



NUCLEAR WASTE
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Social Cultural, Economic, and Health Baseline Studies
Preliminary Report for Engagement
Wabigoon Lake Ojibway Nation – Ignace Area



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This report has been prepared under contract to the NWMO. The report has been reviewed by the NWMO, but the views and conclusions are those of the authors and do not necessarily represent those of the NWMO.

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Social Cultural, Economic, and Health Baseline Studies

Preliminary Report for Engagement

Wabigoon Lake Ojibway Nation-Ignace Area



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The Nuclear Waste Management Organization acknowledges work in many different Indigenous territories since the inception of the organization. The Nuclear Waste Management Organization is grateful to the Indigenous and municipal communities they have worked with over the past 20 years.

The Nuclear Waste Management Organization acknowledge that they are working in Northwestern Ontario in the traditional territory of Wabigoon Lake Ojibway Nation with the community of Wabigoon Lake Ojibway Nation and the Township of Ignace.

The Nuclear Waste Management Organization further acknowledge that we have the privilege of working with other First Nations and organizations, with Métis communities and the Métis Nation of Ontario, and many municipal communities that have all expressed an interest in learning about the work.

As part of our commitment to reconciliation, the Nuclear Waste Management Organization recognizes both the historic and current injustices far too many Indigenous communities endure. They pledge to do our part to encourage well-being in communities with which they work.

GLOSSARY AND ABBREVIATIONS

Term	Details
ACG	Adjusted Clinical Group
ACSC	Ambulatory care sensitive conditions
ADG	Aggregated Diagnosis Group
AHAC	Aboriginal Health Access Centres
ALC	Alternate Level of Care – this indicator refers to use of an inpatient hospital bed in an acute care setting where acute care is not required but an appropriate setting is not available.
All Dx	All diagnosis
ATV	All-terrain vehicle
AAFS	Anishinaabe Abinoojii Family Services
AADT	Average Annual Daily Traffic
Baseline Studies	The Social Cultural, Economic, Health, and Indigenous Peoples Baseline Studies
BCE	Before common era
Births	Unless otherwise stated, “births” includes both live and stillborn infants.
BMZ	Bait Management Zone
BORN Ontario	Better Outcomes Registry & Network Ontario
Cancer	Includes only malignant neoplasms.
CCHS	Canadian Community Health Survey. Survey conducted by Statistics Canada, off-reserve communities only.
CE	Common era
CEGEP	Collège d'enseignement général et professionnel
CHC	Community health centre
CHF	Congestive heart failure
CIHI	Canadian Institute of Health Information
CIP	Community Improvement Plan
CLDSL	Community Living Dryden-Sioux Lookout
CNSC	Canadian Nuclear Safety Commission
COPD	Chronic obstructive pulmonary disease
COPS	Canadian Occupational Projection System
COVID-19	Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. The first case was confirmed in Ontario on January 31, 2020.
CPI	Consumer price index
CPR	Canadian Pacific Railway
CTAS	Canadian Triage and Acuity Scale
CSWB Plan	Community Safety and Well-Being Plan

GLOSSARY AND ABBREVIATIONS CONTINUED

Term	Details
DNFC	Dryden Native Friendship Centre
Dryden Hub	The Dryden Health Hub is an amalgamation of communities who may use/access services based in Dryden. It includes Dryden, Ignace, Machin, Eagle Lake First Nation, and Wabigoon Lake Ojibway Nation.
Dryden RHC	Dryden Regional Health Centre
Dx	Diagnostic Code; one patient may have several diagnostic codes (using ICD coding).
ED	Emergency department
Emergency department acuity	The general level of illness, urgency for clinical intervention, and level of resource use in the emergency department.
FMP	Forest Management Plan
FMZ	Fisheries Management Zones
FNIHB	First Nations and Inuit Health Branch
FT	Full-time
FTE	Full-time equivalent
GB	Gigabytes
GBA+	Gender-based Analysis Plus
GDP	Gross Domestic Product
GIS	Geographic Information System
Ha	Hectares
HBC	Hudson's Bay Company
HBHC	Healthy Babies Healthy Children Program
HST	Harmonized sales tax
IAAC	Impact Assessment Agency of Canada
IAWG	Ignace Area Working Group
ICD	International Classification of Disease Health Coding System
ICD-10	International Classification of Disease Health Coding System, 10 th Edition.
ICD-9	International Classification of Disease Health Coding System, 9 th Edition.

GLOSSARY AND ABBREVIATIONS CONTINUED

Term	Details
Incidence	The number of new cases of a disease, death, or other event, usually reported by year.
Indigenous identity	'Indigenous identity' includes persons who are First Nations (North American Indian), Métis, or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is registered under the Indian Act of Canada) and/or those who have membership in a First Nation or Indian band. Aboriginal peoples of Canada are defined in the Constitution Act 1982 section 35(2) as including the Indian, Inuit, and Métis peoples of Canada.
Indigenous Knowledge	Indigenous Knowledge is an evolving, complex, and sophisticated system of knowledge drawing on a millennia of wisdom and experience. It is an evolving knowledge system that ranges in diversity from governance, ecology, biology, ecosystems, harvesting, science, and other aspects. It constantly grows and expands with the experience of new generations. Other definitions of Indigenous Knowledge may be presented by Indigenous communities or other organizations.
Infant Mortality	Number of deaths in the first year of life per 1,000 live births
IntelliHealth	Ontario Ministry of Health and Long-Term Care protected electronic Data Repository for queries and data extraction.
InterGroup	InterGroup Consultants Ltd.
Internist	Internal medicine specialist
iPHIS	Integrated public health information system
ISC	Indigenous Services Canada
ISCIS	Integrated Services for Children Information System
Kenora Census Division	A Census Division is the general term for provincially legislated areas and are a geographic area between the province/territory level and the municipality level. Throughout the report the Kenora District Census Division is referred to as the Kenora Census Division.
kg	Kilogram
km	Kilometre
KPI	Key Person Interview program
kV	Kilovolt
L	Litre

GLOSSARY AND ABBREVIATIONS CONTINUED

Term	Details
LBW	Low Birth Weight Infant – live born infant of at least 500 grams and less than 2,500 grams.
LHIN	Local Health Integration Network
Livebirth	Newborn, born alive
Local Study Area	<p>The Local Study Area refers to the communities/areas that are most likely to experience future direct, indirect, and induced impacts of the Project, and considers those locations where people can commute to the Revell Site and/or the Centre of Expertise within an hour drive. The selection of spatial boundaries was informed by local residents through the Ignace Area Working Group, key person interviews, and workshops. The Local Study Area for the population and demographics, community and culture, and infrastructure and services components includes the Township of Ignace, City of Dryden, Municipality of Machin, Municipality of Sioux Lookout, Local Services Board of Wabigoon, Local Services Board of Melgund (includes the unincorporated communities Dymont and Borups Corners), Upsala, Valora, and Silver Dollar.</p> <p>The Local Study Area for land and resources use and archaeological and heritage resources are distinct from the other Local Study Areas and were selected based on areas which are considerate of project activities, the potential biophysical changes, and where direct impacts to resources could occur.</p> <p>The Local Study Area for the economic components includes the Township of Ignace, City of Dryden, Municipality of Machin, Municipality of Sioux Lookout, Local Services Board of Wabigoon, Local Services Board of Melgund (includes the unincorporated communities Dymont and Borups Corners), and Dinorwic.</p> <p>The Local Study Area includes Indigenous peoples who reside in the communities of the Local Study Area but is not representative of any specific Indigenous community or nation.</p>
LOS	Length of Stay
LOTW	Lake of the Woods (Kenora)
LSB	Local Services Board
m ³	Cubic Metre
MBCHCH	Mary Berglund Community Health Centre Hub
mbps	Megabyte per second
ML	Megalitre. Is equivalent to 1 million litres.

GLOSSARY AND ABBREVIATIONS CONTINUED

Term	Details
MNO	Métis Nation of Ontario
MNRF	Ministry of Natural Resources and Forestry
Morbidity	Illness
Mortality	Death
MPDx	Main problem diagnosis (using ICD coding for Emergency Department Visits – most likely underlying condition related to accessing emergency department care).
MRDx	Most responsible diagnosis, uses ICD-10 coding
NACRS	National Ambulatory Care Reporting System
NAICS	North American Industry Classification System
NHS	National Household Survey – Statistics Canada
NP	Nurse practitioner
NTAB	Northwest Training and Adjustment Board
NWHU	Northwestern Health Unit
NWMO	Nuclear Waste Management Organization
NWOSTA	North-West Ontario Snowmobile Trail Association
NWOMCFS	Northwest Ontario Métis Child and Family Services
OCAP	Ownership, Control, Access, and Possession
OFAH	Ontario Federation of Anglers and Hunters
OFSC	Ontario Federation of Snowmobile Clubs
OHIP	Ontario Health Insurance Plan
OHIPDx	Used in physician billing only. Ontario Health Insurance Plan Coding that may be submitted with fee code. Not an exact match to ICD or DSM. All data extraction limited to OHIPDx- 1 and Main; meaning physicians only and most primary reason for visit. OHIPDx coding can be used by other non-physician practitioners so that OHIP Dx code must be set to “1” to include physicians only.
OHT	Ontario Health Team

GLOSSARY AND ABBREVIATIONS CONTINUED

Term	Details
OMHRS	Ontario Mental Health Reporting System. Part of IntelliHealth Ontario data repository. As of 2006, all acute care patients in designed adult mental health beds are reported in this system only.
OMPF	Ontario Municipal Partnership Fund
PACE	Patricia Area Community Endeavors
PMR	Premature mortality rate – rate of deaths occurring before age 75
Potentially Avoidable Mortality	Mortality of individuals under 75 years of age who have died with a condition considered as avoidable recorded as the primary cause of death.
Prevalence	The number of people living with a condition. These are typically people living with a chronic disease as opposed to an infectious disease which is treated and resolved or leads to mortality.
Project Site	Refers to the area withdrawn from other land uses, or the lands accessed by the NWMO for the purposes of potential siting for the deep geological repository.
PT	Part-time
PYLL	Potential years of life lost - the number of years of life lost due to premature mortality.
RFDA	Regional Food Distribution Association

GLOSSARY AND ABBREVIATIONS CONTINUED

Term	Details
Regional Study Area	<p>The Regional Study Area for population and demographics, community and culture, infrastructure and services components, and for economic components is the Kenora Census Division. The Kenora Census Division is an administrative boundary where there may be more concentrated or discernible impacts from the Project in comparison to geographies outside of the Kenora Census Division. The Kenora District Census Division includes people living in municipalities, unincorporated communities, and Indigenous reserves and settlements. This includes Indigenous people living both on- and off-reserve.</p> <p>The Regional Study Area for land and resources use and archaeological and heritage resources are distinct from the other Regional Study Areas and is provided for context of where the project has potential to interact with the environment.</p> <p>The Regional Study Area for economic components may be further expanded for different components where relevant.</p> <p>Comparable statistics for Ontario and Canada are provided as available to provide context and comparisons for Regional Study Area information.</p>
SADT	Summer Average Daily Traffic
SAMI	Standardized ACG Morbidity Index
SEPH	Survey of Employment, Payrolls, and Hours
SDW	Specially Designated Waters
SHSM	Specialist High Skills Major
Sioux Lookout MHC	Sioux Lookout Meno Ya Win Health Centre
SLFA	Sioux Lookout Friendship Accord
SLMHC	Sioux Lookout Meno Ya Win Health Centre
Spontaneous Abortion	The spontaneous loss of a fetus without outside intervention before the 20th week of pregnancy. Also known as a miscarriage.
STI	Sexually Transmitted Infections
Stillbirth	All infants ≥ 20 weeks gestation or ≥ 500 grams. Stillbirth includes any spontaneous stillbirth that occurred during the antepartum or intrapartum period.

GLOSSARY AND ABBREVIATIONS CONTINUED

Term	Details
Tailored Guidelines template	<i>Tailored Impact Statement Guidelines Template for Designated Projects Subject to the Impact Assessment Act and the Nuclear Safety and Control Act</i>
The Project	The Adaptive Phased Management Project
TCFS	Tikinagan Child and Family Services
Thunder Bay RHSC	Thunder Bay Regional Health Sciences Centre
Unincorporated area	An unincorporated area is a geographic region in Canada that does not form part of a municipality or Indian reserve. In Ontario, unincorporated areas are found in the Northern Ontario region. Communities within unincorporated areas may have some services provided or administered by a Local Services Board.
Vulnerable populations	'Vulnerable populations' are individuals who are at greater risk of experiencing adverse effects because of "disparities in physical, economic, and social status when compared with the dominant population".
WLON	Wabigoon Lake Ojibway Nation
WMU	Wildlife Management Units
YMCA	Young Men's Christian Association
Youth	Youth are defined as residents who are between the of ages 15 to 29 years old by Statistics Canada.

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1.0 INTRODUCTION

1.1 THE ADAPTIVE PHASED MANAGEMENT PROJECT AND SITE SELECTION PROCESS

The Adaptive Phased Management Project (the “Project”) refers to the Nuclear Waste Management Organization’s (“NWMO”) plan for the long-term management of used nuclear fuel. It emerged from a three-year dialogue with specialists, the public, and Indigenous peoples. The Project is both a technical method and a management system. The technical method is the centralized containment and isolation of Canada’s used nuclear fuel in a deep geological repository in an area of suitable geology and with an informed and willing host. The management system involves realistic, manageable phases marked by explicit decision points, allowing for flexibility in how the process is implemented. In addition to a deep geologic repository, the Project will include a Centre of Expertise (NWMO 2020a, 2021).

The Project fosters the sustained engagement of people and communities throughout implementation. The site selection process has involved extensive learning and dialogue with communities. When initiated in 2010, 22 municipalities (including two Indigenous communities in Saskatchewan) expressed interest in learning more about the potential to become a host. Site evaluations and social engagement over the years narrowed the NWMO’s focus to two siting areas – one in Northwestern Ontario and one in Southwestern Ontario (NWMO 2020a, 2021). Continued engagement with the siting area communities and exploring a sustainable partnership that will foster community well-being are ongoing. Detailed site characterization studies, including environmental and socio-economic studies, were completed to confirm the siting area is suitable for hosting the Project.

In preparing for the next stages of the site selection process and the transition to a federal impact assessment and Canadian Nuclear Safety Commission (“CNSC”) licensing process, the NWMO initiated baseline studies for the Social Cultural, Economic, Health, and Indigenous Peoples environment in Northwestern Ontario (the Wabigoon Lake Ojibway Nation – Ignace area) and Southwestern Ontario (the Saugeen Ojibway Nation – South Bruce area). This is in addition to biodiversity studies (Zoetica 2020a, 2020b) and environmental media studies (CanNorth 2019, 2020) that are also underway.

This report presents the social cultural, economic and health baseline characteristics relevant to the Northwestern Ontario, with a focus on the municipal context. With respect for ongoing relationships with First Nations and Métis communities in Northwestern Ontario, the NWMO intends to work in the spirit and intent of its Reconciliation Policy (NWMO 2019) and Indigenous Knowledge Policy (NWMO 2020b). Baseline studies for Indigenous communities will be approached in a manner preferred by those communities. Indigenous populations are acknowledged and are described where information was available in the municipal context; however, the findings presented herein are not representative of any specific First Nation or Métis communities in Northwestern Ontario.

1.2 BASELINE STUDIES PURPOSE

The Social Cultural, Economic, Health, and Indigenous Peoples¹ Baseline Studies (hereafter “the Baseline Studies”) will feed into a future impact assessment to examine the potential effects of the Project. The Baseline Studies form part of the NWMO’s broader baseline programs, as depicted in **Figure 1.2-1**. It is acknowledged the Revell Site in Northwestern Ontario is in the traditional territory of the Anishinaabeg people of Treaty #3 and the Northwest Ontario Métis.

The Baseline Studies for the Project were designed to satisfy the requirements of the *Impact Assessment Act* (2019a) and associated guidance materials. In particular, the template for the *Tailored Impact Statement Guidelines Template for Designated Projects Subject to the Impact Assessment Act and the Nuclear Safety and Control Act* (“Tailored Guidelines template”) (IAAC 2019b) developed by the Impact Assessment Agency of Canada (the “IAAC”) was considered relevant. Numerous guidance documents offered as part of the Practitioners Guide to Federal Impact Assessments under the *Impact Assessment Act*, (considered as “evergreen” documents by the IAAC) were also consulted. Guidance materials were revisited throughout the Baseline Studies process, and the approach was tailored where appropriate, and relevant to the information available. The Tailored Guidelines template was revised in December 2022 and updates will be incorporated in a potential future impact assessment. Regulatory documents from the CNSC (e.g., REGDOC 1.2.1, Guidance on Deep Geological Repository Site Characterization [2021]) are also considered.

As the Project evolves, and the site selection process is completed, corresponding studies are expected to characterize the social cultural, economic, health, and Indigenous peoples context for Northwestern Ontario with a focus on:

1. Social Cultural, Economic, and Health Baseline Studies that described existing and future (without the Project) baseline conditions within a local and regional study area. This report presented the findings of the municipal context, which is inclusive of Indigenous peoples who reside within the communities and where data is available, but is not reflective of the socio-economic conditions within any specific First Nation or Métis community; and
2. The Indigenous Peoples Baseline Studies are part of the broader program characterizing the overall socio-economic and cultural conditions within a local and regional study area. Baseline information is required on existing social conditions regarding First Nation and Métis communities whose rights and interests may be impacted by the Project.

¹ There are three groups of Indigenous Peoples recognized in the Canadian constitution: First Nations, Inuit, and Métis. These three distinct groups of Indigenous people have unique histories, languages, cultural practices, and spiritual beliefs (Government of Canada 2021). In Northwestern Ontario, Indigenous peoples refers largely to First Nations and Métis people.

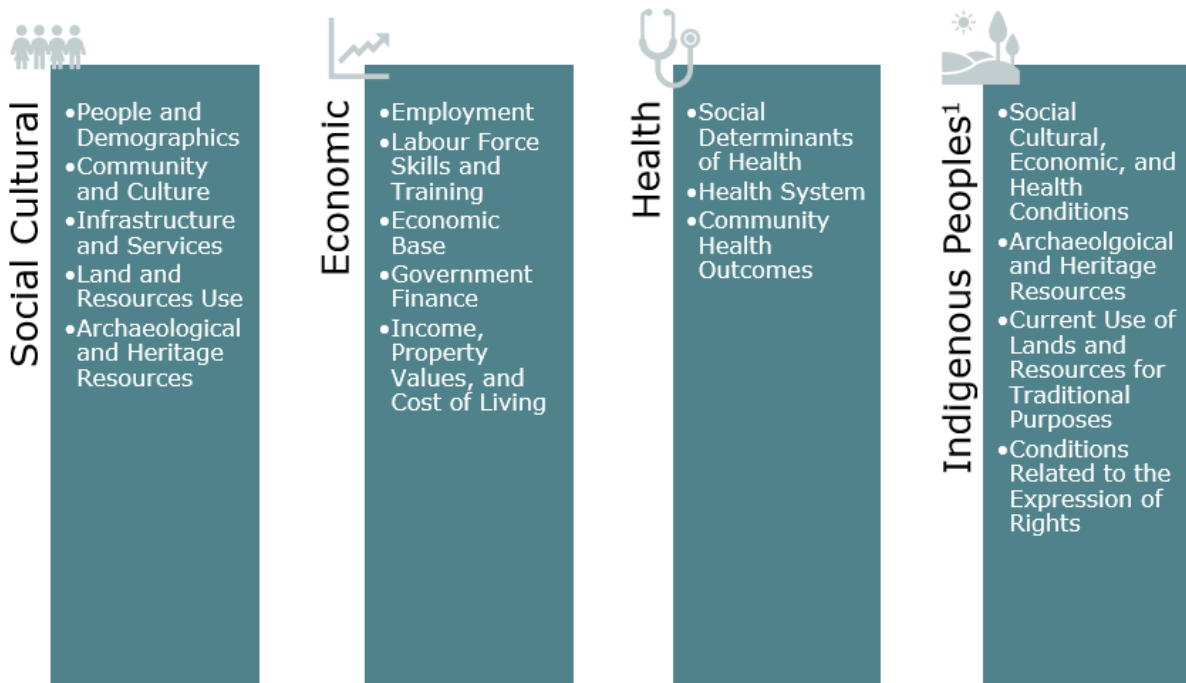
Figure 1.2-1: NWMO Baseline Programs



1.3 BASELINE STUDIES ORGANIZATION

The Baseline Studies are organized under four pillars: Social Cultural, Economic, Health, and Indigenous Peoples. Under each pillar, a series of components were studied to understand existing and potential future (without the Project) baseline conditions within the study areas (with the exception of the Indigenous Peoples pillar, to be completed at a future date). A summary of the baseline components for each pillar of the assessment is provided in **Figure 1.3-1**.

Figure 1.3-1: Summary of Components for Social Cultural, Economic, Health, and Indigenous Peoples Pillars



Note:

1. The NWMO's approach to Indigenous Baseline Studies will be non-prescriptive and may be Indigenous community-led. It is anticipated this will include processes in which the NWMO shares its understanding of the regulatory requirements, along with sharing any other pertinent information with communities to support them in defining their own processes and studies.

This report is organized into the following sections and presents the results for the municipal context:

- Section 1.0: Introduction and Approach;
- Section 2.0: Social Cultural Components;
- Section 3.0: Economic Components; and
- Section 4.0: Health Components.

Each section includes a description of the approach taken to baseline characterization, details on methods specific to the baseline components, the results of the studies to date, and supporting methods and data appendices where applicable.

1.4 BASELINE DESIGN

In 2021, a *Baseline Studies Preliminary Design Report for Engagement* was drafted to guide the baseline study process. The overall approach to designing the Baseline Studies was intended to be interactive and adaptive, allowing for the research design to respond to the complexity and dynamic character of the region (Nelson 1991), inclusive of the interests of communities through the process. It is expected the baseline conditions will continue to evolve as the Project progresses through its next phases. A copy of the *Baseline Studies Preliminary Design Report for Engagement* is provided in **Appendix 1A**. The preliminary design report was built on engagement, information gathering, and learning and dialogue with communities, area leaders, and residents at multiple levels since 2010, which are summarized in **Appendix 1A**. This included the completion of numerous studies, engagement processes, consideration of best practices, and most recently a series of community studies between 2021 and 2022 that helped to consider the potential Project changes to communities in the area. The community studies were considered as a central source of information and are described in more detail below. Other previous studies are identified in **Appendix 1A**.

1.4.1 Community Studies

The community studies were important contributors to the Baseline Studies, but were also designed more specifically to inform a hosting agreement between the Township of Ignace and the NWMO. The community studies were carried out collaboratively between the NWMO and the Township of Ignace. The community studies also provided pertinent information for other future agreements with communities within the region which may be contemplated at later stages in the siting process. Data collection for the community studies and the Baseline Studies often occurred concurrently. The community studies considered the changes from the Project that would drive potential effects in Ignace, other communities in the area, and the broader region. The community studies:

- Explored topics of interest for each of the “vision pillars” (People, Community and Culture, Economics and Finance, and Infrastructure) as expressed by Ignace residents through the Township of Ignace’s 2020 project visioning process;
- Identified Project changes driving potential impacts associated with each study topic;
- Described the characteristics of the existing environment with the potential to be affected by the Project;
- Identified and assessed possible programs and opportunities to leverage potential benefits and mitigate potential impacts;
- Advanced learning and understanding on topics of interest to communities in the Ignace area and region; and
- Provided information to the Township of Ignace that continues to inform dialogue prior to the conclusion of the site selection process in 2024.

The list of community studies completed is provided in **Table 1.4-1**.

Table 1.4-1: List of Socio-economic Community Studies

Community Study Name	Community Study Objectives
Growing the population and options study	Looked at the opportunities and challenges with anticipated population growth and identified options to leverage possible benefits and mitigate potential negative impacts in the Ignace area.
Ignace and area health services study	Assessed the potential impact of the Project on community health services and options to mitigate Project-related consequences. This included identification of options for both the incremental expansion of community health services and infrastructure if required, and the mitigation of potential changes of concern to communities.
Community and culture study	Described the cultural, social, and recreational services in the Ignace area, outlined the communities' aspirations relative to these services, and developed scenarios and ideas in response to projected population and residency changes and impacts associated with the Project.
Labour baseline study	Assessed the labour supply and demand in the area including trends and issues. This information supports a better understanding of the workforce related to the Project.
Workforce development study	Characterized the workforce within the Ignace area and provided options to meet direct employment needs of the Project.
Housing study	Evaluated housing in terms of the supply and demand, the potential for development, and possible impacts of the Project in the Ignace area. It also looked at options to enhance benefits and address possible negative impacts.
Economic development study	Described and characterized the individuals, businesses, and educational institutions that form part of the economy and supply chain network within the Ignace area that might support the Project.
Ignace municipal infrastructure study	Evaluated the required expansion or enhancement of municipal infrastructure to support population growth in the Township of Ignace. Municipal infrastructure consists of the Township of Ignace's water treatment and distribution system, wastewater treatment and conveyance system, stormwater management network, solid waste management systems, roads, and power/telecommunications network.

Table 1.4-1 Continued: List of Socio-economic Community Studies

Community Study Name	Community Study Objectives
Transportation and emergency response study	Described the existing conditions such as travel patterns, capacity demands, safety issues, and the spatial and call characteristics for historical emergency response; summarized potential changes related to transportation and emergency service requirements as a result of the Project; and described existing constraints and capacity with current operations to identify any gaps in existing operations and historical issues that could have an influence on future development.
Social services facilities study	Described the current state of existing and planned social service facilities, determined gaps, identified how residents and vulnerable sub-groups are using facilities, and identified options to leverage positive Project opportunities on social service facilities.
Community recreation facilities study	Described the current state of existing and planned community recreation facilities and determined any gaps that exist, identified how residents and visitors are using facilities, as well as existing capacity and demand, and identified options to leverage positive Project opportunities on recreational facilities.
Ignace area tourism study	Described key characteristics of the tourism industry and tourism trends characterizing the industry, developed profiles of visitors and cultural centres from other projects of similar impact to provide ideas and options for the Centre of Expertise, and identified and described future tourism growth potential and new opportunities in the Ignace area that could be supported by or result from the Project.

1.5 GENERAL METHODOLOGY

1.5.1 Identification of Baseline Components

Components of the Baseline Studies were intended to broadly characterize the existing environment. The baseline components are intended to support the future identification of valued components, which are standard tools in an impact assessment used to focus the analyses on what matters most. Valued components are elements of the natural and human environment that may be impacted by a project and include aspects of the health, social, cultural, and economic environment, or the biophysical environment. The Tailored Guidelines template (IAAC 2020a) identified the following factors considered in selecting valued components which informed the baseline component selection:

- Presence of components in the study area;
- The extent to which the effects of the designated project and related activities have the potential to interact with the component;
- The extent to which the component may be under stress from other past, existing, or future undertakings in combination with other human activities and natural processes;

- The extent to which the component is linked to Indigenous interests or rights of Indigenous peoples and whether an Indigenous rights-holder has requested the component;
- The extent to which the component is linked to federal, provincial, territorial, or municipal government priorities;
- Information from any ongoing or completed regional assessment processes;
- The possibility that an adverse or positive effect on the component would be of particular concern to Indigenous rights-holders, the public, or federal, provincial, territorial, municipal, or Indigenous governments; and
- Whether the potential effects of the project on the component can be measured and/or monitored or would be better ascertained through the analysis of a proxy component.

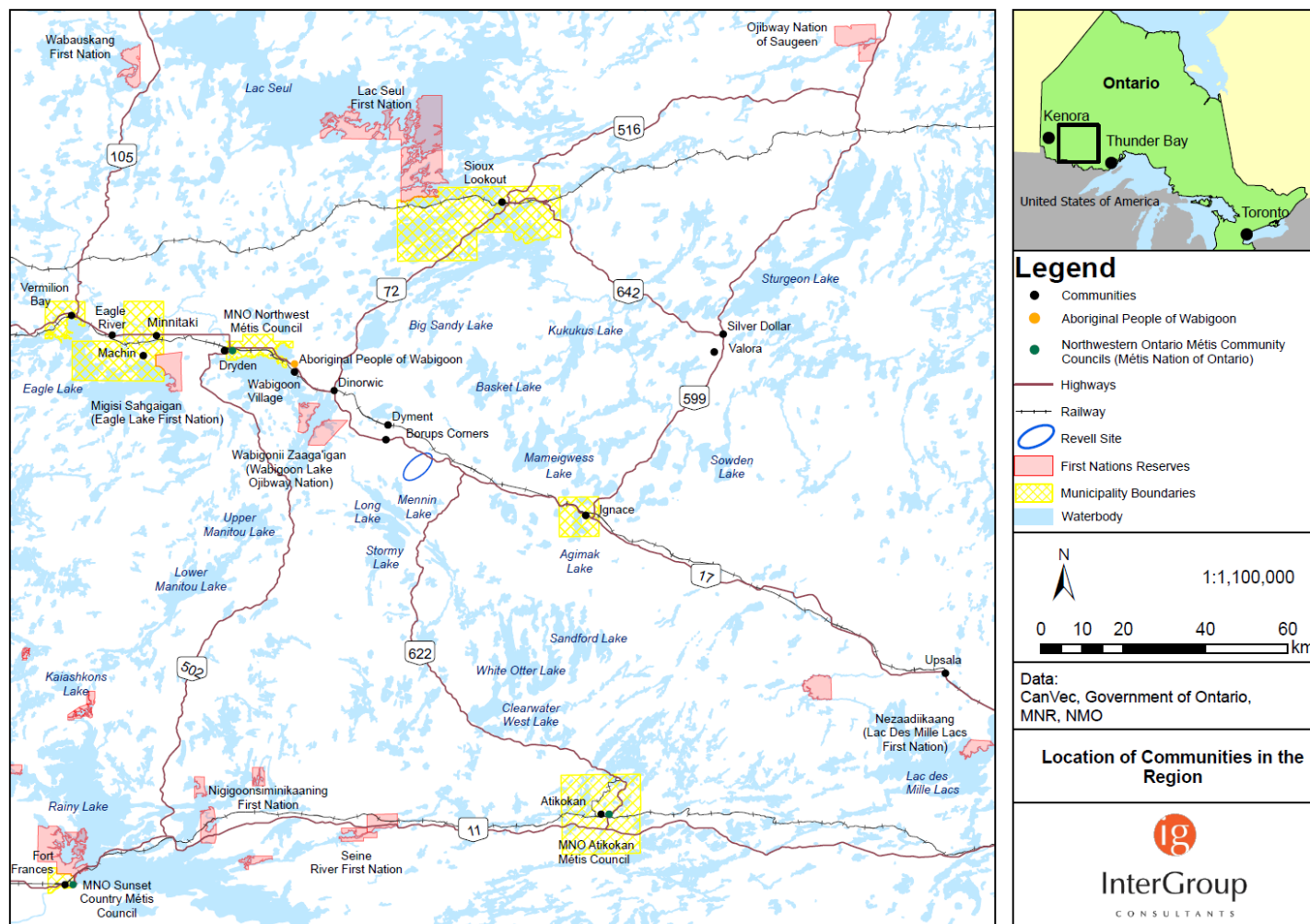
The IAAC (2020a) notes the list of valued components for assessment should be finalized in the planning phases of a project, and should be informed by engagement with the public, Indigenous rights-holders, lifecycle regulators, jurisdictions, federal authorities, and other interested parties.

The baseline components presented in this report have been refined through engagement throughout the implementation of the Baseline Studies. **Figure 1.3-1** provides the list of baseline components relative to each pillar in the Baseline Studies.

1.5.2 Spatial Boundaries

The Project's proposed location in Northwestern Ontario is approximately 40 km west of Ignace, Ontario, was identified as a potential site through earlier technical studies and engagement with local and Indigenous communities (NWMO n.d.). Local communities in the area include municipalities (towns, cities), unincorporated settlements, First Nations, and Métis communities. **Figure 1.5-1** provides an overview of where communities are situated relative to the Project and is not intended to describe the geographic boundaries used in the Baseline Studies. The figure is a starting point to understand the physical location of communities and associated infrastructure/services, but does not describe the linkages between communities, or the distinct relationships that people and communities may have with the land.

Map 1.5-1: Location of Communities in the Region^{1,2}



Note:

1. Local Services Board of Wabigoon is a designated place according to Statistics Canada, but residents refer to the community as Wabigoon or Wabigoon Village.
2. The unincorporated communities Dymont and Borups Corners are part of the Local Services Board of Melgund.

Spatial boundaries varied by component and were refined during engagement for the Baseline Studies. Three general spatial study areas were considered:

- **The Revell Site:** refers to the area withdrawn from other land uses, or the lands accessed by the NWMO for the purposes of potential siting for the deep geological repository.
- **The Local Study Area:** refers to the communities/areas most likely to experience future direct, indirect, and induced impacts of the Project, both positive and negative. For the purposes of the Baseline Studies, the potential “host” community was considered central to the Local Study Area, while other communities were included on a topic-by-topic basis relative to potential future Project impacts and cumulative impacts.
- **The Regional Study Area:** refers to the area used to provide context for each component and may also experience future impacts of the Project (both positive and negative).

Additional criteria considered in determining spatial boundaries for the municipal Baseline Studies included:

- **Administrative boundaries:** which are based on political, economic, or social considerations. For example, this included consideration of the parameters for data sets that are collected on the basis of regional or provincial boundaries, or other administrative boundaries such as census geography, local health integration networks, service board areas, and conservation authorities.
- **Technical boundaries:** refer to the constraints associated with the ability to accurately predict future outcomes (e.g., the accuracy of baseline modelling may decrease as it moves further into the future).

Spatial boundaries for each component are described in the overview and approach section of each pillar.

1.5.3 Temporal Boundaries

Temporal boundaries for the Baseline Studies were defined to support future impact assessment processes. The Tailored Guidelines template (IAAC 2020a) indicates all phases of a designated project (e.g., site preparation, construction, operation, decommissioning, post-decommissioning, abandonment) should be considered.

Understanding history and past experiences of potentially affected communities helped to elucidate a community’s current context and vision for the future (InterGroup 2020). To identify historical trends, information considered different timeframes relative to each baseline component. In some instances, such as for population, data went back to 1991 to provide an indication of overall population trends. For most Statistics Canada data outside of population, most data went back to 2006, which represents the last Census year prior to Ignace’s participation in the NWMO’s site selection process, which was initiated in 2010. For health data, the extent to which past data can be presented was determined in part based on how data was aggregated by the relevant sources, and use of confidentiality practices employed to protect individual data from being released.

Three future time frames (where applicable to the Baseline Studies) were proposed for projection purposes:

- Near-term (2024 to 2032): Aligns with end of site preparation phase in 2032 and design and construction start in 2033.
- Mid-term (2033 to 2042): Aligns with construction phase ending in 2042 and operations start 2043.
- Long-term (2043 and beyond): Aligns with operations, monitoring, and decommissioning.

Baseline projections focused on the near- and mid-term time horizons, as predictions beyond 2043 were difficult to make with accuracy. The analysis for future timeframes used both quantitative and qualitative approaches depending on the topic. Quantitative modelling was used where appropriate for topics such as population (**Section 2.2.6**) and labor force (**Section 3.2.4**).

For other components a more qualitative approach was used to identify trends and key influencing factors. For many components, the analysis of potential long-term trends is limited by the data availability.

Temporal boundaries for each component are described in the overview and approach section of each pillar.

1.5.4 Engagement

Effective engagement plays a critical role in obtaining information related to the future impact assessment process and identifying important community issues and concerns about the Project. Further, it lays the foundation for building trusting relationships while providing important information needed for community members to be informed and involved in the process. Further, not only is this activity a desirable best practice, but it is a requirement of the legislation for proponents to describe their ongoing and proposed public engagement activities (IAAC 2019b).

One means of engaging with communities was to establish a “working group” to support the baseline and community studies processes. The terms of reference for the Ignace Area, Working Group (“IAWG”) included members and observers from the Township of Ignace other municipalities, First Nations, Métis organizations, service providers, businesses, civil society, and other interests – both local and regional. First Nations and Métis were not present to represent or act on behalf of their communities and no Indigenous engagement took place through the IAWG. The IAWG provided input to and advised on the baseline and community studies and related engagement during various phases of the work. Efforts were made by the NWMO to continuously expand the list of participants throughout the IAWG process, and it is expected these terms may evolve if the group remains in place through future Project phases. The original Terms of Reference for the Ignace Area Working Group are provided in **Appendix 1B** and evolved over the course of its implementation. The purpose of the IAWG was:

- To ensure local and regional perspectives are considered through the social cultural, economic, health, and environment studies at key points;
- To support the inclusion of community knowledge;
- To contribute to the design of engagement activities; and
- To verify and validate findings.

The inclusion of Indigenous Knowledge and engagement with Indigenous communities near the Project is in the early phases at this time. Details on Indigenous Knowledge and Indigenous participation are provided in **Section 1.5.6.4** and **Section 1.5.7**.

Between 2021 and 2023 the IAWG met on 17 occasions to inform baseline and community studies processes. The meetings were adjusted in format based on COVID-19 health precautions as applicable, and with consideration of the preference of participants. Some meetings occurred remotely, while others adopted a hybrid model allowing for a combination of in-person and remote participation.

Table 1.5-1 provides a summary of the IAWG meetings throughout 2021 and 2023, including the date and number of participants.

Table 1.5-1: Summary of IAWG Meetings

IAWG Meeting	Date	Number of Participants	Topics Discussed
IAWG Meeting #1	June 29, 2021	IAWG Members: 6 Township of Ignace: 2 NWMO: 6 NWMO consultants: 3	Introductions; Membership; Selection of co-chairs
IAWG Meeting #2	July 22, 2021	IAWG Members: 7 Township of Ignace: 1 NWMO: 2 NWMO consultants: 7	Membership and additional organizations to invite; An introduction to community studies and Baseline Studies
IAWG Meeting #3	August 19, 2021	IAWG Members: 6 Township of Ignace: 2 NWMO: 1 NWMO consultants: 3	Next steps for membership outreach; Member feedback on knowledge holders for baseline topic areas; Scope of work for community studies; Review and inputs to Baseline Studies design
IAWG Meeting #4	October 6, 2021	IAWG Members: 8 Township of Ignace: 1 NWMO: 5 NWMO consultants: 3	IAWG processes to date; Overview of the economic workshop and social cultural workshop
IAWG Meeting #5	December 2, 2021	IAWG Members: 7 Indigenous participants/observers: 2 Township of Ignace: 1 NWMO: 3 NWMO consultants: 3	Update on the community studies; Discussion on IAWG schedule; NWMO introduction to reconciliation; Update on the Baseline Studies
IAWG Meeting #6	February 24, 2022	IAWG Members: 8 Township of Ignace: 1 NWMO: 2 NWMO consultants: 7	Community studies updates; Community studies six-month schedule
IAWG Meeting #7	March 3, 2022	IAWG Members: 11 Township of Ignace: 1 NWMO: 2 NWMO consultants: 6	The Project in the Township of Ignace and area; Community studies (baseline) update on employment and workforce development
IAWG Meeting #8	March 31, 2022	IAWG Members: 8 Township of Ignace: 1 NWMO: 2 NWMO consultants: 10	Community studies (baseline) update on community health protection (health services), recreation and social infrastructure and services, and economic development

Table 1.5-1 Continued: Summary of IAWG Meetings

IAWG Meeting	Date	Number of Participants	Topics Discussed
IAWG Meeting #9	April 7, 2022	IAWG Members: 9 Township of Ignace: 1 NWMO: 1 NWMO consultants: 5	Community studies (baseline and change analysis) update on population projections, workforce development and youth economic development, and housing
IAWG Meeting #10	April 21, 2022	IAWG Members: 10 Township of Ignace: 1 NWMO: 1 NWMO consultants: 8	Community studies (baseline) update on transportation and emergency services, municipal infrastructure, and tourism
IAWG Meeting #11	May 5, 2022	IAWG Members: 9 Township of Ignace: 1 NWMO: 4 NWMO consultants: 8	Community studies (change analysis) update on community health protection and recreation and social infrastructure and services
IAWG Meeting #12	May 19, 2022	IAWG Members: 13 Township of Ignace: 2 NWMO: 3 NWMO consultants: 4	Community studies (baseline and change analysis) update on economic development and municipal infrastructure
IAWG Meeting #13	June 28, 2022	IAWG Members: 13 Township of Ignace: 2 NWMO: 3 NWMO consultants: 4	Community studies (baseline and change analysis) update on tourism and transportation and emergency response
IAWG Meeting #14	September 15, 2022	IAWG Members: 7 Township of Ignace: 1 NWMO: 4 NWMO consultants: 3	Celebration of IAWG accomplishments over the first year and reflections on process; Workplan roadmap for 2022/early 2023; Baseline Studies update
IAWG Meeting #15	October 26, 2022	IAWG Members: 8 Township of Ignace: 1 NWMO: 3 NWMO consultants: 4	Community studies integration discussion; Update on the Baseline Studies (archaeological assessments and land and resource use)
IAWG Meeting #16	March 22, 2023	IAWG Members: 3 Township of Ignace: 3 NWMO: 3 NWMO consultants: 4	IAWG administration; Community studies integration discussion; 2023 Baseline Studies report update
IAWG Meeting #17	September 13, 2023	IAWG Members: 10 Township of Ignace: 1 NWMO: 7 NWMO consultants: 2	IAWG administration; 2023 Baseline Studies report update (key findings); Environmental baseline studies update

The IAWG supported the identification of relevant participants for topic-specific workshops that further refined the baseline and community studies, in addition to identifying relevant participants for data collection processes (**Section 1.5.5**).

The IAWG process also supported the inclusion of community knowledge, which the IAAC (2019a) explains as “[the] common, shared, or specialized knowledge gathered by a community through direct use of, or experience with, an environment or resource.” This knowledge was used in scoping the spatial and temporal boundaries for each baseline component, along with confirming preliminary baseline findings. This included providing detailed feedback on trends demonstrated in the data collected, and information to support the description and analysis of existing conditions. Where information was drawn from IAWG the meeting number is cited specifically to the date on which the information was collected (e.g., IAWG # 5 is referenced as IAWG December 2, 2021).

1.5.5 Data Collection

The characterization of the baseline environment relied on both primary and secondary data sources. A detailed methodology appendix is included for each pillar where relevant.

1.5.5.1 Secondary Data Collection

Secondary data collection involved a review relevant reports and other literature, websites, and databases. A summary of the key sources and limitations of secondary data, including those associated with any modelling is provided in the introduction and approach section of each pillar.

Key sources used included:

- Statistics Canada Census of Population along with other Statistics Canada survey results and reports.
- Federal and provincial government reports and data (e.g., Government of Ontario and Ministry of Municipal Affairs and Housing).
- Municipal reports including community profiles, community safety and well-being reports, community capacity studies, strategic plans, official plans, and business gap analysis studies.
- Ignace and area community studies (see **Section 1.4.1**).
- Ontario Archaeological Sites Database.
- Transportation data sources, for example, Ontario Ministry of Transportation Online Technical Publications.
- Geographic Information System supporting data (e.g., relevant policy documents, emergency response data, background reports).
- Publicly available reports and profiles from other organizations.
- Interactive databases from public websites, including Cancer Care Ontario, Canadian Institute for Health Information, First Nations Information Governance Centre, Public Health Ontario, IntelliHealth Ontario, and Public Health Agency of Canada.
- Online sources (e.g., websites).

All sources used are cited and included in a reference list at the end of each section.

1.5.5.2 Primary Data Collection

Primary data were used to support the inclusion of community knowledge and local perspectives, confirm the reasonableness and relevance of secondary information, and qualitatively fill gaps in secondary data collection, including information on GBA+ and sustainability. Primary data collection was undertaken through IAWG meetings, topic specific workshops, focus groups, and a key person interview program to characterize factors related each component.

For all primary data collection, an informed consent process was used (see **Appendix 1A** for protocols) so participants understood how the information they shared would be collected and presented, consistent with ethical research practices. Participants were offered the opportunity to review notes from all discussions and had the ability to adjust or retract any of the information they provided.

1.5.5.2.1 Topic Specific Workshops

Workshops are a forum at which participants work together on a prescribed topic or assignment to provide specific inputs to the process (IAP2 2006). In all the workshops conducted for the Baseline Studies, presentations were made by the NWMO or its consultants to share Project and study-related information to support fulsome dialogue and discussion. The workshops were typically one to three hours in length, and included a series of specific research questions or prompts to enable participation. Workshops in 2021 and 2022 were held remotely, while workshops held in 2023 were completed in person.

Based on guidance from the IAWG and from participants in the baseline processes, a series of topic-specific workshops to support baseline characterization were undertaken. A total of five workshops were held between 2021 and 2023 to support both the community studies and Baseline Studies. Participants for these workshops were identified with support from the IAWG along with other baseline studies participants and were considered as knowledge holders relative to the topic discussed. A summary of these workshops is provided in **Table 1.5-2**.

Table 1.5-2: Summary of Topic Specific Workshops

Topic	Date	Number of Participants	As Referenced in this Report
Local Economy Workshop	September 9, 2021	Workshop participants: 8 NWMO: 2 NWMO consultants: 3	Local Economy Workshop. 2021. Northwest Ontario (NWO) Baseline Studies Local Economy Workshop, September 09, 2021.
Local Social Cultural and Health Workshop	September 15, 2021	Workshop participants: 10 Indigenous participants: 1 NWMO: 4 NWMO consultants: 4	Local Social Cultural and Health Workshop. 2021. Northwest Ontario (NWO) Baseline Studies Local Social Cultural and Health Workshop, September 15, 2021.
Community Health Workshop	January 25, 2022	Workshop participants: 11 NWMO: 4 NWMO consultants: 5	Community Health Workshop. 2022. Northwest Ontario (NWO) Baseline Studies Community Health Workshop, January 25, 2022.
Health Community Workshop	April 5, 2023	Workshop participants: 11 NWMO: 1 NWMO consultants: 1	Healthy Community Workshop. 2023. Northwest Ontario (NWO) Baseline Studies Community Health Workshop, April 5, 2023.
GBA+ Workshop	May 12, 2023	Workshop participants: 13 NWMO: 5 NWMO consultants: 4	GBA+ Workshop. 2023. Northwest Ontario (NWO) Baseline Studies GBA+ Workshop, May 12, 2023.

1.5.5.2.2 Focus Groups

Focus groups are a type of group interview where participants are guided through a discussion on a particular topic for a clearly defined purpose (IAP2 2006). A total of nine focus groups were held between 2022 and 2023 to support baseline characterization of the Baseline Studies. A summary of these focus groups is provided in **Table 1.5-3**.

Table 1.5-3: Summary of Focus Groups

Topic	Date	Number of Participants	As Referenced in this Report
Mary Berglund Community Health Centre Hub staff focus group	March 3, 2022	Focus group participants: 10 NWMO consultants: 1	Mary Berglund Community Health Centre Hub (MBCHCH) Staff Focus Group. 2022. Northwest Ontario (NWO) Baseline Studies Mary Berglund Community Health Centre Hub Staff Focus Group, March 3, 2022.
Mary Berglund Community Health Centre Hub board focus group	March 29, 2023	Focus group participants: 5 NWMO consultants: 1	Mary Berglund Community Health Centre Hub (MBCHCH) Board Focus Group. 2023. Northwest Ontario (NWO) Baseline Studies Mary Berglund Community Health Centre Hub Board Focus Group, March 29, 2023.
Ignace EarlyOn Child and Family Centre focus group with parents	April 4, 2023	Focus group participants: 4 NWMO consultants: 1	Ignace EarlyOn Child and Family Centre Parent Focus Group. 2023. Northwest Ontario (NWO) Baseline Studies Ignace EarlyOn Child and Family Centre Parent Focus Group, April 4, 2023.
Youth focus group	April 4, 2023	Focus group participants: 3 NWMO consultants: 1	Youth Focus Group. 2023, Northwest Ontario (NWO) Baseline Studies Youth Focus Group, April 4, 2023.
Ignace EarlyON Child and Family Centre focus group with staff and parents	April 4, 2023	Focus group participants: 5 NWMO consultants: 1	Ignace EarlyOn Child and Family Centre Staff and Parent Focus Group. 2023. Northwest Ontario (NWO) Baseline Studies Ignace EarlyOn Child and Family Centre Staff and Parent Focus Group, April 4, 2023.

Table 1.5-3: Summary of Focus Groups Continued

Topic	Date	Number of Participants	Referenced Herein
Healthy Community Working Group at the Ignace Learn More Centre	April 5, 2023	Focus group participants: 1 NWMO consultants: 1	Ignace Healthy Community Working Group. 2023. Northwest Ontario (NWO). Ignace Healthy Community Working Group at the Ignace Learn More Centre, April 5, 2023.
Mary Berglund Community Health Centre Hub staff focus group	April 5, 2023	Focus group participants: 1 NWMO consultants: 1	Mary Berglund Community Health Centre Hub (MBCHCH) Staff Focus Group. 2023. Northwest Ontario (NWO) Baseline Studies Mary Berglund Community Health Centre Hub Staff Focus Group, April 5, 2023.
Ignace Silver Tops focus group	April 6, 2023	Focus group participants: 11 NWMO consultants: 1	Silver Tops Focus Group. 2023. Northwest Ontario (NWO) Baseline Studies Ignace Silver Tops Focus Group, April 06, 2023.
Ignace Food Bank focus group	April 6, 2023	Focus group participants: 2 NWMO consultants: 1	Ignace Food Bank Focus Group. 2023. Northwest Ontario (NWO) Baseline Studies Ignace Food Bank Focus Group, April 06, 2023.

1.5.5.2.3 Key Person Interviews

Key person interviews are qualitative in-depth interviews with people with specific knowledge on a topic of interest (Global Evaluation Initiative 2022). Key person interviews were used to support baseline characterization through data collection and validating and clarifying findings of the secondary research. Between 2022 and 2023 two distinct key person interview programs were implemented to support the baseline and community studies, referenced herein as:

- Northwestern Ontario (NWO) Community and Baseline Studies Key Person Interview Program. 2022; and
- Northwestern Ontario (NWO) Baseline Studies Key Person Interview Program. 2022-2023.

Interviews were conducted with knowledge holders who had information and insight relative to the pillars and components included in the Baseline Studies. Knowledge holders were selected through an iterative process involving the Township of Ignace, the NWMO, the IAWG, and the consulting teams working on the baseline and community studies. This included the identification of knowledge gaps from secondary and desktop research. Generally, interviews were scheduled by NWMO staff who were also responsible for taking notes to ensure consistency across interviews. An NWMO staff member participated in the interviews to answer questions about the Project and go through the consent protocol. In a few instances, where the confidential nature of

discussions warranted (particularly related to land use and health), only members of the consulting team participated in interviews with knowledge holders. Overall, members of the consulting team developed questions to guide the interviews based on the objectives of their studies and overall information needs.

For efficiency, in some instances more than one individual participated in an interview. There were a total of 89 interviews involving 112 individuals across baseline and community studies:

- 44 interviews involving 62 individuals were completed for the Northwestern Ontario Baseline Studies Key Person Interview Program (2022-2023), including land and resource use interviews;
- 45 interviews involving 50 individuals were completed for the Northwestern Ontario Community and Baseline Studies Key Person Interview Program (2022).

A summary of the organizations interviewed for the Baseline Studies is provided in **Table 1.5-4** and for the Community and Baseline Studies is provided in **Table 1.5-5**.

Table 1.5-4: Summary of the Northwestern Ontario Baseline Studies Key Person Interview Program, 2022-2023

Interview ID Number	Source Organization	Date
NWBL01	Local Services Board of Melgund	March 6, 2023
NWBL02	Local Services Board of Wabigoon	March 6, 2023
NWBL03	Machin Revitalization Committee	March 7, 2023
NWBL04	Machin Community Development	March 8, 2023
NWBL05	Silver Dollar Inn and Campground	March 9, 2023
NWBL06	Dinorwic representative	March 8, 2023
NWBL07	Ignace Trappers Council	April 4, 2023
NWBL08	Regional Food Distribution Association	April 6, 2023
NWBL09	Ignace Otters Snowmobile Club	April 14, 2023
NWBL10	Regional Fisheries Specialist	May 2, 2023
NWBL11	Northwest Employment Works	May 2, 2023
NWBL12	Ignace Local Citizens Advisory Committee	May 5, 2023
NWBL13	Northern Ontario Tourist Outfitters	May 8, 2023
NWBL14	Dryden and District Museum	May 18, 2023
NWBL15	City of Dryden, Community Services	May 8, 2023
NWBL16	City of Dryden, Planning and Housing	May 10, 2023
NWBL17	Dryden Food Bank	May 23, 2023
NWBL18	Kenora District Services Board	June 8, 2023
NWBL19	Dryden Fire Service	May 9, 2023
NWBL20	Sioux Lookout, Recreation and Culture	May 9, 2023
NWBL21	Sioux Lookout, Development Services	May 18, 2023
NWBL22	Mary Berglund Community Health Centre Hub	January 5, 2022
NWBL23	Dryden Regional Health Centre	January 24, 2022
NWBL24	Mary Berglund Community Health Centre Hub	February 8, 2022
NWBL25	Dryden Regional Health Centre	March 14, 2022
NWBL26	Dryden Regional Health Centre	March 16, 2022
NWBL27	Northwestern Health Unit	March 25, 2022
NWBL28	Dryden Regional Health Centre	April 11, 2022
NWBL29	Crossroads Employment Services	April 20, 2023
NWBL30	Ignace New Life Church	April 25, 2023
NWBL31	Local Services Board of Upsala	August 23, 2023

Table 1.5-4 Continued: Summary of the Northwestern Ontario Baseline Studies Key Person Interview Program, 2022-2023

Interview ID Number	Source Organization ¹	Date
NWBL-LRU01	Land and Resource Use interview	August 24, 2022
NWBL-LRU02	Land and Resource Use interview	August 25, 2022
NWBL-LRU04	Land and Resource Use interview	August 25, 2022
NWBL-LRU05	Land and Resource Use interview	August 26, 2022
NWBL-LRU06	Land and Resource Use interview	August 26, 2022
NWBL-LRU07	Land and Resource Use interview	August 26, 2022
NWBL-LRU08	Land and Resource Use interview	August 26, 2022
NWBL-LRU09	Land and Resource Use interview	April 3, 2023
NWBL-LRU10	Land and Resource Use interview	April 3, 2023
NWBL-LRU11	Land and Resource Use interview	April 3, 2023
NWBL-LRU13	Land and Resource Use interview	April 6, 2023
NWBL-LRU14	Land and Resource Use interview	April 21, 2023
NWBL-LRU15	Land and Resource Use interview	April 28, 2023

Note:

1. Due to the nature of the topics discussed, Land and Resource Use information is considered confidential and personal information is redacted.

Table 1.5-5: Summary of the Northwestern Ontario Community and Baseline Studies Key Person Interview Program, 2022

Interview ID Number	Source Organization	Date
NWCS01	Federal Economic Development Agency for Northern Ontario	January 24, 2022
NWCS02	Northwest Business Centre	January 28, 2022
NWCS03	Thunder Bay Home Builders' Association	January 28, 2022
NWCS04	Municipality of Machin	January 31, 2022
NWCS05	Sunset Carpentry	January 31, 2022
NWCS06	Northwest Training and Adjustment Board	February 4, 2022
NWCS07	Northern Ontario Heritage Fund Corporation	January 28, 2022
NWCS08	Sioux Lookout Friendship Accord	January 28, 2022
NWCS09	Crossroads Employment and Training Resource Centre	February 11, 2022
NWCS10	Ignace Public School	February 4, 2022
NWCS11	Dryden Native Friendship Centre	February 4, 2022
NWCS12	Treasury Metals	February 7, 2022
NWCS13	Thunder Bay Chamber of Commerce	February 14, 2022
NWCS14	Ministry of Natural Resources and Forestry	February 11, 2022
NWCS15	Township of Ignace	February 28, 2022
NWCS16	Kenora District Municipal Association	February 11, 2022
NWCS17	City of Dryden	February 14, 2022
NWCS18	Domtar Corporation	March 7, 2022
NWCS19	Keewatin Patricia District School Board	March 4, 2022
NWCS20	Ricci's Trucking	February 7, 2022
NWCS21	Municipality of Sioux Lookout	February 18, 2022
NWCS22	Town of Atikokan	February 18, 2022
NWCS23	Resolute Forest Products	February 11, 2022
NWCS24	Township of Ignace	February 28, 2022
NWCS25	Ignace Area Business Association	February 25, 2022
NWCS26	Patricia Area Community Endeavours	February 18, 2022
NWCS27	Alterna Credit Union	February 25, 2022
NWCS28	Dryden Regional Airport and the Loomex Group	March 4, 2022
NWCS29	City of Kenora	February 18, 2022
NWCS30	Confederation College	February 25, 2022

Table 1.5-5 Continued: Summary of the Northwestern Ontario Community and Baseline Studies Key Person Interview Program, 2022

Interview ID Number	Source Organization¹	Date
NWCS31	Community Living Dryden-Sioux Lookout	February 25, 2022
NWCS32	Kenora District Services Board	March 7, 2022
NWCS33	Hoshizaki House, Dryden District Crisis Centre	March 2, 2022
NWCS34	The Ignace Recreation Committee	February 23, 2022
NWCS35	Dryden Regional Health Centre	March 2, 2022
NWCS36	Ignace Public Library	March 2, 2022
NWCS37	Township of Ignace	March 18, 2022
NWCS38	Kenora District Services Board	April 6, 2022
NWCS39	Ignace Healthy Communities Working Group	April 11, 2022
NWCS40	Anonymous organization ²	May 13, 2022
NWCS41	Sunset Country	May 19, 2022
NWCS42	Ministry of Transportation	June 15, 2022
NWCS43	Ontario Provincial Police, Ignace and Dryden	March 21, 2022
NWCS44	Ignace Fire Department	April 22, 2022
NWCS45	EarlyON Child and Family Centre, Ignace	October 14, 2022

1.5.5.2.4 Survey

Surveys are a method used to collect information from a random sample of the population (IAP2 2006). A community Health and Wellness Survey, based on the Canadian Community Health Survey³ and adjusted with inputs from the Mary Berglund Community Health Centre Hub (MBCHCH), was conducted to understand the health and well-being of residents in Ignace or those accessing services at the MBCHCH. The survey was comprised of 51 questions and took approximately 15-20 minutes to complete.

Invitations to participate in the survey were distributed to all mailing addresses in Ignace, in addition to being advertised through posters placed throughout Ignace. Incentives in the form of a prize draw were offered to individuals to participate. A total of 114 people participated in the survey. The survey results should be interpreted with caution as the sample size was small and did not have sufficient participation across gender and age groups to be considered a statistically representative sample..

² Source organization labelled as anonymous to protect the confidentiality of the organization.

³ The Canadian Community Health Survey is an annual survey used by Statistics Canada to gather health-related data at the sub-provincial levels of geography (health region, or combined health region) (Statistics Canada 2023).

1.5.5.3 Data Limitations

Each pillar describes discipline-specific limitations to primary and secondary data. Two additional global data limitations are noted, including those related to the evolving baseline conditions and the worldview from which this report was written.

1.5.5.3.1 Evolving Baseline Conditions

Evolving baseline conditions refer to the fact that the human environment is constantly evolving and will continue to change throughout all phases of the Project. To enable the writing of this report, May 2023 was generally used as the cut-off for data collection, recognizing that new data sources and changes to existing conditions would persist. As such, the report is considered current to the time of drafting and finalizing sections. Future updates to the description of baseline conditions may be warranted on certain topics and are anticipated to be planned and implemented in a similarly collaborative manner after a siting decision is made.

1.5.5.3.2 Worldview

Worldview can be defined as “a comprehensive conception or apprehension of the world especially from a specific standpoint” (Meriam Webster 2023). Overall, worldview can be considered as “a set of beliefs and values honoured and withheld by a number of people” (Leroy Little Bear, as quoted in Indigenous Corporate Training Inc 2016). It is acknowledged that this report was written from a western scientific worldview, as distinguished from an Indigenous worldview.

Section 1.5.6.4 describes the NWMO’s overall understanding of Indigenous Knowledge and approach to collecting this information in collaboration with Indigenous communities. The NWMO has been and will continue to engage with Indigenous communities and that information will be collected and shared in the future at the discretion of the communities involved. As such, it is acknowledged that this report does not include information that could be characterized as Indigenous Knowledge.

1.5.6 Cross Discipline Considerations

Several cross-discipline considerations are identified in IAAC guidance material and were relevant to the overall approach and implementation of the Baseline Studies, including:

- GBA+;
- Sustainability;
- Indigenous Knowledge; and
- Community knowledge.

1.5.6.1 Gender-based Analysis Plus

GBA+ is an analytical lens for documenting how impacts affect diverse segments of the population differently (such as gender,⁴ race, ethnicity, religion, age, sexual orientation, and individuals who identify as 2SLGBTQIA+,⁵ and mental and physical disability). The IAAC's (2020b) *Guidance: Gender-based Analysis Plus in Impact Assessment* notes the following:

"Baseline information for the community should include qualitative and quantitative data that describes a detailed socioeconomic profile including data disaggregated by sex, age, ethnicity, and any other community-relevant identity factors. Where possible, information from government statistics, non-governmental organization reports, academic sources or community consultations can be used to describe community context (including history) and existing gender issues in the community (e.g., gender-based violence, gender division of labour, gender roles, responsibilities, who makes decisions/controls resources). Establishing an accurate baseline community profile will mean recognizing and valuing diverse forms of data and knowledge including Indigenous and community knowledge."

The approach to the consideration of GBA+ in the Baseline Studies reflects this guidance and preliminary GBA+ principles developed by the NWMO are summarized in **Table 1.5-6**.

⁴ In 2021 Statistics Canada began to report on gender identity in the Census of Population, as opposed to sex-assigned at birth in previous censuses. Gender identity is an individual's personal and social identity as a man, woman, or non-binary person (Statistics Canada 2022). Gender identity is reported as men+ (i.e., cisgender men, transgender men, and some non-binary persons) and women+ (i.e., cisgender women, transgender women, and some non-binary persons). A cisgender person is somebody whose gender identity is the same as their sex-assigned at birth and a transgender person is somebody whose gender does not correspond to their sex assigned at birth. A non-binary person is an individual who is not exclusively a man or woman (e.g., fluid, Two-Spirit). Data limitations associated with gender (2021 Census) and sex (previous censuses) are described in detail in Section 2.1.2.1.1 and Section 3.1.2.1.1.

⁵ 2SLGBTQIA+ refers to two-spirit, lesbian, gay, bisexual, transgender, queer, questioning, intersex, and asexual.

Table 1.5-6: NWMO Preliminary GBA+ Guiding Principles

Principle	Description of Principle
Intersectionality	The needs and experiences of different groups of people are influenced by intersecting parts of their identity. An intersectional approach requires consideration for how multiple identity factors can influence the legal, social, and economic opportunities and outcomes.
Community-led/ collaborative/ participatory	Engagement and input from the community is essential in developing a strong understanding of the community, which would support data collection, engagement strategies, and future impact assessment work.
Meaningfully consider and include diverse perspectives and knowledge systems	Recognize that individuals' lived experiences, knowledge, and their input should all be held with equal value.
Critical analysis of systemic root cause	GBA+ also considers the context within which people live, including systems and structures of power. The various factors that make a person's identity can't be considered in isolation. An intersectional approach combined with critical analysis can highlight structural or systemic conditions that may create barriers for some and opportunities for others.
Indigenous world views	Indigenous Knowledge is a systematic way of thinking applied to phenomena across biological, physical, cultural, and spiritual systems. It is recognized that Indigenous Knowledge enhances the understanding of potential Project impacts and plays an important role in the Project outcomes.

GBA+ was built into data collection and engagement processes systematically. Baseline Studies gathered disaggregated data from publicly available sources (e.g., Statistics Canada) to look for key trends relative to identity factors such as sex, age, and Indigenous identity, recognizing that in some instances there were not always sufficient data available to collect or analyze (e.g., availability of data over relevant temporal scale, limitations to data due to data suppression techniques to ensure confidentiality). Limitations of key data sets are described in each section relative to the pillar and components.

Initial collection of disaggregated data from the Census of Population included information on age, sex or gender, and Indigenous identity in communities in the Local Study Area and Regional Study Area and formed the basis of discussion with the IAWG. A selection of these data was presented for discussion to the IAWG (IAWG October 6, 2021), with the concept of GBA+ introduced to the group at that time. An IAWG meeting in December 2021 (IAWG December 2, 2021) included discussions on vulnerable populations and sought feedback from all participants on how parts of these population might be defined relative to the local context. From these discussions, the identification of potential vulnerable populations went through an iterative

process, as detailed in **Appendix 2A**, and which eventually identified four key populations to include in discussions throughout the Baseline Studies:

- People experiencing low socio-economic status;
- People experiencing homelessness or who are precariously housed;
- People experiencing barriers to employment; and
- People experiencing mental health challenges and/or substance dependency.

These vulnerabilities, in addition to questions regarding differences among the populations experiencing them, were built into key person interviews, and explored in greater detail in focus groups and workshops, including the GBA+ Workshop that was implemented in collaboration between the NWMO and City of Dryden. The results of these efforts have been integrated throughout the Baseline Studies and will be supportive of a future impact assessment.

1.5.6.2 Sustainability

The Baseline Studies collected information relevant to the sustainability principles identified for the implementation of the *Impact Assessment Act*:

- Consider the interconnectedness and interdependence of human-ecological systems;
- Consider the well-being of present and future generations;
- Consider positive effects and reduce adverse effects of a designated project; and
- Apply the precautionary principle and consider uncertainty and risk of irreversible harm.

Each pillar considered sustainability for relevant components and where applicable interactions among components (multiple interdependencies not only within pillars but among disciplines). For example, changes in baseline population have the potential to affect the need for community infrastructure and demand for services. Past trends were described to help understand resiliency and adaptability. Participatory processes such as the IAWG reflected communities differing needs and aspirations, while the community studies process supported a better understanding of potential Project interactions with the communities existing and near-to-mid-term future conditions.

1.5.6.3 Community Knowledge

According to the IAAC (2020c) community knowledge is the “knowledge held by individuals or shared by a community which is built up over time through direct use of, or interaction with, a resource or environment (natural or social).” Information provided by communities regarding both the human and biophysical natural environment must be taken into account as per the *Impact Assessment Act*.

The collection of community knowledge was supported through the establishment of the IAWG (**Section 1.5.4**), who acted as an advisory body throughout the community studies and Baseline Studies and ensured local perspectives are considered throughout the process. Ways in which the IAWG contributed community knowledge to the process included:

- Confirming study design parameters such as spatial and temporal boundaries which resulted in adjustments to each;
- Contributing to data collection and identification of knowledge holders to include in topic-specific workshops and key person interview processes; and
- Reviewing preliminary findings.

