, Service
Carpenter	Supervisor	Technician, Sheet Metal
Technician, Computer	Supervisor (Factory)	Technician, Sorthouse
Technician, Desktop Support	Supervisor, Accounts Payable	Technician, Warehouse
Chargehand	Supervisor, Information Systems	Technician, Warehouse (Sr)
Concrete Finisher	Supervisor, Plant	Technician, Waste Management
Controller	Supervisor, Process Control	Technician, Waste Water Treatment
Cook	Supervisor, Recovery Plant	Technician, Wildlife
Co-ordinator, Air Services	Supervisor, Safety	Trainer
Co-ordinator, Intelligence	Supervisor, Security	Trainer, Equipment Operations
Co-ordinator, Investigations	Supervisor, Steel	Trainer, Equipment Operations (Sr)
Co-ordinator, Materials	Supervisor, Stock Control	Trainer, Process Plant
Co-ordinator, Technical Support	Surveyor	Trainer, Safety
Co-ordinator, Training	Surveyor (Sr)	Welder
Crane - Equipment Operator	Technician	
Crew Chief	Technician, Airport	
Draftsperson	Technician, Auto	
Driller	Technician, Belt	
Electrician	Technician, CAD	
Firefighter	Technician, Communications	
Foreman	Technician, Door	
Iron Worker	Technician, Drafting	
Leader, Camp / Travel	Technician, Electrical Services (Sr)	
Leader, Contracts and Purchasing	Technician, Electronics	

Leader, Drill and Blast	Technician, Emergency Medical	
Leader, Electrical Services	Technician, Engineering	
Leader, Maintenance Services	Technician, Environment	
Leader, Mechanical Services	Technician, Environment (Sr)	
Leader, Mine Production	Technician, Equipment	
Leader, Mine Services	Technician, Fabrication	
Leader, Mining Maintenance	Technician, Fisheries	
Leader, Warehouse Services	Technician, Geology	
Leadhand	Technician, GPS	
Lineman	Technician, Health and Safety	
Mason	Technician, Health and Safety	
Mechanic, HD	Technician, Instrument	
Mechanic, Helicopter	Technician, IS	

Semi-Skilled Positions

Apprentice, Auto Technician	Instrument Man
Apprentice, Carpenter	Load Control
Apprentice, Electrical	Miner
Apprentice, Electrician	Officer, Payroll
Apprentice, HD Mechanic	Officer, Safety
Apprentice, Instrumentation	Officer, Security
Apprentice, Iron Worker	Rebar
Apprentice, Millwright	Receiving
Apprentice, Plumber	Receptionist
Apprentice, Welder	Service Representative
Apprentice, Welder / Carp	Serviceman
Assistant, Public Affairs	Student, Clerk
Assistant, Maintenance Planner	Student, Engineering
Belt Splicer	Student, Environment

Cleaner / Supervisor	Student, Geology
Clerk	Student, Geology
Clerk, Data Entry	Student, Maintenance
Clerk, Finance	Student, Mining
Clerk, Maintenance Planning	Student, Plant
Clerk, Stock Control	Student, Safety
Clerk, Temporary	Student, Warehouse
Crusher Operator	Tireman
Equipment Operator	Truck Driver

Unskilled Positions

Assistant, Carpenter's
Assistant, Logistics
Assistant, Mining Maintenance
Assistant, Plant Operations
Assistant, Plant Production
Assistant, Survey
Assistant, Valuation Facility
Assistant, Warehouse
Assistant, Waste Management
Casual
Cleaner
Courier
Dishwasher
Driver, Trainee
Floater
Fuel Handler
General Housekeeping
Helper
Helper, Baker
Helper, Camp
Helper, Carpenter
Helper, Construction
Helper, Drilling

Helper, Engineering
Helper, Kitchen
Helper, Maintenance
Helper, Mining
Helper, Plant
Helper, Warehouse
Housekeeper
Janitor
Labourer
Learner, Drill and Blast
Learner, Equipment Operator

Appendix D

Courses by Training Category

Skill Training

- Building Maintenance
- Business Administration
- Community Economic Development
- Computer Clerk
- Computer System Support
- Computer Works
- Construction Labourer
- Driver Training 2
- Entrepreneurship
- Entrepreneurship & Business
- Geophysics Survey Operator
- Heavy Equipment Operator – Advanced
- Heavy Equipment Operator
- Institutional Cooking
- Mill Operator
- Office Education
- Orientation to Mining
- Prospector – Devex
- Prospector – Advanced
- Prospector Training
- Raisebore Miner
- Refrigeration Engineer
- Security Guard
- *Staying In the Game* Project
- Traditional Land Use
- Truck Driver (1A, 1A Prof, 1A-NRT, 1A-Wepa)
- Truck Driver/Log Haul
- Underground Mining

Apprenticeship

- Carpentry Level I, II, III, IV
- Heavy Equipment Mechanics
- Industrial Mechanics I
- Industrial/Heavy Mechanics
- Mobile Mechanics

Basic Education

- Adult 12 (bridging, pre-tech)
- Development Study (1, 2, 3)
- GED Preparation
- Life skills/Job Readiness
- Literacy
- Post-Secondary Preparation
- Pre-Technologies
- Workplace Education

Technical

- Instrument Technician (1, 2)
- Math/Science University
- Radiation Monitoring
- Supervisor Development

Appendix E

Adult Learning Centers in the North

http://www.edu.gov.mb.ca/aet/all/directory/index_a.html#a_label

1. Assiniboine Community College – Parkland Campus, Dauphin

www.parklandcampus.com Phone: (204) 622-2222

2. Community Adult Learning Centre, Flin Flon

Phone: (204) 687-3223 Email: calc66@hotmail.com

3. Dauphin Adult Learning Centre/Literacy Program

c/o Dauphin Friendship Centre

http://www.dauphinfriendshipcentre.com

Phone: (204) 638-5707

4. Education, Training and Culture Division – Norway House Cree Nation

Phone: (204) 359-6296 Email: kleary@norwayhouse.mb.ca

5. Frontier School Division Adult Education Program,

http://www.frontiersd.mb.ca

Main office – Winnipeg (204) 775-9741

- There are several additional sites and satellite sites found in communities such as Churchill, Lynn Lake, South Indian Lake, Wabowden, Berens River, Gillam, Grand Rapids, Moose Lake, etc.

6. Keewatin Adult Learning Centre, The Pas

Phone: (204) 627-8695 Email: amcdonald@keewatincc.mb.ca

7. Kelsey School Division Adult Education Program, The Pas

www.ksd.mb.ca Phone: (204) 623-1420

8. Ma-Mow-We-Tak Friendship Centre, Thompson

www.mamowwetak.mb.ca Phone: (204) 677-0950

9. Swan River Adult Education Program, Swan River

Phone: (204) 734-9391 Email: adultlwg@mts.net

10. Swan River Friendship Centre Adult Education Program, Swan River

Phone: (204) 734-9301 Email: srfcadulted@hotmail.com