Northwest Community Studies

Workforce Development Study

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GLOSSARY AND ABBREVIATIONS

Term	Details
APM	Adaptive Phased Management
IAWG	Ignace and Area Working Group
Ignace or the Township	Township of Ignace
NOC	National Occupation Classification
NWMO	Nuclear Waste Management Organization
PACE	Patricia Area Community Endeavours
STEM	Science, Technology, Engineering, and Math
The Project	APM Project

TABLE OF CONTENTS

1.0 BACKGROUND AND CONTEXT 1
1.1 LAND ACKNOWLEDGEMENT 3
1.2 IGNACE PROJECT VISION 3
1.3 PURPOSE AND SCOPE 3
1.4 SPATIAL BOUNDARIES 4
1.5 TEMPORAL BOUNDARIES 6
1.6 LINKAGES TO OTHER STUDIES 6
2.0 METHODOLOGY 7
2.1 GENERAL APPROACH 7
2.2 DATA COLLECTION AND INFORMATION SOURCES 7
2.2.1 Data Sources 7
2.2.2 Knowledge Holder Interview Program 8
2.2.3 Ignace and Area Working Group 8
2.2.4 Youth Workshop 8
2.3 ASSESSMENT METHODOLOGY 9
3.0 EXISTING CONDITIONS 10
3.1 COMMUNITY ASPIRATIONS 11
3.2 CONSIDERATIONS FOR WORKFORCE DEVELOPMENT 13
3.2.1 Population 13
3.2.2 Labour Force 16
3.2.3 Housing 23
3.3 EDUCATION AND TRAINING INSTITUTIONS 24
3.3.1 Secondary Education Institutions in the Local Study Area 24
3.3.2 Post-secondary Education Institutions in the Local Study Area 25
3.3.3 Post-secondary Education Institutions in the Regional Study Area 26
3.3.4 Union Hiring Halls in the Regional Study Area 28
3.3.5 Other Resources for Workforce Development in the Local and Regional Study Areas 29

3.3.6 Industry Directed Training in the Local Study Area....30
3.4 YOUTH ECONOMIC DEVELOPMENT....31
3.4.1 Challenges to Youth Employment....32
3.4.2 Youth Entrepreneurship....34
4.0 CHANGE ANALYSIS....37
4.1 PROJECT DIRECT LABOUR REQUIREMENTS....37
4.2 PROJECT IMPACTS ON LABOUR SUPPLY AND DEMAND....42
4.2.1 Labour Supply Compared to Project Requirements....42
4.3 PROJECT LABOUR IMPACT....45
4.3.1 Project Impact on Employment in Ignace....46
4.3.2 Project Impact on Employment in Other Communities in the Local Study Area....47
4.4 CHALLENGES AND OPPORTUNITIES ASSOCIATED WITH PROJECT IMPACTS ON LABOUR....49
4.5 CHALLENGES AND OPPORTUNITIES SPECIFIC TO YOUTH ECONOMIC DEVELOPMENT....52
4.6 LESSONS FROM OTHER EXAMPLES....52
5.0 OPTIONS FOR CONSIDERATION....55
5.1 PRIORITY FOR THE NEXT FIVE YEARS....57
5.1.1 Option 1: Attract and Retain Existing NWMO Staff....57
5.1.2 Option 2: Attract Labour from the Regional Study Area and Beyond....59
5.1.3 Option 3: Invest in Primary and Secondary School Grades....62
5.2 PRIORITY DURING PRE-CONSTRUCTION AND CONSTRUCTION PHASES....64
5.2.1 Option 4: Enhancement of Post-Secondary Education and Training....64
5.2.2 Option 5: Attract Organized Labour to the Local Study Area....67
5.3 PRIORITY THROUGHOUT ALL PHASES OF THE PROJECT....68
5.3.1 Option 6: Retain Labour Working on the Project....68
5.3.2 Option 7: Attract Those Who Have Not Traditionally Pursued STEM Fields or Trades....70

5.3.3 Option 8: Develop Programs to Support Youth Entrepreneurship.....72

5.4 PRIORITIES FOR THE NEXT FIVE YEARS.....74

6.0 SUMMARY.....77

6.1 KEY FINDINGS 77

7.0 REFERENCES 79

APPENDICES

APPENDIX A LIST OF NORTHWEST ONTARIO SOCIO-ECONOMIC COMMUNITY STUDIES

APPENDIX B GLOSSARY OF TERMS

APPENDIX C LIST OF KNOWLEDGE HOLDER ORGANIZATIONS AND WHAT WE HEARD

LIST OF TABLES

Table 3.2-1: Occupations by Occupational Groupings of Relevance to the Project 17
Table 3.2-2: Percent Distribution of Population 15 Years of Age and Older with Post Secondary Education and STEM-Related Qualifications in the Local Study Area (2020)[1] 21
Table 3.3-1: Local Study Area College Programs 26
Table 3.3-2: Regional Study Area College and University Programs in Northern Ontario 27
Table 3.3-3: Workforce Development Institutions by Region.....29
Table 3.4-1: Labour Force Rates in the Local and Regional Study Area for Youths Aged 15 to 24 Years Old (2016)[1,2,3].....33
Table 3.4-2: Entrepreneurial Organization in the Local and Regional Study Areas.....35
Table 4.1-1: APM Labour Requirements.....39
Table 4.1-2: APM Project Occupations and the Education and Experience Requirements 40
Table 4.2-1: Local Labour Supply compared to Project Labour Requirements.....43
Table 4.2-2: Regional Labour Supply compared to Project Labour Requirements.....44
Table 4.3-1: Assumed Impact of Project Labour on Employment in Ignace.....47
Table 4.3-2: Assumed Impact of Project Labour on Employment in the Local Study Area 48
Table 4.4-1 – Assessment of Labour Supply and Demand Challenges and Opportunities by Project Phase.....50
Table 5.0-1 Overview of Potential Options to Develop the Workforce 56
Table 5.1-1: Attract and Retain Existing NWMO Staff 58
Table 5.1-2: Attract Labour from the Regional Study Area and Beyond.....60
Table 5.1-3: Invest in Primary and Secondary School Grades.....62
Table 5.2-1: Enhancement of Post-Secondary Education and Training.....65
Table 5.2-2: Attract Organized Labour to the Local Study Area 67
Table 5.3-1: Retain Labour Working on the Project 69
Table 5.3-2: Attract Those Who Have Not Traditionally Pursued STEM Fields or Trades.....71
Table 5.3-3: Develop Programs to Support Youth Entrepreneurship 73

LIST OF FIGURES

Figure 3.2-1: Ignace and the Local Study Area Total Population (1986 to 2021) 13
Figure 3.2-2: Ignace and the Local Study Area Indigenous Identity (1996 to 2016)[1] 15
Figure 3.2-3: Ignace and the Local Study Area Baseline Population Projections (2016 to 2046) 16
Figure 3.2-4: Total Local and Regional Study Area Occupations within National Occupation Classification Categories Required by the Project (2021) 18
Figure 3.2-5: Local Study Area Jobs in NWMO Identified Occupation Classes (2021) 19
Figure 3.2-6: Distribution of Population 15 Years of Age and Older with Post-Secondary Education and STEM-Related Qualifications in the Local Study Area (2020)[1] 20
Figure 3.2-7: Regional Study Area Jobs in Project Required Occupation Classes (2021) 22
Figure 3.2-8: Regional Study Area Ontario University and College Completions (2018)[1,2] 23
Figure 3.4-1: Ignace Youths as a Proportion of the Total Population (1996, 2006, 2011, and 2016)[1] 32
Figure 4.1-1: Projected APM Jobs by Phase and Type 38
Figure 4.2-1: Projected Regional and Local Labour Pool compared to the Project Labour Requirements by Phase (2042) 42
Figure 4.3-1: Direct Labour Residency by APM Project Phase 45
Figure 4.3-2: Ignace Baseline Employment versus Project Labour Projections 46
Figure 4.3-3: Local Study Area Baseline Employment Excluding Ignace versus Project Labour Projections 48

LIST OF MAPS

Map 1.4-1: Local Study Area Map 5

1.0 BACKGROUND AND CONTEXT

Since 2010, the Township of Ignace (the Township or Ignace) has been involved in a process of learning about the Nuclear Waste Management Organization's (NWMO) Adaptive Phased Management (APM) Project (the Project) for the long-term management of Canada's used nuclear fuel. The two remaining siting areas in the process are the Ignace Area and the South Bruce Area. The NWMO plans to complete all preliminary assessment work and to select one siting area to host the APM Project by 2023. Preliminary studies suggest that the Project can be implemented safely in the Ignace area for a repository that will contain and isolate used nuclear fuel from people and the environment for the long timeframes required.

Studies have been ongoing since 2010; however, further studies are required to fully assess the potential socio-economic impacts of the APM Project. Building on previous work and engagement completed to date, the NWMO and the Township of Ignace are working together to prepare a suite of community studies that will be shared. The list of socio-economic community studies is included in Appendix A. The information acquired through these studies is expected to help the Township of Ignace leadership and residents make informed decisions about whether the Project is a good fit for their community, and if they are willing to consider hosting it and under what circumstances and terms.

Community studies will ultimately inform the Project hosting agreement between the NWMO and the Township of Ignace. As well, they will provide pertinent information for agreements with the City of Dryden and potentially other regional agreements.

A glossary of terms used throughout this report can be found in Appendix B.

Note to Reader

This and other community studies are preliminary and strategic in nature, all intended to identify possible consequences (e.g., to workforce development, youth economic development) in the Township of Ignace, and other local area and regional communities. Using information about the APM Project known at this point in time, these community studies will describe a range of possible consequences that are the subject of specific and separate studies. For each possible consequence, potential options and strategies will be offered to leverage opportunities and/or mitigate possible negative consequences/effects.

It is important to note that these community studies (developed collaboratively by NWMO and the Township of Ignace) being investigated at this time are not the formal or final baseline or effects studies that will be part of the Impact Assessment as conducted under the regulatory process for the APM Project governed by the Impact Assessment Agency of Canada. Effects assessment will be undertaken at a later date following the conclusion of the siting process, and the initiation of the formal regulatory process.

Community studies will ultimately inform the APM Project hosting agreement between the NWMO and the Township as Ignace. As well, they will provide pertinent information for agreements with the City of Dryden and potentially other regional agreements. The study will:

a) Explore in more detail the questions, aspirations and topics of interest expressed by the community through the Township of Ignace project visioning process;

b) Assist the NWMO and the Township of Ignace in developing and identifying possible programs and commitments that ensure the Project will be implemented in a manner that fosters the well-being of the Township of Ignace and communities in the Ignace area and the region;
c) Advance learning and understanding on topics of interest to communities in the Ignace area and the region; and
d) Provide the community with information it has requested to help them make an informed decision in the case of the Township of Ignace and continue to inform dialogue with communities in the Ignace area and region prior to the conclusion of the site selection process in 2023.

The NWMO is committed to working collaboratively to ensure questions, concerns, and aspirations are captured and addressed through continuous engagement and dialogue.

The NWMO will independently engage with Wabigoon Lake Ojibway Nation and other Indigenous communities to understand how they wish to evaluate the potential negative effects and benefits that the Project may bring to their communities.

1.1 LAND ACKNOWLEDGEMENT

It is acknowledged that the lands and communities discussed in this report are primarily situated on the traditional territory of the Anishinaabe people of Treaty 3, and the Métis Nation.

1.2 IGNACE PROJECT VISION

Ignace community members have identified priorities and objectives for the Project if it is sited in Northwestern Ontario. Community priorities and objectives related to workforce development and enhancing local and regional youth economic development opportunities include (InterGroup Consultants 2020):

1. Developing strategies to attract and retain workers and youths in the community;
2. Increasing business opportunities through the Project in the community through investments and programs aimed at nurturing entrepreneurship to assist with the development of the community;
3. Prioritization for local hiring and training for opportunities with the Project;
4. Enhancing training programs offered in the Local Study Area and Northwestern Ontario to maximize participation in Project-related opportunities; and
5. Providing new opportunities in the Local Study Area for education and skill development will be necessary to retain youth.

1.3 PURPOSE AND SCOPE

This report is a summary of multiple studies related to workforce development, including consideration of the labour baseline, opportunities to enhance local employment, and youth economic development. Each study contributes to the understanding of the potential changes resulting from the Project, which collectively contribute to the discussion of options for the NWMO, the Township of Ignace, and other relevant stakeholders if the Project is sited in Northwestern Ontario.

Although each study has distinct objectives, there is also considerable overlap among topics. The Opportunities to Enhance Local Employment study focuses on the next five years and the pre-construction phase of the Project, while the Workforce Development study considers similar priorities, but looks at later phases of construction and operations. The Youth Economic Development study summarizes the available opportunities and challenges regionally and locally for employment, training/education, and entrepreneurship to youths. It also examines the ability of the future labour supply of young adults to obtain employment with the Project. The combined objectives of the studies are as follows:

- Characterize and describe the labour (direct employment) needs of the Project and describe how the NWMO, the Township and regional agencies can develop the workforce necessary to undertake the APM Project.
- To ensure the APM Project has all the necessary skills and talents to adequately meet its needs.
- To support benefits being driven to the Local Study Area and region.
- To describe strategies to ensure the NWMO will be able to attract and retain the necessary workforce.

- To describe strategies for cooperation in the development of the necessary local and regional workforce with other businesses that have a similar or overlapping needs.

Specific objectives include:

- To identify the total potential workforce demand arising from sustaining existing businesses in the region and community economic growth in the absence of the APM Project and with the APM Project.
- To identify options and ideas arising from similar projects undertaken in other communities to maximize the opportunity for local employment of its youth workforce to meet the potential workforce demand in the absence of the APM Project.
- To identify options to encourage youth workforce development in areas of education and career development specifically related to APM Project needs, including Science, Technology, Engineering, and Mathematics (STEM) fields and robotics.
- Undertake an assessment of challenges and opportunities associated with the identified options including timing of the implementation of options.
- Options will explore opportunities to enhance the Project's benefits for local and regional youth.

1.4 SPATIAL BOUNDARIES

The spatial boundaries for the report include three geographic areas: Ignace, the Local Study Area, and the Regional Study Area. In some instances, administrative boundaries are used in characterizing existing conditions (e.g., Statistics Canada census divisions as representative of regional trends).

The Local Study Area (Map 1.4-1) includes the Township of Ignace, City of Dryden; Municipality of Machin; the Local Services Board of Wabigoon; Municipality of Sioux Lookout; unincorporated communities along Highway 17, including Dinorwic, the Local Services Board of Melgund (Dyment and Borups Corner), and Upsala; and along Highway 599, including Valora and Silver Dollar.

The Regional Study Area is inclusive of the Kenora Census Division for context, but is expanded to northern Ontario, Winnipeg, and Steinbach for labour resourcing purposes to include a macro labour-shed relative to the Project's surface and underground facilities. The regional labour-shed considers communities in a boarder area relative to the necessary skills required of the Project and includes:

- The City of Winnipeg;
- The City of Steinbach;
- The City of Kenora;
- The Town of Atikokan;
- The City of Thunder Bay;
- The greater Sudbury area;
- The City of Timmins; and
- The Town of Marathon.

Map 1.4-1: Local Study Area Map

1.5 TEMPORAL BOUNDARIES

The temporal boundaries considered within the report span over two decades from the immediate future (2024) to the APM Project operations phase (2043 and beyond). This time period is divided into three phases with a focus on the Project from 2024 to 2046:

1. **Pre-construction (2024 to 2032)** begins following the siting decision and is the first opportunity for the Township of Ignace and the NWMO to start planning, including construction of the Centre of Expertise in the Township of Ignace, and ends with completion of site preparation.
2. **Construction (2033 to 2042)** begins at the completion of site preparation and with the start of construction at the Revell Site. Construction ends when operations begin in 2043.
3. **Operations (2043 to 2088)** begins with the end of construction and continues through to monitoring. Since the lifespan of the Project is long, this study is primarily focused on the first few years of operations as this presents the best window of opportunity for attracting new residents to Ignace.

1.6 LINKAGES TO OTHER STUDIES

The Workforce Development study is closely linked with other community studies that consider the changes of the Project to the workforce in Ignace, other communities in the Local Study Area, and changes felt at a regional level including:

- **Ignace and Area Community Studies: Economics and Finance – Labour Baseline study:** this study examines opportunities to attract and develop a local labour force which can contribute to workforce development.
- **Ignace and Area Community Studies: Economics and Finance – Housing, Pre-Construction Economic Development, and Construction and Operations Economic Development studies:** the associated workforce for each phase of the Project will increase the demand for housing and support economic development over the life of the Project. Housing will be required to accommodate the new workers who wish to reside permanently in Ignace. Economic development will be anticipated from the new NWMO employees and their local spending, which in turn may foster economic growth for the community, and the development of the workforce.
- **Growing the Population study:** The growth in population resulting from the Project would increase the labour force and increase the demand for training and education opportunities which foster workforce development.

These studies should be read in conjunction with this report for a full appreciation and understanding of the implications associated with developing the workforce.

2.0 METHODOLOGY

2.1 GENERAL APPROACH

The approach to the Workforce Development study was developed collaboratively among the NWMO, the Township of Ignace, InterGroup Consultants Ltd. and Hardy Stevenson and Associates Ltd. The approach broadly consists of the following steps:

- Gathering baseline information and data to characterize existing conditions and trends for opportunities and barriers present for workforce development and youth economic development without the Project. Data collection is described in more detail in Section 2.2;
- Engaging with the Ignace and Area Working Group (IAWG) at key intervals to test assumptions and conclusions. Engagement with the IAWG is described in more detail in Section 2.2.3;
- Completing a change analysis that summarizes the potential Project-related effects to the development of the workforce during pre-construction, construction, and operations phases. The change analysis considers labour force projections, findings of other community studies, and experiences of other communities that managed growth driven by similar scope and scale projects in the region. The change analysis is described in more detail in Section 4.0; and
- Describing potential options to maximize Project-related opportunities to attract, develop, and retain labour. Options to foster workforce readiness and education/training opportunities the Project presents will also be considered, while minimizing negative effects and constraints. Options for consideration is described in more detail in Section 5.0.

2.2 DATA COLLECTION AND INFORMATION SOURCES

2.2.1 Data Sources

The following data sources were considered in the study:

- Statistics Canada data (e.g., Census of Population 2006 to 2016, 2011 National Household Survey);
- Manifold Data Mining Inc. (hereafter referred to as Manifold) data were used to construct labour force profiles current to 2021 for the two study areas. Manifold retrieves raw data from Statistics Canada and then conducts their own assessments and projections.
- Emsi data for 2021 were used to assemble jobs and occupational data for each of the two study areas. Emsi combines employment data from the Survey of Employment and Payrolls and Hours with data from the Labour Force Survey, Census, and Canadian Business Patterns to form detailed geographic estimates of employment.
- Community planning documents (e.g., Community Strategy, 5-Year Strategic Plan, Official Plan, Zoning By-Law Review).
- Project-related documents (i.e., Project Workforce Residency Scenarios and NWMO Project Planning Assumptions).
- Local and regional reports from key stakeholders related to labour markets (e.g., the Northwest Training and Adjustment Board Local Labour Market Plan Report).

- Educational institutions (e.g., course listings) and non-profit, government, and other organizations that support workforce development (e.g., services offered).
- Supporting documents for case studies and best and promising practices for developing the labour market and youth educational and labour force outcomes.

A complete list of information sources is provided in Section 7.0 References.

2.2.2 Knowledge Holder Interview Program

Interviews were conducted with individuals with relevant local knowledge ("Knowledge Holders") and relevant organizations in the Local and Regional Study Areas. Knowledge Holders were selected on the basis of their expertise in areas relevant to the study.

Knowledge Holders were identified by an iterative process among the Township of Ignace, the NWMO, and the consulting team. Interviews with Knowledge Holders were led by the consulting team with NWMO staff in attendance as notetakers. The NWMO staff member was also available to answer questions about the Project and go through the consent protocol with the Knowledge Holder. The interviews took a semi-structured format and allowed for dialogue among the participants present. Appendix C provides a list of organizations the Knowledge Holders represent and a summary of what we heard relating to workforce development.

2.2.3 Ignace and Area Working Group

To support the baseline and community studies work, the Ignace and Area Working Group (IAWG) was proposed to be made up of the Township of Ignace and a diverse range of municipalities, Indigenous communities, service providers, businesses, civil society, and other interests - both local and regional. The Township of Ignace and NWMO have prepared feedback reports noting the IAWG's input.

The collection of community knowledge was supported through the IAWG, who acted as an advisory body throughout the community studies to ensure local perspectives were considered throughout the process. The relevant IAWG meetings to the Workforce Development study are:

- An IAWG meeting took place in August 2021 (IAWG 2021a) and presented the scope of work for the People and Health, Community and Culture, and the Economics and Finance studies;
- IAWG meeting was held in October 2021 (IAWG 2021b) and provided the objectives and focus areas for each of the community studies;
- IAWG meeting was held in December 2021 (IAWG 2021c) and summarized the key steps and schedules for each community studies and a summary was provided on the key objectives of each study;
- IAWG meeting was held in March 2022 (IAWG 2022a) and presented the baseline for the Workforce Development study; and
- IAWG meeting was held in April 2022 (IAWG 2022b) and presented the change analysis for the Workforce Development study inclusive of options for consideration relative to the study's objectives.

2.2.4 Youth Workshop

A Youth Workshop was held in March 2022 (Youth Workshop 2022) with grade 7 to 12 youths from three communities (five from Ignace, three from Atikokan, and five from Upsala) to explore their perspectives

on barriers and challenges they may face with employment, education, and entrepreneurship. The workshop was initially expected to be held during school hours but was deferred to after school hours at the request of the Keewatin Patricia District School Board. As a result, the turnout was less than initially anticipated and only representative of those individuals and communities who opted to participate.

2.3 ASSESSMENT METHODOLOGY

The information gathering process, described in Section 2.2 above, was the first step in the Workforce Development study.

The next step was to characterize existing conditions, by analyzing the available information for past trends in labour force and education and to consider an outlook for labour force without the APM Project in Ignace and the Local and Regional Study Areas.

Identifying potential Project-related changes on the labour force was then completed based on the understanding of existing conditions, information provided by the NWMO, Knowledge Holders, members of the IAWG. Both positive and negative Project-related changes were documented across the relevant spatial boundaries (i.e., Ignace, Local Study Area, Regional Study Area).

After potential Project-related changes were characterized, they were considered in the context of potential opportunities and constraints those changes present to Ignace and other communities in the Local Study Area to achieve their expressed goals and aspirations. The challenges and opportunities were summarized for education/training, labour readiness, and workforce development.

Having identified opportunities and challenges, options were developed to capitalize on the opportunities to maximize benefits, while managing the challenges in developing the local labour force (inclusive of youth) which could foster workforce development throughout the area. Each option was described and assessed for timing, ease of implementation, potential effectiveness, cost, and authority to implement.