Examples on how community knowledge improved data collection and analysis and are consistent with IAAC guidance (IAAC 2020c) included:

- Adjustments to spatial and temporal boundaries for the baseline studies;
- Refinement of modelling parameters and assumptions related to baseline population projections;
- Identification of potentially vulnerable populations and their characterization;
- Providing more certainty where there may be gaps in other knowledge sets; and
- Validating key findings of the baseline studies.

1.5.6.4 Indigenous Knowledge

The NWMO's Indigenous Knowledge policy was developed with "the ongoing advice and education from the NWMO's Council of Knowledge Holders and its predecessor, the Elders Forum, and through the building of relationships with (Indigenous) organizations at the national, provincial and regional levels" (NWMO 2020b). The NWMO's Indigenous Knowledge Policy (NWMO 2020b) notes that Indigenous Knowledge:

"is a complex and sophisticated system of knowledge drawing on millennia of wisdom and experience. It constantly grows and expands with the experience of new generations. It is expected that this knowledge system will continue to provide a source of wisdom through the various stages of project development and implementation. As the project moves through the site selection process and the (NWMO) engages with communities, there is an opportunity to learn from local Indigenous Knowledge."

The NWMO's Indigenous Knowledge Policy reflects current best practices and lays out a collaborative framework for collecting and interweaving Indigenous Knowledge in all Project related decisions. This means that Indigenous communities remain in control of their Indigenous Knowledge: they decide how to formalize knowledge sharing arrangements, they decide how much and on which topics they would like to share, how it is collected, and how it is presented in impact assessment documentation.

1.5.7 Indigenous Participation

Indigenous participation refers to the ways in which Indigenous peoples participate in the impact assessment process, inclusive of the Baseline Studies. The IAAC (2020d) noted that Indigenous participation is encouraged for a variety of reasons, including relationship building, cooperation and partnership, and ensuring impact assessment takes into account Indigenous Knowledge and cultural considerations and customs, in addition to western scientific knowledge. Engagement with Indigenous communities near the Project related to the Baseline Studies is in the early phases at this time. The NWMO's approach to Indigenous engagement will be conducted in

accordance with the NWMO's Reconciliation Policy (2019) and Indigenous Knowledge Policy (2020b), along with guidance provided by the Council of Knowledge Holders, an advisory body to NWMO management, who provides "advice on issues that could enhance the development and maintenance of good relations with Indigenous communities" (NWMO 2022).

The NWMO's non-prescriptive approach to Indigenous participation in the Baseline Studies supports Indigenous communities to share knowledge and information in a fashion and at a time that is appropriate to the community. The NWMO is committed to co-designing and/or providing capacity for First Nation and Métis communities to independently undertake certain aspects of the impact assessment at a pace that is suitable to each individual community. Information, including Indigenous Knowledge, shared by communities will remain the intellectual property of the community and will only be included in the Baseline Studies at each Indigenous community's discretion. Communities will be made aware that their information will be held confidentially unless express permission is given to include and use their Indigenous Knowledge and information in the Baseline Studies.

The NWMO is focused on engaging with Indigenous community members through their appropriate governing structures and as directed by the elected officials representing those communities. It is understood that First Nations and Métis communities have undertaken and participated in previous studies (both related to the NWMO and other projects' processes). Therefore, the NWMO will engage in dialogue with Indigenous communities to share information about the process and explore the community's desired way to best proceed with completing the Baseline Studies. If the studies are Indigenous community-led, the NWMO will openly share results from other baseline or community studies processes.

It is noted that First Nation and Métis communities were invited to participate in the IAWG (**Section 1.5.4**) and joined the IAWG as observers. They were not present to represent or act on behalf of their communities and no Indigenous engagement took place through the IAWG.

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2.0 SOCIAL CULTURAL

2.1 OVERVIEW AND APPROACH

An examination of existing and potential social conditions in the Local Study Area and Regional Study Area is required to support the impact assessment for the Adaptive Phased Management Project ("the Project"). The scope of the Baseline Studies has been designed to satisfy regulatory requirements under the *Impact Assessment Act* and as described in the Tailored Guidelines template (IAAC 2020a), including Gender-based Analysis Plus ("GBA+") and sustainability considerations, along with the requirements under the Canadian Nuclear Safety Commission's REGDOC-1.1.1. *Site Evaluation and Site Preparation for New Reactor Facilities* (CNSC 2018) where applicable. The Baseline Studies are designed to provide sufficient detail to understand current and reasonably foreseeable potential future conditions that may be affected by the Project. Approaches to GBA+ and sustainability are discussed in **Section 1.0**. The Baseline Studies document the current state and relevant historical context for each social cultural component. Potential foreseeable future conditions without the Project are also examined. Finally, the Baseline Studies incorporate relevant community knowledge, information from the Ignace Area Working Group ("IAWG"), workshops, key person interviews and perspectives from diverse groups within the communities where available and as determined by each community. Indigenous Knowledge as defined by the Impact Assessment Agency of Canada's ("IAAC")⁶ (2023) has not been included in this section as the Nuclear Waste Management Organization ("NWMO") is working with Indigenous communities as per their Indigenous Knowledge policy (**Section 1.5.6.4**), and information of this type will be collected in collaboration with Indigenous communities in other baseline studies at an appropriate time. However, where data are available for Indigenous peoples residing in the Local Study Area and Regional Study Area, this information is presented.

Table 2.1-1 summarizes the components included in the social cultural pillar of the Baseline Studies and provides the rationale for including each component, based on the Tailored Guidelines template (IAAC 2020a), the IAAC's guidance *Analyzing Health, Social, and Economic Effects under the Impact Assessment Act* (IAAC 2020b), the Canadian Nuclear Safety Commission's REGDOC-1.1.1. *Site Evaluation and Site Preparation for New Reactor Facilities* (CNSC 2018), the *Ontario Heritage Act* (Government of Ontario 1990d), and the *Ontario Environmental Assessment Act*. Where requirements differ from the Tailored Guidelines template, the Project impacts or pathways and existing reports are used, highlighting the desires and aspirations of Ignace as a potential host, as described in the Project Visioning process (InterGroup 2020).

⁶ The IAAC (2023) defines Indigenous Knowledge as "a holistic system embedded in the various cultures of different Indigenous peoples. For the purposes of (an) assessment processes under the *Impact Assessment Act*, generally, Indigenous Knowledge is understood as a body of knowledge built up by a group of Indigenous people through generations of living in close contact with the land. Indigenous Knowledge is cumulative and dynamic. It builds upon the historic experiences of a people and adapts to social, economic, environmental, spiritual and political change."

Table 2.1-1: Components Considered for Social Cultural Conditions

Component Included in Social Cultural Analysis	Rationale for Inclusion
Population and demographics (Section 2.2)	The Tailored Guidelines template and the IAAC's guidance ¹ include requirements for baseline information about local populations and diverse subgroups, while REGDOC-1.1.1. requires an understanding of population density and distribution.
Community and culture (Section 2.3)	The Tailored Guidelines and the IAAC's guidance ¹ , include requirements for sufficient information to assess future impacts on social conditions, including social divisions within a community and community history in the Local Study Area and Regional Study Area.
Infrastructure and services (Section 2.4)	The Tailored Guidelines template and the IAAC's guidance ¹ , include requirements for a description of housing and existing local and regional infrastructure and services. REGDOC-1.1.1. requires an understanding of the transportation infrastructure that will be used during site preparation.
Land and resources use (Section 2.5)	The Tailored Guidelines template, the IAAC's guidance ¹ , and the CNSC's REGDOC-1.1.1. include requirements for a description of resource users and resource use in the Local Study Area and Regional Study Area.
Archaeological and heritage resources (Section 2.6)	The Project will require an archaeological assessment in accordance with the Ontario <i>Environmental Assessment Act</i> that is conducted in accordance with the <i>Ontario Heritage Act</i> and the <i>Standards and Guidelines for Consultant Archaeologists</i> .

Notes:

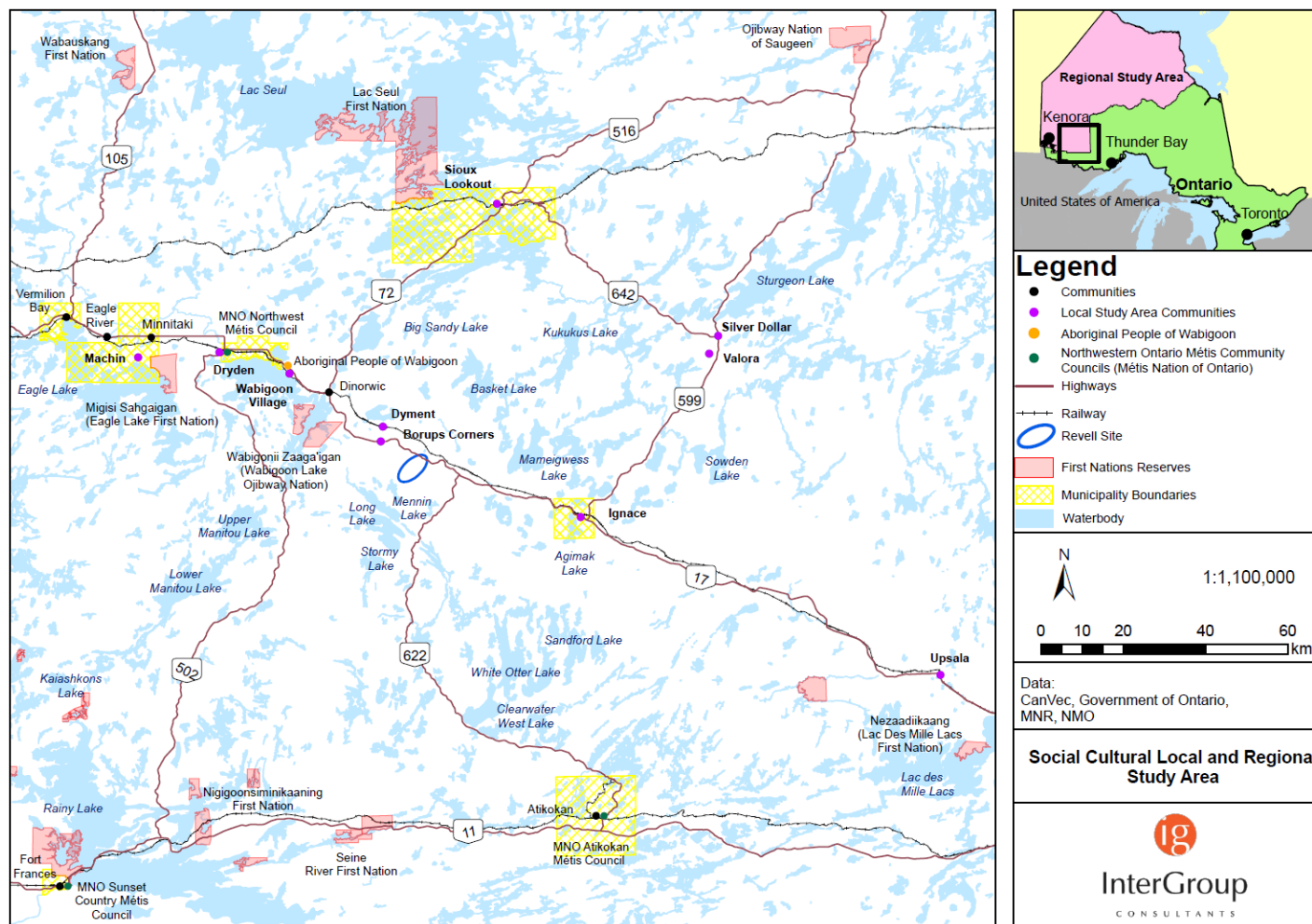
1. IAAC guidance includes *Analyzing Health, Social, and Economic Effects Under the Impact Assessment Act*.

2.1.1 Spatial and Temporal Boundaries

2.1.1.1 Spatial Boundaries

Spatial boundaries for social conditions were selected to reflect the geographic areas where social and cultural impacts from the Project are likely to be detectable and measurable. The social cultural pillar includes a Local Study Area and a Regional Study Area, and have been developed relative to each component under consideration. Social impacts extending beyond the Local Study Area and Regional Study Area are likely to be diffused and may not be detectable. **Section 1.5.2** describes the overall approach to selecting spatial boundaries.

Map 2.1-1: Social Cultural Local and Regional Study Area^{1,2}



Note:

1. Local Services Board of Wabigoon is a designated place according to Statistics Canada, but residents refer to the community as Wabigoon or Wabigoon Village.
2. The unincorporated communities Dyment and Borups Corners are part of the Local Services Board of Melgund.

2.1.1.1.1 Local Study Area

Local Study Areas for the social cultural pillar vary by component.

The Local Study Area for population and demographics, community and culture, and infrastructure and services (**Section 2.2, Section 2.3, and Section 2.4**) includes:

- Township of Ignace ("Ignace");
- City of Dryden ("Dryden");
- Municipality of Machin ("Machin");
- Municipality of Sioux Lookout ("Sioux Lookout"); and
- Local Services Boards ("LSBs") and unincorporated communities, where available:
 - LSB of Wabigoon ("LSB of Wabigoon" or "Wabigoon Village");⁷
 - LSB of Melgund (includes the unincorporated communities Dymont and Borups Corners) ("LSB of Melgund" or "Melgund");⁸
 - Upsala;
 - Valora; and
 - Silver Dollar.

The Local Study Area includes Indigenous peoples who reside in the communities of the Local Study Area but is not representative of any specific Indigenous community or nation.

The Local Study Area refers to the communities/areas that are most likely to experience future direct, indirect, and induced impacts of the Project. For certain social cultural components, this considers those locations where people can commute to the Revell Site and/or the Centre of Expertise within an hour drive, as those are the communities that may experience population growth with project related in-migration. The selection of spatial boundaries was informed by local residents through the IAWG, key person interviews, and workshops.⁹ The Local Study Area for land and resource use (**Section 2.5**) and archaeological and heritage resources (**Section 2.6**) are distinct from the Local Study Areas for the other social cultural components. The Local Study Areas for land and resource use (**Section 2.5**) and archaeological and heritage resources

⁷ Statistics Canada identifies the Local Services Board of Wabigoon as a designated place, but residents refer to the community as Wabigoon or Wabigoon Village. In the report, the naming convention of the Local Services Board of Wabigoon will only be used when speaking to Statistics Canada data or when referring to the Local Services Board as an organization. When not referring to the Local Services Board organization or Statistics Canada data, the report will use the name of the community used by Local Study Area residents ("Wabigoon Village") (NWO Baseline Studies Key Person Interview Program 2022-2023).

⁸ In the report the naming convention of the Local Services Board of Melgund will only be used when referring to the Local Services Board as an organization (Local Services Board of Melgund). When not referring to the Local Services Board organization, the report will use the name of the community used by Local Study Area residents ("Melgund") (NWO Baseline Studies Key Person Interview Program 2022-2023).

⁹ IAWG meeting #3 (IAWG August 19, 2021), The Local Economy Workshop (2021), IAWG meeting #4 (IAWG October 06, 2021), and IAWG meeting #5 (IAWG December 2, 2021) provided feedback to revise the Local Study Area spatial boundaries to include Machin, Sioux Lookout, Upsala, and unincorporated communities along Highway 599 such as Silver Dollar and Valora.

(**Section 2.6**) were selected based on areas which are considerate of project activities, the potential biophysical changes, and where direct impacts to resources could occur. More information on the Local Study Areas for land and resource use and archaeological and heritage resources are summarized in **Section 2.5.1** and **Section 2.6.1**, respectively.

Where detailed Statistics Canada data for the LSBs and unincorporated communities are not available, general characteristics are captured through broader Statistics Canada data for the Kenora District Census Division (hereafter “Kenora Census Division”) and key person interviews.

2.1.1.1.2 Regional Study Area

The Regional Study Area for the social cultural components of population and demographics (**Section 2.2**), community and culture (**Section 2.3**), and infrastructure and services (**Section 2.4**) is the Kenora Census Division, which is the area where most regional-level impacts are anticipated. The Regional Study Area for land and resource use (**Section 2.5**) and archaeological and heritage resources (**Section 2.6**) are distinct from the Regional Study Area for the other social cultural components. The Regional Study Areas for land and resource use (**Section 2.5**) and archaeological and heritage resources (**Section 2.6**) is provided for context of where the project has potential to interact with the environment. More information on the Regional Study Areas for land and resource use and archaeological and heritage resources are summarized in **Section 2.5.1** and **Section 2.6.1**, respectively.

The Regional Study Area provides context for potential regional-level impacts, provides context and comparison to the Local Study Area as a relevant reference point, and shares social cultural and demographic characteristics with the Local Study Area.

The Kenora Census Division includes people living in municipalities, unincorporated communities, Indigenous reserves and settlements, and the surrounding areas. This includes Indigenous people living both on- and off-reserve. Indigenous communities can consist of one or multiple reserve parcels. The reserve parcels or settlements do not always reflect the names of the communities used by people from the communities and only reflect the names used by the Government of Canada. The Indigenous settlements or reserves are not always inhabited on a full-time basis by members of the reserves due to various reasons but the land is used at the discretion of the community and its members. **Table 2.1-2** summarizes the census subdivisions (i.e., municipalities, Indigenous reserves, settlements, and other areas) within the Kenora Census Division.

Table 2.1-2: Census Subdivisions within the Kenora District Census Division

Indigenous Reserve Parcels and Settlements	Municipalities and other areas
Whitefish Bay 32A, Whitefish Bay 33A, Eagle Lake 27, Slate Falls, Fort Albany (Part) 67, Attawapiskat 91A, Marten Falls 65, Fort Hope 64, Cat Lake 63C, Osnaburgh 63B, Lac Seul 28, Wabigoon Lake 27, English River 21, Weagamow Lake 87, Northwest Angle 33B, Wabaseemoong, Sabaskong Bay 35D, Shoal Lake 34B2, Lake of the Woods 37, Kenora 38B, Poplar Hill, Shoal Lake 39A, Rat Portage 38A, Deer Lake, Sandy Lake 88, Kitchenuhmaykoosib Aaki 84, Sachigo Lake 1, Pikangikum 14, Fort Severn 89, Webequie, North Spirit Lake, Lansdowne House, Shoal Lake (Part) 40, Whitefish Bay 34A, Wabauskang 21, Wunnumin 1, Summer Beaver, Wapekeka 2, The Dalles 38C, Peawanuck, Neskantaga, Bearskin Lake, Kasabonika Lake, Muskrat Dam Lake, Kingfisher Lake 1, Wawakapewin, and Kee-Way-Win.	Ignace, Dryden, Machin, Sioux Lookout, Kenora, Sioux Narrows-Nestor Falls, Ear Falls, Red Lake, and Pickle Lake. Kenora Unorganized (i.e., unorganized settlements and communities within the Kenora Census Division). This includes communities such as the LSB of Wabigoon, LSB of Melgund, Upsala, Valora, and Silver Dollar.

Source: Statistics Canada 2022a.

Notes:

1. The LSB of Wabigoon is classified as a designated place by Statistics Canada making data available for the community.

2.1.1.2 Temporal Boundaries

Section 1.0 describes the overall approach to selecting temporal boundaries. Temporal boundaries vary for each social cultural component. Thus, each component provides details on its temporal boundaries, below.

The temporal boundaries for population and demographics (**Section 2.2**) go back far enough in time to understand past population trends and how they led to the current population and go into the future far enough to understand future population trends without the Project within a reasonably foreseeable timeframe. Data collection goes back to 1991 to understand past trends. Population projections go 25 years into the future to understand future population trends without the Project, which roughly aligns with the beginning of operations (NWMO 2020a).

Temporal boundaries for community and culture (**Section 2.3**) includes a description of community history going back as far as the early 17th century, when Ignace was founded. For the other topics included in the community and culture section, changes starting in 2006 are described to the extent possible.

Temporal boundaries for infrastructure and services (**Section 2.4**) focus on the current provision of services and changes in service provision in the past 5 to 10 years to understand trends (e.g.,

changes in demand). Where available, third-party projections (e.g., from service providers and utilities), are included but the temporal scope relies on available information.

Temporal boundaries for land and resources use (**Section 2.5**) focuses on current use and use during the past 10 years to understand trends. To the extent possible, future trends are described based on demand for resources and publicly available management plans, such as forest management plans.

The temporal boundaries for archaeological and heritage resources (**Section 2.6**) focus on previous archaeological research, geographic, land use, and historical/archival information for the Project (all lands that are part of the development proposal) and the relevant surrounding area through a background study.

2.1.2 Data Collection

The characterization of the baseline environment relies on both primary and secondary data sources. Data collection began with a review of existing literature and databases from a variety of public sources. Primary data collection was undertaken in the form of the IAWG, workshops, and key person interviews.

2.1.2.1 Desktop research

The review of literature and databases included the following sources:

- Statistical data sources, for example, Statistics Canada Census of Population, Public Health Ontario, Canadian Community Health Survey, Canadian Survey on Disability, and Housing Price Index.
- Federal, provincial, and municipal government reports and data (e.g., Government of Ontario and Ministry of Municipal Affairs and Housing).
- Municipal reports including community profiles, community safety and well-being reports, community capacity studies, strategic plans, and official plans.
- Ignace and Area Community Studies, including the Community and Culture Community Study (SMM and InterGroup 2022), Ignace Area Infrastructure: Community Recreation Facilities Study (WSP 2022a), Ignace Area Infrastructure: Transportation and Emergency Response Study (WSP 2022d), Ignace Area Infrastructure: Municipal Infrastructure Study (WSP 2022b), and the Ignace Area Infrastructure: Social Services Facilities Study (WSP 2020c).
- Ontario Archaeological Sites Database.
- Transportation data sources, for example, Ontario Ministry of Transportation Online Technical Publications.
- Geographic Information System ("GIS") supporting data (e.g., relevant policy documents, emergency response data, background reports).
- Publicly available reports and profiles from other organizations.
- Online sources (e.g., community websites).

2.1.2.1.1 Limitations of Desktop Research

Desktop research uses information from publicly available sources to incorporate the best knowledge at the time of writing. Desktop research is limited to publicly available studies and sources. Some studies and secondary sources may be out of date and are subjective to who wrote and published the source material.

Statistics Canada

Statistics Canada enumerates Ignace, Dryden, Machin, Sioux Lookout, and the LSB of Wabigoon. Statistics Canada does not enumerate the LSB of Melgund (Dyment or Borups Corners), Silver Dollar, Upsala, or Valora. Statistics Canada indicators for the Local Study Area typically include Ignace, Dryden, Machin, Sioux Lookout, and the LSB of Wabigoon and do not include the LSB of Melgund Silver Dollar, Upsala, or Valora.

Statistics Canada Census of Population data contributed to developing an understanding of the Local Study Area and Regional Study Area for population and demographics, community well-being, and housing, and how they have changed over time. Data should be interpreted with caution because of issues of comparability across years, confidentiality, data quality, and response error. Limitations relative to specific indicators are provided as notes to tables and figures. In 2011, a shift occurred in how the Census was administered, with a National Household Survey replacing the long-form census. One of the key differences was a change from a mandatory to an optional response requirement. This resulted in reduced survey response rates and variability of response rates at lower geographic levels. As a result, trends over time should be interpreted with caution.

The Census of Population suppresses data for confidentiality or data quality. Data suppression for confidentiality reasons is meant to prevent the disclosure of data that could be used to identify individuals, particularly in small communities. Data suppression due to data quality is done for a variety of reasons, including incompletely enumerated communities. The Census of Population also relies on a random rounding procedure, where actual values are randomly rounded up or down to the nearest integer of five to enhance confidentiality. This can impact very small populations but is not believed to have a material impact on the Local Study Area reporting.

The 1991, 1996, 2001, 2006, 2011, and 2016 Census disaggregate information by sex and the 2021 Census disaggregates information by gender. The sex variable (male and female) in census years prior to 2021 and the two-category gender variable (men+ and women+) in the 2021 Census may be included in figures that display trends across time. Although sex and gender refer to two different concepts, the introduction of the two-category gender variable is not expected to have a significant impact on data analysis and historical comparability, given the small size of the transgender and non-binary populations. The 2021 Census reports that the transgender population (0.19% of Canada's population) and non-binary population (0.14% of Canada's population) in Canada is small (Statistics Canada 2023b). Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories (men+ and women+) and are denoted by the "+" symbol (Statistics Canada 2022a). When analyzing trends across time (1996, 2001, 2006, 2011, 2016, and 2021 Census) the terms sex or gender are used, along with male and female. When analyzing trends prior to the 2021 Census (1996, 2001, 2006, 2011, and/or 2016 Census) the term sex is used, along with male and female. When analyzing only 2021 Census data, the

term gender is used, along with men+ and women+ or men and women. Footnotes expand on the explanation, where relevant, within sections.

Indigenous identity refers to individuals who identify as North American Indian (First Nation), Métis, Inuit, and/or those who reported as Treaty Indian or Registered Indian and/or have membership in a First Nation or Indian Band (Statistics Canada 2022a). For the Census of the Population in Canada, Indigenous identity is self-identified. People who identify as Indigenous in the Local Study Area may or may not be affiliated with First Nations or Métis communities within the Regional Study Area, and may or may not be considered as formal rights holders to the Wabigoon Lake Ojibway Nation ("WLON")-Ignace area. The information in this report discusses information for people who self-identify as Indigenous and does not reflect the perspectives of Indigenous communities throughout the Regional Study Area.

It is acknowledged that baseline conditions will continue to evolve and an artificial data cut off was implemented in order to draft this report.

2.1.2.2 Population Projections Modelling

A population projection is a forecast of potential future population growth, it is not an accurate predication, but rather a series of estimates that provide context for understanding how communities may change over time. The population projections document potential population change without the Project for existing settlement areas within the Local Study Area. Population projections for small populations can be difficult to prepare as seemingly small changes in numbers can represent high proportions of change.

For the Regional Study Area, Local Study Area, and Ignace¹⁰, the population projection modelling uses the component/cohort-survival method as a base scenario to be built on. This method grows each population from the latest base year estimate by forecasting births, deaths, and migration by age. These forecasts are based on past trends modified to account for possible future changes and should be viewed as only one possible scenario of future population. They also take into consideration any factors that may influence future growth, such as housing availability, the availability of land for housing developments, and connections between population and key industries and employers. High growth scenarios use an average annual growth rate.

Typical drivers of population change are fertility rates, mortality rates, and net migration. These drivers are affected by multiple factors including the age structure of the current population, government initiatives (e.g., programs to promote migration such as the Rural and Northern Immigration Pilot), and economic opportunities. Economic opportunities, in particular, require consideration of multipliers as the creation of new jobs may generate additional growth. As such, two sets of multipliers were considered relative to growth driven by economic opportunities:

- **Family multiplier:** the family multiplier accounts for family members who migrate to the area with their spouses/partners/parents/children. Baseline population projections use a family multiplier that is derived by InterGroup Consultants Ltd. from the projected average household size in 2046.

¹⁰ Ignace is included in the Local Study Area but is also examined separately as it is the potential host community if the Project is sited in the WLON-Ignace area.

- **Economic multiplier:** Private (e.g., retail, accommodation) and public (e.g., health care, educational services) sector jobs are created in response to economic development and the associated increase in population. The economic multipliers are used to estimate the number of indirect and induced jobs that are created because of direct jobs, and thus potentially add to population growth. The population projections use the same economic multiplier for all scenarios except for the lower bound of the conservative projections. A more conservative economic multiplier was selected to reflect the potential for fewer economic opportunities or other potentially less favourable economic circumstances. Other scenarios capture different levels of economic growth and therefore use a higher economic multiplier.

Population projections are completed for 25 years into the future under three scenarios: conservative-growth range, potential-growth range, and optimistic-growth range to present a range of possible future population changes. The 25-year span roughly aligns with the beginning of the Project operations (NWMO 2020a). Further information on methods and approach are discussed in detail in **Appendix 2A Detailed Methods**.

2.1.2.2.1 Limitations of the Population Projections

Population projections were completed by using an age cohort model or an average annual growth rate derived from historical population. The projections also included scenarios with economic assumptions for possible expansions or contractions to the economy that are subject to the use of family and economic multipliers. The population projections were reviewed at IAWG meetings to test the reasonableness of the projections (IAWG December 2, 2021; IAWG February 24, 2022; IAWG April 07, 2022).

The age cohort model projection for the Kenora Census Division was the starting point for the population projections. This model was derived from the Ontario Ministry of Finance population projections (Ministry of Finance Ontario 2020) which determined the growth rate by using the fertility rate of females ages 15-49 years old, the observed death rates by age and sex, and net migration rate by Census Divisions. Due to confidentiality and the complexity of some of the data (e.g., non-permanent residents, intraprovincial migration), only the projected number of births, deaths rates by age and sex, and net migration by Census Division were provided by the Ontario Ministry of Finance. Through back-calculated approximations for a constant fertility rate and migration rate were obtained which yielded similar results to the Ontario Ministry of Finance for the Kenora Census Division.

The projected death rates by age and sex, number of births and net migration for the Kenora Census Division were applied to the Local Study Area communities. This assumption may not reflect the true death rates, number of births, and net migration for the Local Study Area communities. The population projections include assumptions of net migration into the Regional Study Area and Local Study Area. The additional migrants are added to the age cohort model results but are not subject to the death rates, births, or net migration calculations.

Each of the projections include economic assumptions for possible drivers or contractions to the economy that are subject to a family multiplier and economic multiplier. The use of multipliers was used to account for the family members who migrate with their spouses (i.e., family multiplier) and from more jobs being created due to the increase in economic activity from the creation of new jobs (i.e., economic multiplier).

The economic multiplier is determined by the average of the industry multipliers produced by the Northern Policy Institute (2019) for the Kenora Census Division. These estimates may not reflect

the current true multipliers and do not reflect the changes to the multipliers over time. Also, the multipliers for the Kenora Census Division may not accurately reflect the multipliers in the Local Study Area communities. Different factors could influence the economic multiplier selected, for example economic multipliers are notably smaller for areas with smaller economies and might suggest a downward adjustment could be appropriate.

The family multiplier is determined by taking the average annual change in persons per household from 2011 to 2016 for Ignace, Dryden, and Sioux Lookout and forecasting the average person per household by 2046. Using the projected value by 2046 as the family multiplier is a conservative approach to account for the uncertainty of the change in person per household and number of people migrating to the Local Study Area or Regional Study Area over time.

The economic and family multipliers are assumed to have an interaction where the creation of a job and ensuing migration of the employee with their family (i.e., family multiplier) will generate an increase in demand for private and public services (i.e., economic multiplier). In other words, both the new workers and the additional family members are subject to the economic multiplier. One limitation to the assumption that the family and economic multipliers interact is it assumes that the new jobs created from the economic multiplier will be resourced exclusively by residents living outside of Ignace or the Local Study Area. This creates an upward bias for the number of residents migrating to Ignace or the Local Study Area by assuming all new jobs will be filled by residents not currently residing in the respective area. The economic multiplier is applied only to the direct employees and their families but is not applied to the new economic migrants to avoid over-estimating growth.

Other population growth rates were calculated by using historical annual growth rates for the Kenora Census Division and Ontario from 1996 to 2021. The average annual growth rate for the Kenora Census Division was 0.165%. On the other hand, the Ontario historical growth rate was very optimistic and there would be several developments required for there to reach a growth rate as robust as the 1.13% average annual growth observed from 1996 to 2021. The extrapolation of growth rates for population projections assumes past growth will continue. It does not reflect changing birth rates or net migration. Further information on limitations are discussed in detail in **Appendix 2A Detailed Methods**.

2.1.2.3 Primary Data Collection

Primary data are used to support the inclusion of community knowledge and local perspectives, confirm the reasonableness and relevance of secondary information, and qualitatively fill gaps in literature review, including information on GBA+ and sustainability considerations. Primary data collection was undertaken through IAWG meetings, workshops (including a Local Social Cultural and Health Workshop and GBA+ Workshop), and key person interviews. In some instances, information shared in primary data collection includes information on quantitative data (e.g., number of households in an unorganized community) and should be assumed to be an approximate estimation.

Section 1.5.5.2 provides additional information on primary data collection in the Baseline Studies, including for the IAWG, workshops, and key person interviews.

2.1.2.3.1 Primary Data Collection Limitations

Limitations for the IAWG, workshops, and key person interviews include that the information reflects the lived experiences and perspectives of the participants. This information could not always be validated through triangulation of data sources but is still considered as valid. In some instances, individuals or organizations were invited to participate in these processes and declined, thus primary data could not be readily collected. An informed consent process was used with all participants, and the option to not respond to questions or redact sensitive information was offered.

2.1.3 Methods

The methods used to describe the components within the social cultural pillar were developed to reflect IAAC guidance (IAAC 2020a; IAAC 2020b) in consideration of future Project interactions and are intended to support future impact assessment processes. Specific methods vary by component and are described in the overview and approach for each component (**Section 2.2, Section 2.3, Section 2.4, Section 2.5, and Section 2.6**). Further details are also described in **Appendix 2A Detailed Methods**. Methods are consistent with best practice and consideration for the incorporation of GBA+ and community knowledge.

2.2 POPULATION AND DEMOGRAPHICS

2.2.1 Overview and Approach

Population and demographics are key to understanding a community's characteristics. Population can drive changes to aspects of community life, including demand for infrastructure and services (**Section 2.4**), housing (**Section 2.4.7**), education and training opportunities (**Section 2.4.5** and **Section 3.3**), outdoor recreation (**Section 2.4.6**), harvested resources (**Section 2.5.4.3** for recreational fishing and **Section 2.5.5** for hunting), and community safety and well-being plans (**Section 2.3.4**). To understand potential population changes, it is necessary to understand existing population trends.

This section describes and quantifies past and future population and demographic trends for the Local Study Area and Regional Study Area. **Table 2.2-1** summarizes the list of indicators which are intended to paint a picture of the population.

Table 2.2-1: Population and Demographic Indicators

<ul style="list-style-type: none"> • Total population and population densities • Mobility status • Age characteristics • Family characteristics • Mother tongue 	<ul style="list-style-type: none"> • Religion • Indigenous identity • Visible minority population • Sex assigned at birth and gender identity • Persons with disabilities
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Population projections were completed for the Local Study Area, Regional Study Area, and Ignace.

In the context of GBA+, it is important to consider populations or groups that have been more vulnerable to changes or who have been historically excluded (IAAC 2020a). Vulnerable populations refer to groups that experience a disproportionate burden of inequities which result in differences in socio-economic outcomes. An analysis of vulnerable populations was completed for the Local Study Area and Regional Study Area.

The data are disaggregated by sex (or gender for 2021 data), age, and Indigenous identity, where available and sufficiently robust. Where quantitative data are not available, qualitative research methods are used to obtain data that can be used to characterize those populations. The GBA+ and vulnerable population analyses reflect learnings from the IAWG, the community studies (**Section 1.0**), and other primary data collection processes. Additional information on GBA+ is provided in **Section 1.0**.

Qualitative analysis has been included where available for those communities that Statistics Canada does not enumerate.

The Regional Study Area for population and demographics is the Kenora Census Division. The Regional Study Area includes Indigenous communities and reserves (see **Section 2.1.1.1.2**). Comparable statistics for Ontario are summarized as available to provide context. The Local Study Area for population and demographics includes the communities closest to the Project:

Township of Ignace, which is a potential host community, the City of Dryden, Municipality of Machin, Municipality of Sioux Lookout, and the unincorporated communities and Local Services Boards near Ignace and the Revell Site (the LSB of Melgund, Upsala, Valora, Silver Dollar, and the LSB of Wabigoon).

Temporal boundaries for population and demographics will go back to 1991, as data are available, to understand past trends. Population projections will go 25 years into the future to understand future population trends without the Project. Twenty-five years roughly aligns with the beginning of operations (NWMO 2020a).

Further information on temporal boundaries for population and demographics is provided in **Section 2.1.1.**

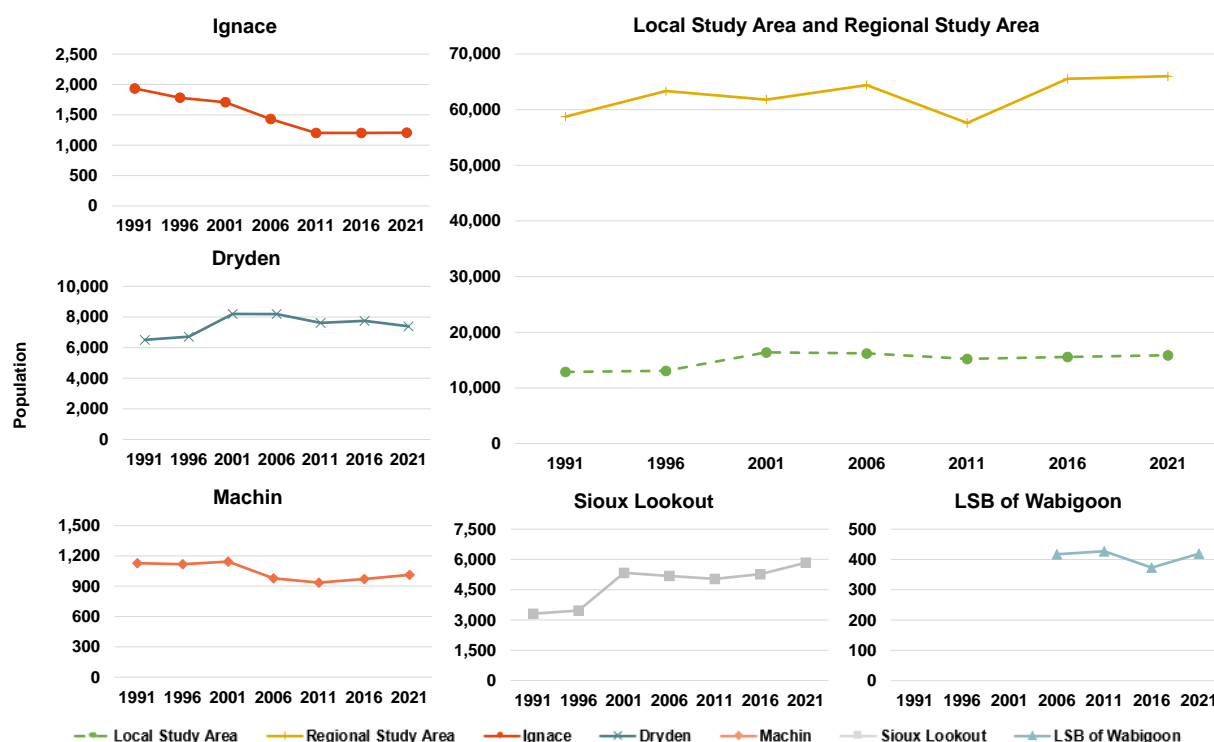
Information on data collection, including desktop research and primary data collection is provided in **Section 2.1.2.**

2.2.2 Historical and Current Population

This section describes the historical and current populations of the communities in the Local and Regional Study Areas based on Statistics Canada data.

Figure 2.2-1 shows the population of the Local Study Area and Regional Study Area from 1991 to 2021. Population growth for the Local Study Area and Regional Study Area has been generally flat since 1991, although this does not necessarily reflect population growth in individual communities. In 2021, the Regional Study Area population was 66,000 and the Local Study Area population was 15,864. The largest population centres in the Local Study Area are Dryden (7,388 people) and Sioux Lookout (5,839 people). Ignace has the next largest population but is notably smaller (1,206 people).

Figure 2.2-1: Total Population in the Local Study Area and Regional Study Area, 1991 to 2021¹



Source: Statistics Canada 1992, 1998, 2002, 2007, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.

Notes:

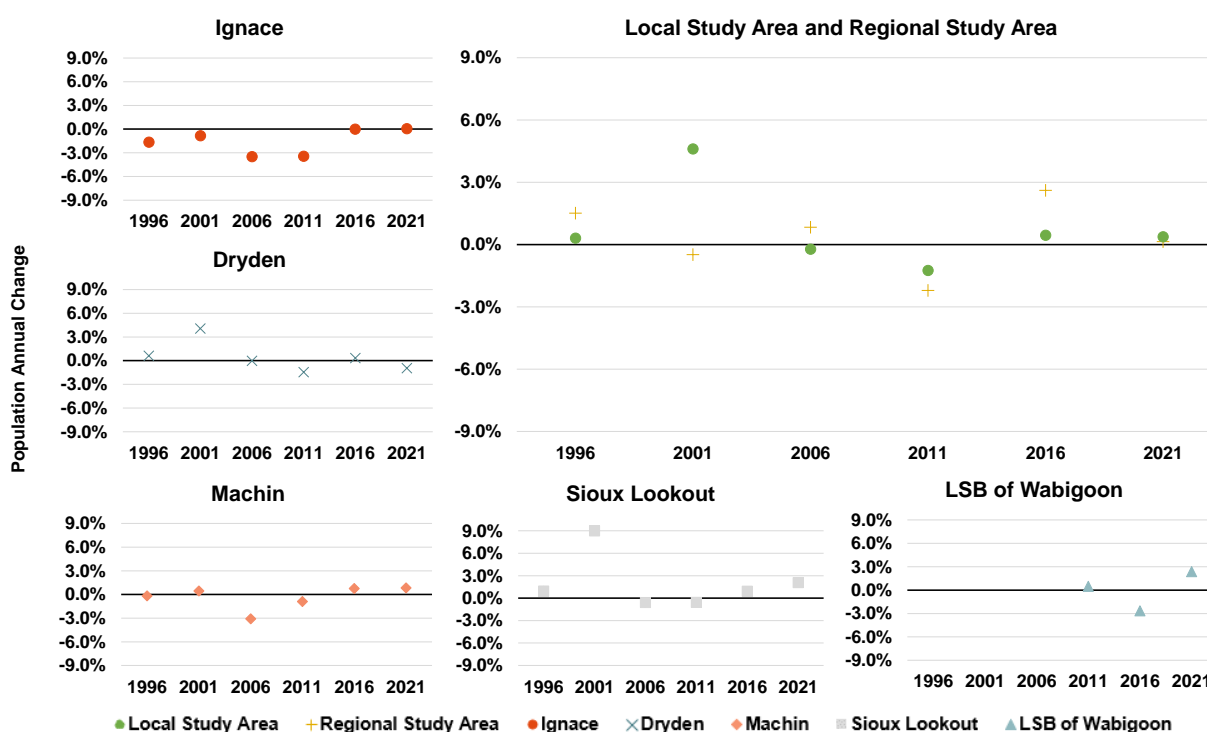
1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1991 to 2021. Data were not available for the LSB of Wabigoon for 1991 to 2001.

The Local Study Area population increased from 12,878 in 1991 to 15,864 in 2021. The Regional Study Area population increased from 58,748 in 1991 to 66,000 in 2021. The increase in the Local Study Area population from 12,878 in 1991 to 16,386 in 2001 was due primarily to growth in Dryden and Sioux Lookout (**Section 2.2.2.2** and **Section 2.2.2.4**). Population increases were not consistent between census periods or distributed equally among Local Study Area communities. The Local Study Area population decreased from 16,386 in 2001 to 15,218 in 2011 before increasing to 15,864 by 2021. The Local Study Area population decline from 2001 to 2011 was primarily attributed to the population decrease in Ignace (See **Section 2.2.2.1**). Notable population trends in the Local Study Area communities are:

- The population growth in each community has been flat since 2006. Notable exceptions are a decrease in population from 2006 to 2011 in Ignace, from 2016 to 2021 in Dryden, and an increase in population from 2016 to 2021 in Sioux Lookout.
- Since 1991 the population increased the most in Sioux Lookout from 3,311 in 1991 to 5,839 in 2021, followed by Dryden from 6,505 in 1991 to 7,388 in 2021.
- The largest decrease in population occurred in Ignace from 1,935 in 1991 to 1,206 in 2021.

Figure 2.2-2 shows the average annual five-year population changes between Census periods for the Local Study Area and the Regional Study Area. The average annual five-year population change reflects the average annual population change over the previous five years. For example, the average annual population change for 2001 is the average annual population change between 1996 and 2001.

Figure 2.2-2: Average Annual Five-Year Population Change for the Local Study Area and Regional Study Area, 1991 to 2021¹



Source: Statistics Canada 1998, 2002, 2007, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.
Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1991 to 2006.

In the Regional Study Area, the growth rate fluctuated between -2.21% (from 2006 to 2011) and 2.61% (from 2011 to 2016) and resulted in an annual growth rate of 0.39% from 1991 to 2021. In the Local Study Area, the growth rate fluctuated between -1.25% (from 2006 to 2011) and 4.61% (from 1996 to 2001). The large growth from 1996 to 2001 is from increases in population in Dryden and Sioux Lookout (**Section 2.2.2.2** and **Section 2.2.2.4**). The growth rate in the Local Study Area from 1991 to 1996 was 0.31% and the growth rate of -0.16% from 2001 to 2021 indicates relatively stable population growth for the Local Study Area from 1991 to 2016 when accounting for the large increase in population from 1996 to 2001.

The Regional Study Area has a larger proportion of the population who identify as Indigenous compared to the Local Study Area. The growth in the population in the Regional Study Area since 2001 is consistent with national 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 identity population through 2041 because of a younger age structure and higher birth rates.

Individual communities in the Local Study Area generally experienced average annual declines in population, excluding Sioux Lookout and Dryden. Notable trends in Local Study Area communities are as follows:

- In the Local Study Area, Ignace was the only community to generally have no period of population growth from 1991 to 2021, with annual changes in population ranging between -3.49% from 2001 to 2006 to 0.07% from 2016 to 2021.
- The population growth trend in Sioux Lookout was similar to Dryden from 1991 to 2016 with stable or flat population growth; however, there was material growth in population with an average annual increase of 2.06% from 2016 to 2021.
- The LSB of Wabigoon and Machin experienced modest average annual decreases in population; but Machin had population growth from 2011 to 2021.

Table 2.2-2 shows population density in the Local Study Area communities, the Local Study Area, and the Regional Study Area, from 2001 to 2021. Population density is represented as the number of persons per square kilometre within a specified land area.

Table 2.2-2: Population Density in Local Study Area and Regional Study Area, 2001 to 2021

Community ¹	Population Density (km ²)				
	2001	2006	2011	2016	2021
Ignace	23.5	19.7	16.5	16.5	16.7
Dryden	125.5	125.7	115.7	117.1	112.7
Machin	4.0	3.4	3.2	3.3	3.5
Sioux Lookout	14.1	13.7	13.3	13.9	15.4
LSB of Wabigoon	Data not available	Data not available	8.3	7.3	8.3
Local Study Area	20.3	19.6	17.7	18.1	18.5
Regional Study Area	0.2	0.2	0.1	0.2	0.2

Source: Statistics Canada 2002, 2007, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2001 to 2021. Data were not available for the LSB of Wabigoon for 2001 to 2006.

The population density in the Local Study Area decreased from 20.3 persons per square kilometre in 2001 to 18.5 in 2021. Over the same timeframe, the population density in the Regional Study Area remained constant at 0.2 persons per square kilometre. Notable observations for the population density in the Local Study Area communities include:

- In 2021, Dryden had the highest population density at 112.7 persons per square kilometre and Machin had the lowest population density at 3.5.
- Between 2001 and 2021, Sioux Lookout was the only community to experience an increase in population density from 14.1 persons per square kilometre in 2001 to 15.4 in 2021.
- From 2001 to 2021, Dryden experienced the largest decrease in the number of persons per square kilometre from 125.5 in 2001 to 112.7 in 2021. However, Ignace experienced the largest percentage decrease, dropping 29% from 23.5 persons per square kilometre in 2001 to 16.7 in 2021.

The next sections discuss the historical population trends in each Local Study Area community shown in **Figure 2.2-1**, **Figure 2.2-2**, and **Table 2.2-2** and provides context from secondary sources and participants in the Key Person Interview program. The Local Study Area communities share some demographic trends between 1996 and 2021. They include an aging population, slight decreases to the number of persons per census family and children living at home, and an increasing proportion of the population who identify as Indigenous.

Given the strong connection of the communities to the natural environment and the outdoors, there is a notable seasonal population which is not captured in the Census of Population. Information on the seasonal population and temporary population related to shift work are also described.

2.2.2.1 Ignace

In 2021, the Township of Ignace had a population of 1,206 and a population density of 16.7 persons per square kilometre. Since 1991, the population has materially decreased. from 1,935 in 1991 to 1,206 in 2021 for an average annual growth rate of -1.56%. The population has generally remained unchanged since 2011 (1,202 residents). The population decline from 1991 to 2011 was a result of shifts in the local economy including:

- The closure of the Mattabi Mine in 1991 (Beak and Golder 1997);
- Downturns in the forestry industry from 2000 to 2008 with the loss of paper machines due to a change in scope of operations at Domtar¹¹ in Dryden and the closure of the Bowater Mill in Ignace (Pulp and Paper Canada 2006; NWO Community and Baseline Studies Key Person Interview Program 2022). The Bowater Mill later changed its name to Resolute Forest Products in 2011 and reopened in 2015 (Resolute Forest Products 2022); and
- From 1991 to 2011 there was a large out-migration of families (**Section 2.2.3**) that contributed to a decline in the youth population¹² (NWO Community and Baseline Studies Key Person Interview Program 2022). More recently, youth are leaving Ignace to pursue education and employment opportunities. The more recent out-migration also includes some families with children who leave to pursue better opportunities for their children's high school education (NWO Community and Baseline Studies Key Person Interview Program 2022).

The population of Ignace fluctuates seasonally. In the summer, cottagers add to the population. Currently there are approximately 60 seasonal cottage dwellings, which is estimated to represent

¹¹ Formerly known as Domtar Inc.'s Dryden Mill, the mill was purchased by First Quality Enterprises LLC in August, 2023 (First Quality 2023).

¹² Youth are defined as residents who are between the ages of 15 and 29 years old.

approximately 125 seasonal residents using the average household size for Ignace (Statistics Canada 2017; NWO Community and Baseline Studies Key Person Interview Program 2022). Some of the cottagers support the local economy by paying property taxes, water fees, and sewer fees.

Canadian Pacific Railway ("CPR") and Ricci Trucking have temporary accommodations in Ignace for their workforce. The bunkhouses for Ricci Trucking employees are used year-round. They accommodated up to 24 people before the COVID-19 pandemic. In 2022, they accommodated up to 12 employees. Employees typically stay in the bunkhouses for four nights, arriving on Monday and departing on Friday (NWO Community and Baseline Studies Key Person Interview Program 2022).

2.2.2.2 Dryden

In 2021, Dryden had a population of 7,388 and a population density of 112.7 persons per square kilometre. Between 2001 and 2021, the population in Dryden decreased slightly. The Town of Dryden had a population of 6,711 in 1996 and increased to 8,198 in 2001 after the amalgamation of Dryden and Barclay formed the City of Dryden. This represented a 22% increase or 1,487 people to the population of Dryden from 1996 to 2001 (Statistics Canada 2002). Since 2001, the population of Dryden decreased from 8,198 in 2001 to 7,388 in 2021 for an average annual growth rate of -0.52%.

Participants in the Key Person Interview program expressed concerns that Statistics Canada undercounted the population in Dryden in 2021 (NWO Baseline Studies Key Person Interview Program 2022-2023). It is also believed that the Indigenous identity population was undercounted, as there has been an observed increase in the Indigenous identity population related to the growth of service providers for Indigenous peoples in the community (NWO Baseline Studies Key Person Interview Program 2022-2023). Although there was a decrease in the population in Dryden from 2016 to 2021, municipal service providers observed an increase in building permit values, residential units, and more density over the same timeframe. The current vacancy rate of zero in Dryden also suggests an undercount in the total population, and thus the dip in population reported by Statistics Canada is not clear (NWO Baseline Studies Key Person Interview Program 2022-2023).

There are a substantial number of residents living in the unincorporated area surrounding Dryden. In 2016, the Northern Policy Institute estimated that the fringe population¹³ was around 3,600 residents (NPI 2021). This population can be of concern to municipalities as they may use services provided by the municipality but do not pay property taxes. This can place capacity pressures on services provided by the municipality and lead to an insufficient tax base (NWO Baseline Studies Key Person Interview Program 2022-2023).

The number of seasonal residents in Dryden is difficult to track. It is known that there are seasonal residents in and around Dryden including at Timberland Estates, which is an approximately 48 unit development for seniors who are primarily seasonal residents; (NWO Baseline Studies Key Person Interview KPI Program 2022-2023), at Ghost Lake, which is located

¹³ The fringe population is the population which resides just outside the border of a municipality in the surrounding unincorporated region (NPI 2021).

just outside of Dryden; and through the Ministry of Natural Resources and Forestry ("MNRF"), that houses a large number of seasonal employees in Dryden during the summer fire season.

There is also the transient population who come to the community to access services (education, health, social services) but who do not stay in the community long-term (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023; GBA+ Workshop 2023).

2.2.2.3 Machin

In 2021, Machin had a population of 1,012 and a population density of 3.5 persons per square kilometre. Since 1991, the population in Machin has remained about the same. The population decreased from 1,127 in 1991 to 1,012 in 2021 for an average annual growth rate of -0.36%. The population was relatively stable from 1991 (population of 1,127) to 2001 (population of 1,143) but saw a large decrease by 2006 (population of 978) and remained stable thereafter.

There is a notable increase in the population during the summer months due to people visiting seasonal camps, cabins/cottages, and other lodges/accommodations. Many of the seasonal guests are Americans. Despite a large tourist population, most of the people at camps do not shop in town because many of the lodges/accommodations provide everything with their accommodations (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.2.2.4 Sioux Lookout

In 2021, Sioux Lookout had a population of 5,839 and a population density of 15.4 persons per square kilometre. Since 2001, the population in Sioux Lookout has increased slightly. The population increased from 3,311 in 1991 to 5,839 in 2021 for an average annual growth rate of 1.91%. The population increased in Sioux Lookout from 3,469 in 1996 to 5,336 in 2001 due to the amalgamation of Sioux Lookout with unorganized communities in the surrounding area including the Township of Drayton, Jordan, Vermillion, and other surrounding land in 1998 (MHBC 2019). The population in Sioux Lookout was relatively constant from 2001 to 2016 before a large jump in population between 2016 and 2021. A participant in the Key Person Interview program noted that the increase in population could be due to the availability of jobs, and some people from the First Nation communities north of Sioux Lookout choosing to settle in Sioux Lookout (NWO Community and Baseline Studies Key Person Interview Program 2022). In Sioux Lookout, one of the primary constraints to future population growth is the housing shortage. Developers have been building apartments and condominiums but not detached residential dwellings.

The seasonal population is approximately 75 residents who come to Sioux Lookout during the summer when the local camps and lodges are open. A participant in the Key Person Interview program noted that there used to be more seasonal dwellings, but many have been purchased and are used as permanent homes (NWO Baseline Studies Key Person Interview Program 2022-2023). It is also believed that there is a larger population of permanent Indigenous residents than was reported by Statistics Canada. Sioux Lookout is a service hub for northern communities with the presence of the Sioux Lookout Meno Ya Win Health Centre, Sioux Lookout First Nations Health Authority, four tribal councils, and the Pelican Falls First Nation High School which offers boarding options for students from northern reserves (Keewaytinook Okimakanak Board of Education 2016). Both health organizations provide services to people in Sioux Lookout and the surrounding areas (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

2.2.2.5 Local Services Board of Wabigoon

The population of the LSB of Wabigoon was 419 in 2021 with a population density of 8.3 persons per square kilometre. The population of the LSB of Wabigoon in 2021 was similar to the population in 2006 but has experienced changes in between. A participant in the Key Person Interview program noted that 30 years ago, multiple families with 3 to 4 children each lived in the LSB of Wabigoon. The decrease in population began around 30 years ago with a shift in the forestry industry towards more industrial harvesting operations followed by mills closing. This led to families moving away because young people had limited employment opportunities (NWO Baseline Studies Key Person Interview Program 2022-2023).

There is a notable increase in the population during the summer months from seasonal residents. It is estimated that the population can increase by 50% to 60% during the summer due to the RV parks filling up, tourist camps, and seasonal cottages (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.2.2.6 Unincorporated Communities

Borups Corners and Dymont are part of the LSB of Melgund. In 2023, the LSB of Melgund is estimated to have about 50 fulltime residents between Borups Corners and Dymont (NWO Baseline Studies Key Person Interview Program 2022-2023). Local residents have noted that the population has generally increased over the last 10 to 20 years (NWO Baseline Studies Key Person Interview Program 2022-2023). In addition to fulltime residents, there are about 20 seasonal residents during the summer months.

The community of Silver Dollar is estimated to have between 10 to 20 fulltime residents as of 2023 (NWO Baseline Studies Key Person Interview Program 2022-2023). The population in Silver Dollar has not changed much in the last 10 years but there was a notable decrease in the population throughout the 1990s and early 2000s after the Mattabi Mine closed (NWO Baseline Studies Key Person Interview Program 2022-2023). Silver Dollar used to be a trailer park with year-round residents when the mine was operating but has since shifted to be a seasonal and tourist-based community (NWO Baseline Studies Key Person Interview Program 2022-2023). During the summer months due to the influx of camp owners, seasonal residents, and guests, the population increases by an estimated 60 to 80 seasonal residents (NWO Baseline Studies Key Person Interview Program 2022-2023).

The LSB of Upsala is estimated to have between 150 to 200 fulltime residents as of 2023 (NWO Baseline Studies Key Person Interview Program 2022-2023). The population in Upsala has steadily decreased since the 1990s due to the closure of the Upsala Forest Products mill in the early 2000s. An aging population, limited housing, and youth leaving for postsecondary education have also contributed to the decrease in population (NWO Baseline Studies Key Person Interview Program 2022-2023).

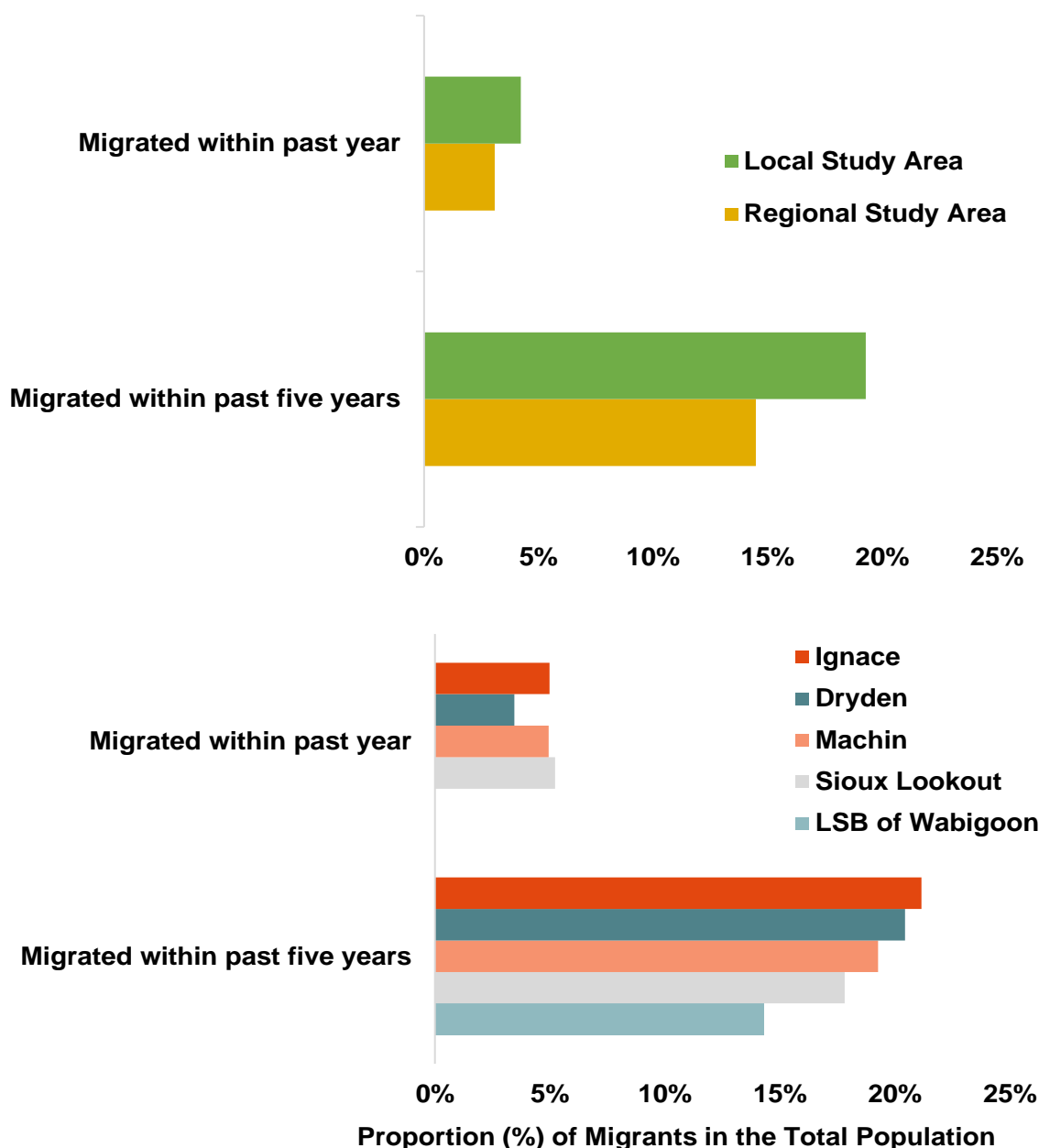
The community of Valora had five occupied dwellings and five vacant or abandoned dwellings in 2023 (NWO Baseline Studies Key Person Interview Program 2022-2023). One household resides in Valora fulltime. Local residents have noted that Valora used to be a bustling community when the Mattabi Mine was in operation north of Sturgeon Lake and there was railroad access through the town (NWO Baseline Studies Key Person Interview Program 2022-2023). It is estimated that there are an additional 75 seasonal residents who live in the community during the summer months (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.2.3 Population Mobility

Population mobility tracks the number of individuals who move into a new census division (i.e., in-migration), census subdivision, or Indian Reserve. In-migration can be a key driver of population change. People may move for a variety of reasons, including access to employment and educational opportunities or to be closer to family. Migrants are people who relocated into a new census subdivision and include both internal migrants who moved to a different city, town, township, village, or Indian Reserve within Canada, and external migrants who lived outside of Canada at an earlier date. Migrants do not include people who moved within the same census subdivision (Statistics Canada 2022a). Mobility rates should be interpreted with caution as a high in-migration rate does not necessarily correspond to an increase in population as this does not account for out-migration and changes in the population from births and deaths.

Figure 2.2-3 shows the proportion of the population who migrated into the Local Study Area and Regional Study Area in the year prior to the 2021 Census (i.e., between 2020 and 2021) and within the last five years of the Census (i.e., between 2016 to 2021). The Local Study Area had a larger proportion of the population who migrated to the area between 2020 to 2021 (4.2% [670 people]) and between 2016 to 2021 (19.3% [3,060 people]) compared to the Regional Study Area (3.1% [2,035 people] between 2020 and 2021 and 14.5% [9,560 people] between 2016 and 2021). Proportionally, Ignace (5.0% [60 people]) and Sioux Lookout (6.2% [305 people]) had the largest proportion of in-migration into the community between 2020 and 2021.

Figure 2.2-3: Mobility Status for the Local Study Area and Regional Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

A larger proportion of the population migrated to the Local Study Area between 2020 and 2021 at 4.2% (or 670 people) compared to 3.1% (or 2,035 people) to the Regional Study Area. There

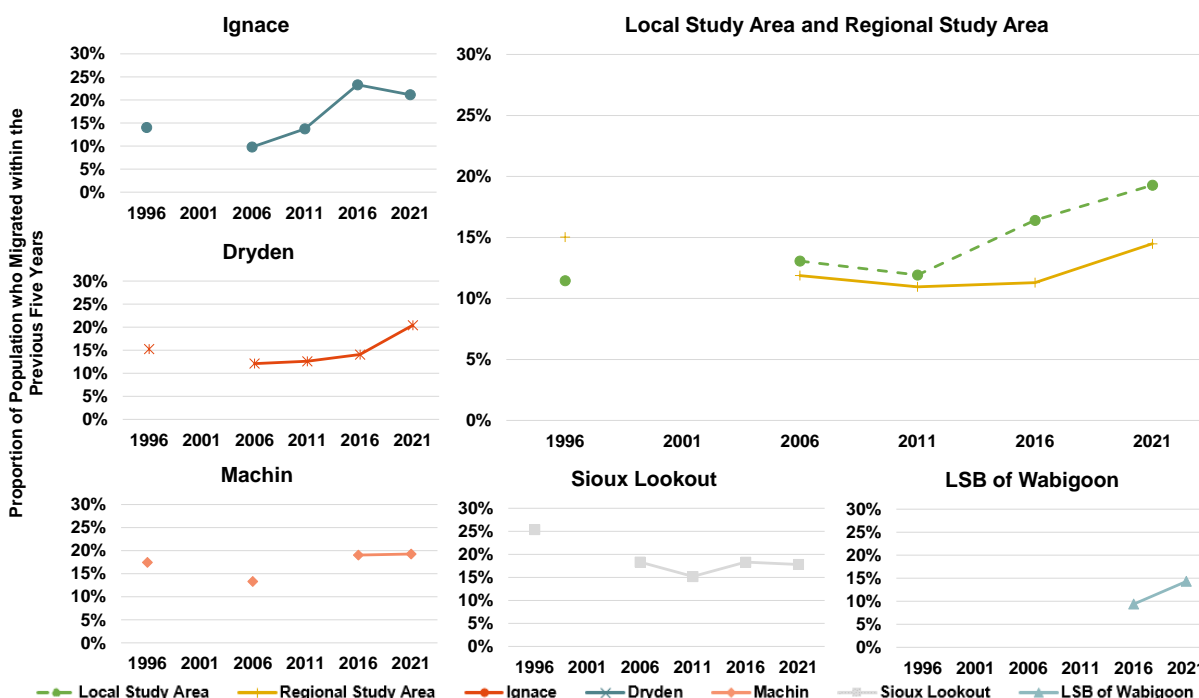
was also a larger proportion of the population who migrated to the Local Study Area between 2016 and 2021 at 19.3% (or 3,060 people) compared to 14.5% (or 9,560 people) to the Regional Study Area. Notable highlights of in-migration within the Local Study Area communities are:

- Among the Local Study Area communities, the largest proportion of the population migrated to Ignace, between 2020 and 2021 at 5.0% (or 60 people) and between 2016 and 2021 at 21.1% (or 255 people). Sioux Lookout had the second largest proportion of the population that migrated to Sioux Lookout between 2020 and 2021 at 5.2% (or 305 people). Dryden had the second largest proportion of the population which migrated to Dryden between 2016 and 2021 at 20.4% (or 1,510 people).
- Among the Local Study Area communities, the smallest proportion of the population migrated to the LSB of Wabigoon, between 2020 and 2021 at 0% and between 2016 and 2021 at 14.3% (or 60 people). There may have been people who migrated to the LSB of Wabigoon between 2020 and 2021 but due to random rounding was reported as 0.