3.0 EXISTING CONDITIONS

The analysis of existing conditions and trends in Workforce Development without the Project informed the current labour force characteristics, education, and training in the Local and Regional Study Areas. Key findings from the analysis of existing conditions are:

- Towns and villages within the Local Study Area have expressed common goals and aspirations to retain young people and expand their populations, increase employment opportunities, and expand business commerce in a sustainable manner by maintaining a stable economy which is not reactionary to short-term changes in the economy or dependent on a single industry.
- In the absence of the Project, population is expected to grow modestly across the Local Study Area with some variation by community. Youths have declined as a proportion of the total population and are expected to form an even smaller proportion in Ignace as youth leave to seek employment elsewhere. Fewer young families in Ignace translates into an aging population.
- The proportion of the population which identifies as Indigenous is expected to grow faster than the non-Indigenous population in the Local Study Area, in part due to a difference in age structure relative to the overall population. There is an opportunity to increase representation of Indigenous peoples across occupations.
- Some of the major employers in Ignace are engaged in forestry, education, public administration, and health services (Township of Ignace 2018). The labour force in Ignace is primarily engaged in the transportation and warehousing, accommodation and food services, forestry,[1] health care and social assistance, and the public administration industries (Statistics Canada 2017).
- The labour force in the Local Study Area possess skills of relevance to the APM Project (Figure 3.2-5) and are engaged in transport and heavy equipment operations and related maintenance occupations (580 jobs); industrial, electrical and construction trades (350 jobs); and technical operations related to natural and applied sciences (300 jobs) (Emsi 2022).
- There is currently a higher demand for skilled labour than labourers available to fill them within the Local Study Area which results in price (wage) competition between employers for skilled labour.
- Many of the regional employers in the forestry and mining industries provide housing and camps to bring in labour from a large regional area beyond Northwestern Ontario (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).
- Permanent housing, temporary housing, and affordable housing in the Local Study Area are all in short supply. Although there are developable lands within the Local Study Area to accommodate new housing, there is currently a large housing shortage for both permanent and rental housing.
- Local and regional labour force and economic development organizations, along with willing industry partners form a strong network for workforce development; however, education and training

[1] The forestry industry includes agriculture, forestry, fishing, and hunting establishments primarily engaged in growing crops, raising animals, harvesting timber, harvesting fish and other animals from their natural habitats, and providing related support activities (Statistics Canada 2018). In the Ignace and area region, businesses from this industry are primarily engaged in forestry which is confirmed in community profiles and Knowledge Holder Interviews (Township of Ignace 2018; NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

opportunities are less readily available in the Local Study Area. Union hiring halls are rare, necessitating alternatives for sourcing some trades necessary for the Project.

The following sections provide a summary of the community aspirations, insights from supporting studies, a summary of existing educational attainment and education and training institutions in the Local and Regional Study Areas, and opportunities and challenges in youth economic development.

3.1 COMMUNITY ASPIRATIONS

Community aspirations reflect the goals and desires of residents and groups within communities in the Regional and Local Study Areas. Community aspirations describe the values and principles a community had identified to guide their future workforce development. The following is a summary of the community aspirations identified through primary and secondary data collection.

Ignace

Ignace identified the goal to improve employment recruitment and retention strategies for in-demand skilled workers, youths, Indigenous people, adult learners, and young professionals. Some means for reaching this goal are thought to include:

- Improving opportunities available for youths and young adults to pursue education opportunities;
- Increasing supports and resources for individuals who suffer mental health issues that impact one's ability to acquire and retain employment; and
- Supporting local youth and adult learners seeking to acquire education and training to fill sought local job positions (Ignace 2021).

The Township of Ignace outlined economic development as another priority area for improvement in its 2019-2024 Community Strategy (Ignace 2019). Goals identified in the Community Strategy include:

- Retaining and supporting existing businesses and their expansion in Ignace;
- Actively supporting and increasing communication between businesses and the Township;
- Attracting new businesses and investments to Ignace including those in the forestry, mining, retail/commercial, and tourism sectors;
- Supporting workforce development in partnership with the Northwest Training and Adjustment Board and other regional groups/municipalities to identify effective initiatives that Ignace can implement to attract a workforce; and
- Engaging local and regional businesses to create youth jobs and co-op opportunities to improve youth retention in the community.

Dryden

The Dryden 5-year Strategic Plan outlined several priorities for enhancing economic and investment diversity (MDB Insight 2019). Some of the strategic plans include:

- Supporting existing businesses;
- Advancing economic related actions identified in the Community Improvement Plan; and
- Partnering with Indigenous organizations/communities and others to foster local and regional growth.

Sioux Lookout

The 2020 Community Well-Being Plan (Sioux Lookout 2020b) set a goal to improve employee recruitment and retention. The outcomes of the goal are to:

- Increase opportunities available for youths and young adults to pursue education;
- Increase support and resources for individuals who have mental health issues which have an effect on acquiring and retaining employment; and
- Support local youth and adult learners seeking to acquire education and training to fill local positions.

The 2020-2025 Sioux Lookout Strategic Plan (Sioux Lookout 2020a), identified the strategic priorities to proactively invest in the community to encourage growth and to collaborate with regional groups and other municipalities to address common challenges. Goals for encouraging growth and addressing common challenges include:

- Collaborating with community partners to foster growth and economic development;
- Enabling community growth through programs and policies which encourage new businesses into Sioux Lookout and the retention of existing businesses; and
- Working with First Nation partners to expand the Sioux Lookout Friendship Accord.

Machin

The municipality of Machin has adopted a goal of diversifying the local economy to support sustainable growth with a focus on elders' and youths' needs to support a healthy and vibrant community (MNP 2021). Machin recognizes the need to diversify and stimulate the economy to create a positive change for the community to be able to participate in the ever-changing socio-economic environment in Northwestern Ontario (MNP 2021).

Northern Ontario

The 2011 Growth Plan for Northern Ontario (WSP 2019) is a 25-year strategy developed by the Ontario government to support economic development, infrastructure investment, labour market development, and a land-use plan. The Northern Ontario region includes the Kenora, Rainy River, Thunder Bay, Cochrane, Algoma, Timiskaming, Sudbury, Parry Sound, Nipissing, and Manitoulin Census Divisions. The Growth Plan for Northern Ontario was developed in partnership with northerners to create a diversified northern economy, stronger communities, and a skilled, adaptive, and innovative workforce (Ontario 2011). The Growth Plan includes six guiding principles to ensure the region's long-term sustainability:

- Creating a productive region with a diverse competitive economy that offers a range of opportunities for all residents;
- Developing a highly educated and skilled workforce to support an evolving economy and proficiency in the trades;
- Partnerships with Indigenous peoples to increase education and employment opportunities;
- Delivering a complete network of transportation, energy, communications, social, and learning infrastructure to support the communities;
- Demonstrate leadership in sustainable growth and environmental management; and

- Establishing partnerships to maximize resources to ensure the 25-year growth strategy is realized.

3.2 CONSIDERATIONS FOR WORKFORCE DEVELOPMENT

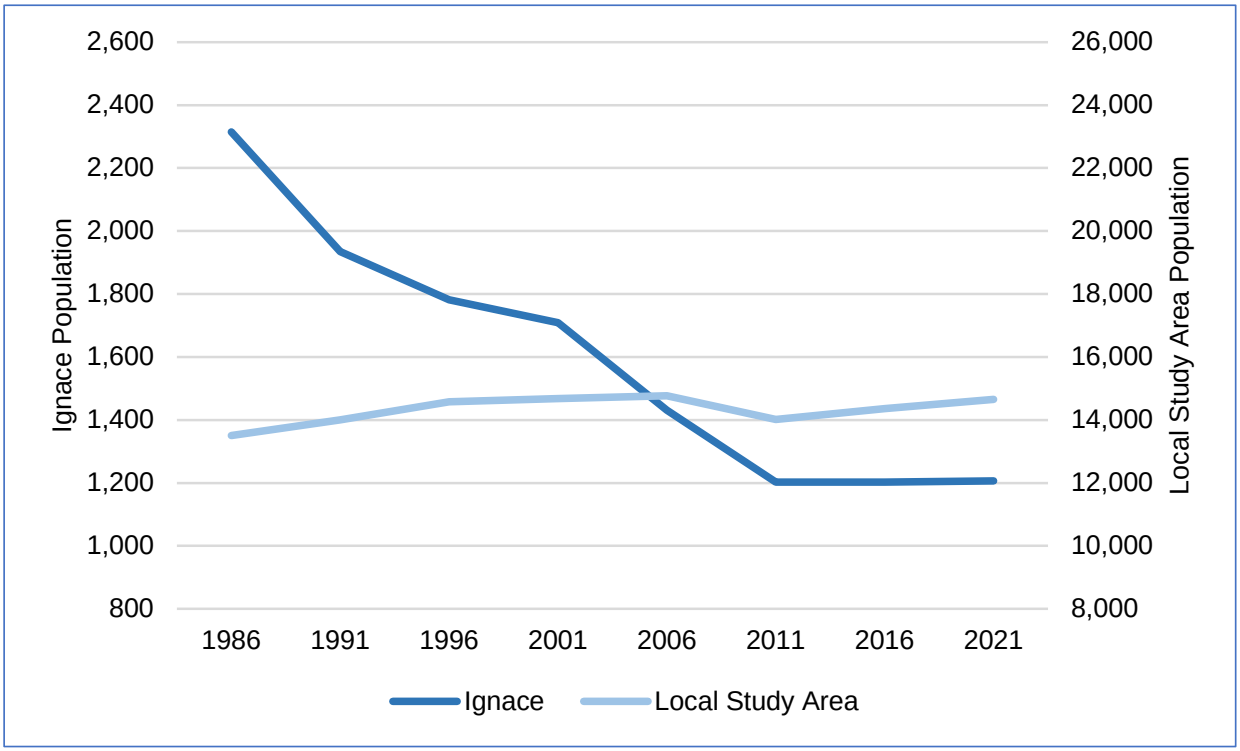
This Workforce Development study is closely linked with other community studies being undertaken, including the Growing the Population study and the Ignace and Area Community Studies: Economics and Finance – Housing and Labour Baseline studies. The existing environment in Ignace and the Local Study Area is examined in the context of the described APM Project phases and future demand for labour. This includes baseline projections relative to anticipated trends without the Project for population and housing.

The following sections summarize the key insights and findings relevant to the Workforce Development study.

3.2.1 Population

The Township of Ignace had 1,206 residents in 2021 (Statistics Canada 2022a). While this is a decline from 2,314 residents in 1986, the population has remained stable since 2011 (1,202 residents). Compared with the population of Ignace, the total population in the Local Study Area has remained more stable (Figure 3.2-1).

Figure 3.2-1: Ignace and the Local Study Area Total Population (1986 to 2021)



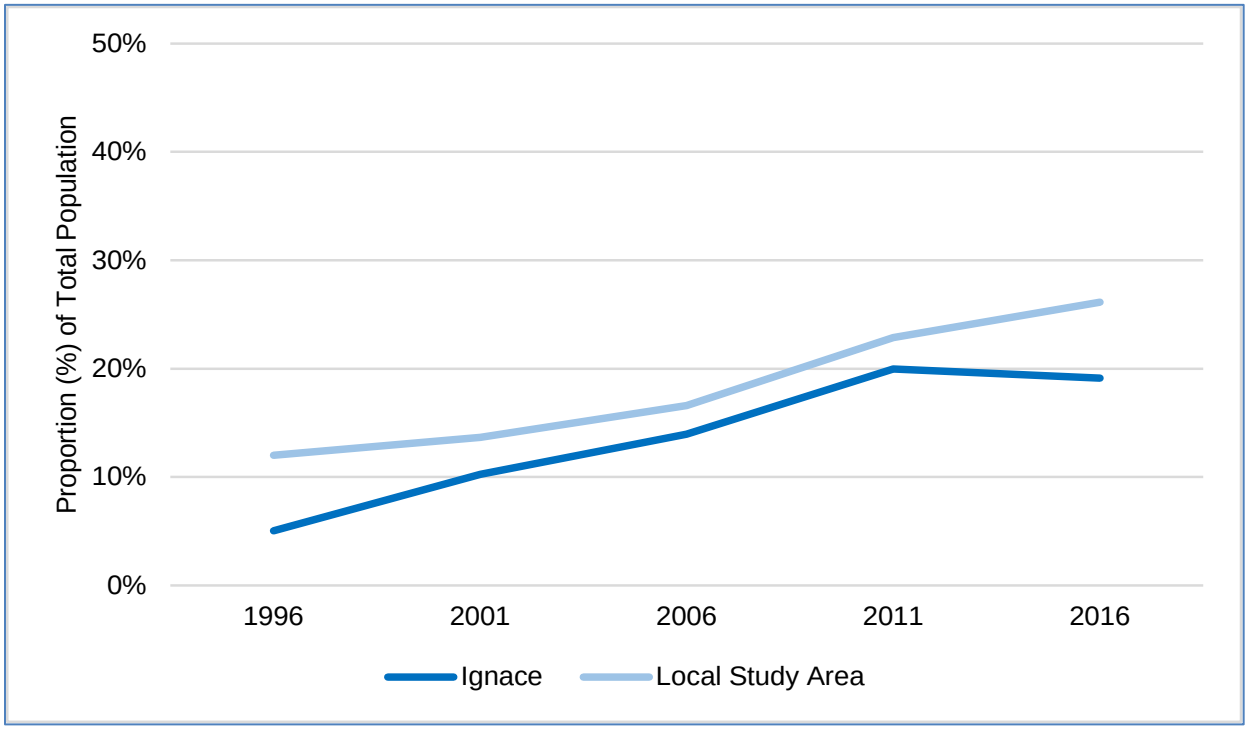
Source: Statistics Canada Census 1986-2021.
Notes: See Growing the Population Study for more detail.

The reasons for the decline in population in Ignace have changed over time relate to shifts in the local economy and include:

- The closure of the Mattabi Mine in 1991 (Beak and Golder 1997); and
- Downturns in the forestry industry from 2000 to 2008 with the loss of three paper machines due to a change in scope of operations and the closure of the Bowater Mill (Pulp and Paper Canada 2006; NWO Community and Baseline Studies Knowledge Holder Interviews 2022). The Bowater Mill later reopened in 2008 and AbitibiBowater changed its name to Resolute Forest Products in 2011 (Resolute Forest Products 2022); and
- From 1991 to 2011 there was a large out-migration of families which resulted in the youth population to decline and the median age of the population to continually increase from 2001 to 2016 (median age of 37 years old in 2001 and 52.5 years old in 2016) (Statistics Canada 1992, 1998, 2002, 2007, 2012, 2013, 2017; NWO Community and Baseline Studies Knowledge Holder Interviews 2022). More recently, youths are migrating out of Ignace to pursue education and employment opportunities. This includes some families with children who leave to pursue better opportunities for their children's secondary education (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

Figure 3.2-2 shows the growing Indigenous population in Ignace and other communities in the Local Study Area. Since 1996, the proportion of Ignace residents who identify as Indigenous has increased from 5% in 1996 (90 residents) to 19% in 2016 (230 residents). The increase mirrors population trends noted by Statistics Canada (2021a), which projects that the Indigenous identity population in Canada will increase at a faster rate than the non-Indigenous population through 2041. The growing Indigenous population has been noted by Knowledge Holders as an underutilized source of labour for employers in the northwest (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

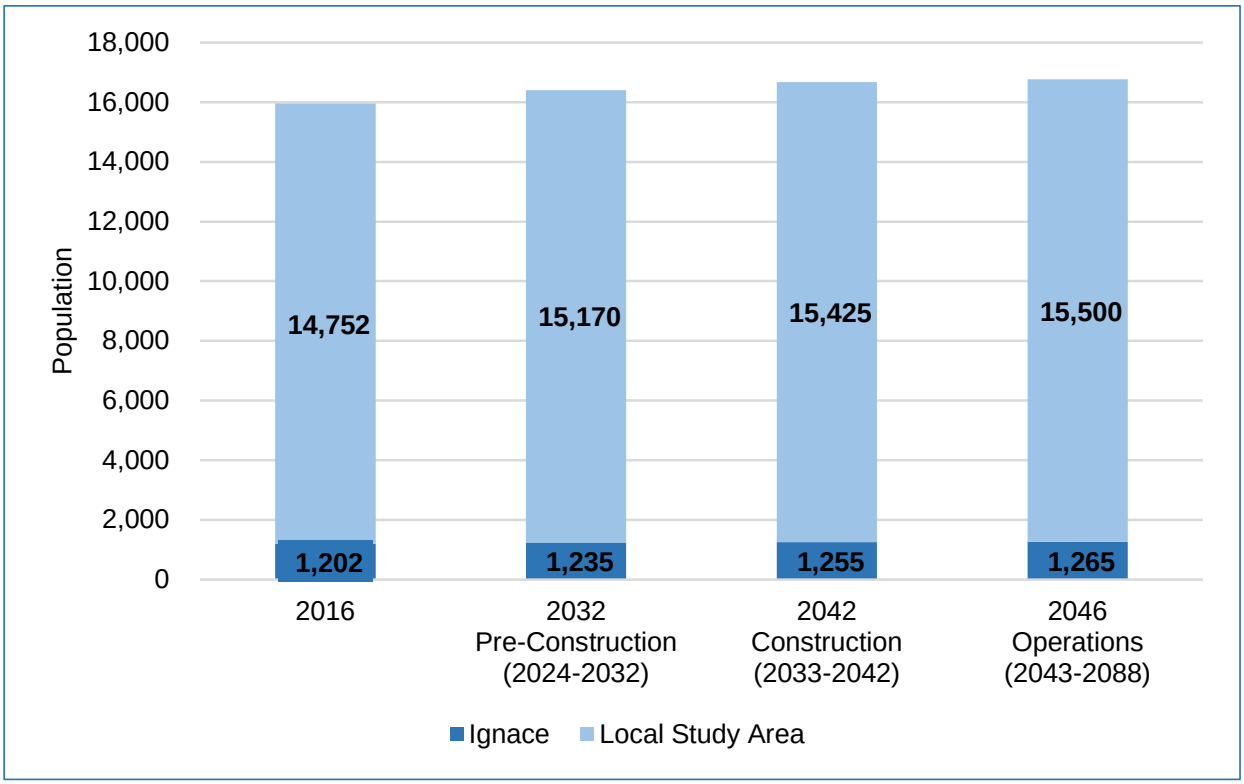
Figure 3.2-2: Ignace and the Local Study Area Indigenous Identity (1996 to 2016)[1]



Source: Statistics Canada Census 1996-2021.
Notes: See Growing the Population Study for more detail.
1. Indigenous identity (known as Aboriginal identity) refers to whether a person self-identifies with the Aboriginal people of Canada (First Nation, Métis, Inuk [Inuit]), registered or treaty Indian, or those who have membership in a First Nation or Indian band).

Figure 3.2-3 shows the baseline population projections for Ignace and the other communities in the Local Study Area. In the absence of the Project or other major economic drivers, growth in Ignace and other communities in the Local Study Area is expected to be fairly stable over the next several decades, with both experiencing an increase around 5% of the current population.

Figure 3.2-3: Ignace and the Local Study Area Baseline Population Projections (2016 to 2046)



Source: Statistics Canada Census 2016. Projections were completed by InterGroup (2022).
Notes: See Growing the Population Study for more detail.

3.2.2 Labour Force

This section presents a summary of findings from the Ignace and Area Community Studies: Economics and Finance – Labour Baseline study that are pertinent to workforce development. This section does not attempt to comprehensively define the labour baseline (see Ignace and Area Community Studies: Economics and Finance – Labour Baseline study for more information), but rather focuses on the broad categories and occupational groups of relevance to the NWMO and the Project (Table 3.2-1). These groupings include:

- Resources workers;
- Constructors and manufacturers;
- Operators;
- Technicians and professionals; and
- Managers.

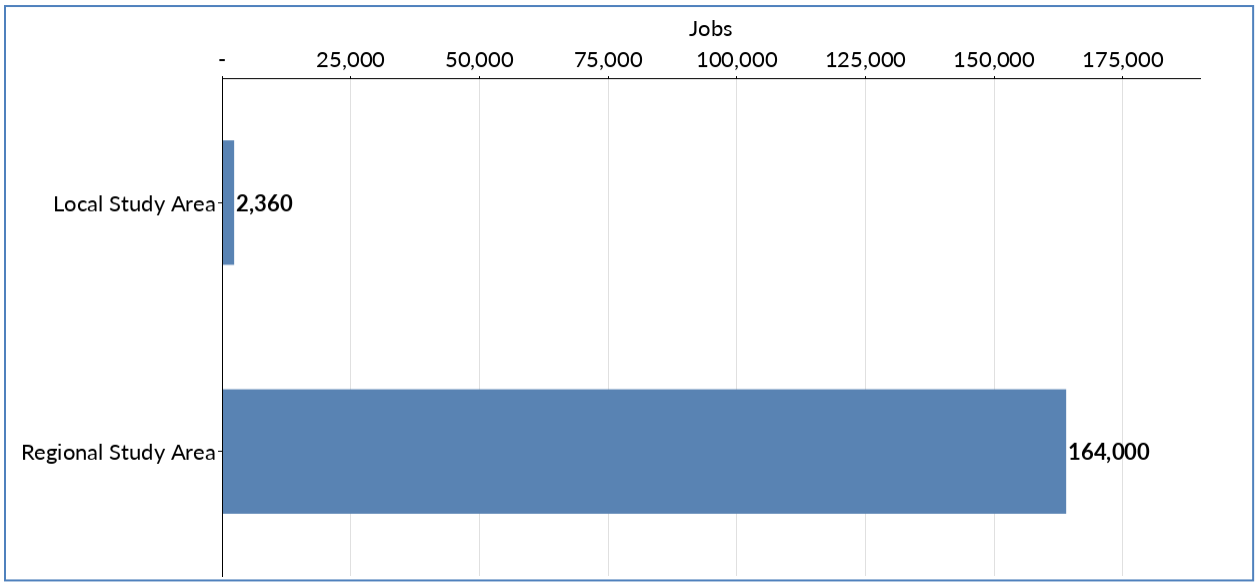
Table 3.2-1: Occupations by Occupational Groupings of Relevance to the Project

Occupational Grouping	Occupation
Resource Workers	Natural Resources and Agricultural Workers
	Natural Resources and Agricultural Supervisors
Constructors and Manufacturers	Industrial Electrical Construction Trades
	Processing and Manufacturing
Operators	Transportation Operations and Maintenance
	Equipment Operations and Maintenance
	Supervisors and Control Operators
Technicians and Professionals	Technician in Natural and Applied Sciences
	Professional Occupations in Natural and Applied Sciences
	Professionals in Business and Finance
Managers	Middle Management
	Specialized Middle Management
	Senior Management

Source: NWMO 2021.

Figure 3.2-4 presents the distribution of Project-required occupations between the Local and Regional Study Areas.

Figure 3.2-4: Total Local and Regional Study Area Occupations within National Occupation Classification Categories Required by the Project (2021)



Source: Emsi 2022.

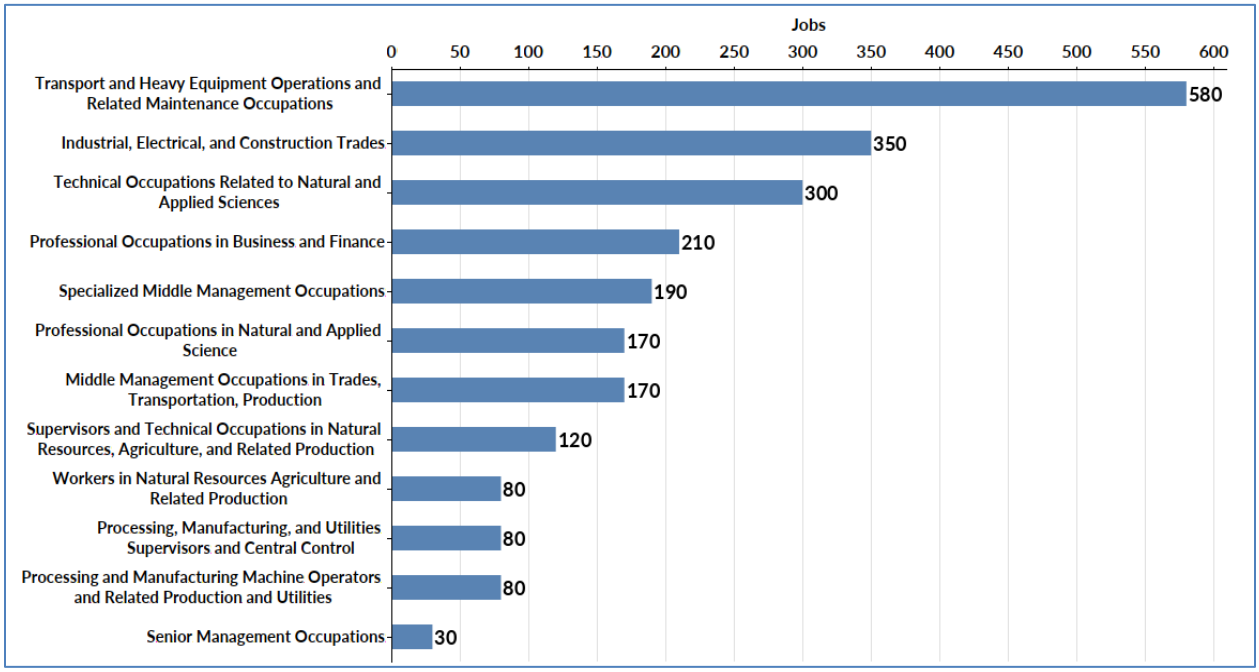
In 2021, there were a total of 166,360 workers in occupations of interest to the NWMO within the Local and Regional Study Areas. The majority of these occupations occur across the northwest region (164,000) while the Local Study Area accounts for just 1.5% (2,360) of total occupations.

The Project also has a requirement for skilled labour with post-secondary certificates, diplomas, or degrees. In particular, labour with post-secondary certificates, diplomas, and degrees in STEM will be required by the Project.

3.2.2.1 Labour Supply and Qualifications in the Local Study Area

The available skilled labour required by the Project is limited within the Local Study Area. Figure 3.2-5 provides a detailed breakdown of the presence of the occupations required by the Project within the Local Study Area. In 2021, the 2,360 jobs in occupations required by the Project account for approximately 23% of the labour in the Local Study Area. These occupations are concentrated in Dryden and Sioux Lookout which account for 90% of the Local Study Area's labour with the occupations required by the Project. While the labour in the occupations required by the Project are present in the Local Study Area, they are insufficient in quantity to fulfill all Project needs. The Local Study Area has a persistent shortage of skilled labour and businesses recruit labour from outside the area (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

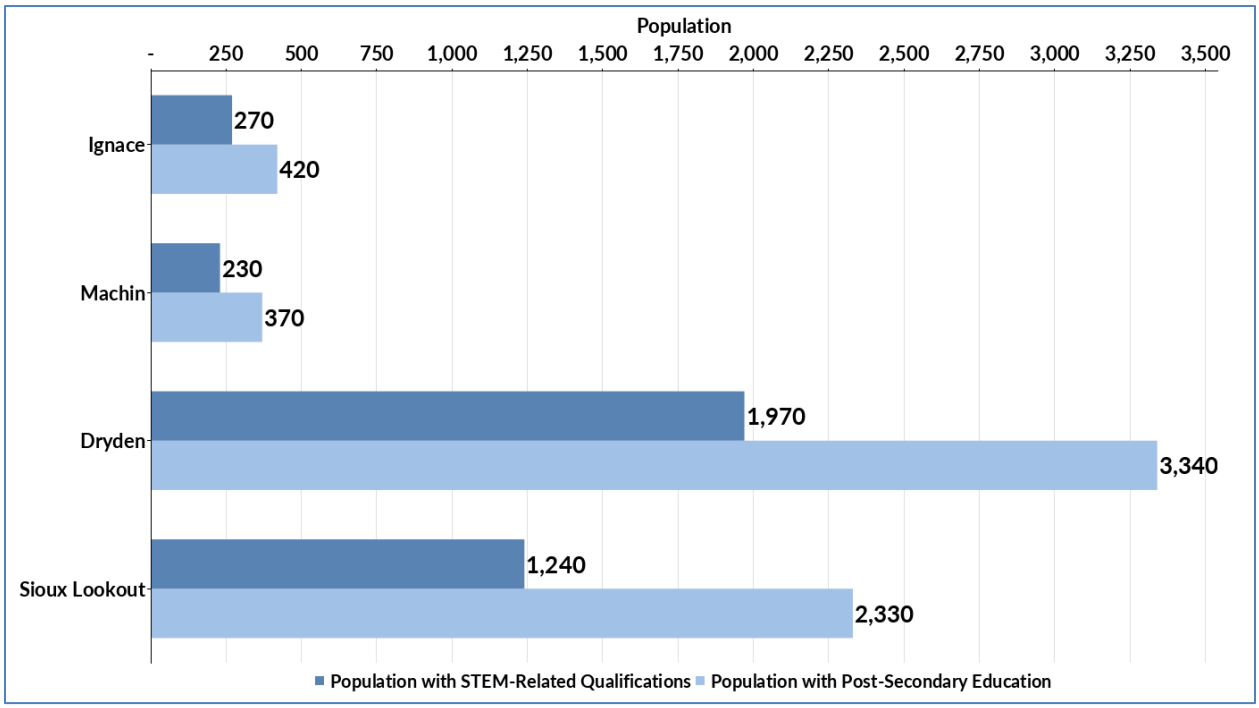
Figure 3.2-5: Local Study Area Jobs in NWMO Identified Occupation Classes (2021)



Source: Emsi 2022.

Labour with a post-secondary education is required for the Project, and STEM-related qualifications are of particular importance. Figure 3.2-6 provides the quantity of labour with post-secondary completions and STEM qualifications in the Local Study Area. Table 3.2-2 provides a percent distribution of post-secondary graduates with qualifications relating to STEM. It is estimated that 57% of the population aged 15 years and older in the Local Study Area have a post-secondary education. It is further estimated that approximately 28% of the population aged 15 years and older in the Local Study Area have STEM-related qualifications and 25% of the total population in Ignace have STEM-related qualifications. The Local Study Area is equally as qualified as the Regional Study Area to provide the Project labour with the educational backgrounds required, however the Regional Study Area offers a larger pool of prospective candidates.

Figure 3.2-6: Distribution of Population 15 Years of Age and Older with Post-Secondary Education and STEM-Related Qualifications in the Local Study Area (2020)[1]



Source: Manifold 2022.

Notes:

1. STEM-related completions are derived from total completions in STEM-related programs from Manifold.

Table 3.2-2: Percent Distribution of Population 15 Years of Age and Older with Post Secondary Education and STEM-Related Qualifications in the Local Study Area (2020)[1]

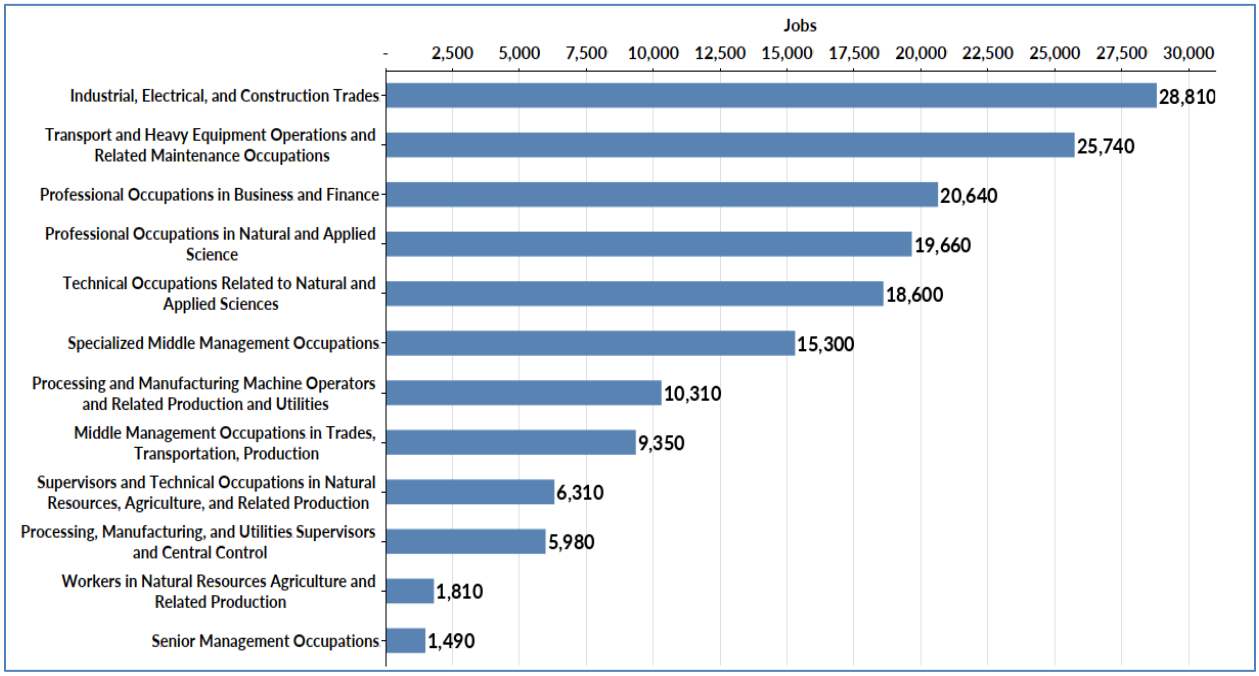
Area	Population with STEM-Related Qualifications	Population with Post-Secondary Education	Total population aged 15 years and over	Total Post-Secondary (% of Population Age 15 Years and Over)	STEM-Related Post Secondary (% of Population Age 15 Years and Over)
Ignace	270	420	1,061	64%	25%
Machin	230	370	877	62%	26%
Dryden	1,970	3,340	6,737	59%	29%
Sioux Lookout	1,240	2,330	4,565	53%	27%
Sum of Local Study Area	**3,710**	**6,460**	**13,240**	**57%**	**28%**

Source: Manifold 2022.
Notes:
1. STEM-related completions are derived from total completions in STEM-related programs from Manifold.

3.2.2.2 Labour Supply and Qualifications in the Regional Study Area

The Regional Study Area has the labour required to fulfill the Project's labour requirements. Figure 3.2-7 provides a detailed breakdown of the number of jobs in the Project required occupations by National Occupational Classification (NOC) within the Regional Study Area. In 2021, the 164,000 jobs in occupations required by the Project account for approximately 26% of the labour in the Regional Study Area. These occupations are concentrated in Winnipeg, Thunder Bay, Greater Sudbury, and the Kenora District. The occupations that are required for the Project are abundant in the Regional Study Area.

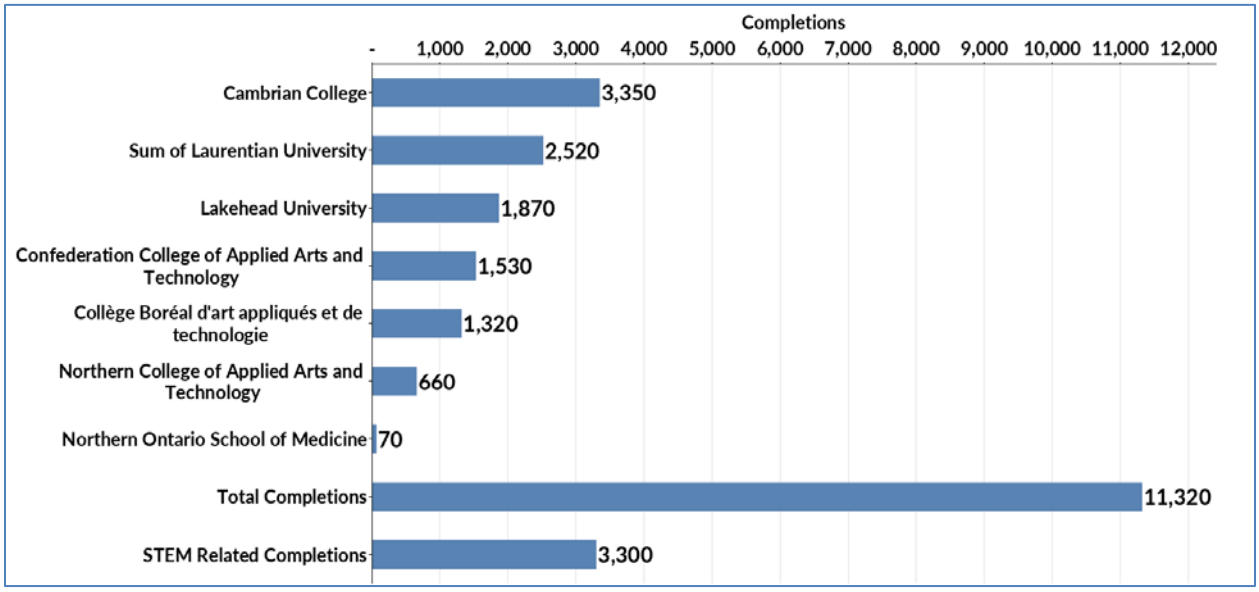
Figure 3.2-7: Regional Study Area Jobs in Project Required Occupation Classes (2021)



Source: Emsi 2022.

The Project requires labour with a post-secondary education, including labour with post-secondary degrees, certificates, or diplomas in STEM-related fields. Figure 3.2-8 shows that in 2018 there were approximately 11,320 graduates from universities and colleges located within the Ontario portion of the Regional Study Area. Twenty-nine percent of these graduates were from STEM-related programs. This means that the Ontario based universities and colleges in the Regional Study Area are capable of, and currently are, graduating students with the STEM-related certifications, diplomas, and degrees required by the Project.

Figure 3.2-8: Regional Study Area Ontario University and College Completions (2018)[1,2]



Source: Emsi 2022; Manifold 2022;
Notes:

1. The Regional Study Area only includes those university and colleges located within the Ontario portion of the Regional Study Area.
2. STEM-related completions are derived from total completions and percent of STEM-related enrollments.

Although there is a large supply of labour with the occupations required by the Project, within the Regional Study Area the demand for skilled labour exceeds the current supply. The Kenora District Municipal Association noted that there is a lack of skilled trades in almost every mine and forestry operation and job postings are going unfilled (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). This is creating competition for labour in Northwestern Ontario and causing workers to move between opportunities based on wage rates. Many workers will go wherever they can find the highest wage (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). This means that labour can be attracted to the project with high wages. Not all workers supplying the Project will be willing to permanently settle in a community, they may prefer temporary accommodation, as they would intend to travel to the next employment opportunity that presents higher wages and/or other benefits.

3.2.3 Housing

This section presents a summary of findings from the Housing Study that are pertinent to workforce development. This section does not attempt to comprehensively cover the Housing Study. This section should be read in conjunction with the full Housing study report

Permanent housing, temporary housing, and affordable housing in the Local Study Area are all in short supply. This was identified in the secondary sources and confirmed through stakeholder interviews in the Housing study.

The lack of availability of housing impacts the ability to attract workers to the Local Study Area. During the interviews it was noted that employees are unable to come to one particularly community in the Local Study Area as they are unable to secure housing, either permanent (owned) or rented (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

Within the Local Study Area, all municipalities have indicated there is developable land and infrastructure to accommodate housing growth, except for Machin which is constrained by the existing water treatment system (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). Although developers/builders within the Regional Study Area are capable of constructing housing, there is concern regarding the potential financial return of such an endeavour.

3.3 EDUCATION AND TRAINING INSTITUTIONS

Local and regional labour force and economic development organizations, along with willing industry partners form a strong network for workforce development; however, education and training opportunities are less readily available in the Local Study Area.

3.3.1 Secondary Education Institutions in the Local Study Area

Ignace has one secondary school, Ignace Public School, which offers co-op programs, Specialist High Skills Major Programs, the Ontario Youth Apprenticeship Program, and dual credit courses which can be used towards an eligible post-secondary certificate or diploma. Ignace Public School currently has 160 students, with less than 60 enrolled in grades 9 through 12 (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). With 14 teaching staff, Ignace Public School has a low teacher-to-student ratio which enables the ability to offer more personalized lesson plans and one-on-one teaching to the students.

The school offers all the compulsory courses required by the Ministry of Education, and a wide range of optional courses which are provided based on student demand. Specialist High Skills Major courses and other occupation-specific courses offered at Ignace Public School include health and wellness, transportation, construction, welding, mechanics, and technical design.

Business classes are not currently offered but could be made available with sufficient interest. More programs are beginning to be offered virtually which could help address the issue of insufficient demand for certain courses which are not usually available at schools with a smaller number of students. Currently, all streams of math and science are offered in-person or through distance learning. Due to the small teacher-to-student ratio, Ignace Public School was able to offer a customized lesson plan for a student who required a specialized math pre-requisite for a trade they intended to pursue after high school (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

There are three other high schools in the Local Study Area —Dryden High School, Sioux North High School, and Pelican Falls First Nation High School. Each high school offers co-op programs, focused learning on a specific economic sector through the Specialist High Skills Major Programs, the Ontario Youth Apprenticeship Program, and/or dual credit courses which can be used towards both the Ontario Secondary Diploma and towards an eligible post-secondary certificate or diploma.

The dual credit programs target ‘at-risk’ students, including those without clear plans after high school. The dual credit courses allow them to earn credit toward their Ontario Secondary School Diploma and future programs at Confederation College.

The Ontario Youth Apprenticeship Program is closely tied to the Specialist High Skills Major Program because the Specialist High Skills Major Program is a bundle of credits, for example, the automotive Specialist High Skills Major Program has a requirement of two courses and two co-op credits (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). The Ontario Youth Apprenticeship

Program, Specialist High Skills Major Programs, and the co-op programs all have work components which allow students to gain workforce experience while obtaining their secondary diploma. Each of the programs will have different offerings based on the proximity of the school to businesses, availability of qualified teachers, and the community demand for certain economic sectors (e.g., Red Lake has a mining Specialist High Skills Major Program) (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). Dryden High School currently offers five Specialist High Skills Major Programs: automotive, manufacturing, health and wellness, construction, and business (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

3.3.2 Post-secondary Education Institutions in the Local Study Area

There are a limited number of post-secondary institutions in the Local Study Area (i.e., Confederation College, Sioux Lookout Mining Centre of Excellence) and course offerings but do possess flexibility to meet community and employer needs (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). There are no post-secondary institutions located in Ignace and no universities available in any of the communities. A summary of current college-level programming is provided in Table 3.3-1.

Confederation College occasionally offers customized training and courses at the Dryden and Sioux Lookout campuses, and can provide in-community (e.g., within Ignace) training if there is sufficient demand (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

The Sioux Lookout Mining Centre of Excellence is a part of the Sioux Lookout Friendship Accord and Economic Development Corporation, which offers tuition-free and barrier-free entry level training for Indigenous and non-Indigenous individuals for occupations that are in demand in Northwestern Ontario. The Mining Centre works closely with the Northern College and Haileybury School of Mines for the delivery of programs which are targeted to support the mining industry in Northwestern Ontario (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

Table 3.3-1: Local Study Area College Programs

Institutions	Location of Institution	Duration of Programs	Description of Programs
Confederation College	Dryden and Sioux Lookout	Programs are typically one to three-year certificates or diplomas.	Offers programs in business, community services, health, and hospitality (Confederation College n.d.). Has the ability to provide in-demand off-the-shelf or custom training in-community and on campus (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).
Seven Generations Education Institute	Sioux Lookout	Programs are typically one to three-year Ontario College certificates/ diplomas. Some programs are bachelor level programing and require four years.	Offers programs in business, community service, health, and arts through partnerships with Lakehead University, and various colleges in Ontario (Seven Generations n.d.).
Sioux Lookout Mining Centre of Excellence	Sioux Lookout Some programs are offered in other communities and mines based on current partnerships and availability.	Programs are typically three months to one-year.	Offers programs in entry-level mining positions, truck driving, and entry-level skilled trades training (Sioux Lookout Mining Centre of Excellence n.d.). Also offers online programs for support and culinary workers supporting mining camps. One of the programs has a work placement at a mining camp.

3.3.3 Post-secondary Education Institutions in the Regional Study Area

Post-secondary institutions in Northwestern Ontario are understood to sufficient programming and number of STEM graduates (see Table 3.2-2 and Figure 3.2-8) in the Local Study Area (3,710 residents possess STEM-related qualifications in 2020) and the northern Ontario Regional Study Area (3,300 STEM graduates in 2019), although programming specific to the nuclear sector was not evident. There are ample STEM-related programs in Winnipeg (e.g., engineering, geology, environmental science), however, there is no specialized programming relevant to the nuclear sector or in the field of mining engineering.[2] Table 3.3-2 summarizes the types of certificate and diplomas offered at the Northern Ontario-based Regional Study Area universities and colleges.

[2] Winnipeg has four universities: University of Manitoba, University of Winnipeg, Université de Saint-Boniface, and Canadian Mennonite University. The universities offer four-year undergraduate programs and one-to-three-year graduate study programs but only have Project-related programs in business for management occupations and science for professional and technical occupations in natural and applied sciences.

Table 3.3-2: Regional Study Area College and University Programs in Northern Ontario

College and University Institutions	Location of Institution	Duration of Programs	Programs Offered
Lakehead University	Thunder Bay	Bachelor and graduate level programming	Offers undergraduate and graduate programs in arts, education, health, business, environmental science, and STEM (Lakehead University n.d.a). Mining-related program offerings include a four-year undergraduate and graduate program in geology (Lakehead University n.d.b).
Confederation College of Applied Arts and Technology	Main campus is in Thunder Bay. Satellite campuses in Dryden and Sioux Lookout.	Programs are typically one to three-year certificates or diplomas	Offers programs in business, community services, health, hospitality, aviation, engineering technology, natural resources, and skilled trades programs (Confederation College n.d.).
Seven Generations Education Institute	Kenora, Sioux Lookout, and Fort Frances.	Programs are typically one to three-year Ontario College certificates/ diplomas. Some programs are bachelor level programing and require four years.	Offers programs in business, community service, health, arts, skilled trades, and salon and spa through partnerships with Lakehead University, and various colleges in Ontario (Seven Generations n.d.).
Cambrian College	Sudbury	Programs are typically one to three-year certificates or diplomas; or one to two-year graduate certificate programs	Offers programs in skilled trades, engineering technology, health, arts, community services, law, business, and environmental studies (Cambrian College n.d.).
Laurentian University	Sudbury	Programs are typically one to four-year certificates or diplomas; and one to two-year graduate certificate programs.	Offers undergraduate and graduate diplomas in arts, education, health, management, science, engineering, and architecture. Some programing is offered in French (Laurentian University n.d.a). Mining-related programming includes a four-year undergraduate mining engineering program (with optional co-op component) and a geology, mineral deposits, and Precambrian geology program (Laurentian University n.d.b).

College and University Institutions	Location of Institution	Duration of Programs	Programs Offered
Collège Boréal d'arts Appliqués et de Technologie	A francophone college with campuses in Sudbury, Hearst, Kapuskasing, Timmins, and Nipissing.	Programs are typically one to three-year certificates or diplomas	Offers programs in agriculture, commerce, education, community services, natural resources, engineering technology, health, and skilled trades (Collège Boréal n.d.a). Mining-related programs include prospecting and mining exploration techniques, construction engineering technology (civil and mining), and construction technician in mining and civil (Collège Boréal n.d.b; Collège Boréal n.d.c).
Northern College of Applied Arts and Technology	Campuses in Ontario including Haileybury, Timmins, Kirkland Lake, and Moosonee.	Programs are typically one to three-year certificates or diplomas	Offers undergraduate programs in business, community services, health, veterinary science, welding engineering technology, and engineering technology (Northern College n.d.a). Mining-related program offerings include a mineral exploration techniques and mining engineering technician. Also offers training certificates in mining related occupations including diamond driller assistant common core, underground hard rock miner common core, and surface miner common core (Northern College n.d.b).