Despite Ignace having the largest proportion of migrants within five years of the census, the population increased by four people between 2016 and 2021. This highlights that, although mobility tracks the number of individuals entering a community, it does not report on how many people leave a community. Key person interviews noted that there has been a large out-migration of families over the past 30 years. More recently, due to the aging population who are slowly putting more homes on the market, younger families with children are moving in (NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 2.2-4 shows the proportion of the population who moved within the Local Study Area and Regional Study Area within the previous five years, from 1996 to 2021. Among the Local Study Area communities, in-migration rates have generally increased since 1996. However, a high in-migration rate does not necessarily correspond to an increase in population as this does not account for out-migration and changes in the population from births and deaths.

Figure 2.2-4: Migration within the Previous Five Years for the Local Study Area and Regional Study Area, 1996 to 2021¹



Source: Statistics Canada 1998, 2002, 2007, 2013, 2017, 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1996 to 2011 and for Machin for 2011. Migrant mobility was not reported in the 2001 Census.

The proportion of the total population in the Local Study Area who migrated between 1991 and 1996 at 18.0% (or 2,350 people) was lower than the proportion who migrated between 2016 and 2021 at 19.3% (or 3,060 people). The proportion of the total population in the Regional Study Area who migrated between 1991 and 1996 at 15.0% (or 9,520 people) was slightly higher than the proportion who migrated between 2016 and 2021 at 14.5% (or 9,560 people). Notable trends of in-migration to the Local Study Area communities are as follows:

- The proportion of the Ignace population that are 5-year migrants has increased in each census since 2006. Mobility statistics for Ignace show a five-year in-migration rate between 2001-2006 of 9.8% (140 migrants) and 2016-2021 of 21.1% (255 migrants). This corresponds with the period when the population in Ignace has stabilized.
- In-migration has generally increased for Dryden since 1996. The five-year in-migration rate in Dryden has ranged between 12.1% (960 migrants) for 2001-2006 and 20.4% (1,510 migrants) for 2016-2021.
- The proportion of the Machin population that are five-year migrants has generally increased since 1996. The in-migration rate between 1991-1996 was 17.5% (195 migrants) but fell to 13.3% (130 migrants) for the period of 2001-2006. The fall in the proportion of migrants

coincides with a large population decline in Machin between 2001 to 2011 (See **Section 2.2.3**).

- The proportion of the Sioux Lookout population that are five-year migrants has generally decreased since 1996. The in-migration rate between 1991-1996 was 25.4% (880 migrants) and was 17.8% (1,040 migrants) between 2016-2021.
- In-migration for the LSB of Wabigoon between 2011-2016 was 9.4% (35 migrants) which is the smallest proportion among Local Study Area communities but increased to 14.3% (60 migrants) between 2016-2021.

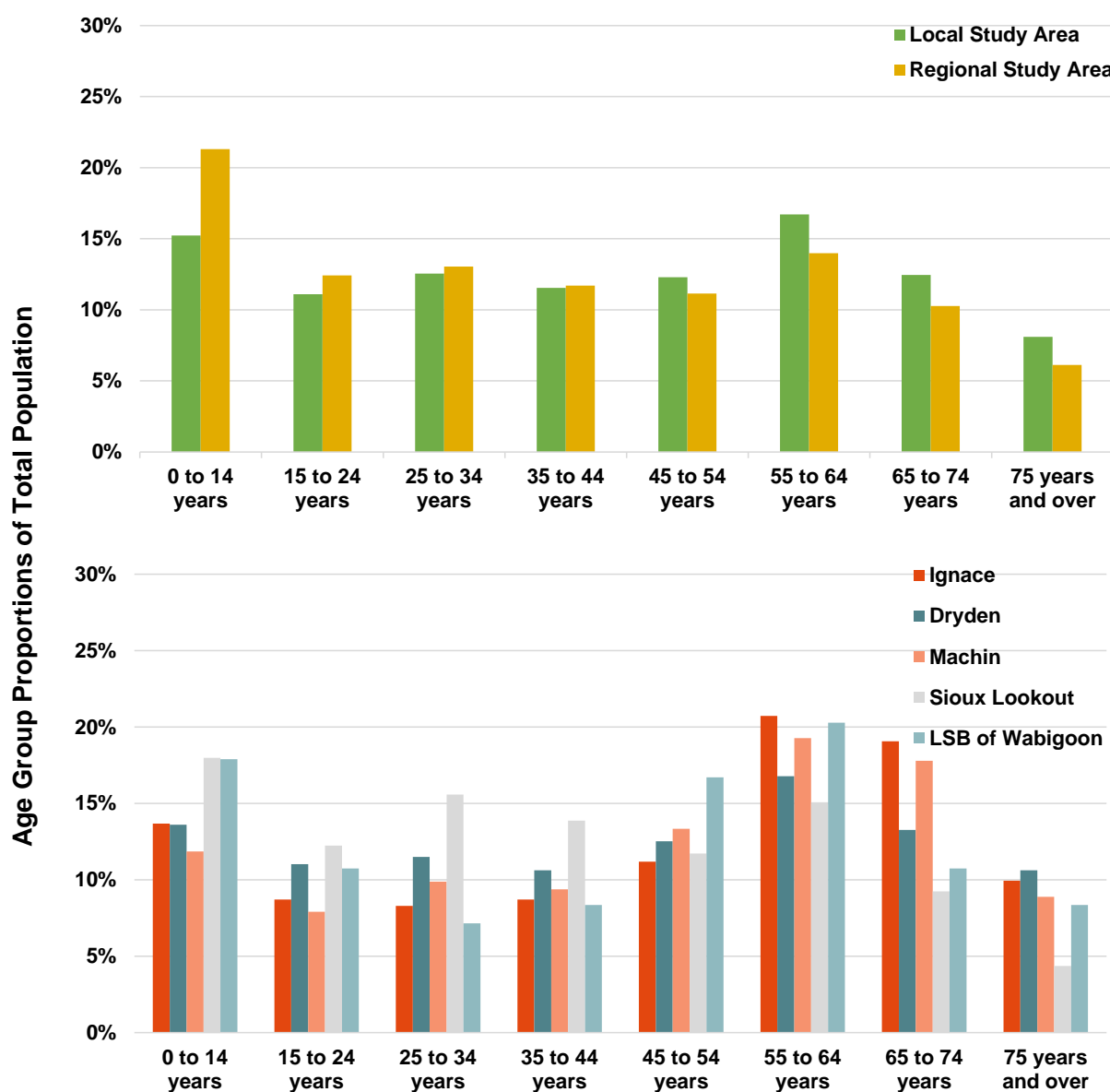
Key person interviews identified out-migration as a concern in the Kenora Census Division (NWO Community and Baseline Studies Key Person Interview Program 2022). Out-migration can be attributed to multiple factors, including residents leaving the community to pursue employment, training, and education and not returning due to limited opportunities in the area (NWO Community and Baseline Studies Key Person Interview Program 2022). The Northwest Training and Adjustment Board (2023) reported a net out-migration of 396 residents leaving the Kenora Census Division from 2015 to 2019. There was a net out-migration of 398 residents aged 65 years and older, while 410 net in-migration of residents aged 25 to 44 years old to the Kenora Census Division (NTAB 2023). The positive net in-migration for individuals aged 25 to 44 years old suggests that younger families are moving into the region more recently (NTAB 2023; NWO Community and Baseline Studies Key Person Interview Program 2022).

2.2.4 Demographics

2.2.4.1 Age and Gender Characteristics

Figure 2.2-5 shows the distribution of the population by age cohorts for the Local Study Area and Regional Study Area for 2021.

Figure 2.2-5: Population Age Distribution for the Local Study Area and Regional Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

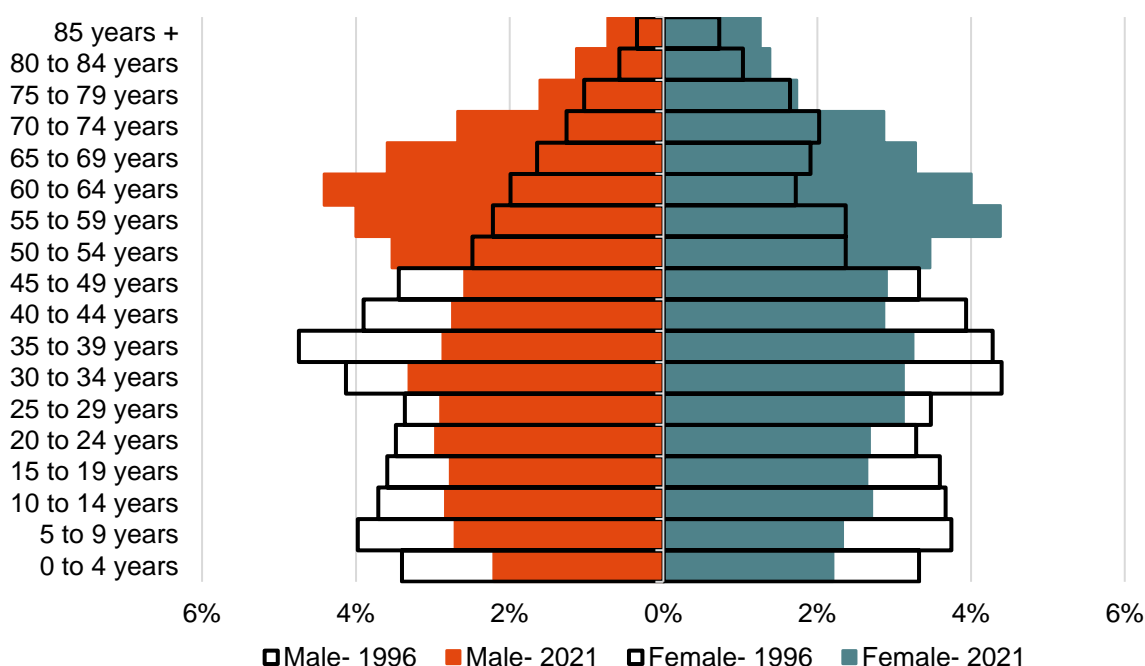
1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

The population distribution by age cohort in the Regional Study Area shows a large proportion of the population under 25 years old and a smaller proportion of the population aged 55 and older when compared to the Local Study Area. Notable observations for Local Study Area communities include:

- Among the Local Study Area, Ignace and Machin have the oldest population in 2021; with 22% of the population under 25 years old and 50% of the population 55 years or older in Ignace. In Machin, 20% of the population is under 25 years old and 46% of the population is 55 years or older.
- Sioux Lookout has the youngest population in 2021 with 30% of the population under 25 years old and 29% of the population 55 years or older.

Figure 2.2-6 compares the proportion of the population by age and sex or gender in 1996 and 2021. The age cohorts are presented along the vertical axis with each block representing the proportion of males or females for the corresponding year. See **Section 2.1.2.1.1** for limitations of comparisons between gender and sex over time. The horizontal axis presents the proportion of the total population with the female population presented on the right side and the male population on the left side.

Figure 2.2-6: Population Age and Sex or Gender Distribution for the Local Study Area, 1996 and 2021¹



Source: Statistics Canada 1998, 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 or 2021. Data were not available for the LSB of Wabigoon for 1996.

The population in the Local Study Area has aged since 1996. In 1996, 20% of the population was 55 years and older (2,680 people) compared to 37% (5,910 people) in 2021. In 1996, 36% (4,680 people) of the population were below 25 years old compared to 26% (4,175 people) in 2021.

Table 2.2-3 shows median ages in the Local Study Area communities, Local Study Area, and Regional Study Area, from 2001 to 2021.

Table 2.2-3: Median Age in Local Study Area and Regional Study Area, 2001 to 2021

Community ¹	Median Age				
	2001	2006	2011	2016	2021
Ignace	37.0	42.5	48.1	52.5	53.6
Dryden	38.2	41.8	45.0	46.2	48.0
Machin	39.8	43.3	47.0	50.6	53.6
Sioux Lookout	33.5	35.1	36.1	35.9	38.0
LSB of Wabigoon	Data not available	Data not available	43.4	48 .0	49.2
Local Study Area	36.7	38.7	42.4	43.5	45.1
Regional Study Area	33.9	34.9	38.6	36.5	37.6

Source: Statistics Canada 2002, 2007, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2001 to 2021. Data were not available for the LSB of Wabigoon for 2001 to 2006.

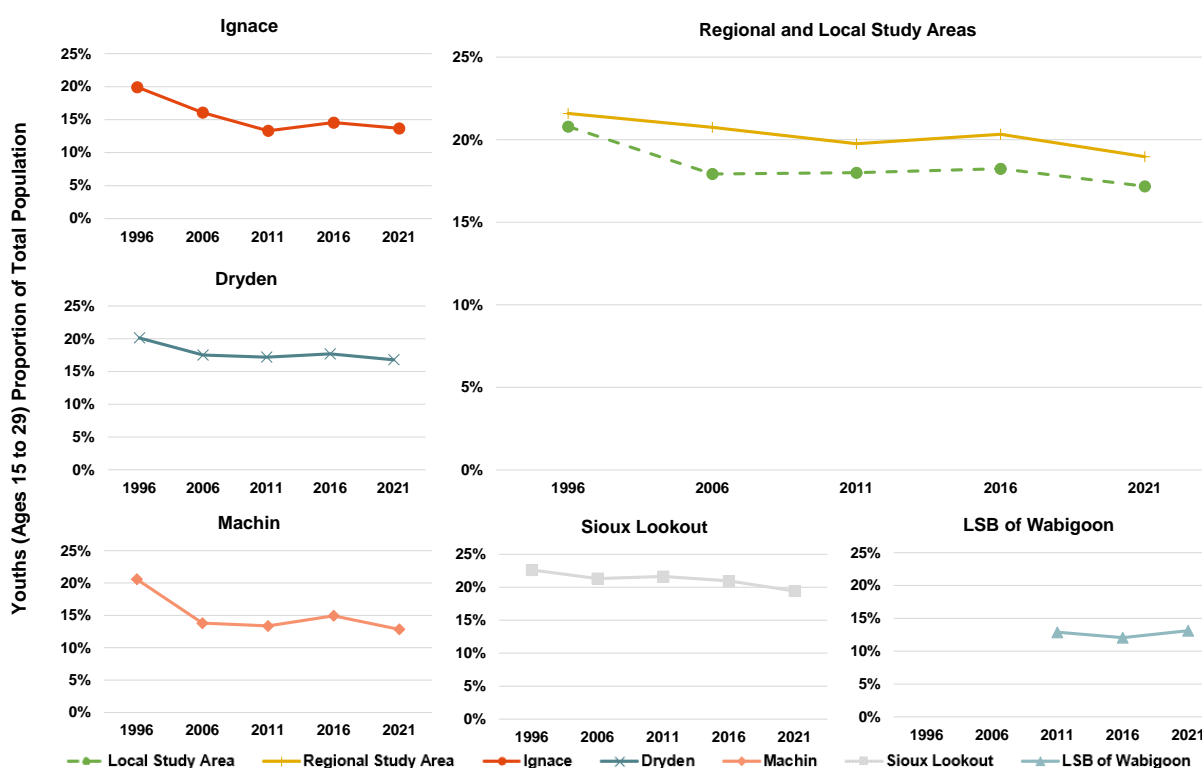
The median age in the Local Study Area increased from 36.7 years old in 2001 to 45.1 years old in 2021. The median age in the Regional Study Area increased by a smaller amount compared to the Local Study Area from 33.9 years old in 2001 to 37.6 years old in 2021. Notable trends in the median age in the Local Study Area communities include:

- In 2021, the median age ranged between 38.0 years old in Sioux Lookout to 53.6 years old in Ignace and Machin.
- A pattern of an aging population in the Local Study Area is evident for Ignace, Dryden, Machin, and the LSB of Wabigoon, and to a lesser extent for Sioux Lookout.
- From 2001 to 2016 the median age in Ignace increased materially from 37.0 years old in 2001 to 52.5 years old in 2016. Dryden and Sioux Lookout have seen gradual increases to the median age over the 15-year span. Machin and the LSB Wabigoon had increases to the median age similar to Ignace.
- As of 2021, Sioux Lookout is the only Local Study Area community with a median age below 40 years old, which is similar to the median age of 37.6 years old in the Regional Study Area. The next youngest median age is 48.0 years old for Dryden.

Youth are defined as residents who are between the of ages 15 to 29 years old by Statistics Canada (Canadian Heritage 2021). Youth represent not only an important component of the labour force within a region, but also an age group that can contribute to community vibrancy and leadership into the future.

Figure 2.2-7 shows the youth population (i.e., 15 to 29 years old) as a proportion of the total population in the Local Study Area and Regional Study Area from 1996 to 2021.

Figure 2.2-7: Youth as a Proportion of the Total Population in the Local Study Area and Regional Study Area, 1996, 2006, 2011, 2016, and 2021¹



Source: Statistics Canada 1998, 2002, 2007, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.
Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1996 to 2006.

The youth population in the Local Study Area decreased from 21% in 1996 to 17% in 2021. The youth population in the Regional Study Area had a similar decrease from 22% in 1996 to 19% in 2021. Notable trends in the youth population for the Local Study Area communities are as follows:

- In 2021, the youth population as a proportion of the total population is largest in Sioux Lookout, and smallest in Ignace, Machin, and the LSB of Wabigoon.
- Ignace experienced a material decline in the total number of youth between 1996 to 2021 [355 youth in 1996 (17%) to 165 (14%) in 2021]. This represented a 53% decline in the total number of youth.
- The youth population in Dryden decreased from 20% in 1996 to 17% in 2021 (1,350 youth in 1996 to 1,240 in 2021).

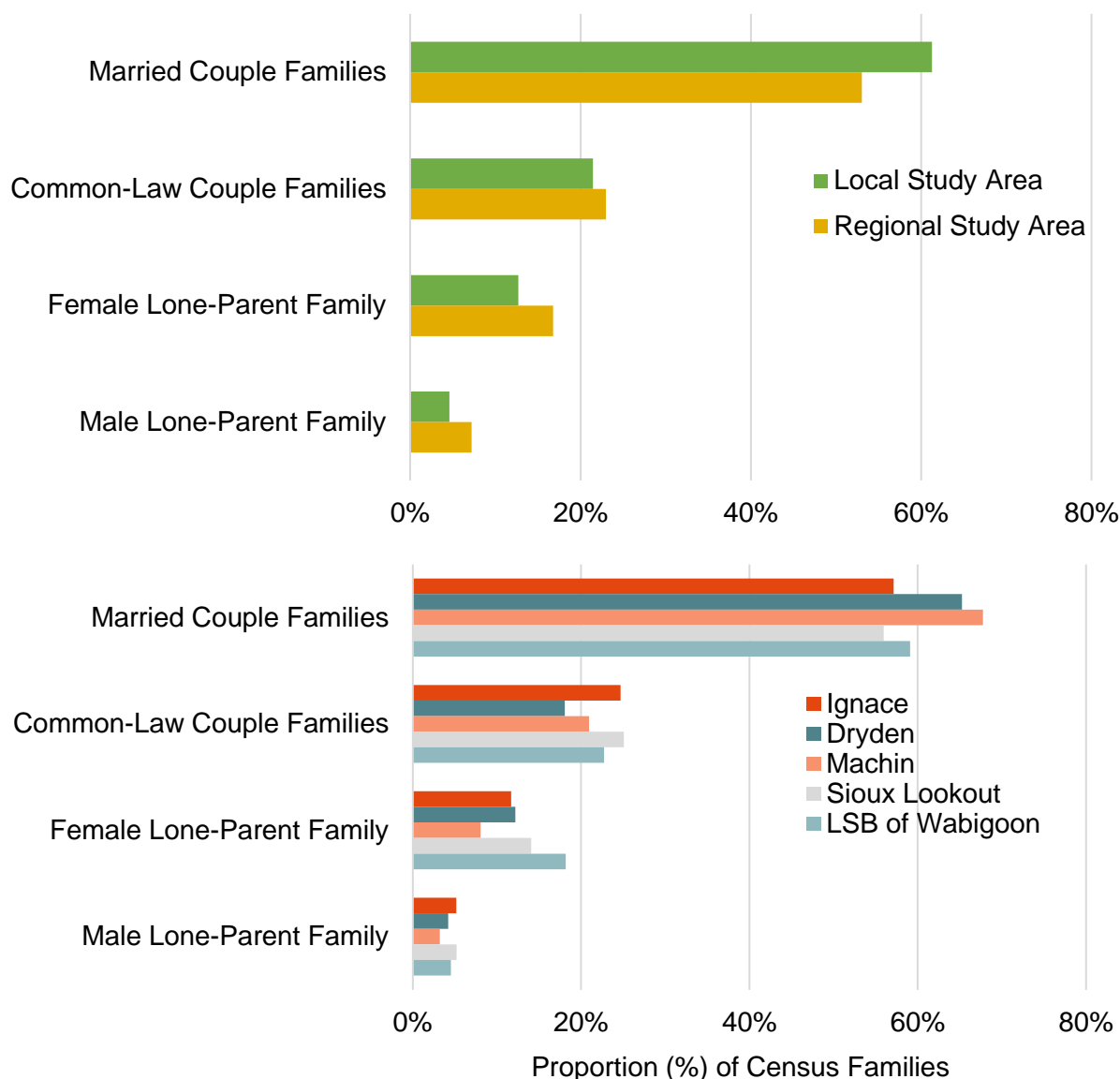
- The youth population in Machin decreased from 21% of the total population in 1996 to 13% in 2021 (230 youth in 1996 to 130 in 2021).
- The youth population in the LSB of Wabigoon has remained around 13% since 2011.
- The youth population in Sioux Lookout decreased from 23% of the total population in 1996 to 19% in 2021 (785 in 1996 to 1,135 in 2021). However, the total number of youth increased over the same period. The proportional decrease in youth population was due to a large increase in total population. (See **Section 2.2.2**).

Key person interviews noted that youth are leaving communities in the Local Study Area to pursue education and employment opportunities and often not returning (NWO Community and Baseline Studies Key Person Interview Program 2022). The general decline in the youth population and the growing population over 55 years old in the Local Study Area communities highlight the ongoing struggle to retain and attract working age individuals and families to the region.

2.2.4.2 Family Characteristics

Figure 2.2-8 shows the breakdown on census families by family types for the Local Study Area and Regional Study Area in 2021. A census family is defined as a married couple, common-law couple, or a lone-parent family with at least one child living in the same dwelling. Children may be biological, adopted, or fostered regardless of their age or marital status as long as they live in the dwelling and do not live with their children, married spouse, or common-law partner (Statistics Canada 2022a). For example, if a married couple has a child who lives in the same dwelling, but their child's spouse also lives with them, they will represent two distinct census families. Grandparents living with their grandchildren but with no parents living in the dwelling are also considered a census family.

Figure 2.2-8: Types of Census Families in the Local Study Area and Regional Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

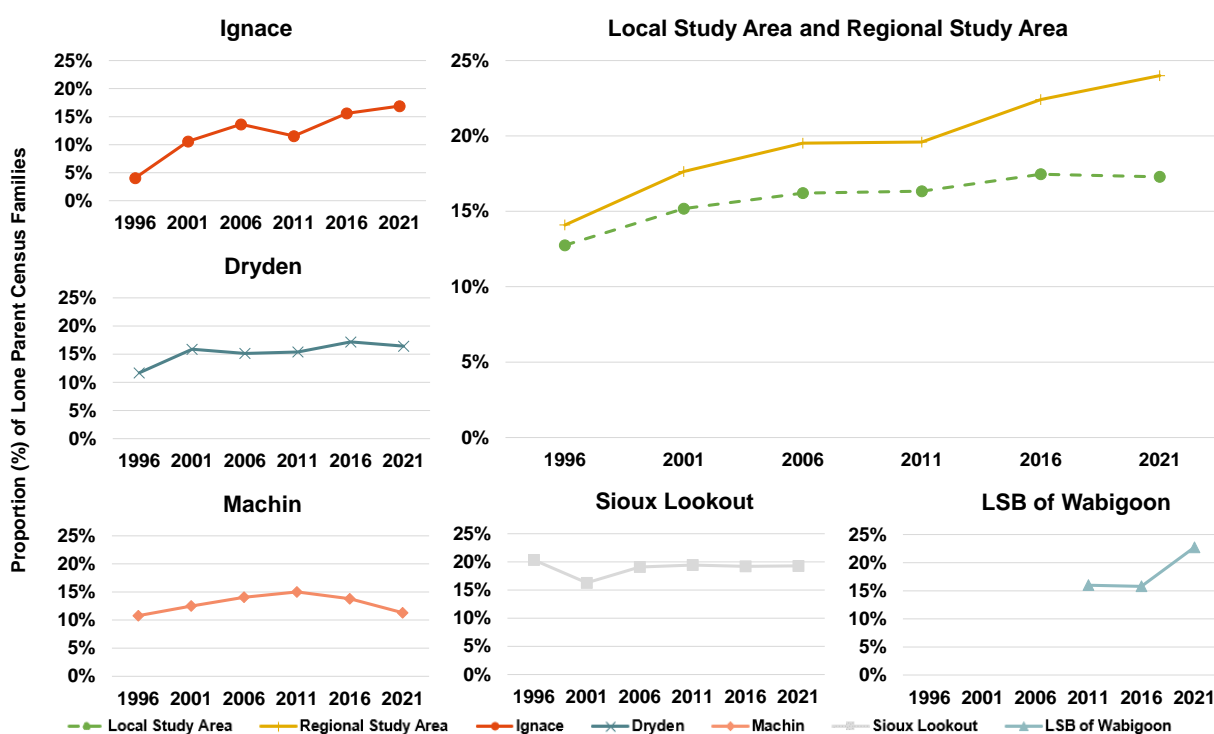
In 2021, the proportion of couple families represented 82% of census families (61% married couples and 21% common-law couples) in the Local Study Area. In the Regional Study Area, couple families represented 76% of census families (53% married couples and 23% common-law couples). The proportion of lone-parent families represented 18% of census families (13% female lone-parent families and 5% male lone-parent families) in the Local Study Area which is lower than the proportion of lone-parent families at 24% in the Regional Study Area (17%

female lone-parent families and 7% male lone-parent families). Notable observations among the Local Study Area communities are as follows:

- Machin has the largest proportion of census families which are married couples (68%), and Sioux Lookout has the smallest proportion (56%).
- Sioux Lookout has the largest proportion of census families which are common-law couples (25%), and Dryden has the smallest proportion (18%).
- The LSB of Wabigoon has the largest proportion of census families which are lone-parent families (18% women and 5% men), and Machin has the smallest proportion (8% women and 3% men).

Figure 2.2-9 shows the proportion of lone-parent census families in the Local Study Area and Regional Study Area from 1996 to 2021.

Figure 2.2-9: Proportion of Lone-Parent Families in the Local Study Area and Regional Study Area, 1996 to 2021¹



Source: Statistics Canada 1998, 2002, 2007, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.
Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1996 to 2006.

The proportion of lone-parent families increased slightly from 13% in 1996 to 17% in 2021 (455 families in 1996 to 790 families in 2021) in the Local Study Area. The proportion of lone-parent families increased from 14% in 1996 to 24% in 2021 (2,345 families in 1996 to 4,375 in 2021) in the Regional Study Area. The increase of lone-parent families was materially larger in the

Regional Study Area compared to the Local Study Area. Changes observed in the proportion of male and female lone-parent families in the Local Study Area and Regional Study Area are:

- Female lone-parent families in the Local Study Area represented 11% (or 395 families) of census families in 1996 and 13% (or 560 families) in 2021. Male lone-parent families in the Local Study Area represented 2% (or 60 families) of census families in 1996 and 5% (or 210 families) in 2021.
- Female lone-parent families in the Regional Study Area represented 11% (or 1,845 families) of census families in 1996 and 17% (or 3,060 families) in 2021. Male lone-parent families in the Regional Study Area represented 3% (or 500 families) of census families in 1996 and 7% (or 1,315 families) in 2021.

Notable observations for the Local Study Area communities are as follows:

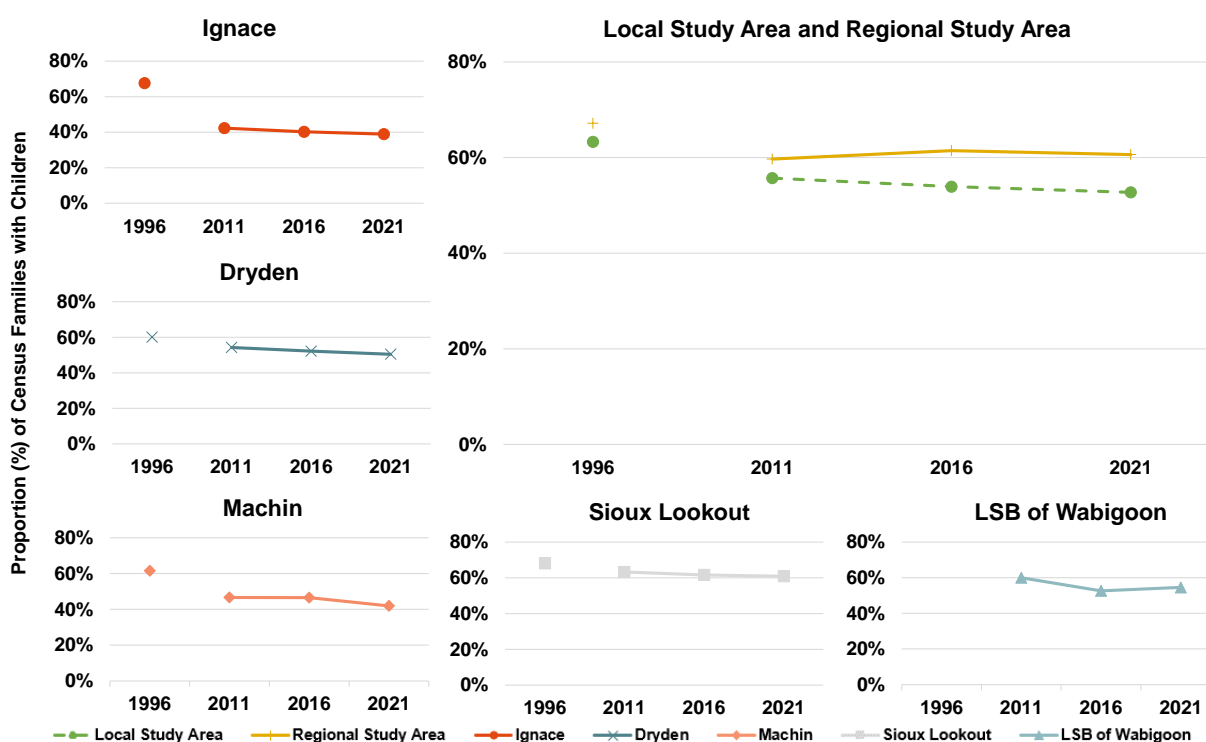
- In Ignace, the proportion of lone-parent families increased by a material amount from 4% (or 20 families) in 1996 to 17% (or 65 families) in 2021. This represented the largest increase in the proportion of census families among the Local Study Area communities. The proportion of female lone-parent families in Ignace increased from 4% (or 20 families) in 1996 to 14% (or 45 families) in 2021. The proportion of male lone-parent families increased from 0% in 1996 to 5% (or 20 families) in 2021.
- In Sioux Lookout, the proportion of lone-parent families has remained relatively constant at 19% since 1996. In 1996, Sioux Lookout had the largest proportion of lone-parent families (20%) and in 2021 had the second largest proportion. The proportion of female lone-parent families in Sioux Lookout decreased from 17% (or 155 families) in 1996 to 14% (or 230 families) in 2021. The proportion of male lone-parent families increased from 3% (or 30 families) in 1996 to 5% (or 85 families) in 2021.
- In 2021, Machin had the lowest proportion of lone-parent families (11%) among the Local Study Area communities. The proportion of census families has remaining relatively constant at 11% since 1996. The proportion of female lone-parent families in Machin remained similar around 8% (or 25 families in both 1996 and 2021) from 1996 to 2021. The proportion of male lone-parent families also remained constant around 3% (or 10 families in both 1996 and 2021) from 1996 to 2021.
- In 2021, the LSB of Wabigoon had the largest proportion of lone-parent census families at 23%. The number of female lone-parent families in the LSB of Wabigoon increased slightly from 15 families in 2011 to 20 families in 2021. The number of male lone-parent families remained constant at 5 families between 2011 and 2021.
- In Dryden, the proportion of lone-parent families increased from 12% (or 215 families) in 1996 to 16% (or 350 families) in 2021. The proportion of lone-parent families has remained relatively constant at 16% since 2001. The proportion of female lone-parent families in Dryden increased from 11% (or 195 families) in 1996 to 12% (or 260 families) in 2021. The proportion of male lone-parent families increased from 1% (or 20 families) in 1996 to 4% (or 90 families) in 2021.

The increasing trend of lone-parent census families was observed for both the Local Study Area and Regional Study Area and most of the Local Study Area communities. The increasing trend in lone parents has been observed both nationally and globally over the last few decades (Statistics

Canada 2022d). In 1970, there were 8.8 marriages per 1,000 people in Canada which decreased to 5.3 in 1996, and 3.9 by 2019 (Statistics Canada 2022d). This pattern was evident for the Regional Study Area, Local Study Area, and each of the Local Study Area communities, excluding Sioux Lookout which experienced a decrease to the proportion of married-couples and lone-parent families.

Figure 2.2-10 shows the proportion of census families with children in the Local Study Area and Regional Study Area in 1996, 2011, 2016, and 2021.

Figure 2.2-10: Proportion of Census Families with Children in the Local Study Area and Regional Study Area, 1996, 2011, 2016, and 2021¹



Source: Statistics Canada 1998, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1996 to 2006.

The proportion of families with children in the Local Study Area decreased from 63% in 1996 to 53% in 2021 (2,260 families in 1996 to 2,410 in 2021). Compared to a slight decrease in the proportion of families with children in the Regional Study Area from 67% in 1996 to 61% in 2021 (11,180 families in 1996 to 11,270 in 2016). Despite decreases to the proportion of families with children in both the Local Study Area and Regional Study Area, there were marginal increases to the total number of families with children resulting in a modest decrease to the proportion of census families with children. This trend is evident in Sioux Lookout, which experienced decreases to the proportion of census families with children, but not to the same magnitude as

other Local Study Area communities. Other notable trends in the proportion of census families with children in the Local Study Area communities include:

- In 1996, Ignace had the second largest proportion of census families with children at 68% (or 335 families) but declined materially to 39% (or 150 families) by 2021. As of 2021, Ignace has the lowest proportion of census families with children among the Local Study Area communities.
- The proportion of census families with children in Dryden decreased slightly from 60% in 1996 to 51% in 2016 (1,105 families in 1996 to 1,075 families in 2021).
- The proportion of census families with children also decreased materially in Machin from 62% (or 200 families) in 1996 to 42% (or 130 families) in 2021. Machin had the second lowest proportion of census families with children among the Local Study Area communities.
- The proportion of census families with children in Sioux Lookout decreased from 68% in 1996 to 61% in 2021 (620 families in 1996 to 995 families in 2021). Despite a decrease in the proportion of census families with children, the number of census families with children increased by 60% (or 375 families).
- The proportion of census families with children in the LSB of Wabigoon decreased slightly from 60% in 2011 to 55% in 2021 (75 families in 2011 to 60 families in 2021).

The declining proportion of census families with children reflects an aging population (see **Section 2.2.4.1**) and captures the challenges of attracting families to the Local Study Area and Regional Study Area. An older couple or parent are less likely to have children living at home. Also, the lack of available postsecondary educational programs offered in the Local Study Area means many children must leave their home community to obtain a higher level of education (GBA+ Workshop 2023). This can lead to youth leaving the community and not coming back or families migrating out of the community to provide their children with access to a wider variety of postsecondary educational programs.

Table 2.2-4 shows the average size of census families for the Regional Study Area and the Local Study Area communities.

Table 2.2-4: Average Size of Census Families in the Regional Study Area and Local Study Area Communities, 1996, 2006, 2011, 2016, and 2021

Community ¹	Average Census Family Size				
	1996	2006	2011	2016	2021
Ignace	3.1	2.8	2.6	2.6	2.5
Dryden	3.0	2.9	2.8	2.7	2.7
Machin	3.0	2.7	2.6	2.6	2.6
Sioux Lookout	3.2	2.9	2.9	2.9	2.9
LSB of Wabigoon	Not Reported	Not Reported	2.9	2.6	2.5
Regional Study Area	3.2	3.1	2.9	3.0	3.0

Source: Statistics Canada 1998, 2002, 2007, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.

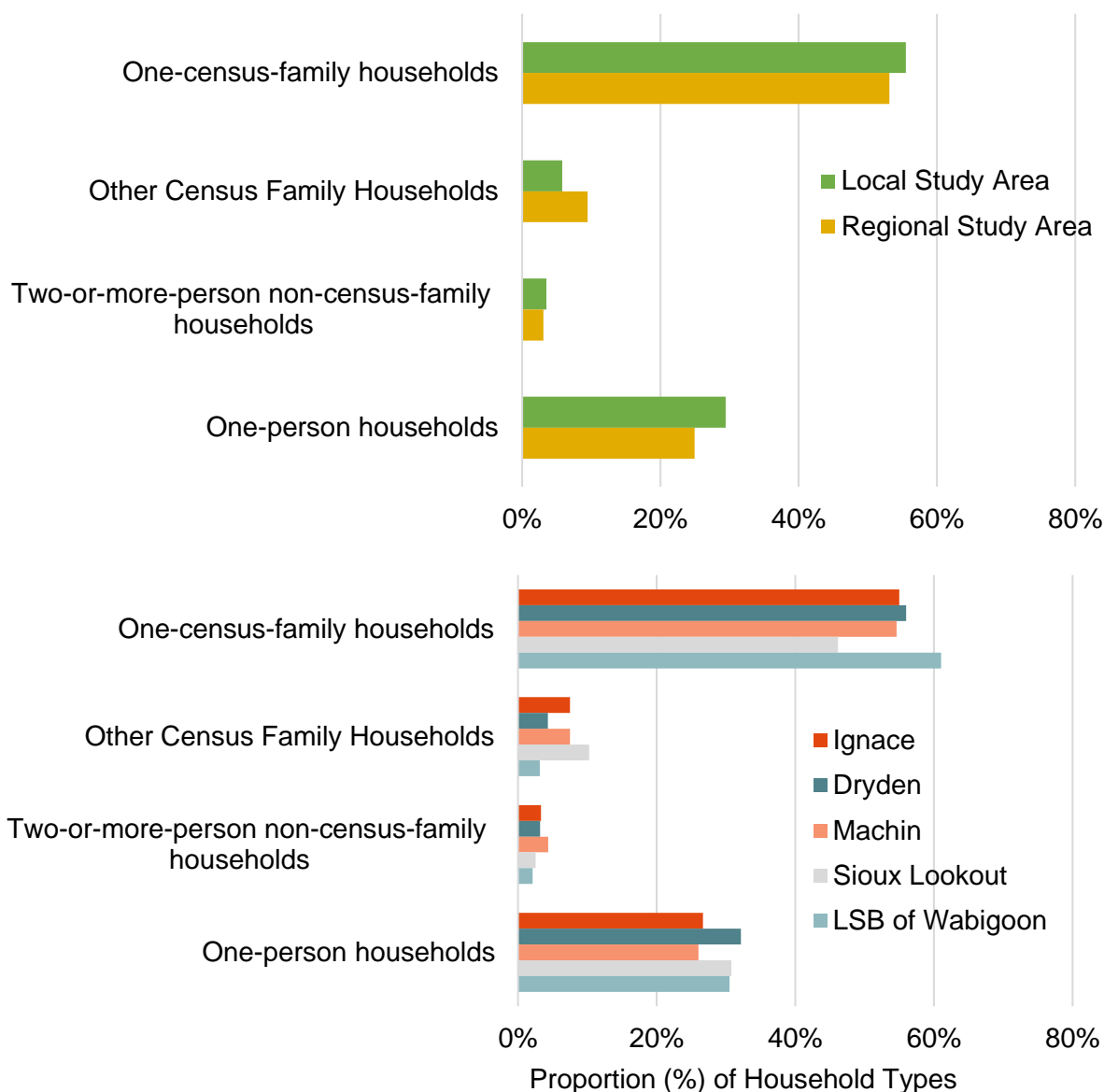
Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1996 to 2006.

The average size of census families has decreased in the Regional Study Area and in each of the Local Study Area communities. This reflects a decrease in the average number of persons per household (**Section 2.4.7**). The larger declines in Ignace and Machin are reflective of the decrease in the number of youth and number of census families with children. The decline in the average size of census families is reflective of a trend of women and families having fewer children, which coincides with national fertility rate trends, which have been declining since 2008 and reached a record low of 1.40 children per women in 2020 (Statistics Canada 2021b).

Figure 2.2-11 shows the proportion of household family types in the Local Study Area and Regional Study Area in 2021. A one-census family is a household which contains one family and no additional people who are not a part of the census family. Other census family households include households with more than one census family living in the dwelling, or a household with a census family and other members living in the household such as a friend or sibling of the parents. A non-census family household is a household comprised of one person or multiple people with none of them having children or living with a spouse or common-law partner (Statistics Canada 2022a).

Figure 2.2-11: Proportion of Household Family Types in the Local Study Area and Regional Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

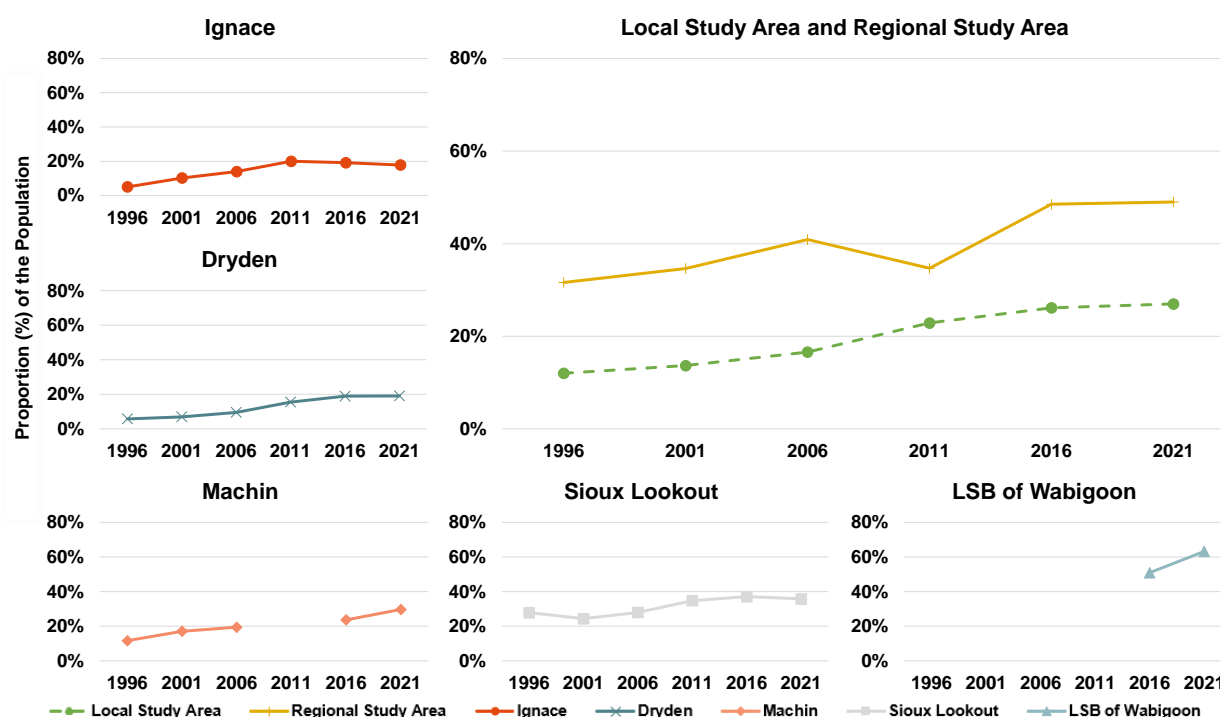
In 2021, one census family households represent 56% of households in the Local Study Area compared to 53% in the Regional Study Area. The proportion of one-person households is higher in the Local Study Area at 29% compared to 25% in the Regional Study Area. Notable observations of household types among the Local Study Area communities are as follows:

- The LSB of Wabigoon had the largest proportion of one census family households (61%). Machin and Ignace had the smallest proportion of one census family households among the Local Study Area communities (55% for both communities).
- Dryden had the largest proportion of one-person households (32%) and Sioux Lookout and the LSB of Wabigoon had the second largest proportion of one-person households (31% for both communities). Machin had the smallest proportion of one-person households (26%).
- Sioux Lookout also had the largest proportion of other census family households (10%). This can include multiple census family households and households with a census family and other people not a part of the census family.

2.2.4.3 Indigenous Identity

Figure 2.2-12 shows the proportion of the population who identify as Indigenous in the Local Study Area and Regional Study Area from 1996 to 2021. Indigenous identity refers to individuals who identify as a North American Indian (First Nation), Métis, Inuit, and/or those who reported as a Treaty Indian or Registered Indian and/or have membership in a First Nation or Indian Band (Statistics Canada 2022a).

Figure 2.2-12: Proportion of the Population Identifying as Indigenous in the Local Study Area and Regional Study Area, 1996 to 2021¹



Source: Statistics Canada 1998, 2002, 2007, 2013, 2017, 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1996 to 2011 and Machin for 2011.

In the Regional Study Area, the proportion of the population who identify as Indigenous increased from 32% in 1996 to 49% in 2021. The Local Study Area also has a large proportion of the population who identify as Indigenous, albeit a smaller proportion compared to the Regional Study Area. The proportion of the population who identify as Indigenous in the Local Study Area increased from 12% 1996 to 27% in 2021. Notable trends in the proportion of the population who identify as Indigenous for the Local Study Area communities are as follows:

- The Indigenous identity population in Ignace increased from 5% in 1996 to 18% in 2021. The Indigenous identity population in Ignace represented the smallest proportion of the total population among the Local Study Area communities.
- The Indigenous identity population in Dryden increased from 6% in 1996 to 19% in 2021. Key person interviews in Dryden provided that the Indigenous identity population in 2021 was undercounted in the Census (NWO Baseline Studies Key Person Interview Program 2022-2023).

- The Indigenous identity population in the LSB of Wabigoon was 51% in 2016 and 63% in 2021. Among the Local Study Area communities, the LSB of Wabigoon had the largest proportion of the population who identify as Indigenous.
- The proportion of the population who identifies as Indigenous in Machin increased from 12% in 1996 to 30% in 2021.
- The proportion of the population who identifies as Indigenous in Sioux Lookout increased from 28% in 1996 to 36% in 2021. Sioux Lookout has the largest Indigenous identity population (2,090 people) among the Local Study Area communities and represents 49% of the Indigenous identity population in the Local Study Area.

The large Indigenous identity population in Sioux Lookout can be attributed to more Indigenous people moving to Sioux Lookout from communities north of Sioux Lookout. Sioux Lookout is an important service hub for northern communities with the presence of the Sioux Lookout Meno Ya Win Health Centre, Sioux Lookout First Nations Health Authority, four tribal councils, and the Pelican Falls First Nation High School. Both health centres provide services to people in Sioux Lookout and the surrounding areas (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

Dryden is also a service hub for Indigenous people, with a well-positioned Native Friendship Centre, and an increase in Indigenous service providers and existing service providers providing more Indigenous related services (NWO Baseline Studies Key Person Interview Program 2022-2023). The large Indigenous identity populations in Dryden, Machin, and the LSB of Wabigoon have also been linked to members of nearby First Nation communities living in the community (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

The increase in the proportion and number of Indigenous peoples mirrors population trends noted by Statistics Canada (2021a), which projects the Indigenous identity population in Canada will increase at a faster rate than the non-Indigenous identity population through 2041. Reasons include a higher fertility rate, changes in self-reporting, and legislative changes. For example, legislative changes have allowed more individuals who live off-reserve to apply for Registered Indian status. The changes in self-reporting can be linked to response mobility, which is the change in one's response to a question overtime. For Indigenous identity reporting in Canada, research has found people with a certain degree of mixed ancestry was correlated to response mobility (O'Donnell and LaPointe 2019). By tracking individuals and their change in response to Indigenous identity questions between the 2006, 2011, and 2016 Censuses, it was found that people who previously identified as non-Indigenous were identifying as Indigenous in following surveys. There was also a portion who previously identified as Indigenous but identified as non-Indigenous in the following survey, but this proportion was smaller than the people who began to identify as Indigenous (O'Donnell and LaPointe 2019). The changes in responses over time may be influenced by factors such as a respondents' social environment, understanding of their family history, or growing pride in their Indigenous ancestry (IAWG October 06, 2021).

Table 2.2-5 shows the proportion of the Indigenous identity population disaggregated by Indigenous identity for the Local Study Area and Regional Study Area in 2021. Individuals who self-identify as Métis may not be a citizen or member in a Métis organization or settlement.

Table 2.2-5: Indigenous Identity Breakdown for the Local Study Area and Regional Study Area, 2021

Indigenous Identity ¹	Ignace	Dryden	Machin	Sioux Lookout	LSB of Wabigoon	Local Study Area	Regional Study Area
First Nations	64%	52%	46%	90%	88%	73%	86%
Métis	36%	46%	54%	9%	6%	25%	13%
Inuk (Inuit)	0%	1%	0%	0%	0%	0%	0%
Multiple Indigenous Identities	0%	1%	0%	0%	6%	1%	0%
Not Included Indigenous Identities	0%	0%	0%	0%	0%	0%	1%

Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

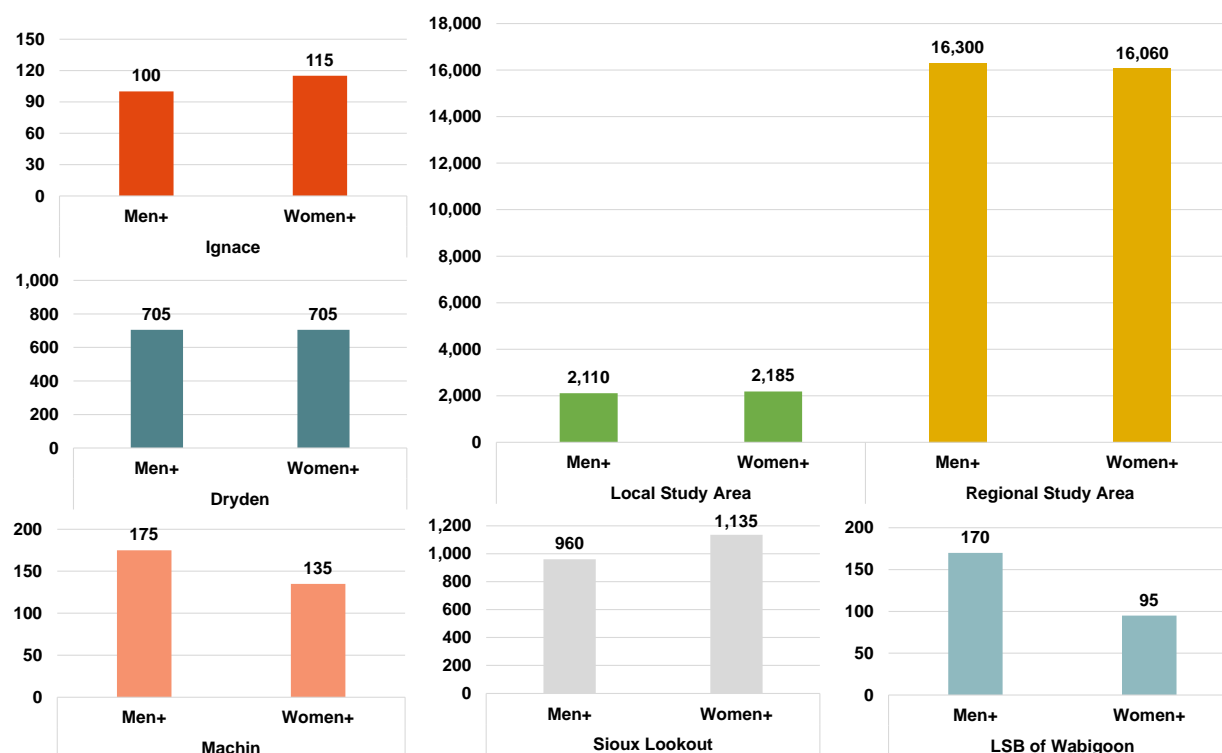
1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

In 2021, Indigenous peoples primarily identified as First Nations or Métis in the Local Study Area and Regional Study Area. The Local Study Area has a larger proportion of Métis relative to the Regional Study Area, with 25% of the Indigenous identity population identifying as Métis and 73% First Nations. In the Regional Study Area, of the Indigenous identity population, 86% identified as First Nations and 13% identified as Métis. Notable highlights of Indigenous people's Indigenous identity breakdown for the Local Study Area communities are as follows:

- Local Study Area communities have a larger proportion of Indigenous people who identify as First Nations compared to other Indigenous groups, excluding Machin, where there is a larger proportion of Métis people.
- Among the Local Study Area communities, Sioux Lookout and the LSB of Wabigoon have the largest proportion of their Indigenous identity population that identify as First Nations (90% in Sioux Lookout and 88% in the LSB of Wabigoon).
- Machin and Dryden have the largest proportion of their Indigenous identity population that identify as Métis (54% in Machin and 46% in Dryden).
- In Dryden, 1% of the Indigenous identity population identify as Inuk (10 people). This represents one third of the entire Inuk population across the Regional Study Area (30 people).

Figure 2.2-13 shows the Indigenous identity breakdown by gender for the Local Study Area and Regional Study Area in 2021.

Figure 2.2-13: Number of People Identifying as Indigenous by Gender in the Local Study Area and Regional Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

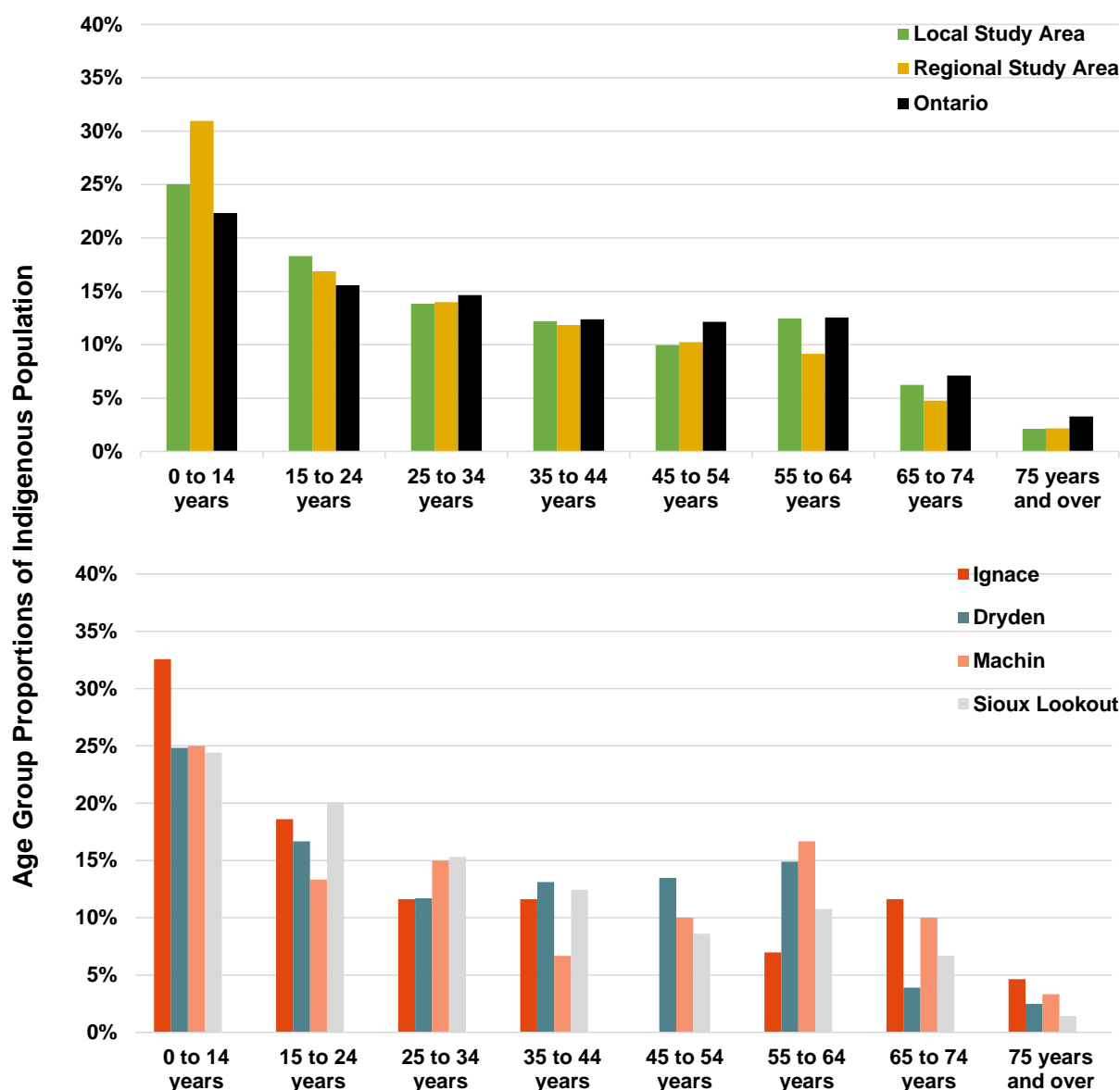
1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

In the Local Study Area, there is a similar number of Indigenous men (2,110) compared to Indigenous women (2,185). In the Regional Study Area, there also is a similar number of Indigenous men (16,300) compared to Indigenous women (16,060). Notable highlights of Indigenous people's breakdown by gender for the Local Study Area communities are as follows:

- Among the Local Study Area communities, Ignace and Dryden are the only communities which have a relatively equal number of Indigenous men and women.
- Sioux Lookout is the only community that had a larger number of Indigenous women (1,035) than Indigenous men (960) living in the community.
- Machin and the LSB of Wabigoon had a higher number of Indigenous men (175 in Machin and 170 in the LSB of Wabigoon) compared to Indigenous women (135 in Machin and 95 in the LSB of Wabigoon).

Figure 2.2-14 shows the distribution of the Indigenous identity population by age cohorts for the Local Study Area, Regional Study Area, and Ontario for 2021.

Figure 2.2-14: Indigenous Identity Population Age Distribution for the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023c. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

The Indigenous identity population distribution by age cohort in the Regional Study Area has a larger proportion of the population under 25 years old and a smaller proportion of the population aged 55 and older when compared to the Local Study Area and Ontario. The Local Study Area has a slightly larger proportion of the population under 25 years old and slightly smaller

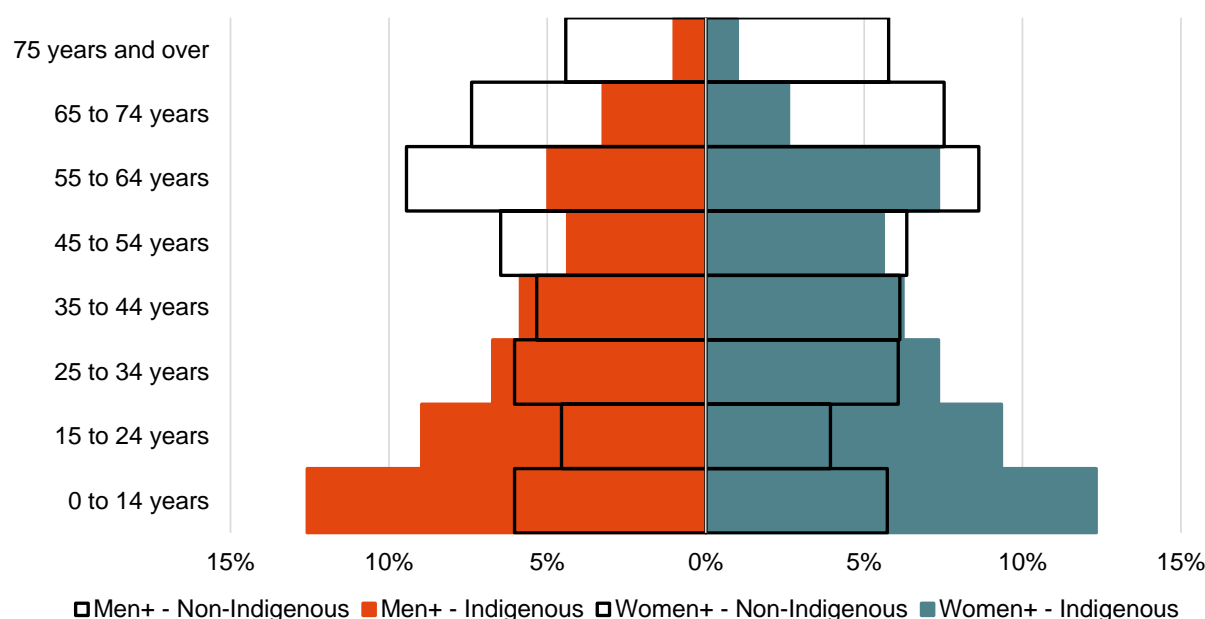
proportion of the population aged 55 and older when compared to Ontario. Notable observations for Local Study Area communities include:

- Among the Local Study Area communities, Ignace and Sioux Lookout have the largest proportion of Indigenous people who are under 25 years old; 51% in Ignace and 44% in Sioux Lookout. Machin has the smallest proportion of Indigenous people who are under 25 years old at 38%.
- Machin and Ignace have the largest proportion of Indigenous people who are 55 years and older; 30% in Machin and 23% in Ignace. Sioux Lookout has the smallest proportion of Indigenous people who are 55 years and older at 19%.

In the key person interviews it was noted that most of the smaller settlements and LSBs not reported on in detail by Statistics Canada are also home to Indigenous people and households. (NWO Baseline Studies Key Person Interview Program 2022-2023).

Figure 2.2-15 compares the proportion of the Indigenous and non-Indigenous identity populations by age and gender in 2021. The age cohorts are presented along the vertical axis with each block representing the proportion of men or women for the corresponding year. The horizontal axis presents the proportion of the total population with the population of women presented on the right side and the population of men on the left side.

Figure 2.2-15: Population Age and Gender Distribution for Indigenous and non-Indigenous Peoples in the Local Study Area, 2021¹



Source: Statistics Canada 2023c. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

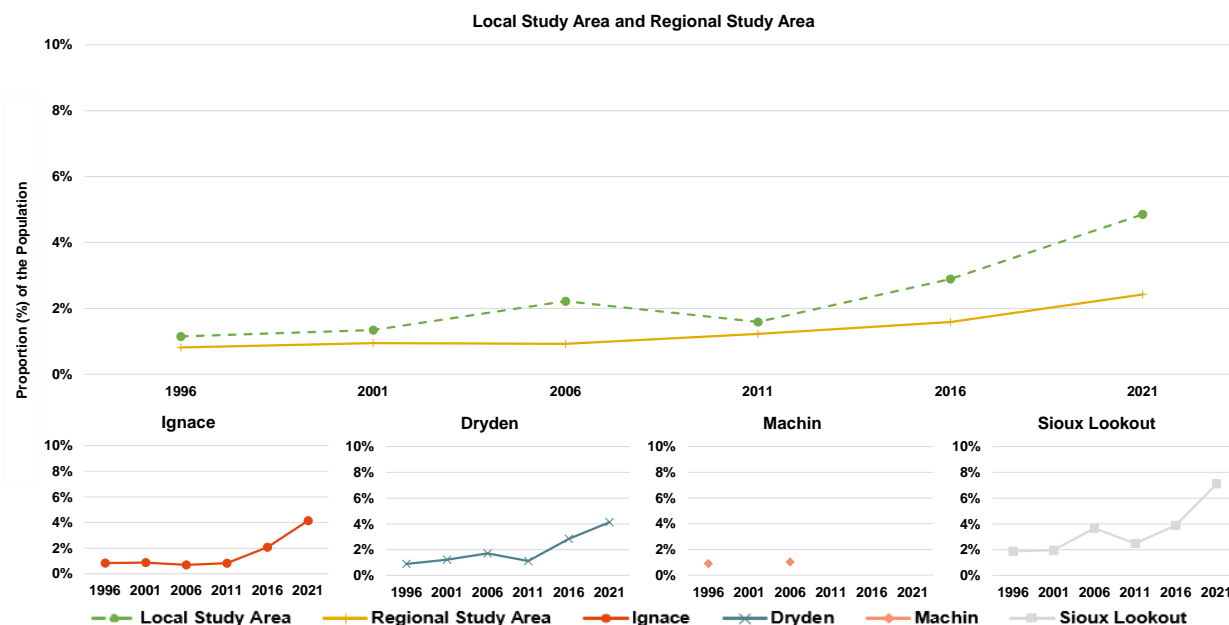
The Indigenous identity population in the Local Study Area was notably younger than the non-Indigenous identity population in 2021. For the Indigenous identity population, 43% (or 1,735 people) of the population were younger than 25 years old compared to 20% (or 2,315 people) for the non-Indigenous identity population. For the Indigenous identity population, 8% (or 315 people) of the population were 55 years old or older compared to 25% (or 2,870 people) for the non-Indigenous identity population.

2.2.4.4 Visible Minorities

Figure 2.2-16 shows the proportion of the population who identify as visible minorities in the Local Study Area and Regional Study Area from 1996 to 2021.¹⁴ Visible minorities are persons other than Indigenous peoples who are non-Caucasian in race or non-white in colour and includes: Chinese, South Asian, Black, Filipino, Latin American, Southeast Asian, Arab, West Asian, Korean, Japanese and others (Statistics Canada 2022a).

¹⁴ No visible minorities were reported to live in the LSB of Wabigoon in 2016 and 2021, and the 2011 NHS did not report on the LSB of Wabigoon.

Figure 2.2-16: Visible Minorities in the Local Study Area and Regional Study Area, 1996 to 2021¹



Source: Statistics Canada 1998, 2002, 2007, 2013, 2017, 2022a. Statistics Canada 2011 NHS. See **Appendix 2B Supplemental Data.**

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1996 to 2011 and Machin for 2011.

The communities in the Local Study Area are largely Caucasian or Indigenous peoples; however, the visible minority population is increasing in all communities, excluding Machin. The growth of the visible minority population has been more pronounced in the Local Study Area compared to the Regional Study Area. In 1996, the visible minority population in the Local Study Area represented 1.1% (150 people) of the total population and increased to 4.9% (770 people) by 2021. The visible minority population had steadily doubled in both size and proportion in the Regional Study Area from 0.8% (515 people) of the total population in 1996 to 2.4% (1,600 people) in 2016. Notable observations among the Local Study Area communities include:

- The visible minority population in Ignace increased from 0.8% in 1996 to 4.1% in 2021. Since 2011, the visible minority population more than doubled from 0.8% of the total population (10 people) to 2.1% in 2016 (25 people) before doubling again to 4.1% in 2021 (50 people).
- The visible minority population in Dryden has increased from 0.9% (60 people) of the total population in 1996 to 4.1% (305 people) in 2021.
- The visible minority population in Sioux Lookout has increased from 1.9% (65 people) of the total population in 1996 to 7.1% (415 people) in 2021. The 415 visible minorities in Sioux Lookout represent over 25% of visible minorities in the Regional Study Area. As of 2021,

Sioux Lookout has the largest number and proportion of visible minorities among the Local Study Area communities.