3.3.4 Union Hiring Halls in the Regional Study Area

Within the Regional Study Area, there are a limited number of union hiring halls. Union hiring halls help employers fulfill their needs for organized labour. They help ensure that the labour has the skill and qualifications required by the employer. Most union hiring halls of interest are located to the south beyond the Regional Study Area. The relevant halls located in the Regional Study Area to consider are:

- International Brotherhood of Electrical Workers (IBEW) – Thunder Bay/Sudbury/Winnipeg;
- United Brotherhood of Carpenters and Joiners of America (UBCJA) – Sudbury;
- Cement Masons and Plasters Union – Winnipeg; and
- United Steelworkers – Winnipeg

There are no hiring halls within the Local Study Area. Youths identified that a local union to assist with job matching would help address the challenges they face with entering the workforce with limited working experience (Youth Workshop 2022).

3.3.5 Other Resources for Workforce Development in the Local and Regional Study Areas

Other resources for workforce development in the Local and Regional Study Areas are summarized in Table 3.3-3.

Table 3.3-3: Workforce Development Institutions by Region

Institutions	Description of Institution and Services Offered
Local Study Area	
Contact North	In Ignace and Dryden, offers on-line secondary and post-secondary courses, certificates, diplomas, and degrees in a wide variety of professions from colleges and universities across Ontario.
Northwest Employment Works (NEW)	Offers employment services such as job matching, job postings, apprenticeship matching, and support for individuals seeking to end social assistance and re-enter the workforce.
Seven Generations Education Institute	Is an Indigenous-led institution which has several locations across Northwestern Ontario for adult education, including Ignace. Seven Generations has a Sioux Lookout campus which offers training for employment for individuals and businesses, the Apatisiwin Employment and Training program, and the Azhemiinigoziwin program which focuses on developing life skills, Indigenous teachings, education, and job preparation for women.
Patricia Area Community Endeavors (PACE)	Offers lending services to businesses and entrepreneurs if they have been declined by the bank. PACE also offers counseling services and a business incubator program. The business incubator program has three offices that can be used for up to 12 months by clients.
Crossroads Employment and Training	Located in Ignace, provides counseling and assistance with resumes for job seekers, but are constrained by provincial funding. Crossroads refers job seekers who would benefit from further upskilling to Contact North (located in the same building) where some certifications and courses are offered.
Regional Study Area	
Northern Centre for Advanced Technology (NORCAT)	Located in Sudbury, offers labour training and development programs, services, and resources to optimize productivity and safety of workers in skilled labour industries. They offer common core programs for basic mill and mining operations, simulation training for operators of mining equipment, and customized training requested by employers.
Northern Community Development Services (NCDS)	Located in Fort Frances, offers employment services such as job search, career guidance, specialized services for both the unemployed and employed, skill-building workshops, assistance with resumes, and placements.

Institutions	Description of Institution and Services Offered
YES Employment Services	Located in Thunder Bay, offers employment services such as job matching, job and training postings, career counseling, and education and re-training options through the Better Jobs Ontario program. Also offers support for youths (i.e., 15 to 29 years old) through the Youth Job Connection program which delivers pre-employment training, work placements, and mentorship and job coaching throughout the program.
Workforce Inc.	Located in Thunder Bay, has job postings available for the public and provides supports for employers to assist with resourcing skilled trades, labour, and professionals to address labour demands.
Thunder Bay Community Economic Development Commission (CEDC)	Located in Thunder Bay, the Community Economic Development Commission engages in projects and programs that will contribute to economic development. The Thunder Bay Community Economic Development Commission also provides entrepreneurial support including business consultation services, guidance with business start-ups, assistance with obtaining funding, and referral services.
Northwestern Ontario Innovation Centre	Is a non-profit organization which offers programs designed to promote job growth by supporting entrepreneurs and companies grow their business. The programs offered focus on starting the business, developing a clientele, resources for office space, obtaining funding, and programs for youth entrepreneurs.
Professional Association of Residents of Ontario (PARO)	Professional Association of Residents of Ontario is the official representative voice for doctors in training in Ontario. Professional Association of Residents of Ontario's priority is to advocate on behalf of the members, addressing professional and educational concerns to optimize training and the well-being of Ontario's newest doctors.
The Northwest Training and Adjustment Board (NTAB)	Does not provide any training themselves but facilitates the connections and processes to develop the workforce with local and regional employers. They also have a thorough understanding of the local and regional labour forces through research and community engagement.
Shooniyaa Wa-Biitong	Is a training and employment centre mandated by the Chiefs of Treaty No.3 to promote employment development and deliver training to First Nation communities and their members within the Treaty No.3 area and Treaty No.3 members outside of the Treaty #3 area. The programs offered include training, an employment training program, a self-employment program, and youth programs which assist with defining career goals, education and employment goals, and entrepreneurship.

3.3.6 Industry Directed Training in the Local Study Area

There is substantial industry-directed training in the study area (e.g., Resolute Forest Products, Domtar) with employers training their staff directly to ensure they have the necessary skills to fulfill their needs. For example, Domtar noted co-op opportunities with the Dryden High School across various programs from STEM to operations and accounting. Domtar also noted a two-and-a-half-day Conservation Camp, a

program extended to Grade 9 students which covers subjects such as water, soils, trapping, harvesting, and seeding. It is a broad program with significant uptake by students who benefit from credit towards a year-end science task.

The Sioux Lookout Mining Centre of Excellence offers ten different programs that include courses in hard rock common core, surface diamond drilling, and heavy equipment operations. For 2022 there are 137 participants set to complete the program, of which 51% are women (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

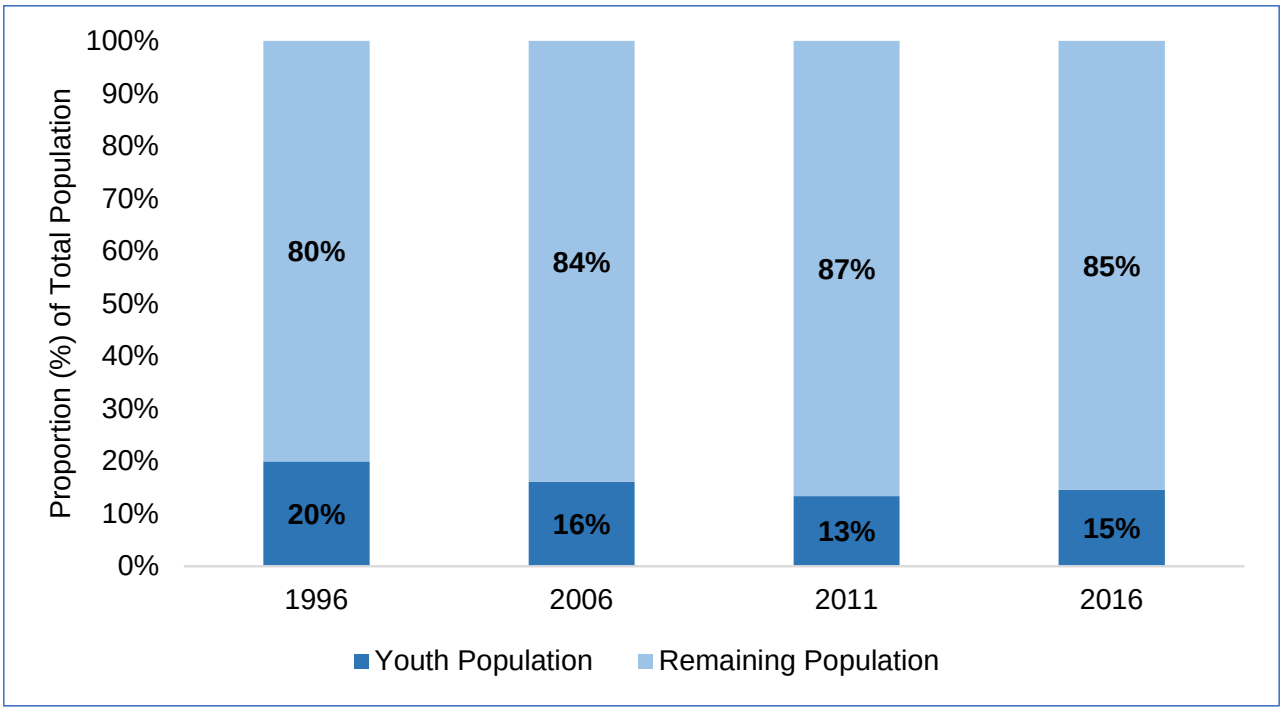
This means that there are large employers and institutions (e.g., Treasury Metals, Domtar, Resolute Forest Products, Northwest Training and Adjustment Board, PACE, Sioux Lookout Mining Centre for Excellence) that have existing experience in working with educational institutions to meet their labour force needs.

3.4 YOUTH ECONOMIC DEVELOPMENT

"The term 'youth' generally refers to those in the stage of life from adolescence to early adulthood" (Canadian Heritage 2021) and this transition period from children to adulthood typically brings greater opportunity for "economic independence, political involvement, and participation in community life" (United Nations 2020). Youth are defined as residents who are in the labour force and younger than 30 years old (i.e., ages 15 to 29 years old), and represent not only an important labour force within the region, but as an age group that has the ability to contribute to community vibrancy and leadership into the future. "Youth who are not (engaged) in education, employment or training are more likely to experience social and economic exclusion" (United Nations 2020).

Overall, there has been a decline in youth in the Local and Regional Study Areas since 1996. Ignace experienced a decline in the total number of youths between 1996 to 2016 (355 youths in 1996 to 175 in 2016). This represented a 51% decline in the total number of youths. Over this period there was also a 5% decline of youths as a proportion of the total population (Figure 3.4-1). This reflects both an overall decline in the community's population and associated economic events along with a general trend of the aging population (Section 3.2.1).

Figure 3.4-1: Ignace Youths as a Proportion of the Total Population (1996, 2006, 2011, and 2016)[1]



Source: Statistics Canada 1996, 2006, 2011, 2016.
Notes:
1. The age breakdown of 15-29 years old is not available in the 2001 Census of Population.

Other communities in the Local Study Area experienced a 10% increase in the total number of youths over the same timeframe, although youths as a proportion of the total population declined by 2% (Statistics Canada 1998, 2017). This is consistent with trends in the Kenora Census Division which experienced a 2% decline in the total number of youths and youths as a proportion of the total population from 1996 to 2016 (Statistics Canada 1998; 2017).

3.4.1 Challenges to Youth Employment

Table 3.4-1 shows the participation, employment, and unemployment rates for youths in the Local and Regional Study Areas. Youths in Ignace have lower participation and employment rates compared to other communities in the Local Study Area, but similar rates to youths in the Regional Study Area. Although unemployment rates are generally similar across the board, the rate at which youths are not in the labour force (i.e., the opposite of the participation rate) is materially higher for youths in Ignace and the Regional Study Area compared to other communities in the Local Study Area. Youth in general tend to experience lower rates of employment than other Canadians, in part due to the fact they are attending school on a full-time basis (Statistics Canada 2021b).

Table 3.4-1: Labour Force Rates in the Local and Regional Study Area for Youths Aged 15 to 24 Years Old (2016)[1,2,3]

	Ignace		Dryden		Sioux Lookout		Machin		Local Services Board of Wabigoon	Local Study Area		Kenora Census Division	
	Youth Rates	Overall Rates[3]	Youth Rates	Overall Rates	Youth Rates	Overall Rates	Youth Rates	Overall Rates	Overall Rates	Youth Rates	Overall Rates	Youth Rates	Overall Rates
Participation rate (%)	48.1	53.5	75.1	61.8	60.4	71.2	65.2	58.3	50.0	68.7	63.7	51.7	60.7
Not in the Labour Force rate (%)	51.9	47.0	24.9	38.1	39.6	28.7	39.1	41.7	16.7	31.6	36.3	48.3	39.3
Employment rate (%)	44.4	48.0	61.1	57.0	53	66.9	56.5	50.6	40.0	57.6	58.7	40.4	53.6
Unemployment rate (%)	15.4	9.3	18.7	7.7	11.1	6.1	13.3	14.3	50.0	15.7	7.8	21.8	11.6

Source: Statistics Canada 2019.

Notes:

1. The age breakdown of 15-29 years old is not publicly available, so rates for 15-24 years old are used as proxy.
2. Data for the youths in the Local Services Board of Wabigoon was not available due to the small population size and to ensure the confidentiality of the residents.
3. "Overall rates" refers to the rates associated with the total population aged 15 and above.

Youth across Canada face a variety of challenges in finding employment, including "lack access to technology, professional networks and career development opportunities. Youth that come for low-income or marginalized communities are disproportionately impacted by these barriers" (Canadian Heritage 2021). Within the LSA, some of these challenges are exacerbated my existing conditions, such as poor internet connectivity and lack of public transportation options within and between communities (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

Knowledge holder interviews and the youth workshop identified a lack of local education and training institutions as a barrier to employment. There are no universities within the Local Study Area, and even training for skilled trades and other employment requires travel within or beyond the area meaning youth have to commute or relocate to access a full range of opportunities. As there is no guarantee of employment within their chosen field, many youth do not return to Ignace or their home communities after pursuing post-secondary education. A lack of available and affordable housing options also acts as a deterrent to returning to the area. (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). Youth also have concerns about the financial burden associated with post-secondary education as tuition costs continue to rise and entry level position salaries are often insufficient to pay off any associate loans or debts (Canadian Heritage 2021, NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

3.4.2 Youth Entrepreneurship

Entrepreneurship can generate economic empowerment and can begin at any age. New small businesses play a pivotal role in competition of emerging sectors and are critical for economic development and innovative capacity (Ribeiro-Soriano 2017). As of 2019, small businesses (i.e., businesses with 1 to 99 paid employees) employed 68.8% of the total private labour force, and between 2014 and 2019, small businesses were responsible for 35.8% of the net growth in employment (Government of Canada 2020). In 2016, small businesses accounted for 41.9% of GDP generated by the private sector (Statistics Canada 2020). This demonstrates the importance of encouraging entrepreneurship and is further supported by the finding that 85% of net job creation in the first two years of recovery following the previous three recessions (prior to 2011) took place among small and medium sized businesses (MDB Insight 2011).

The youth workshop and knowledge holder interviews indicated that there isn't a strong sense of youth entrepreneurship within the Local Study Area, and it is more likely that entrepreneurship is pursued either in the later stages of youth upon completing any post-secondary education, or as part of adulthood (Youth Workshop 2022, NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

There are no organizations specifically providing supports to entrepreneurs in Ignace, but the Ignace and Area Business Association does hold public monthly meetings to facilitate business development discussions and networking. PACE also offers its services remotely to Ignace and other communities in the Local Study Area, but the nearest office is in Dryden.

In general, there are limited organizations locally, but there are more supports available at the regional level for young entrepreneurs, many of which can be accessed online. Table 3.4-2 summarizes organizations which provide entrepreneurial supports within the Local Study Area and the northern Ontario Regional Study Area.

Table 3.4-2: Entrepreneurial Organization in the Local and Regional Study Areas

Organization	Location	Services Offered
Patricia Area Community Endeavors (PACE)	Dryden	PACE provides business counseling and support, loans, non-profit funding, mentorship, and a small business incubator program (PACE n.d.a). The Small Business Incubator program provides subsidized office space for up to 12 months to a small business owner. This also presents an opportunity for small business owners to engage in skill development and business training that is designed to accelerate their business (PACE n.d.b).
Futurepreneur Canada	Available online	Non-profit organization which supports business owners in the age range of 18-39 years old. Provides financing, mentoring and supports including online resources and pre-launch coaching (Futurepreneur n.d.).
FedNor - Federal Economic Development Initiative for Northern Ontario	Northern Ontario, available online	FedNor is the Government of Canada's economic development organization for northern Ontario. The organization provides support for businesses including financing and business services (FedNor 2021).
Shooniyaa Wa-Biitong	Kenora and Fort Frances	Is a training and employment centre mandated by the Chiefs of Treaty No.3 to promote employment development and deliver training to Indigenous peoples. Shooniyaa Wa-Biitong also offers a self-employment program which is designed to help support entrepreneurs with a small business start-up.
Northwest Business Centre	Kenora	The Northwest Business Centre offers one-on-one consultation services including business planning, start-ups, and program and funding options (Northwest Business Centre n.d.a). The Starter Company Plus program is designed to create sustainable jobs through the provision of a $5,000 grant for entrepreneurs looking to start, expand, or buy a small business. Entrepreneurs will also receive training to complete a business plan and one-on-one guidance (Northwest Business Centre n.d.b).
Summer Company	Thunder Bay	The Summer Company Program is for young entrepreneurs, between 15-29 years old, and returning to school in the fall. Provides up to a $3,000 grant to help start the business and will also provide business coaching and mentoring from local community business leaders (Thunder Bay CEDC n.d.).

Organization	Location	Services Offered
Ontario Network of Entrepreneurs (ONE)	Available online; various programs are offered in communities across Ontario	The Ontario Network of Entrepreneurs is funded by the Government of Ontario and provides resources for starting a business, growing and financing a business, youth entrepreneurship supports, and supports for research and development (ONE n.d.).
Northwestern Ontario Innovation Centre	Kenora and Thunder Bay	Offers an innovator membership which provides business advice and supports including market research, market development, market export, product development and accessing capital (I Innovation n.d.a). Also provides supports for finding customers, physical resources such as office space, obtaining funding, and product development. The Youth Effect Program is for youths, between the ages of 18 and 29, who will be matched with a local business to gain experiential learning and training (NWO Innovation n.d.b). The BizKids Camp is for youths, between the ages of 9 and 12, who will generate a business idea with the guidance of counselors and will run their business during the last day of the camp (NWO Innovation n.d.b). The TechKids Program allows youths to have the opportunity to learn about game and app development, robotics, web development, 3D printing and different careers in technology (NWO Innovation n.d.b). A Trailblazer Program which is geared towards early-stage startups and helps identify the market and validate the business idea (NWO Innovation n.d.c). The Costarter Program is an accelerator program which is an intensive crash course in creating a business for entrepreneurs in the early stages of their business venture (NWO Innovation n.d.d).
Northern Ontario Angels (NOA)	Sudbury	Northern Ontario Angels is an organization where northern Ontario entrepreneurs can look to grow their capital and investors looking for investments (NOA n.d.).

4.0 CHANGE ANALYSIS

The Project has a direct labour requirement of 200 workers during pre-construction, 640 workers during construction, and 700 workers during operations. These workers will be comprised of NWMO staff and surface and sub-surface trades. This mix of workers will change by Project phase. Direct employment will be primarily focused off-site during pre-construction with 180 workers located at the Centre of Expertise. Most of the direct employment will be located at the Revell Site during subsequent phases. There will be 470 workers located on-site during construction and 580 workers on-site during operations.

The Local Study Area has a limited supply of workers with the occupations required by the Project. The Local Study Area faces high demand for skilled workers and trades that exceeds their supply. The Regional Study Area has a relatively larger supply of workers with the occupations required by the Project compared to the Project's labour requirements; however, the Regional Study Area is currently facing the same industry demand for skilled workers and trades. Given the size of the Project's requirement for labour and the smaller quantity of workers in occupations of interest, the Project will materially further increase the demand for undersupplied skilled workers.

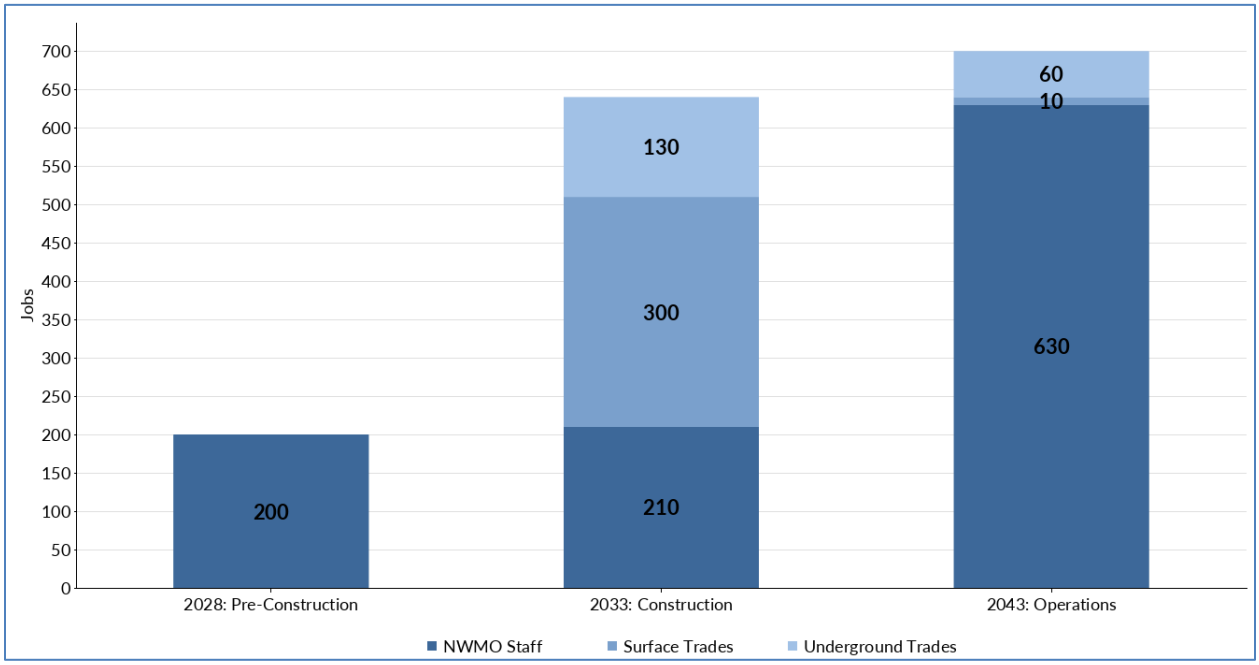
The direct employment related to the Project will have a material and positive impact on the amount of employment in the Local Study Area that increases the economic base without causing a disruptive change due to the increase in the number of jobs. The Project employment will have a substantive and larger impact on Ignace, with 160 to 180 Project workers (mostly NWMO staff) assumed to live in Ignace during the pre-construction and construction periods respectively. During operations this number grows to a target of 300 Project workers living in Ignace. This represents an increase in Ignace of 30% over the baseline employment in pre-construction and growing to 50% over the baseline employment in operations.

This direct Project employment will create demand for additional jobs to develop permanent housing and meet other downstream needs for workers associated with the Project.

4.1 PROJECT DIRECT LABOUR REQUIREMENTS

Workforce for the Project is expected to come in three phases: pre-construction (2024 to 2032), construction (2033 to 2042) and operations (2043 to 2088). If Ignace is selected, by 2028 most NWMO staff will be working full-time from the Centre of Expertise in Ignace. As the Project progresses surface and underground trades will be part of the direct labour requirements. Figure 4.1-1 provides projections for the average annual requirement for NWMO staff, surface construction, and underground excavation trade labour by phase throughout the duration of the Project.

Figure 4.1-1: Projected APM Jobs by Phase and Type



Source: NWMO 2021.