- The visible minority population in Machin is small and fluctuates between 0 and 10 people, which is likely attributed to random rounding which randomly rounds population counts, excluding total population, up or down to a multiple of 5 or 10. Since 2006, there were 0 visible minorities reported in Machin.

Both Dryden and Sioux Lookout reported a material decline in the visible minority population from 2006 to 2011, followed by a material increase in the population from 2011 to 2016. Trends in the data, particularly related to the 2011 National Household Survey, should be interpreted with caution due to a shift from a mandatory to an optional response survey in that year which resulted in a higher non-response rate.

Currently, there are immigration programs in Ontario which include the Rural and Northern Immigration Pilot program and the Ontario Immigrant Nominee Program. The Rural and Northern Immigration Pilot Program takes place from November 2019 to February 2024, and was recently expanded to include communities in northwest Ontario for the Thunder Bay region including Ignace, Dryden, and Sioux Lookout (Thunder Bay CEDC n.d.; Government of Canada 2023). The Rural and Northern Immigration Pilot Program has resulted in over 400 candidates for permanent residence through nominations by the Thunder Bay CEDC and from 2019 to 2021 included 229 job offers, resulting in an additional 92 jobs in the local economy (Thunder Bay CEDC n.d.; Rocha 2023). The Ontario Immigrant Nominee Program is available to employers by facilitating the immigration of managerial, professional, and skilled foreign workers and international students to address resourcing needs (Government of Ontario 2023h). The Ontario Immigrant Nominee Program is available across Ontario and awards higher scores for job offers and places of study within northern Ontario (Government of Ontario 2023h). The Ontario Immigrant Nominee Program has grown annually and issued a total of 9,750 nominations to successful applicants in 2022 (Government of Ontario 2021j, 2022i).

2.2.4.5 Gender Identity

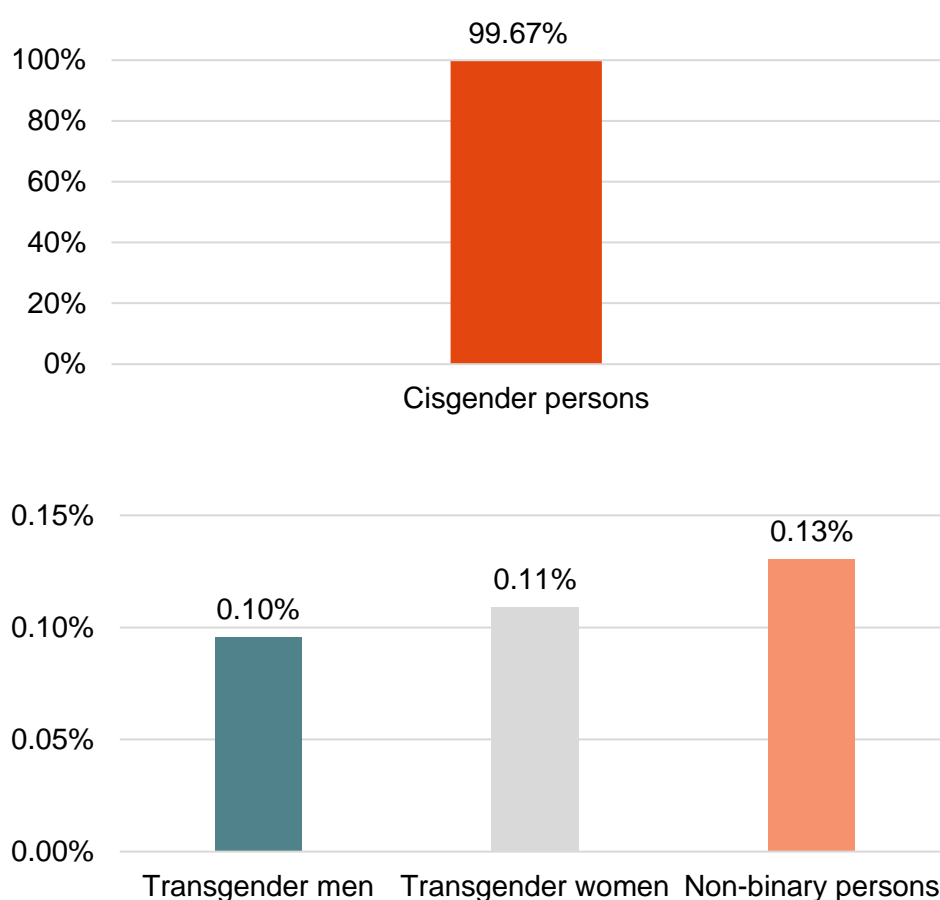
In 2021, Statistics Canada began to report on gender identity in the Census of Population, as opposed to sex assigned at birth in previous censuses. Gender identity is an individual's personal and social identity as a man, woman, or non-binary person (Statistics Canada 2022a). See **Section 2.1.2.1.1** for limitations of comparisons between gender and sex over time. Gender identity is reported as men+ (i.e., cisgender men, transgender men, and some non-binary persons) and women+ (i.e., cisgender women, transgender women, and some non-binary persons). A cisgender person is somebody whose gender identity is the same as their sex assigned at birth and a transgender person is somebody whose gender does not correspond to their sex assigned at birth (Statistics Canada 2022b). A non-binary person is an individual who is not exclusively a man or woman (e.g., fluid, Two-Spirit). Transpersons and non-binary persons represent a small proportion of Canadians and for confidentiality reasons data are only available at the national, provincial, and Census Metropolitan Area levels. The Thunder Bay Census Metropolitan Area is the nearest Census Metropolitan Area to the Local Study Area. Only information on Ontario is reported in this section.

The shift in reporting on gender identity and collecting information on a person's sex assigned at birth and gender identity reflect the evolving acceptance and understanding of gender identity (Statistics Canada 2022b). The reporting of gender identity is to provide information to public

decision makers, employers, providers of health care and social services, and educators to better meet the needs of all Men+ and Women+, including gender diverse people. Gender identity is typically formed early in life. People generally use gender stereotypes in their behaviours, attitudes, and dress to express their gender identity (Government of Quebec 2023). Ensuring people are free of stereotypes promotes gender diversity and the value of equality between men and women.

Figure 2.2-17 shows the proportion of gender identity for the population aged 15 years and older in Ontario, in 2021.

Figure 2.2-17: Gender Identity for the Population 15 Years and Older in Ontario, 2021¹



Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for Local Study Area or Regional Study Area.

In 2021, over 99% of the population in Ontario are cisgender persons (i.e., gender identity is the same as their sex assigned at birth). In Ontario, approximately 1 in every 300 people identify as

a transgender or non-binary person. These proportions are similar to trends in Canada with approximately 1 in every 300 Canadians identified as transgender or non-binary in 2021 (Statistics Canada 2022b).

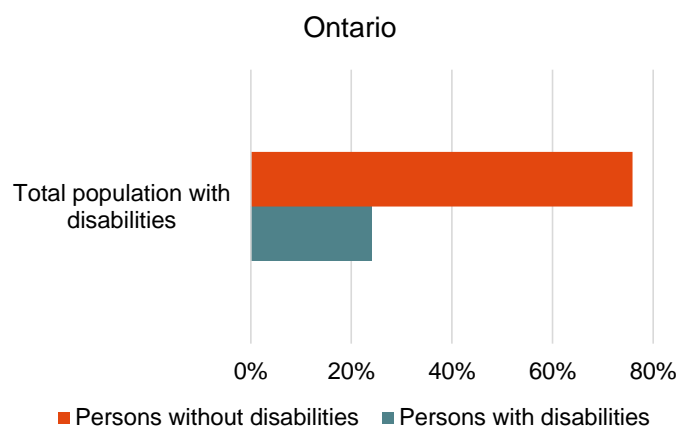
Within the Local Study Area, key person interviews noted that 2SLGBTQQIA+ (two-spirit, lesbian, gay, bisexual, transgender, queer or questioning, intersex, and asexual) population is larger than people think and many experience small community isolation and challenges with mental health (GBA+ Workshop 2023). The Rainbow Alliance Dryden organization meets at least once a month to provide support, education, and awareness for the 2SLGBTQQIA+ community and plan for Pride month each June (Youthline n.d.). In Sioux Lookout, some parents sought out to form a 2SLGBTQQIA+ parent support group to provide help and educate residents on topics such as gender and sexual identity (Bonello 2020).

2.2.4.6 Persons with Disabilities

A disability may be present from birth, from an accident, or develop over time. There are a variety of disabilities, both visible and not visible, which include physical, cognitive, social, and learning disabilities and disorders, hearing, vision, mental health, environmental sensitivities, and other conditions (OHRC n.d). Mental health is the state of psychological and emotional well-being of an individual (Government of Canada 2020). A cognitive disability is identified as a disability which can impair learning, memory, developmental, or other aspects of cognitive capacity (Statistics Canada 2018). Persons with a disability represent a small proportion of Canadians and for confidentiality reasons data are only available at the national, provincial, and Census Metropolitan Area levels. Information is not available from Statistics Canada for the Local or Regional Study Areas. Only information on Ontario is reported in this section.

Figure 2.2-18 shows the proportion of the population ages 15 years and older in Ontario with a disability in 2017. Persons with disabilities are identified through disability screen questions, and only individuals who report a limitation in their day-to-day activities are identified as having a disability (Statistics Canada 2018).

Figure 2.2-18: Disabilities for the Population Ages 15 Years and Older in Ontario, 2017¹



Source: Statistics Canada (2017) Canadian Survey on Disability. See **Appendix 2B Supplemental Data**.

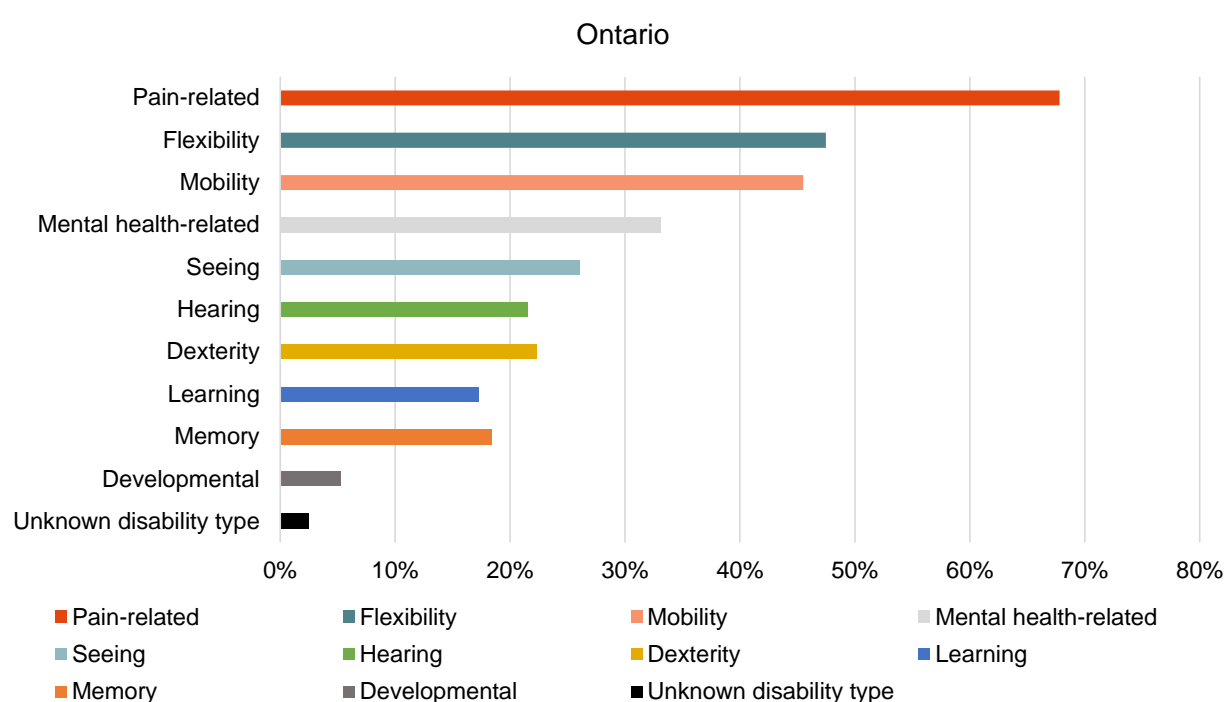
Notes:

1. Data were not available for the Local Study Area or Regional Study Area.

In Ontario, about 24% of the population have a disability which limits their day-to-day activities and 76% of the population do not have a disability. For people 65 years and older, about 43% of people have a disability (Statistics Canada 2018).

Figure 2.2-19 shows the breakdown of disabilities, limitations, and disorders for people 15 years and older with disabilities in Ontario in 2017. A person with a disability may have multiple conditions and limitations which results in the types of limitations totaling to over 100%.

Figure 2.2-19: Disability Types of Limitations for the Population Ages 15 Years and Older in Ontario, 2017¹



Source: Statistics Canada (2017) Canadian Survey on Disability. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the Local Study Area or Regional Study Area.

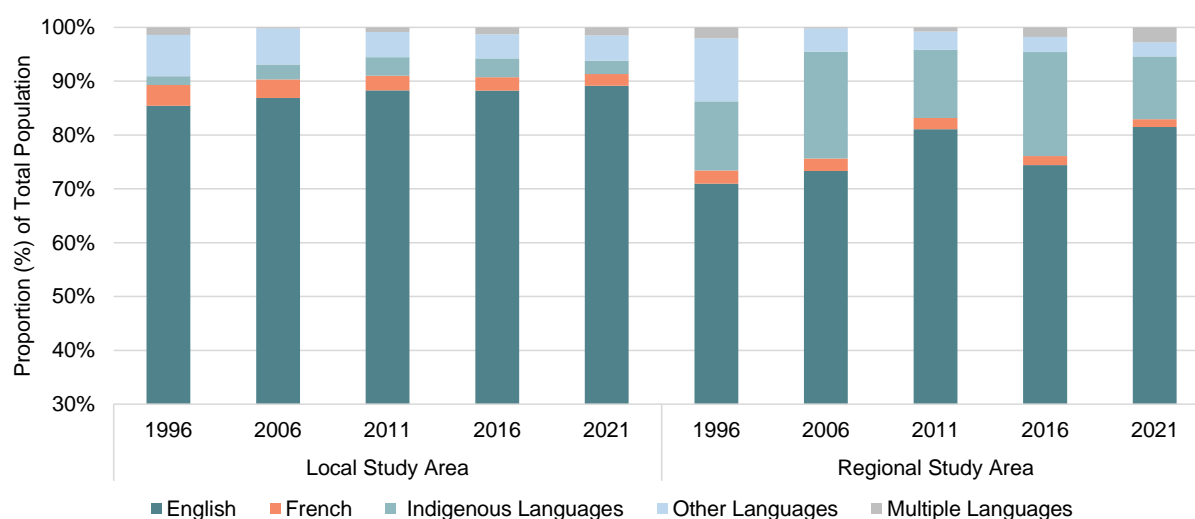
In 2017, most people with disabilities in Ontario experienced limitations in their everyday life due to challenges related to pain (68%), flexibility (48%), mobility (46%), and mental health (33%). People with disabilities related to sight (26%), hearing (22%), and dexterity (22%) account for over 20% of the population with disabilities. Cognitive (or mental) disorders can include disabilities related to learning (17%), memory (18%), and developmental (5%) are the least common disabilities in Ontario.

2.2.4.7 Language

Figure 2.2-20 shows the proportional breakdown of mother tongue for the total population for the Local Study Area and Regional Study Area from 1996 to 2021. Mother tongue is defined as the first language(s) learned at home in childhood and still understood by the individual at the

time of the census (Statistics Canada 2022a). The most common mother tongues are English, French, and Indigenous languages. Indigenous languages are spoken throughout the Regional Study Area, and to a lesser extent in the Local Study Area¹⁵. Multiple languages refer to individuals who learned more than one language in childhood and still understand them at the time of the census.¹⁶

Figure 2.2-20: Mother Tongue in the Local Study Area and Regional Study Area, 1996 to 2021¹



Source: Statistics Canada 1998, 2002, 2007, 2012, 2017, 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 1996 to 2021. Data were not available for the LSB of Wabigoon for 1996 to 2006.

Individuals whose mother tongue is English represent the largest proportion of the population in the Regional Study Area and Local Study Area. Notable observations in the Local Study Area and Regional Study Area are as follows:

- In the Local Study Area, individuals whose mother tongue is English represent 88.2% (13,990 people) of the population in 2021, which increased from 84.7% (11,080 people) in 1996. In the Regional Study Area, individuals whose mother tongue is English represent 80.5% (53,105 people) of the total population in 2021, which increased from 70.5% (44,660 people) in 1996.

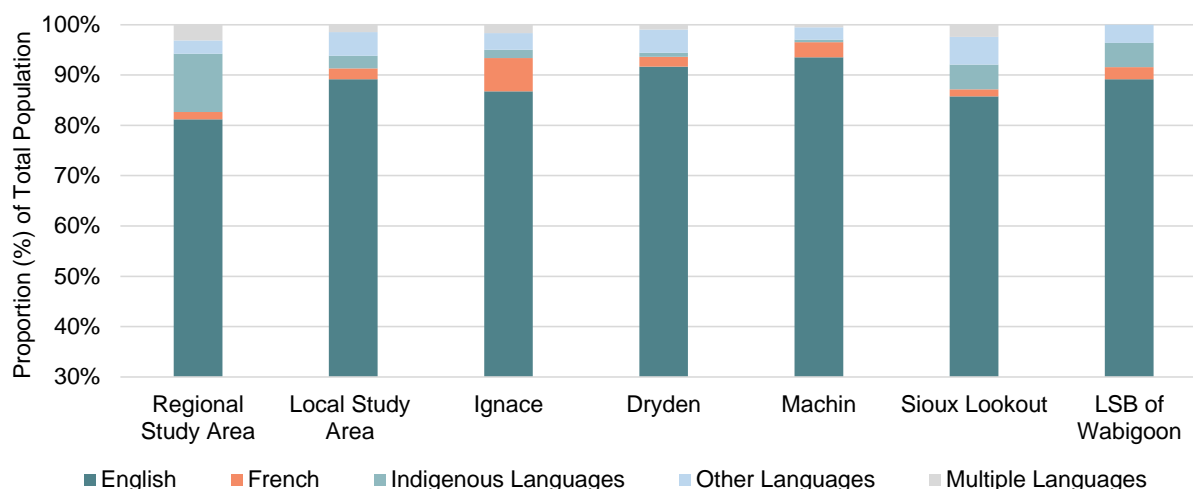
¹⁵ Statistics Canada defines Indigenous language as a non-official language. Other languages are also classified as non-official languages (Statistics Canada 2022a).

¹⁶ Multiple languages includes: English and French; English and non-official languages; French and non-official languages; and English, French, and non-official languages.

- In the Local Study Area, individuals whose mother tongue is an Indigenous language increased slightly from 1.6% (210 people) of the population in 1996 to 2.5% (390 people) in 2021.
- In the Local Study Area, individuals who speak another language decreased from 7.6% (1,000 people) of the population in 1996 to 4.5% (685 people) in 2021.
- The second largest proportion of mother tongue for the Regional Study Area is for Indigenous languages. The share of people whose mother tongue is an Indigenous language decreased from 12.7% (8,065 people) in 1996 to 11.5% (7,590 people) of the total population in 2021.
- There was a material decrease in the proportion of people whose mother tongue is an Indigenous language from 2016 to 2021 for both the Local Study Area (3.4% in 2016 to 2.5% in 2021) and Regional Study Area (19.2% in 2016 to 11.5% in 2021).
- In the Local Study Area, there was a decrease in the proportion of the population whose mother tongue is French from 3.8% (500 people) in 1996 to 2.1% (340 people) in 2021. There was a similar decrease in the Regional Study Area from 2.4% (1,535 people) in 1996 to 1.5% (960 people) in 2021. The decrease in the proportion of French speaking residents may be attributed to dissatisfaction of health care services, diversity and inclusion services, and transportation as found in a study completed by the Northern Policy Institute (2022).

Figure 2.2-21 shows the proportional breakdown of the total population by mother tongue for the Local Study Area and Regional Study Area in 2021.

Figure 2.2-21: Mother Tongue in the Local Study Area and Regional Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

In the Local Study Area, 88.2% (13,990 people) of the population mother tongue is English, other languages represent 4.6% (735 people) of the population and Indigenous languages

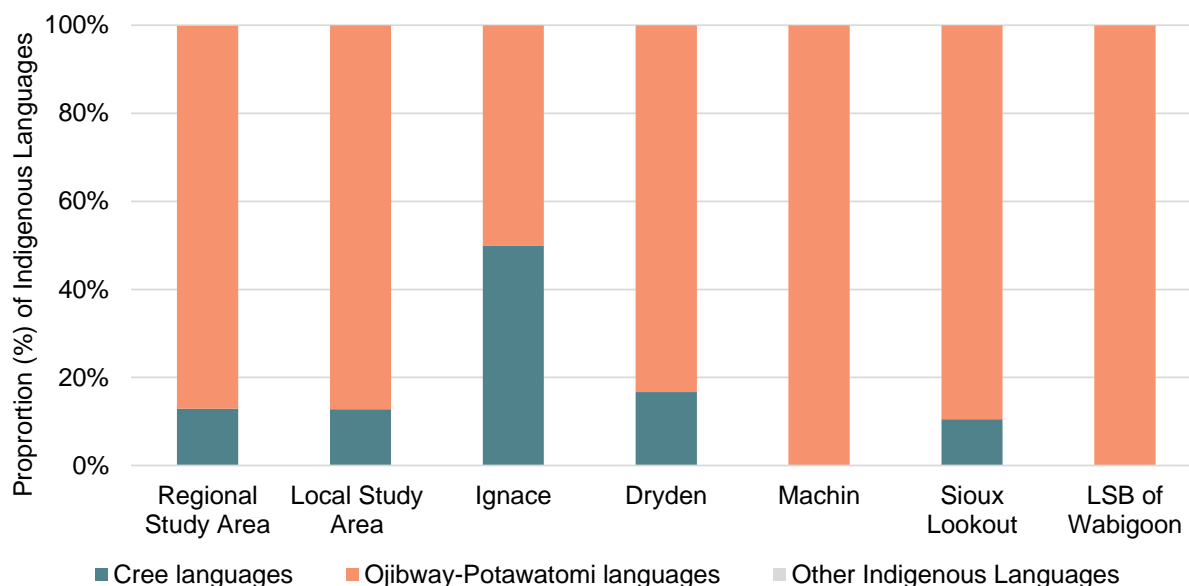
represent 2.5% (390 people) of the population in 2021. In the Regional Study Area, 80.5% (53,105 people) of the population mother tongue is English and 11.5% (7,590 people) mother tongue is an Indigenous language. In the Local Study Area, 2.1% (340 people) of the population mother tongue is French compared to 1.5% (960 people) in the Regional Study Area. Notable observations about mother tongue among the Local Study Area communities are as follows:

- In Ignace, 87.1% (1,050 people) of the populations mother tongue is English and 6.6% (80 people) is French. Ignace has the largest proportion of residents whose mother tongue is French among Local Study Area communities, which represents 23.5% of the population whose mother tongue is French in the Local Study Area and 8.3% in the Regional Study Area.
- In Dryden, 90.3% (6,995 people) of the populations mother tongue is English, 1.9% (140 people) is French, and 4.5% (355 people) is another language.
- In Machin, 92.9% (940 people) of the population mother tongue is English, 3.0% (30 people) is French, and 2.5% (25 people) is another language. Machin has the largest proportion of residents whose mother tongue is English among Local Study Area communities.
- In Sioux Lookout, 85.0% (4,965 people) of the population mother tongue is English, 4.9% (285 people) is an Indigenous language, and 5.5% (320 people) is another language. Sioux Lookout has the largest proportion of residents whose mother tongue is an Indigenous language or other language. Sioux Lookout also has the lowest proportion of residents whose mother tongue is English among Local Study Area communities. In Sioux Lookout, 2.4% (140 people) of the population mother tongue consists of multiple languages, which is the highest among the Local Study Area communities.
- In the LSB of Wabigoon, 88.3% (370 people) of the population mother tongue is English, 4.8% (20 people) is an Indigenous language, and 3.6% (15 people) is another language.

Ignace is one of 26 communities across Ontario which are currently designated as having a notable francophone population and included in the *French Language Services Act* (Government of Ontario 1990). The act ensures that governmental services are offered in French, excluding hospitals and nursing homes services.

Figure 2.2-22 shows the proportional breakdown of the population whose mother tongue is an Indigenous language for the Local Study Area and Regional Study Area in 2021.

Figure 2.2-22: Mother Tongue as an Indigenous Language in the Local Study Area and Regional Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

The proportion of the population whose mother tongue is an Indigenous language is composed of about 13% Cree languages and 87% Ojibway-Potawatomi languages for both the Local Study Area and Regional Study Area in 2021. Of the people whose mother tongue is an Indigenous language, Ojibway-Potawatomi languages are the most prominent, and range from 50% in Ignace to 100% in the LSB of Wabigoon and Machin.

2.2.4.8 Religion

Table 2.2-6 shows the breakdown of religion in the Local Study Area communities, Local Study Area, and Regional Study Area for 2021. Religion refers to an individual's self-identification as having a connection or affiliation with any religious group, body, or other religiously defined community or system of belief. For infants and children, religion refers to the specific religious group or denomination of the household they are being raised in. Persons without a religious connection or affiliation can self-identify as atheist, agnostic, or humanist, or can provide another applicable answer (Statistics Canada 2022a).

Table 2.2-6: Religion in the Regional Study Area, Local Study Area, and Local Study Area Communities, 2021

Religion	Region ¹						
	Ignace	Dryden	Machin	Sioux Lookout	LSB of Wabigoon	Local Study Area	Regional Study Area
Christian	58.4%	55.3%	56.4%	49.6%	53.8%	53.5%	47.2%
Traditional (North American Indigenous) Spirituality	1.3%	0.3%	0.0%	2.9%	0.0%	1.3%	5.9%
Other	0.0%	1.7%	0.0%	2.3%	0.0%	1.6%	1.3%
No Religious Affiliation	38.7%	42.5%	44.1%	45.2%	46.2%	43.4%	45.6%

Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

In the Local Study Area and Regional Study Area most of the population identify as being a part of a Christian religious group or having no religious affiliation. For the Local Study Area 53.5% (8,385 people) belong to a Christian religious group, 43.4% (6,805 people) do not have any religious affiliation, and 1.3% (205 people) reported a traditional (Indigenous) spirituality affiliation. For the Regional Study Area 47.2% (30,705 people) belong to a Christian religious group, 45.6% (29,650 people) do not have any religious affiliation, and 5.9% (3,825 people) reported a traditional (Indigenous) spirituality affiliation. There is a similar proportion of people who do not have any religious affiliation in the Local Study Area and Regional Study Area. There is a materially higher proportion having a traditional spirituality affiliation in the Regional Study Area compared to the Local Study Area. Notable observations among the Local Study Area communities are as follows:

- Ignace had the largest proportion of Christians at 58.4% (695 people) and the lowest proportion of individuals with no religious affiliation at 38.7% (460 people).
- Sioux Lookout had the largest proportion of the population who reported a traditional spirituality affiliation at 2.9% (170 people). Sioux Lookout also has the lowest proportion of the population who belong to a Christian religious group at 49.6% (2,860 people).
- The LSB of Wabigoon had the largest proportion of the population who do not have any religious affiliation at 46.2% (240 people).

Table 2.2-7 provides a breakdown of the proportion of the population who belong to a Christian religious group in 2021.

Table 2.2-7: Christian Religious Groups in the Regional Study Area, Local Study Area, and Local Study Area Communities, 2021

Religion	Region ¹						
	Ignace	Dryden	Machin	Sioux Lookout	LSB of Wabigoon	Local Study Area	Regional Study Area
Anglican	10.1%	7.5%	7.2%	7.8%	13.5%	8.0%	9.2%
Catholic	23.5%	21.9%	18.5%	23.2%	20.2%	22.3%	17.4%
United Church	3.4%	9.2%	8.7%	4.5%	3.8%	6.8%	5.7%
Other Christian	19.3%	16.7%	21.0%	13.9%	16.3%	16.1%	14.8%

Source: Statistics Canada 2022a. See **Appendix 2B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2021.

Anglicans and Catholics represent the two largest proportions of Christian religious groups in the Local Study Area communities, Local Study Area, and Regional Study Area. In the Local Study Area, 22% of the population are Catholic (3,490 people). This is higher than the proportion of the population who are Catholics in the Regional Study Area at 17% (11,340 people). There is a similar proportion of people who are Anglican or are a part of the United Church in the Local Study Area and Regional Study Area. Notable highlights of affiliations to Christian religious groups in the Local Study Area communities are as follows:

- Ignace and Sioux Lookout had the largest proportion of the population who are Catholics at about 23% (280 people in Ignace and 1,340 people in Sioux Lookout).
- LSB of Wabigoon had the largest proportion of the population who are Anglicans at 14% (70 people) in 2021.
- Dryden had the largest proportion of the population who are a part of the United Church at 9% (665 people).
- Machin had the largest proportion of the population who are a part of the other Christian religious groups 21% (205 people).

2.2.5 Vulnerable Populations

Existing conditions reflect historical and current power structures that have “*shaped society and created inequalities*” (IAAC 2021). Vulnerable populations are individuals who are at greater risk of experiencing adverse effects because of “*disparities in physical, economic, and social status when compared with the dominant population*” (Patrick et al 2018; Rukmana 2014). The terms “vulnerable populations” and “priority populations” are often used interchangeably by academics and service funders/providers and refer to groups that experience a disproportionate burden of inequities, which result in differences in socio-economic outcomes. According to the National Collaborating Centre for Determinants of Health, “*vulnerable populations are groups and*

communities at a higher risk for poor health as a result of the barriers they experience to social, economic, political and environmental resources, as well as limitations due to illness or disability" (NCCDH 2022). Social inequality and social disadvantage results when resources and access to opportunities and supports required are not evenly distributed. Equity means that all people can reach their full potential and should not be at a disadvantage from reaching it due to social position or other socially determined circumstance such as ability, age, culture, ethnicity, family characteristics, gender, language, race, religion, sex, social class, or socio-economic status (NCCDH 2013).

The process for identifying vulnerable populations in the Local Study Area and Regional Study Area is described in detail in **Appendix 2A Detailed Methods** and was an iterative process that included a review of secondary information, discussions with the IAWG, workshops, and reflections from key person interviews. Key person interviews determined four priority vulnerable populations key groups, which are described in **Table 2.2-8**. It is acknowledged that there may be specific populations within each of the groupings identified in **Table 2.2-8** (e.g., youth, seniors, Indigenous people). Socio-economic conditions (**Section 4.2.4**), physical and social environment (**Section 4.2.5**), and health behaviors (**Section 4.2.6**) are components of social determinants of health which are discussed in detail throughout **Section 4.2**.

Table 2.2-8: Vulnerable Populations

Vulnerable Population	Rationale for Inclusions
Low socio-economic status	<ul style="list-style-type: none"> • Individuals who are below the low-income threshold must manage the added stress of financial instability to their everyday life and well-being. • Lower income means a larger portion of income must be spent on shelter costs, food, and clothes. • Reduced purchasing power when prices rise (e.g., from a growing economy) can result in shelter costs becoming unaffordable. This can also influence disposable income and lead to food insecurity and lack of means to afford other essential goods. • People with lower socio-economic status tend to rely heavily on services. They are sensitive to changes in services which leads to them being in a precarious position as service providers adjust their services (GBA+ Workshop 2023).
Individuals experiencing homelessness or are precariously housed	<ul style="list-style-type: none"> • Housing availability and the rising value of homes has been identified as a concern in communities in the Local Study Area (NWO Community and Baseline Studies Key Person Interview Program 2022). • Increased housing costs may further exacerbate challenges in acquiring suitable, adequate, or affordable housing. • Certain population groups are stereotyped leading to difficulties in finding available housing or rental options (GBA+ Workshop 2023).
Individuals experiencing barriers to employment	<ul style="list-style-type: none"> • Lack of higher levels of educational attainment can be a barrier to obtaining employment and advancing to higher levels of employment (GBA+ Workshop 2023). • Years of experience required to enter the workforce can be a barrier for someone without formal work experience, or individuals who have been out of work for a long time, as employers are less inclined to hire those with gaps in work experience. • The transition to a structured work environment can be challenging for individuals who have been unemployed or underemployed as it may not be what an individual is accustomed to. • Life skills and self-reliance are essential and without them individuals may be unable to obtain employment or seek further education due to an inability to complete basic tasks (e.g., read, write, complete a resume).
Individuals experiencing mental health and/or substance dependence	<ul style="list-style-type: none"> • Economic instability can cause significant mental health problems (Government of Canada 2013). • Increases to disposable income can result in increased substance use (NWO Community and Baseline Studies Key Person Interview Program 2022). • Increases to cost of living and housing can exacerbate mental health challenges. • Mental health and addictions services are already facing capacity constraints (NWO Community and Baseline Studies Key Person Interview Program 2022).

People may be categorized in one to all four vulnerable population groups. Specific sub-groups of the population are more likely to fall within the vulnerable population groups, and include: youth,

seniors, single parents, and Indigenous people. Some service providers have observed that Indigenous people are overrepresented in each of the categories relative to their proportion of the total population (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023; GBA+ Workshop 2023).

The vulnerable populations identified for inclusion in the Baseline Studies and the services they rely on are discussed throughout the social cultural, economic, and health pillars. **Table 2.2-9** describes where more detailed descriptions can be found.

Table 2.2-9: Vulnerable Populations in the Baseline Studies

Vulnerable Population Groups	Relevant Sections
Low Socio-economic Status	<ul style="list-style-type: none"> • Social services are discussed in Section 2.4.9. • Health system is discussed in Section 4.3. • Household and personal incomes are discussed in Section 3.6.2. • Educational attainment is discussed in Section 3.3.2. • Community demographics are discussed in Section 2.2.4. • Socio-economic conditions of social determinants of health are discussed in Section 4.2.4.
Individuals Experiencing Homelessness or are Precariously Housed	<ul style="list-style-type: none"> • Housing and dwellings are discussed in Section 2.4.7. • Housing affordability is discussed in Section 3.6.2. • Social determinants of health for housing are discussed in Section 4.2.5.3.2 and for homelessness are discussed in Section 4.2.5.3.3.
Barriers to Employment	<ul style="list-style-type: none"> • Barriers to employment are discussed in Section 3.2.3. • Employment services are discussed in Section 3.2.3. • Labour force characteristics are discussed in Section 3.2.2. • Educational attainment is discussed in Section 3.3.2. • Socio-economic conditions of social determinants of health are discussed in Section 4.2.4.
Mental Health and Substance Use	<ul style="list-style-type: none"> • Mental health is discussed in Section 4.4. • Health services are discussed in Section 4.3. • Social determinants of health for alcohol and substance use are discussed in Section 4.2.6.5.

2.2.5.1 Low Socio-economic Status

Low socio-economic status is a measure of an individual's combined economic and social status. Higher socio-economic status tends to be positively associated with better health (Baker 2014). Socio-economic status encompasses not only income, but educational attainment, financial security, and subjective perceptions of social status and social class (Cutter 1995). Sub-groups

who have been identified as more likely to have low socio-economic status include seniors, youth, single parents, and Indigenous people (GBA+ Workshop 2023).

Table 2.2-10 shows household income statistics including median household income and low-income measures for the Local Study Area and Regional Study Area, in 2021.

Table 2.2-10: Household Income Statistics for the Local Study Area and Regional Study Area, 2020

Median household income, used as a comparison across communities and whether certain subgroups of the population should be included as priority low-socio economic vulnerable populations.	<ul style="list-style-type: none"> Local Study Area¹ \$86,891 Regional Study Area \$78,500 Ontario \$91,000 Ignace \$69,000 Dryden \$82,000 Machin \$77,500 Sioux Lookout \$102,000 LSB of Wabigoon \$58,800
Low-income measure after-tax (LIM-AT) is a low-income approximation which accounts for economies of scale (each additional member in a family result in less need for more income [e.g., 4 to 5 dependents require \$7,000 more and 5 to 6 dependents require \$5,000 more]).	<ul style="list-style-type: none"> Local Study Area 10.4% Regional Study Area 19.7% Ontario 10.1% Ignace 13.2% Dryden 10.1% Machin 10.4% Sioux Lookout 8.0% LSB of Wabigoon 21.2%

Source: Statistics Canada Census 2022a

Note: 1. The median income for the Local Study Area is the weighted average of median incomes for the Local Study Area communities.

People with low socio-economic status are more likely to access services within the Local Study Area. See **Section 2.4.9** for information on social services, **Section 4.3** for information on the health system, **Section 2.4.7** for information on housing, **Section 3.6.2.2** for household income and low-income measures, **Section 3.3.2** for information on educational attainment, and **Section 3.2.3** for information on employment services. Some factors and their implications that can cause or exacerbate low socio-economic status include:

- Lack of transportation: people who do not have access to transportation will face challenges obtaining employment and accessing social or health services;
- Limited access to higher education: an issue linked with low socio-economic status in the Local Study Area is the need for people, in particular youth, to migrate out of the Local Study

Area to obtain higher levels of education (GBA+ Workshop 2023). Although there are satellite Confederation College campuses in Dryden and Sioux Lookout, people must travel to Thunder Bay or Winnipeg to have access to a wider variety of educational programs;

- Housing availability; and
- Challenges obtaining and retaining employment: there are not many opportunities outside of the forestry sector, hospitals, and service industry which limits the variety of employment opportunities (GBA+ Workshop 2023).

2.2.5.2 Individuals Experiencing Homelessness or are Precariously Housed

An individual without a permanent address or residence, appropriate housing, or the immediate prospect, means, and ability to acquire it are considered homeless (KDSB 2021). An individual or family whose current housing situation does not meet public health and safety standards are considered to be precariously housed (Gaetz et al 2012). For more information on housing and dwellings see **Section 2.4.7**. Homelessness and precariously housed are not static concepts and being unhoused or precariously housed may be temporary. In the Regional Study Area, it may be seasonal due to seasonal employment or lower levels of income in slower months.

In 2018, the Kenora District School Board completed its first homelessness enumeration and completed the second homelessness enumeration in 2021. **Table 2.2-11** shows the number of homeless people in the Local Study Area communities in 2018 and 2021.

Table 2.2-11: Homeless People in Local Study Area Communities, 2018 and 2021

2018	2021
<ul style="list-style-type: none"> • Ignace – 5 people; • Dryden – 67 people; • Machin – 1 person; and • Sioux Lookout – 66 people. 	<ul style="list-style-type: none"> • Ignace – 4 people; • Dryden – 37 people; • Machin – 0 people; and • Sioux Lookout – 36 people.

Source: KDSB 2021a, 2022.

Between 2018 and 2021, the Kenora District School Board reported a decrease in the number of homeless people, most notably in Dryden and Sioux Lookout. Despite the decrease in homelessness, key person interviews identified that the number of homeless people is understated. This could be due to the transient and cyclical nature of homelessness (GBA+ Workshop 2023). Sub-groups of the population who are more likely to be homeless or precariously housed include:

- Women experiencing domestic violence;
- People with substance dependence;
- People with criminal records and challenges with obtaining employment;
- Youth;

- Indigenous peoples (specifically young men and single mothers); and
- Seniors.

Some of the challenges related to homelessness and the precariously housed include (GBA+ Workshop 2023):

- Lack of affordable housing and rental options (Cost of living is discussed in **Section 3.6.3** and housing is discussed in **Section 2.4.7**);
- The effects of racism and stereotypes on a landlord's willingness to rent out a space to an Indigenous person or a person who may have a substance dependence;
- Youth aging out of Child and Family Services who no longer have supports, may lack life skills, and are on their own; and
- Inflation and rising housing and rental prices.

2.2.5.3 Barriers to Employment

People may experience barriers to employment because of a lack of educational attainment, years of experience, familiarity with a structured work environment/workplace culture, and life skills and self-reliance. Within the Local Study Area, the need for reliable transportation and leaving the community to obtain most forms of postsecondary education are common barriers to employment. People who have not obtained a high school certificate or equivalent face additional barriers to employment (GBA+ Workshop 2023). Indigenous youth who must leave their community to obtain high school and postsecondary education are more likely to feel isolated because they are separated from their family and may have a lack of community supports (GBA+ Workshop 2023). Other factors that can lead to or exacerbate barriers to employment include:

- Life circumstance (e.g., poverty, lack of family support, mental health, substance dependence);
- Quality of education received;
- Criminal record;
- Lack of culturally sensitive human resources policies;
- Challenges with understanding technology;
- Lack of cultural supports;
- Housing; and
- Affordability of postsecondary education.

Barriers to employment can affect all demographics but sub-groups which are more likely to face barriers include: youth, seniors, Indigenous people, newcomers, and people with disabilities.

Table 2.2-12 shows employment and education statistics for the Local Study Area and Regional Study Area from 2020 to 2022.

Table 2.2-12: Employment and Education Statistics for the Local Study Area and Regional Study Area, 2020-2022

No high school attainment in 2021	<ul style="list-style-type: none"> Local Study Area 20.9% Regional Study Area 30.9% Ontario 15.3% Ignace 23.1% Dryden 19.7% Machin 22.4% Sioux Lookout 20.8% LSB of Wabigoon 30.8%
Postsecondary educational attainment in 2021	<ul style="list-style-type: none"> Local Study Area 47.6% Regional Study Area 40.1% Ontario 57.5% Ignace 39.5% Dryden 47.2% Machin 42.9% Sioux Lookout 52.3% LSB of Wabigoon 29.7%
EI and/or CERB recipients in the Regional Study Area ¹	<ul style="list-style-type: none"> 2020 <ul style="list-style-type: none"> 140 males 90 females 2021 <ul style="list-style-type: none"> 1,140 males 860 females 2022 <ul style="list-style-type: none"> 420 males 280 females

Source: Statistics Canada Census 2022a, 2023.

Notes: 1. EI benefits statistics were suspended from March to September 2020 due to people accessing CERB (Statistics Canada 2023). Similarly, in 2021, there were a large number of workplace closures which resulted in a higher number of EI recipients. The totals presented in the table are higher for 2021 compared to 2020 and 2022 due to CERB payments.

2.2.5.4 Mental Health and/or Substance Use

Mental health is the state of psychological and emotional well-being of an individual (Government of Canada 2020). Addictions is the problematic use of a substance (The Centre for Addiction and Mental Health n.d.). Individuals who experience mental health and/or substance use issues may require both social and health supports. Mental illnesses are characterized by alterations in thinking, mood, or behavior and can include mood disorders, schizophrenia, eating disorders, problematic gambling, and substance dependency (Government of Canada 2022a). It is important to recognize that somebody with a mental illness could have good mental health as mental health refers to a person's state of well-being. **Table 2.2-13** shows self-reported mental

health for residents of Ontario and the Northwestern Health Unit (see **Section 4.3** for further detail).¹⁷

Table 2.2-13: Mental Health Statistics in the Northwestern Health Unit and Ontario

Rating of Mental Health	<p>Perceived mental health fair or poor:</p> <ul style="list-style-type: none"> 7.3% under the Northwestern Health Unit in 2017/18 and 8.3% in 2019/20. 7.9% in Ontario in 2017/18 and 9.8% in 2019/20. <p>Perceived mental health very good or excellent:</p> <ul style="list-style-type: none"> 67.3% under the Northwestern Health Unit in 2017/18 and 64.7% in 2019/20. 69.1% in Ontario in 2017/18 and 64.7% in 2019/20. <p>Perceived life stress (most days quite a bit or extremely stressful):</p> <ul style="list-style-type: none"> 20.2% under the Northwestern Health Unit in 2017/18 and 18.2% in 2019/20. 21.6% in Ontario in 2017/18 and 20.9% in 2019/20. <p>Population with mood disorder (reported that they have been diagnosed by a health professional as having a mood disorder, such as depression, bipolar disorder, mania, or dysthymia):</p> <ul style="list-style-type: none"> 10.6% under the Northwestern Health Unit in 2017/18 and 11.9% in 2019/20. 9.2% in Ontario in 2017/18 and 9.5% in 2019/20.
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Source: Statistics Canada 2022b. See **Appendix 2B Supplemental Data**.

Perceived life stress, mental health, and individuals with mood disorders have similar proportions for the Northwestern Health Unit compared to the Ontario average. There was a slight increase in the proportion of people who report fair or poor mental health in both Ontario and in the Northwestern Health unit. Within the Northwestern Health Unit there was also a slight increase in the proportion of people with a mood disorder.

Table 2.2-14 shows drug and alcohol use statistics in the Northwestern Health Unit, the Northwest Local Health Integration Network, and Ontario.

¹⁷ The Northwestern Health Unit includes communities in the Kenora and Rainy River Census Divisions and the Unorganized Kenora and Rainy River areas. The North West Local Health Integration Network catchment area includes communities in the Kenora, Rainy River, and Thunder Bay Census Divisions and the Unorganized Kenora, Thunder Bay, and Rainy River areas.

Table 2.2-14: Drug and Alcohol Use Statistics in the North West Local Health Integration Network, Northwestern Health Unit, and Ontario

Heavy Alcohol Use	<p>Self-reported heavy alcohol drinking in 2015-16:</p> <ul style="list-style-type: none"> • 25.3% of residents under the North West Local Health Integration Network • 26.2% of residents under the Northwestern Health Unit • 18.5% of residents in Ontario
Heavy Opioid Use	<p>Cases of opioid-related emergency department visits reported in 2011, 2016, and 2021:</p> <ul style="list-style-type: none"> • 47.7 in 2011, 46.8 in 2016, and 224.3 per 100,000 individuals in 2021 under the North West Local Health Integration Network • 34.4 in 2011, 34.3 in 2016, and 173.2 per 100,000 individuals in 2021 under the Northwestern Health Unit • 22.1 in 2011, 31.7 in 2016, and 114.0 per 100,000 individuals in 2021, in Ontario <p>Cases of opioid-related hospitalizations visits reported in 2011, 2016, and 2021:</p> <ul style="list-style-type: none"> • 33.3 in 2011, 22.5 in 2016, and 35.1 per 100,000 individuals in 2021 under the North West Local Health Integration Network • 25.8 in 2011, 27.0 in 2016, and 23.2 per 100,000 individuals in 2021 under the Northwestern Health Unit • 12.1 in 2011, 13.6 in 2016, and 16.3 per 100,000 individuals in 2021, in Ontario <p>Cases of opioid-related deaths reported in 2011, 2016, and 2021:</p> <ul style="list-style-type: none"> • 8.9 in 2011, 8.1 in 2016, and 63.8 per 100,000 individuals in 2021 under the North West Local Health Integration Network • 4.9 in 2011, 6.1 in 2016, and 37.8 per 100,000 individuals in 2021 under the Northwestern Health Unit • 4.2 in 2011, 6.2 in 2016, and 19.0 per 100,000 individuals in 2021, in Ontario

Source: Public Health Ontario 2018, 2022.

Approximately 25% of residents self-reported engaging in heavy alcohol drinking in the North West Local Health Integration Network and the Northwestern Health Unit. Between 2011 and 2021 there was a material increase in the rate of opioid-related emergency department visits and deaths under the North West Local Health Integration Network, Northwest Health Unit, and in Ontario. The rate of hospitalizations has fluctuated for each region but has not increased to the same extent as the rate of emergency department visits and deaths. In 2021, under the North West Local Health Integration Network, 224.3 per every 100,000 individuals visited an

emergency department for an opioid-related emergency and 173.2 per every 100,000 individuals under the Northwestern Health Unit. The Northwestern Health unit reported a 52% greater opioid-related emergency department visits compared to Ontario. This much larger rate may seem high, but due to the small population in the Local Study Area communities and northwestern Ontario relative to the entire Ontario population, the reported hospitalizations are much smaller compared to Ontario. The rates might be higher compared to the Ontario average, but due to the small population, the number of visits is not very many in Ignace and the Northwestern Health Unit; however, due to the nature of services available locally any increase in the number of incidents would be considered noteworthy. Participants in the GBA+ workshop noted that drug use is increasing. A disproportionate number of youth and Indigenous people, in particular those who have lower socio-economic status, are using illicit substances and partaking in heavy alcohol use. Participants commented that the lack of programs to provide guidance to youth in drug awareness and coping with life transitions (e.g., a new job) might have contributed to the rise in substance use (GBA+ Workshop 2023). More information on alcohol and substance use are described in **Section 4.2.6.5**.

2.2.6 Population Projections

2.2.6.1 Population Projections Overview

Typical drivers of population change are fertility rates, mortality rates and net migration. These drivers are affected by multiple factors including the age structure of the current population, government initiatives (e.g., programs to promote migration such as the Rural and Northern Immigration Pilot), and economic opportunities. Economic opportunities also require consideration of multipliers as the creation of new jobs may generate additional population growth to meet increased demand for services.

2.2.6.2 Baseline Projections

This section describes potential future population trends without the Project in Ignace and other Local Study Area communities, referred to here as the baseline population trend. Projections were completed to reflect three different scenarios to present the possible range of population growth in the Local Study Area and Regional Study Area as follows:

- The **optimistic growth scenario** assumes major resource projects in the Local Study Area and Regional Study Area moving forward and a substantial amount of in-migration, which is higher than the historical average.
- The **potential growth scenario** assumes a modest amount of growth due to major resource projects in the Local Study Area and Regional Study Area moving forward.
- The **conservative growth scenario** assumes a slight downturn in the natural resource industries.

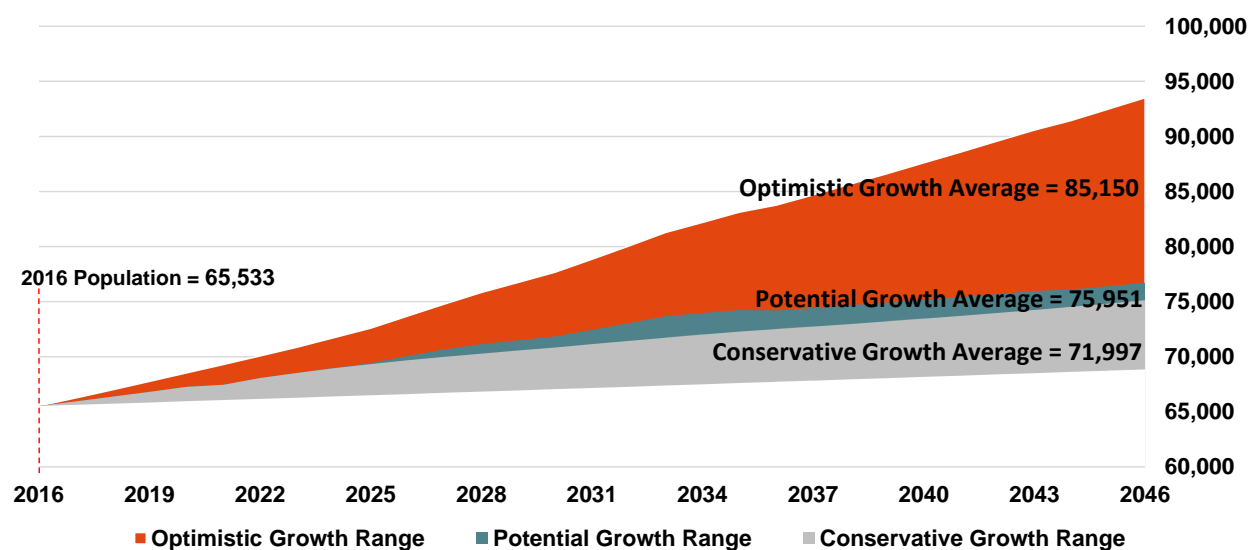
Initiatives such as Rural and Northern Immigration Pilot Program expanding to smaller communities could improve net-migration into the Local Study Area and Regional Study Area, which is projected to be modest over the projection period. Similarly, if programs were established to help relocate new immigrants from nearby Rural Northern Immigration Pilot communities (e.g., Kenora and Thunder Bay) could improve net-migration and economic growth in the Local Study Area and Regional Study Area.

The Regional Study Area is forecast to grow at a higher rate for each scenario due to a younger age structure (see **Section 2.2.4.1**) compared to the Local Study Area communities. The median age in the Regional Study Area was 36.5 years old in 2016 which is materially lower than the median age of 43.5 in the Local Study Area and 52.5 years old in Ignace (the highest median age among Local Study Area communities) (Statistics Canada 2017). One trend that supports the possibility of the Regional Study Area experiencing substantial growth over the projection period is the presence of a large Indigenous identity population (49%; 31,800 residents in 2016). Statistics Canada (2021a) projects the Indigenous identity population in Canada will increase at a faster rate than the non-Indigenous identity population through 2041 due to a higher fertility rate and younger age structure. Additional information on population projections prepared for the Regional Study Area, Local Study Area, and Ignace are discussed in **Appendix 2A Detailed Methods** and **Appendix 2B Supplemental Data**.

2.2.6.2.1 Regional Study Area

The Regional Study Area population in 2016 was 65,533 residents (Statistics Canada 2017). **Figure 2.2-23** shows three potential population projections for the Regional Study Area for 2016 to 2046.

Figure 2.2-23: Regional Study Area Baseline Population Projection, 2016 to 2046¹



Source: Statistics Canada 2017. See **Appendix 2B Supplemental Data**.

Notes:

1. Projections were prepared by InterGroup Consultants Ltd.

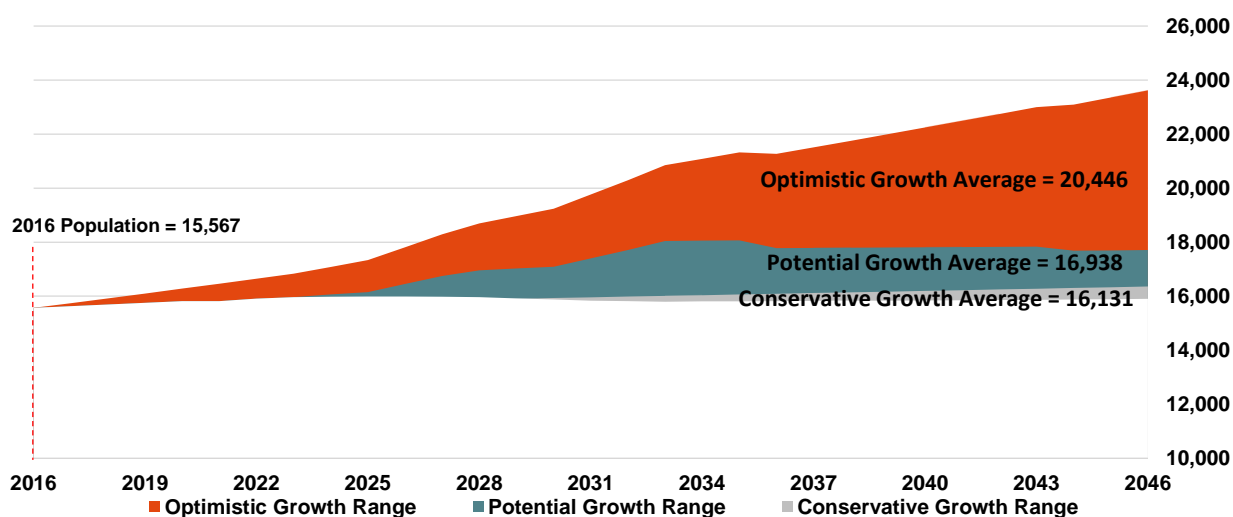
The forecasts project population growth in the Regional Study Area over the next thirty years ranging from 68,849 in 2046 for the conservative growth scenario to 93,541 in 2046 for the optimistic growth scenario. The optimistic growth range uses the Ontario historical annual average growth rate, which was 1.16%. The optimistic growth scenario serves as an upper

bound to population growth and would require substantial in-migration to reach this level of population.

2.2.6.2.2 Local Study Area

The Local Study Area population in 2016 was 15,567 residents (Statistics Canada 2017). **Figure 2.2-24** shows the population projections for the Local Study Area for 2016 to 2046.

Figure 2.2-24: Local Study Area Baseline Population Projection, 2016 to 2046^{1,2}



Source: Statistics Canada 2017. See **Appendix 2B Supplemental Data**.

Notes:

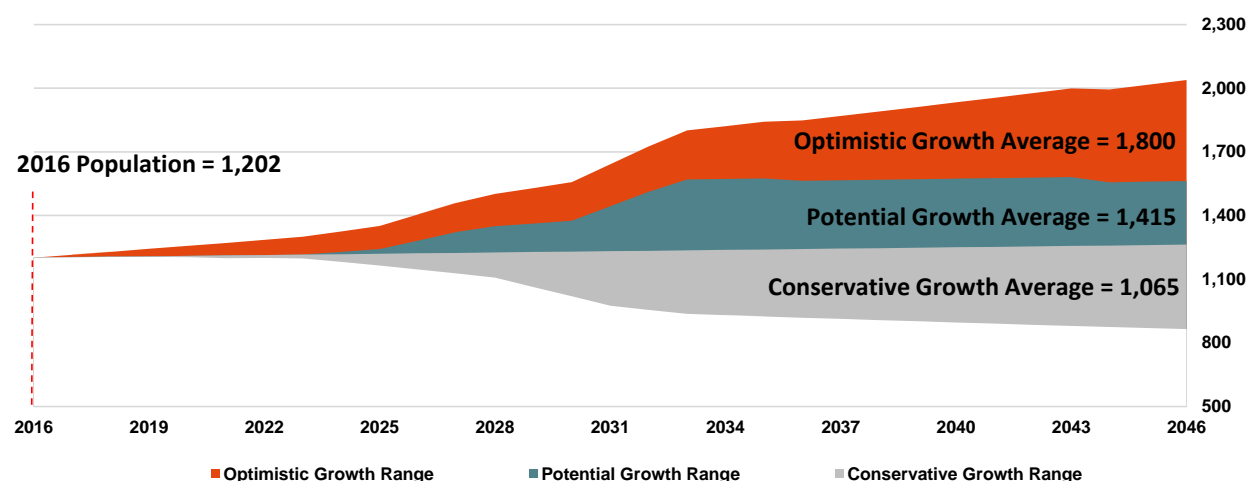
1. Projections were prepared by InterGroup Consultants Ltd.
2. Data were not available for the LSB of Melgund, Valora, Silver Dollar, and Upsala for 2016.

The forecasts project a growth in population in the Local Study Area over the next thirty years ranging from 15,905 in 2046 for the conservative growth scenario to 21,373 in 2046 for the optimistic growth scenario. The optimistic growth range serves as an upper bound to population growth and would require substantial net-migration and economic growth not captured in the potential growth range to reach this level of population.

2.2.6.2.3 Township of Ignace

The population in Ignace in 2016 was 1,202 residents (Statistics Canada 2017). **Figure 2.2-25** shows the population projections for Ignace for 2016 to 2046.

Figure 2.2-25: Ignace Baseline Population Projection, 2016 to 2046¹



Source: Statistics Canada 2017. See **Appendix 2B Supplemental Data**.

Notes:

1. Projections were prepared by InterGroup Consultants Ltd.

The forecasts project a change in population in Ignace over the next thirty years ranging from a decrease to 866 in 2046 for the conservative growth scenario to an increase to 2,039 in 2046 for the optimistic growth scenario. The optimistic growth range serves as an upper bound to population growth and would require substantial net-migration and economic growth not captured in the potential growth range to reach this level of population.

2.2.6.2.4 Other Local Study Area Communities

Other communities in the Local Study Area have had population projections calculated to help with municipal planning.

The Dryden Community Capacity Study (Explorer Solutions 2022) contains a set of population projections to help determine the future capacity and needs of municipal services and infrastructure. Dryden's population in 2021 was 7,388 and project a range of population growth models with a lower bound of 6,466 due to an economic downturn to an upper bound of 8,536 due to the Treasury Metals Goliath Gold Complex mining project coming online. The upper bound assumes a migration of 150 residents due to the Treasury Metals mining project and a family multiplier of 2.0 and an economic multiplier of 1.52, which is overlayed on the historical Kenora Census Division growth rate of 0.432%. The economic downturn reflects a contraction of economic development in the City and an aging workforce in Dryden, which would lead to a further decline in the Dryden labour pool.

The Municipality of Machin had a population of 971 in 2016. The Machin 2017-2022 Strategic Plan (Crupi Consulting 2017) included a ten-year population projection to 946 residents by 2026. This decline would represent an average annual decline of -0.26% due to an aging population

and lack of available housing (NWO Community and Baseline Studies Key Person Interview Program 2022).

The Municipality of Sioux Lookout had a population of 5,272 in 2016. The 2021 Sioux Lookout Community Profile (Municipality of Sioux Lookout 2021) included a population projection to 6,378 residents by 2031. This growth in population would represent an average annual growth of 1.28%, which is greater than the historical growth of 1.16% for Ontario from 1996 to 2021.

The effects of the COVID-19 pandemic on population changes are not fully understood yet.

2.2.7 Summary of Population and Demographics

The population in the Local Study Area has grown by a modest amount from 12,878 in 1991 to 15,864 in 2021. The growth in population in Dryden and Sioux Lookout contributed to the modest increase in population, which were partially offset by a decrease in population in Ignace. The growth in population in the Local Study Area has been slightly more pronounced with an average annual growth rate of 0.7% compared to the marginal growth in the Regional Study Area from 58,748 in 1991 to 66,000 in 2021 (or an average annual growth rate of 0.4%).

Population projections were completed for the Regional Study Area which projects a population of 71,997 for the conservative growth scenario average, 75,951 for the potential growth scenario average, and 85,150 for the optimistic growth scenario average by 2046. In the Local Study Area, the population is forecast to increase to 16,131 for the conservative growth scenario average, 16,938 for the potential growth scenario average, and 20,446 for the optimistic growth scenario average in 2046. In each region, to reach close to the upper bound, population growth would require substantial net-migration and economic growth.

The population in the Local Study Area communities is aging, with a declining proportion of youth. Sioux Lookout is a notable exception where the population has not aged to the same extent as other Local Study Area communities and there is a larger proportion of youth. The younger population in Sioux Lookout is similar to the age structure in the Regional Study Area.

Family structure has changed over time in the Local Study Area with a decrease in the number of married couple families and the number of families with children living at home. The decrease in the number of families with children living at home is attributed to an aging population and the challenges of attracting younger families to the region. It has also been noted that many youth leave the communities after completing high school to obtain a postsecondary education and do not always come back (NWO Community and Baseline Studies Key Person Interview Program 2022; GBA+ Workshop 2023). Most households in the Local Study Area are single census families or one-person households. The large proportion of one-person households may be attributed to the large senior population.

There has been an increase in the Indigenous identity population in the Local Study Area and Regional Study Area. In the Local Study Area over 70% of the Indigenous identity population identify as First Nation, and the remainder are Métis. In the Regional Study Area over 85% of the Indigenous identity population identifies as First Nation, 13% identify Métis, and a small number (less than 1%) of people identify as Inuit. The Indigenous identity populations among the Local Study Area communities are generally younger compared to the total population.

The visible minority population has increased materially in the Local Study Area since 2011. The increase is due in large part to changes the visible minority population in Sioux Lookout, but notable increases have also occurred in Dryden and Ignace.

The language that residents first learn and still understand is primarily English in the Local Study Area and Regional Study Area. There is a small portion of the population who first learned an Indigenous language or French. The most common Indigenous languages spoken by residents are Ojibway-Potawatomi languages, followed by Cree languages.

In the Local Study Area, over half the population are a part of a Christian religious group and a large proportion do not have any religious affiliation.

Vulnerable population groups identified in the Local Study Area include people of low socio-economic status, individuals experiencing homelessness or are who are precariously housed, individuals experiencing barriers to employment, and individuals experiencing mental health or substance dependence. Within these groups, there are a disproportionate number of seniors, youth, Indigenous peoples, and single parents who fall in one of these vulnerable population groups (GBA+ Workshop 2023).

2.3 COMMUNITY AND CULTURE

2.3.1 Overview and Approach

The topics described in community and culture are history, including Indigenous history; community character and heritage; goals and plans; community well-being; food security; income inequality; and the connection people feel to their natural environment in the study areas. These topics are intended to provide an idea of each community's character and culture by providing context on their past and present, residents' perspectives on their community, as well as community successes, challenges, and opportunities. This section is not a depiction of First Nation and Métis community and culture, rather, Indigenous history is included to give credence to the influence of Indigenous peoples on the land prior to colonization.

Spatial boundaries for community and culture include a Local Study Area and Regional Study Area. Spatial boundaries are discussed in further detail in **Section 2.1.1**.

The Regional Study Area is the Kenora Census Division. The Regional Study Area is inclusive of Indigenous communities and reserves. The Local Study Area includes the Township of Ignace, City of Dryden, Municipality of Machin, Municipality of Sioux Lookout, and the unincorporated communities and Local Services Boards near Ignace and Dryden, including the Local Services Board of Melgund, Upsala, Valora, Silver Dollar, and the Local Services Board of Wabigoon.

Temporal boundaries for community and culture include that the description of community history goes back as far as the early 17th century when the first European explorers arrived in the northwestern Ontario area. The temporal boundaries for Indigenous peoples and the communities they comprise cannot be interpreted with the same temporal boundaries as non-Indigenous peoples/communities. Further information on temporal boundaries for community and culture is provided in **Section 2.1.1**.

Data collection for **Section 2.3** community and culture considered federal, provincial, and municipal government reports and data, including municipal community profiles, community safety and well-being plans, strategic plans, and official plans, the Ignace and Area Community Studies, in particular the Community and Culture Study (SMM & InterGroup 2022), as well as publicly available reports and online sources (e.g., community websites). Primary data collected through key person interviews and workshops was used to support and confirm information collected through secondary sources with community knowledge, include local perspectives, and fill gaps in information. Primary data is particularly prevalent in sub-sections **Section 2.3.3** community character and heritage, **Section 2.3.6** food security, and **Section 2.3.8** connection to the natural environment. Further information on data collection, including desktop research and primary data collection, is provided in **Section 2.1.2**. Publicly available information on Wabigoon Village and Dinorwic was limited and has been included in subsections when available. Publicly available information on Indigenous history was searched and relevant results were included. This may not be representative of the perspective of First Nations or Métis people in the Regional Study Area (see **Section 1.5.5.3.2**).

2.3.2 Community and Regional History

Community and regional history describe the history of the Local Study Area and Regional Study Area, from the presence of the Anishinaabe peoples to the development and settlement of northwestern Ontario that makes the area what it is today. This section is written from a western

scientific perspective and includes a regional overview of northwestern Ontario history, as well as historical information pertaining to Treaty #3 Territory, the Township of Ignace, and other Local Study Area communities when available.