The average annual direct labour required by the Project includes 200 direct NWMO staff during pre-construction, 210 NWMO staff and 430 trades during construction, and 630 NWMO staff and 70 trades during operations. This workforce will be located between the Centre of Expertise and the Revell Site. The distribution of labour by type, Project phase, and location is provided in Table 4.1-1.

Table 4.1-1: APM Labour Requirements

		NWMO Staff	Surface Trades	Underground Trades	Total
On-site	Pre-construction (2028)	20	-	-	**20**
	Construction (2033)	40	300	130	**470**
	Operations (2043)	510	10	60	**580**
Off-site	Pre-construction (2028)	180	-	-	**180**
	Construction (2033)	170	-	-	**170**
	Operations (2043)	120	-	-	**120**
Total	Pre-construction (2028)	200	-	-	**200**
	Construction (2033)	210	300	130	**640**
	Operations (2043)	630	10	60	**700**

Source: NWMO 2021.

There are a range of professional, technical (including technicians and Red Seal journeypersons[3]), and labour positions required for the Project. The Workforce Development study uses NOC codes and their associated educational requirements. Table 4.1-2 presents the occupational categories and the typical associated education and employment requirements.

[3] A certified journeyperson is recognized as a qualified and skilled person in a trade and is entitled to the wages and benefits associated with that trade. A journeyperson is allowed to train and act as a mentor to a registered apprentice (Statistics Canada 2008).

Table 4.1-2: APM Project Occupations and the Education and Experience Requirements

Occupational Category	Typical Associated Education and Employment Requirements
Senior management (NOC 00) and specialized middle management (NOC 011, 021, 073, 081, 097).	• Four-year university degree, minimum. • Some specialized management areas require a graduate degree. • Some specialized management may also require additional licensure (Professional Engineer) or certification (Certified Human Resources Professional). • Multiple years of experience.
Professional occupations related to natural and applied sciences: physical science professionals; civil, mechanical, electrical, and chemical engineers (NOC 21).	• At least a four-year university degree. • Some positions will also require a graduate degree. • Additional licensure often required (Professional Engineer).
Technical occupations related to natural and applied sciences: technicians and technologists in a range of fields, including physical science, life science, engineering, land surveying, mathematics, statistics, actuarial science, and computer and information systems (NOC 22).	• Varies by field and position. • Up to a three-year post-secondary college education program. • Sometimes provincial or territorial certification is available.
Supervisors and technical occupations in natural resources, includes underground production and development miners (blasters, drillers, miner) (NOC 82).	• Formal training (six weeks) followed by specialized training. • In Ontario, may be certified as basic common core or underground hard rock miner. • Other certification may be required (blasting, first aid).
Natural resources workers, includes underground mine service and support workers (crusher operator, helpers) (NOC 84).	• Formal training (six weeks) followed by training as a helper. • In Ontario, may be certified as basic common core or underground hard rock miner.

Occupational Category	Typical Associated Education and Employment Requirements
Processing, manufacturing, and utilities supervisors and central control operators (NOC 92).	• College diploma may be required. • On-the-job training is typically provided. • Experience as a machine or process operator at the same company often required.
Processing and manufacturing operators and related production workers (NOC 94).	• On-the-job training. • College or university diploma may be required. • Occupation-specific training courses or specific work experiences. • Additional training could be required for handling of used nuclear fuel.
Industrial, electrical, and construction trades (includes Red Seals). (NOC 72).	• Journeyman/woman certification. • Red Seal endorsement if available. • Occupation-specific training courses or specific work experiences.
Maintenance and equipment operation trades, includes heavy equipment and transport operators and supervisors, machinery and transportation equipment operators and supervisors (NOC 73).	• Completion of appropriate apprenticeship programming if required. • May require additional certification.
Transport and heavy equipment operation, includes truck transport drivers and heavy equipment operators (NOC 75).	• Appropriate licence or certification. • Transportation program is required by the Canadian Nuclear Safety Commission upon applying for a license to transport used nuclear fuel (CNSC 2021).

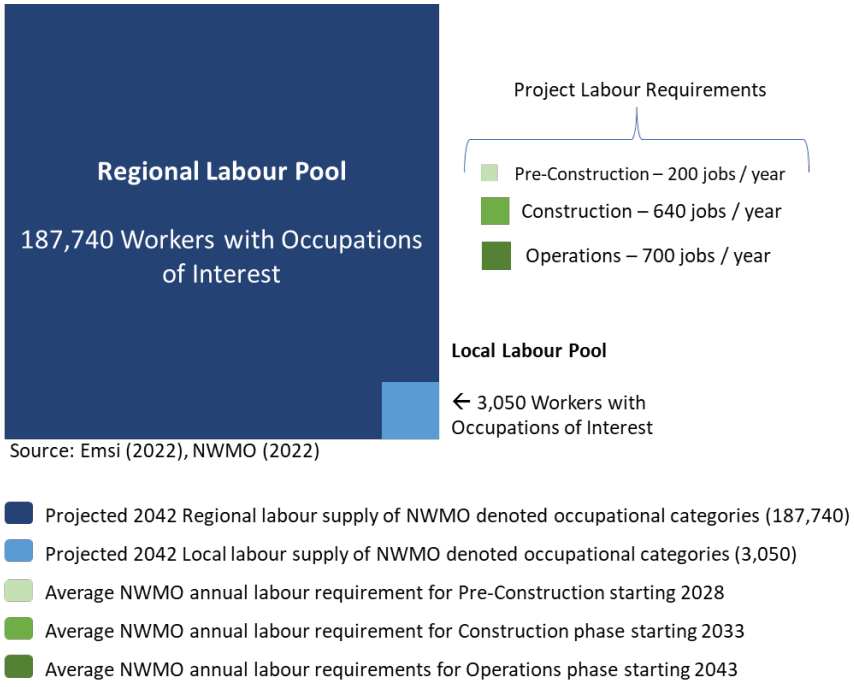
Source: Statistics Canada Census 2016. NWMO 2021.

4.2 PROJECT IMPACTS ON LABOUR SUPPLY AND DEMAND

The labour baseline for the Local and Regional Study Areas is described in detail in the Ignace and Area Community Studies: Economics and Finance – Labour Baseline study. This section presents the impacts of the Project's labour requirements on the labour supply.

As noted in Sections 3.2.2.1 and 3.2.2.2 the Local Study Area does not have sufficient labour with the occupations of interest to meet most of the Project's requirements, while the Regional Study Area does. Figure 4.2-1 visually represents these challenges, showing the size of the Regional and Local Labour markets relative to the Project labour requirements by phase.

Figure 4.2-1: Projected Regional and Local Labour Pool compared to the Project Labour Requirements by Phase (2042)



Source: Emsi 2022. NWMO 2022.

These impacts are further described by Study Area and Project phase below.

4.2.1 Labour Supply Compared to Project Requirements

The Local Study Area labour supply includes 10,160 workers in 2021. Of these, 2,360 workers in the Local Study Area have occupations that will be required by the Project. Table 4.2-1 compares the forecast number of workers with occupations required by the Project in the Local Study Area at the start of each Project phase with the Project's average annual requirement for direct labour.

Table 4.2-1: Local Labour Supply compared to Project Labour Requirements

	Local Study Area Labour Supply (Occupations required by the Project)	Project Labour Requirements	Project Labour Requirements/ Local Study Area Labour Supply (%)
Pre-Construction (2028)	2,570	200	8%
Construction (2033)	2,740	640	23%
Operations (2043)	3,120	700	22%

Source: NWMO 2022. Emsi 2022.

In pre-construction the labour required by the Project is 8% of the local labour supply (of occupations required by the Project) in the Local Study Area. In construction the labour required by the Project is 23% of the occupations required by the Project in the Local Study Area. In operations the labour required by the Project is 22% of the occupations required by the Project in the Local Study Area.

Across all phases of the Project, the Project demand for labour is relatively high compared to the relevant labour supply in the Local Study Area. The Project demand for labour is smallest in the pre-construction phase of the Project and will draw from labour the qualified labour available in the Local Study Area; however, it is probable that a large portion of the labour will be drawn from the Regional Study Area or beyond. Some of this labour requirement will be met by existing NWMO staff relocating to the Centre of Expertise. Though this is likely the smallest Project requirement for labour by phase, a fraction of 8% is still a significant increase in demand relative to the Local Study Area labour supply.

In the construction and operation phases of the Project, the Project demand for labour is large relative to the Local Study Area labour supply. While there is a labour supply in the Local Study Area that meets some of the Project needs it is too small to fully meet the Project demand. Some labour to meet the Project's demand will come from outside the Local Study Area.

The Regional Study Area labour supply includes 629,760 workers in 2021 (see the Economics and Finance – Labour Baseline study for more information). Of these, 164,000 workers in the Regional Study Area have occupations that will be required by the Project. Table 4.2-2 compares the forecast number of workers with occupations required by the Project in the Regional Study Area at the start of each Project phase with the Project's average annual requirement for direct labour.

Table 4.2-2: Regional Labour Supply compared to Project Labour Requirements

	Regional Labour Supply (Occupations required by the Project)	Project Labour Requirements	Project Labour Requirements/ Regional Labour Supply (%)
Pre-Construction (2028)	170,310	200	0.1%
Construction (2033)	175,090	640	0.4%
Operations (2043)	185,370	700	0.4%

Source: NWMO 2022. Emsi 2022.

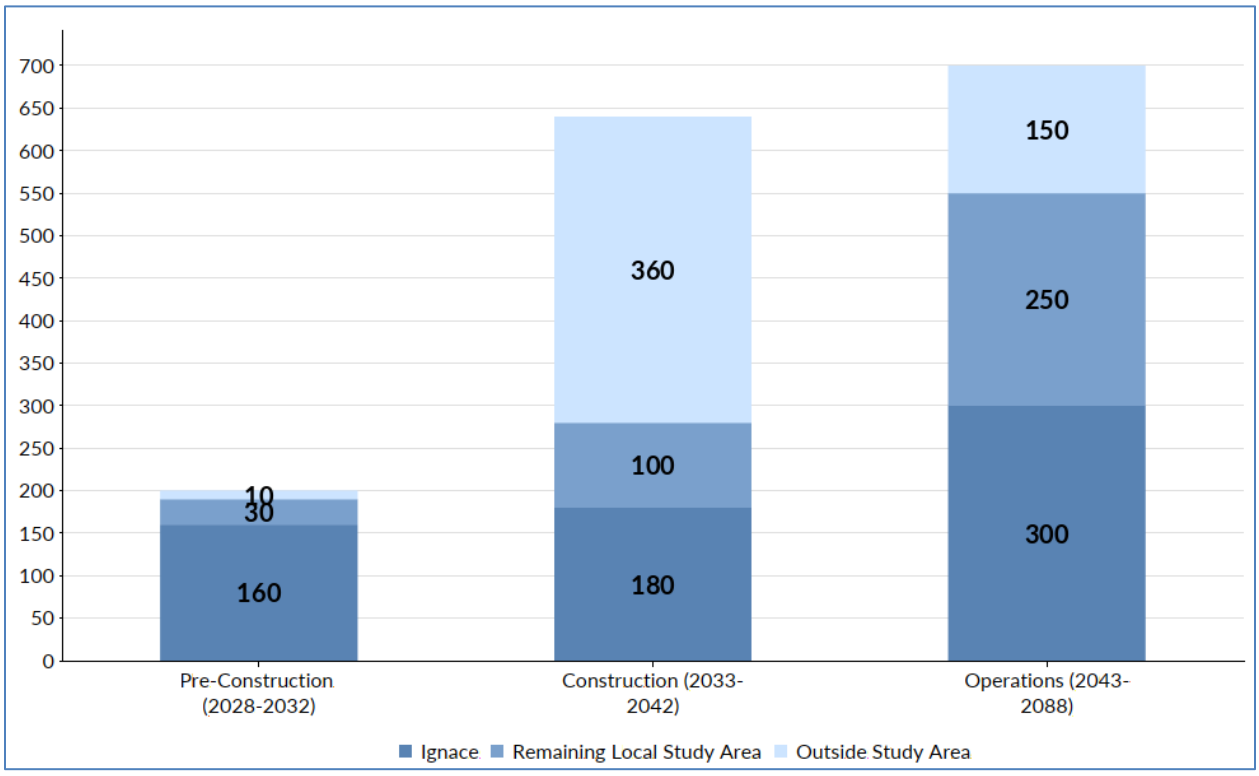
In pre-construction the labour required by the Project is 0.1% of the occupations required by the Project in the Regional Study Area. In the construction phase, the labour required by the Project is 0.4% of the occupations required by the Project in the Regional Study Area. In the operations phase the labour required by the Project is 0.4% of the occupations required by the Project in the Regional Study Area.

In all phases of the Project, the Project demand for labour is a relatively small percentage of the relevant labour supply in the Regional Study Area (<1% across phases), however represents a greater demand on the local labour supply (between 8% and 23% across all phases). Although there is an abundance of the required labour in the Regional Study Area, the skilled labour and trades required by the Project are fully employed. All industries are currently experiencing labour shortages, but the trades labour shortages and projected labour shortages have been a concern for some time due to the aging demographic in the region (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). There is a shortage of skilled labourers locally and communities such as Dryden have resolved to recruiting labour from outside their community (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). The Project will need to fulfill its labour requirements in a labour market that has pre-existing high demand relative to supply for the occupations required.

4.3 PROJECT LABOUR IMPACT

The impact of the Project on employment will be dependent on where the labour employed by the Project resides. It is important to note that the employment numbers and locations of the employment for the Project are projections and may change. Employment projections will be dictated by regional discussions and the human resources strategies implemented by the NWMO over the duration of the Project. Figure 4.3-1 presents planning assumptions for labour residency during each phase of the Project.

Figure 4.3-1: Direct Labour Residency by APM Project Phase



Source: NWMO 2022.

During pre-construction most of the direct labour force will be NWMO staff working at the Centre of Expertise which may be in Ignace. This means that an annual average of 200 NWMO staff will be working out of the Centre of Expertise in Ignace during pre-construction. As this represents the best opportunity to attract staff to reside in Ignace the planning assumption is that in an average of 160 direct workers will choose to reside in Ignace. It is assumed that in this phase 30 workers will choose to reside in other communities in the Local Study Area, surrounding Ignace, and 10 workers will be located outside the Local Study Area.

During construction, focus for direct employment will be at the Revell Site for 10-years. The greatest increase in direct employment will come from trades at the Revell Site. During construction a work camp will be established to accommodate a workforce that drives or flies in to work for an extended period of time and then drives or flies out to return to their permanent residence. This means that much of the direct workforce will come from outside of the Local Study Area. The planning assumptions for this phase are that the direct workforce located in Ignace grows to 180, while 100 workers will be located in the Local Study Area outside of Ignace, and 360 workers will reside outside of the Local Study Area.

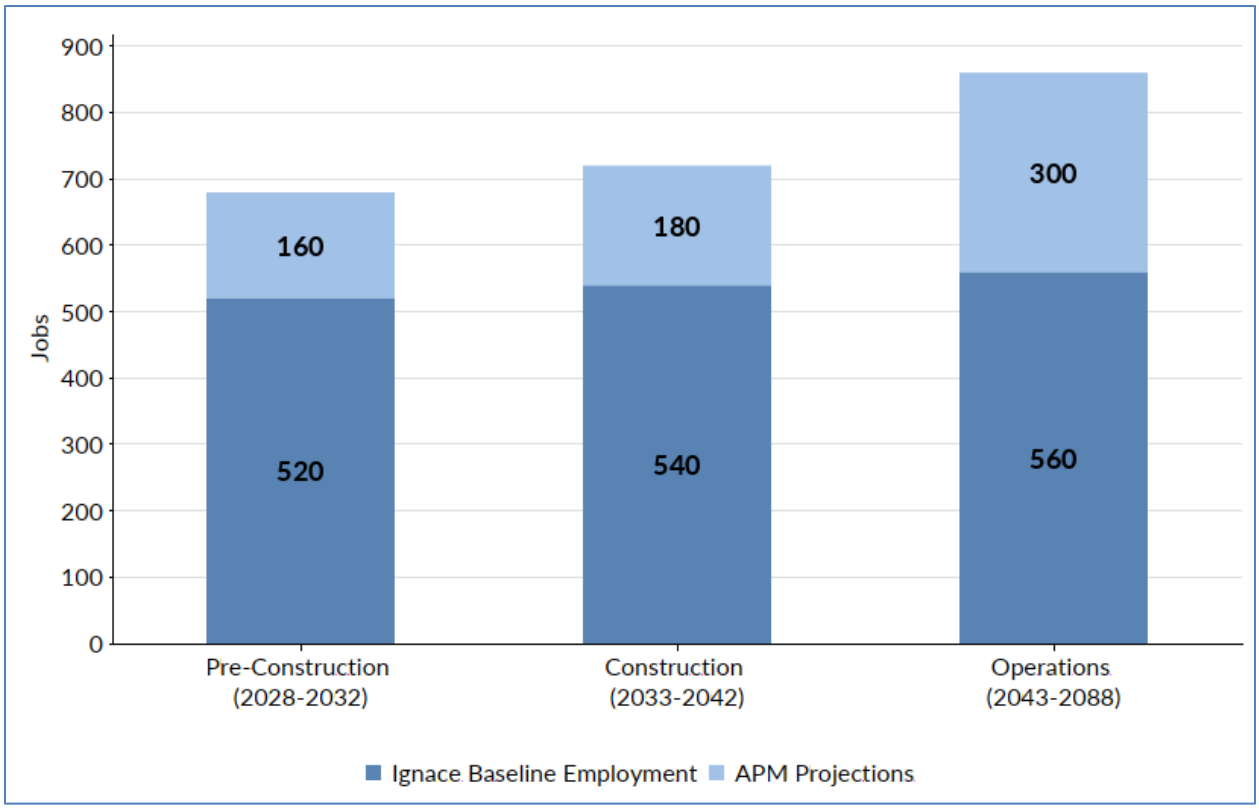
Finally in the operations phase, most of the direct workers will be NWMO staff. Most will be located at the Revell Site. Over 100 NWMO staff will remain located at the Centre of Expertise. There will still be some surface and underground trades employed at the Revell Site. There will not be a work camp in this phase of the Project. This means that employment will grow within the Local Study Area, in both Ignace and the surrounding communities. The planning assumptions in this phase are that 300 workers will choose to reside in Ignace, 250 workers will commute to the Project from communities in the surrounding Local Study Area, and 150 workers will commute from outside of the Local Study Area.

In addition to the impact of the direct labour associated with the Project additional jobs will be created developing and building permanent housing and meeting other induced needs for workers associated with the Project.

4.3.1 Project Impact on Employment in Ignace

The Township of Ignace wants to attract staff associated with the Project to take up residence in the community. Throughout the Project phases the baseline employment without the Project in Ignace is forecast to range from 520 jobs at the start of pre-construction, 540 jobs at the start of construction and 560 jobs at the start of operations. The planning assumptions are that the annual average number of workers employed by the Project resident in Ignace by phase are 160 during pre-construction, 180 during construction, and 300 during operations. Figure 4.3-2 shows the proportion of Project workers assumed to locate in Ignace compared to the baseline employment projections for Ignace.

Figure 4.3-2: Ignace Baseline Employment versus Project Labour Projections



Source: Manifold 2022. NWMO 2022.
Notes: Note: Projections were calculated using a compound annual growth rate between 2020 and 2030 projections.

Table 4.3-1 shows the impact of the Project on employment in Ignace. All phases of the Project represent a substantive positive increase in employment in the Local Study Area. The increases in employment range from 30.8% over the baseline employment in pre-construction and growing to 53.6% over the baseline employment in operations.

Table 4.3-1: Assumed Impact of Project Labour on Employment in Ignace

	Pre-Construction (2028-2032)	Construction (2033-2042)	Operations (2043-2088)
Ignace	30.8% increase over baseline without the Project.	33.3% increase over baseline without the Project.	53.6% increase over baseline without the Project.

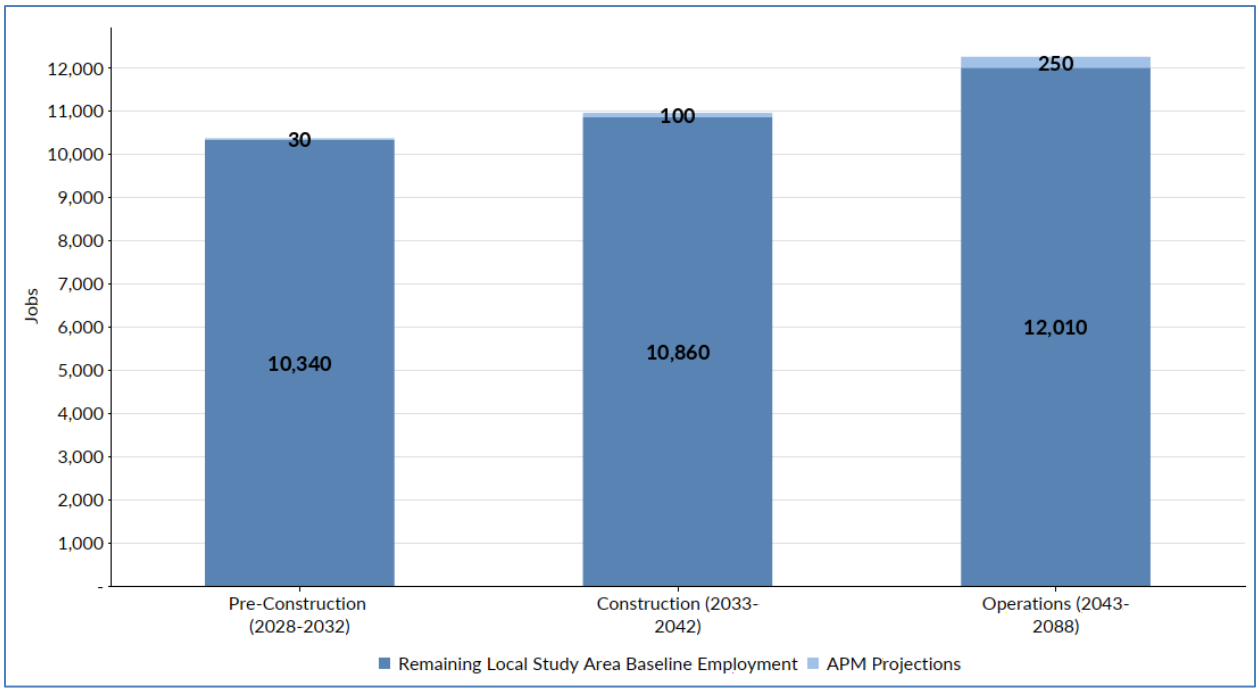
Source: Emsi 2022. NWMO 2022.

These forecast changes in employment are material and will alter Ignace's workforce dynamics. This increase in employment will cascade to a substantive increase in population with a need for housing, infrastructure, and other services in Ignace. The Project could become the largest single source of employment in Ignace, assuming no other major employer establishes in the area during the three phases of the APM Project.

4.3.2 Project Impact on Employment in Other Communities in the Local Study Area

Throughout the Project phases the baseline employment without the Project in other communities in the Local Study Area (excluding Ignace) is forecast to range from 10,340 at the start of pre-construction, 10,860 at the start of construction and 12,010 at the start of operations. The planning assumptions are that the annual average number of workers employed by the Project in the Local Study Area by phase during pre-construction include 30 workers, during construction this grows to 100 workers, and finally during operations 250 workers. Figure 4.3-3 compares the proportion of Project workers expected to reside in the Local Study Area against the baseline projections.