2.3.2.1 Regional Overview

Northwestern Ontario is a vast region sculpted by the geology of the Canadian Shield, dominated by boreal forest and bodies of water. First peoples have inhabited this region since time immemorial. Petroglyphs (carved rock) and pictographs (painted rock) found on exposed rock surfaces, as well as burial grounds and other cultural sites found throughout northwestern Ontario bear witness to the presence of first peoples for thousands of years prior to European colonization and settlement in the late 19th and early 20th centuries (Guertin and Joly 2008). The Anishinaabeg view their relationship with the natural environment as fundamental; that they were created on the land and the spirit who created them gave them their lands (Mainville 2007). Acknowledging the Anishinaabeg relationship with the land is critical to understanding the history of the northwestern Ontario region, Anishinaabeg rights, and the effects of Treaty #3 (see **Section 2.3.2.2**).

2.3.2.1.1 The Anishinaabeg

The Anishinaabeg have had an intimate relationship with the lands of what is now referred to as northwestern Ontario since time immemorial. The Anishinaabeg practices of kiigookewin¹⁸ (fishing), Manitou Gitigaan (Great Spirit's Garden), kiiose'win (hunting), and onii'igewin (trapping) speak to this relationship. The Anishinaabeg were skilled in kiigookewin, having traditional fisheries and creating products like isinglass, a highly valued product from sturgeon bladders that was extensively traded. Caviar and sturgeon meat were also valued commercial products for trading. Kiiose'win and onii'igewin for food and fur were also important practices for the Anishinaabeg that later became commercially important due to the sale of meat and fur to settlers. The Anishinaabeg were traditionally adept at Maanchi chi' ga'win, managing game, further displaying the deep relationship with and respect for the land and its resources (Grand Council Treaty #3 2011).

In the 19th century, Manitou Gitigaan became increasingly important to the Anishinaabeg, as traditional farming practices and the production of foods like corn, potatoes, and other crops were important to their traditional economy and a major source of food for their growing population as well as for fur traders and settlers. The Anishinaabeg traditionally had comprehensive knowledge of the forest and plants for medicinal, practical, and sacred purposes; "there was nothing they didn't use that grew" (Grand Council Treaty #3 2011). Anishinaabe management of these resources was displayed through the planting of manoomin (wild rice) in lakes and the planned burning of specific locations for blueberry production. Harvesting and preparing manoomin has always been a way of life for the Anishinaabeg and played a significant role in the Anishinaabeg economy (Yerxa 2014). Anishinaabe wild plant products became essential to the survival of early settlers, and Maanchi chi' ga'win, their management of natural

¹⁸ Anishinaabemowin is the language spoken by the Anishinaabeg. Terms in this section are described in Anishinaabemowin, before presented in English, as provided by the source to respect and protect Anishinaabemowin, a language present on the land long before English.

resources, was responsible for the extensive pine forests that covered Treaty #3 prior to 1873 (Grand Council Treaty #3 2011).

Kaagigina Aatigiziwat, Anishinaabeg leadership, was based on competence, familial relationships, achievements, and service. The Anishinaabeg originated from Manitou Innakonig'ewin, the Great Spirit, and Manitou Innakonig'ewin established the leadership rules in which the Anishinaabeg followed, which led to the development of a highly organized system due to their location among the rich natural resources and arrival of settlers (Grand Council Treaty #3 2011).

2.3.2.1.2 Arrival of Settlers

The first European explorers arrived in what is now Ontario in the early 17th century in search of a trade route with Asia. However, explorers like France's Samuel de Champlain and England's Henry Hudson unknowingly stumbled upon a land of furs, a resource in great demand in their respective colonial empires. Champlain's first voyage to Canada in 1603 brought him to the north shore of the St. Lawrence River in present day Tadoussac, Quebec, and he later established a trading post to trade fur with First Nations in present day Quebec City (The Canadian Encyclopedia n.d.). Hudson arrived in James Bay around 1610, similarly learning of the rich fur resources, triggering further exploration and a rush of trading activities that would later establish The Hudson's Bay Company (Hunter 2008).

The fur trade arrived in northwestern Ontario, brought by settlers moving west. The fur trade not only fuelled the regional economy, but also fuelled rivalries between the European nations. The Indigenous peoples of the region would trap and trade their furs for European tools and other goods. However, it is important to note that fur trade was not the sole livelihood of the Anishinaabeg as is commonly misconstrued; Anishinaabeg would also sell several of their other harvests, such as fish and manoomin (wild rice), to traders, suggesting the Anishinaabeg economy was highly diverse (Mainville 2007).

Competition between England and France to claim these lands peaked in 1670 when England's King Charles granted a trading charter to the Hudson's Bay Company for the Hudson Bay basin. France responded with expeditions to claim the area as their own, asserting French title on the region in 1671. In 1763, England defeated France in the Seven Years' War thereby securing the lands claimed by France, including northern Ontario. From this point on, the fur trade rivalry continued through business networks instead of through nation states involving the Hudson's Bay Company and the North West Company, until the two merged in 1821 (Republic of Mining 2010).

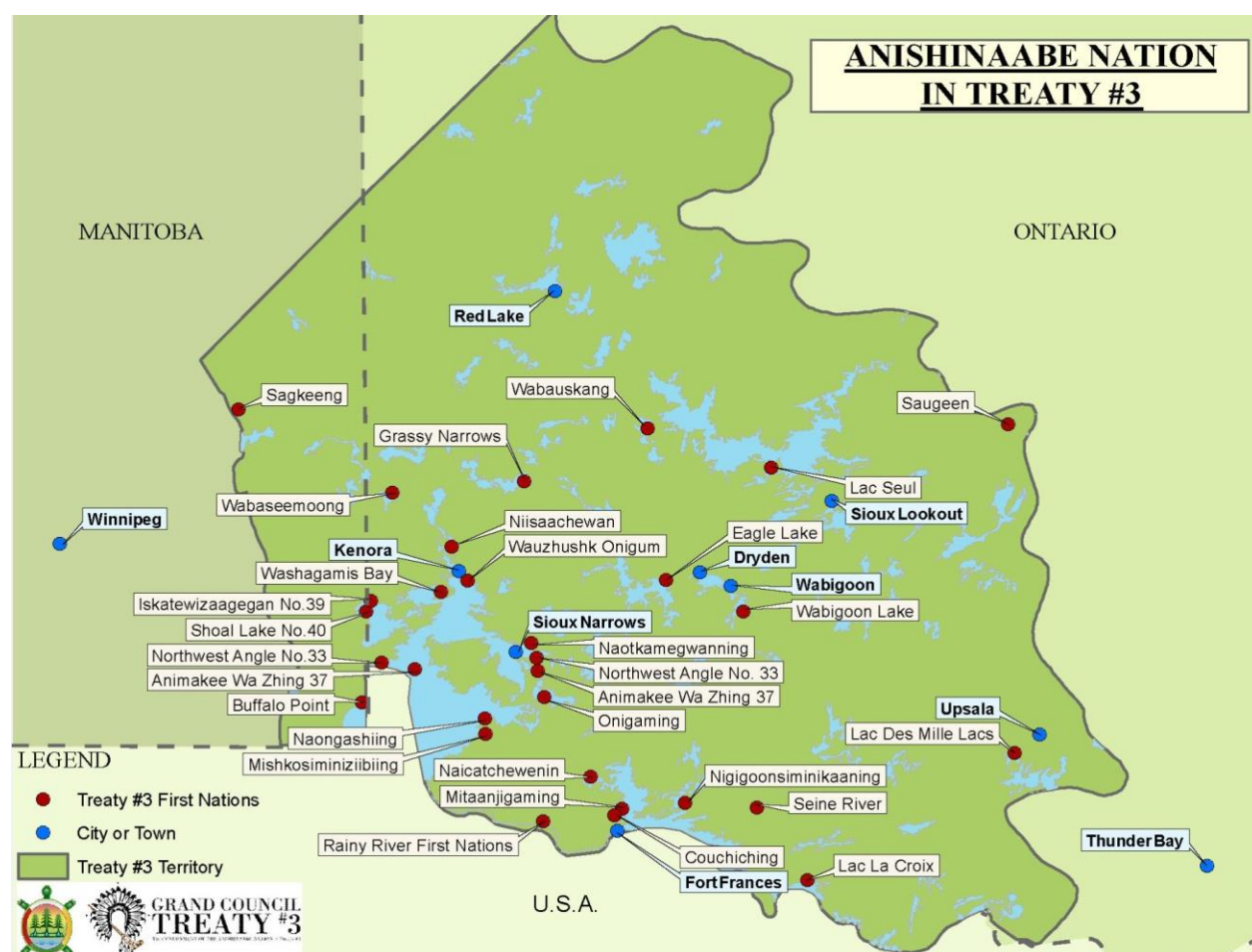
European demand for furs began to decline throughout the 19th century. The decline in demand for furs marked a long period of transition for the northern Ontario region until later developments with Canadian Pacific Railroad, mining, forestry, commercial fishing, and other industries arrived in northwestern Ontario.

By the late 19th century, urgency to expand exploration and settlement across the interior of Canada increased. The late 19th and early 20th centuries saw northwestern Ontario become a key region for expansion west as a railway shipping hub and centre for mining and forestry. This period's developments in transportation and industrialization led to rapid population growth in the region, with newcomers to Canada arriving in the area for the promise of work (Republic of Mining 2010).

2.3.2.2 The Signing of Treaty #3

On October 3, 1873, Treaty #3 was signed and signified the beginning of the involvement of the federal government in the lands already occupied by 28 First Nations; 55,000 square miles of territory spanning from west of Thunder Bay to north of Sioux Lookout and along the U.S. border into eastern Manitoba became shared between the Anishinaabe peoples and the federal government. Treaty #3 territory is home to 28 First Nation communities with a total population of approximately 25,000 (Grand Council Treaty #3 n.d.). **Map 2.3-1** provides the Anishinaabe Nation in Treaty #3.

Map 2.3-1: Anishinaabe Nation in Treaty #3



Source: Grand Council Treaty #3 n.d.

In 1869, the Government of Canada began planning a route between Fort Garry (now Winnipeg) and Fort William (now Thunder Bay) to provide access to the Canadian interior. Treaty #3 was planned to be the first post-Confederation treaty (Grand Council Treaty #3 n.d.). Treaty negotiations from 1869 to 1873 displayed a lack of responsiveness from the British toward Anishinaabe claims to sovereignty and ownership of themselves and their lands (Mainville 2007).

The Anishinaabe peoples insisted that they would not cede lands, nor allow farming or settlement, in their territory and wanted payments for the “right of way” through their lands. After Treaty #3 was signed in 1873, federal “business” would be permitted in the territory in exchange for various goods and Indigenous rights to hunting, fishing, and natural resources on reserve lands (Grand Council Treaty #3 n.d.; Filice 2016). However, after the signing of the Treaty, Canada pursued control over Anishinaabe lands, displaying federal disregard for the importance of the Treaty relationship (Mainville 2007).

Under the terms of Treaty #3, the Government of Canada promised to set aside reserve lands and provide payments to individuals and families, as well as agreed to purchase farm equipment and other tools for Ojibwe peoples. The Anishinaabe agreed to share their land in exchange for these promises and mutual support; however, following its signing, Canada called the Treaty a “land surrender” and argued that it gave the government ownership over Anishinaabe territory (Garrett n.d.). Thus, in exchange for verbal promises, the Treaty claimed that the Anishinaabe peoples would “cede, release, surrender, and yield” all rights and title to their land to the federal government (Filice 2016). The verbal promises made to the Anishinaabe peoples during negotiations were not reflected in the Treaty #3 text (Garrett n.d.). Elders refer to Miinigozii’onan, the “agreement known as Treaty #3”, the spirit and intent of Treaty #3 that was not upheld by the federal government. The Anishinaabe continue to protest treaty violations to date (Garrett n.d.).

The effects of broken federal promises following Treaty #3 were large in scale. For example, two decades after the signing of the Treaty, non-Indigenous commercial fishing increased significantly in the region. Canada reallocated fisheries to non-Anishinaabe, a violation of Treaty #3 that was detrimental to Anishinaabe way of life. Similarly, the Anishinaabeg had secured rights during negotiations of the Treaty, such as hunting, mineral, forestry and plant resources; however, Canada’s version of Treaty #3 omitted mention of many Anishinaabe rights on their lands, a denial of rights to reserves that lasted many years in Ontario (Grand Council Treaty #3 2011). Colonialism and forced assimilation, such as the Sixties Scoop and residential schools¹⁹ in Canada, have eroded the traditional practices and self-governance of Indigenous peoples. It was through the oppression of Indigenous peoples that settlers were able to thrive. Acknowledging this history is critical to understanding the lasting effects of colonialism and for moving forward in reconciliation.

2.3.2.3 Township of Ignace

The history of what is now the Township of Ignace spans back to the presence of First Nations peoples. Red ochre pictographs can be found on the flat surfaces of the Canadian Shield at waterbodies surrounding the Township. These pictographs are interpreted to be messages to the Manitou, supernatural beings (Barr 1979). The arrival of settlers introduced various industries to the area, including rail, forestry, and mining.

¹⁹ *Content warning:* the following information mentions topics which may cause trauma invoked by past abuse. The former residential schools located within the Regional Study Area and Local Study Area include Cecilia Jeffrey (Kenora, Shoal Lake) and Pelican Lake (Pelican Falls) in Sioux Lookout (Chiefs of Ontario n.d.).

2.3.2.3.1 Canadian Pacific Railway

The Township of Ignace was established in 1879 when the Canadian Pacific Railway (“CPR”) was being built through the area, where it became a railway division point halfway between Kenora and Fort William (Thunder Bay), which included a station, marshalling and maintenance facilities, employee houses, and a railroad YMCA (“Young Men’s Christian Association”). Ignace became the transfer station for Winnipeg to Thunder Bay. The Township was named by railway engineer Sir Sandford Fleming after his Iroquois guide, Ignace Mentour, who came from the Caughnawaga Reserve near Montreal (Barr 1979). In 1872, Ignace Mentour paddled and portaged Flemming and his surveying team over the Dawson Route (Barr 1979).

The federal government built the first building in Ignace around 1875, a 20-feet long log cabin for surveyors plotting the railway line. The building stood east of present-day Pine Street. The Ojibway peoples also began building tepees along the Agimak (the Ojibway word for ash tree) Creek to provide supplies and services. On July 6, 1882, Ignace saw the first official train from Winnipeg pass through (Barr 1979).

Though Ignace was known as a railway town, the town also had fur trade, commercial fishing, mining, and forestry. In 1894, a mining patent was issued to Ignace, securing the town’s mineral claims (Barr 1979).

In 1904, CPR built a red-brick railway roundhouse. Around this time, CPR also built several duplexes for employees to rent, which faced the railway. The decision to face these houses away from town reflected the conflicting priorities of industry and community (Barr 1979). CPR did not install sewer and water for their company houses in Ignace until 1932. Electricity followed, but only powered lights. Ignace’s present day Front Street was the old Main Street through town at this time.

W.H. (William Henry) Cobb arrived in the area along with the railway construction crews, later going into business as a hotel and grocery store owner. Cobb was also involved in the fur trade and became Ignace’s first reeve in 1908, at the time of incorporation. W.H. Cobb’s fieldstone hotel, built during the Sturgeon Lake gold rush, became Ignace’s first rail YMCA in 1910. The next, newer YMCA was built in 1924 by CPR and opened in 1925, featuring two bowling alleys, 21 bedrooms with showers and toilets, an apartment for Secretary Chauncey Depew, a reading room, dining room, and a kitchen that served meals around the clock for running crews. The YMCA served as Ignace’s centre for socializing and recreation into the late 1930s.

In the early 1900s, the west end of the railway yards, roughly half a mile from the station, was a boxcar neighbourhood known as “Little England”. English newcomers formed a tight community amongst the larger context of the community (Barr 1979). Other newcomers were arriving in Ignace at this time, with people settling from Italy, Norway, Sweden, and Ukraine (Barr 1979).

The Township became incorporated in 1908 and remained a railroad town until the 1950s, when changes in rail transport caused CPR to reduce operations in Ignace. The last steam engine passed through town in the late 1950’s; the end of Ignace’s era as a railway town. On October 13, 1909, the Ontario Provincial Police were brought in by order of the council, their duties including investigating serious crimes and enforcing the Game, Fisheries, and Ontario Temperance Acts. In 1923, Keewatin Lumber Company opened an Ignace branch. Keewatin Lumber cut ties, sawlogs, and pulpwood until 1933. In the late 1940s, Ignace campaigned for town hydro. In 1954, Ontario Hydro began supplying Ignace through a local, commission-owned

system, which required construction of a transformer station and 12 miles of line. Ignace was largely able to say goodbye to coal oil and gas lamps. This transition for Ignace was marked by over 200 people at the War Memorial School. On November 14, 1956, Bell Telephone established both local and long-distance telephone services in the town of 450 people.

2.3.2.3.2 Trans-Canada Highway

Construction of the Trans-Canada Highway in the 1930s opened up the area for further development and opportunity, particularly in the service and tourist industries. Completing the highway to connect Fort William (now Thunder Bay) to Winnipeg offered up employment to many area residents and brought in hunters, fisherman, and tourist trade (Barr 1979). Further, the building of the TransCanada pipeline through the Township in the 1950's and Highway 599 in the 1960's stimulated the growth of the community. Another prospecting/mining boom hit Ignace from the 1930s to the 1950s (Barr 1979).

The end of World War II brought a surge in tourism activities in Ignace, with camps/cabins and businesses opening. Logging activity also rose after World War II until the late 1950s (Barr 1979).

2.3.2.3.3 Forestry and Mining

The town growth following the end of World War II carried through the 1960s as forestry and mining operations developed rapidly in the area, bringing 150 Canadian Forest Product Limited employees along with miners and their families. Highway 599 serviced the Mattabi and Falconbridge mines. Ignace became the designated townsite for Mattabi Mines around 1970, tripling, then quadrupling, the population (Barr 1979). This population increase brought considerable development to the area, resulting in the construction of over 100 residential units, sewage and water treatment facilities, public elementary and secondary schools, a private French Catholic elementary school, a recreation facility, churches, and a number of local businesses.

The rapid and staggered growth of industry in Ignace in the late 1900s resulted in the development of neighbourhoods based on ones' employer; CPR, Mattabi Mine, Falconbridge Mine, and municipal employees all resided in their own respective neighbourhoods in Ignace. Ignace's rapid growth as a dormitory community with a limited industrial tax base resulted in financial deficit for the town (Barr 1979).

The Township thrived into the 1980s, until the forestry and mining industries contracted. Forestry jobs were lost due to increased mechanization, market factors, and business considerations. The mines were ultimately closed by 1991. During this contraction of these two industries in the 1980's and 1990's, Ignace tourism began to grow. The Regional Tourist Information Centre in Ignace was designed to mirror the town's old CPR roundhouse. It's location in Ignace was also the site of the old CPR YMCA, and stones from Butler Stone Quarry were used in the Centre's construction. These features reflect Ignace's pride in and sense of the town's history. Today, the Centre is also home to the Ignace Public Library and municipal offices.

Transportation maintains a key role in Ignace's local economy, as the railway, highway, and pipeline remain. The Township also remains a tourism hub, offering visitors the opportunity for wilderness exploration including popular activities like hunting and fishing.

2.3.2.4 City of Dryden

Indigenous peoples have lived in the area now known as the City of Dryden since time immemorial. Of particular importance was Paawidigong, the place of the rapids, which served as the camp and meeting place of the Anishinaabe peoples on the Wabigoon River. The shores of the Wabigoon River rapids were a seasonal gathering place that Anishinaabeg would travel to from their winter camps and trapping areas to hunt, fish, and harvest during the spring and summer months. Following the arrival of settlers to the area, Anishinaabeg would use their camp at the rapids to trade, until settlers built a dam in 1910. Following the construction of the dam, the Anishinaabe peoples move their camp inland, around the area where Dryden High School now stands today. The new camp and meeting place remained the location of Anishinaabeg until the early 1950s. Several pictographs, artifacts, and sacred places of the Anishinaabe peoples remain in the Dryden area today (City of Dryden n.d.a).

2.3.2.4.1 Arrival of Settlers

Lumber operations and gold prospecting began in the Wabigoon Lake area in the 1880s with construction of the CPR; however, permanent European settlement in the area did not begin until the 1890's when the Ontario Minister of Agriculture, John Dryden, opened the area to agriculture by establishing a 320-acre provincial pioneer farm to attract settlers to northwestern Ontario (Bray 2012; City of Dryden n.d.a). In 1893, John Dryden was a train passenger travelling through Dryden, and had seen clover growing along the railway track and presumed the area would be suitable for farming (The Dryden Observer n.d.; Willard 1983). Clover seeds had been left behind by colonists travelling west. John Dryden started an experimental farm (The Dryden Observer n.d.; Willard 1983). The settlement around Dryden began around 1896-1897 (Wice 1967). Surveyors laid out the Township of Van Horne (near the Wabigoon Rapids) and the Township of Wainwright (north of the Township of Van Horne).

The first settler in the area was Andrew Ellsworth Annis, who became superintendent of the farm and the Crown lands agent in 1895. Annis was a contact for new settlers, providing advice and selling the first lots in the village south of the railway (City of Dryden n.d.a). Early settlers in Dryden largely came from Eastern Ontario (Wice 1967). In 1897, the village was officially named Dryden after Minister John Dryden, at which point the settlement had grown to more than a dozen families, 24 houses and stores, and a sawmill. The first steam whistle to blow in Dryden was also in 1897, announcing the sawmill, the village's first industry (Wice 1967). Dryden was incorporated as a town in 1910 and incorporated as a city in 1998. Pulp and paper contributed to the City's economy and pulp continues to contribute heavily (The Dryden Observer n.d.).

2.3.2.4.2 Forestry

In 2018-2019, the Dryden and District Museum created an oral history project to record various community stories and perspective from senior Dryden area residents. Through the history project, residents spoke to the earlier days of the Dryden pulp and paper mill:

"Dryden, the mill at that time, made the world's finest white paper. It was shipped all over the world. Yeah. And pulp too." (Dryden and District Museum, Interview with Stella Davies, 2019a)

"But Dryden was still our centre of attraction eh. We used to shop at the Bay, at the Co-op Store, but we worked, we, we were working here in Dryden, in the mill at first. I worked in the mill until sixty-four. When I was a teenager, I started working in the mill, that would have been in '61. I had worked on the railroad for a few months, in Eagle. But as that was dying down, the foreman had said you know, they are cutting back and cutting back. He said if I were you, if you get a chance to get in the mill, do so because the CPR is going downhill." (Dryden and District Museum, Interview with Alphonse Roussin Part 1, 2019b)

Forestry maintains a key role in Dryden's local economy today, with Dryden Fibre Canada, ULC (formerly Domtar),²⁰ being the largest employer in the City (see **Section 3.4.4.2**). The City's economy has shifted based on the mills' operations over time, and overall the economy has experienced challenges with growth and stagnation as a result. Dryden also remains a service hub for surrounding communities, with many of the City's major businesses being located along Highway 17 for greater accessibility for visitors (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.3.2.5 Municipality of Machin

The Municipality of Machin is comprised of the communities of Minnitaki, Eagle River, and Vermillion Bay. The Municipality of Machin was incorporated in 1909. In 1908, meetings were held in Eagle River, Minnitaki, Oxdrift, Vermillion Bay, and Waldhof to organize the west end of the Dryden District as well as to obtain a licence for a hotel in Eagle River. Oxdrift and Waldhof withdrew, but Minnitaki, Eagle River, and Vermillion Bay proceeded. Municipal offices were first established in Eagle River, until an old school in Vermillion Bay became available where the Municipal office then moved to for a larger facility. The Municipality was named after Harold A.C. Machin, a World War I Lieutenant-Colonel who then served in the Legislature from 1908 to 1919 (Municipality of Machin n.d.a). Today, Nelson Granite in Vermillion Bay, and resource-based tourism, with outfitting lodges located across the communities, play a large role in the Municipality's economy.

2.3.2.5.1 Minnitaki

In 1896, the Townships of Eton, Sanford, and Aubrey were surveyed and laid out but T.B. Speight, Ontario Land Surveyors, and marked the early stages of settlement in the area. The origin of the name "Minnitaki" is in doubt, with different interpretations of what the name means. Indigenous interpretation of the name is "muddy waters", suggesting the community's Beaver River was the inspiration for the name. Another interpretation, by a local school master on Eagle Lake Reserve, is that Minnitaki means the shadow on the water cast by clouds passing in front of the sun, and thus, shaded or shadowed waters (Municipality of Machin n.d.a).

2.3.2.5.2 Eagle River

In 1881, the CPR railhead from Port Arthur (Thunder Bay) was in Eagle River, and by the late 1890's, Eagle River was a hub for settlers and supplies coming by rail. Eagle River station was an

²⁰ Formerly known as Domtar Inc.'s Dryden Mill, the mill was purchased by First Quality Enterprises LLC in August, 2023 (First Quality 2023).

important coaling and water location for CPR. The railway docks and station were demolished in 1968-1969 and 1973, respectively.

Furs and fuel wood were shipped out of Eagle River by rail. The earliest reference to fur trading in Eagle Lake was the winter of 1869-1870. During that time, Eagle Lake was considered an outpost consisting of small log houses and only maintained during the winter. In 1882, the Eagle Lake post was moved near the railway on Wabigoon Lake to protect the Hudson's Bay territory.

The first fishing and hunting lodge was built in 1935-1936 on Eagle Lake. Hydro power houses were built on the Eagle River in 1928 and 1937 to supply power to the Dryden Paper Company Mill (Municipality of Machin n.d.a).

2.3.2.5.3 Vermillion Bay

Construction of the CPR in the area was slow due to the challenging terrain. At the time, Vermillion Bay was a construction camp. Two miles east, a sawmill was also operating. The railway was completed in 1882, sparking the construction of a station, houses for the maintenance workers, and a 40-foot pump tower for refilling steam engines. Construction of the Grand Trunk Pacific began in 1902, nine miles north of Vermillion Bay. The Township was surveyed in 1906. The gold and soapstone mines located on the southwest shore of Eagle Lake used Vermillion Bay as a hub for supplies and shipping the minerals in the early 1900's. When the Trans-Canada Highway was built in the late 1930s, Vermillion Bay continued to grow, and, with the developing forestry and tourism industries, Vermillion Bay began to prosper. Tourist camps were established on the east and north shores of Eagle Lake by the 1940s, using Vermillion Bay as a base for business (Municipality of Machin n.d.a).

Today, tourism remains important to Vermillion Bay. Blue Lake Provincial Park is located a short drive from the community where it is a popular place for visitors to take part in activities, such as swimming, camping, and kayaking, due to its blue water and sandy bottom (To Do Canada 2020). Nelson Granite currently operates out of Vermillion Bay. It is a family-run business that moved to northwestern Ontario in the early 1980s (Ross 2009). The company is one of Canada's largest producer of quarried dimensional stone and manufactured memorial products (e.g., mausoleums, monuments) with their granites being quarried exclusively from the northwestern Ontario region (Nelson Granite n.d.).

2.3.2.6 Municipality of Sioux Lookout

The Town of Sioux Lookout was incorporated in 1912. The name "Sioux Lookout" originates from the area's use of the Sioux Mountain vantage point for guards to see visitors travelling the English River route and is rooted in the battle between the Anishinaabe and Sioux Nations. This area also served as a hub for trading goods, including fur and forestry products (Municipality of Sioux Lookout 2020a).

2.3.2.6.1 Arrival of Settlers and Canadian National Railway

The Sioux Lookout area's natural waterway connects the western continent, which is believed to be the reason it attracted early settlers. From Lac Seul, travellers could head north to Hudson Bay or the arctic channel, west to the Columbia River, east to the Gulf of St. Lawrence, or south to the Gulf of Mexico (Heath 2023). Sioux Lookout was connected to the railway in 1912 and became a railway terminal in the early 1900's before transitioning to a gold and iron mining town

and aviation centre. Pinetree Radar Base was a large employer from the 1950s to 1987 (Municipality of Sioux Lookout 2020a).

The Sioux Lookout Canadian National Railway Station was successful for several decades and was directly tied to the community's development. The railway was the main source of employment, transportation, goods, and communication for Sioux Lookout before roads to and from the community were constructed in the 1960's. It continues to operate for passenger service with Via Rail, while part of the building has been renovated for hospitality uses (Parks Canada n.d.).

2.3.2.6.2 Aviation

The MNRF was first established in Sioux Lookout, following forest fires in the 1920s that destroyed over 2 million acres. Part of the MNRF's initiative to fight forest fires was setting up a base in Sioux Lookout. Bearskin Airlines also had a base in Sioux Lookout, established in 1978, one year after the airline began flying regularly scheduled flights between Sioux Lookout and Big Trout Lake. Upon establishment of the base in town, regular flights to Thunder Bay were scheduled (Heath 2023).

2.3.2.6.3 Wilderness Tourism

Sioux Lookout was also the site of northern Ontario's first tourist fishing lodge. In 1928, Mike Ament, referred to as the "Father of Tourism" in Sioux Lookout, set up a lodge near Little Vermillion Lake. Ament's Kenneally Lodge quickly became internationally renowned for his guiding services. Guests travelling to Ament's lodge arrived on the Canadian National Railway line in Hudson, Ontario and journeyed to the grounds via horse and buggy. Another of Ament's contributions to the tourism industry was his introduction of smallmouth bass to Little Vermillion Lake; the highly sought-after game fish have been caught as far as Lac Seul and the English River and continue to be caught to this day (Heath 2023).

2.3.2.6.4 Hub of the North

Formerly known as a rail hub, today, Sioux Lookout remains a service "Hub of the North" for northern Ontario, connecting 31 remote northern communities and First Nations and over 30,000 Ontarians to essential services, featuring one of the busiest airports in the province (MHBC Planning 2013). See **Section 2.3.3.4** for more information on the Canadian National Railway in Sioux Lookout.

2.3.2.7 Local Services Board of Melgund

The Local Services Board of Melgund includes the communities of Dyment and Borups Corners. Dyment, located on Melgund Lake, was established in 1898. Dyment was once a booming mining town, hosting the Clark, Tabor Lake, and Sakoose gold mines (Dyment Community n.d.). Residents of the Local Study Area, including residents from Dyment, meet on an all-terrain vehicle ("ATV") trail near the Revell Site (see **Section 2.5.10**) and travel by ATV together to visit and explore the old Tabor Lake Mine site (NWO Baseline Studies Key Person Interview Program 2022-2023). Participants of the NWO Baseline Studies Key Person Interview Program 2022-2023 shared that the Tabor Lake Mine has interesting sites to see, such as old settlements and mine shafts. Today, Melgund is home to residents who appreciate its small and quiet nature,

many of whom are retired or semi-retired, and enjoy the communities' proximity to the outdoors and gathering with neighbours at the hall located between Dymont and Borups Corners.

2.3.2.8 Township of Upsala

The Town of Upsala was surveyed in 1914, but with the beginning of World War I, was not established to serve as a station for CPR until 1922. The name Upsala reflects the Swedish and Nordic backgrounds of the area's immigrants, named after the City of Uppsala in Sweden. In 1922, public lands were sold, including 62 lots at the cost of \$0.50 per acre. To qualify for a patent, each settler had to clear at least 15 acres per year, build a house and barn, dig a well, and live on the property for at least 6 months (Upsala n.d.b). H.D. Wiseman, Hugo Carlson, C. Nordstrom, S. Kenuck, O. Hakanson, G.R. Johnston, and Esther Aho were some of the pioneer settlers (Upsala n.d.a).

In the 1920s, use of the area for pulpwood was an important source of income for settlers in Upsala, with stories suggesting that families working together could cut enough pulp to pay their land taxes each year. This cooperation amongst neighbours is an example of the community spirit that remains a part of Upsala's character today (Upsala n.d.b).

The community worked together to establish the first school in Upsala in 1925. The Women's Institute was founded in 1935 by D.B. Frazer. By the 1930's, the town consisted of many homes, but no roads were in the centre of Upsala until 1937 when the Trans-Canada Highway was constructed over the town's wagon trail to connect Upsala to Fort William and Port Arthur (Upsala n.d.a). The Upsala hotel had recreational opportunities and social events for locals (Upsala n.d.b). Today, Upsala plays a role in the region's tourism, acting as a host for visitors looking to get outside and take part in activities, including fishing and hunting, particularly due to its proximity to Lac des Milles Lacs.

2.3.3 Community Character and Heritage

Community character and heritage describes the character of the Local Study Area communities, including what residents value about their home community, existing challenges, and community cohesion, as well as any designated heritage sites and historically important residents, when available.

2.3.3.1 Township of Ignace

The Township of Ignace is situated on the shores of Agimak Lake and surrounded by the natural environment, including rivers, lakes, waterfalls, and forests, where residents and visitors take part in outdoor activities in both the summer and winter months, such as hunting, fishing, trapping, swimming, boating, snowmobiling, and much more (see **Section 2.4.6** for more information on recreational activities and **Section 2.5** for more information on land and resource use).

According to the Ignace Community Strategy (Ignace 2019b), the Township values community, unity, cooperation, integrity, resilience, and the natural environment, which are reflected in the visioning project completed a year later (InterGroup Consultants 2020) and which is described in more detail in **Section 2.3.4.2.5**). These values helped shape what Ignace is today and continue to be community goals to strive toward in the future.

2.3.3.1.1 Community

Ignace values community; being a safe, peaceful, welcoming, supportive, and family-oriented community (TD Graham & Associates 2019). Residents of Ignace appreciate its small-town nature, fusion of cultures, local businesses, and northern hospitality (Township of Ignace n.d.a; Township of Ignace n.d.b). During key person interviews, residents pointed to their proximity to the natural environment, community history, White Otter Castle, excellent schools and health facility, and gathering spaces like Silver Tops, as characteristics that make Ignace unique and cohesive (NWO Baseline Studies Key Person Interview Program 2022-2023). Many residents appreciate that Ignace can be a “quiet” community, but also feel that it is important to improve the quality of life for younger residents by developing more opportunities for youth to participate in the arts and recreation. The Township’s library was noted as an important hub for cultural events in the community.

One of the Township’s visions, as reflected during project visioning, is to be a complete, livable, and vibrant ‘small-town’ community of between 2,500-3,000 people that can shape and direct its own character by enhancing its quality of place (InterGroup Consultants 2020). Community feedback on these priorities confirmed the importance of Ignace’s small-town nature to residents, but also pointed to the importance of not having a “small-town mindset” when it comes to community development. Residents shared that it can be important to welcome positive voices and creative ideas, not only from long-term residents of Ignace, but also from newcomers and “outside help”, such as learning from other communities on ways to develop the community’s character and opportunities. The presence of industries and associated ebb and flow of new residents has, however, also had an affect on the community’s cohesion. For example, key person interviews pointed to the presence of forestry operations and the lack of time spent in the community by members of the industry, suggesting that companies come to Ignace for its natural resources without spending time in the community to support its character and businesses (NWO Baseline Studies Key Person Interview Program 2022-2023).

Overall, residents feel that Ignace is a safe and close-knit community where residents carry a sense of pride, belonging, and connection to the natural environment (Local Social Cultural and Health Workshop 2021).

2.3.3.1.2 Unity and Cooperation

Ignace values unity and cooperation, aiming to foster teamwork, the sharing of ideas, and collaborating for the betterment of the community (TD Graham & Associates 2019). These values are reflected in the “small-town feel” that Ignace provides, and residents cherish. Participants of the key person interview program shared they felt that Ignace is a place where neighbours will lend a helping hand and a great place to raise children (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents feel they can trust their neighbours to look out for their loved ones and the neighbourhood streets are safe to let their children play in the community with less supervision than might be necessary in larger urban centres.

2.3.3.1.3 Integrity and Resilience

Ignace values being a community with integrity and resilience; being transparent, fair, honest, and authentic, remaining strong and moving forward while embracing challenges and opportunities (TD Graham & Associates 2019). The Township celebrates its heritage and small-

town nature. Residents noted during project visioning that maintaining a small population may contribute to the Town's resilience in the future (InterGroup Consultants 2020). Key person interviews suggested that Ignace also helps foster well-adjusted, independent individuals (NWO Baseline Studies Key Person Interview Program 2022-2023). Long-time residents who raised their children in Ignace felt that northwestern Ontario helps foster self-sufficient adults due to its small-town nature, wealth of outdoor activities, and lack of services that are often present in larger metropolitan areas (NWO Baseline Studies Key Person Interview Program 2022-2023).

Ignace has a high proportion of seniors compared to other age groups, and it is important to the community to ensure that the senior population is supported and provided with the means to age in place. One of Ignace's visions is to support an enhanced quality of life at every stage of life, where the sense of community is fostered by meeting the needs of residents of all ages. This sense of caring for one another, the community, and the natural environment supports sustainable growth and strengthens the bond between residents and the places they share (InterGroup Consultants 2020). Residents have shared concerns about losing the community's senior population and the history, knowledge, and stories that they hold. Residents also desire to be more proactive in highlighting Ignace's history (i.e., gateway signage), a major source of pride in the community, as a way of attracting tourists and new residents (InterGroup Consultants 2020).

2.3.3.1.4 Natural Environment

Ignace values the surrounding natural environment; the importance of fresh air, clean lakes, and the natural beauty (TD Graham & Associates 2019). The interconnectedness of Ignace and its surrounding natural environment is part of what brings visitors to the area and what keeps residents in place. Key person interviews emphasized the local love for the outdoors, stating that a love of the outdoors is essential to living in the community (NWO Baseline Studies Key Person Interview Program 2022-2023). See **Section 2.3.8** for more on residents' connection to the natural environment.

Part of Ignace's vision is to foster the personal health and wellness of its residents through physical activity, social engagement, and artistic expression that supports opportunities for people to improve their health and wellness, socialize and interact with others, learn new skills, have fun, and find balance in their lives (InterGroup Consultants 2020). Ignace's level of access to the surrounding natural environment provides opportunities for a variety of activities that work towards this community vision (NWO Baseline Studies Key Person Interview Program 2022-2023).

Agimak Lake

Agimak Lake is located in the Local Study Area, within the Township of Ignace. Agimak Lake is one of the Township's most treasured assets, providing Ignace residents with immense outdoor water-based activities close to home (NWO Baseline Studies Key Person Interview Program 2022-2023). Agimak's shores host residential properties as well as accommodations and businesses including Agimak Lake Resort and Lone Pine Inn. The lake has two beaches, Agimak Beach, located on the east side of the lake, and West Beach, located at the north end of the lake. Popular recreational activities that occur on Agimak Lake include swimming, boating, canoeing, kayaking, stand up paddle boarding, and fishing (NWO Baseline Studies Key Person Interview Program 2022-2023).

The Agimak Trail is a canoe route south from Ignace to White Otter Lake, where many locals and visitors go to see White Otter Castle (see **Section 2.3.3.1.5** for more on White Otter Castle). The route can also be accessed from Devil's Gap Lake. This canoe route became prominent for settlers in 1879 following Ignace's establishment as a railway point for Canadian Pacific Railway, but was a navigable waterway for Indigenous inhabitants for thousands of years prior (Township of Ignace n.d.e). Beyond the Agimak Trail to White Otter Castle is the Turtle River Provincial Park Route. The route can take between 3 to 12 days to complete depending on where it is started from. Individuals paddling this route from Agimak Lake can see White Otter Castle, pictographs, and pristine lakes amongst the Canadian Shield (Canadian Canoe Routes 2021).

2.3.3.1.5 Heritage

Ignace has a rich history that shaped the community into what it is today, beginning from the presence of the Ojibway peoples in northwestern Ontario, to the arrival of settlers and industries including rail, mining, and forestry (see **Section 2.3.2** for information on community and regional history). This section describes key influential people through Ignace's recent history who played a role in Ignace's heritage, including James A. McQuat, Mary Berglund, and Dennis Smyk.

White Otter Castle

White Otter Castle is an Ontario Heritage Trust structure located southwest of Ignace on White Otter Lake, accessible by water only. White Otter Castle is a three-storey log home built with red pine logs in the early 1900s by James A. McQuat. McQuat was a woodsman who built the castle on his own, completing it at the age of 60 (Ontario Heritage Trust n.d.). Using a block and tackle method to raise the red pine logs to their place and bringing all other supplies over 15 portages to the site, McQuat finished the construction of his castle in 1914, which featured a four-storey tower and hip roof covered with tar paper. McQuat claimed that, as a child growing up in the Ottawa valley, he was scolded, "Ye'll never do no good! Ye'll die in a shack!", so he decided to build himself a castle (Township of Ignace n.d.b). McQuat travelled to Ignace by canoe for provisions (Barr 1979).

James McQuat died in the fall of 1918 and his grave remains at the site to date. The castle has since been renovated by "Friends of the White Otter Castle", who continue to maintain the property today. White Otter Castle remains a popular site to visit by canoe, float plane or snowmobile (Township of Ignace n.d.b). When asked what makes Ignace unique, residents commonly referred to White Otter Castle, noting a sense of community pride in the heritage structure (NWO Baseline Studies Key Person Interview Program 2022-2023).

Mary Berglund

Mary Berglund was the first nurse in Ignace. Berglund pioneered the role of nurse practitioner; key person interviews shared that Berglund was trusted by doctors to carry out many aspects of healthcare independently (NWO Baseline Studies Key Person Interview Program 2022-2023). Berglund moved to Ignace in 1932, when her husband began working for CPR. In 1939, Ignace's doctor moved away, leaving the town of 600 without a healthcare provider. Berglund began to respond to her community's needs and continued to practice as the only healthcare worker within 110 kilometres for the next 30 years. Berglund also travelled to provide medical

assistance, often riding the railway as well as accompanying the Ontario Provincial Police (NWO Baseline Studies Key Person Interview Program 2022-2023). Ignace residents and visitors treated by Berglund would pay her for her services in a variety of ways, from small amounts of cash to cabbages, carrots, and fish (Abelsohn 1996).

As word of Berglund's work spread beyond Ignace, doctors in Dryden began to support her work by arranging for her to purchase medications, including narcotics and antibiotics. Following one of the most dramatic medical cases in Berglund's career, involving a CPR employee who lost his leg from a boxcar incident, CPR connected Berglund's house to the company's water system and assumed her water expenses until the day she moved out 40 years later. When immunization services became established by public health nurses across the country, Berglund took on the responsibility of bringing immunizations to Ignace, visiting schools and houses in the area and even snowshoeing to Indigenous settlements to vaccinate children and infants (Abelsohn 1996).

In 1972, Berglund received an honorary membership from the Ontario Medical Association, amongst several other honours throughout her career. The Mary Berglund Community Health Centre was named after her in 1975 upon its opening (Abelsohn 1996). Berglund's commitment to her community and the health profession remains a strong point of pride for Ignace and all who knew her (NWO Baseline Studies Key Person Interview Program 2022-2023).

Dennis Smyk

Dennis Smyk, "Mr. Ignace," was publisher of the Ignace Driftwood and beloved by many Ignace residents over his lifetime of service in the community. Over the years, Smyk served Ignace as a teacher, volunteer firefighter, fire chief, councillor, and Mayor, amongst several other volunteer positions in the community (Long 2019; Walters 2018). Smyk grew up in Ignace, attended high school in Thunder Bay, Ontario and Selkirk, Manitoba, and attended teacher's college in Thunder Bay where he met his wife, Jackie Smyk, eventually returning to Ignace as a teacher (Dryden Community Funeral Home 2018).

The Ignace Driftwood was important to Smyk and his wife since publishing their first issue on a gestetner (printing) machine in 1971. Residents of Ignace also took pride in the Driftwood, one of the smallest newspapers in Canada at the time with a circulation of roughly 400 each week, appreciating the "all-in-one" source of information it provided to keep people updated on community goings-on (Long 2019). The Driftwood operated continuously from 1978 until 2018, the year Dennis passed, publishing over 2,000 editions and never missing a weekly circulation in its 40-year life span (Walters 2018).

Smyk was an avid explorer of the natural environment which surrounded him, documenting more than 600 archaeological sites and 150 pictographs (Long 2019). In 2013, Smyk received the Queen's Diamond Jubilee Medal for his more than 50 years of service in northwestern Ontario (Long 2019). Ignace's museum was renamed the "Dennis Smyk Heritage Centre" in honour of the local legend and his contributions to the museum.

2.3.3.2 City of Dryden

Situated on the shores of the Wabigoon and Thunder Lakes in the heart of the Kenora District, Dryden is known for its abundance of outdoor opportunities. Dryden is located midway between Winnipeg, Manitoba and Thunder Bay, Ontario acting as a hub for both travellers and the

numerous communities that surround the City. Dryden is regarded by its citizens as having a strong sense of community and pride, with opportunity to grow and prosper (MDB Insight 2019).

Dryden aims to be recognized as *"a vibrant, safe, healthy, and inclusive community with a diverse economy, providing an excellent quality of life"* (MDB Insight 2019), and is guided by principles of inclusion, safety, community pride, regional leadership, and quality of life.

2.3.3.2.1 Inclusion and Safety

Dryden works to honour, welcome, and accept all people while providing a platform for diverse voices in order to strengthen cultural relationships and build community cohesion and inclusivity. It is important to Dryden to make efforts to ensure that the City's programs and services are accessible and reflect the diverse needs of the community (MDB Insight 2019). Key person interviews suggest that Dryden is a welcoming community to newcomers and essential services are easily accessible within the community (NWO Baseline Studies Key Person Interview Program 2022-2023). Survey results from the Community Safety and Well-Being Plan for Dryden, Machin, and area suggest that nearly 40% of respondents have a strong sense of belonging in their community (MNP 2021).

Dryden works to place the safety of its residents at the centre of all City planning and actions. In particular, Dryden aims to develop and maintain safe community spaces for shared use in order to promote quality of life in the community (MDB Insight 2019). Participants of key person interviews recalled Dryden as a safe place when growing up in the community but shared that, in recent years, they no longer feel as comfortable in the community as they once were (NWO Baseline Studies Key Person Interview Program 2022-2023). The perceived lack of safety by residents of Dryden was attributed to an increase in the presence of transient groups and individuals struggling with addictions in the community (NWO Baseline Studies Key Person Interview Program 2022-2023).

Participants of key person interviews shared that they feel the City's leadership is now working to address and support vulnerable populations in the community, particularly unhoused and precariously housed individuals and individuals living with addictions and/or mental health challenges, but that there is more work to be done to make Dryden an inclusive and safe community for all. Dryden also has a volunteer fire service (see **Section 2.4.4**) that plays a large role in fire protection, emergency services, and public education on safety (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.3.3.2.2 Community Pride and Regional Leadership

Dryden views having well-maintained properties, assets, and infrastructure, civic engagement to keep residents informed and in touch with community leadership, and volunteerism as ways in which the City may enhance community pride (MDB Insight 2019). Dryden is focused on being a regional hub for northwestern Ontario and is committed to innovation, knowledge sharing, and building and maintaining effective local and regional partnerships (MDB Insight 2019). Results from key person interviews suggest Dryden is proud to be the service hub of northwestern Ontario, including or retail, transportation, healthcare, and education (NWO Baseline Studies Key Person Interview Program 2022-2023).

One way in which the City is working on improving its community image and sense of pride is through a new branding strategy that was introduced in 2018, known as Blaze Your Trail (City of

Dryden n.d.b). Blaze Your Trail represents Dryden's community character; an active community surrounded by nature with diverse recreation and commerce, where community members are proud and work to support one another (City of Dryden n.d.b).

Participants of key person interviews expressed a sense of pride having grown up in Dryden, with one participant sharing that they would not have wanted to grow up anywhere else (NWO Baseline Studies Key Person Interview Program 2022-2023). Many residents are proud to serve their community, with survey results from the Community Safety and Well-Being Plan for Dryden, Machin, and area showing that, of over 600 residents who responded, residents volunteer an average of 181 times per year (MNP 2021).

2.3.3.2.3 Quality of Life

Dryden aims to be a leader in environmental stewardship by protecting the natural beauty of the surrounding environment and the community's access to nature. The City would also like to maintain alignment with the community's values and priorities by ensuring that all decisions place quality of life at the front of mind (MDB Insight 2019).

Participants of key person interviews shared that a love of the outdoors is important to one's quality of life in Dryden (NWO Baseline Studies Key Person Interview Program 2022-2023). While residents shared that there is not as many opportunities for activities within the City, particularly after the partial closure of Dryden's pulp and paper mill and subsequent loss of jobs and population, its location provides a vast amount of opportunity to get outside and enjoy activities such as camping, hiking, fishing, and hunting. Dryden's recreational programming and facilities are an asset to the community (e.g., indoor pool, curling, soccer fields) (see **Section 2.4.6**). Residents noted that Dryden's close proximity to nature is a primary reason for living in the community, with one participant stating that you can fish 30 lakes within 10 minutes of town (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents also appreciate the small-town feel of the City while still being within a 4 hours' drive of the larger metropolitan areas, with Winnipeg to the west and Thunder Bay to the east.

2.3.3.3 Municipality of Machin

The Municipality of Machin is home to the communities of Vermillion Bay, Minnitaki, and Eagle River. Residents of the Municipality value their small-town lifestyle and independence, proximity to the natural environment and natural beauty, diversity, and the sense of safety and belonging that their communities provide (Crupi Consulting 2017). Key characteristics among the communities include the level of volunteerism and residents' involvement in community causes, the communities' facilities and recreational infrastructure, community groups, opportunities for outdoor activities, and educational, medical, and senior facilities (Crupi Consulting 2017). The commitment of residents to their community through volunteerism and community groups helps display the civic pride, hard work, and pursuit of growth in the Municipality (Crupi Consulting 2017).

Participants of key person interviews emphasized the importance of connection among the communities in the Municipality; community connections through recreational and other activities helps foster a sense of unity and belonging amongst community members (NWO Baseline Studies Key Person Interview Program 2022-2023). Participants also emphasized the importance of looking out for one's neighbours when living in a small community where particular services

are often lacking. Other characteristics of the Municipality that are valued by residents include the peace and quiet, access to outdoor activities, and the friendliness of its people.

According to Machin's Community Economic Development Strategic Plan (Crupi Consulting 2017), the Municipality aims to continue fostering its diversity and be known as an innovative, growing community that offers a safe place and good quality of life. Machin's priorities include being able to work together despite differences among communities and residents, improve recreation and entertainment for youth and seniors, build relationships with First Nations and other surrounding communities, work towards a strong local economy through promoting entrepreneurialism and supporting local businesses, attract new residents, retain youth, develop sustainably through progressive infrastructure and municipal services, and promote community pride (Crupi Consulting 2017).

2.3.3.4 Municipality of Sioux Lookout

The Municipality of Sioux Lookout is situated on the shores of the Pelican, Abram, and Lac Seul lakes, amidst boreal forest, connecting 31 remote northern communities and over 30,000 Ontarians to essential services. Located halfway between major cities including Winnipeg and Thunder Bay, Sioux Lookout is connected by air, rail, road, and water (Municipality of Sioux Lookout n.d.a; Municipality of Sioux Lookout 2020b). According to the Municipality's 2020-2025 Strategic Plan (Municipality of Sioux Lookout 2020a), Sioux Lookout priorities include community investment, wellness, and collaboration.

2.3.3.4.1 Community Investment

Residents of Sioux Lookout are involved in their community, with the town coming together for annual festivals and events to maintain a lively arts and culture scene. Further, the abundant natural resources that surround the community form the basis of the Sioux Lookout lifestyle, where residents embrace community, diversity, and the great outdoors (Municipality of Sioux Lookout n.d). Participants of key person interviews shared that they value the small-town nature of Sioux Lookout and the feeling that their neighbours will "have their back" when issues arise (NWO Baseline Studies Key Person Interview Program 2022-2023).

The Municipality has a history as a former transportation hub and has adapted to various economic changes over the years, now focusing on the Municipality's role as a service centre for its surrounding First Nations communities. Sioux Lookout is considered by many as the "Hub of the North", featuring the second busiest airport in northwestern Ontario and the fourth busiest in Ontario (MHBC Planning 2013). According to the municipality's Strategic Plan for 2020-2025, their vision is a vibrant community where diversity, nature, and compassion drive prosperity (Municipality of Sioux Lookout 2020a). To achieve this vision, the Municipality aims to proactively invest in the community to encourage growth and improve quality of life by developing infrastructure and housing that meets the diverse needs of the community (Municipality of Sioux Lookout 2020a).

2.3.3.4.2 Wellness

Sioux Lookout strives to encourage and foster a healthy and safe community by promoting and enhancing the area's natural assets to encourage activities, develop and support programs that encourage healthy lifestyles and ensure that there are appropriate services in place for the

diverse range of needs in the community (Municipality of Sioux Lookout 2020b). Sioux Lookout has the Meno Ya Win Health Centre, a critical service available in the community to maintain the health and wellness of its residents which integrates the history and culture of the First Nations and non-Indigenous identity populations in the area (SLMHC n.d.). Residents of Sioux Lookout are generally active individuals, enjoying a large variety of outdoor activities including water sports, hunting, fishing, hiking, cross-country skiing, snowmobiling, and more (McSweeney and Associates 2019). Participants in? key person interviews expressed their enjoyment of Sioux Lookout's surrounding natural environment and the amount of space available; there is no competition/traffic when locals want to enjoy the outdoors (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents also shared that they value Sioux Lookout's small-town feel while still having access to essential services and programs (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.3.3.4.3 Collaboration

Sioux Lookout takes pride in the deep connections it maintains with places, people, and, in particular, neighbouring First Nations communities in working together to strengthen the area's economy and quality of life (Municipality of Sioux Lookout n.d.a). Sioux Lookout's diverse population can be attributed to the rich history of the Anishinaabe peoples of what is now northwestern Ontario. Inherent to this history is the recognition of the effects of colonial policies and residential schools on the large population of Indigenous peoples who reside in Sioux Lookout today (Municipality of Sioux Lookout 2020b).

One example of Sioux Lookout's collaboration with surrounding First Nations is the Sioux Lookout Friendship Accord ("SLFA"). The SLFA was created in 2017 and is an agreement between the Municipality of Sioux Lookout and Cat Lake First Nation, Lac Seul First Nation, Slate Falls First Nation, and Kichenuhmaykoosib Inninuwug First Nation. The SLFA allows these communities to collaborate on various aspects of community management and planning to allow all communities to "*share sustainable prosperity, inspire change and hope, and to foster healing and opportunities for future generations*" (SLFA EDC n.d.). Core values of the SLFA include (SLFA EDC n.d.):

- Fulfilling social responsibilities and building healthy, just, and competitive communities;
- Economic independence for individuals, businesses, and communities;
- Advance economic development and financial independence through cooperation and collaboration; and
- Focus on diversity, tolerance, and equity.

Sioux Lookout would like to continue fostering its growth and development through collaboration with other communities to address shared opportunities and challenges and capitalize on the community's existing strengths (Municipality of Sioux Lookout 2020b).

2.3.3.4.4 Heritage

The Sioux Lookout Canadian National Railway Station, located at 53 Front Street in downtown Sioux Lookout, is a heritage site. The Sioux Lookout Canadian National Railway Station was constructed in 1911, forming part of the Grand Trunk Provincial Railway/National

Transcontinental Railway system to provide a direct link from the prairies' grain operations to the Atlantic. The station is recognized under the *Heritage Railway Stations Protection Act*. The exterior of the building and scenic character of the property are protected by the Ontario Heritage Trust. Standing at the centre of town, the two-and-a-half-storey station provides a look back at Sioux Lookout's earlier days and represents the community's history (Canada's Historic Places n.d.).

The station is a rare example of Tudor-style design, featuring cladding with half timbers and stucco which differentiates it from other rail stations in Ontario. The original massing and low level of ornamentation has remained consistent throughout the station's history. The character defining elements that contribute to the station's heritage value include (Canada's Historic Places n.d.):

- Traditional size and massing as a divisional station;
- Unusual Tudor-inspired exterior design of stucco and half-timbering;
- Elongated, simply massed, and modestly ornamented architectural presentation;
- Prominent symmetrical roofline accented with twin cross gables at the building's ends;
- Passenger canopies running along the north and south elevations of the station;
- Large operator's bay at the west end of the south façade;
- Paired windows with louvered shutters of the upper storey on the north and south elevations;
- Elongated hipped roof with centrally located eyebrow dormers on all sides;
- Tall and narrow brick chimney at the western side of the roof's southern slope;
- Location at the historic centre of the town; and
- Landmark value as the pre-eminent heritage building in the town (Canada's Historic Places n.d.).

2.3.3.5 Local Services Board of Melgund

The Local Services Board of Melgund is a not-for-profit organization supported by volunteers that holds the authority to provide its communities, Dymont and Borups Corners, with arts, culture, and recreation services.

Results from key person interviews characterized Melgund as a quiet community where individuals enjoy being in nature and can always find things to do outside (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents of the area feel supported by their community and feel that neighbours are always willing to lend a helping hand. Residents enjoy gathering at the local hall to socialize, where events such as playing music together, game nights, and holiday celebrations (e.g., Canada Day) occur. Challenges in Melgund include a lack of space and funding to develop, limited resources/services, and a lack of community gathering spaces (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.3.3.6 Township of Upsala

Results from the key person interview program (NWO Baseline Studies Key Person Interview Program 2022-2023) characterized Upsala as a close-knit community where everyone helps one another and residents cherish the outdoors. Upsala is looking for ways in which the Town can bring more people into the community, but lack of housing and employment opportunities remain barriers. Upsala would also like to have more locations to socialize and have organized sports available for residents to take part in, but the small population remains a barrier to doing so. Residents of Upsala rely on having a personal vehicle to get around, with most residents relying on Thunder Bay for their groceries and services.

2.3.3.7 Local Services Board of Wabigoon

Results from key person interviews characterized Wabigoon Village as a community with shared pride where residents choose to live an outdoor lifestyle, such as taking part in activities like hunting and fishing and enjoy opportunities to be in nature (NWO Baseline Studies Key Person Interview Program 2022-2023). Participants indicated that Wabigoon Village, and the northwestern Ontario region in general, can provide less enjoyment/be limiting for residents who are less enthusiastic about the natural environment and remoteness. However, despite differing lifestyle aspirations amongst residents of Wabigoon Village, the community is considered to be cohesive; residents are largely looking for the same opportunities and development in their community, and when challenges arise, community members unite (NWO Baseline Studies Key Person Interview Program 2022-2023).

Challenges in Wabigoon Village include youth retention and a lack of opportunities for socializing and entertainment (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.3.4 Community Goals and Plans

Community goals and plans describes public plans for the Regional Study Area and Local Study Area when available, highlighting any goals and action items outlined in each plan. The section presents each community and its goals/plans, as well as a description of community challenges. Not all communities in the Local Study Area have the same types of plans, thus, each section presents the relevant available plans for each community.

2.3.4.1 Regional Goals and Plans

This section describes Ontario's Growth Plan for Northern Ontario.

2.3.4.1.1 Growth Plan for Northern Ontario

The Growth Plan for Northern Ontario is a 25-year plan to guide and coordinate provincial decisions and investments to aid population and economic growth in the region. The Growth Plan focuses on four areas of growth: diversifying traditional resource-based industries, workforce education and training, infrastructure investment and planning integration, and tools for Indigenous participation in the economy. The vision of the Growth Plan for Northern Ontario is to, by 2036, have *"a skilled, educated, healthy and prosperous population that is supported by world-class resources, leading edge technology and modern infrastructure"* (Government of Ontario 2011).

The Growth Plan is guided by six principles:

1. Creating a highly productive region, with a diverse, globally competitive economy that offers a range of career opportunities for all residents;
2. Developing a highly educated and skilled workforce to support an evolving knowledge-based economy and excellence in the trades;
3. Partnering with Indigenous peoples to increase educational and employment opportunities;
4. Delivering a complete network of transportation, energy, communications, social and learning infrastructure to support strong, vibrant communities;
5. Demonstrating leadership in sustainable growth and environmental management; and
6. Establishing innovative partnerships to maximize resources and ensure this Plan achieves its ambitious vision and is fiscally sustainable.

The Plan is divided into 6 topic areas: economy, people, communities, infrastructure, environment, and Indigenous peoples. Each topic area contains an action plan with policies to guide decision-making and investment in that area. These topics and their action plans are described further, below.

Economy

The economic action plan focuses on strategies for development on the following priority economic sectors:

- Advanced manufacturing;
- Agriculture, aquaculture, and food processing;
- Arts, culture, and creative industries;
- Digital economy;
- Forestry and value-added forestry-related industries;
- Health sciences;
- Minerals sector and mining supply and services;
- Renewable energy and services;
- Tourism;
- Transportation, aviation, and aerospace; and
- Water technologies and services.

The strategies for these existing and emerging sectors examine opportunities to strengthen networks and collaboration across stakeholders and communities, attract investment, grow and retain existing businesses, respond to labour market needs and opportunities, support research in the northern Ontario context, improve on the clarity and efficiency of provincial regulatory and legislative frameworks, and integrate consideration of the sectors when planning labour market and infrastructure.

People

The action plan for people in northern Ontario focuses on three key areas: educational attainment, skill and innovation, and health. The province's strategy for educational attainment prioritizes working with school boards and postsecondary institutions to increase opportunities for residents of northern Ontario to participate in secondary and postsecondary education. To create a skilled and innovative population in the north, the province intends to collaborate with partners in education to increase the ability of northern residents to participate in the workforce through programs and initiatives. Lastly, the province's strategy for a health population is to increase the number of health professionals in the northern region, increase access to health services, and encourage municipalities to promote healthy living by providing variety in land uses, employment, housing, public spaces, and easily accessible businesses/services.

Communities

The action plan for communities looks to build vibrant and resilient northern communities through both long-range and regional economic planning. The Growth Plan recommends that all municipalities should create long-term community strategies. The Growth Plan also identifies strategic core areas, including Thunder Bay, Greater Sudbury, North Bay, Timmins, and Sault Ste. Marie, which are particularly encouraged to plan to create vibrant, walkable, mixed-use communities. Part of the action plan includes identifying economic and service hubs in the northern region to provide additional support. Lastly, the Growth Plan's regional economic planning priority seeks to strengthen northern communities' capacity to plan for economic development by developing regional economic plans for each economic planning area.

Infrastructure

The infrastructure action plan seeks to coordinate and align infrastructure investments in order to support economic development and meet the needs of current and future residents. The Growth Plan's strategy for infrastructure focuses on coordinated investments, a multimodal transportation system to enhance connectivity, education infrastructure, information and communications infrastructure, and energy. Infrastructure investments include transportation, water and wastewater, waste management, energy, information and communications, and community infrastructure. Planning for a multimodal transportation system focuses on the efficiency and safety of transportation in the region as well as enhancing connectivity between communities. Education infrastructure refers to increasing access to education and training in the northern region through improved technologies, facilities, and partnerships. Planning for information and communications infrastructure investments can help support other economic development, educational attainment, healthcare, and public safety policies. Lastly, plans for energy infrastructure improvements include identifying investment opportunities in the north's transmission and distribution systems to maintain reliability and meet demands, working with stakeholders to identify opportunities for diesel alternatives for remote communities, and seek opportunities to increase energy efficiency in the region.

Environment

The environment action plan seeks to support the sustainable development of northern Ontario's natural resources. The action plan recognizes the need for climate change mitigation and

adaptation and focuses on environmental leadership and protection. Plans for the region's management of natural resources includes integrating approaches with provincial policies and programs, as well as working within a framework which responds to changing environmental, economic, and social values, and science-based information to allow for emerging practices and technologies. Environmental protection plans are pursuant to the *Far North Act* of 2010 and encourage municipalities to contribute to the protection of surface and groundwater features, identify sustainability objectives, and incorporate climate change mitigation strategies to create a culture of conservation. The province would like to facilitate renewable energy projects in the region and work with various stakeholders to protect and preserve air and water quality, water quantity, and natural heritage from climate change impacts.

Indigenous Peoples

The Province of Ontario recognizes the need to reconcile and work closely with Indigenous peoples. The Growth Plan seeks to address the socio-economic gaps which exist between Indigenous and non-Indigenous groups by supporting improvements in economic development, healthcare, and educational attainment in the north. Economic development is a key objective in this plan as the province seeks the involvement of Indigenous communities in economic planning and improving the economic development capacity of Indigenous communities. The action plan begins with acknowledgement of Indigenous and treaty rights and the need to develop consultation frameworks, support capacity-building, and work with the federal government to settle Indigenous land claims. Economic development planning focuses on increasing employment opportunities for Indigenous peoples in the northern region, involving Indigenous communities in regional economic development planning, expanding Indigenous opportunities to participate in local labour markets through various methods including internships, increasing access to education and training, and encouraging partnerships between Indigenous communities and educational/training institutions, and support Indigenous enterprises. Actions to improve healthcare and educational attainment for Indigenous peoples include establishing and monitoring targets and indicators, facilitating support programs and summer work experiences, and delivering education and health services in a culturally appropriate manner. Lastly, the action plan for Indigenous peoples looks to collaborate with communities in their land-use planning. The province will support community-based land-use planning and include Indigenous communities in planning related to Crown land and resources to consider traditional knowledge.

2.3.4.2 Township of Ignace

This section presents the following plans of the Township of Ignace: Official Plan, Community Improvement Plan, Community Safety and Well-Being Plan, and Community Strategy: Exploring Our Possibilities 2019-2024. These plans are described in further detail below.

2.3.4.2.1 Ignace Official Plan

Official plans describe municipal policies and zoning for how lands within the community may be used, such as where housing, industry, and roads may be located. This ensures that community growth is coordinated and meets the public's needs, as well as ensures the public is aware of the Municipality's general land use policies. Official plans also describe community improvement initiatives (Government of Ontario 2019c). The Township of Ignace's 2020 Official Plan established a vision for the community and outlines six community goals. The Official Plan is

intended to guide and manage the Township's development to the year 2045 and aims to balance physical and economic growth with the protection of social, cultural, and natural resources. The Township's vision for Ignace is (WSP 2020):

Ignace will be a complete, healthy, and active northern community which offers a full range of housing options, employment, services, and opportunities for all residents at all stages of life. Ignace will grow its tourism, resource, and service (e.g., commercial) sectors through economic diversification and investment-readiness initiatives. The Township will continue to protect its key natural heritage and recreational resources, such as Agimak Lake, and will maintain its small-town character.

This community vision is guided by the following six goals and their sub-goals, outlined below in **Table 2.3-1**.

Table 2.3-1: Township of Ignace Official Plan Goals

Main Goal	Sub-Goals
Grow as a complete and health community.	<p>Promote a logical, orderly, attractive, and cost-effective development and land use pattern in the Township;</p> <p>Achieve a greater range of commercial services including retail stores, hardware stores, grocery stores, and restaurants;</p> <p>Attract and maintain a full range of medical and wellness services;</p> <p>Respect and enhance the Township's sense of place by promoting well designed built form and cultural planning, and conserving features that help define character, including cultural heritage resources and landscapes;</p> <p>Develop and enhance recreational facilities, cultural amenities, and opportunities for art;</p> <p>Ensure that growth and development is balanced with the need to protect the Township's natural heritage and beauty;</p> <p>Enhance and protect areas that are significant to the Township's identity, such as Tower Hill and the beaches on Agimak Lake;</p> <p>Promote community beautification, especially along Highway 17/Main Street;</p> <p>Consider the potential impacts of climate change when considering the design of new developments; and</p> <p>Contribute to a barrier-free environment for persons with disabilities.</p>

Source: WSP 2020.