Figure 4.3-3: Local Study Area Baseline Employment Excluding Ignace versus Project Labour Projections



Source: Manifold 2022. NWMO 2022.
Note: Projections were calculated using a compound annual growth rate between 2020 and 2030 projections.

Table 4.3-2 shows the impact of the Project on employment in the Local Study Area (excluding Ignace). All phases of the Project represent a material and positive increase in employment in the Local Study Area. The increases in employment range from 0.3% over the baseline employment in pre-construction and growing to 2.1% over the baseline employment in operations. These forecast changes in employment likely represent incremental and not disruptive changes to the workforce dynamics in the Local Study Area. This increase in employment will cascade to an increase in the need for housing, infrastructure, and other services, while adding to the economic base of the Local Study Area.

Table 4.3-2: Assumed Impact of Project Labour on Employment in the Local Study Area

	Pre-Construction (2028-2032)	Construction (2033-2042)	Operations (2043-2088)
Local Study Area (excluding Ignace)	0.3% increase over baseline without the Project.	0.9% increase over baseline without the Project.	2.1% increase over baseline without the Project.

Source: Emsi 2022. NWMO 2022.

4.4 CHALLENGES AND OPPORTUNITIES ASSOCIATED WITH PROJECT IMPACTS ON LABOUR

Each phase of the Project has unique demands for the types of workers (e.g., permanent vs temporary workforce) and the types of occupations and professions required. Certain challenges and opportunities are also more imminent, in respect of the pre-construction phase beginning in 2028. An assessment of the opportunities and challenges associated with meeting the Project labour demands are provided in Table 4.4-1.

Table 4.4-1: Assessment of Labour Supply and Demand Challenges and Opportunities by Project Phase

Conditions	Assessment	
Pre-Construction	Existing Conditions	• The current local labour supply is insufficient to meet the Project's demands, however there is sufficient labour supply within the Regional Study Area to meet most Project needs.
	Potential Change	• If residency assumptions are achieved, there will be an approximate 31% increase in employment in Ignace and a 0.3% increase within the rest of the Local Study Area relative to baseline conditions.
	Challenges	• There is already competition for labour within the Local and Regional Study Areas, particularly for construction trades. • The pre-construction phase is likely to require recruitment from a broader geographic scope to meet the residency assumptions. • Available and affordable housing is currently a challenge for employers, several of whom rely on commuters from other locations and others who offer temporary housing to meet labour requirements. • To ensure Ignace and communities nearest to the Project benefit the most, strategies to recruit and retain employees will need to be implemented soon. Attracting and retaining existing NWMO employees will require specific focus and strategies. • To enhance youths' ability to work on the Project, partnerships with primary, secondary, and post-secondary institutions will need to be formed soon to advance training and education opportunities for both current and new residents in Ignace and the Local Study Area.
	Opportunities	• Youth retention may be enhanced in Ignace and other communities in the Local Study Area due to the availability of long-term employment opportunities. • The initial wave of staff may increase opportunities for entrepreneurs to meet the demand of a growing community, enhance the availability of services locally, and assist with recruitment and retention. • Leveraging existing programs to attract skilled labour will contribute to a diversified workforce (e.g., the Rural and Northern Immigration Pilot)
Construction	Existing Conditions	• The current local labour supply is insufficient to meet the Project's demands, however there is sufficient labour supply within the Regional Study Area to meet most Project needs. • Rotational work associated with major construction and resource extraction activities is common among the labour force of Northwestern Ontario.
	Potential Change	• If residency assumptions are achieved, there will be an approximate 33% increase in employment in Ignace and a 1% increase within the rest of the Local Study Area relative to baseline conditions. • Many jobs will be short term in nature and a construction camp will be offered at the Revell Site to house the travelling workforce. • 300 persons involved in surface construction and 130 in underground trades will be required.

Conditions	Assessment	
	Challenges	• The proportion of youth in the community is small, meaning that training and skill development need to be targeted. Offering on-the-job training opportunities and employment prior to the onset of construction to maximize local employment. • The majority of the construction workforce is expected to be non-local and housed at a construction camp complex at the Revell Site, meaning opportunities for entrepreneurship and other local economic benefits may not increase as materially as in the pre-construction phase.
	Opportunities	• Some components of the construction workforce may be transferable to the operations phases, representing an opportunity to encourage existing non-local workers to pursue employment opportunities for the operations phase and to reside in Ignace or the Local Study Area on a more permanent basis.
Operations	Existing Conditions	• The current local labour supply is insufficient to meet the Project's demands, however there is sufficient labour supply within the Regional Study Area.
	Potential Change	• If residency assumptions are achieved, there will be an approximate 54 % increase in employment in Ignace and a 2% increase within the rest of the Local Study Area relative to baseline conditions. • A larger proportion of STEM professions will be required in this phase, along with miners, managers, plant technicians, and professionals, while surface and underground trades contractors will decrease to 10 and 60 employees respectively. • An anticipated 510 employees will be required for the Revell Site, while 120 will continue to work at the Centre for Expertise.
	Challenges	• If issues such as housing and attracting services and amenities are not sufficiently planned for and addressed in prior phases it will continue to present challenges to recruitment and retention.
	Opportunities	• The Project can provide long-term workforce stability that provides an economic base to support and grow the local economy. • There are two decades to develop the appropriate skills and qualifications of the workforce to meet part of the demands of the Project, thus providing real opportunity to recruit and retain from within the Local Study Area. This could include investment by the NWMO, the Township, and other regional organizations (e.g., Northwest Labour Attraction Task Force organizations) across all stages of the education experience (e.g., enhancements to STEM programming at the primary and secondary levels, investment in equipment or facilities to support trades-based programming, etc.) • There are two decades to carefully plan for and address the housing needs of the future workforce. • There are two decades to form partnerships with local and regional organizations to address challenges related to education, employment skills, and economic development. Including strategies with post-secondary institutions to cultivate a skilled workforce to be employed with the Project and recruitment of Indigenous peoples who are an underrepresented in careers in STEM and resource-based sectors.

4.5 CHALLENGES AND OPPORTUNITIES SPECIFIC TO YOUTH ECONOMIC DEVELOPMENT

The existing conditions for youth economic development and the challenges and opportunities youths face are similar to the general workforce but youths also face the challenge of limited working experience, less savings to fund education and business start-ups, and a smaller network compared to an older individual. This section discusses the challenges and opportunities youth face for entrepreneurship and starting a business. Discussion of challenges and opportunities youth entrepreneurs encounter are typically applicable to all business owners.

The existing conditions for youth entrepreneurship include a lack of knowledge of the initial steps to starting a business including the requirement of a business plan to obtain loans/grants, cash to obtain a loan or purchase a business, and understanding cash flows (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). Also, there are not many grants available in Northwestern Ontario and it is becoming increasingly difficult for youths to obtain loans from banks in today's financial environment (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). There is currently a lack of interest by youths in business studies in secondary schools and entrepreneurship within the Local Study Area (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). There is a disconnection between the importance of entrepreneurship among youths and the need for a diverse range of businesses and services offered in Ignace and the Local Study Area to help recruit and retain new and current residents and a diverse workforce (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

The different phases of the Project will not create any novel effects to youth entrepreneurship opportunities or challenges but present opportunities relative to the increase in employees and their families relocating to Ignace and the Local Study Area. The Project will present an opportunity for the creation of new businesses and a more diverse range of services and products to be offered due to the larger market. If the residency planning assumptions are met, there will be direct and potential indirect and induced population growth in Ignace and the Local Study Area, meaning that there will be an increased demand for businesses and services, along with the potential to expand the range of goods and services on offer. This will provide an opportunity of the expansion of current businesses, and the entry of new businesses due to the larger local market.

The potential population growth in Ignace and the Local Study Area will not be limited to direct NWMO employees, as others including family members, other professionals and service providers may relocate to meet the needs of the community. This creates the need for strategies to promote entrepreneurship and business development broadly, with an opportunity to engage more specifically with youth as potential future business owners. This presents an opportunity for partnerships with secondary and post-secondary institutions, along with regional entrepreneurial organizations (e.g., PACE and Northwest Business Centre) throughout each phase of the Project. Supports for youth entrepreneurship may encourage youth to remain in the community, along with adding strength to the local business sector who may be anticipating future shortages associated with an aging population and retirements.

4.6 LESSONS FROM OTHER EXAMPLES

The unique characteristics of each phase of the Project, combined with Ignace's desire to grow and sustain a diverse self-sufficient workforce needs to be considered in workforce development strategies.

There are valuable lessons to be learned from other project examples, and an examination of relevant literature and other projects noted the following relative to labour force:

- Ignace's goal to recruit and retain youths to work on the Project aligns with the need to invest in education and form partnerships to increase youth involvement with the Project. Research on the Saskatchewan Multi-Party Training Plan found investments in childhood education is key (e.g., primary and secondary education), in addition to bridging programs and career counseling for students before they leave high school (CVMPP 2013). It is also important to devise strategies that reduce barriers that individuals face earlier in their scholarly development, prior to post-secondary education (CVMPP 2013; NPI 2018). Focusing primarily on financial barriers may overlook other barriers which prevent an individual's success (CVMPP 2013; NPI 2018).
- The long-term operation of the Project and the high demand for STEM professionals aligns with the goal is to promote STEM education among youths in the Local Study Area. O'Connor et. al. (2021) conducted a literature review of best practices for out-of-school STEM learning among minority youth in the United States. They described strategies of engaging minority youths and their families about pursing a career in the STEM field. They identified the need to meet youths in spaces they frequent (i.e., home community, school, cultural centre), build partnerships with organizations that have regular contact with minority populations, communicate using a variety of media and materials (e.g., traditional news outlets, social media, radio, community specific newsletters), and aligning programs that support minority youth with recruitment (i.e., minority STEM professional mentors, career awareness seminar).
- Increasing the participation of Indigenous employment in the natural resource sector and professional occupations was identified as an untapped opportunity in Northwestern Ontario (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). To maximize participation of Indigenous peoples in the labour market, Kiikenomaga Kikenjigewen Employment and Training Services (KKETS) in Thunder Bay, Ontario, and the Mawiw Tribal Council, in Frederickton, New Brunswick, both stressed the importance of a collaborative approach amongst communities, employers, local businesses, training providers, and multiple levels of government (NPI 2018). Provision of all around supports are important because barriers outside of the classroom are often more critical than barriers inside it (e.g., cost of higher education).
- A case study review conducted by the Northern Policy Institute (2018) examined strategies to improve the participation of Indigenous peoples in higher level professional occupations, something that has been identified as a gap in Northwestern Ontario (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). They found it is important to create measurable goals and opportunities for credit portability so individuals can build on diplomas over time and advance their career positions (CVMPP 2013; NPI 2018). Effective programs on employment, training, and economic development in the First Nation communities may assist Indigenous participation in the workforce and better equip Indigenous entrepreneurs (NPI 2018). Essential skills development and training for entry-level programs may improve Indigenous recruitment and put individuals in a position where they can further upgrade their diplomas and training in the future (CVMPP 2013; CSLS 2018). Offering programs that promote individual career development may lead to greater Indigenous participation at higher level positions (CSLS 2018).
- In the region there have been partnerships to address regional education and employment issues and outreach programs to attract groups who are underrepresented in skilled trades and STEM-related

occupations. The Keewatin Patricia District School Board in the past has held a Mind-over-Matter after school workshop to encourage females into the skilled trades by having a female Red Seal welder host the all girls workshop. Another partnership the Keewatin Patricia District School Board has facilitated is with a mine in Red Lake and Domtar to help address the gaps in the knowledge of pathways to apprenticeships, trades, and opportunities. To address the labour shortage of skilled trades New Gold and other mining companies have already implemented outreach strategies outside of Ontario (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

- There are many examples of industries, governments, and communities addressing labour shortages through the attraction of newcomers. For example, COSTI Immigrant Services worked with La Foundation Emmanuelle Gattuso to identify Syrian refugees with background in architecture, engineering, accounting, social work, information technology, and business and provided internships and training to transition individuals to permanent positions (Hire Immigrants 2019). Manitoba Maple Leaf Foods recruited international employees from China, Colombia, Mexico, and El Salvador (among other locations) and offered English training, onboarding, and community programming to support their transition to permanent residency (Hire Immigrants n.d.).
- Immigrants may bring high levels of education and resources, which can benefit communities economically and culturally. Another successful newcomer integration program occurred in Australia where 50 employees from Myanmar were hired at the Luv-A-Duck plant in the small town of Nhill, Australia (Hire Immigrants 2019). This initial outreach occurred in 2010, and by 2018 there were over 170 Myanmar refugees and their families living in Nhill. The refugees obtained jobs, while the town received an economic and cultural shift (Hire Immigrants 2019). Economic opportunity, adequate housing, and civic amenities are necessary to attract new residents. Retaining new residents requires meeting lifestyle expectations over the long term. The regional council around Nhill have incorporated the resettlement and integration of the refugees as part of their economic development strategy (Hire Immigrants 2019).

5.0 OPTIONS FOR CONSIDERATION

Note to Reader

This section provides an overview of possible options to enhance positive outcomes and mitigate negative consequences. They are presented by the authors to foster discussion only. They do not represent commitments or actions for the NWMO, the Township of Ignace, or other parties. The final decisions on actions and commitments will be made at a future date.

Potential effects (Table 4.4-1) relative to attracting and developing the Local Study Area workforce to support the Project were identified in Section 4.4 and Section 4.5. The potential opportunities associated with workforce development should support Ignace in achieving its vision to improve employment recruitment and retention strategies for in-demand skilled workers, youths, Indigenous people, adult learners, and young professionals.

Eight options are presented in Table 5.0-1 that relate specifically to developing the workforce and increasing the involvement of Local Study Area youths in education and training opportunities related to the Project. The options are grouped by the required timing of implementation of the options—priority for the next five years, priority during pre-construction and construction and a priority throughout all phases of the Project. Each option could continue into operations but additional efforts may be required within the next five years or throughout the pre-construction and construction phases. These options are not mutually exclusive and should be used in conjunction with other options presented.

Table 5.0-1 Overview of Potential Options to Develop the Workforce

Options	Opportunity Addressed
Priority for the Next Five Years	
Option 1 – Attract and Retain NWMO Staff	The long-standing nature of the Project presents the opportunity to attract existing and new NWMO staff from outside the region to move into the Local Study Area.
Option 2 – Attract Labour from the Regional Study Area and Beyond	There is an abundance of STEM, mining, and other trades/professionals within the Regional Study Area which presents an opportunity to attract these individuals to migrate to Ignace and the Local Study Area. Inclusion of newcomers in this category would support diversifying the local population.
Option 3 – Invest in Primary and Secondary School Career Readiness	The long lead-time relative to the Project employment presents an opportunity to invest in multiple levels of education to develop a young workforce in the Local Study Area that will be able to work on the Project.
Priority During Pre-Construction and Construction	
Option 4 – Enhancement of Post-Secondary Education and Training	Investments in post-secondary education and training will help increase the proportion of representation of Northwestern Ontario residents on this Project and many other project developments. The Project presents the opportunity to partner with governments, post-secondary institutions, and potential industry partners to address the challenges in recruiting and retaining labour in the Local Study Area.
Option 5 – Attract Organized Labour to the Local Study Area	A lack of hiring halls could be attributed as a factor to the low number of skilled trades in the region. Presents an opportunity to work with unions to develop hiring halls for trades of interest to support this Project and others in the region.
Priority Throughout All Phases of the Project	
Option 6 – Retain Labour Working on the Project	The Project presents an opportunity to have a stable source of employment for skilled employers but will require strategies to retain them throughout multiple phases of the Project.
Option 7 – Attract Those Who Have Not Traditionally Pursued STEM Fields or Trades	Indigenous peoples and women have been identified as being underrepresented in the skilled trades and natural resources and STEM professions which presents an opportunity to have policy to increase their involvement in these sectors.
Option 8 – Develop Programs to Support Youth Entrepreneurship	The Project presents an opportunity to expand the number of businesses and the goods and services provided in the Local Study Area. Programs to promote entrepreneurship among youths is crucial as the population is aging in Ignace and there will continue to be a large number of retirements and changing of businesses over the couple of decades.

The options presented are reflective of these potential outcomes, and are then assessed based on four criteria:

- **Ease of implementation**: includes demonstrated success on other projects if known and the degree of complexity required to implement, which may consider number of required partners and current municipal and provincial policies;
- **Degree of effectiveness:** considers the conditions required for effectiveness based on understanding of the community needs and aspiration;
- **Cost, if known**: will document costs for implementation if known; and
- **Ability for the NWMO or the Township of Ignace to implement**: considers if the NWMO or the Township alone or in partnership can implement a option or if another responsible authority needs to be involved.

5.1 PRIORITY FOR THE NEXT FIVE YEARS

5.1.1 Option 1: Attract and Retain Existing NWMO Staff

To attract and retain existing NWMO staff to Ignace, some of the concerns surrounding life in a small population centre or rural area must be addressed. Small towns and rural areas often suffer from the perception that a community's economic possibilities and social vibrancy are linked to its size or proximity to a major centre (Esses and Carter 2019).

To ensure staff working at the Centre of Expertise are residing in the Local Study Area, the NWMO might encourage on-site work, and limit telecommuting. NWMO might also consider incentives to attract existing NWMO staff to Northwestern Ontario, structured to make it desirable to become long-term residents of Ignace. Incentives and programs that could be developed to attract new residents and encourage work transition include but are not limited to the following possibilities:

- NWMO partnering or incenting local developers and builders to develop new housing in Ignace before in-migrating staff are expected to arrive. This might include support for staff to purchase permanent housing.
- To attract existing NWMO staff and their families to Ignace, the NWMO might implement programs to support families, including free or subsidized childcare and career development opportunities for youth (e.g., summer student programs).
- Spousal employment opportunities can be supported through programs to support job searches, start a small business, facilitate travel and temporary remote work during transition, and establishing preferential hiring policies with the NWMO where possible.
- Competitive wages and retention bonuses that reward long-term employment with the NWMO and residency in Ignace, and/or other financial incentives, such as travel subsidies (financial or additional paid time off) for visiting family, or subsidies for home renovations.
- To foster staff integration into Ignace, NWMO might encourage community volunteering during work hours and provide corporate sponsored extra-curricular activities open to the broader community (e.g., concerts and the arts, recreational sports, wilderness activities).
- NWMO might engage with local leadership to determine what incentives or environment would be required to attract staff with their families to Ignace.

Table 5.1-1 presents an assessment of Option 1: attract and retain existing NWMO staff.

Table 5.1-1: Attract and Retain Existing NWMO Staff

Challenge / Opportunity:	• Opportunity to leverage existing NWMO workforce located outside of Ignace that has experience with the Project. • As Project labourers with post-secondary education relocate to the Local Study Area, more residents will be exposed to the positive benefits of pursuing post-secondary education, in particular children and youths. • Challenge to convince staff and new hires to relocate from outside of the Region to Ignace and Northwestern Ontario.
Description of Option:	Mandate NWMO Staff to locate in Ignace: • Terms of employment in contracts require NWMO staff to be located at the Centre of Expertise or Revell Site. • Require staff to be in the office during work hours, at least some days during the week, and limit telecommuting. Incent NWMO staff to locate in Ignace: • Provide a variety of housing opportunities including singles, town homes and multiple family housing. • Provide staff with financial incentives and subsidies. • Develop overlapping periodic retention bonusing (e.g., enrolment in second bonus happens prior to the first bonus paying out but this may be difficult to implement with unionized staff). • Annual travel allowances for staff. • Competitive wages. • Allow community volunteering on NWMO time. • Assist with employment for spouses/partners of NWMO staff where feasible. Create a culture that encourages NWMO staff to locate in Ignace: • Leadership commitment to living in Ignace. • Creating an attractive and comfortable work campus. • Formal staff development and retention plans. • Align NWMO staff values with the community. • Corporate sponsored extra-curricular activities (open to the community) (e.g., subsidized concerts). • This would work best if done in coordination with Ignace designing and planning a community that competes with the lure of other communities in the Local Study Area.
Timing:	• Pre-construction. • Priority for the next 5-years.
Assessment:	Ease of Implementation: • Mandates and incentives are relatively easy to develop and implement. Degree of effectiveness: • Mandates and incentives can be effective in the short term but lose efficacy over time. For example, research suggest that incentives can reduce intrinsic motivation but real-word tests suggest either they have no long-term effect or a positive long-term effect (Urminsky 2018), so incentives may be most relevant in the pre-construction phase. • It is likely that Project workers will respond better to incentives than mandates as incentives are what drive human behaviour. Cost if known: • Costs would need to be estimated based on the incentives and other investments being made. Ability to implement: • Incentives require close coordination and joint-development with the community.

5.1.2 Option 2: Attract Labour from the Regional Study Area and Beyond

Skilled labour will be required in the near future to construct the Center of Expertise, conduct pre-construction site preparation, housing construction, and eventually construction of the Project. A supply of skilled labour exists across the broad Regional Study Area, and effort will be needed to attract and retain labour for the Project. Consideration may also be warranted to reflect national demographic shifts associated with an aging labour force and looming retirements and potential shortages in the coming decades (Statistics Canada 2022b).

There is a large population in Northwestern Ontario and Manitoba that wants to stay in the region provided there are stable economic opportunities for them. While there are benefits to attracting individuals who are familiar with the Northwestern Ontario context, this alone may not be sufficient for meeting the Project's labour demands, notwithstanding other indirect (i.e., growth to other services that can support Project-operations resulting from project-related growth) and induced (i.e., growth from increases in spending and population resulting from the direct and indirect Project-related growth) growth that could occur as a result. Attracting newcomers to Canada is seen as one of several necessary strategies to address labour shortages nationally and is an important consideration relative to the Project and the Local Study Area.

Upon site selection, NWMO could consider establishing a Northwest Labour Attraction Task Force, with industry and government partners, to begin attracting the interest of skilled labour, including pathways to permanent residency for any newcomers to Canada.

Table 5.1-2 presents an assessment of Option 2: attract labour from the Regional Study Area and beyond.

Table 5.1-2: Attract Labour from the Regional Study Area and Beyond

Challenge / Opportunity:	• The abundance of labour employed in NWMO's occupations of interest in the Regional Study Area presents an opportunity to hire regional labour into the Project. This leverages a labour force that exists and is present in Northwestern Ontario but is for the most part currently employed. • Labour from the Regional Study Area will be required very soon, as not all the existing NWMO staff will transfer to the Centre of Expertise during pre-construction. • NWMO will need to compete with and cooperate with other industries and firms for labour required by the Project. • Strategies to include newcomers in labour recruitment initiatives may support addressing Project and community needs beyond what exists within the region. • Immigrants may bring high levels of education and resources, which can benefit the communities economically and culturally. • Newcomers will help the Township diversify its population base, which may necessitate the development of cultural appropriate services and amenities to serve the new population.
Description of Option:	During pre-construction: • Developing a Northwest Labour Attraction Task Force with willing industry and government partners: o Industry partners such as Resolute Forest Products, Treasury Metals, Domtar; o Government partners such as the Northwest Training and Adjustment Board, PACE, Sioux Lookout Mining Centre of Excellence; and o Partners such as the Rural and Northern Immigration Pilot and/or the Multicultural Association of Kenora District who may have expertise in attracting newcomers. • Highlighting the competitive wages and stable non-cyclical employment offered by NWMO to help attract labour for the Project. During construction: • Accommodating a drive-in/drive-out workforce with desirable temporary accommodation (at the Revell Site) and work schedules that allow regional (greater than two-hour) travel to and from work. • Ensuring there is appropriate housing available for other full-time resident workforce. Across all phases, including operations: • Supporting strategies to welcome and integrate newcomers to Northwestern Ontario (see Section 4.6 for case studies of effective welcoming and integration strategies for newcomers). • Pursue options from other studies that focus on the enhancement of infrastructure and services to attract residents to Ignace and the Local Study Area.

Timing:	• The establishment of a Northwest Labour Attraction Task Force would be of immediate priority during the pre-construction phase. • During construction efforts might shift to retaining skilled/qualified members of the workforce from the Regional Study Area to the Local Study Area. • Additional efforts may be warranted when the Project transitions to operations and new long-term jobs become available.
Assessment:	Ease of Implementation: • Pre-construction activities are achievable, but will have some challenges. These challenges may include recruiting labourers from established businesses in the area and developing a diversified Northwest Labour Attraction Task Force relative to the shorter timing window available to attract staff. Liaison with these businesses will be important. • Industry and government partners have indicated a willingness to work together to attract labour to Northwestern Ontario. • Developing a workforce camp on the scale that is required to support the Project's non-resident direct workforce is a material level of effort. • Ensuring appropriate housing for the resident workforce will involve the complexity of coordinating with municipalities in the Local Study Area, developers, and builders. • Ensuring pathways to permanent residency for newcomers will be an important factor to establish. Degree of effectiveness: • Given the abundance of labour employed in occupations of interest and the propensity of this workforce to move between jobs based on inter-firm competition, these options will likely be effective in attracting regional labour, but should be evaluated on a continual basis. • Opportunity to improve the cultural diversity in Ignace and the Local Study Area which may further encourage more newcomers, businesses, and investment opportunities into the region. The Rural and Northern Immigration Pilot in Thunder Bay has had success with increasing the population, and the diversity of residents, businesses, and opportunities in the area (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). Cost if known: • Costs would need to be estimated based on the wages required to be competitive, investment in regional outreach, the cost of building temporary accommodation, and the incentives required to attract builders. Ability to implement: • Implementing these options requires coordination with regional industry, regional government organizations, municipalities, and other relevant partners.

5.1.3 Option 3: Invest in Primary and Secondary School Grades

Quality education will be essential for a skilled and robust local workforce in the near term and long term. Existing high school programs, such as the Specialist High Skills Majors program, can be bolstered with facilities, equipment, and staff to provide introduction to skills and occupations relevant to the Project. Primary and early childhood education can also be supported to prepare students with the foundational knowledge and skills needed for success in high school and beyond. Investments in primary and secondary education may help attract NWMO employees with families to Ignace and the Local Study Area. As the population in Ignace and the Local Study Area grows, so will the number of students at the schools. The higher enrollment will increase demand and ability of the schools to offer a wider variety of courses and programs.

Research has shown that investment in quality early childhood education and development produces larger benefits than investment and interventions later in a child's life, including an increased rate of economic return. Investments in early childhood have effects on education levels and important non-cognitive characteristics that correlate with academic success, such as motivation and perseverance, and positively affects earning potential, rates of violent and property crime, and reliance on social assistance programs later in life (Heckman 2006). They are also more economically effective, with educational interventions targeting adolescents and young adults costing more to produce the same results as less expensive interventions aimed at young children (Executive Office of the President of the United States 2014; Heckman 2006).

Effective supports in high school include bridging programs and career counselling to devise strategies to reduce barriers students face in their development (CVMPP 2013; NPI 2018). All around supports to address barriers youths face inside (e.g., financial) and outside (e.g., career counseling, essential skills development) of the classroom are important, as non-financial barriers are sometimes more difficult to overcome (CVMPP 2013; NPI 2018).

Table 5.1-3 presents an assessment of Option 3: invest in primary and secondary school grades.

Table 5.1-3: Invest in Primary and Secondary School Grades

Challenge/ Opportunity:	• With the long lead-time relative to APM Project employment, there is an opportunity for the NWMO to work with other appropriate local and regional stakeholders (e.g., school boards, government, other industry partners) to invest in multiple levels of education to develop a workforce in the long-term for employment with the APM Project and in Local Study Area communities. • The NWMO could offer co-op placements in energy or mining centres through the Specialist High Skills Major Program.
Description of Option:	• Early childhood education: Studies demonstrate that smaller investments earlier in education equal larger investments later on. • Primary education: Invest in math and science specialists who can either provide support for math and science-related lesson plans or can teach math and science in primary school classes on a rotating basis. • Secondary education: o Additional facilities, equipment, and teachers/instructors for the Specialist High Skills Majors Program relevant to future employment with the Project or with communities in the Local Study Area.

	o Support student-parent evenings to expose both groups to the benefits of going into trades. o Participation on the School Council and other advisory bodies. o Provision of summer co-op placements for students with an interest in STEM-related occupations. o Offer scholarships and bursaries for students graduating with a secondary diploma and pursuing an education in science (particularly in STEM) and skilled trades. o Hold career fairs that provide clear information on paths to employment, including education and experience requirements. o Provision of a co-op placement in energy and mining through the Specialist High Skills Major program at secondary schools in the Local Study Area. o Ensure that students who are home schooled have access to speciality programming and advanced science and math courses.
Timing:	• Starting in pre-construction. • In place through all phases of the Project. • Focus will be during pre-construction and construction to develop a labour force which can participate in employment with the Project.
Assessment:	Ease of Implementation: • Dependent on the ability of the NWMO and other local employers to be able to support the work component (e.g., work placement, apprenticeship sponsors) of the Specialist High Skills Major courses. • Support strategies and partnerships with school boards in the Local Study Area (e.g., Keewatin Patricia District School Board) to invest in math and science specialists to teach classes on a rotating basis will require proactive planning to ensure primary schools in the Local Study Area are encouraging students to pursue an education in STEM fields. Degree of effectiveness: • Could increase the number of students enrolling in science and math courses. Studies demonstrate that smaller investments earlier in education (e.g., primary education) result in equal returns to larger investments later on (e.g., secondary education). • Could increase the number of skilled trades and STEM professionals in the labour force which will help support all of Northwestern Ontario. Cost if known: • To be determined. Ability to implement: • Will require partnerships with the Ontario government, district school boards, and potentially other industries to enhance the Specialist High Skills Majors courses offered at various schools. • Will require partnerships with the Ontario government, district school boards, and Kenora District Services Board to enhance early childhood education.

5.2 PRIORITY DURING PRE-CONSTRUCTION AND CONSTRUCTION PHASES

5.2.1 Option 4: Enhancement of Post-Secondary Education and Training

Post-secondary education and training is necessary to develop a workforce with the necessary skills and credentials for the Project. To facilitate employment among residents of Local Study Area, partnerships for training programs at colleges and universities in Northwestern Ontario will be needed. The NWMO, governments, post-secondary institutions, and industry partners might collaborate to develop the appropriate training programs to meet the needs of the Project and the communities in the Local Study Area.

Organizations have expressed willingness to partner with the NWMO and others to address challenges to recruitment and retention that employers in the Local and Regional Study Areas typically face (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). Partnering with educational institutions (e.g., Confederation College) and local employment service providers (e.g., Crossroads Training and Employment Centre and Shooniyaa Wa-Biitong) may prove critical to increase the uptake of higher education in the Local Study Area, but will ensure that residents have a robust foundation for their future learning (CSLS 2018). The delivery of programs which are not currently offered in regional colleges and universities could require partnerships and an agreement with the Ministry of Colleges and Universities. This would likely require sufficient planning time to have programs ready prior to the construction phase to ensure the population can obtain the necessary training and education for employment throughout operations in 2043.

In-community training, where possible, will reduce barriers to participation. Possible customized training facilities at the Centre of Expertise could enable individuals in the Local Study Area access to relevant training opportunities without having to commute long distances.

Table 5.2-1 presents an assessment of Option 4: provision of post-secondary education and training.

Table 5.2-1: Enhancement of Post-Secondary Education and Training

Challenge / Opportunity:	• The appropriate credentials will be important for working on the Project, providing opportunities to work with post-secondary training and educational opportunities. • Employers in the Local Study Area and Regional Study Area have shared their challenges recruiting and retaining employees. • Organizations in the Local Study Area and Regional Study Area are willing to partner with the NWMO and others to collectively improve workforce development opportunities for all.
Description of Option:	• The NWMO will work with colleges, universities, industry partners, and other training and educational institutions to develop and offer training that will meet the needs of the Project and the community. This partnership could involve the Northwest Training and Adjustment Board and involve other relevant organizations engaged in the nuclear sector (e.g., Bruce Power, Ontario Power Generation). Partners could include: o Existing workforce and economic development partners (e.g., private sector industry, Northwest Training and Adjustment Board, PACE, Northwest Business Centre, Sioux Lookout Friendship Accord Economic Development Corporation); o Existing education and training partners (e.g., Keewatin Patricia District School Board, Confederation College, Lakehead University, Crossroads Training and Employment Centre, Shooniyaa Wa-Biitong); o Provincial and federal government (e.g., Ministry of Colleges and Universities); and o Companies and organizations involved in a variety of relevant sectors in the region. • Offer in-community training where possible. Include a customized training facility at the Centre of Expertise that can accommodate rotating classes. • Make available some form of student financial support at preferential interest rates and repayment terms for those who may not qualify for scholarships or bursaries and for whom Ontario Student Assistance Program may not be sufficient. • When scholarships for students are offered, they should cover degrees that meet the NWMO and community needs and cover all costs (tuition, room and board, books, and equipment) and come with supports (dedicated tutors, support groups) to help students graduate. • Ensure that training and educational opportunities continue once residents of the Local Study Area are hired to encourage promotion and advancement. • Engage with the Ministry of Colleges and Universities to leverage the APM Project to attract appropriate college/university programs to the Local Study Area communities. • Case study/example – the Ontario Power Generation's relationship with Ontario Institute of Technology and Durham College: o Ontario Power Generation investment in: ▪ Capital and equipment investments; ▪ Educational programs; and ▪ Scholarships. o Results in programs that meet the Ontario Power Generation's needs in: ▪ Degrees; and ▪ Credentials and certifications. o Creates a learning environment that prepares students to enter the workforce. o Helps remove barriers from those who don't have the same access to post-secondary education.

Timing:	• Starting in pre-construction. • In place through all phases of the Project.
Assessment:	Ease of Implementation: • Strategies such as developing training facilities at the Centre of Expertise and ensuring training and educational opportunities which encourage promotion and advancement will require the procurement of instructors to deliver the training and the provision of mentors and counselors to promote career development will be easier to implement. Further, such facilities could be supported/connected with, and staffed by, the local school board to support continuity and efficiency. • Programs which require partnerships with education and training providers for training within the Local Study Area will require planning and formal agreements that could go well beyond the NWMO's corporate mandate. Some programs could require partnerships with the Ministry of Colleges and Universities and discussions would need to occur in the next five years. • NWMO could leverage existing regional economic development organizations (e.g., Northwest Training and Adjustment Board) to find opportunities for partnerships with other large employers Degree of effectiveness: • Will increase the involvement of both current residents in Ignace and the Local Study Area to pursue training and employment opportunities with the NWMO. • Will increase the representation of municipalities and Indigenous communities across Northwestern Ontario to pursue training relevant to the Project and potential employment. • Will increase post-secondary training and education opportunities in the Local Study Area, which could enhance youth retention. • Will increase the supply of skilled trades and professional related to mining and the level of educational attainment in the Local Study Area. • Will increase training facilities that manage nuclear waste through partnerships with other organizations involved in the nuclear sector regionally and possibly provincially. Cost if known: • To be determined. Ability to implement: • Will require the NWMO and other employers to collaborate with educational and training institutions to offer relevant training programs in the Local Study Area. • Strategies to deliver training at the Centre of Expertise will require partnerships with training providers and/or educational institutions. • May require agreements with other employers and regular meetings to address strategies and review and update goals.

5.2.2 Option 5: Attract Organized Labour to the Local Study Area

The skilled trades labour supply has been identified as insufficient by several local knowledge holders (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). This presents the opportunity for the NWMO and other regional employers to partner with labour unions to develop hiring halls for trades of interest in the Local Study Area. Increasing the presence of hiring halls will promote organized hiring and intake for Project employment, and indirectly encourage uptake in skilled trades education in the Local Study Area.

Table 5.2-2 presents an assessment of Option 5: attract organized labour to the Local Study Area.

Table 5.2-2: Attract Organized Labour to the Local Study Area

Challenge / Opportunity:	• The Project presents an opportunity to strengthen organized labour in the Local Study Area. • A challenge in attracting organized labour to the Local Study Area is there are limited people employed in the trades of interest in the area. • There are no union hiring halls for trades of interest located in the Local Study Area and only a few union hiring halls located in the Regional Study Area.
Description of Option:	• Work with organized labour to develop hiring halls that can support the needs of the Project. Organized labour will be able to ensure members are suitably qualified and trained to meet the Project's needs and provide a relatively stable supply of trades. • Work with organized labour to create on-the-job apprenticeship opportunities associated with this Project and others. This will create opportunities for apprentices to graduate into a journeyperson. • Work with potential service providers so they are aware of the presence and structure of organized labour coordinating with the Project.
Timing:	• Pre-construction: developing relationships with organized labour. • Construction and operations: offering apprenticeship positions and fully utilizing the hiring halls. • Starting to form relationships with organized labour is a priority in the next five years.
Assessment:	Ease of Implementation: • Coordination with organized labour and NWMO Project planning will be required to implement this option. • Given the size of the Project and labour in the labour-shed, it may require a partnership/consortium of regional employers to form sufficient demand for a hiring hall. Degree of effectiveness: • The effectiveness of this initiative is dependent on the ability to form working relationships with organized labour and the ability for organized labour to attract workers to their respective trades. Cost if known: • Costs would need to be estimated based on the needs of organized labour to develop a training/hiring hall environment. Ability to implement: • Implementing these options requires coordination with potential suppliers to the Project and organized labour.

5.3 PRIORITY THROUGHOUT ALL PHASES OF THE PROJECT

5.3.1 Option 6: Retain Labour Working on the Project

The long timeframe of each phase of the Project, and the transferability of skills between phases presents the opportunity to employ strategies to retain workers through multiple phases of the Project and promote individual career development. Retention can be challenging where individuals are inclined to live in a larger population centre or are attracted by other resource projects in the region. This necessitates comprehensive retention policies.

In addition to retention policies, special considerations should be given to create a safe and attractive work environment, particularly for individuals (e.g., women, Indigenous peoples, LGBTQ2S+ identifying individuals) who do not fit into the dominant culture at worksites and may feel isolated and unsafe. For example, Indigenous women often report feeling unsafe on remote worksites (Native Women's Association of Canada 2018). To promote a safe and attractive work environment NWMO should develop strategies to encourage work and life balance, support for family employment, support for non-traditional gender roles, confront racism, and encourage reconciliation.

Table 5.3-1 presents an assessment of Option 6 for retaining labour working on the Project.

Table 5.3-1: Retain Labour Working on the Project

Challenge / Opportunity:	• The Project presents an opportunity for workers to have a steady, stable source of skilled employment in an environment that supports career development. This is a work environment that can support long-term resident workers. • The challenge is these workers will have a competitive skill set that will be desirable to other regional employers. These workers may leave when they have completed projects or seasonal assignments, or when they can find a competitive job outside of the Local Study Area.
Description of Option:	• Create opportunities for professional advancement and mentorship. • Have the Center of Expertise offer opportunities beyond Project technologies (aligned with community aspirations or social needs). If the Centre of Expertise is able to present workers with opportunities to develop their career beyond the core nuclear industry, they are more likely to remain resident in the community. • Promote community and employee health and well-being. • Encourage work/life balance. • Align the organization's values with the values of the community and employees. • Support for family (intergenerational and partner) employment. The relatively smaller population of Ignace and the Local Study Area may mean that workers develop family relationships with other employees. The relatively smaller pool of jobs means that parents and children, siblings or other family relations may be working together. Support for these working relationships is important. • Create a safe work environment that supports: o Non-traditional gender roles (e.g., women's roles in heavy machinery); o Confronting racism; and o Spirit of reconciliation.
Timing:	• Starting in pre-construction. • In place through all phases of the Project.
Assessment:	Ease of Implementation: • Strategies that are the exclusive responsibility of the NWMO, such as opportunities for advancement and mentorship and creating a safe and attractive work environment will be easier to implement. • Strategies that require collaboration with the Township and other partners such as expansion of opportunities beyond Project technologies at the Centre of Expertise and aligning organizational values with values of the community and employees will require proactive planning and setting and reviewing goals throughout the Project. • These initiatives are not necessarily expensive to implement but they can require real cultural change. Degree of effectiveness: • These types of initiatives have the potential to be successful in the long-term but will require time and a significant investment in financial resources by NWMO and Ignace's own future aspirations. • Will help develop a stable local labour supply and enhance community and NWMO staff relations through NWMO staff becoming long-standing resident of Ignace and the Local Study Area. Cost if known: • These types of initiatives can result in increased direct or indirect staffing costs, but the primary cost is increased managerial time. • Specific costs would need to be estimated.

	Ability to implement: • These initiatives would be led primarily by NWMO but would benefit with some coordination the municipalities in the Local Study Area.

5.3.2 Option 7: Attract Those Who Have Not Traditionally Pursued STEM Fields or Trades

Attracting people who have not traditionally pursued occupations needed by the Project may expand the pool of potential candidates, creating a larger labour force to draw on. Some sectors, such as mining, have been grappling with the challenges of a predominately aging male workforce. To address these challenges, they have begun to examine approaches to diversifying the workforce.

Women, Indigenous people, and newcomers to Canada are among those who have not often pursued occupations in the natural resources sector. Targeted policies and strategies are warranted to generate interest and attract new demographics to the workforce. Attracting these groups towards STEM fields, should also be considered, as these occupations comprise a large portion of NWMO employees.

Establishing interest and communicating the benefits and possibilities associated with a non-traditional occupation must occur prior to career selection, such as for high school students. Creating an accommodating work environment could also employ the following strategies:

- Provide training with credit portability so students can build their diplomas over time (CVMPP 2013 NPI 2018);
- Promote career development of an individual's career into higher level professional positions through career counseling and mentoring supports of individuals from the same group (i.e., Indigenous male would have an Indigenous professional as a mentor) to help diversify the workforce at higher level positions with the Project (CSLS 2018);
- Retention strategies that seek to overcome structural barriers, like providing childcare, providing safe transportation, and culturally sensitive human resources policies to reflect different priorities (e.g., policies that prioritize time off for employees wishing to partake in cultural activities such as harvesting seasons for Indigenous communities);
- Provide locations on-site for cultural practices and activities, such as space for daily prayers for Muslim employees or space for smudging for Indigenous employees; and
- To help with issues in the workplace provide an employee and family assistance program or on-site counselling.

Table 5.3-2 presents an assessment of Option 7: attract those who have not traditionally pursued STEM fields or trades.

Table 5.3-2: Attract Those Who Have Not Traditionally Pursued STEM Fields or Trades

Challenge / Opportunity:	• Attract those who have not traditionally pursued STEM fields or trades.
Description of Option:	• Develop proactive programming to generate interest and attract a diverse workforce into STEM fields and trades that highlights the benefits and possibilities of these occupations. • Consider a local hiring preference for residents of the Local Study Area or Regional Study Area to enhance the competitiveness of local applicants, including those who have not traditionally pursued STEM fields or trades. • Create barrier-free training and education opportunities. Barriers can include affordability of equipment and Personal Protective Equipment, transportation, and childcare. Offer "wrap around" services and supports so students can focus on their studies. • Workplace policies and supports for a safe workplace for a diverse workforce, including policies and programs coming out of NWMO's Reconciliation Policy, childcare facilities for employees, and flexible scheduling to accommodate traditional land use activities and family obligations. • Support wrap around life stabilization programming to help individuals who are transitioning off social assistance or entering the workforce after post-secondary education adjust to their new responsibilities at work and home.
Timing:	• Starting in pre-construction. • In place through all phases of the Project.
Assessment:	Ease of Implementation: • Where strategies involve physical space at the Revell Site or the Centre of Expertise (e.g., washrooms, change rooms, dedicated space for cultural activities), the NWMO should be able to implement as part of facility design. • Developing and implementing policies that support inclusive workspaces at the Revell Site and Centre of Expertise should be straightforward for the NWMO. • Strategies to provide mentorship, "wrap around" supports, in-community training, and life stabilization strategies may require partnerships with Indigenous communities and professionals who can provide adequate counseling and supports. Degree of effectiveness: • Will create a diverse workforce that is flexible in the ability to accommodate to the needs of the employees to ensure their well-being. • Opportunity to tap into the marginalized workforce and support the development of the educational achievement for Indigenous peoples and other underrepresented groups. • If part of planning for diversity is instituting targets for employment or procurement, the Project could increase household income through Project employment, contracting, and associated opportunities. Cost if known: • To be determined.

	Ability to implement: • Strategies involving accommodating the needs and safety of underrepresented groups can be implemented by the NWMO alone but will require proactive planning and review of predicted and unforeseen barriers. • Partnerships with service providers to support the development and well-being of traditionally underrepresented individuals will be required.

5.3.3 Option 8: Develop Programs to Support Youth Entrepreneurship

Partnerships with local entrepreneurial organizations (e.g., PACE and Northwest Business Centre) and secondary and post-secondary institutions may support in developing youth entrepreneurship. In addition to providing an alternative source of employment and income, youth entrepreneurship can contribute to the local business environment, which will in turn promote the attractiveness of Ignace and other communities in the Local Study Area for new residents.

Entrepreneurship can generate economic empowerment and can begin at any age. New small businesses play a pivotal role in competition of emerging sectors and are critical for economic development and innovative capacity (Ribeiro-Soriano 2017). The promotion of youth entrepreneurship and the relevance of business courses at the secondary level will be important given the stability that small businesses provide to the economy (MDB Insight 2011; Statistics Canada 2020). The idea of economic stability during and following economic downturns is important for communities like Ignace that have been reactionary to short-term needs which have contributed to a transient and limited workforce (NWO Community and Baseline Studies Knowledge Holder Interviews 2022).

Table 5.3-3 presents an assessment of Option 8: Develop programs to support youth entrepreneurship

Table 5.3-3: Develop Programs to Support Youth Entrepreneurship

Challenge / Opportunity:	• There is currently limited active youth entrepreneurship in the Local Study Area. • With the anticipated growth of the population, there will be greater opportunity for individuals to develop business to meet the goods and service needs of the communities. • Some youth may want to pursue opportunities other than those associated with the existing economy or those offered by the Project, and the growing population offers an opportunity to pursue the development of businesses or other enterprises locally. • There is an opportunity to develop partnerships with educational institutions and regional entrepreneurial organizations to support youth economic development and economic sustainability in Local Study Area communities through the encouragement of youth entrepreneurship. • Accessing financing to develop businesses can be especially challenging for youth.
Description of Option:	• Partnerships with local entrepreneurial organizations (e.g., PACE) and secondary and post-secondary institutions (e.g., Keewatin Patricia District School Board, Confederation College) to build entrepreneurship into existing and planned curriculum to increase youth's knowledge and understanding of the potential opportunities. • Develop strategies to help address the gaps in the understanding of starting and operating a business among youths.
Timing:	• Starting in pre-construction. • In place through all phases of the Project. • Focus will be during pre-construction and construction to develop the next generation of entrepreneurs to support the community throughout the entire life of the Project.
Assessment:	Ease of Implementation: • Developing and implementing strategies and partnerships with secondary and post-secondary institutions in the Local Study Area (e.g., Keewatin Patricia District School Board) and entrepreneurial organizations (e.g., PACE, Northwest Business Centre) will require proactive planning to develop programs to encourage youths into entrepreneurship. Degree of effectiveness: • Will create a sustainable community by providing supports for youths to engage in successful careers as an entrepreneur/business owner. • Could help diversify the services and good that are offered in Ignace and the Local Study Area which is currently limited (NWO Community and Baseline Studies Knowledge Holder Interviews 2022). Cost if known: • To be determined. Ability to implement: • Requires planning and partnerships with relevant secondary and post-secondary institutions and entrepreneurial organizations to support the development and well-being of traditionally underrepresented individuals will be required.