Table 2.3-1 Continued: Township of Ignace Official Plan Goals

Main Goal	Sub-Goals
Facilitate economic diversification and growth.	<p>Facilitate the expansion of existing businesses, including home occupations and home industries, and attract new business development;</p> <p>Promote industrial development in the Township, notably on available industrial lands within the settlement area north of Highway 17/Main Street;</p> <p>Encourage economic growth and development in the Township's rural area, including resource development (e.g., aggregates, forestry and mineral exploration and development);</p> <p>Maximize the economic opportunities associated with resource-based tourism and recreation (e.g., fishing and hunting);</p> <p>Provide opportunities for the remediation and re-use of brownfield sites (properties that may be contaminated) and greyfield sites (previously developed properties that are underutilized, derelict, or vacant but not contaminated);</p> <p>Promote the establishment of an agricultural sector and the economic opportunities associated with agricultural uses, agriculture-related uses, and on-farm diversified uses in the rural area; and</p> <p>Position the Township to become a service hub for mineral exploration and development in the region, including the Ring of Fire.</p>
Preserve and enhance the natural environment.	<p>Protect the quality and quantity of surface water and ground water features and their hydrologic functions, specifically Michel Lake, the Township's drinking water source;</p> <p>Preserve and enhance the ecological integrity of the Township's lakes and their ability to support resource-based recreation (e.g., fishing);</p> <p>Mitigate the potential risk associated with hazardous forest types for wildland fires; and</p> <p>Minimize the impacts of land uses on the natural environment, including but not limited to fish habitat, wildlife habitat, creeks, waterways, and wildflowers such as Lady Slippers.</p>

Source: WSP 2020.

Table 2.3-1 Continued: Township of Ignace Official Plan Goals

Main Goal	Sub-Goals
Promote a full range of housing options.	<p>Permit affordable housing options such as second units, garden suites, apartments, co-operative housing, and tiny homes, as appropriate;</p> <p>Promote a diversity of housing options including townhouse dwellings, low-rise apartments, and semi-detached dwellings;</p> <p>Support the development of a range of affordable housing options for seniors; and</p> <p>Support opportunities for appropriate rural residential development while protecting the natural environment.</p>
Enhance mobility and transportation.	<p>Encourage the development of sidewalks, pathways, and trails to promote healthy and active transportation in new developments and/or in roadway modifications/upgrades;</p> <p>Design roads as complete streets, where possible, to allow pedestrians, cyclists, and motorists of all ages and abilities to move safely along roadways;</p> <p>Recognize the importance of Highway 17/Main Street to the community's mobility and promote its enhancement, including a future pedestrian crossing; and</p> <p>Promote opportunities for alternative modes of inter-community transportation including shuttle bus and taxi services.</p>
Recognize and respect cultural, heritage, and recreation resources.	<p>Identify and protect the Township's cultural heritage resources, which include archaeological resources, built heritage resources and cultural heritage landscapes;</p> <p>Identify and protect the Township's recreational resources such as the trails around Lily Pad Lake and snowmobile trails; and</p> <p>Identify opportunities for new recreational resources and amenities suited to all age groups, including seniors.</p>

Source: WSP 2020.

2.3.4.2.2 Ignace Community Improvement Plan

In 2018, the Township of Ignace released its Community Improvement Plan ("CIP") for 2019 to 2024. The CIP is a planning tool that provides a framework to guide community development towards a set of goals and objectives. The CIP follows provincial acts such as the *Planning Act*, *Municipal Act*, *Ontario Heritage Act*, *Accessibility for Ontarians with Disabilities Act*, *Provincial Policy Statement*, and *Growth Plan for Northern Ontario*, as well as other plans created by the Township including the 2015-2019 Strategic Plan and Community Investment Readiness and Capacity Building Master Plan.

The vision of Ignace's CIP is to "*position Ignace as an investment-ready northern community by retaining and attracting businesses and residents through incentive programs, and municipal*

leadership strategies which contribute to revitalization and beautification" (WSP 2018). A strengths, weaknesses, opportunities, and threats analysis were conducted as part of Ignace's CIP and highlighted the following opportunities for community revitalization (WSP 2018):

- Reignite economic development associated with redevelopment of vacant or underutilized properties for commercial and residential purposes;
- Improve building façades, particularly along Main Street;
- Develop a more cohesive, vibrant, and accessible streetscape in the core business areas of the Township (e.g., Main Street);
- Develop gateway signage improvements;
- Use wayfinding signage with maps to increase awareness of key recreational assets, such as the Township's beaches, in order to draw-in tourists and the travelling public; and
- Promote the redevelopment of vacant and brownfield sites (e.g., former gas stations).

The opportunities identified by the strengths, weaknesses, opportunities, and threats analysis led to the creation of the following community improvement goals, which align with the Township of Ignace 2015-2019 Strategic Plan, and Community Investment Readiness and Capacity Building Master Plan:

- Enhance the Township's physical image, buildings, and main streets to reflect the vibrant, welcoming, and friendly nature of the community and its people;
- Increase the Township's tax base by offering incentives that retain, grow, and attract businesses and residents, providing long-term payback in the form of municipal revenues;
- Entice tourists and the travelling public to come to Ignace, stay longer, and return more frequently;
- Promote and enhance the Township's natural features and community assets (beaches, community facilities, etc.);
- Make a strong, lasting, and positive first impression through gateway features that reflect the community's assets and identity; and
- Implement community improvement through the right set of direct and indirect financial incentives and municipal leadership strategies (WSP 2018).

To achieve the community vision and goals outlined above, the Township identified several public projects using the philosophy, "what is the smallest thing we can do to make the biggest impact?" The following recommended projects focus on enhancing Ignace's existing character and natural environment.

- Public lands and buildings: development should consider maintaining public access to the waterfront and sufficient area for community recreation and leisure needs. The Township may consider adding additional seating and other amenities to the beach areas to maximize their utility and draw. The Township may also consider restoration of the float plane 'node' located on the north side of Main Street.

- Gateway signage: the Township has undertaken a branding and marketing strategy, which included designing new signage. The Township may consider relocating the existing stone markers for use elsewhere in the community. The Township may consider the placement of its gateway signage to align with the town's entrances more closely to welcome the travelling public and allow them more time to consider stopping to use the town's amenities. A directory listing the town's businesses and services would also aid this.
- Property standards for Highway 17: to ensure a positive first impression on visitors, the Township may consider participation in the Ministry of Northern Development and Mines' First Impressions Community Exchange. This program helps communities learn about their strengths and weaknesses as seen through the eyes of first-time visitors. Volunteer "visitors" from two exchange communities do unannounced, incognito visits, record their observations, and then provide constructive feedback. This can help the Township in identifying priorities for improvement in appearance (e.g., property standards).
- Lookout Point/Tower Hill: the Township may wish to consider improving signage to alert drivers of the upcoming scenic lookout and provide enough time for them to safely slow down and make the required turn. The Township may also wish to consider maintaining and managing vegetation in order to minimize the vegetation that obscures views of the Township and Agimak Lake. Lighting improvements, landscaping, and seating at the top of Lookout Point could contribute to the beautification of this asset. The addition of public washrooms would also support the development of this asset as a destination for residents and the travelling public.
- Smartphone application: the Township may wish to consider developing a smartphone application for the use of residents and visitors alike. Potential functionality could include the following: local events calendar; promotions and features offered by local businesses; maps of the Township featuring points of interest, local attractions and hunting and fishing resorts; local business directory on a map illustrating the location of goods and services within the Township; and food and accommodations information.
- Highway 599: participants of the Visioning Workshops identified that signage to Highway 599 is not very clear and could be improved. Additionally, vegetation overgrowth at the northwest corner of the Highway 17 and Highway 599 intersection obscures the public facilities located there, specifically the provincial ministry offices and Mary Berglund Clinic.
- Municipal policies: it is recognized that the Township is currently making a number of key investments in the community, for example through the branding and marketing strategy, as well as the integrated land use planning project. To complement these efforts, the Township may wish to consider development of the following policy documents:
 - Urban design guidelines: to ensure that development and redevelopment supported by the CIP is compatible with existing development and appropriately reflects the community's future vision, the Township may wish to develop detailed design guidelines. Design guidelines may identify architectural elements (colours, cladding, etc.) as well as performance standards (heights, setbacks, etc.) and could assist the Township in evaluating proposals for CIP incentives.
 - Streetscape strategy: to set out a strategy for the improvement for the public realm in Ignace, particularly along Main Street and in other commercial and institutional areas,

the Township may wish to consider developing a streetscape strategy. The strategy should identify specific improvements and strategic interventions in the Township, anticipated costs, and implementation (WSP 2018).

Several incentive programs were developed and presented in the CIP to help the Township fulfill its community improvement goals by stimulating private sector investment. The CIP also presents a marketing strategy for the Township, targeted at investors and business owners across the region, which can help Ignace to realize its goals for community improvement. The marketing strategy includes developing printed materials displaying an overview of the CIP and incentive programs, updating the Township website with a webpage highlighting the CIP, annual reporting on the monitoring and evaluation of the CIP through newsletters/information sheets, hosting a launch party to celebrate and promote the completion of the CIP, arrange targeted meetings/presentations for investors and business owners, and identify, recognize, and celebrate successful projects under the CIP.

2.3.4.2.3 Ignace Community Safety and Well-Being Plan

Community safety and well-being plans are legally required in the Province of Ontario under legislative requirements of the *Police Services Act* (1990c) that went into effect in January 2019 (Government of Ontario 2021f). The Ignace Community Well-Being and Safety Plan (2021) outlines a course of action for identifying and responding to current and emerging well-being and safety challenges in the community. The goal of this plan is “everyone belongs,” and this goal is reflected in the community engagement and collaboration which occurred to identify the priority considerations of Ignace community members (see **Section 2.3.3.1** for more information on Ignace community character). The priority areas determined by the Township were support for seniors, employment, mental health, and accessibility, respectively. The strategic priorities, targeted outcomes, and key activities for each priority area is described below in **Table 2.3-2**.

Table 2.3-2: Ignace Community Well-Being and Safety Priorities

Strategic Priorities	Targeted Objectives	Key Activities
Priority area: seniors		
<ul style="list-style-type: none"> • To create, strengthen, and support the well-being and safety for our seniors; • To support seniors in maintaining their independence and social connections; • To encourage and support seniors' safe mobility, transportation, and independence; and • To provide diversity in housing stock that meets the unique needs of seniors enabling them to transition to new housing as their needs evolve. 	<ul style="list-style-type: none"> • Participants will have skills and strategies to adjust and accommodate for age-related changes in their driving abilities; • Potential for fewer accidents involving older drivers; • Extend older drivers' ability to drive safely; and • A diversified housing stock to allow not only "aging in place" but support transition to new housing options. 	<ul style="list-style-type: none"> • Promote the 55 Alive Mature Driver Refresher Course developed by the Canadian Safety Council and delivered locally to increase awareness of age-related risks, highlight specific driving conditions and situations that are most hazardous to older drivers, and encourage strategies for coping with or avoiding these risky driving conditions; • Identify and correct bad driving habits; • Ensure that future development proposals include affordable, rental, and senior housing; • Consider granting tax exemptions for non-profit seniors and affordable housing developments for seniors housing, purpose-built rentals, and/or housing that incorporates accessible design as incentives to encourage development; • Develop a comprehensive housing strategy that includes housing needs assessment as well as strategies to address seniors and low-income housing; • Lobby public and private sectors to engage in measures to improve the housing stock in Ignace; • Advocate that market priced housing alone will not be sufficient to meet the needs of the community and that significant investments in subsidized housing will need to be made; and • Advocate to provincial and federal governments and the private sector for continued and increased investment in affordable housing.

Table 2.3-2 Continued: Ignace Community Well-Being and Safety Priorities

Strategic Priorities	Targeted Objectives	Key Activities
Priority area: employment		
<ul style="list-style-type: none"> To provide employment recruitment and retention opportunities for in demand skilled workers, youth, Indigenous, adult learners, and young professionals. 	<ul style="list-style-type: none"> Articulate and measure the community's skilled human resource needs; Increase the opportunities available for youth and young adults to pursue further education opportunities; Increase the supports and resources for those individuals with mental health challenges to acquire and retain employment; and Support local youth and adult learners to acquire skills/education to fill sought local positions to provide the level of services to meet community needs. 	<ul style="list-style-type: none"> Monitor community skilled human resource gaps by collecting the status of stagnant job vacancies from local employers; Support the youth engagement strategy to help grow and develop local youth education and skills-training opportunities; Welcome young professionals to the community and support their network of associations that support their skills training and career development; Meet with local school boards, post-secondary educational institutes, and employment agencies to promote career pathways and trades for Ignace youth and adult learners; Lobby employers to engage in measures to provide Ignace residents access to education and job training for in demand jobs, apprenticeships, and trades; and Support employers on recruitment, mentoring, retainment, and incentive packages for employment opportunities.

Table 2.3-2 Continued: Ignace Community Well-Being and Safety Priorities

Strategic Priorities	Targeted Objectives	Key Activities
Priority area: mental health		
<ul style="list-style-type: none"> To improve the outcomes and experiences of people living with mental health and/or substance use issues in Ignace; To promote mental wellness and positive relationships among community members and families through fostering supportive environments; To improve access to mental health and wellness services and supports for “at risk” and vulnerable groups by simplifying pathways and coordinating efforts; and To promote healthy living and addiction treatment options available to all residents. 	<ul style="list-style-type: none"> More youth, Indigenous, and seniors feel safe, connected and supported in the community; Improved health and wellness outcomes for community members through a better “streamlined” system in navigating among mental health and addiction services and supports (i.e., barrier-free, umbrella of care, cost management approach); Improved access to mental health services and supports for youth, seniors, and Indigenous groups; More situations of acutely elevated risk are mitigated; Increase in awareness and acceptance of mental health challenges; Reduced stigma and discrimination; Enhanced communication among local and regional agencies; and Reduced police involvement in non-criminal calls. 	<ul style="list-style-type: none"> Recreational facilities and events are available to youth, Indigenous, families/parents, and seniors in the community; Social supports are incorporated into the fabric of the community (inclusiveness, community gatherings, welcoming events); and Mental health services are provided to youth, Indigenous, and seniors in an environment they are comfortable in.

Table 2.3-2 Continued: Ignace Community Well-Being and Safety Priorities

Strategic Priorities	Targeted Objectives	Key Activities
Priority area: accessibility		
<ul style="list-style-type: none"> To increase residents' sense of belonging and safety (resilience); To increase vulnerable residents' experiences regarding ease of access to services and critical supports, as well as positive and sustainable outcomes; To expand community-wide education and awareness on safety and belonging; and To improve accessibility to service and supports. 	<ul style="list-style-type: none"> Increased opportunities to build new relationships and strengthen social support networks reducing isolation and feelings of loneliness; Increased awareness among residents of existing services available to the community; Wider range of group peer support that includes sharing of experiences/information and mutual learning; Improved accessibility/mobility through improvements to physical environments (i.e., outdoor spaces and buildings); and Decreased incidents of falls and related injuries for seniors. 	<ul style="list-style-type: none"> Develop a municipally supported communication strategy that increases access to economic and community supports for vulnerable populations in Ignace; Develop, maintain, and distribute an inventory (paper, electronic) of local services to service agencies; Enhance 211 directory for Ignace by ensuring that every agency is included, and their listings are updated regularly; Undertake and implement a community safety audit; Develop a peer mentor network of persons with lived experience to act as coaches in navigating the system, identifying, and accessing services, in addition to reducing the intimidation factor that may be associated with the process; Recruit and train (if necessary) individuals with lived experience to act as peer mentors; Develop accessible design guidelines to apply to new development in the community; Ensure all public buildings are equipped with accessible design features, such as accessible washrooms, ramps, railings, and other features; Ensure additions or replacements of public seating (e.g., benches and picnic tables) in public spaces have accessible design; Work with the Ignace Area Business Association to help improve the accessibility of their spaces, including benches outside of stores, ramps, automatic doors, use of washrooms, and accessible parking spaces; Ensure all future sidewalk development maintains widths of at least 1.5 metres to accommodate persons using mobility aids and walkers; Identify key pedestrian routes to receive additional winter maintenance (e.g., snow and ice clearing) with a priority focus a senior walk/urban art proposed route; Work with Township of Ignace and Ignace Public School for community exercise activities such as daily seniors' walks; Identify opportunities to provide additional lighting and remove tripping hazard along main walking routes and pathways throughout town; and Consider providing free sand or salt for residents to use to reduce slippery ice conditions on their driveways and sidewalks, and in front of local businesses.

Source: Township of Ignace 2021.

2.3.4.2.4 Ignace Community Strategy: Exploring Our Possibilities 2019-2024

The Ignace Community Strategy aims to support and grow the community and its economy by outlining priorities and directing municipal efforts. The Strategy provides goals, recommendations, and actions for the Township's four development priorities, or "pillars": community development, economic development, tourism, and marketing and communications (see **Section 3.0 Economy** for information on the economic development and tourism pillars). Actions for each pillar were determined through public consultation and research and are the responsibility of various stakeholders in the Township, including elected officials, economic development staff and other Township departments, local organizations, local businesses, and residents. The Community Strategy works to support Ignace's vision, *"to be a safe, attractive, and caring community that focuses on quality of life which is driven by a healthy, diversified economy based on principles of sustainability."*

Community Development

The Township of Ignace would like to continue building a strong, cohesive community with a growing population, while maintaining the small-town feeling that Ignace residents value. In seeking to foster a united community, the Ignace Community Strategy highlights the following goals for community development:

1. To be a proud, united, and vibrant community that works together and celebrates success; and
2. To build trust through relationships.

Table 2.3-3 below outlines recommendations and the top five actions to help the Township achieve these community development goals.

Table 2.3-3: Community Strategy 2019-2024, Community Development Recommendations and Top 5 Actions

Recommendations	Actions
<ul style="list-style-type: none"> • Clean up and beautify the community; • Build trust through relationships for positive community change; • Maintain relationships with current key prospects; and • Build on key community assets to be ready for investments in the specific sectors of forestry, mining, and commercial/retail. 	<ol style="list-style-type: none"> 1. Use the new brand and create a themed signage program. Implement the signage program along the Trans-Canada corridor, between Thunder Bay and Dryden; 2. Continue to remove any derelict or abandoned buildings that are located within Ignace. Turn the properties into landscaped parkettes or erect building facades/signage that demonstrate what the property would look like within the CIP guidelines; 3. Continue to enact and enforce property standards to ensure Ignace portrays itself with an image of heightened property ownership and pride; 4. Continue to support the existing community events (i.e., White Otter Days, Canada Day, etc.) and use the success of these annual events to make residents proud of their community and use it as an opportunity to market the community as a location of choice for potential new residents; and 5. Continue to demonstrate to the NWMO that Ignace is the right choice for the Canada Geologic Repository and be ready for when Ignace could be the selected site.

Source: TD Graham & Associates 2019.

Marketing and Communications

Residents of Ignace seek a central source of information to learn of local opportunities, events, community stories, and more since the loss of their local newspaper, the Ignace Driftwood, in 2018 (NWO Baseline Studies Key Person Interview Program 2022-2023). Further, residents want to share local information and spread the word about Ignace to non-residents. The Ignace Community Strategy highlights the following marketing and communications goal:

- For the Township of Ignace to effectively tell the community's story and messages to current and prospective residents, businesses, tourists, and other levels of government about the community's assets and strengths.

Table 2.3-4 below outlines recommendations and the top five actions to help the Township achieve these marketing and communications goals.

Table 2.3-4: Ignace Community Strategy 2019-2024, Marketing and Communications Recommendations and Top Five Actions

Recommendations	Actions
<ul style="list-style-type: none"> Consolidate and enhance online presence; and Continue to implement remaining actions in the Ignace Marketing Plan 2018. 	<ol style="list-style-type: none"> Review the Township of Ignace website and complete missing content ensuring the Ignace messaging is geared to attracting visitors; Launch e-newsletter and e-blast program to keep businesses up to date, addressing local concerns and opportunities. Use these to communicate Ignace initiatives that affect and/or support local business community; Modify existing Facebook page and update it often. As new content gets added to the site, share this news via social media. Goal is to drive traffic to the website; Apply to Destination Northern Ontario for funding to develop and implement wayfinding strategy; and Create better directional signage in and around the Township directing residents and tourists to key attractions such as Agimak Lake, the beaches, Tower Hill, trails, the Mary Berglund Community Health Centre, and others that are currently not well-signed. This will also help to improve linkages to the lake and trails.

Source: TD Graham & Associates 2019.

2.3.4.2.5 Ignace Project Visioning

The Ignace Project Visioning Community Conversations report (2020) presents community feedback on Township priorities and objectives in relation to the Project, as provided by Ignace residents through series of discussions. Community members were presented with five categories of priorities and objectives: people, economics and finance, infrastructure, community and culture, and natural environment. The priorities and community feedback are described further below.

People

The Township would like to grow the population to 2,500-3,000, develop strategies to retain population across all age groups, particularly youth, and attract new residents to the area by developing strategies to attract and retain workers. Community feedback on these goals included a common desire to maintain Ignace's small-town feel, with most indicating they prefer a community population under 3,000, concerns regarding a lack of employment opportunities, long-term care facilities, and general services in the area to retain youth and seniors, and a desire to ensure existing Ignace residents benefit the most from opportunities brought by the Project, including prioritizing local training and hiring.

Economics and Finance

The Township has several economic goals and considerations, including increasing business activity and employment opportunities, enhancing strategies to sustain local businesses, growing the tax base to fund community services/facilities through managed population growth, enhancing local training programs to maximize project opportunities for residents, increase household income, and diminish needs for social assistance, and support the growth of tourism through community enhancements. Participants reaffirmed the importance of maintaining local businesses as they represent northern culture, provide youth employment opportunities, and offer an alternative to larger, chain stores, with variety and quality of local businesses being a priority for attracting and retaining residents including a need for conveniences such as a 24-hour gas station/convenience store, restaurant, and pet-friendly accommodations. Participants were concerned with the Township's financial sustainability and the costs associated with developing and maintaining infrastructure, noting that Ignace should not go into deficit to host the Project. Community members noted that new opportunities for skill development, including a large facility to host them, would benefit the community, particularly youth, as residents currently leave the community for secondary education and training and are also often unaware of the services offered by Crossroads Employment Services in town. Participants shared that they would like to see maximum economic benefit to Ignace throughout the Project and that expanding the Township's relationship with the NWMO to include an economic development team would be beneficial. Participants were interested in learning more about the Project's potential effects on tourism in the area, suggesting Ignace be promoted as a healthy community with numerous outdoor recreation opportunities and implementation of an interactive information site highlighting points of interest, and noting opportunities for developing pedestrian and cyclist networks in town.

Infrastructure

The Township would like to prioritize coordinated and integrated infrastructure and services, expand real estate development and upgrade the existing housing stock, improve transportation infrastructure and services, improve the aesthetics and attractiveness of Ignace along the highway corridor, and improve recreational facilities and programming. Participants expressed that new infrastructure is the most cost-intensive compared to other community priorities and the need to improve existing infrastructure ahead of developing new facilities, but acknowledged that new, innovative and iconic infrastructure could attract tourists. Residents suggested service lines and fencing around commercial properties and improvements to communication infrastructure, including internet and cellphone services. Feedback on housing development was tied to employment opportunities, as residents shared that Ignace cannot have new housing without providing more employment, however, there is a shortage of affordable residential real estate and rentals and participants acknowledged a demand for new, affordable, and high-quality housing, particularly for seniors. Participants pointed to sidewalks, curbs, and potholes as being in need of improvement, noting that the highway corridor through town and the trailer park require improvements to their aesthetics. Participants also noted that, if the population increases, the Town may require public transportation. A need for greater recreation programming and infrastructure was expressed by participants, including enhancements to current facilities like the fitness facility, tennis courts, and curling rink, and new facilities such as an indoor swimming pool and a youth centre. As current recreation in Ignace relies heavily on volunteerism, community members suggested a transition to staffed positions to support

sustainable recreation. Residents felt strongly about maintaining access to the outdoors, suggesting opportunities for boat launches close to the community and protecting forested areas for recreation. With a potential growth in Ignace's population, participants expressed a need to study other municipalities in proximity to major projects to understand ways to address potential social challenges that may arise.

Community and Culture

The Township would like to celebrate its heritage and small-town nature, as well as support its community members through recreation and social programming enhancements. Community feedback on these priorities confirmed the importance of Ignace's small-town nature to residents, with some participants noting that maintaining a small population may contribute to the town's resilience in the future, concerns about losing the community's senior population and the history/knowledge/stories that they hold and the desire to be more proactive in highlighting Ignace's history (i.e., gateway signage) as a way of attracting tourists and new residents. Participants also suggested that Ignace's recreational facilities be updated/modernized and expressed the desire to provide more recreational opportunities across different age groups and for youth in particular.

Natural Environment

The Township would like to maintain and protect the environmental integrity of the area and support the conservation of reserves and parks. Community members responded to these priorities with the recommendation that they be expanded to better reflect the community's strong connection to the outdoors. Participants noted that the natural environment is not limited to the areas surrounding Ignace and should also reflect areas within the community, and consideration should be given on how the environment within Ignace can be preserved and enhanced, such as through community beautification initiatives, preserving natural areas when expanding the community, and measures related to waste disposal. Participants acknowledged that the integrity of the natural environment in and around Ignace is critical to many residents' livelihoods, and the importance of communication regarding Project activities to increase public understanding and support of the Project.

2.3.4.3 City of Dryden

This section presents the following plans of the City of Dryden: Official Plan, Community Improvement Plan, Community Strategic Plan, and Community Safety and Well-Being Plan (this plan is shared with the Municipality of Machin). These plans are described in further detail below.

2.3.4.3.1 Dryden Official Plan

Dryden's Official Plan (2022) focuses on sustainable development through the integration of governance, land use, transportation, and the social, cultural, economic, natural, and built environments (Quartek Group 2022). According to Dryden's previous Official Plan (2012), the City envisions that by 2031, Dryden will thrive as a service centre for the region, offering advanced educational and health care facilities surrounded by boreal forest. The City will be a welcoming, prosperous, and modern community, supporting culture, tourism, and the natural environment while ensuring an excellent quality of life for its residents and visitors.

The 2022 Official Plan establishes goals and objectives in several priority areas to guide future development in the City, including community, culture, economy, environment, housing, sustainable development, tourism, and transportation (see **Section 2.4** for a description of the community, environment, housing, sustainable development, and transportation priorities; see **Section 3.0** for a description of the economy and tourism priorities). The culture priority is described further, below.

Culture

Culture priorities identified in the Dryden Official Plan (2022) include:

- Encourage the conservation of cultural heritage resources, which includes their identification, protection, management, and use;
- To recognize and support the diverse ethnic groups, ages and interests of the present and future residents of the City;
- To support the cultural community and support local artisans, through the installation of public art and creation of public spaces that celebrate the creativity of the community;
- To engage with Indigenous communities when considering significant land uses or public works in the City;
- To recognize and respect the cultural values and heritage of First Nations, urban Indigenous, and Métis populations;
- To build a physically attractive and accessible community that enhances the community's quality of life and sense of place;
- To ensure that planning for land use, infrastructure and other municipal or community services considers culture as a consideration in the consultation and decision-making process; and
- To recognize the contribution cultural heritage makes to the municipality's identity, economic prosperity, quality of life, and overall sense of place (Quartek Group 2022).

2.3.4.3.2 Dryden Community Improvement Plan

In 2019, the City of Dryden released an updated CIP, modernizing the city's previous improvement plan from 2007. The CIP is a planning tool that provides a framework to guide community development towards a set of goals and objectives. The CIP follows provincial acts such as the *Planning Act*, *Municipal Act*, *Ontario Heritage Act*, *Accessibility for Ontarians with Disabilities Act*, Provincial Policy Statement, and Growth Plan for Northern Ontario, as well as other plans created by the City, such as Dryden's Official Plan (2022) and Economic Development Strategic Plan (2015).

The vision of Dryden's CIP is, *"Dryden will seek unique opportunities to build pride in our community by supporting existing and future businesses, attract new strategic investment, and facilitate an efficient building and development process."* To realize this vision, the City identified nine community improvement goals (WSP 2019):

1. Market Dryden's geographic location as a regional hub to attract targeted, strategic investment in the community;

2. Assist and collaborate with existing businesses in achieving their economic development goals;
3. Be investment-ready to accommodate new business opportunities;
4. Encourage development that is beneficial to the community as a whole on municipally and privately-owned vacant and/or underutilized land;
5. Support the revitalization and beautification of the community, including existing development and businesses;
6. Recognize opportunities and work proactively with applicants, and provide assistance to applicants through the building and development process;
7. Utilize technology and implement a streamlined, easy-to-follow CIP application process;
8. Encourage and reward pride and investment in property ownership, including celebrating and marketing successful community improvement initiatives; and
9. Pursue the implementation of community improvements through a combination of municipal leadership and private investment in the following:
 - a. Accessibility improvements;
 - b. Provision of affordable housing and seniors housing;
 - c. Remediation, rehabilitation, and redevelopment of brownfield sites;
 - d. Conversion of vacant or under-utilized space to support new development;
 - e. Improvements to the energy efficiency of existing buildings;
 - f. Improvements to building facades, signage, landscaping, and parking areas;
 - g. Development on surplus municipally owned lands;
 - h. Provision of public art; and
 - i. Promoting community gardens, small-scale agricultural uses, and local food production as interim uses on private vacant lands prior to their development/redevelopment.

To achieve the community vision and improvement goals outlined above, the City developed a municipal strategy for complementary improvements to public policy, wayfinding and signage, lands, and infrastructure. The following is a list of City initiated projects that can help Dryden meet the goals of its improvement plan and positively represent its municipal leadership (WSP 2019):

- Municipal initiatives/documents: Dryden has opportunities to implement strategic policy initiatives that will support its Improvement Plan goals and objectives. The City may wish to consider development of the following municipal initiatives and documents:
 - Reconciliation and partnerships: Dryden will seek to partner with Indigenous organizations and communities, as well as any other organizations, to foster local and regional economic growth and identify the necessary resources to drive economic competitiveness; and

- Streetscape design plan: this plan would set out to improve public streets, sidewalks, pathways, and trails that are the City's responsibility. The plan would set out guidelines for beautification, signage, street furniture, pedestrian crossings, among other elements. This plan should identify and prioritize specific improvements in conjunction with planned public infrastructure works, anticipated costs, and a proposed implementation strategy.
- Co-working space: to encourage local entrepreneurs and small business operations, the City may consider the development of a co-working space for small businesses, such as an innovation centre or an incubator space. Co-working spaces may be located on City-owned lands or within existing facilities.
- Infrastructure: several streets throughout the City were identified by community members as being in need of road repairs, repaving, and streetscaping improvements. When local streets are being considered and prioritized for road works, including to minimize traffic conflicts and congestion, the City should consider implementing streetscape improvements in conjunction with other construction, including planting street trees, improving lighting, rehabilitating sidewalks, trails, and road surfaces, installing street furniture, and other decorative elements such as planters, banners, and hanging flower baskets. Such improvements would contribute to enabling connected, safe, and comfortable travel by pedestrians, cyclists, and vehicles.
- Gateway signage and wayfinding: there are opportunities to enhance key entryways into the municipality, including along Highway 17, to attract potential visitors and vehicles passing through Dryden. There is also a need to implement better signage and wayfinding to increase awareness of key recreational and tourism assets in the City, such as the Laura Howe Marsh. Wayfinding could be implemented at key entry points into the City, including business and recreational area listings, with directional signage. A downtown business directory and associated signage could be implemented at Highway 17/Duke Street in the east, and at Highway 17/King Street in the west.
- Public art: the City may incorporate public art on municipal buildings, structures (e.g., bridges, retaining walls), and in public spaces to celebrate and support a thriving arts culture in Dryden. Public art may also be utilized to improve streetscaping and the visitor experience, as well as promote tourism, as public artworks can be used to visualize and reflect local culture and history, and implement the City's branding strategy. Protective measures and lighting for public art pieces should be considered, as well as a cohesive public art theme throughout specific areas, such as the downtown core.
- Waterfront lands: improvements and redevelopment of the waterfront areas in Dryden, specifically the government dock, was a focus of community members. Other areas where programming and facilities could be improved include Sandy Beach Park and Cooper Park. Development should consider the maintenance/enhancement of public waterfront access and public boat launches and ensure that sufficient areas are provided for recreation and leisure needs of the community and visitors. Improvements to wayfinding and signage can also help raise awareness of the existing waterfront amenities and spaces in Dryden (WSP 2019).

Several incentive programs were developed and presented in Dryden's CIP to help the City fulfill its improvement goals by stimulating private sector investment. Dryden's CIP was designed for adaptation by building flexibility into the City's policies and programs to account for fluctuating resources and priorities. Thus, the CIP remains a living document and may be adjusted or amended to better respond to community needs. This Plan represents Dryden's commitment to

community improvement and to ensure Dryden flourishes as a regional hub and proud northern community.

2.3.4.3.3 Dryden Community Strategic Plan 2020-2025

The City of Dryden's Strategic Plan for 2020 to 2025 is a results-based plan aimed at guiding the City's decisions, planning, and budgeting, to advance Dryden's priorities and municipal operations, identify key outcomes, and allot the necessary resources for implementation. Six strategic goals were identified by the community to help Dryden realize its vision, *"as a vibrant, safe, healthy, and inclusive community with a diverse economy, providing an exceptional quality of life."* Dryden's strategic goals and priorities are (MDB Insight 2019):

1. Community diversity and inclusion: the City of Dryden will celebrate its diversity and inclusiveness, while ensuring our doors are open and all who enter are welcomed.
 - a. Develop support systems to welcome and familiarize new and existing citizens to the City of Dryden; and
 - b. Continue to foster positive relationships with Indigenous peoples and neighbouring First Nation communities.
2. Community safety and well-being: The City of Dryden places safety and well-being at the core of our existence and all we do.
 - a. Support implementation of community safety and well-being plan, including senior and youth programs and services.
 - b. Undertake appropriate efforts to form the federal and provincial partnerships required to support community safety and well-being strategies; and
 - c. Explore opportunities to enhance public/affordable/safe transportation in Dryden.
3. Infrastructure: the City of Dryden is progressive in its efforts to maintain and strengthen our infrastructure to maximize our opportunity for growth.
 - a. Complete and maintain asset management plan as per legislated requirements to drive longer term capital and resource planning;
 - b. Develop long-term preventative maintenance and capital investment plans to extend the lifecycle of infrastructure, facilities, and fleet; and
 - c. Utilize grant opportunities to maximize project-specific funding with a focused priority on:
 - i. Recreation centre facility upgrades to replace end of life mechanical systems, rehabilitate building envelope, improve accessibility and address arena expansion for the growing user demand and supporting regional and localized special events.
 - ii. Shovel ready road and underground infrastructure projects such as Van Horne Avenue, Duke Street, Earl Avenue, Colonization Avenue, Thunder Lake Road, Government Street watermain upsizing, and other infrastructure projects directly related to the asset management plan.

4. Fiscal sustainability: the City of Dryden operates in a fiscally responsible manner through established practices that ensure a sustainable future for the community and municipality.
 - a. Seek creative, new revenue sources;
 - b. Increase City reserve funds;
 - c. Continue the City's debt repayment plan to 2021; and
 - d. Sustain existing funding sources and efforts.
5. Economic and investment diversity: the City of Dryden recognizes and responds to opportunities that diversify our economy and positions us to achieve positive return on investments.
 - a. Waterfront Development;
 - b. Utilize a portion of the Municipal Accommodation Tax to further build community capacity and local tourism activities and attractions;
 - c. Attract new businesses by promoting Dryden as a regional business and transportation hub;
 - d. Implement re-branding initiatives;
 - e. Support existing business in Dryden;
 - f. Identify and respond to economic related actions identified in the CIP;
 - g. Partner with Indigenous organizations and communities and other organizations to foster local and regional economic growth; and
 - h. Identify necessary resources to drive economic competitiveness.
6. Communications and our people: the City of Dryden respects our employees and our citizens and is committed to responsive and transparent communication.
 - a. Develop and implement formal communication plans;
 - b. Support management, mentoring and leadership training;
 - c. Develop a corporate wide customer service training strategy; and
 - d. Enhance organizational culture and communications to promote employer of choice qualities and commitment to the municipal mission.

Implementation and monitoring efforts are critical to the success of Dryden's strategic plan and require accountability, responsiveness, timeliness, and transparency from the City.

2.3.4.3.4 Dryden, Machin and Area Community Safety and Well-Being Plan

The Community Safety and Well-Being ("CSWB") Plan for Dryden, Machin, and area (MNP 2021) provides a framework for communities and their stakeholders to promote and maintain community safety. The CWSB Plan works to complement and reflect existing municipal strategies in Dryden and Machin, such as community official and strategic plans. The CSWB Plan's mission is to, *"bring people together to advance inclusion, build upon our resilience and strengthen our community connections for a safer Dryden, Machin, and Area."*

This mission is guided by four main principles: community-led collaboration, anti-racism/anti-oppression, person-centred care, and data-informed practice. These principles are reflected in the goals and objectives set out in the CWSB Plan. Three primary goals were identified in the CWSB Plan:

1. Meaningful multi-sectoral collaboration enhancing service provision to community members with high risk factors;
2. Safe and healthy community members; and
3. Meaningful community engagement and inclusion that improves community safety and well-being.

Community and stakeholder engagement further identified four focus areas for the community and CSWB Plan: supporting youth, prevention/education, treatment, and social development. These four pillars, described further below, help to break down the CWSB Plan's goals into actionable items, including targeted objectives, outputs/outcomes, and responsible parties.

Supporting Our Youth

This pillar aims to ensure that Dryden, Machin, and area youth feel included in their community by providing safe spaces for activities, promoting a holistic, healthy lifestyle, and supporting those at risk of mental health challenges with access to services. Social inclusivity and connectivity are key to supporting the development and well-being of youth; youth that feel they are well-connected to a support system are better equipped to access help and support. With the CSWB Plan, Dryden and Machin acknowledge that a strong sense of community, providing safe spaces, promoting well-being, and healthy activities are all important elements required to support their youth. This pillar focuses on the following objectives:

- Obtain funding to open the Dryden Youth Centre and run youth-friendly programming;
- Make mental health and addictions services more readily available to youth;
- Support the City of Dryden in advancing efforts toward a youth friendly city designation; and
- Provide easy educational/civic engagement activities to prevent poor health behaviours in youth.

Prevention/Education

Community members identified crime and harmful behaviours as two primary concerns for safety and well-being in the area. In particular, residents felt that addictions, crime prevention, and mental health were the top priorities with regard to these concerns. The prevention/education pillar focuses on the following objectives:

- Develop a risk mitigation tool to reduce harm and victimization from social disorder and crime;
- Public health organizations operating harm reduction programs (i.e., needle exchange, sexual health clinic, dating violence, elder abuse, internet abuse);
- Activities that keep the peace, ensure public safety, and reduce criminal activity with a focus on community safety;

- Educating the public about proactive ways to decrease their likelihood of being a victim of a crime as well as supportive services for victims of crimes in an effort to improve the feelings of safety by community members;
- Develop an online directory to improve communication and the promotion of services to residents; and
- Continue to develop a community directory with support agencies to ensure information is current and accessible for residents.

Treatment

The focus of this pillar is to develop partnerships that enhance collaborative efforts to address gaps and barriers in mental health and addictions services, as well as the crisis intervention system. The treatment pillar focuses on the following objectives:

- Address gaps and barriers within mental health and addictions services through the enhancement of key partnerships;
- Address gaps and barriers within crisis response through the enhancement of key partnerships;
- Identify opportunities for new partnerships and review current funding sources for crisis intervention;
- Review current service offerings and identify gaps/barriers that need to be addressed for suicide response; and
- Develop a plan to address gaps and barriers in suicide response.

Social Development

This pillar is focused on promoting individual and community wellness by addressing social issues. The social development pillar focuses on the following objectives:

- Work with community-based organizations and food programs to improve emergency food access;
- Working with local, provincial, and federal governments to advocate for appropriate housing including supported housing and crisis housing;
- Identify and highlight needs related to community housing;
- Coordination of support/service pathways for emergency housing clients;
- Establish effective methods to promote volunteer opportunities; and
- Identify and promote activities for older adults (arts/music/cultural/etc.) to reduce isolation.

2.3.4.4 Municipality of Machin

This section presents the Municipality of Machin's Municipal Modernization Program.²¹ This plan is described in further detail below.

2.3.4.4.1 Municipal Modernization Program

Machin's Municipal Modernization Program (BDO 2020) outlines recommendations to improve service delivery and summarizes potential opportunities for modernization based on historical demographic and financial data and stakeholder consultation. The report aims to provide achievable improvements for the current state of services in the Municipality while keeping the future in mind. These improvements take the form of six priority areas for Machin: operating/capital grants, municipal systems/processes, human capital, communication, short-term infrastructure, and long-term infrastructure. These priority areas are presented in the Machin Modernization Program report with short-term action plans that consider the roles of governance, administration/finance, fire services, public works, and the Woodland Arena. The six priority areas and their recommended improvements/opportunities are described further below.

Operating/Capital Grants

The operating/capital grants priority for Machin focuses on pursuing grants to be "shovel ready", meaning that the relevant studies have been completed and programs/applications have been pursued. The recommended improvements for service delivery on operating/capital grants include:

- Hire an economic development officer and pursue development opportunities;
- Review asset management plan to project future funding needs and development of shovel ready projects;
- Develop a five-year capital plan that is reviewed and updated quarterly; and
- Dedicate staff time and support from economic development officer to the pursuit of grants.

Municipal Systems/Processes

The municipal systems/processes priority focuses on improvements in planning, policy, and procurement. The recommended improvements for service delivery on municipal systems/processes include:

- Delegate financial processes and map for employee orientation;
- Share services, when possible, with neighbouring municipalities; and
- Policies/by-laws need to be kept current, trained on, and liability/risk managed.

²¹ The Municipality of Machin is included in the Community Safety and Well-Being Plan with the City of Dryden, described in the previous sub-section.

Human Capital

The human capital priority is focused on developing a leadership team and improving training processes and performance management systems. The recommended improvements for service delivery on human capital include:

- Development of leadership team terms of reference/role clarification;
- Implement cross-training plan for employees; and
- Enhance and implement performance management system.

Communication

The communication priority is focused on internal and external communication improvements. The recommended improvements for service delivery on communication include:

- Enhance communication to community (re: service level e.g., tax allotment, roads, etc.);
- Develop electronic communications/scheduling program; and
- Increase communication with government to support smaller municipality needs.

Short-Term Infrastructure/Asset Management

The short-term infrastructure priority focuses on updates to infrastructure to improve service delivery on roads maintenance, building updates, watershed calculations, and water services. The recommended improvements for service delivery on short-term infrastructure include:

- Road maintenance/project;
- Public works garage improvements;
- Review watershed calculations when replacing culverts and evaluate budget;
- Renovate office building to be accessible; and
- Study expansion of water services.

Long-Term Infrastructure/Asset Management

The long-term infrastructure priority focuses on long-term capital planning and reserve administration. The recommended improvements for service delivery on long-term infrastructure include:

- Develop long-term plan for landfill (compacting);
- Water plant updates/improvements;
- Review of bridge needs and infrastructure updates; and
- Development of senior centre to attract new residents/support growth.

2.3.4.5 Municipality of Sioux Lookout

This section presents the following plans of the Municipality of Sioux Lookout: Official Plan, Community Improvement Plan, Community Safety and Well-Being Plan, and Strategic Plan 2020-2025. These plans are described in further detail below.

2.3.4.5.1 Sioux Lookout Official Plan

Sioux Lookout's Official Plan (MHBC 2019) establishes a community vision and guiding principles, objectives, and policies to reach it. The Official Plan focuses on managing and directing the physical development of the Municipality and enact changes to the social, cultural, economic, and natural environments over a 20-year horizon. Sioux Lookout's vision is, *"through innovative leadership, we engage our diverse population to create a caring, prosperous place to live, invest and be a desirable destination for regional services and tourism."* To achieve the Municipality's vision, the Official Plan sets out eight guiding principles and their objectives/goals, described further below in **Table 2.3-5**.

Table 2.3-5: Municipality of Sioux Lookout Official Plan Guiding Principles and Objectives

Principle	Description	Objectives
Sustainable development	The Municipality shall promote sustainable development to enhance the quality of life for present and future generations.	<ul style="list-style-type: none"> To promote compact development; To direct residential development to the two settlement areas of urban Sioux Lookout and Hudson; To support and encourage infill and intensification in built up areas within the two settlement areas where municipal services exist; To permit limited residential growth in the Drayton area and the rural designation, where lot size and configuration can support private water supply and sanitary sewage systems, and where the development would be compatible with the character of the land use in the surrounding area; To permit limited dry industrial uses in the unserviced area in size and number, except where the development consists of a resource-based industry that requires a large land area and is compatible with the surrounding land uses; To provide opportunities for the adaptive re-use of former industrial areas and brownfield sites where the industrial use is no longer viable; and To permit mix-use areas and buildings with a variety of compatible uses.
Natural environment and resources	The Municipality shall support the protection and integrity of the natural environment as valued by the community.	<ul style="list-style-type: none"> To protect natural and cultural heritage features and areas, surface water and groundwater features; To minimize negative impacts to air quality and climate change through site design; and To protect and preserve and enhance hazard lands, sensitive areas, and important natural resources such as fish and wildlife habitat areas, wetlands, minerals, and aggregates.

**Table 2.3-5 Continued: Municipality of Sioux Lookout Official Plan
Guiding Principles and Objectives**

Principle	Description	Objectives
Affordable housing	The Municipality shall support the location and integration of affordable housing within new or existing development.	<ul style="list-style-type: none"> To provide a range and mix of affordable housing types in locations that are close to services and amenities, and that are compatible with adjacent land uses.
Diversified economy	The Municipality shall maintain and seek opportunities for a strong, diversified economy that provides a wide range of employment opportunities for its residents.	<ul style="list-style-type: none"> To support the airport and air transportation facilities as economic drivers for the Municipality and encourage employment uses to locate on land surrounding the airport; To continue fostering partnerships with Lac Seul First Nation and other Sioux Lookout Area First Nations to identify economic development and other opportunities; To coordinate with Indigenous communities on planning matters related to economic development and employment land uses; To promote the Municipality as a “hub” for health care, tourism, and government services; To ensure that there are sufficient municipally serviced lands for the expansion of residential, industrial, and commercial development to support industrial expansion; and To support the extraction of sand and gravel, minerals, and forest products by providing sufficient and designated land for commercial and industrial purpose to support these uses.

**Table 2.3-5 Continued: Municipality of Sioux Lookout Official Plan
Guiding Principles and Objectives**

Principle	Description	Objectives
Tourist destination	Over the lifetime of this Official Plan, the Municipality of Sioux Lookout shall continue to expand its role as an urban, cultural service centre and tourist destination, providing services to the traveling public and residents of the area.	<ul style="list-style-type: none"> To provide opportunities to enhance the downtown as a destination for visitors by providing docking facilities; To support the development of the heritage sector to meet visitor expectations by preserving important buildings, landscapes, and other elements that defines or represents Sioux Lookout's history such as Centennial Park; To coordinate with Indigenous communities on planning matters related to tourism; To provide opportunities for eco-tourism in a manner that is balanced with the protection and conservation of the natural environment.
Complete communities	The Municipality shall encourage new development (e.g., buildings, new neighbourhoods) to provide for a mix of uses in planning for complete communities that include appropriate housing, recreation facilities and jobs. The Municipality supports the co-location of public service facilities in community hubs, where appropriate, to promote cost-effectiveness and facilitate service integration and active transportation.	<ul style="list-style-type: none"> To support mixed-use opportunities where compatible; To enhance the quality of life for existing and future residents by improving access to parkland, cultural and recreational facilities; To provide a range of housing types so that residents can age in place or within the neighbourhood (e.g., downsize from a two-storey single-detached to a bungalow or to an apartment or a garden suite); To promote green infrastructure, energy efficiency and conservation where feasible; To consider impacts of climate change; and To ensure that development is strategically located to support the effective and efficient delivery of emergency management services.

Table 2.3-5 Continued: Municipality of Sioux Lookout Official Plan Guiding Principles and Objectives

Principle	Description	Objectives
Multi-modal transportation system	Sioux Lookout will strive to provide a range of mobile transportation modes that are accessible for persons of all ages and abilities by connecting people and places through coordinated land use, urban design, and transportation planning efforts.	<ul style="list-style-type: none"> To support the establishment of an efficient safe and inclusive multi-mode transportation system for all users; To prioritize trails and pathways; To implement a linked network of safe and active transportation trails and pathways; and Minimize the loss of future opportunities for sidewalks, trails, and pathway development by land acquisition at the time of development.
Community and Indigenous engagement	Sioux Lookout shall promote inclusivity of all people and backgrounds to participate and collaborate in achieving the community's vision. Inform, educate, and obtain the views of the public on matters requiring approval under the Planning Act. The Municipality will pursue the preparation of a land use planning communication strategy in consultation with Indigenous communities which outlines when and how the Municipality will engage with Indigenous communities on development applications and land use projects.	<ul style="list-style-type: none"> To ensure that all stakeholders and the public have appropriate and adequate opportunities to participate in planning processes; To recognize and respect the cultural values and heritage, and to engage other Sioux Lookout Area First Nations and Lac Seul First Nation which are adjacent to the Municipal boundary; and To consult with Indigenous groups or First Nations on matters that hold potential relevance to Indigenous persons.

Source: MHBC 2019.

2.3.4.5.2 Sioux Lookout Community Improvement Plan

Sioux Lookout's Community Improvement Plan (MHBC Planning 2013) focuses on attracting and supporting the rehabilitation and revitalization of private lands and buildings in the Municipality. The CIP provides objectives for improvements to private property and establishes financial incentives for property owners to encourage revitalization. Improvement objectives for the

Municipality are separated into four areas under the CIP: main central area, gateway area, Hudson core area, and airport area. The intent of the Plan is to improve existing buildings/properties, however, an incentive for new residential developments is also included. The following objectives apply to all Improvement areas:

- To improve the success of retail business in Sioux Lookout by encouraging more attractive areas and a wider variety of goods and services;
- To encourage the development of additional residential units as infilling within the community improvement areas of Sioux Lookout and Hudson;
- To encourage the improvement of private and public properties in a manner that reflects a caring and affluent community; and
- To encourage future development within the Municipality of Sioux Lookout by reducing the costs for initial development and ensuring that there are incentives to increase the overall value of lands within the Municipality.

Area specific priorities were also identified in the CIP. Priorities in the main central area include resurfacing Front Street, and improvements to the curbs and gutters, street trees, and streetlights. The gateway area requires improvements to the curbs and gutters, street trees, and streetlights, as well as landscaping the boulevard. The Hudson area requires resurfaced roadways, boulevard landscaping, building rehabilitation, and improvements to the curbs and gutters. Lastly, the airport area requires extending municipal services to Bigwood Lake.

Several incentive programs were developed and presented in the CIP to help the Municipality fulfill its objectives by stimulating private sector investment.

2.3.4.5.3 Sioux Lookout Community Safety and Well-Being Plan

Sioux Lookout's Community Safety and Well-Being Plan (2020b) outlines strategies and actions at four levels of intervention: social development, prevention, risk intervention, and incident response. Through a collaborative process of research, community reports, and community input, the Plan identifies six priority areas of focus: appropriate and affordable housing, mental wellness, substance misuse and addictions, crisis services' capacity for incidence response and de-escalation, employee recruitment and retention, and community cohesiveness and vibrancy. The CSWB Plan expands these areas of focus by identifying the vulnerable/target groups under each priority area and providing supporting goals and activities, which are described further below.

Appropriate and Affordable Housing

Sioux Lookout's housing shortage impacts individuals and families of all ages, demographics, and social backgrounds. However, the impacts are especially prominent for individuals challenged by poverty, mental illness, and/or addictions. The housing goals of the CSWB Plan are:

- Outline of how severe the housing shortage is and who is most impacted; and
- Increase the availability of appropriate and affordable housing at all levels of economic attainment.

Mental Wellness

Sioux Lookout's youth are at particularly high risk for mental illness due to added pressures such as relocation, increased poverty, discrimination, cultural barriers, and lack of extracurricular activities. Many of these issues in Sioux Lookout are interdependent, and therefore require a widespread approach to understand how impacting one area, like housing, can create stability and support for those facing these challenges. The mental wellness goals of the CSWB Plan are:

- Vulnerable populations (such as youth and adults who move from northern communities) are identified and supported while living in Sioux Lookout;
- Youth and families feel welcomed and supported living in Sioux Lookout; and
- Mental health services are available and accessible to youth.

Substance Misuse and Addictions

This priority area focuses on supporting individuals experiencing addictions and substance abuse, including at-risk, in-crisis, and in-recovery individuals. The substance misuse and addictions goals of the CSWB Plan are:

- Increase the opportunities for Sioux Lookout residents to receive addictions services in their community, in person or virtually;
- Greater diversity of addiction services to cater to different demographics such as youth, adults, and Indigenous residents; and
- An enhanced complement of mental health and addiction services in the community to provide capacity for wrap-around crisis and recovery resources.

Crisis Services' Capacity for Incident Response and De-Escalation

The crisis services' capacity priority is targeted to emergency first responders and focuses on individuals who experience crisis episodes, particularly individuals challenged by mental illness, addictions, or other marginalized populations, such as Indigenous peoples. The crisis services' capacity goals of the CSWB Plan are:

- Front line workers have resources to aid in mental health and addiction incidents;
- Increase the awareness/compassion and skilled policing in the area of mental health, addictions, and cultural inclusivity; and
- Emergency services have crisis worker supports and alternatives to the detention system to de-escalate incidents involving those in crisis.

Employee Recruitment and Retention

The employee recruitment and retention priority focuses on in-demand, skilled workers, youth, and adult learners. The employee recruitment and retention goals of the CSWB Plan are:

- Articulate and measure the community's skilled human resource needs;

- Increase the opportunities available for youth and young adults to pursue further education opportunities;
- Increase the supports and resources for those with mental health challenges to acquire and retain employment; and
- Support local youth and adult learners to acquire skills/education to fill sought local positions to provide the level of services to meet community needs.

Community Cohesiveness and Vibrancy

The community cohesiveness and vibrancy priority focuses on community members broadly, including individuals and families of all ages, Indigenous peoples, visible minorities, and low-income households. The community cohesiveness and vibrancy goals of the CSWB Plan are:

- Increase the number of opportunities for residents of Sioux Lookout to celebrate the rich cultural and natural wonders of the community;
- Increase the engagement of community and surrounding region in cultural and natural amenities of Sioux Lookout; and
- Celebrate Sioux Lookout as a place of rich cultural heritage.

2.3.4.5.4 Sioux Lookout Strategic Plan 2020-2025

Sioux Lookout's Strategic Plan for 2020 to 2025 (2020a) celebrates the Municipality's cultural diversity while identifying ways to ensure the health, happiness, and prosperity of its residents. Through a series of community and stakeholder engagement, five strategic priorities were identified to guide the Strategic Plan in its mission to foster "*a vibrant community where diversity, nature, and compassion drive our prosperity.*" These strategic priorities include innovation and development, community wellness, regional collaboration, community engagement, and operational excellence, and are described further below in **Table 2.3-6** alongside goals and actions to achieve them.

Table 2.3-6: Sioux Lookout Strategic Plan 2020-2025, Strategic Priorities, Goals, and Actions

Strategic Priority	Goals	Actions
Community innovation and development: proactively invest in our community to encourage growth and enhance our quality of life.	Provide infrastructure and housing to meet the needs of our community, now and as it grows.	<ul style="list-style-type: none"> • Ensure that our assets are sustainable and that they will meet our long-term needs; • Use municipal best practices to identify innovative approaches to managing our infrastructure; • Ensure that our transportation infrastructure allows people to get around safely and efficiently; and • Encourage an increase in the housing available in Sioux Lookout to meet our current and future needs.
	Collaborate with community partners to foster growth and economic development.	<ul style="list-style-type: none"> • Work proactively with local and regional economic development groups to advance our community's best interests; • Support local efforts to improve Sioux Lookout as a place to do business; • Work with local partners to promote and encourage tourism; and • Support public transportation to make it available and useful to as many of our residents as possible.
	Enable community growth through innovative, proactive planning.	<ul style="list-style-type: none"> • Ensure that the Municipality's planning policies and practices are appropriate to address current needs and accommodate future growth; • Work to secure sufficient commercial property to attract businesses to Sioux Lookout; • Minimize regulatory obstacles to development while ensuring appropriate processes are followed; and • Develop programs and policies that encourage new businesses to move "to Sioux Lookout" and existing ones to stay here.
	Strengthen and enhance Sioux Lookout's status as "Hub of the North"	<ul style="list-style-type: none"> • Ensure the Sioux Lookout airport remains the number one airport in our area; • Collaborate with the hospital to maintain a strong working relationship; • Consider the implications for Indigenous people of any Municipal policies and • Recognize that addressing our social issues enhances Sioux Lookout's status as "Hub of the North."

Table 2.3-6 Continued: Sioux Lookout Strategic Plan 2020-2025, Strategic Priorities, Goals, and Actions

Strategic Priority	Goals	Actions
Community wellness: strive to make our community a healthy and safe place to live for all of our residents.	Maximize and enhance our natural assets and facilities to encourage physical activity.	<ul style="list-style-type: none"> Collaborate with community partners to maintain and enhance our network of parks, trails, and active transportation options; and Work with partners to create and maintain facilities that our residents can use for healthy activities.
	Foster programs that create a vibrant community and encourage lifelong healthy living.	<ul style="list-style-type: none"> Create a vibrant and healthy community through recreation, events, arts, and culture; Partner with community groups to promote active, healthy living; Support local health services in Sioux Lookout; and Collaborate with community groups to enhance their work delivering programs that improve the lives of all residents.
	Work with others to ensure that appropriate services are available to residents who need help.	<ul style="list-style-type: none"> Work with local agencies to monitor the wellness and safety of our residents to better understand their needs; Keep the public informed of community wellness and safety issues and initiatives; and Collaborate with regional agencies to address community challenges.
	Work to ensure that our community is a safe place to live.	<ul style="list-style-type: none"> Work with regional and local partners to ensure the health and safety of our residents; Work with local groups to engage other orders of government and make the case for additional services and resources; and Encourage collaboration between the social agencies and community groups to deal with challenging social issues.

Table 2.3-6 Continued: Sioux Lookout Strategic Plan 2020-2025, Strategic Priorities, Goals, and Actions

Strategic Priority	Goals	Actions
Regional collaboration: collaborate with other groups to address the opportunities and challenges we share.	Use the community's existing assets to enhance collaboration'.	<ul style="list-style-type: none"> • Monitor, encourage and support local health services in Sioux Lookout; and • Enhance the Municipality's relationship with local and regional health agencies.
	Collaborate with First Nations to advance our shared interests.	<ul style="list-style-type: none"> • Work with First Nations partners to expand the Friendship Accord; and • Identify and pursue projects where Sioux Lookout collaborates with First Nations partners to solve the challenges we share.
	Work with other groups to promote municipal and regional interests.	<ul style="list-style-type: none"> • Participate in regional groups to advance our shared interests; • Work with other regional partners to identify and address the challenges we share such as addiction, mental health, housing, and others; and • Lobby other levels of government to help with the unique challenges of our community.
	Collaborate with regional partners to foster economic development.	<ul style="list-style-type: none"> • Focus on collaborations that foster and encourage economic development, with a particular emphasis on: <ul style="list-style-type: none"> ○ Creating an environment in which businesses can thrive (open, stay, grow) in Sioux Lookout; ○ Creating affordable housing; ○ Facilitating the transportation of goods and services; and • Improving our road network and other infrastructure assets.

Table 2.3-6 Continued: Sioux Lookout Strategic Plan 2020-2025, Strategic Priorities, Goals, and Actions

Strategic Priority	Goals	Actions
Community engagement: engage with our residents and local businesses and encourage their participation in Municipal affairs.	Share relevant information regularly about key issues and Municipal initiatives.	<ul style="list-style-type: none"> • Maintain and regularly update our website to provide easy access to information about Municipal affairs; • Make it easy to access information about Municipal policies, decisions, and initiatives; • Update and implement a communication strategy to ensure frequent, informative, user-friendly communication with the public; and • Develop and maintain a social media policy to ensure that social media is used effectively to connect with residents.
	Encourage our residents and local organizations to provide input to Municipal decision making.	<ul style="list-style-type: none"> • Make stakeholder engagement a key component of the Municipality's communications strategy.
	Reach out to stakeholders to better understand their needs and priorities.	<ul style="list-style-type: none"> • Proactively seek customer feedback to assess satisfaction and obtain ideas to improve services; • Reach out to stakeholders regularly and in a variety of ways to understand their needs; and • Make it as convenient as possible for stakeholders to provide their input.
	Encourage members of our community to volunteer and recognize those who do.	<ul style="list-style-type: none"> • Highlight volunteerism in Sioux Lookout's communication strategy; • Develop and maintain a program to recognize outstanding volunteer contributions by our citizens; and • Work with local organizations to encourage our citizens to volunteer their time in areas where volunteers are needed.

Table 2.3-6 Continued: Sioux Lookout Strategic Plan 2020-2025, Strategic Priorities, Goals, and Actions

Strategic Priority	Goals	Actions
Operational excellence: strive for operational excellence through open communication, sound fiscal management and exceptional customer service.	Ensure that we are making the most of our human resources and that Municipal staff are able to do their work effectively.	<ul style="list-style-type: none"> Assess Municipal finances on an ongoing basis, compile statistics and communicate them clearly; Maintain long-term financial plans that ensure the sustainability of the Municipality's finances; Promote Sioux Lookout to attract investment and increase commercial tax base; and Find operational efficiencies and new revenue sources.
	Strive to provide exceptional customer service to all of our stakeholders.	<ul style="list-style-type: none"> Establish and maintain employee individual development plans; Develop and utilize succession plans for key roles; Focus on employee collaboration, acknowledgement, and wellness; Continue to allocate appropriate resources towards training opportunities for employees; and Equip staff with technology to maximize data driven analysis.
	Provide transparent governance.	<ul style="list-style-type: none"> Proactively seek customer feedback to assess satisfaction and obtain ideas to improve services; Ensure that the Municipality's organizational structure and staffing levels are appropriate to meet growing needs; and Use technology to improve access to Municipal services.
	Act as stewards of our environment.	<ul style="list-style-type: none"> Include consideration of the environment in Municipal decision making; Investigate green technology options when assessing capital projects; and Develop plans and strategies to reduce Municipal waste.

Source: Municipality of Sioux Lookout 2020a.

2.3.4.6 Local Services Board of Melgund

According to the key person interview program, Melgund has goals to continue improving the community hall by adding a deck and picnic tables to increase the usability of the hall's outdoor

spaces, maintain walking trails, and upgrade the lot and building to be more accessible (i.e., wheelchair accessible) (NWO Baseline Studies Key Person Interview Program 2022-2023). Melgund's small population and subsequent tax base makes covering hall operations and improvements difficult.

2.3.4.7 Local Services Board of Wabigoon

According to the key person interview program, Wabigoon Village has goals to expand street lighting in the community, have a fully-enclosed ice arena with a Zamboni, and offer more programming at the Memorial Hall (NWO Baseline Studies Key Person Interview Program 2022-2023). As an LSB, Wabigoon is restricted in its mandates as to the changes it can make in the community but sees their recreation mandate as a great opportunity to support the community. Wabigoon is currently working on the construction of an unenclosed pavilion in the community that will be able to host a variety of arts and recreation, such as markets, music, skating, and pickle ball.

2.3.5 Community Well-Being

Community well-being can be defined as "the social, economic, environmental, cultural, and political conditions identified by individuals and their communities as essential for them to flourish and fulfill their potential" (Wiseman & Brasher 2008). The community well-being index measures the socio-economic well-being of Canadian communities over time as an indication of progress made to improve the health and well-being of communities (Indigenous Services Canada 2023). The index encompasses four components: education, labour, income, and housing, which are combined to provide each community with a score out of 100. The community well-being index components are based on and limited to Census data; thus, they do not represent a complete list of dimensions of community well-being, nor do they necessarily reflect community values in the Local Study Area. **Table 2.3-7** shows the community well-being index scores for the Local Study Area in 2006, 2011, and 2016.

Table 2.3-7: Community Well-Being Index Scores for the Local Study Area, 2006 to 2016

Year ¹	Ignace			Dryden			Machin			Sioux Lookout		
	2006	2011	2016	2006	2011	2016	2006	2011	2016	2006	2011	2016
Education	44	51	49	57	58	59	48	43	53	57	60	59
Income	72	69	77	77	78	79	73	73	77	77	78	79
Housing	95	91	94	95	93	93	94	92	92	94	96	92
Labour	85	77	79	88	87	86	88	79	81	93	90	89
CWB Index Score	74	72	75	79	79	79	76	72	76	80	81	80

Source: ISC 2023.

Notes:

1. Data were not available from the LSB of Wabigoon, the LSB of Melgund, Upsala, Valora, and Silver Dollar.

Ignace, Dryden, Machin, and Sioux Lookout saw a relatively consistent community well-being score from 2006 to 2016. Among the Local Study Area communities, Ignace had the lowest community well-being score in 2006 (74) and 2016 (75) and Sioux Lookout had the highest score in 2006 (80) and 2016 (80). Observations of the individual scores for the Local Study Area communities include:

- For education, Ignace had the lowest score in 2006 (44) and 2016 (49). Dryden and Sioux Lookout had the highest score in 2006 (57) and 2016 (59). Each Local Study Area community saw an increase in the education score from 2006 to 2016 with notable increases in Ignace and Machin.
- For income, Ignace had the lowest score in 2006 (72) and Ignace and Machin had the lowest score in 2016 (77). Dryden and Sioux Lookout had the highest score in 2006 (77) and 2016 (79). Each Local Study Area community saw an increase in the income score from 2006 to 2016 with notable increases in Ignace and Machin.
- For housing, the Local Study Area communities saw a decrease in the housing score from 2006 to 2016.
- For labour, Ignace had the lowest score in 2006 (85) and in 2016 (79). Sioux Lookout had the highest score in 2006 (93) and 2016 (89). Each Local Study Area community saw a decrease in the labour score from 2006 to 2016 with notable decreases in Ignace and Machin.

2.3.6 Food Security

Food security is when a person has the physical, social, and economic access to sufficient, safe, nutritious, and culturally appropriate food for an active, healthy lifestyle at all times (OECD n.d.). Food security is an important social determinant of health; being food secure helps maintain

one's physical and mental well-being (MNP 2021). Understanding the state of food security in a community/region is important when potential development and changes may occur in the area, as changes to goods and services due to new development/industry can negatively affect a community's food security (IAIA 2023). This section describes the current state of food security in northwestern Ontario and current efforts to support food security in the region.