5.4 PRIORITIES FOR THE NEXT FIVE YEARS

The five years from the siting decision to finishing construction of the Centre of Expertise will require coordinated planning efforts. In 2028, NWMO business operations will be transferred to the Centre of Expertise. The lead time must be used efficiently to address the priorities needed to successfully launch the Project. Any delay on a siting decision will reduce the lead time available or delay the Project schedule.

Many of the actions to prioritize over the next five years relate to the near and longer-term objectives of attracting and retaining new residents. Although not detailed here, it is anticipated that other community studies will be instructive in how this occurs. The following provides a list of broad priorities relative to attracting new residents:

- Plan and construct the Centre of Expertise, with the inclusion of temporary and/or flexible spaces to serve either long-term training needs or general community needs/interests (see Community and Culture and Infrastructure studies for more information);
- Plan and build temporary and permanent housing, with a variety of options including owned and rented properties, short-term rentals, and single-family and multi-unit dwellings to serve a diverse workforce (see Housing study for more information); and
- Address any infrastructure and/or services gaps that are required to accommodate a growing population (see Community and Culture, Community Health Protection, and Infrastructure studies for more information).

With respect to workforce development, the following items are identified as the near-term priorities:

- As the most readily available pool of labour with an understanding of the Project, focus on transitioning existing NWMO staff to live in Ignace to compliment the new NWMO staff who likely will not have much familiarity with the Project or Ignace;
- To support the objective of local residents participating in Project opportunities organize a Northwest Labour Attraction Task Force, led by the NWMO and regional industry and government partners, to cultivate partnerships for economic development, training, and social supports;
- Begin investing in and planning for the development of a local intergenerational workforce through investment in early, primary, and secondary education; and
- Begin investing in and planning to attract traditionally underrepresented groups (e.g., women, Indigenous peoples, newcomers) to pursue careers in skilled trades and STEM fields.

Focus on Transitioning Existing NWMO Staff to Live in Ignace

Existing NWMO staff represent an important potential source of labour relative to their knowledge and expertise of the Project. For existing NWMO staff to make an informed decision about relocating to Ignace, the vision for life in Ignace should be as clear as practical (e.g., through staff/family trips to Ignace), and staff should be afforded a reasonable time frame to make their decision. Career development plans, remuneration and benefits, and any other incentives should be well understood. The availability of appropriate housing, planned or expected civic amenities (such as shopping, services, and municipal facilities), and planned programming (such as arts and culture, sport, and outdoor recreation) should also be understood. Staff should be afforded the opportunity to envision life in Ignace, for themselves and their families, and be willing to make a long-term commitment based on that vision.

Organize a Northwest Labour Attraction Task Force and Cultivate Partnerships for Economic Development, Training, and Social Supports

To enable local participation in Project opportunities, the NWMO should initiate a Northwest Labour Attraction Task Force to organize efforts among industry, government, and non-profit organizations to develop and attract skilled labour required for the Project. The NWMO can develop a terms of reference for the Task Force and canvass candidate organizations such as the Northwest Training and Adjustment Board, Crossroads Training and Employment Centre, Patricia Area Community Endeavours, Northwest Employment Works, Shooniyaa Wa-Biitong, Sioux Lookout Friendship Accord Economic Development Corporation, and major employers such as Domtar, Resolute Forest Products, and Treasury Metals. Similarly, the Sioux Lookout Friendship Accord Economic Development Corporation is considering establishing a regional economic development corporation that a Northwest Labour Attraction Task Force could complement. The benefits of Task Force participation should be clearly articulated, as should the potential pitfalls of overlooking a coordinated effort to develop the workforce.

The NWMO should begin attracting interest and formalizing partnerships with the various organizations in areas of workforce and economic development, education and training, and social supports. The Task Force may include sub-committees dedicated to certain aspects of workforce development and may be formed as an umbrella committee to coordinate with other partnerships relevant to Project, on labour, economic development, and social matters. Partnerships may span from simply informing parties of plans and actions, to consulting with parties on specifics, to full partnership or joint ventures. The extent of partnerships will depend on the issues and the organizations.

Forming the minimum number of partnerships necessary to accomplish the goals is preferred, to avoid competing with other efforts or working at cross purposes. In short, more organizations around fewer tables are preferred to numerous bi-lateral partnerships. The Northwest Labour Attraction Task Force may provide the appropriate umbrella under which to organize these partnerships.

Invest in Early, Primary, and Secondary Education

Knowledge holders interviewed often reflected on the fact that retention strategies could be supported through the recruitment of people from within the region who were already familiar with the area and way of life. The NWMO has a long lead-time before Project construction and operations and research demonstrates that early investment in education has a higher return on investment. For example, an individual seeking an operational job requiring a four-year degree would begin kindergarten in 2026, meaning that efforts to invest in education early should be aligned with the arrival of employees for the Centre of Expertise. Investing early in the local population will help with workforce retention. After the siting decision in 2023, the NWMO should begin working with childcare providers, including Kenora District Services Board and the province of Ontario on ensuring high-quality early childhood education is available and accessible to residents of the Local Study Area communities. For primary and secondary education, the NWMO should begin working with the Keewatin Patricia District School Board and province of Ontario on STEM- and trades-related initiatives for the schools. Early investment at all grade levels can benefit the NWMO starting during pre-construction and continuing through the duration of operations.

Invest Early in Attracting Underrepresented Groups to Pursue Careers in the Skilled Trades and STEM

Early efforts to attract traditionally underrepresented groups (e.g., women, Indigenous peoples, newcomers) into skilled trades and STEM-related occupations will support the longer-term operational needs of the Project. Initial investments in proactive programming to generate interest and attract a

workforce into STEM and trades that highlights the benefits and the demand for these occupations. Other investments will include barrier-free training and education (e.g., childcare, provision of equipment and Personal Protective Equipment) opportunities and comprehensive supports which address barriers inside and outside of the classroom (CVMPP 2013). Planning for policies and supports (e.g., NWMO's Reconciliation Policy) to ensure a safe workplace for a diverse workforce will also be important for increasing the representation of underrepresented groups in skilled trades and STEM-related occupations. Potential local organizations to engage with or partner in efforts include Shooniyaa Wa-Biitong, the Sioux Look Mining Centre of Excellence, and Seven Generations Education Institute.

6.0 SUMMARY

The current labour force suited to the Project in Ignace and the Local Study Area is limited, whereas the broader region (e.g., Winnipeg, Thunder Bay, Sudbury) represent a large pool of labour with skills appropriate to the Project. In the absence of the Project, population is expected to grow modestly but is constrained by the anticipated slow growth in housing stock and the lack of economic opportunities outside of resource-based industries which are reactionary to short-term economic needs. The specific types of skilled labour required by the NWMO for the Project are broadly available in the Regional Study Area, but limited within the Local Study Area.

Local and regional educational institutions, other organizations dedicated to workforce development, and willing industry partners form a strong ecosystem for workforce development. Union hiring halls are rare necessitating alternatives for sourcing some trades necessary for the Project.

According to the residency planning assumptions, jobs in Ignace will increase employment substantially from the baseline projection without the Project beginning in pre-construction. During construction, resident Project labour and temporary labour will more than double the baseline employment in Ignace. For the Local Study Area, the increased jobs from the Project will increase employment between 2% to 4% from pre-construction through operations. Policies and initiatives will be required to achieve the residency planning assumptions for the duration of the Project.

6.1 KEY FINDINGS

Existing Conditions

- Local Study Area communities want to improve opportunities available for youths and young adults to pursue education opportunities and to engage and continue community partnerships to foster economic and workforce development.
- Although there are few post-secondary educational institutions in both the Local Study Area and the Regional Study Area, there are a handful of institutions across Northwestern Ontario. Additionally, Confederation College occasionally offers customized training and courses at the Dryden and Sioux Lookout campuses, and can provide in-community (e.g., within Ignace) training if there is sufficient demand.
- There are a handful of employment service providers and other workforce development-related organization in the Regional and Local Study Areas.
- Although there are not many entrepreneurial organizations in Ignace, many in the Local and Regional Study Areas provide services virtually. Although there are supports for youth entrepreneurship, it will be important for secondary schools to develop strategies to increase the uptake and delivery of business courses. Part of the strategies will need to focus on addressing the gaps in knowledge for starting a business and the required first steps.

The Project

- Jobs in Ignace will substantially increase employment by 31% during pre-construction, 35% during construction, and 54% during operations. Similarly, the Project will result in an increase in employment for the Local Study Area by 2% during pre-construction, 3% during construction, and 4% during operations.

- During construction, resident Project labour (180 employees) and temporary labour (over 400 temporary workers) will more than double the baseline employment (approximately 540 workers) in Ignace.
- Many of the policies related to developing the workforce and the youth in Ignace and the Local Study Area will require partnerships and to be proactively managed to achieve the continued development and involvement of the local labour force and youth on the Project.
- The policies intended to strengthen the opportunities for training and education in Ignace and the Local Study Area could involve regional institutions and potentially provide benefits to Northwestern Ontario.
- The policies related to the worksite and the Centre of Expertise can largely be implemented by the NWMO alone, although there are some programs and policies for incentivizing living in Ignace and planning for a diverse workforce that will require a broad range of partners.

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APPENDIX A:

List of Northwest Ontario Socio-Economic Community Studies

Table A-1: List of Socio-economic Community Studies

Study Name	Study Proponent	Lead Consultant
Community and Culture	NWMO	InterGroup Consultants Ltd. and Scatliff+Miller+Murray
Local and Regional Economics and Finance	NWMO	Hardy Stevenson and Associates Ltd
People and Health	NWMO	InterGroup Consultants Ltd.
Infrastructure	Township of Ignace	WSP
Tourism	Township of Ignace	Urban Systems

APPENDIX B:

Glossary of Terms

Table B-1: Glossary of Terms

Term	Definition
Adaptive Phased Management (APM) Project	The Deep Geological Repository and other required infrastructure for the safe, long-term management of Canada's used nuclear fuel.
Adaptative management	Adaptive management is defined consistent with the CNSC's definition of adaptive management (REGDOC-3.6): A planned and systematic process for continuously improving management practices (primarily environmental) by learning from their outcomes. For an environmental assessment it involves, among other things, the implementation of new or modified mitigation measures over the life of the Project to address unanticipated environmental effects. Note: the need to implement adaptive management measures may be determined through an effective follow-up program.
Community	The use of the term 'community' (a group of people living either in the same place or having a particular characteristic in common) will be qualified to specify the specific community of reference.
Community Studies Purpose	Community studies will inform the primary APM Project hosting agreement between the NWMO and the Township of Ignace. In addition, they will provide pertinent information for agreements with the City of Dryden as well as other potential regional agreements.
Ignace Area	Delineates the general area surrounding the potential APM Project location Deep Geological Repository in Northwestern Ontario; mainly comprising of City of Dryden, Machin, the Local Services Board of Wabigoon, the Local Services Board of Melgund (Dyment and Borups Corner), and Sioux Lookout. The area is located in Treaty #3 within the traditional territories of multiple Indigenous and Métis communities.
Ignace and Area Working Group	The Township of Ignace and the NWMO have established a working group inclusive of the Township of Ignace, Wabigoon Lake Ojibway Nation, and other Indigenous and non-Indigenous local and regional community members and observers to collaboratively design and implement baseline and community studies to provide a basis for achieving informed decision making related to the APM Project.

Term	Definition
Local Study Area	The Local Study Area refers to the communities/areas most likely to experience future direct, indirect, and induced impacts of the APM Project - both positive and negative. For the purposes of the baseline studies, the potential "host" community (i.e., Ignace) is considered central to the Local Study Area, while other communities may be included on a topic-by-topic basis relative to potential future impacts and cumulative impacts. The Local Study Area will vary by baseline component/study as well as phase of the Project. For example, for workforce the Local Study Area includes communities that can commute to the Revell Site or the Centre of Expertise within an hour drive. This means that Ignace, Dryden, Sioux Lookout (for the Revell Site) and Machin (for the Revell Site) and unincorporated municipalities constitute the primary Local Study Area (micro labour-shed). This micro labour-shed includes settlement areas (unincorporated communities) between Dryden, Ignace, and Sioux Lookout. The preliminary spatial boundaries are as follows: • Ignace; • Dryden; • Machin; • Sioux Lookout; • The Local Services Board of Melgund; and • The Local Services Board of Wabigoon.
Neighboring Community	Communities in Northwestern Ontario surrounding the Project or included in both Local and Regional Study Areas (i.e., Dryden, Sioux Lookout, Machin, and unincorporated municipalities).
Neighboring Community Leadership	For the purpose of engagement on draft materials, neighboring community leadership in this context refers to municipal administrative leadership inclusive of the Local Services Board of Wabigoon, the Local Services Board of Melgund, etc.
Potential Municipal Host Communities	Two municipal siting communities remain in the process. These are the Township of Ignace and the Municipality of South Bruce. Ignace has participated in the NWMO's site selection process since initiation in 2010.
Project Site	Used to describe the location of the primary APM infrastructure including the Deep Geological Repository, and ancillary infrastructure to support operations.

Term	Definition
Regional Study Area	The Regional Study Area refers to the area used to provide context for each component and may also experience future impacts of the APM Project (both positive and negative). During the future impact assessment, cumulative effects will be considered within the Regional Study Area. The Regional Study Area will also vary by baseline component/study as well as phase of the Project. In some instances, the regional boundaries are either narrowly defined by the area within the Kenora District or more broad in scope such as the labour baseline for example: • Atikokan; • Kenora; • Thunder Bay; • Steinbach; and • Winnipeg.
Revell Site	Revell Batholith Temporary Withdrawal Area.
Rights Holders	First Nation and Métis communities who have asserted and or hold recognized treaty and/or Indigenous rights and whose Traditional Territories include the Project site.
Siting Area	In the context of the Community Studies for Northwestern Ontario, 'siting area' refers to the Ignace Siting Area defined above for 'Ignace Area'.
South Bruce Area	Delineates the general area surrounding the potential APM Project location in southwestern Ontario; mainly comprising Bruce County (excluding the South Bruce Peninsula) and northern portions of Huron County, but not extending to the shores of Lake Huron. The area is located in Treaty #45 1/2 in the traditional territory of the Saugeen Ojibway Nation as well as the asserted traditional territories of Métis communities.
Spatial Boundaries as defined in Baseline Design Report	Spatial boundaries vary by topic and will be refined over the course of engagement. It is anticipated spatial boundaries will reflect inputs from local governments, the public, Indigenous communities, federal and provincial government departments and agencies, and other interested parties, consistent with the Tailored Guidelines template. Two general spatial study areas are considered as part of the Community Studies that referred to as the Local Study Area and Regional Study Area.

APPENDIX C:

List of Knowledge Holder Organizations and What we Heard

Table C-1: List of Knowledge Holder Interviews

Knowledge Holder Organizations	
Alterna Credit Union	Ignace Resolute Sawmill
City of Dryden	Keewatin Patricia District School Board (KPDSB)
City of Kenora	Kenora District Municipal Association (KDMA)
City of Williston	Kenora District Services Board (KDSB)
Community Living Dryden-Sioux Lookout	Ministry of Natural Resources and Forestry (MNRF) Fire Centre
Confederation College	Municipality of Atikokan
Crossroads Training and Employment Centre	Municipality of Machin
Domtar	Municipality of Sioux Lookout
Dryden Native Friendship Centre	Northwest Business Centre
Dryden Regional Airport	Northwest Training and Adjustment Board (NTAB)
Dryden Regional Mental Health	Ontario Provincial Police (OPP)
FedNor	Patricia Area Community Endeavours (PACE)
Hoshizaki House	Ricci's Trucking
Ignace Area Business Association (IABA)	Sioux Lookout Friendship Accord Economic Development Corporation - Sioux Lookout Mining Centre of Excellence
Ignace Healthy Community Working Group	Thunder Bay Chamber of Commerce
Ignace Public Library	Thunder Bay Homebuilders Association
Ignace Public School	Township of Ignace
Ignace Recreation Committee	Treasury Metals

Table C-2: What We Heard from Knowledge Holder Interviews

Knowledge Holder Organizations	
City of Dryden	Municipality of Atikokan
City of Kenora	Municipality of Machin
Confederation College	Municipality of Sioux Lookout
Crossroads Training and Employment Centre	Northwest Training and Adjustment Board (NTAB)
Domtar	Patricia Area Community Endeavours (PACE)
Ignace Public School	Sioux Lookout Friendship Accord Economic Development Corporation - Sioux Lookout Mining Centre of Excellence
Ignace and Area Business Association (IABA)	Thunder Bay Chamber of Commerce
Ignace Resolute Sawmill	Thunder Bay Homebuilders Association
Keewatin Patricia District School Board (KPDSB)	Township of Ignace
Kenora District Municipal Association (KDMA)	Treasury Metals
Northwest Business Centre	

What we Heard about Workforce Development in Ignace and the Local Study Area	
Education	**Secondary** • The Ontario Youth Apprenticeship Program is closely tied to the Specialist High Skills Major Program because the Specialist High Skills Major Program is a bundle or credits, for example, the automotive Specialist High Skills Major Program has a requirement of two courses and two co-op credits. • Ignace Public School offers two Specialist High Skills Major courses (i.e., transportation and health and wellness) and offer courses in construction, welding, mechanics, and technical design. • Ignace Public School currently has 160 students, with less than 60 enrolled in grades 9 through 12. The school has the capacity to accommodate 500 students comfortably. • Ignace Public School was able to offer a customized lesson plan for a student who required a specialized math pre-requisite for a trade they intended to pursue after high school.

What we Heard about Workforce Development in Ignace and the Local Study Area	
	• Business classes at Ignace Public School are not currently offered but could be made available with sufficient interest. Currently, all streams of math and science are offered in-person or through distance learning. • Each of the Ontario Youth Apprenticeship Program, Specialist High Skills Major Program, and co-op programs will have different offerings based on the proximity of the school to businesses, availability of qualified teachers, and the community demand for certain economic sectors (e.g., Red Lake has a mining Specialist High Skills Major Program). • Dryden High School currently offers five Specialist High Skills Major Programs: automotive, manufacturing, health and wellness, construction, and business. **Post-secondary/Training** • Confederation College occasionally offers customized training and courses at the Dryden and Sioux Lookout campuses, and can provide in-community (e.g., within Ignace) training if there is sufficient demand. • The Sioux Lookout Mining Centre of Excellence works closely with the Northern College and Haileybury School of Mines for the delivery of programs which are targeted to support the mining industry in northern Ontario. For 2022 there are 137 participants set to complete the program, of which 51% are women. • Finding a journeyman to complete an apprenticeship under can be a challenge for some trades due to the number of journeyman and also the proximity of the work relative to the youths' home community.

What we Heard about Workforce Development in Ignace and the Local Study Area	
Employment	• More recently, youths are migrating out of Ignace to pursue education and employment opportunities and not returning. • Transportation to and from work and school can be a challenge for individuals who live in remote communities or need to travel far distances. • Difficult for youths to find jobs in their field of study around their home community. • Local Study Area businesses are good for providing work placements for apprenticeships (including the Ontario Youth Apprenticeship Program program) and co-ops. • There is a stigma present in adults where they do not want their children to be engaged in skilled trades due to the demanding work and variable hours despite continuous improvements to working standards over time. • Ignace businesses are good for supporting youths with co-op, apprenticeship, and work placements. • There is a preference to work with hunting outfitters and on mines due to the extended time off from a two-weeks on two-weeks off schedule. • The wage gap between the resource-based industries and the service industry in town can result in youths to migrate to find employment elsewhere if they are not pursuing employment in the resource-based industries. • Youths sometimes possess a gap in work readiness after completion of their schooling. Employers are not always as understanding and patient compared to teachers in education and training.

What we Heard about Workforce Development in Ignace and the Local Study Area	
Youth Entrepreneurship	• A lack of office space in Ignace is a challenge for young entrepreneurs trying to start-up their business. • A business plan is a required first step to start a business and obtain a loan/grant. • Lack of understanding the requirement and lack of understanding of needing money (i.e., cash or down payment) to obtain a grant or purchase a business is an issue for youths and others looking to start a business. • Lack of financial issues related to business start-ups and the requirement to save and have plans in place. • Lack of understanding cash flows and how to move forward when cash flows are constraining operations. • Not many grants are available in Northwestern Ontario. • There is a disconnection with the schools and the promotion of entrepreneurship to youths. • Lack of willingness to accept advice. • Limited market in terms of numbers locally, which limits the types of services and products that can be offered.

What we Heard about Workforce Development in Ignace and the Local Study Area	
Labour Force/ Economic Base	• Downturns in the forestry industry from 2006-2008 contributed to the loss of three paper machines due to a change in scope of operations and the closure of the Bowater Mill (later re-opened and renamed the Ignace Resolute Mill). • The growing Indigenous population has been noted by Knowledge Holders as an untapped resource for employers in the northwest. • The labour force in Ignace has always been limited, transient, and has minimal longevity as it is reactionary to short term economic needs. • Even with Dryden having the highest concentration of skilled labourers there is still a persistent labour shortage and businesses recruit labour from outside the community. • The Kenora District Municipal Association noted that there is a lack of skilled trades in almost every mine and forestry operation and job postings are going unfilled. • There is a large demand in the Local Study Area for labour in entry level positions, skilled trades, forestry, health, and mining.

What we Heard about Workforce Development in Ignace and the Local Study Area	
Housing/ Population	• From 1991 to 2011 there was a large out-migration of families which resulted in the youth population to decline. • It was noted by the Municipality of Sioux Lookout during key stakeholder interviews that employees are unable to come the Municipality as they are unable to secure housing. • The City of Dryden is in the process of developing affordable housing geared towards fixed income households. • It was noted by the Town of Atikokan that the homes in the area are typically older which is unattractive to most outside buyers. • All municipalities have indicated there is capacity to accommodate housing growth, with the exception of Machin which is constrained by the existing water treatment system. • Ignace also expressed that their growth plan can support a maximum of 5,000 residents, however some of the older infrastructure will need to be updated. • There is a lot of available space for building residential homes, however, developers are not seeing a high enough return on investment. • There are two to three large developers in Thunder Bay who have the capacity to build the necessary homes to accommodate the Project but are hesitant due to the associated risk of Project labourers choosing not to settle in the Local Study Area.

What we Heard about Workforce Development in Ignace and the Local Study Area	
Considerations for Workforce Development and the Project	• Ensure Ignace and communities nearest to the Project benefit the most from the Project. • The Project will provide the opportunity for local businesses to meet increases in demand, this will increase the prosperity of the local economy. • More local and training opportunities will keep people in the community. • Basic employment skills will help ensure individuals can participate in the Project or participate indirectly through supporting industries. • Organizations in the Local and Regional Study Area have expressed a willingness to partner with the NWMO to address challenges related to education, employment skills, and economic development. • The Rural Northern Immigration Pilot has been effective in building a skilled and diversified workforce and contributing to population growth in Thunder Bay. • Developing and enhancing private and public amenities will be required to attract and retain new residents for the long term.