Food insecurity is growing across northwestern Ontario, as challenges such as poverty, inflation, addictions, mental health, lack of education and/or employment opportunities, and other social issues continue to affect peoples' ability to obtain an affordable, healthy, and culturally appropriate diet. According to key person interviews, cultural food access is a primary issue in northwestern Ontario (NWO Baseline Studies Key Person Interview Program 2022-2023). Rates of food insecurity are often highest amongst individuals of low socio-economic status, Indigenous peoples, newcomers to Canada, single parent households, and individuals living on social assistance (see **Section 2.2.5** for more information on vulnerable populations). (MNP 2021).

Over the last three years, those with employment income who access food banks have increased by 27% in Ontario (Feed Ontario, 2020). The report goes on to note that the increase in food bank usage in Ontario is attributable to an *"...inadequate safety net, precarious employment, and unaffordable housing"* (Feed Ontario 2020). Income has also been found to be a determining factor for food insecurity.

In 2016, the Northwestern Ontario Health Unit, which includes the Rainy River District and most of the Kenora District, had the most expensive food basket in the province. For a family of four, consuming healthy foods costs approximately \$1,018.20 per month, nearly \$160 more per month than the monthly cost for a family of four living in Toronto. Further, food basket costs collected in Ignace, Dryden, and Thunder Bay from 2022-2023 show that Ignace has a higher unit price across all food basket categories (e.g., dairy, eggs, fruit and vegetables, meat, etc.) compared to Dryden and Thunder Bay, suggesting smaller communities in northwestern Ontario see even higher food costs in the region and province (see **Section 3.6.3.2** for more information on food baskets). Community remoteness is positively correlated to the cost of a healthy diet, with high costs of healthy foods being a major contributor to food insecurity in northwestern Ontario (Northern Policy Institute 2018). Further, contrary to the common misconception that employment leads to food security, the Northwestern Health Unit (2017) found that 58.9% of food insecure individuals in the region were employed.

2.3.6.1 Northwestern Ontario

The Regional Food Distribution Association ("RFDA") of northwestern Ontario works to harvest, purchase, donate, and distribute food to 50 member agencies across the region that need food. The RFDA is a direct member of Feed Ontario and an affiliate of Second Harvest, Food Banks Canada, and over 20 other partners. The RFDA supports its members in various ways in addition to supplying food donations, such as library feeding programs, after school programs, and helping members apply for funding to subsidize their costs. The RFDA advocates on behalf of those living in poverty and supports educators to teach food nutrition and equip people with life skills to help overcome social barriers to food security (NWO Baseline Studies Key Person Interview Program 2022-2023).

The COVID-19 pandemic heightened food insecurity in northwestern Ontario, with the RFDA noting a 25% increase in individuals being served. The RFDA has been further challenged by the food shortage and rising food prices which followed the COVID-19 pandemic, as grocery stores

have less food to donate and donations from residents have decreased due to the high cost of food (NWO Baseline Studies Key Person Interview Program 2022-2023).

The RFDA has been working with Feed Ontario to provide access to healthy country foods in local hubs, such as Sioux Lookout's Meno Ya Win Health Centre. The RFDA is also working to increase access to alternative proteins for newcomers to northwestern Ontario, such as teaching people to cook with lentils. The RFDA's mission to help communities in northwestern Ontario become food autonomous focuses on helping communities educate residents on food nutrition, healthy lifestyles, and life skills, create their own systems of food production (e.g., community gardens, community freezers), and learn how to deal with logistics like food distribution (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.3.6.2 Township of Ignace

A primary challenge related to the higher cost of foods in Ignace is the lack of market competition. Lack of market competition means that many residents are forced to purchase their groceries from the only available store(s) in their community, regardless of the cost. For example, a participant of key person interviews shared that after Ignace lost its second-last grocery store to a fire, they felt the prices in the remaining grocery store increased by almost 30% (NWO Baseline Studies Key Person Interview Program 2022-2023). Food basket cost results in **Section 3.6.3.2** show that Ignace has a higher unit price across all food basket categories when compared to Dryden and Thunder Bay. This financial barrier is particularly challenging for residents, such as the senior population, who do not have the means to travel to a larger, nearby urban centre, such as Dryden, to purchase groceries at a lower cost. Lack of transportation options within the Township and to other communities to access more affordable food sources and services is an issue identified by Ignace residents (NWO Baseline Studies Key Person Interview Program 2022-2023).

Support for food security in Ignace is provided through a food bank at the Mary Berglund Community Health Centre. The local food bank, known as the Carousel, provides food to those in need. The Mary Berglund Community Health Centre also supports a community garden located next to the ambulance base on Highway 17 (Lederer & West 2020). Participants of key person interviews expressed a sense of pride over the community garden and the Mary Berglund Community Health Centre's work to support community needs (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.3.6.3 City of Dryden

The Dryden Food Bank has been in operation for 28 years and distributes surplus and donated foods and essentials to residents in need in the Dryden area. The Dryden Food Bank operates three days per week and also delivers food to those who do not have the means to access their services directly. In 2022, Dryden Food Bank provided a total of 5,399 hampers in the community. Further information gathered by the food bank showed that, of the individuals accessing food bank services, 76% were renting or residing in social housing, 58% were receiving support from Ontario Works or Ontario Disability Support Program, and 28% were children aged 0 to 14, the largest proportion of individuals receiving support by age (MNP 2021). More recent demographic information from the Dryden Food Bank shows that 63% of clients identify as Indigenous, 53% are female, 30% are under the age of 18, with the most frequent visitors being individuals between the ages of 19 and 35 (NWO Baseline Studies Key Person

Interview Program 2022-2023). Results from the GBA+ Workshop confirmed that Dryden youth are facing food insecurity, an issue often exacerbated by family and life circumstances (GBA+ Workshop 2023). For example, youth who are disconnected from their family may be unable to access food and social supports due to remaining listed as part of their family group (GBA+ Workshop 2023).

The Dryden Food Bank currently serves approximately 130 families with hampers, serving 539 households as of April 2023. The Dryden Food Bank is one of few food banks in the region that provides access to food on a weekly basis, as other food banks only operate once every two weeks to once per month (NWO Baseline Studies Key Person Interview Program 2022-2023). According to key person interviews, the number of residents using Dryden Food Bank's services has been gradually increasing, particularly following the Food Bank of Canada's decision in April 2022 to no longer require a means test in order to access food bank services (NWO Baseline Studies Key Person Interview Program 2022-2023). The primary reasons for the number of residents facing food insecurity in Dryden include high food costs in the community and the community's reliance on major employers such as lumber and paper, industries that have seen partial closures and large layoffs (NWO Baseline Studies Key Person Interview Program 2022-2023).

The COVID-19 pandemic exacerbated food insecurity, with food needs in Dryden increasing substantially at the pandemic's onset. For example, results from key person interviews shared that there were 62 incidents of theft from the local grocery stores in Dryden (NWO Community and Baseline Studies Key Person Interview Program 2022). During the COVID-19 pandemic, the Dryden Native Friendship Centre was one of few service organizations operating to help address food insecurity. Prior to the COVID-19 pandemic, the Dryden Native Friendship Centre was serving approximately 14-18 lunches per day to vulnerable populations; this number increased to approximately 50 lunches per day during the COVID-19 pandemic. A large portion of the Dryden Native Friendship Centre's emergency services work to address food insecurity in the community. The Dryden Native Friendship Centre keeps food and gift cards for food onsite for emergency food needs and continues to serve daily lunches to those in need. These services help support community members who may be underemployed, have recently become unemployed, or are dealing with crises in their personal lives. The Dryden Native Friendship Centre has approximately 90 volunteers who help carry out the Centre's services (NWO Community and Baseline Studies Key Person Interview Program 2022).

The Community Table program was another service working to address food insecurity in Dryden that began at First United Church in Dryden in March 2022, funded by partners. The Community Table provided supper meals on Tuesdays to any food insecure individuals (i.e., no criteria to access these food supports), as well as offered emergency food supports and invited other local service providers on-site to build relationships with patrons. From March to December 2022, the Community Table served over 2,300 meals. The Community Table hopes to continue serving the Dryden community into the future (Burry 2023).

Dryden also has Meals On Wheels, organized by Dryden District Senior Services, which delivers lunch up to three days per week on Mondays, Wednesdays, and Fridays, and dinners up to seven days per week to seniors living independently in the community. The meals are delivered by volunteers (NorthWest HealthLine 2023).

2.3.6.4 Municipality of Machin

The Vermillion Bay Lions Club provided emergency food services for residents of Machin during the COVID-19 pandemic, in partnership with the Dryden Food Bank and funded by the Kenora District Services Board, also offering delivery services to those who could not travel to access the food bank (Watson 2020; NWO Baseline Studies Key Person Interview Program 2022-2023). The Dryden Food Bank serves residents of Machin (Watson 2020).

2.3.6.5 Municipality of Sioux Lookout

Calvary Baptist Church, New Life Assembly, and Cornerstone Christian Fellowship have been operating the Sioux Lookout food bank since October 2022. Prior to churches running the community food bank, it was operated by Sioux Lookout's Out of the Cold Shelter. According to the churches operating the food bank, food insecurity in Sioux Lookout is on the rise due to inflation and rising food costs. The food bank relies on community donations and volunteers to remain operational. The food bank is working on a partnership with the Dryden Native Friendship Centre to provide hampers of fresh produce in a one-year pilot project (Brody 2023).

2.3.7 Income Inequality

Income inequality refers to the uneven distribution of income amongst a population. Income inequality can negatively affect social and community cohesion and cause distrust in institutions meant to serve (Burkinshaw, Terajima, & Wilkins 2022). Understanding the state of income inequality is important where there is potential development and change, as, for example, an increase in population and number of high-paying jobs can increase the income inequality in a community/region and disproportionately affect low-income individuals and vulnerable populations.

A measure of income inequality is the Gini coefficient. The Gini coefficient indicates how evenly (or unevenly) income is distributed amongst a given population, measuring how much income distribution diverges from equality. The Gini coefficient ranges from 0 to 1; a value of zero indicates perfect income equality amongst a population, while a value of 1 indicates perfect income inequality where all income is with one unit. **Table 2.3-8** displays the Gini coefficient for the Local Study Area communities, Local Study Area, Kenora Census Division, and Ontario in 2020.

Table 2.3-8: Gini Coefficient for the Local Study Area, Kenora Census Division, and Ontario, 2020

	Ignace	Dryden	Machin	Sioux Lookout	LSB of Wabigoon	Local Study Area	Kenora Census Division	Ontario
Gini index on adjusted household total income	0.320	0.298	0.305	0.286	0.311	0.296	0.365	0.357

Source: Statistics Canada 2022a.

Note:

1. Gini coefficients are calculated for three types of adjusted household income, including market income, total income, and after-tax income. Adjusted income is calculated by dividing household income by a factor equal to the square root of the size of the household, in order to consider economies of scale; the needs of a household increase as the size of the household increases, but at a decreasing rate.

The Gini coefficient on adjusted household total income for the Local Study Area communities further confirms that, of the Local Study Area communities, the Township of Ignace has the largest household income disparity at 0.320, while the Municipality of Sioux Lookout has the lowest income disparity at 0.286 (see **Section 3.6.2.2** for more information on household income in the Local Study Area) (Statistics Canada 2022a). Further, the Local Study Area has less income inequality a lower Gini coefficient than the Kenora Census Division and Ontario.

Income inequality may also be measured by examining the ratio of average to median income. Personal and household income for the Local Study Area communities in 2020 is described in **Section 3.6.2.1** and **Section 3.6.2.2**, respectively. The higher the ratio of average to median income, the larger the existing income disparity (WLI 2022). **Table 3.6-1** provides the ratio of average to median personal income for the Local Study Area communities. Results from **Table 3.6-1** indicate that, of the Local Study Area communities, the Township of Ignace had the highest personal income disparity with a ratio of 1.40, while Sioux Lookout had the lowest personal income disparity with a ratio of 1.11 (Statistics Canada 2022e). The Township of Ignace's higher income disparity may, in part, be attributed to the large proportion of the senior population in the community; 50% of the population of Ignace is 55 years or older (see **Section 2.2.4**). During the 1980s and early 1990s, income inequality increased substantially in Canada and has remained relatively stable over the past 25 years, excluding global crises like the 2007-2009 financial crisis and COVID-19 pandemic. The increase in income inequality during the period from the 1980s to the 1990s was primarily felt by low-income individuals and young people, while older people benefited from higher retirement income (Burkinshaw, Terajima, & Wilkins 2022). A review of income in Canada from 1976 to 2016 suggests the median incomes of persons aged 44 years and younger have remained the same or fallen, while having had a strong increase for those aged 65 years and older (Burkinshaw, Terajima, & Wilkins 2022). This increase is largely due to private retirement income from employer or personal pension sources (Burkinshaw, Terajima, & Wilkins 2022).

While income is an indicator of socio-economic status (see **Section 2.2.5.1** for more on low-socioeconomic status), other factors such as educational attainment, employment, gender, availability and access to childcare, family supports, social supports, mental health and addictions, ageism, and racism, may have an impact on an individual or households' income and socio-economic status (GBA+ Workshop 2023). Individuals of low socio-economic status and lower income in the Local Study Area spend a larger proportion of their income on shelter, food, and clothing costs as compared to those with a higher income (GBA+ Workshop 2023). A lower socio-economic status and lower income can also result in poorer health outcomes, a lack of means to access education and training to improve their financial situation, barriers to engage in recreational activities and access amenities which could improve their well-being and make it difficult to adjust to inflation which may lead to challenges with food security (see **Section 2.3.6**) and purchasing other essential goods.

2.3.7.1 Gender Income Inequality

Gender income inequality, or the gender pay gap, is the difference in average earnings of people based on their gender (Canadian Women's Foundation 2022). The gender pay gap is exacerbated for those who face multiple barriers, such as racialized women and women living with disabilities, and thus has disproportionate effects (Canadian Women's Foundation 2022). The gender pay gap persists in Canada. In 2021, female employees earned 11.1% less per hour than male employees; in other words, women earned \$0.89 for every dollar men earned (Statistics Canada 2022e). In Ontario, only approximately 30% of the gender pay gap can be explained by factors such as demographics, education, occupation, industry, job tenure, part-time versus full-time work, and public sector versus private sector work, meaning that 70% of the gender pay gap remains unexplained (Pay Equity Commission n.d.). The unexplained portion of the gender pay gap suggests additional factors influence pay, such as gender discrimination and societal constraints/expectations that exist for women as compared to men (Pay Equity Commission n.d.).

Personal income by sex and gender²² is described in **Section 3.6.2.1.1**. Results from **Figure 3.6-4** show that, in 2020, males in the Local Study Area had an average personal income that was 35.9% higher than females in the Local Study Area, while males in the Regional Study Area had an average personal income that was 27.3% higher than females in the Regional Study Area (Statistics Canada 2022a). The Township of Ignace had the largest gender pay gap of the Local Study Area communities, with males having an average personal income that was 98.9% greater than females in the Township. The gender pay gap was smallest in the LSB of Wabigoon, where males and females had similar personal average incomes. Results from key person interviews confirmed findings that men tend to make more than women within the Local Study Area, consistent with the national trend (NWO Baseline Studies Key Person Interview Program 2022-2023).

²² The sex variable (male and female) is used in census years prior to 2021 and the two-category gender variable (men+ and women+) is used in the 2021 Census.

2.3.7.2 Indigenous Income Inequality

Income inequality amongst Indigenous and non-Indigenous peoples in Canada persists, regardless of place of residence²³ (Paul 2020). The effects of colonialism have left Indigenous peoples in Canada economically disadvantaged as compared to the rest of the country (Paul 2020), where a considerable gap in earnings between First Nation, Métis, and Inuit individuals and non-Indigenous individuals is observed (Wilson & Macdonald 2010). In particular, Indigenous people living on-reserve typically earned lower incomes than Indigenous people living off-reserve (Raphael et al. 2020). Overall, Indigenous peoples in Canada face significant socio-economic inequalities compared to non-Indigenous Canadians due to the long-lasting impacts of colonialism (Durand-Moreau, Lafontaine, & Ward 2022).

Personal income by Indigenous identity²⁴ is describe in **Section 3.6.2.1.3**. Results from **Figure 3.6-6** show that, in 2020,²⁵ across the Local Study Area communities, Indigenous people had a lower average personal income than non-Indigenous people (Statistics Canada 2023c). Non-Indigenous people in the Local Study Area had an income that was 18.8% higher than Indigenous people in the Local Study Area. The Regional Study Area had a large Indigenous pay gap, where non-Indigenous individuals had an income that was 38.1% higher than Indigenous people in the Regional Study Area. This was also the proportional difference (40.5%) in the Township of Ignace, the Local Study Area community with the highest proportion of Indigenous income inequality. The lowest proportion of Indigenous income inequality was in the Municipality of Machin, where non-Indigenous individuals in Machin had an income that was 11.7% higher than Indigenous peoples in Machin.

Barriers to educational and economic opportunities have perpetuated the experiences of poverty and the income gap between Indigenous and non-Indigenous identity populations in Canada (Statistics Canada 2022e). Results of the GBA+ Workshop confirmed that real and perceived barriers to education and employment for Indigenous peoples persist in the Local Study Area (GBA+ Workshop 2023).

2.3.8 Connection to the Natural Environment

The Local Study Area and Regional Study Area are full of “blue lakes and rocky shores” (NWO Baseline Studies Key Person Interview Program 2022-2023). Dominated by broadly rolling surfaces of Canadian Shield bedrock and surrounded by numerous lakes, the natural environment encompassing the Local Study Area is the pride and joy of the people who call northwestern Ontario home. This section describes the connection to the outdoors held by residents of the Local Study Area and Regional Study Area using information collected during key person interviews (see **Section 2.5** for information on land and resource use).

²³ Information on Indigenous income inequality presented in this section is representative of general statistics and does not reflect the social conditions of a specific Indigenous community.

²⁴ ‘Indigenous identity’ includes persons who are First Nations (North American Indian), Métis, or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is registered under the Indian Act of Canada) and/or those who have membership in a First Nation or Indian band. Aboriginal peoples of Canada are defined in the Constitution Act 1982 section 35(2) as including the Indian, Inuit, and Métis peoples of Canada.

²⁵ Data for Local Study Area communities may be suppressed for confidentiality, including the LSB of Wabigoon for 2020.

The connection to the outdoors held by residents of the Local Study Area and Regional Study Area is reflected throughout their community goals, plans, and strategies (see **Section 2.3.4** for community goals and plans; **Section 2.4** for community development/infrastructure goals and plans; see **Section 3.0** for economic development goals). For example, according to the Township of Ignace's *Project Visioning: Community Conversations* report (InterGroup Consultants 2020), Ignace would like to maintain and protect the environmental integrity of the area and support the conservation of reserves and parks. Participants noted that the natural environment is not limited to the areas surrounding Ignace and should also reflect areas within the community, and consideration should be given on how the environment within Ignace can be preserved and enhanced, such as through community beautification initiatives, preserving natural areas when expanding the community, and measures related to waste disposal. Participants acknowledged that the integrity of the natural environment in and around Ignace is critical to many residents' livelihoods, and the importance of communication regarding Project activities to increase public understanding and support of the Project (InterGroup Consultants 2020).

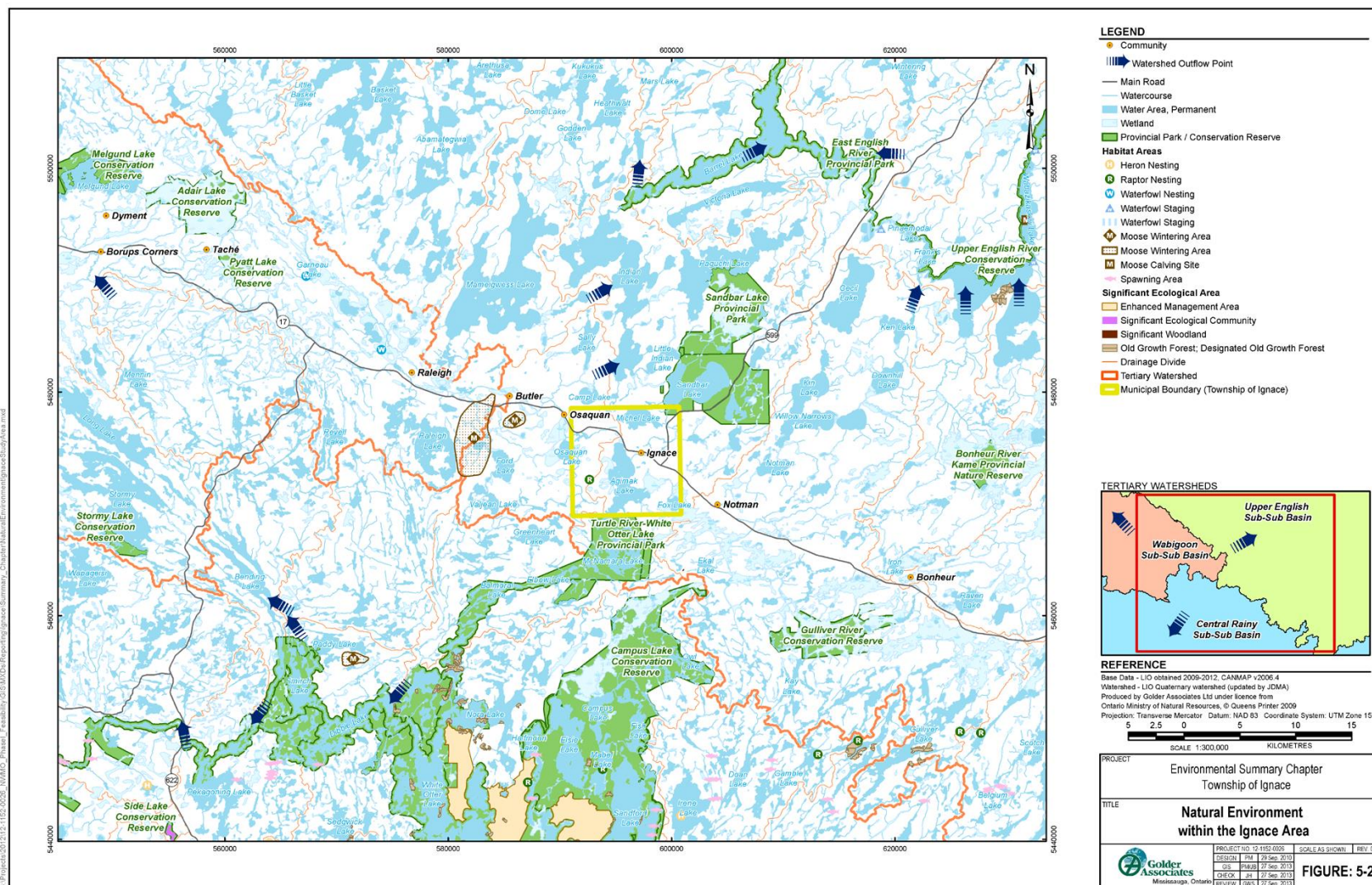
Residents of the other Local Study Area communities have strong connections to the surrounding natural environment. It is a source of pride and adds to their sense of place and quality of life. The natural setting provides various opportunities for fishing, forestry, hunting, trapping, harvesting/foraging, ATVing, snowmachining, tourism, and more. There are a number of businesses that draw labour and visitors to the Local Study Area on the basis of these connections, which speaks to the natural environment's importance to local livelihoods. In addition to these more active pursuits, the Local Study Area also provides opportunities for more passive appreciation of the natural environment (e.g., camping, swimming, hiking, biking, wildlife viewing, boating, canoeing, berry picking) (SMM and InterGroup 2022). Key areas of importance to residents of Ignace, in particular, include the trail system through the community, surrounding lakes including Agimak, and access to activities including fishing, hunting, snowmobiling, use of ATVs, and berry picking (InterGroup 2020).

Results from key person interviews suggest that many residents in the Local Study Area came to and/or remain in northwestern Ontario because of their connection to the outdoors and ability to step into the natural environment in a matter of minutes (NWO Baseline Studies Key Person Interview Program 2022-2023). Participants from key person interviews shared that the natural environment forms the basis for the way in which people live in northwestern Ontario; some rely on the outdoors for solitude, many use it to gather and explore with their neighbours, and others' livelihoods rely on it (NWO Baseline Studies Key Person Interview Program 2022-2023). Several participants shared that being surrounded by the natural environment provides a safe and healthy place to raise their children and helps foster self-sufficient adults. Participants characterized the natural environment as critical to the community, providing some of the greatest natural resources in the world. Many Local Study Area residents often get out in nature every day, with participants sharing that it is a great way to spend time with their families and neighbours, and particularly enjoy getting outdoors because it is something they can do with their children (NWO Baseline Studies Key Person Interview Program 2022-2023).

The natural environment of the Local Study Area and Regional Study Area supports residents' sense of belonging and adds to their quality of life. Participants from key person interviews have expressed uncertainty and fear with regard to any potential damage to or loss of the environment (NWO Baseline Studies Key Person Interview Program 2022-2023). **Map 2.3-2** depicts the natural environment within the Ignace area through ecological characteristics, such

as nearby provincial parks and conservation reserves (see **Section 2.5.2**), water areas and water courses (see **Section 2.5.11** for more on key lakes), and habitat areas, providing context on some of the areas where people connect with their environment (see **Section 2.5** for more information on land and resource uses).

Map 2.3-2: Natural Environment within the Ignace Area



2.3.9 Summary of Community and Culture

The Local Study Area and Regional Study Area has a rich history rooted in the presence of the Anishinaabe peoples and the bountiful natural environment. Sculpted by Canadian Shield and dominated by boreal forest and water bodies, northwestern Ontario has been home to Indigenous peoples since time immemorial and has since seen the evolution of industries including rail, forestry, mining, and outdoor tourism. The natural environment is a source of pride for residents of the Local Study Area and Regional Study Area and its integrity is critical to their sense of place and quality of life.

The Local Study Area communities each have several goals and plans which present their community aspirations, strategies, and commitment to sustainability, including official plans, strategic plans, community improvement plans, and community safety and well-being plans. Local Study Area community plans hold the protection and promotion of the natural environment at their core, while recognizing opportunities to improve and expand their communities both socially and economically, from improving arts, culture, and recreation opportunities to promoting tourism and entrepreneurialism.

Common community challenges across the Local Study Area communities include youth retention, lack of transportation within and between communities, housing, access to health care, lack of local education and training opportunities, and lack of services coupled with higher costs than larger metropolitan areas, such as higher costs of groceries (NWO Baseline Studies Key Person Interview Program 2022-2023; GBA+ Workshop 2023). Food insecurity has increased in the Regional Study Area, particularly since the COVID-19 pandemic and subsequent inflation and rising food costs.

Of the Local Study Area communities, income inequality is largest in the Township of Ignace, which may, in part, be attributed to the large proportion of seniors in the community. Income inequality in the Local Study Area is lower than the Kenora Census Division and Ontario. In the Local Study Area, men had an average personal income that was 35.9% higher than women, while in the Regional Study Area, men had an average personal income that was 27.3% higher than women. Non-Indigenous people in the Local Study Area had an income that was 18.8% higher than Indigenous people in the Local Study Area. The Regional Study Area had a large Indigenous pay gap, where non-Indigenous individuals had an income that was 38.1% higher than Indigenous people (Statistics Canada 2022a).

Results from key person interviews suggest residents of the Local Study Area are proud of their way of life and immensely value the natural environment that surrounds them (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents appreciate their communities and want their communities to prosper without losing the small-town nature that they value.

2.4 INFRASTRUCTURE AND SERVICES

2.4.1 Overview and Approach

Infrastructure and services describe the built infrastructure and municipal services available in the Local Study Area and Regional Study Area. Descriptions include consideration of current capacity and the potential to expand capacity in the future, including planned expansions and any barriers for expansion. **Table 2.4-1** summarizes the infrastructure and services described in this section.

Table 2.4-1: Infrastructure and Services

Infrastructure	Services
<ul style="list-style-type: none"> • Transportation modes and infrastructure, including railways, highways, airports, traffic levels and patterns, and public safety concerns; • Pipelines; • Utilities and associated infrastructure, including natural gas and electricity; • Water and wastewater infrastructure, including water sources; • Solid waste disposal and recycling infrastructure and services; • Telecommunications; • Policing and emergency services (fire and emergency medical services), including local and regional emergency response plans; • Educational facilities, including primary, secondary, and postsecondary facilities; • Recreation facilities; • Housing, including rental housing, apartments, owner-owned single-family housing, affordable housing, social housing, assisted living, long-term care, and housing availability; and • Temporary accommodations, including hotels and motels. 	<ul style="list-style-type: none"> • Childcare, including available spaces and costs; • Services to support seniors, including assisted living and long-term care; • Formal recreational services, including organized sports; • Services to support survivors of gender-based violence; • Services to support Indigenous people; • Mental health and substance use services; • Child and adult protective services; and • Services required to serve vulnerable populations in the Local and Regional Study Areas to support their daily needs (e.g., shelter, clothing, food).

Health care facilities and services are addressed in the health section (**Section 4.0**).

Spatial boundaries for infrastructure and services include a Local Study Area and a Regional Study Area. Spatial boundaries are discussed in further detail in **Section 2.1.1**.

The Regional Study Area is the Kenora Census Division. The Regional Study Area is inclusive of Indigenous communities and reserves. The Local Study Area includes the Township of Ignace, City of Dryden, Municipality of Machin, Municipality of Sioux Lookout, and the unincorporated communities and Local Services Boards near Ignace and Dryden, including the Local Services Board of Melgund, Upsala, Valora, Silver Dollar, and the Local Services Board of Wabigoon.

The temporal boundaries for infrastructure and services will focus on the current provision of services and changes in service provision in the past 5 to 10 years to understand trends (e.g., changes in demand). Understanding changes in service provision in the recent past will focus on the underlying reasons for those changes (e.g., population changes, administrative changes, legal or regulatory changes). Further information on temporal boundaries for infrastructure and services is provided in **Section 2.1.1**.

Information on data collection, including desktop research and primary data collection is provided in **Section 2.1.2**.

2.4.2 Transportation Infrastructure

This section describes regional and local roads, railways, and airports in the Local Study Area. The regional highway network that connects Local Study Area communities includes Highway 17 from Machin to Upsala, Highway 72 from Sioux Lookout to Highway 17, and Highway 599 from Ignace to Silver Dollar. Ministry of Transportation (MTO) classifies Ontario highways according to the posted speed limit and the Average Annual Daily Traffic ("AADT") volume (Government of Ontario 2018e). The highway classification system is used to determine the maximum allowable time for complete snow removal and ranges between 8 hours for a freeway/urban highway to 24 hours for a minor or local highway (Government of Ontario 2022f). The classification is also used for the maximum allowable time to address other required maintenance along highways including cracks, potholes, and shoulder drop-offs. Vehicles exceeding certain dimensions require an oversize permit to operate on Ontario highways. These dimensions are: a width of 2.6 m, a height of 4.15 m, a length for a single vehicle including load of 12.5 m, a box length of 18.5 m, and a combined vehicle and load length of 23.0 m (Government of Ontario 2022e). During spring thaw (e.g., March to May) reduced loads can be imposed where the weight upon an axle cannot exceed 5,000 kg (Government of Ontario 2023i).

2.4.2.1 Regional Highway Network

The primary highways in Ontario are referred to as "King's Highways" (HC & IBI 2016). These are the oldest provincial highways, numbered from 3 to 148 and 400 to 451 (Government of Ontario 2019b). These paved highways form an interconnected network spread across various regions in the province (HC & IBI 2016).

Numbered 502 to 673, secondary highways are used to link primary highways or connect communities to primary highways. They are often used to connect areas with a high rate of traffic such as airports, mines, quarries, sawmills, or resort areas and may be gravel or paved. Due to the fact that northern Ontario lacks county and regional governments, secondary

highways in northern Ontario can serve a similar purpose to the county or regional roads in southern Ontario, except with The Government of Ontario's Ministry of Transportation (MTO) who are responsible for management and oversight (Government of Ontario 2019b; HC & IBI 2016).

Tertiary highways exist exclusively in northern Ontario. Numbered in the 800's, they provide additional links to communities and resources that are not provided with secondary highways. Most are gravel surfaced with the MTO not liable for any winter maintenance services (Government of Ontario 2019b; HC & IBI 2016). Beyond tertiary highways, there are other minor highways that the MTO is responsible for.

The communities in the Local Study Area are along or just off Highway 17 (Ignace, Dryden, Machin, Wabigoon, Melgund, Dinorwic, and Upsala); Highway 72 (Sioux Lookout); and Highway 599 (Valora and Silver Dollar). The roads discussed in this section are depicted on **Map 1.5-1**.

2.4.2.1.1 Highway 17

Highway 17 is a highway in Ontario's Provincial Highway Network and is part of the Trans-Canada Highway. It is classified as a King's highway (primary route), part of a network of the oldest provincial highways that connect urban centres with a population above 2,000 by the shortest possible route (Government of Ontario 2019b). Highway maintenance is overseen by the MTO; however, the City of Dryden oversees highway maintenance of Highway 17 and Highway 594 within the City limits (NWO Baseline Studies Key Person Interview Program 2022-2023). Within the study areas, Highway 17 runs on an east-west alignment (WSP 2022d). It begins at the Manitoba-Ontario border west of Kenora and ends where Highway 417 begins west of Arnprior.

There are multiple plans for improvement along Highway 17 under the MTO's 5-year capital plan that include:

- Between Dinorwic and Dryden, there are rehabilitation plans for road resurfacing. This has targeted completion date between 2024 and 2025 (WSP 2022d).
- Between Dryden and Ignace, four structure improvements are planned, involving either culvert or bridge rehabilitations. This has a targeted completion date between 2023 and 2025 (WSP 2022d).

Highway 17 from Dryden to Ignace is classified as a class II highway according to MTO winter service levels and should be cleared to bare pavement within 16 hours of the end of snowfall (Government of Ontario 2023i).

MTO is currently completing bridge habilitation on the Wabigoon River Bridge, which is 2km west of Highway 665, Dryden, and the Revell River No. 3 Bridge which is 1 km east of Highway 622. These are scheduled for completion in 2023 and 2024, respectively. Road resurfacing is scheduled to occur between Ignace and Highway 599 in 2024. There is also work planned for the Thunder Creek Bridge east of Dryden, to be completed in 2025 or 2026 (Government of Ontario 2023j).

Traffic Volumes

In 2016, Average Annual Daily Traffic ("AADT") volumes were recorded along Highway 17. The highest volumes were measured between Dryden and Highway 72 at 5,950 vehicles/day. Seasonal Average Daily Traffic ("SADT") volumes were recorded at 7,250 between Dryden and

Highway 72 (WSP 2022d). Further east, towards Ignace, measured traffic volumes were lower with a measured AADT of 2,850 vehicles/day. In the summer months, traffic volumes were approximately 23% higher (WSP 2022d). A high-level analysis of highway capacity level of service found that Highway 17 operates at a level of service A or best operating condition, given that its highest SADT and AADT (7,250 and 5,950, respectively) are well below the maximum suggested AADT for this type of highway (13,900) (WSP 2022d).

Public Safety Concerns

Between 2017 and 2021, there were 267 collisions, including fatalities, injuries, and property damage, on the stretch of Highway 17 located between the west limits of Dryden and the east limits of Ignace. The total number of collisions along that stretch of Highway 17 have steadily decreased by 7% between 2017 and 2021. This is in contrast to Ontario provincial highways as a whole, where the number of collisions has increased annually by 2% from 2009 to 2018 (WSP 2022d).

Using available collision data between 2017 and 2021, the most common contributing factors to collisions along the stretch of Highway 17 between Dryden and Ignace is lighting/visibility (darkness) and animal encounters. Concerns regarding transport trucks have been noted as the data shows transport truck collisions occurring more frequently than other types of vehicles due to aggressive and inexperienced drivers. Interview participants noted aggressive driving by transport truck drivers even during inclement weather conditions (NWO Community and Baseline Studies Key Person Interview Program 2022; WSP 2022d).

Operational and maintenance issues along Highway 17 between Ignace and Dryden have also been noted. This includes limited emergency access for firetrucks, heavy vehicle parking despite the presence of prohibited parking signs, excessive snow piling along the highway main corridor and sidewalks (sightline impairment), and increased highway traffic congestion (WSP 2022d).

2.4.2.1.2 Highway 72

Highway 72 is a King's highway that connects to Highway 17 in Dinorwic and runs north to Sioux Lookout. Highway 72 from Dinorwic to Sioux Lookout is classified as a class III highway according to MTO winter service levels and should be cleared to bare pavement within 24 hours of the end of snowfall (Government of Ontario 2022f).

During 2023, MTO conducted bridge rehabilitation 8 km north of Highway 664 (south of Sioux Lookout) and implemented safety improvements for a pedestrian crossing at May st. West and Sturgeon River rd. in Sioux Lookout (Government of Ontario 2023j).

From 2025 to 2026, MTO has planned road resurfacing work from Highway 17 to 3 km north of Kathlyn Lake Rd., 36 km north of Highway 17 to Sioux Lookout, and 1 km east of Highway 72 at Dinorwic. Bridge Rehabilitation work is planned for Frog Rapids Bridge which is 3 km north of Highway 664 (south of Sioux Lookout). Culvert rehabilitations are planned for Melgund Creek (west of Highway 603), Osaquan River (11km west of Highway 599), and Shoshowae Creek (8 km west of Highway 665) (Government of Ontario 2023j).

Traffic Volumes

The AADT along Highway 72 was 3,200 vehicles/day with a SADT of 3,900 vehicles/day. Between 2006 and 2016 there was no observed increase in traffic volumes (WSP 2022d). In 2019, the

AADT was highest on Highway 72 between the edge of Sioux Lookout and Dinorwic at 1,100 vehicles/day, with volumes increasing within the core downtown area of Sioux Lookout to 5,650 vehicles/day (Ministry of Transportation 2019). Highway 72 is assumed to be operating at Level of Service D with a capacity of 12,500 AADT which is well above the AADT of 5,650 vehicles/day in the downtown area of Sioux Lookout (National Academies of Sciences, Engineering, and Medicine 2016).

Public Safety Concerns

Ontario Provincial Police (OPP) have indicated that the main public concerns along Highway 72 have centred around unsafe and aggressive driving, wildlife, and inexperienced drivers during inclement weather (NWO Community and Baseline Studies Key Person Interview Program 2022). Flooding has also been noted as a concern along Highway 72. On June 4, 2023, for example, reports of a beaver dam breaking caused water to cover both sides of the highway approximately 5 km north of Dinorwic, resulting in a multi-day closure until repairs could be completed between Dinorwic and Highway 644 (Thoms 2023; Forbes 2023).

2.4.2.1.3 Highway 599

Highway 599 is a secondary highway. It connects to Highway 17 at Ignace and goes north to its terminus at Pickle Lake. Highway 599 from Ignace to Pickle Lake is classified as a class IV and V highway according to MTO winter service levels and should be cleared to bare pavement within 24 hours of the end of snowfall (Government of Ontario 2022f).

MTO is currently conducting road resurfacing from Silver Dollar to Savant Lake that is anticipated for completion in 2023 (Government of Ontario 2023j). Resurfacing work is planned for 2024 from the English River Bridge to Highway 642 at Silver Dollar. Road reconstruction is planned for north of Highway 642 for 2025 and 2026 (Government of Ontario 2023j).

Traffic Volumes

Highway 599 has low AADT volumes, not exceeding 300 vehicles/day (WSP 2022d). Traffic volumes are low along Highway 599, well below the assumed Level of Service D capacity of 12,500 AADT (National Academies of Sciences, Engineering, and Medicine 2016).

2.4.2.1.4 Forest Access and Managed Roads

There are a number of forest access and managed roads within the Wabigoon Forest, Dryden Forest, and English River Forest Areas (for more information on the forest areas see **Section 2.5.3**). Forest access and managed roads can be privately owned and maintained or, in the case of roads in Crown forests, be publicly owned and maintained. These roads are used for recreational and commercial purposes (Government of Ontario 2021k; Government of Ontario 2021l). Forest access and managed roads are classified as primary roads, branch roads and operational roads (Resolute FP Canada Inc. 2019). Primary and branch roads are managed and maintained under the designated forestry management plans. Operational roads are permitted construction within operational road boundaries and are only maintained throughout operations. After operations are complete they are regenerated into forest cover to meet forestry management plan objectives (Resolute FP Canada Inc. 2019).

2.4.2.1.5 Transportation Plan for Northern Ontario

In 2020, the Province of Ontario released *Connecting the North: A Draft Transportation Plan for Northern Ontario*. The purpose of the plan is to expand highways and transit services, foster economic opportunities, and make travel more reliable to remote and First Nations communities in Northern Ontario. Among the plan's key actions that would affect Local Study Area communities are widening sections of Highway 17 and adding new bus routes between Thunder Bay and Winnipeg (Government of Ontario 2020a).

2.4.2.2 Municipal Transportation

2.4.2.2.1 Ignace

Municipal Roads

The Township of Ignace is located along Highway 17 at the intersection of Highway 599, a highway that runs north beyond Pickle Lake. It is maintained by the MTO via Miller Group Services (subcontractors).

Defined by the section of Highway 17 with four-lanes and two-way streets, Main Street in Ignace runs between Rand Street North and 500 metres east of Lakeshore Drive. The posted speed limit within the community is 50km/h, there is also a Community Safety Zone whereby fines are doubled. Traffic and pedestrian operations are free flowing with no signalized intersections. Sidewalks run along both sides of the street, however, there are no pedestrian crossings that connect the north and south sides of the road (WSP 2022d). Despite no parking signs, heavy vehicles occasionally park alongside Highway 17 to make short stops which leads to reduced visibility for people entering or exiting Ignace (WSP 2022d).

Approximately 70% of Ignace's roads are in "fair or better condition" based on asset age and field condition, and 60% of roads have a remaining service life of 6 to 10 years. Throughout the Township of Ignace, there are approximately 3 km of gravel roads and 20 km of paved roads (WSP 2022d). The Ignace Official Plan (2020) states that new local roads are to be constructed to municipal standards. Existing roads are to be reviewed by Council on a regular basis to determine the level of service and maintenance. Where road improvement is required, consideration for the provision of a sidewalk on at least one side of the street is to be considered (Township of Ignace 2020).

Airport

While the Ignace Municipal Airport (Ignace Aerodrome) does not currently have operational status, Ignace Airways offers a seaplane charter service that operates throughout northwestern Ontario. In 2021, the Township of Ignace Council formed the Ignace Aerodrome Advisory Committee to look at different opportunities in operating the airport as well as funding for tarmac/runway and facility upgrades (Township of Ignace 2021b). The Ignace runway is 3,500 feet and is compatible with the runway requirements of a Dash 8 or C-130 Hercules (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.2.2.2 Dryden

Municipal Roads

Dryden is located along Highway 17 which runs through Dryden from east to west. Highway 594 extends west of Dryden and connects to Highway 502. Highway 502 runs north/south and connects to Highway 11 and the United States border at Fort Frances/International Falls. Having easy access from multiple directions via road has helped to make Dryden a regional hub for suppliers wishing to service the Kenora District, including northern remote communities. A future highway by-pass that would run to the north of Dryden may require the city to reserve lands for the MTO (Explorer Solutions 2022a). Due to a lack of places for trucks to stop or park within the city, transports are parking at the side of the highway (WSP 2022d). Signs and barriers placed in the previously used parking lots across from Walmart and close to Tim Horton's have resulted in more trucks parking along the road, increasing the chances of a collision occurring (NWO Community and Baseline Studies Key Person Interview Program 2022).

In Dryden, the length of roads are categorized by the following functional classifications (Explorer Solutions 2022a):

- Urban Local (35,625.89 m);
- Urban Collector (12,462.65 m);
- Urban Arterial (15,221.69 m);
- Rural Local (36,891.11 m);
- Rural Collector (17,180.54 m); and
- Rural Arterial (13,878.00 m).

Roads in fair condition make up the highest percentage (Explorer Solutions 2022a). The majority of roads within the Dryden road network are maintained by the City of Dryden (NWO Baseline Studies Key Person Interview Program 2022-2023). Some roads are privately owned and/or overseen by the MTO, therefore the city is not responsible for their maintenance (Explorer Solutions 2022a). Any areas in Dryden that are identified for future development which are within the MTO's permit control areas will be subject to the MTO's policies, standards, and requirements. The city has committed to prioritizing early consultation to ensure municipal planning initiatives align with provincial transportation planning (Quartek Group 2022). In the Dryden 2023 budget \$3.2 million was allocated for planned construction on Highway 17 from Cecil ave. to West limit (City of Dryden 2023b).

Airport

Located approximately 10 km northeast of the City of Dryden, and the closest certified airport to the Township of Ignace, the Dryden Regional Airport is certified for regular commercial service (WSP 2022d). The airport employs four full-time staff and a manager, employed by the City of Dryden (NWO Baseline Studies Key Person Interview Program 2022-2023). In 1996, the City of Dryden attained ownership and operations of the airport from the Federal Government. In December 2019, Dryden contracted Loomex Group to provide an Airport Manager who is responsible for management and oversight of operations (Loomex Group 2021). The airport helps to support several services for the community and broader region including aerial firefighting, scheduled passenger service, general aviation, search and rescue operations, corporate charters, and medical evacuation flights. Between 2017 and 2022, the airport had approximately 10,000 to 12,000 aircraft movements annually with the number of annual

scheduled flights decreasing from 1,929 to 753, mainly due to economic impacts from the COVID-19 pandemic (City of Dryden n.d.c). The airport is equipped with an Instrument Landing System that allows aircrafts to land in any weather condition (WSP 2022d).

Dryden Regional Airport is equipped with 10 to 15 privately-owned hangars that are occupied and has space for new development. The runway is 5,993 feet long and 148 feet wide (1,826.5 meters by 45 meters) and is long enough to accommodate a 737-800 aircraft carrying either cargo or 150 passengers.

Airport services are offered by Bearskin Airlines, which offers 7 flights, 6 days/week between Thunder Bay, Dryden, and Winnipeg; MAG Aerospace Canada; Ministry of Natural Resources and Forestry (MNR) Fire Management Centre; Expedition Helicopters; and Provincial Helicopters. Morgan Fuels is the primary provider of fuel services at the airport (Loomex Group 2021). Some businesses have maintained services at the airport for an extended period of time include Hydro One, Northern Youth Programs, and MNR. Northern Youth Programs and MNR both have hangars at the airport (Loomex Group 2021).

The airport serves an essential function in the community by transporting patients from Dryden to the appropriate facilities for urgent medical care while bringing in surgeons and other specialists to the Dryden Regional Health Centre. Northwest Emergency Medical Services (EMS) does not have the capacity to transfer patients and the Dryden Regional Health Centre does not have a helipad (WSP 2022d).

Airport services are often busiest during the summer months, due to increased activity by the MNR caused by forest fires. The terminal has been an evacuation hub during forest fires and can accommodate up to 200 people at a given time during an evacuation. In case of an emergency, such as a forest fire, the Dryden Regional Airport has developed its own Emergency Plan, which includes the OPP, fire, and ambulance on site. In addition, the Dryden Regional Airport has additional staff from the City of Dryden and The Loomex Group available (City of Dryden 2020).

Strategic priorities identified in the Dryden Regional Airport Strategic Plan (2021) include supporting airport revenues by developing land for industrial or commercial sites on property that is not required for aeronautical use, and hangar and facility development such as rental hangars, and improved scheduled passenger air services.

2.4.2.2.3 Machin

Municipal Roads

The Municipality of Machin has 88 km of roads; most are classified as "Class 5" (BDO 2020), meaning that they are low speed limit and low traffic roads (Government of Ontario 2018d). Approximately 77% of the Municipality's road network is considered to be in "poor to very poor condition", whereas 5% are assessed as "very good condition" (Public Service Digest 2016).

Airports

Machin is currently investigating options to develop a plan for the use of the Vermillion Bay Airport property (NWO Community and Baseline Studies Key Person Interview Program 2022).

The Vermilion Bay Water Aerodrome is located 1.5 km northwest of the community of Vermilion Bay on Kawashegamuk/Long Lake that services mainly private regional tourist outfitters.

2.4.2.2.4 Sioux Lookout

Municipal Roads

The Municipality of Sioux Lookout's road network contains over 50 km of paved and 2.6 km gravel local and collector roads (PSD Citywide 2020). The road network is predominately within the settlement areas of Sioux Lookout and Hudson. Most roads (68%) have a remaining life of over 10 years. The Municipality completed an internal road condition assessment in 2018 and rated surface condition on a five (5) point scale that ranged from excellent to critical condition. 38% of paved roads have been given an average condition rating of "poor", with 65% being rated between "fair" and "very good" (PSD Citywide 2020). The 2023 Sioux Lookout Budget included road reconstruction on Moosehorn dr., road resurfacing on Willington st. and Sturgeon River rd., and road reconstruction on Sturgeon River rd. (Municipality of Sioux Lookout 2023).

Airports

The Sioux Lookout Airport is a licensed airport that offers scheduled flights through Bearskin Airlines, Wasaya Airways, Perimeter Aviation, and North Star Air with charter flights from Skycare Air Ambulance, Bamaji Air, Slate Falls Airways, and Thunder Air (Sioux Lookout Airport n.d.a). In addition, the airport serves as a base for the Ornge Air medevac services, Nishnawbe-Aski Police Service (NAPS), private aircraft owners, and several other charters from across North America. The airport also acts as a hub for patients from the Meno-Ya-Win Health Centre from 29 northern communities and 17 nursing stations (Sioux Lookout Airport n.d.a).

The Sioux Lookout Airport is also a hub for many northern First Nation communities and provides service to approximately 160,000 passengers from 25,000 to 26,000 flights travelling through the airport every year (Municipality of Sioux Lookout 2021; NWO Community and Baseline Studies Key Person Interview Program 2022). This airport also accommodates 24-hour NavCanada Flight Services and is open to traffic 24-hours a day, 365 days a year (Sioux Lookout Airport n.d.a). The Sioux Lookout Airport has one runway which is 5,300 feet long by 100 feet wide (Sioux Lookout Airport n.d.b). Sioux Lookout Airport is also a fuel service dealer supplying Jet A-1 fuel with FSII and AV gas, available through Morgan Fuels (Sioux Lookout Airport n.d.c).

Sioux Lookout is currently expanding water and sewer services at the airport to facilitate development of their Big Wood property to develop another hotel (NWO Community and Baseline Studies Key Person Interview Program 2022).

Railways

The Canadian Pacific Railway has stations in Ignace and Dryden and passes through Machin (Canadian Pacific 2022). Canadian Pacific is a freight rail service provider with passenger services limited to luxury tours provided by Royal Canadian Pacific (Canadian Pacific 2023). Ignace has convenient access to the rail system in the form of a switch yard/reload terminal which is located two blocks north of Highway 17 (Township of Ignace 2018).

The Canadian National Rail Line travels through Sioux Lookout, just to the north of the other Local Study Area communities (CN 2023). The station in Sioux Lookout was built in 1911 as part

of the Grand Trunk Pacific Railway (GTPR)/National Transcontinental Railway (NTR) system that became Canada's second transcontinental railway (CNR in Ontario 2011). Passenger service is available on the CN rail line through VIA Rail. VIA Rail Passenger Service is available in Sioux Lookout. While the station is closed, the train continues to stop at the Sioux Lookout location for passengers for approximately 20 to 30 minutes (VIA Rail n.d.).

No intermodal facilities exist at any of the stops in the Local Study Area communities on the Canadian Pacific Railway or Canadian National Rail Line. The nearest intermodal facility is in Winnipeg, on the Canadian National Rail Line (Explorer Solutions 2022a).

2.4.3 Utilities and Associated Infrastructure

The following section describes the utility infrastructure in the Local Study Area, including electricity, natural gas and propane, water, wastewater, and stormwater, solid waste and recycling, cellular and landline phone service, internet service, and television service. **Section 3.6.3.5** describes the average residential monthly electricity, natural gas, water and wastewater, cellular phone, and internet bills.

2.4.3.1 Electricity

Electricity service providers in the Local Study Area include Hydro One Networks and Sioux Lookout Hydro. Hydro One Networks and Sioux Lookout Hydro are both regulated by the Ontario Energy Board (OEB 2023; Hydro One n.d.a; Sioux Lookout Hydro 2019).

- **Hydro One Networks:** the electricity provider for Ignace, Dryden, Machin, Wabigoon Village, Melgund, and Dinorwic (Hydro One n.d.a, Township of Ignace 2018; City of Dryden 2017; NWO Baseline Studies Key Person Interview Program 2022-2023). Hydro One has 115 and 230 kV transmission lines throughout Northern Ontario (Hydro One n.d.b).
- **Sioux Lookout Hydro:** the electricity provider for Sioux Lookout (Sioux Lookout Hydro 2019; Sioux Lookout Hydro 2023). Sioux Lookout Hydro is an incorporated company owned by the Municipality of Sioux Lookout. Sioux Lookout Hydro also maintains streetlights on behalf of the Municipality (Municipality of Sioux Lookout 2022b). Sioux Lookout Hydro is embedded within the Hydro One Network distribution system with 115 and 230 kV transmission lines (Hydro One n.d.b).

In April 2019, Hydro One Networks issued a Notice of Commencement for the Terms of Reference for the Environmental Assessment for the Waasigan Transmission Line. The transmission line is a proposed line between Thunder Bay, Atikokan, and Dryden that is expected to bring an additional 350 megawatts of electricity to northwestern Ontario (Hydro One n.d.a).

2.4.3.2 Natural Gas and Propane

Union Gas (Enbridge) provides natural gas service to Ignace, Dryden, and Machin (OEB 2023; NWO Baseline Studies Key Person Interview Program 2022-2023). The Township of Ignace natural gas infrastructure was installed in the early 1980s and late 1990s, connecting all properties within the Township. Primary lines run north and south (e.g., West Beach Drive, Lakeshore Drive, West Street, Pine Street, and Davey Lake Road). The City of Dryden natural gas infrastructure was predominantly installed from the late 1970s to 1990s, connecting the majority of properties within the City. The community of Vermillion Bay natural gas infrastructure

was predominantly installed throughout the 1980s and 1990s (NWO Baseline Studies Key Person Interview Program 2022-2023).

Sioux Lookout, Wabigoon Village, Melgund, and Dinorwic do not have natural gas service (NWO Baseline Studies Key Person Interview Program 2022-2023). While there is currently no natural gas service in Wabigoon Village, the Local Services Board has investigated the potential for Union Gas to provide service as the Union Gas natural gas line passes near the community (NWO Baseline Studies Key Person Interview Program 2022-2023). The Union Gas natural gas line also passes near Melgund and Dinorwic (NWO Baseline Studies Key Person Interview Program 2022-2023). A natural gas line does not pass near Sioux Lookout.

Superior Propane and Morgan Fuels serve the communities of Dryden and Sioux Lookout (Explorer Solutions 2022b; NWO Baseline Studies Key Person Interview Program 2022-2023). A Superior Propane regional office and plant is located on the west side of Dryden (Superior Propane n.d.).

A TC Energy (formerly TransCanada Corporation) natural gas transmission pipeline runs through the Local Study Area but does not distribute natural gas to the Local Study Area communities. TC Energy owns and operates the Canadian Mainline natural gas pipeline, which roughly twins the Trans-Canada Highway (TC Energy 2017). The pipeline has rights of way that cross municipal lands for Ignace, Dryden, Machin, Village of Wabigoon, and Melgund (WSP 2022b; Quartek Group Inc 2022).

2.4.3.3 Water, Wastewater, and Stormwater

Municipal water and wastewater service is provided to residents of Ignace, Dryden, and Sioux Lookout with the exception of some residential properties in Ignace that do not receive wastewater service and some rural and urban properties in Dryden that are not serviced by municipal water and sewer. For these properties service is the responsibility of the homeowner (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents of Machin have municipal water service, while wastewater service is the responsibility of the homeowner (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents of Machin typically have a septic tank and field for wastewater (NWO Baseline Studies Key Person Interview Program 2022-2023). Water and wastewater service for residents of Wabigoon Village, Melgund, and Dinorwic are the responsibility of the homeowner (NWO Baseline Studies Key Person Interview Program 2022-2023). Service can come in the form of cisterns and water wells for water service and septic tank and field for wastewater service (NWO Baseline Studies Key Person Interview Program 2022-2023).

Municipal stormwater management is provided to residents of Ignace, Dryden, Sioux Lookout, and Machin. The Township of Ignace, City of Dryden, and Municipality of Sioux Lookout each manage a system of stormwater sewer mains, culverts, ditches, catch basins, and manholes. The Municipality of Machin maintains ditches with culverts. The Ministry of Transportation maintains the ditches and culverts for Wabigoon Village, Melgund, and Dinorwic (NWO Baseline Studies Key Person Interview Program 2022-2023).

The following section describes the municipal water, wastewater, and stormwater infrastructure for the Local Study Area communities.

2.4.3.3.1 Township of Ignace

Water Treatment and Distribution

The water distribution system network is owned by the Township of Ignace and Northern Waterworks Inc. operates, maintains, and manages the water distribution system. Northern Waterworks Inc. is also responsible for testing and tracking activities and identifies capital needs for Township consideration (Urban Systems 2021). The water distribution system in Ignace was built in 2009 with a 50-year useful life. Ignace's water treatment plant has an operational capacity for approximately 1,870 people (or 2,000 m³/day), which exceeds its current population. Michel Lake (located north of the Township) is the community's main water source (WSP 2022b). The water treatment system uses a membrane filtration process (WSP 2022b). A water pollution control plant by Agimak River has an extended aeration plant and disinfects phosphorous and other contaminants from the water. Its capacity can carry up to 2 million litres of water in its reservoir (WSP 2022b). The plant currently operates at 30% capacity with a maximum daily demand of approximately 1,500 m³/day of water and an average daily demand of 868 m³/day (Urban Systems 2021). The water distribution system consists of approximately 24 km of various sized water mains, 140 valves, and 142 fire hydrants (WSP 2022b). Water lines and hydrants are approximately 45 years old, with an expected lifespan of 80 years. Water valves are over 45 years old and nearing the end of their lifespan after recent failures suggested 50 years is a reasonable useful life (WSP 2022b).

During the winter of 2018 to 2019 there were issues with frozen residential water lines at over 235 houses due to water lines installed in the frost zone, removal of insulating snow on streets where service lines are most shallow, and a high water table (JML Engineering 2019). In 2019, Aqua-Flo units were installed in 187 homes to help keep water circulating and avoid freezing (JML Engineering 2019).

Sanitary Sewer and Sewage Treatment

The Township's existing wastewater treatment plant was built in the 1980s and is nearing the end of its 50-year lifespan (WSP 2022b). The wastewater system runs for approximately 15 km throughout Ignace and includes approximately 180 manholes. The plant has a capacity of 2,536 m³/day and was designed to serve a maximum population of about 2,400. Due to performance and operational limits of the plant, it would be unable to support sizeable future population growth. While the wastewater treatment plant is nominally operating at 63% capacity and at its operational limit, 297 residential properties receive municipal water but are not utilizing the Township's sanitary sewer system (i.e., they have their own septic systems). The sewers and manholes are approximately 45 years old, with an expected lifespan of 60 to 80 years. Although existing sanitary pipes do not require replacement for over 15 years, most pipes use asbestos cement (WSP 2022b).

Stormwater Management

Stormwater infrastructure was installed in Ignace the early 1970s as new residential subdivisions for mining, forestry, and government employees were built (PSD 2020). Most culverts and storm sewers have an expected life between 50 and 80 years. In June 2022, an engineering inspection of the Pine Street culverts revealed issues with structural integrity. As a result, Pine Street was

temporarily closed (Township of Ignace n.d.c). The Township applied for an emergency provincial grant in July 2022 and was awarded \$1.74 million to cover remediation and replacement costs of the Pine Street culvert and bridge, with work expected to begin in the fall of 2023 (Township of Ignace n.d.c). The total length of the stormwater network in Ignace is approximately 4 km with 11 catch basins, 153 storm units, and 4 storm culverts (WSP 2022b). Storm sewers (80 years of expected life), culverts (50 years of expected life), and catch basins (60 years of expected life) are all nearing halfway of their useful life (WSP 2022b).

2.4.3.3.2 City of Dryden

Water Treatment and Distribution

The City of Dryden has a conventional surface water treatment plant. Water is sourced from Wabigoon Lake, located approximately 2 km from the water treatment plant. Two lines, including one backup line, have been installed (Government of Ontario 2021g). The water treatment plant currently runs at 30% capacity (633 litre per capita/day) at 4,080 m³/day (Explorer Solutions 2022a)²⁶. Although the water treatment plant is running at 30% capacity, the facility is 46 years old, and reliability could be an issue in the future. To accommodate larger future developments the water treatment plant would need to be upgraded. The water distribution system consists of approximately 60 km of various sized water mains, 840 valves, 305 fire hydrants, and 2,600 service connections (PSD 2016). The condition of most watermains in Dryden is “moderate or worse”²⁷ (Explorer Solutions 2022a). The City of Dryden Public Works Department handles water distribution system repairs and services disruptions, including hydrants (The Loomex Group 2022a).

Sanitary Sewer and Sewage Treatment

The City of Dryden’s wastewater treatment plant was built in 2014 and is LEED Silver certified as per the Canada Green Building Council (Stantec n.d.). The wastewater treatment plant has an expected lifespan of 60 years. The City of Dryden Public Works Department operates the wastewater treatment plant and pumping stations, as well as manages sewer line repairs and system maintenance. The wastewater system runs for approximately 57 km throughout Dryden. The wastewater system includes 701 manholes for access and servicing (PSD 2016). The condition of most sewers in Dryden is “moderate or worse”, whereas larger sewers are evaluated as “poor or very poor condition” (Explorer Solutions 2022a). The Dryden Community Capacity (Explorer Solutions 2022a) study noted the capacity of the sanitary sewer system to be approximately 10,800 m³/day. Certain sections of the sewer are currently near capacity and may require replacements of some sections to accommodate larger future developments.²⁸

²⁶ The Dryden Community Capacity Study (2022) reports the water treatment plant capacity at 13.6 ML/day which is equivalent to 13,600 m³/day. Conversions were calculated by InterGroup Consultant Ltd.

²⁷ The condition classification is an estimate based on the date of installation and includes very good (installed less than 20 years ago), good (installed 20-40 years ago), moderate (installed 40-60 years ago), poor (installed 60-80 years ago), and very poor (installed more than 80 years ago) (Explorer Solutions 2022a).

²⁸ The Dryden Community Capacity Study (2022) reports the wastewater treatment plant capacity at 10.8 ML/day which is equivalent to 10,800 m³/day. Conversions were calculated by InterGroup Consultant Ltd.

Stormwater Management

The total length of the stormwater network in Dryden is approximately 39 km with 653 catch basins, 648 manholes, and 4,420 m of storm culverts (PSD 2016). The condition of most storm sewers in Dryden are in moderate or worse condition²⁹ (Explorer Solutions 2022a). The City of Dryden Public Works Department manages the stormwater network, including repairs and system maintenance.

2.4.3.3.3 Municipality of Machin

Water Treatment and Distribution

The Municipality of Machin owns and operates their municipal water distribution system, which includes the Vermillion Bay water treatment plant and low lift pumping station (Municipality of Machin 2019). The water is sourced from Eagle Lake. The water distribution system consists of approximately 7.5 km of various sized water mains, 65 gate valves, 50 fire hydrants, and 154 service connections (PSD 2021). In 2019, the water treatment plant operated at 14% capacity (1,360 m³/day) of the average daily demand, providing water to approximately 220 households (NWO Community and Baseline Studies Key Person Interview Program 2022; BDO 2020; Municipality of Machin 2019). In 2019, the system supplied 70,980 m³ of treated water (or approximately 195 m³/day) (Municipality of Machin 2019). The maximum daily demand was 457 m³/day which represented 34% of the capacity (1,360 m³/day). Nearly 90% of the municipality's water system assets have over 10 years of useful life remaining and almost 60% are considered to be in fair condition with upgrades and improvements needed to meet demand and service delivery efficiencies (PSD 2016; BDO 2020). The water treatment plant has over 15% of assets at fair or worse condition, and although it is less than 20 years old, the expected useful life is between 10-50 years old and may need to be replaced in the next ten years (PSD 2021). The Municipality is evaluating the water plant for larger distribution (BDO 2020). The municipal water supply was noted to be an issue, but there is an inability to further increase tax revenues for funding to address this issue (NWO Community and Baseline Studies Key Person Interview Program 2022).

Sanitary Sewer and Sewage Treatment

The Municipality of Machin does not provide municipal sewer service. Residents are responsible for providing their own septic fields (NWO Baseline Studies Key Person Interview Program 2022-2023).

Stormwater Management

The Municipality of Machin maintains ditches with culverts as part of their stormwater management service (NWO Baseline Studies Key Person Interview Program 2022-2023). Machin has 156 culverts with an average age of 50 years, despite only an estimated useful life of 30

²⁹ The condition classification is an estimate based on the date of installation and include very good (installed less than 20 years ago), good (installed 20-40 years ago), moderate (installed 40-60 years ago), poor (installed 60-80 years ago), and very poor (installed more than 80 years ago) (Explorer Solutions 2022a).

years. Given the average age and estimated useful life of the culverts, over 70% of the culverts are in very poor condition (PSD 2021).

2.4.3.3.4 Municipality of Sioux Lookout

Water Treatment and Distribution

The Sioux Lookout water treatment plant was built in 1999. Water is sourced from Pelican Lake (Municipality of Sioux Lookout 2021). The water treatment plant is owned by the Municipality of Sioux Lookout and administered by the Public Works Department in conjunction with Northern Waterworks Inc. Northern Waterworks Inc. primarily oversees the operations, testing, reporting, and treatment of the plant and lift stations and completes all required ministerial reporting for any unplanned maintenance events. The Municipality completes unplanned maintenance tasks for the water distribution system. The Sioux Lookout water distribution system has approximately 32 km of water mains, 11 booster stations, 250 water main gate valves, 172 fire hydrants, and 2 water towers (PSD 2020). The water distribution system assets have an average age of 23.9 years with a remaining service life of 39 years (PSD 2020). Booster stations, water tower assets, and water treatment plant assets all have less than 15 years of average service life remaining (PSD 2020). A large portion of water system assets are in poor or very poor condition, with 73% of booster stations in poor or very poor condition, 37% of hydrants and valves, 98% of water tower assets, and 43% of water treatment plant assets. In 2022, average daily demand was measured at 1,892 m³/day, representing 36% of the capacity of the Water Treatment Plant (5,200 m³/day). The average daily flow was 2,700 m³/day, which represents 52% of the capacity of the treatment facility (Northern Waterworks 2022). Population growth has necessitated upgrades and replacements to water infrastructure (PSD 2020).

Sanitary Sewer and Sewage Treatment

The Municipality of Sioux Lookout wastewater treatment plant was built in 1984. The wastewater treatment plant has a rated capacity of 2,840 cubic meters of raw sewage on average daily (Municipality of Sioux Lookout n.d.b). In 2020, about 2,170 m³/day of sewage was introduced to the facility which represents 76% of the 2,840 m³/day capacity. The maximum amount of sewage introduced on a day was about 3,600 m³ which represents 39% of the peak flow rate of 9,230 m³/day (Northern Waterworks 2020). The wastewater system runs for approximately 23 km throughout Sioux Lookout. The wastewater system includes 246 manholes for access and servicing (PSD 2020). Nearly 85% of the wastewater treatment plant assets are in poor or worse condition and over 60% of manholes and pumping station assets are in poor or worse condition (PSD 2020). The average service life remaining is less than 15 years for manholes, pumping stations, and wastewater treatment plant assets. The wastewater treatment plant and associated collection system are owned by the Municipality of Sioux Lookout and operated, maintained, and managed by Northern Waterworks Inc. The Municipality also owns and operates a communal septic field for six residences (PSD 2020).

Stormwater Management

The Municipality of Sioux Lookout owns and maintains a stormwater network that has 13.6 km of storm sewer mains, 243 catch basins, 117 manholes, and ditches and culverts. The average condition of stormwater infrastructure is good with a service life remaining of 23 years (PSD

2020). The Sioux Lookout Public Works Department maintains the stormwater system. Manholes provide access to the storm mains and catch basins. Stormwater mains distribute stormwater collected from roads and streets to the discharge area (i.e., river) (PSD 2020).

2.4.3.3.5 Unincorporated Communities

Water and wastewater service for residents of Wabigoon Village, Melgund and Dinorwic are the responsibility of the homeowner (NWO Baseline Studies Key Person Interview Program 2022-2023). Service can come in the form of cisterns and water wells for water service and septic tank and field for wastewater service (NWO Baseline Studies Key Person Interview Program 2022-2023).

The MTO maintains ditches with culverts along the highway right of way corridor for Wabigoon Village, Melgund, and Dinorwic (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents are responsible for stormwater management on their own properties (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.3.4 Solid Waste Disposal and Recycling Services

The following section describes the municipal solid waste disposal and recycling services for the Local Study Area communities.

2.4.3.4.1 Township of Ignace

The Township of Ignace manages its own curbside solid waste collection and disposal and operates the landfill site. There is currently no curbside recycling. The landfill is located 3 km north of the community on Highway 599. The landfill is used by several adjacent unorganized communities in the surrounding area and services approximately 5,000 residents (Pinchin 2021). The landfill site has a remaining capacity of 175,000 cubic metres (WSP 2022b). Approval of waste material for drop-off is at the discretion of the landfill attendant who can reject and advise on solid waste accordingly. The Township is currently developing a waste management strategic plan that includes recycling and other waste diversion tactics such as aggressive compaction of solid waste which could extend the life expectancy past 2056 (WSP 2022b).

2.4.3.4.2 City of Dryden

The City of Dryden operates a full range of waste disposal services including urban and rural garbage collection. As of July 1, 2023, residential recycling collection transitioned to producer responsibility. Once the new framework is complete in 2026, producers will assume full accountability, including financial responsibility for recycling products (Circular Materials n.d.) Curbside recycling collection is contracted by B&M Waste Services (NWO Baseline Studies Key Person Interview Program 2022-2023; Circular Materials n.d.). Residential recycled products are sent to Winnipeg. The City's landfill site is 9.5 km southwest on Highway 502 and is operated by City of Dryden staff. The City also provides curbside yard waste collection services every spring and fall. Hazardous waste disposal is available through the Public Works Department and each year a household hazardous waste collection day is held during which residents can drop off their household hazardous waste at the Public Works Yard.

2.4.3.4.3 Municipality of Machin

The Municipality of Machin operates two landfill sites. The Municipality does not offer recycling pick up services, but does provide bins at the landfill sites for collecting recyclable items (NorthWest Healthline 2022). The two landfills operated by the Municipality include:

- The Eagle River Landfill site was opened in August 1972 and is located at 1690 Highway 594, approximately 4 km south of Hwy 17. The disposal site is situated on land which is overseen by the MNRF. The Eagle River landfill is projected to have capacity until 2046 (BDO 2020).
- The Vermilion Bay landfill site is located at 369 Highway 647, approximately 4 km north of Vermilion Bay. The landfill should have been closed in 2013 because it was at capacity, however, recent studies note that it has an extended useful lifespan (BDO 2020).

The Municipality of Machin no longer accepts materials from outside its Municipal Landfill Boundaries due to having to complete upgrades to extend the landfill lifespan and prevent closure for municipal residents (Machin Messenger 2022).

2.4.3.4.4 Municipality of Sioux Lookout

The Municipality of Sioux Lookout owns and operates the Hidden Lake Landfill Site, located 13 km east of Sioux Lookout (PSD 2020). The landfill has an estimated lifespan of 10 to 40 years (PSD 2020). To encourage waste diversion, the Municipality has employed strategies that include limiting the number of bags collected as part of scheduled collection, introducing multiple streams (household waste, recyclable materials, and/or organics), and changing the collection schedule (KPMG 2020). Sioux Lookout currently provides pick up of residential waste on a weekly basis. The Municipality also offers residents bi-weekly recycling pick up through a contract with B&M Delivery Services (Municipality of Sioux Lookout n.d.c). The Municipality operates garbage collection under a user pay system where users purchase garbage bag tags for pick-up (Municipality of Sioux Lookout n.d.d).

2.4.3.4.5 Unincorporated Communities

There is no curbside garbage or recycling pick up in Wabigoon Village, Melgund, or Dinorwic. The MNRF operates landfill sites that residents can access (NWO Baseline Studies Key Person Interview Program 2022-2023). Property owners in Melgund and Dinorwic may also bring their garbage and recycling to the Dryden landfill (NWO Baseline Studies Key Person Interview Program 2022-2023). The New Wabigoon Waste Disposal Site, located north of the LSB of Wabigoon on Dump Road is the nearest landfill to the LSB of Wabigoon, the LSB of Melgund, and Dinorwic. The two nearest landfills to Upsala are the Upsala Lake Waste Disposal Site, located east of Upsala on Concession Road 3, and the Cushing Lake Waste Disposal Site, located south of Upsala and east of Cushing Lake.

2.4.3.5 Telecommunications

Cellular phone service for all Local Study Area communities is provided by Bell Canada, TBayTel, Telus, Rogers, Virgin Mobile, Fido, and Koodoo (WSP 2022b).

Bell Canada provides landline service in the Local Study Area (WSP 2022b). In Dryden, the Dryden Municipal Telephone System provides landline service and is owned by Bell Canada (WSP 2022b).

The television service providers for all Local Study Area communities includes Bell Canada and Shaw Direct (WSP 2022b).

Table 2.4-2 illustrates the internet service providers for the Local Study Area communities.

Table 2.4-2: Internet Service Providers in the Local Study Area

Service Provider	Ignace	Dryden	Machin	Sioux Lookout	Wabigoon Village	Melgund	Dinorwic
Starlink	✓	✓	✓	✓	✓	✓	✓
Xplornet	✓	✓	✓	✓	✓	✓	✓
Bell Canada	✓	✓	✓	✓	✓	✓	✓
Shaw	✓	✓	✓	✓	✓	✓	✓
Celerity Telecom	✓	✓					
TBayTel		✓					
DMTS		✓					
Kuhkenah Network (K-Net)				✓			
TekSavvy				✓			

Source: WSP 2022b; Municipality of Sioux Lookout 2021.

2.4.4 Police, Fire, and Emergency Medical Services

2.4.4.1 Ontario Provincial Police

In the Local Study Area, the Ontario Provincial Police provide policing services. Across Ontario, the Ontario Provincial Police have more than 5,800 uniformed officers, 2,400 civilian employees, and 830 auxiliary officers (Ontario Provincial Police n.d.).

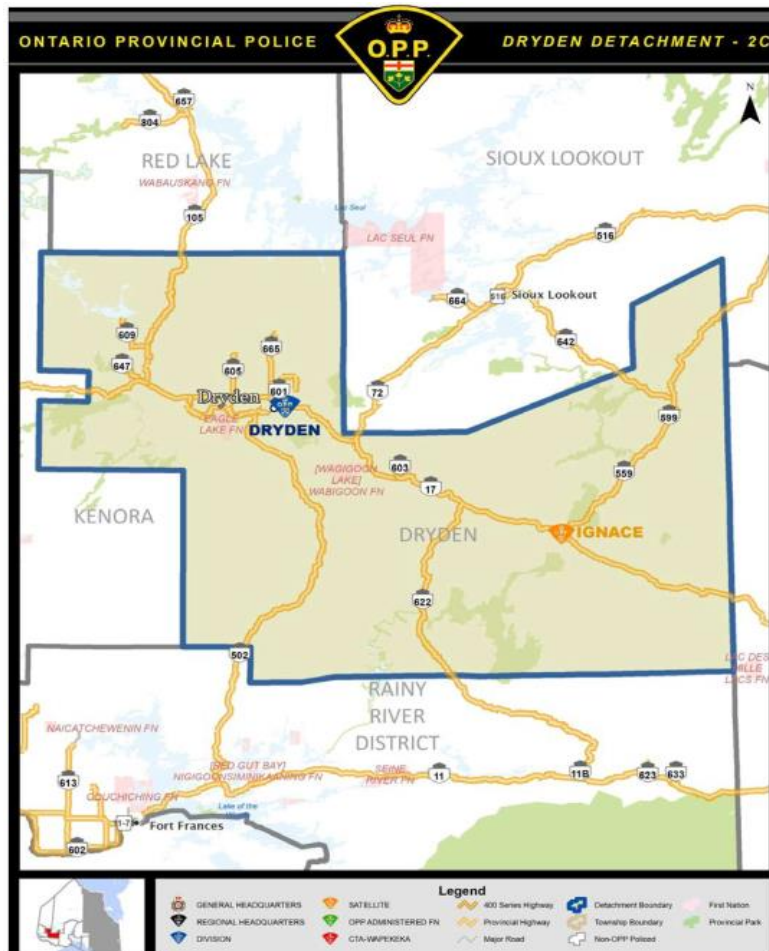
The Dryden detachment and Sioux Lookout detachment cover the Local Study Area. Dryden has the largest detachment of officers followed by Sioux Lookout. The Dryden detachment provides policing services to Dryden, Ignace, Machin and the unincorporated areas surrounding these municipalities. Ignace and Machin have a three-member Police Services Board and Dryden has a five-member Police Services Board that meets regularly with the detachment commander (Ontario Provincial Police 2022a).

2.4.4.1.1 Dryden Detachment

The Dryden detachment's service area is 16,041 km² including 708 km of highways and 1,124 km of other roadways. Nearly half of the area is waterways, trails, and remote areas. The Dryden detachment provides police services to Dryden, Machin, Ignace, Ojibway Nation of

Saugeen, and Savant Lake (**Map 2.4-1**). (Ontario Provincial Police 2022a). There is a satellite office in Vermillion Bay that is rarely used (WSP 2022d).

Map 2.4-1: Dryden Ontario Provincial Police Detachment Area



Source: Ontario Provincial Police 2022.

Table 2.4-3 shows the emergency call history in Ignace and Dryden between 2017 and 2021 (WSP 2022d). There was a consistent increase from 2017 to 2019, while call volumes have remained steady between 2019 and 2021.

Table 2.4-3: Dryden Ontario Provincial Police Emergency Call Frequency

Occurrence¹	2017	2018	2019	2020	2021
Violence	309	368	370	385	381
Property related	581	656	798	738	662
Drugs	79	105	114	152	122
Mental health acts	88	154	167	279	334
Total	1,057	1,283	1,449	1,554	1,499

Source: NWO Community and Baseline Studies Key Person Interview Program 2022; WSP 2022d.

Notes: 1. All data for the City of Dryden data were extracted from the Dryden Police Service domain prior to amalgamation with the OPP. Any historical data for the Dryden Police Service has not been reviewed by the OPP.

Ignace Satellite Office

The Dryden Ontario Provincial Police detachment has a satellite office in Ignace located off Highway 17 (NWO Community and Baseline Studies Key Person Interview Program 2022). Staffing in Ignace includes nine constables and one sergeant; all staff in Ignace report to the Dryden detachment. There is no administrative staff in Ignace, therefore all administrative work is sent to Dryden. Staffing is considered sufficient in Ignace outside of a lack of administrative staff (WSP 2022d).

Dryden Office

In Dryden, the Ontario Provincial Police detachment has a main office and a detachment office off Highway 17 (NWO Community and Baseline Studies Key Person Interview Program 2022). Daily staffing is made up of four platoons with eight constables and one sergeant on duty. Two to three constables patrol the rural area, which includes Highway 17. The platoons are typically split so that two to three constables patrol what is known as the rural area, which also covers Highway 17. The remainder of constables on duty are assigned to the City of Dryden (WSP 2022d).

The Ontario Provincial Police replaced the Dryden municipal police force (i.e., as the provider of police services within the municipality's boundary) on February 24, 2022, after the Ontario Civilian Police Commission approved the City of Dryden's application to disband the Dryden Police Service (DrydenNow 2021a). Policing costs in Dryden have routinely been amongst the highest per capita in Ontario. In 2022, Statistics Canada estimated Dryden had the second highest average policing cost at about \$1,040 per property, over triple the average cost per property in Ontario (\$311). Dryden's average policing cost at \$488 per capita was also well above Canada's average policing cost of \$410 per capita (DrydenNow 2021b). Policing costs in northwest Ontario are generally higher than provincial averages but Dryden's cost are notably higher than other communities (DrydenNow 2021b). In 2023, policing costs are estimated to have increased to close to \$1,400 per property (Fleury 2023).

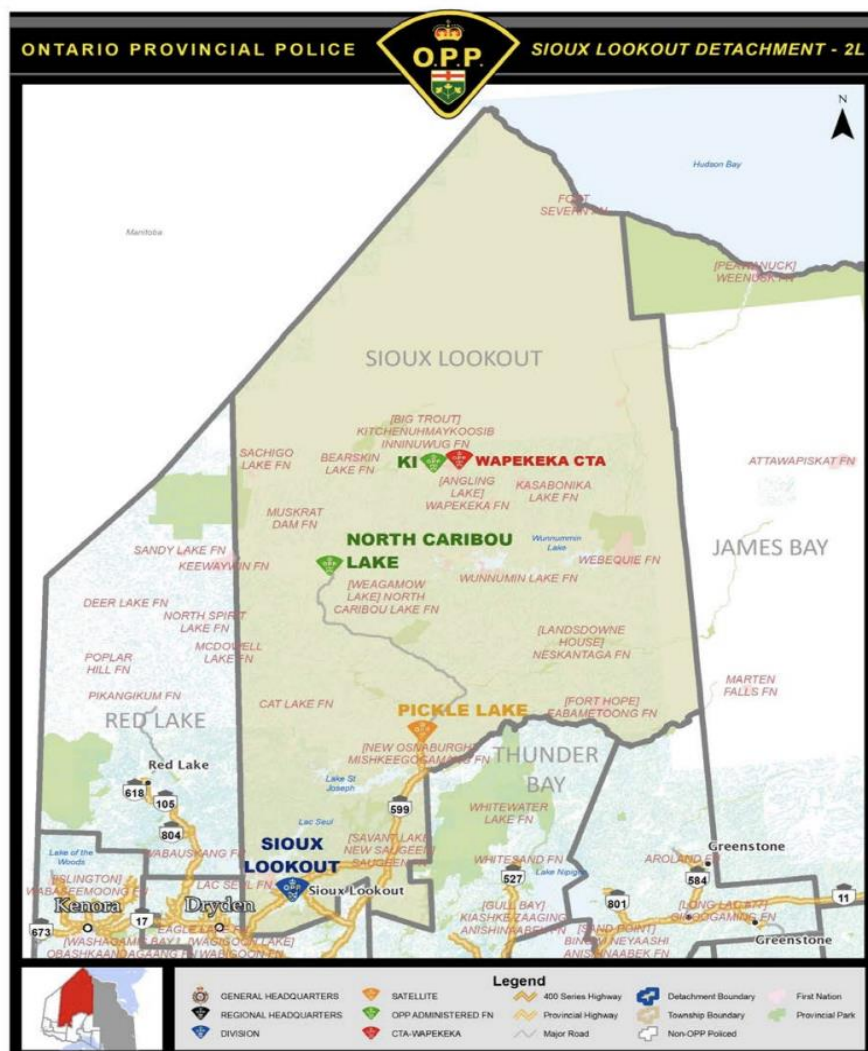
2.4.4.1.2 Sioux Lookout Detachment

The Sioux Lookout detachment has a large service area (**Map 2.4-2**). In addition to providing policing services in and around Sioux Lookout, the detachment has agreements with First Nations communities to provide policing or support in First Nation communities, including (Ontario Provincial Police 2022b):

- Wapekeka First Nation, which is 400 km north of Sioux Lookout by air;
- North Caribou Lake First Nation or Weagamow First Nation, which is 320 km north of Sioux Lookout; and
- Kitchenuhmaykoosib Inninuwug First Nation or Big Trout Lake First Nation, which is 440 km north of Sioux Lookout by air.

The detachment also has agreements in place to support the Nishnawbe-Aski Police Service and the Lac Seul Police Service (Ontario Provincial Police 2022).

Map 2.4-2: Sioux Lookout Ontario Provincial Police Detachment Area



Source: Ontario Provincial Police 2022b.

The Sioux Lookout detachment is responsible for 1,203 km of winter (ice) roads (Ontario Provincial Police 2022b).

The Sioux Lookout Ontario Provincial Police are a detachment with duration posting whereby assigned members must complete a fixed term of four years before they are eligible for transfer (Municipality of Sioux Lookout n.d.e). Staffing for the Sioux Lookout detachment includes 44 constables, seven First Nation constables, five special constables, six sergeants, one staff sergeant, one inspector, eight civilian employees, and 62 part-time guards and matrons. The posting to the Sioux Lookout detachment is for four years, after which staff are eligible for transfers (Municipality of Sioux Lookout n.d.e).

2.4.4.2 Jails, Correctional Centres, and Detention Centres

In the Local Study Area there are no jails, correctional centres, or detention centres.³⁰ The OPP detachments in Dryden and Sioux Lookout are equipped with detention cells and civilian guards who will watch prisoners 24 hours a day (NWO Community and Baseline Studies Key Person Interview Program 2022). For example, the Dryden detachment has nine adult jail cells, and two cells for young offenders (CKDR 2012). There are no detention centres in the Regional Study Area. The Kenora Jail is the only jail in the Regional Study Area. Additional facilities outside of the Regional Study Area include (Government of Ontario 2023o):

- Thunder Bay Correctional Centre;
- Thunder Bay Jail; and
- Fort Frances Jail.

2.4.4.3 Fire Services

2.4.4.3.1 Ignace Volunteer Fire Station

The fire hall in Ignace was built in the 1960s. The fire hall has showers and a kitchenette, but no overnight accommodations (NWO Community Studies and Baseline Key Person Interview Program 2022). The fire department is equipped with two pumper trucks, one of which is from 1991; one rescue vehicle for highway response, including extrication; and a half-ton designated truck (WSP 2022d). In 2023, Ignace received a new pumper fire truck (Township of Ignace 2023).

The fire department is staffed by volunteers except for the fire clerk, who works part-time. There are currently 14 active members, but it has the capacity for 25 members as per the fire department's policy (WSP 2022d). Volunteers are required to live within the Township of Ignace. They have no set schedule but must operate on a 24/7 pager basis; however, they are not required to respond to calls (WSP 2022d). Volunteer firefighters do not receive compensation for being on-call/pager but there is remuneration for responding to fire calls (WSP 2022d).

When the Ignace fire department is dispatched for a call and there are not enough volunteers to attend, or if the incident is too large, additional support is requested from the Kenora District Mutual Fire Aid Association who reach out to other fire departments. Wabigoon Village has the closest fire department to Ignace and would likely be contacted first in this situation (NWO Baseline Studies Key Person Interview Program 2022-2023).

Table 2.4-4 presents emergency calls from 2017 to 2021. The lowest number of calls was in 2019 with 47 calls total, while 2021 had the highest number of calls with 68 (WSP 2022d). The most common calls were for accidents and extrications followed by fires (WSP 2022d).

³⁰ Correctional centres typically house sentenced offenders who are serving periods of incarceration between 60 days to two years. Detention centres are larger regional facilities holding persons on remand, those serving shorter sentences (e.g., 60 days or less), and offenders awaiting to be transferred to a federal or provincial correctional centre. Jails are generally smaller facilities that were originally established by local counties, townships, or municipalities (Government of Ontario 2023o).

Table 2.4-4: Five Year Emergency Response

Call Type	2017	2018	2019	2020	2021	5-Year Total
Accident/ extrication	19	17	14	20	24	94
Fires	16	15	16	9	17	73
Public hazards	11	8	3	4	15	41
Alarms	12	3	1	10	4	30
Calls cancelled	5	5	9	8	5	32
Assist other agencies	1	3	4	3	3	14
Total	64	51	47	54	68	284

Source: NWO Community and Baseline Studies Key Person Interview Program 2022; WSP 2022d.

The existing fire station does not meet current building code standards or firefighting standards. It is located adjacent to the Canadian Pacific Railway tracks within the disaster zone. This means that the fire department may not be able to respond to a call if there is a disaster on the railway close to Ignace due to volunteer firefighters being unable to reach the fire hall. The Township is considering two potential locations for a new fire station; either behind the Ignace ambulance base or beside the Public Works Department (WSP 2022d).

2.4.4.3.2 Dryden Fire Service

The Dryden Fire Service is a composite fire service with four full-time staff and 37 pay-per-call firefighters. The majority of Dryden Fire Service members are trained and certified to NFPA standards. The current fire service model places a high demand on pay-per-call fire fighters, including the initial training and certification and weekly training sessions (Loomex Group 2022b; NWO Baseline Studies Key Person Interview Program 2022-2023). The Dryden Fire Service is responsible for dealing with forest fires within the City boundaries; outside of City boundaries fire suppression is the MNRF's responsibility (NWO Baseline Studies Key Person Interview Program 2022-2023). The City of Dryden has an agreement with the MNRF to provide fire services support at a cost and depending on the wildfire location.

The Dryden fire service has two fire halls. One fire hall is located in Dryden (fire hall #1), while the other fire hall is east of the city in a rural location (fire hall #2) (NWO Baseline Studies Key Person Interview Program 2022-2023).

Fire hall #1 is the larger of the two halls. In addition to the apparatus area for gear, it has a training room and basement for crews (NWO Baseline Studies Key Person Interview Program 2022-2023; Loomex Group 2022). There is no additional space to expand (NWO Baseline Studies Key Person Interview Program 2022-2023). Fire hall #2 is smaller and not as up to date. The ventilation system and wash stations to clean fire equipment are recommended to be improved (NWO Baseline Studies Key Person Interview Program 2022-2023). The fire department has been working on enhancements (e.g., new roof, floor drainage, wash sink for decontaminating smaller gear, and new lockers) (NWO Baseline Studies Key Person Interview Program 2022-

2023). Overall, the City's facilities are adequate for the needs of fire services (i.e., the training spaces and equipment) (NWO Baseline Studies Key Person Interview Program 2022-2023).

Fire hall #1 houses six vehicles: a pumper truck, an aerial truck, a rescue truck that contains auto extrication and water rescue equipment, two command vehicles, and an equipment truck that carries decontamination equipment and air tanks. Fire hall #1 also houses a fire truck from the 1920s for parades and other community events (NWO Baseline Studies Key Person Interview Program 2022-2023). Fire hall #2 houses a pumper, a water tanker truck for rural fires, an equipment truck that contains water rescue equipment and air tanks, and a half-ton truck with auto extrication equipment (NWO Baseline Studies Key Person Interview Program 2022-2023).

The 2022 Fire Master Plan (Loomex Group 2022) compared response times for Fire Hall #1 and Fire Hall #2 and recommended replacing the fire halls with a single centralized location. This would improve the coverage area due to slower response times at Fire Hall #2. Other recommendations from the Fire Master Plan included developing an officer promotional program, expanding public fire safety social media content on a variety of topics, improving fire personnels delivery of public fire safety education, and improving training for various firefighting courses (Loomex Group 2022).

The department services a fire response area of 65.84 km², and a vehicle rescue/extrication response area of up to 100 km away. **Table 2.4-5** presents the number of incidents responded to by the Dryden fire service broken out by fire hall.

Table 2.4-5: Incidents Responded to by Fire Halls

Year	Number of Emergency Calls	Number of Non-emergency Calls	Total
Hall #1			
2017	169	9	178
2018	160	41	201
2019	199	13	212
2020	181	7	188
2021	228	17	245
Hall #2			
2017	10	5	15
2018	8	0	8
2019	11	1	12
2020	19	2	21
2021	20	3	23

Source: Loomex Group 2022

The standard for responding to calls is "10 and 10," or 10 people at a fire in 10 minutes (NWO Baseline Studies Key Person Interview Program 2022-2023). The average response time was between 6.14 minutes in 2020 to 8.14 minutes in 2022 (City of Dryden n.d.c). The average time

for the first fire truck to arrive at an incident from the time it was dispatched (response time) for all calls was 9 minutes and 37 seconds (City of Dryden n.d.c). The average time for the first fire truck to arrive at an incident within the City of Dryden from the time it was dispatched (response time) for all calls was 8 minutes and 31 seconds (City of Dryden n.d.c).

The Dryden fire service is part of the “neighbours help neighbours” program where they provide services to other communities. For example, they help Oxdrift and Wabigoon Village with fire attack and auto extrication. While no formal agreement exists, the Province of Ontario provides financial aid when the fire service responds to these calls.

2.4.4.3.3 Machin Fire and First Response Department

Machin’s fire and first response department provides services to the Municipality and the surrounding unincorporated areas (Municipality of Machin 2021). The fire and first response department are staffed by volunteers. The fire hall currently meets demands and has a useful life of 40 years. Equipment had a useful life of between 10 and 25 years as of 2016 (BDO 2020).

2.4.4.3.4 Sioux Lookout Fire Department

The Sioux Lookout fire department has two fire halls. The fire department includes 27 firefighters, a fire chief, a district fire chief, a deputy fire chief, seven captains, and a training officer. A total of 35 members are volunteer. The fire chief is a full-time position (Municipality of Sioux Lookout 2022a).

The Fire department is responsible for 536 km². The service area is east to Alcona, south to beyond Ojibway Provincial Park, west to Hudson, and 10 km to the north of Sioux Lookout (Municipality of Sioux Lookout 2022a).

The fire department has two equipment trucks, three pumper trucks, an ice/water rescue trailer, a compressed air foam truck, one tanker and one aerial ladder truck (Municipality of Sioux Lookout 2022a).

2.4.4.3.5 Unincorporated Areas

Oxdrift and Wabigoon Village both have volunteer fire departments that are part of the provincial Northern Fire Protection Program and managed by the Office of the Fire Marshall (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.4.3.6 MNRF Fire Bases

The MNRF have fire management headquarters in Sioux Lookout, a primary tanker airbase (or District Fire Centre) in Dryden, and a tertiary airbase and a forward attack base in Ignace (Government of Ontario 2023o). The fire management headquarters is an administrative location which provides fire management and administrative support and a primary tanker base is an MNRF operated facility which acts as a home position for staff and aircraft to operate from and the capacity to complete large scale maintenance. A tertiary tanker base is utilized for short-term deployments of staff and aircraft during extreme levels of fire response operations, and a forward attack base is operated temporarily during periods of fire suppression activity (Government of Ontario 2023o).

In Dryden, there are approximately 225 employees at the MNRF District Fire Centre and a large number of seasonal staff during fire season (NWO Community and Baseline Studies Key Person Interview Program 2022). Most of the positions at the District Fire Centre are technical positions,

with about ten staff who are technicians and supervisory staff. Seasonal staff are hired for various jobs such as fire suppression or fire support (e.g., logistics, clerical support). Employees also monitor for required suppression of fires during a fire ban, but only certain staff can enter private properties and administer fines for non-compliance or negligence (NWO Community and Baseline Studies Key Person Interview Program 2022).

2.4.4.4 Emergency Medical Services

2.4.4.4.1 Northwest Emergency Medical Services

Northwest Emergency Medical Services is under the Kenora District Services Board ("KDSB") and provides emergency medical services in the Regional Study Area. Northwest Emergency Medical Services has nine ambulance bases throughout the Regional Study Area, including a base in the Local Study Area communities of Ignace, Dryden, and Sioux Lookout (KDSB 2023f).

Within the Regional Study Area, average response times include 2.4 minutes in 2019, 1.35 minutes in 2020, and 1.41 minutes in 2021 within a target plan of two minutes. Call volumes include 22,829 in 2019, 20,893 in 2020, and 19,137 in 2021 (Ministry of Health and Long-term Care 2022).

It has been noted that attracting qualified paramedics is challenging in the region in part because there are no programs in the Local Study Area or Regional Study Area (NWO Baseline Studies Key Person Interview Program 2022-2023). Staffing numbers are based on call volumes. The capacity of each crew is about 2,500 calls each year (WSP 2022d).

2.4.4.4.2 Ignace Ambulance Base

The Ignace ambulance base is owned by the KDSB and has two bays. The building is approximately 2,850 ft². The base is in good condition. There are no near-term plans to expand the ambulance base (Urban Systems 2021). The vehicle fleet consists of two ambulances (one frontline and one backup). Staffing includes one crew that works 24/7 (on-duty during the day and on-call at night), paramedics (three full-time, one part-time, and three casuals), and one paramedic coordinator (KDSB 2023f). In a year, the Ignace ambulance base receives about 300 calls. There has not been a substantial change in calls over the past few years. (WSP 2022d). In health focus groups, participants noted that burnout among emergency medical services staff is a challenge, along with consistent staffing and coordinating response with the Dryden emergency response teams (Ignace Health and Wellness Focus Group 2023; Ignace EarlyOn Child and Family Centre Staff and Parent Focus Group 2023).

2.4.4.4.3 Dryden Ambulance Base

The Dryden ambulance base is owned by the KDSB and has eight bays. The building is approximately 9,343 ft² (KDSB n.d.). The vehicle fleet consists of four ambulances (two frontline, two backup), one multi-casualty support vehicle, two emergency response vehicles (support/command), and one emergency response unit community paramedic (KDSB 2023f).

Staffing for 911 response includes two crews daily and one crew at night, paramedics (11 full time, three part-time, four casual), one superintendent of operations who oversees the central region operations for the Dryden, Ear Falls, and Red Lake bases ((KDSB 2023f). There are also community paramedicine staff that includes community paramedics (two full-time, one part-

time), one community paramedicine administrative assistant, and one superintendent of community paramedicine. There is also administrative staff (KDSB 2023f).

Call volumes in Dryden have been increasing. A reason for this includes mental health and substance use issues. Dryden has experienced an increase in call volumes, which can be attributed, but not limited to, social issues including mental health and drugs/alcohol addiction (WSP 2022d).

2.4.4.4.4 Sioux Lookout Ambulance Base

The Sioux Lookout ambulance base is owned by the KDSB and consists of three bays. The building is approximately 4,843 ft². The fleet consists of three ambulances (two frontline, one backup), one emergency response vehicle (support/command), and one emergency response unit community paramedic (KDSB 2023f). The ambulance base is staffed with two crews (24/7), paramedics (14 full-time, six part-time, and three casuals), and one superintendent of operations who oversees 911 responses for the eastern region operations for the Sioux Lookout, Pickle Lake, and Ignace bases. Staffing also includes a full-time community paramedic who looks after community paramedicine (KDSB 2023f).

2.4.4.4.5 Machin Ambulance Base

The KDSB is looking to build an ambulance base in Vermillion Bay (WSP 2022d).

2.4.4.5 Emergency Response Plans

Under the *Emergency Management and Civil Protection Act*, every municipality is required to have an emergency response plan that describes necessary services during an emergency (Government of Ontario 1990e). In the Local Study Area, Ignace, Dryden, Machin, and Sioux Lookout have all prepared emergency response plans.

2.4.4.5.1 Township of Ignace

The Ignace emergency response plan identifies the officials who form the emergency operations control group. This group is responsible for directing emergency operations. In Ignace, it includes the mayor or alternate, clerk or alternate, fire chief or alternate, public works manager or alternate, and the community emergency information officer. The group may add additional members from different organizations (e.g., the Ontario Provincial Police, KDSB, Northwest Emergency Medical Services, and utilities) (Township of Ignace 2021a).

The plan is developed and implemented by a community emergency management coordinator who is required to successfully complete relevant training and be familiar with current legislation and standards. The community emergency management coordinator is also responsible for developing budgets and providing strategic advice to the emergency management program committee (Township of Ignace 2021a).

Emergencies include forest fire, severe power outages and hazardous spills (WSP 2022b). The emergency response plan describes the response to each type of emergency, including dispatching fire crews or the Ontario Provincial Police, public announcements, and evacuation plans (Township of Ignace 2021a).

2.4.4.5.2 City of Dryden

The City of Dryden's emergency response plan provides procedures to respond to emergency situations from forces of nature, disease, and accidents that result in serious harm to several persons and/or substantial damage to property (City of Dryden 2020). The plan describes how the emergency control group helps guide a coordinated response with several agencies to help provide immediate assistance. The emergency control group includes the mayor, chief administrative officer, fire chief or community emergency management coordinator, public works manager, treasurer, and clerk. The emergency control group has adopted the incident management system by the Province of Ontario, which organizes incident response into command, operations, planning, logistics, and finance and administration (City of Dryden 2020).

The Dryden emergency response plan supports the idea that response to a large-scale emergency requires an assessment of the situation as well as the efficient deployment and management of resources. Its primary function is to provide an organizational framework that is well coordinated, flexible, and supported with adequate resources (e.g., personnel, equipment, and expertise) that allows for a well coordinated response and guide for City of Dryden leadership (City of Dryden 2020). The plan allows sections to be used, reviewed, and/or modified independently to reflect the public safety requirements of the community. City department leaders and agencies are expected to develop their own internal notification lists, procedures, and contingency plans to help fulfill their own responsibilities.

The Dryden Regional Airport adheres to their own emergency response plan which follows the Ontario Mass Evacuation Plan: for the Far North and the Provincial Emergency Response Plan which requires that adequate resources, including transportation and accommodation, are in place in case of emergency (Loomex Group 2021). The Dryden Regional Airport emergency plan works in coordination with the City of Dryden's emergency response plan (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.4.5.3 Municipality of Machin

The aim of the emergency response plan for the Municipality of Machin is to make provisions for the extraordinary arrangements and measures that may have to be taken to safeguard property and the health, safety, and welfare of the inhabitants exposed to an emergency in the community (Municipality of Machin 2021). Their focus is to provide a coordinated response to an emergency or disaster thereby ensuring the preservation of life and the environment and protection of property. The Municipal emergency control group includes the mayor, deputy mayor, emergency coordinator, deputy clerk, fire secretary, and public works (Municipality of Machin 2021). Additional support may be drawn upon from other organizations.

2.4.4.5.4 Municipality of Sioux Lookout

The Municipality of Sioux Lookout emergency plan describes the earliest possible coordinated response to ensure the effects of an emergency or disaster are minimized, protect and preserve health and private property, and essential services are maintained or restored quickly (Municipality of Sioux Lookout 2020c). The plan outlines strategic steps related to roles and responsibilities of the Municipal emergency control group, communications guide, forest fire emergency protocols, evacuation notices (stage 1 and 2), evacuation plan and procedures, emergency reception plan, and public education protocols (Municipality of Sioux Lookout 2020c). The emergency control group includes the head of council, chief administrative officer, manager

of emergency services, manager of corporate services, treasurer, and airport manager (Municipality of Sioux Lookout 2020c).

2.4.5 Educational Facilities

This section presents a summary of the primary and secondary education facilities in the Local Study Area communities. Details on postsecondary education are provided in **Section 3.3.2.2**.

2.4.5.1 Ignace

The following section describes the educational facilities in Ignace, Dryden, Machin, and Sioux Lookout, including elementary school facilities, and high school facilities. Educational programming, including college and university programs throughout northern Ontario and Winnipeg, is described in **Section 3.3.2**.

2.4.5.2 Ignace Educational Facilities

The Keewatin Patricia District School Board ("KPDSB") operates the Ignace Public School and the Conseil Scolaire de District Catholique des Aurores Boreales operates the École Immaculée Conception. Ignace also has a Contact North satellite office.

2.4.5.2.1 Ignace Public School

The KPDSB operates the Ignace Public School (KPDSB 2022), which opened in 1973. The Ignace Public School is a kindergarten to grade 12 facility. Since its opening, there have been two expansions, in 1976 to expand the elementary school classrooms and teaching facilities (kindergarten to grade 8) and in 1981 to accommodate high schooling (grade 9 to grade 12) needs (WSP 2022c).³¹

The Ignace Public School has a combined elementary and high school capacity of 679 students. The projected enrollment for 2022-2023 is 159 pupils, including 106 in elementary and 53 in high school (KPDSB 2022). The projected 2022-2023 enrollment would result in a capacity of 23% for the school (KPDSB 2022). Enrolment over the next 10 years is expected to stay consistent for elementary grades at approximately 100 students, while the high school grades are projected to decline to less than 50 students by 2025 (KPDSB 2022). The Ignace Public School has approximately 14 teaching staff (NWO Community and Baseline Studies Key Person Interview Program 2022).

The Ignace Public School has small class sizes and a low student to teacher ratio. In the past, Ignace has had issues retaining a qualified science teacher but has had one since 2021 (NWO Community and Baseline Studies Key Person Interview Program 2022). The school also faced challenges with resourcing during the COVID-19 pandemic but the school is located close enough to Dryden and Thunder Bay that staff can opt to commute for the week (NWO Community and Baseline Studies Key Person Interview Program 2022). The school offers high school educational

³¹ The initial school facility housed 7 classrooms, a kindergarten room, gym and stage, art room, library, music room, science lab, industrial arts shop, home economics room, staff lounge, and administrative offices. To deal with pressures from increasing enrollment, the school expanded in 1973 with a second addition adding another 7 classrooms, metal shop, business arts classroom, science lab, gymnasium, and new administrative and guidance council offices. In 1981, a third wing was added to accommodate secondary schooling needs (i.e., high school) with 4 classrooms, a Mechanical Shop Home Economics, and a senior library.

programming in Life Skills and Specialist High Skills Majors (for example, construction and mechanics), and an Ontario Youth Apprenticeship Program. The Ignace Public School has two gyms and a multi-purpose room that are used by the community for recreation, arts, and cultural events (such as talent shows, dance, singing, and Indigenous events) (NWO Baseline Studies Key Person Interview Program 2022-2023). Town hall meetings and special community events may also occur at the school.

The Ignace Public School is oversized for its enrolment and is approximately 76,200 ft² (KPDSB 2016). Based on the KPDSB's Long-Term Capital Plan for 2015 to 2025, it is recommended that the school should be sized appropriately for enrolment needs (for example, the total floor area should be reduced for enrolment needs) or additional space should be leased (KPDSB 2016).³²

In partnership with the KDSB, an architectural analysis was performed at the Ignace Public School in 2021 to determine its suitability for a full-day childcare program and after-school program (WSP 2022c). Based on this analysis, the junior library space was recommended as an ideal space for children because of its location, access, and suitability for programming (WSP 2022c).

2.4.5.2.2 École Immaculée Conception

The Conseil Scolaire de District Catholique des Aurores Boréales operates the École Immaculée Conception in Ignace. École Immaculée Conception is a French-as-a-first-language school, as opposed to French immersion, and offers French language education from kindergarten to grade 8. The school was constructed in 2017 and has a gym, three classrooms, a classroom/lunchroom, a library/media room, and administrative offices (CSDCAB 2021). The school promotes its cultural identity and the enhancement of the Catholic faith (CSDCAB 2021).

The school has a capacity of 60 students and, as of the 2022-2023 school year, is operating at a capacity of approximately 25% with present enrollment of 15 students. The school board allows use of the school facilities for community use outside of school hours for non-profit community groups.

2.4.5.2.3 Distance Education

Contact North is a free bilingual service that supports rural and remote communities in Ontario in accessing online programs and courses from colleges, universities, and training providers (Contact North n.d.). Contact North has a satellite office in Ignace that is located in the basement of the Crossroads Employment facility. The Ignace satellite office has a small office and classroom space (approximately 500 ft²). Ignace is one of three satellite offices found in the Local Study Area, with satellite offices also found in Dryden and Sioux Lookout (Contact North n.d.).

Contact North offers free local support services for Ontario residents, including online courses and programs, registration support, technological support, and supervision of written exams (Contact North n.d.). The Ignace satellite office does not pay for rent in the Crossroads Employment facility, however, there have been discussions with respect to moving the Ignace Contact North operations to an entirely virtual platform.

³² The estimated cost of a major renovation and to appropriately size the school for enrolment needs would be approximately \$8.5 million.

2.4.5.3 Dryden Educational Facilities

Three school boards operate schools in Dryden.

- The Keewatin Patricia District School Board operates the New Prospect Elementary Public School, Open Roads School, and the Dryden High School;
- The Conseil Scolaire de District Catholique des Aurores Boréale operates the École Catholique de l'Enfant-Jésus; and
- The Northwest Catholic District School Board operates the St. Joseph's Catholic School.

2.4.5.3.1 New Prospect Public School

The KPDSB operates the New Prospect Public School. The school was built in 2003 (KPDSB 2022). The school has a total floor area of 42,200 ft² and sits on 10 acres of land (KPDSB 2022). The school accommodates kindergarten to grade 8. The student capacity is 493 students. The 2022-2023 school year was projected to have a student enrollment of 342 students, which is a capacity of 69% (KPDSB 2022).

The school has an outdoor play area and soccer field, and the school grounds are surrounded by City of Dryden maintained walking paths. The school curriculum includes nature walks, cross country skiing, and/or snowshoeing during recesses. The school also has a community garden that is used by the students. In 2022, the school received a playground renovation as part of capital upgrades (KPDSB 2023a).

New Prospect Public School is the only KPDSB operated school in the Dryden area that offers French immersion programming from kindergarten to Grade 8 (KPDSB 2023b). The school has three full-day kindergarten programs (two English and one French) and the classrooms are staffed with specialized kindergarten teachers and early childhood educators.

2.4.5.3.2 Open Roads School

The KPDSB operates the Open Roads School. The school was built in 2013 and has a capacity for 470 students. Enrollment for the 2022-2023 school year was projected to be 363 students, which means the school will be at 77% capacity (KPDSB 2022).

The Open Roads School has specialized rooms for drama, arts, and instrumental music, a designated special education resource area, a double gym with change rooms, and a library (KPDSB 2022). Classrooms are equipped with interactive smart boards and sound systems (KPDSB 2023c). Students can choose different programs, including the Explore Program that includes sports, outdoor activities, and arts instructions, and a Fine Arts Program to learn visual arts techniques and the performing arts. Extra-curricular activities are offered for all students. These include team sports, robotics club, the Howling Wolves rock band, an eco club, and cheerleading (KPDSB 2023c).

2.4.5.3.3 École Catholique de l'Enfant-Jésus

The École Catholique de l'Enfant-Jésus is operated by the Conseil Scolaire de District Catholique des Aurores Boréales. The school was built in 2007. As of 2022-2023 the school has 21 students enrolled from kindergarten to grade 8 (OpenGov n.d.). The school is a French as a first language school and offers French language education (OpenGov n.d.).

2.4.5.3.4 St. Joseph's Catholic School

The St. Joseph's Catholic School is operated by the Northwest Catholic District School Board and opened in 1943 (NCDSB n.d.a.). The school offers education for kindergarten through grade 8. The school offers core programs in French Immersion (NCDSB n.d.a.). In the 2020-2021 school year, the school had 390 students enrolled from kindergarten to grade 8 (Government of Ontario 2023k).

2.4.5.3.5 Dryden High School

The Dryden High School is operated by the KPDSB. The school opened in 1952 and, at the time, had approximately 300 students. The Dryden High School has seen many renovations and additions, including additions in 1955, 1959, 1962, 1964, 1967, 1992, and 1998.³³ Between 2005 to 2017, the school received upgrades to the Gordon Wood Auditorium, installation of wireless services, updates to the HVAC and the physics and science laboratories, new windows, drainage enhancements to the Harry McMaster Athletic Field, and the installation of two student lounging areas (Dryden High School n.d.). An upgraded music room provides the ability to deliver both traditional music and digital music curriculum to students. The Student Resource Center, built in the mid-2010s, continues to support students including services for special education.

The Dryden High School currently has a capacity for 1,040 students and student enrollment for the 2022-2023 school year is projected to be 566, which is a capacity of approximately 55% (KPDSB 2022). For the 2022-2023 school year, approximately 180 students entered grade 9 from the New Prospect Public School (Dryden), Open Roads School (Dryden), Lillian Berg School (Vermillion Bay), and St. Joseph's Catholic School (Dryden) (Dryden High School n.d.). Fifty percent of students are bussed daily from within the City of Dryden, Vermillion Bay, Eagle Lake First Nation, Wabigoon Lake Ojibway Nation, and the surrounding unincorporated areas around Dryden (Dryden High School n.d.; NWO Baseline Studies Key Person Interview Program 2022-2023). A small percentage of students attend from northern Reserves. Enrolment is expected to decline to 513 pupils by 2025 (KPDSB 2022).

The Dryden High School focuses on educational programming in Life Skills and Specialist High Skills Majors (e.g., construction). The Specialist High Skills Majors are closely related to the Ontario Youth Apprenticeship Program, which is also offered at Dryden High School (NWO Community and Baseline Studies Key Person Interview Program 2022). The high school also offers the Four Directions Program, which is a high school graduation coach program for Indigenous students (Lessard 2018). As of 2019, the Four Directions program has doubled its success rate of Indigenous student graduates (WSP 2022c).

³³ The original building constructed in 1952 housed administrative offices, a small gym, seven classrooms, and a staff room. The staff room was demolished and replaced in 1998. At that time, renovations also included upgrading the 1954 and 1959 wings; replacing the library, upgrading the science and business classrooms, and replacing all safety devices and replacement of the overall functional/mechanical operation for the entire building. The project cost was \$7,000,000. A roofing replacement also occurred at the cost of \$1,179,024. There was also a modernization, renovation, and equipment renewal to 10 shop classes in 1995 at a cost of \$850,000 (KPDSB, 2016).

See Educational Programming (**Section 3.3.2**) for information on postsecondary institutions in Dryden.

2.4.5.4 Machin Educational Facilities

2.4.5.4.1 Lillian Berg Public School

The Lillian Berg Public School in Vermillion Bay is operated by the KPDSB. The school offers kindergarten to grade 8. Residents of the Municipality of Machin typically go to the Dryden High School for grade 9 to grade 12 (NWO Baseline Studies Key Person Interview Program 2022-2023).

Lillian Berg Public School was built in 1975 and can accommodate 265 students. Enrollment for the 2022-2023 school year is projected to be 79 students, which is 30% of the school's capacity (KPDSB 2023d). Of these students, 36% of the students self-identified as Indigenous. The school provides a breakfast program and hot lunch program to all students (KPDSB 2023d). The school also offers a nutritional care package for the weekends for students in need (KPDSB 2023d).

Lillian Berg School has a gymnasium, library, a student kitchen, seven classrooms, a baseball diamond and is beside the Woodlands Arena for immediate access for skating and hockey. In partnership with the KDSB, a nursery school is also located within the school for preschool aged children (see **Section 2.4.9.4**).

The school host' a variety of community events such as Thanksgiving and Christmas community dinners, a Christmas concert, a community Veteran's breakfast for Remembrance Day, and a community talent show (KPDSB 2023d).

2.4.5.5 Sioux Lookout Educational Facilities

Sioux Lookout educational facilities include the Sioux Mountain Public School and the Sioux North High School, operated by the KPDSB, the Sacred Heart School operated by the Northwest Catholic District School Board, the Pelican Falls First Nation High School (a private, First Nations operated school), and the Wahsa Distance Education Centre.

2.4.5.5.1 Sioux Mountain Public School

The Sioux Mountain Public School is operated by the KPDSB. The Sioux Mountain Public School was built in 2001 and has capacity for 530 students. In 2022-2023 the student enrollment was projected to be 321, which is 61% of the school's capacity (KPDSB 2022). As an elementary school it provides teaching for students in kindergarten to grade 8 (KPDSB 2023e). The school offers its students a Hockey Canada Skills Academy program (KPDSB 2023e).

2.4.5.5.2 Sacred Heart School

The Sacred Heart School opened in 1994 and is operated by the Northwest Catholic District School Board. The school offers core programming for kindergarten to grade 8 (NCDSB n.d.b). The school also houses the KDSB daycare, the Biidaaban Children's Centre (see **Section 2.4.9.5**). In the 2020-2021 school year, the school had 330 students enrolled from kindergarten to grade 8 (Government of Ontario 2023k).

2.4.5.5.3 Sioux North High School

The Sioux North High School is operated by the KPDSB and opened in 2019. The school accommodates grades 9 to grade 12. The school replaced the Queen Elizabeth District High School (CBC 2019). The school can accommodate 500 students (Prokopchuk 2016). In 2020-2021 the student enrollment was about 340 students, which is 68% of the school's capacity (Government of Ontario 2023k). About 20% of students are from First Nations in the area, primarily Lac Seul First Nation. For the 2022-2023 school year, enrollment was projected to be 492 students, which is close to the school's capacity (KPDSB 2022).

The Sioux North High School has a multi-purpose cafeteria and auditorium with full dramatic arts capabilities including telescopic seating and new state of the art equipment and spaces for shop classes, science labs, and nutrition programs (CBC 2019). A new library, gym, and music room help support and complement the arts and recreational curriculum. The school also includes spaces for Confederation College, FIREFLY Child & Family Services, and the Meno Ya Win Health Centre.

2.4.5.5.4 Pelican Falls First Nations High School

The Pelican Falls First Nations High School is a private, First Nations operated school for grade 9 to grade 12. In 2019, the school had about 180 students enrolled and offers unique and culturally relevant educational services to students from 24 First Nation communities within the Northern Nishnawbe Education Council and the Nishnawbe Aski Nation (Bonello 2019; School Options North 2023). Pelican Falls First Nation High School serves 23 communities and includes boarding homes for students from reserves across Ontario (Keewaytinook Okimakanak Board of Education 2016). The school offers activities for student's interests, from sports such as hockey, volleyball, and wrestling, to leadership classes, a youth forum, annual powwow, winter carnival, career fair, and school trips (Pagacz 2019).

The school offers a full curriculum approved and inspected by the Ontario Ministry of Education. The school has courses that teach Indigenous languages and also offers cultural activities and traditional Indigenous teachings as part of regular programming (Brody 2022).

See Educational Programming (**Section 3.3.2**) for information on postsecondary institutions in Sioux Lookout.

2.4.5.6 Distance Education

The Wahsa Distance Education Centre is an accredited private high school inspected by the Ministry of Education. The centre opened in 1991 and offers courses online with a curriculum tailored to students in the north. The Wahsa Distance Education Centre has 23 centres across northern Canada in remote and rural communities. Since the Centre's opening, over 500 students across the north have graduated with their grade 12 diploma (State of the Nation 2023). Distance education coordinators help monitor and maintain the learning centres, while providing support to students. Distance education coordinators also help students set up their classes and to send their course work via email or fax once per week (State of the Nation 2023). The centre offers Oji-Cree language classes.

2.4.5.7 Upsala Education Facilities

2.4.5.7.1 Upsala Public School

Upsala Public School in Upsala is operated by the KPDSB. The school offers kindergarten to grade 8. Residents of Upsala typically go to Ignace Public School for grade 9 to grade 12 (NWO Community and Baseline Studies Key Person Interview Program 2022). Students from Upsala are usually bused to Ignace when attending high school (NWO Baseline Studies Key Person Interview Program 2022-2023). There were fewer than ten children attending the school in 2022-2023 (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.6 Recreation Programs and Facilities

The communities in the Local Study Area have a variety of indoor and outdoor recreational facilities and community recreation opportunities (WSP 2022a). The extent of recreation programming is directly related to the size of the community (IAWG March 31, 2022). Communities within the Local Study Area place importance on the outdoors and have a strong connection to the surrounding natural environment (WSP 2022a; SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022). It is a source of pride and adds to their sense of place and quality of life. The natural setting provides various opportunities for fishing, forestry, hunting/trapping, tourism, and a passive appreciation of the natural environment, through camping, swimming, hiking, biking, wildlife viewing, boating, canoeing, and berry picking (SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022). Outdoor recreation beyond municipal boundaries is described in **Section 2.5**.

A lack of transportation, costs, and lack of programming for youth, seniors, and people with disabilities were noted as barriers to accessing recreational programs from participants in key person interviews (NWO Baseline Studies Key Person Interview Program 2022-2023; GBA+ Workshop 2023).

2.4.6.1 Ignace Recreation Facilities and Programs

Ignace residents value opportunities to engage in recreational activities (InterGroup 2020). There are a variety of recreational facilities, programming, and informal activities in Ignace to support recreational activities for residents of Ignace and the surrounding communities. The Ignace Recreation Committee is composed of volunteers, one member of council, and the Recreation Programmer (Township of Ignace n.d.d). The committee's primary responsibility is planning community events and securing funding (NWO Community and Baseline Studies Key Person Interview Program 2022). The Township is responsible for maintaining municipally owned facilities, public beaches, and trails (NWO Community and Baseline Studies Key Person Interview Program 2022). There is a high quality of recreation services provided in Ignace, which residents consider an asset in terms of advancing personal community health and well-being, supporting economic development, and improving overall quality of life (SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022). No recreation facility is currently considered to be over capacity (IAWG May 05, 2022). The need for recreation infrastructure and programming is a common theme among Ignace residents (InterGroup 2020). Improvements to existing facilities or the development of new facilities has been discussed (InterGroup 2020). Examples include enhancements to the fitness facility, tennis courts, curling

rink, and other aging recreation facilities, along with the need for a youth centre and an indoor swimming pool (InterGroup 2020).

Residents of Ignace have commented that there are currently not enough recreational activities and services for youth and small children (Social Cultural and Health Workshop 2021). Lack of a full suite of recreational opportunities for children and youth (e.g., soccer, gymnastics, science groups) may act as a deterrent for people wishing to relocate to the community for employment opportunities (Social Cultural and Health Workshop 2021). Key person interviews indicate Ignace residents travel to Dryden to access a broader range of recreation opportunities, although some residents of Ignace may not be willing to travel for recreational opportunities particularly with winter road conditions (SMM and InterGroup 2022; NWO Community and Baseline Studies Person Interview Program 2022; Social Cultural and Health Workshop 2021). Travel is a requirement for various recreation programming, and it can be challenging to access recreation services in different communities (e.g., travel distance, vehicle access, seasonal weather, road conditions), which limits programming opportunities to local context and the capacity of local communities to provide them (SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022; IAWG March 31, 2022).

The Recreation Programmer (Recreation Department) and volunteer Recreation Committee support and organize recreational programming in Ignace. More recreation staff resources are needed (SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022). Recreation is mostly run by volunteers (NWO Community and Baseline Studies Key Person Interview Program 2022). A transition to staffed positions would support the sustainability of recreation programs in the longer term (InterGroup 2020). Recreation is mostly run by community organizations with the same volunteers. Volunteer burn-out has been an issue in program delivery, as many people are retiring and opting to slow down (SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022; IAWG May 05, 2022). There is a variety of programming for the 5 to 10 years old age group, but more programming is needed for the 10 to 13 years old age group, 35+ age group, and seniors age group. Further, there is poor and limited internet, which makes virtual programming a challenge and inaccessible to many (SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022).

2.4.6.1.1 Ignace Indoor Recreation Facilities

Recreational facilities, programming, and informal activities in Ignace include the Ignace Recreation Complex, the Dennis Smyk Heritage Centre and Library, and the Silver Tops senior centre.

Sports facilities include:

- The Ignace Recreation Complex is managed by the Township and was constructed in 1976 (WSP 2022a). The Complex can accommodate up to 4,000 people (WSP 2022a). The Complex has an arena, a bowling hall, a fitness centre, and a curling hall (WSP 2022a). Curling is not currently offered as it needs to be refurbished and the space is currently used as a community hall (WSP 2022a). An addition to the Recreation Complex was completed in 2010, however further renovations are needed, including to the structure and roof, mechanical repairs, electrical repairs, and upgrades to the kitchen, bathroom, curling hall, and fitness room (WSP 2022a). The arena is currently being renovated (WSP 2022a).

Cultural facilities include:

The Dennis Smyk Heritage Centre (museum) and library are adjoining buildings that are managed by the Township and were built in 1992 (Township of Ignace 2018).

- The Dennis Smyk Heritage Centre (museum) is managed by the library staff (WSP 2022a). The Heritage Centre needs a larger space as it currently does not have enough space to display materials (WSP 2022a). The Heritage Centre also needs a curator (WSP 2022a). Currently there are nine themes on display at the museum illustrating the life and history of Ignace from its earliest to present days. The nine themes include early peoples, exploration, fur trade and settlement, railroad, the Town, mining, quarrying, logging, and road and air transportation (Township of Ignace 2018). These themes are represented by artifacts, photographs, dioramas, models, maps, and written descriptions.
- The public library provides public internet access and photocopy and fax services to community members (SMM and InterGroup 2022). The library operates on a limited budget (SMM and InterGroup 2022). Renovations are needed in the library including window and ceiling tile replacement due to water stains. A new carpet was installed in 2019 (WSP 2022a).

Other indoor facilities and programming include:

- The Silver Tops senior centre was built in the 1970s and the community organization known as the Silver Tops was formed in 1994 (see **Section 2.4.9.2**) (WSP 2022a). The senior centre hosts exercise classes, quilting, social activities, and a meal program for seniors (SMM and InterGroup 2022). The senior centre needs major repairs and renovations to meet industry and accessibility standards (WSP 2022a). Major repairs and renovations needed include to the HVAC, windows, doors, and lights (WSP 2022a). There is asbestos in the drywall and lead paint on the exterior of the building (WSP 2022a). There are renovations planned to develop movable space dividers and a new commercial kitchen (WSP 2022a).
- Various tournaments occur in Ignace, including an adult billiards and dart tournament, league bowling and tournaments, and others (Township of Ignace 2018; SMM and InterGroup 2022).
- Various classes are offered in Ignace, including the Silver Sneakers exercise class, dance classes, music lessons, yoga classes, and figure skating (Township of Ignace 2018; SMM and InterGroup 2022).

2.4.6.1.2 Ignace Outdoor Recreation Facilities

Ignace provides different settings for outdoor activities in the region and a wide range of activities to enjoy, including parks, beaches, and trails, sports facilities, and other outdoor facilities and programming. Ignace has the Davey Lake Road Park, the Park at Ignace Plaza and Tourist Attraction Centre, two beaches on Agimak Lake including Agimak Beach and West Beach, two trails including the Lilypad Trail and the Urban Art Senior's Trail, nearby provincial parks, and various outdoor facilities including playgrounds, the skate park, baseball diamonds, soccer fields, tennis courts, Tower Hill, and others (IAWG March 31, 2022).

Parks, beaches, and trails include:

- The Davey Lake Road Park is an area that is not maintained, but it has been identified as greenspace (WSP 2022a). The Township of Ignace has identified plans to clean up the park and add picnic tables and garbage facilities in 2023 (WSP 2022a).
- The Park at Ignace Plaza and Tourist Attraction Centre has picnic areas and a dog walk, as well as an interpretive trail and other nature displays to present the vegetation and history of forestry and firefighting in the area (WSP 2022a).
- Nearby provincial parks used for recreational activities include the Sandbar Lake Provincial Park and the Turtle River White Otter Lake Provincial Park (Township of Ignace 2018).
 - Sandbar Lake Provincial Park, located on Sandbar Lake, is 12 kilometers north of Ignace and includes campground sites for tenting and RVs and trails for hiking. Trails include the Silhouette Trail (2 kilometers), the Red Pine Trail 0.5 kilometers), and the Rockcliff Trail (4 kilometers) (Township of Ignace n.d.c). Sandbar Lake may also be used for fishing and canoeing, among other outdoor activities.
 - Turtle River White Otter Lake Provincial Park begins at the south end of Agimak Lake and is home to the White Otter Castle. The park is a popular canoe and portage route (the Agimak Lake Trail) and travel to the castle is approximately 40 kilometers by canoe with 15 portages. Several clean campsites are located along the portage route.
- There are two municipal beaches in Ignace, the Agimak Beach and the West Beach. The beaches are maintained by the Public Works Department (Township of Ignace n.d.a). West Beach, located at Agimak Lake on West Street Drive, features a public boat launch, floating dock, and enclosed swimming area for children and novice swimmers (Township of Ignace 2018). There are plans to renovate the dock and to install a pavilion on the West Beach (WSP 2022a). Agimak Beach is located at the west end of Lily Pad Lake Road. The Township of Ignace plans to upgrade the washroom facilities on both beaches and to establish a watersports park and beach rental operation (WSP 2022a and Township of Ignace 2021b).
- There are two trails in Ignace, the Lilypad Trail and the Urban Art Senior's Trail.
 - The Lily Pad Lake Trails were built in 1989 and can be accessed west of the soccer fields on Lily Pad Lake Road, across from Agimak Beach (WSP 2022a). The Lily Pad Lake Trails include the Red Fox Lake Trail large loop (1,325 meters), the Red Fox Lake Trail small loop (200 meters), the Black Bear Trail (720 meters), the Yellow Squirrel Trail (255 meters), and the Blue Rabbit Trail (240 meters).
 - The Urban Art Senior's Trail began construction in 2021-2022 (WSP 2022a). The installation of art pieces and outdoor furniture are alongside the trail to support seniors' ability to use the trail (WSP 2022a).

A map of the Ontario Trail Network within the Local Study Area and Regional Study Area is included in **Section 2.5.10.1**.

Sports facilities include:

- The White Otter Recreational and Lifestyle Development (WORLD) Hub and golf course was built in 2011 (WSP 2022a). The golf course is managed by the Township (WSP 2022a). Upgrades are needed to the golf course, including fairway upgrades, improvements to water sources throughout the fairways (inability to properly water and irrigate the golf course), and

a need for washroom facilities on the golf course (WSP 2022a). The WORLD Hub requires upgrades and maintenance, including to the roof, deck, electrical, soundproofing, and painting and plaster work (WSP 2022a). The WORLD Hub is considered to be in fair to good condition.

- The skate park in Ignace was built in 2017 (WSP 2022a). The skate park is managed by the Township (WSP 2022a). The skate park is in fair condition, but the signage needs updating and the grass surrounding the skatepark needs care (WSP 2022a). Additional gaps have been identified to improve the skate park including lighting, general maintenance, a water source, seating, more paving to limit sand and stones in the skate park, a shelter to protect from weather, and there is a lack of security (WSP 2022a).
- There are two baseball diamonds in Ignace, one was built in 1970, which is managed by the Township, and one was built in 1973, which is managed by the school (WSP 2022a). If the baseball diamonds are to be used in the evening, there would be a need to install lighting (WSP 2022a). There are currently inadequate places to park. General maintenance is required at both baseball diamonds, including that both need new stands and fencing (WSP 2022a).
- The soccer fields were constructed in the early 2000s (WSP 2022a). They are in fair to poor condition, there is a lack of lighting, parking, and washroom/changing facilities (WSP 2022a). The grounds also need general maintenance (WSP 2022a).
- The tennis courts in Ignace were constructed in the 1980s (WSP 2022a). Currently, the pavement is not level and needs re-surfacing (WSP 2022a; IAWG May 05, 2022). The tennis courts also need new nets (WSP 2022a).
- Tower Hill was constructed in 1994, and the sliding park was added in 2021 (WSP 2022a). Tower Hill requires regular maintenance (WSP 2022a). The facility is not accessible (WSP 2022a).
- In the winter, Ignace community members organize the Otters Snowmobile Club. The Club maintains snowmobile trails for snowmobilers in the region and hosts derbies that support the community (NWO Baseline Studies Key Person Interview Program 2022-2023). Snowmobiling is described in more detail in **Section 2.5.10.2**.

Other outdoor facilities and programming include:

- Playgrounds are available for community use and are found throughout community parks, including the Best Start Hub, École Immaculée-Conception (Ignace French School), Ignace Public School, and Ignace Tourist Information Centre. All playgrounds are equipped with monkey bars, slides, swings, and see saws (Township of Ignace 2018).
- Tournaments are held throughout the year, including the Agimak ice fishing derby, Ignace mixed broomball tournament, Ignace slo-pitch baseball tournament, and golf tournaments, among others (Township of Ignace 2018; SMM and InterGroup 2022).
- Additional outdoor activities that Ignace residents and visitors may enjoy include a dog park, Front Street Park, a splash park, roller skating, a bike rodeo, adult badminton, adult pickleball, birdwatching, bouldering, canoeing, fishing, geocaching, and many others (Township of Ignace 2018; SMM and InterGroup 2022).

2.4.6.1.3 Ignace Community Events

Residents of Ignace value community events and the opportunities it provides to bring the community together (WSP 2022a; SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022). There are a variety of community events in Ignace, including:

- The Ignace Annual Kids Fest takes place in August (Township of Ignace 2023). The festival is in partnership with the Township and with the EarlyON Centre, an organization that focuses on activities for children under 4 (Township of Ignace 2018).
- The Teddy Bear Picnic occurs in September and encourages participants to bring a teddy bear and their grandparents to a picnic lunch (Township of Ignace 2018). There are games and music at the event (Ignace, 2023).
- White Otter Days takes place in July and includes various activities such as a hockey tournament, a fish derby, a slo-pitch tournament and more (Township of Ignace 2018).
- A Christmas Parade takes place in December (Township of Ignace 2018). The event offers free public skating and hot chocolate (Township of Ignace 2018).
- The Winter Carnival occurs annually in February or March. There are various events that take place including a snow derby, an ice fishing derby, sliding parties, youth pool & dart tournaments, and an adult pool tournament (Township of Ignace 2018).
- Other events occur throughout the year, including the Spring Fever Dun Day, Vacation Bible School Day Camp, and Summer Day Camps (WSP 2022a).

2.4.6.2 Dryden Recreation Facilities and Programs

Residents of Dryden value the activities and infrastructure that promote a healthy community, including recreation facilities, trails and parks, and community gathering places (City of Dryden n.d.e). The residents of Dryden's quality of life are enhanced by their parklands, waterfront, beaches, cultural and recreational facilities, and linking recreation settings with active transportation networks wherever practical (City of Dryden n.d.e). Key person interviews noted that recreation typically has an outdoor focus (NWO Baseline Studies Key Person Interview Program 2022-2023). Recreation in Dryden depends on volunteers, although there are approximately 40 to 50 directly hired employees across the community service department, green space maintenance, and public works employees (NWO Baseline Studies Key Person Interview Program 2022-2023). Volunteer groups in Dryden include the Dryden Recreation Extension and Modification (DREAM) committee and are passionate about recreation and have helped find funding to upgrade the arena (IAWG March 31, 2022). The City of Dryden recreation facilities are maintained by City staff through the community service department, green space maintenance crews, and public works department. Upgrades of current facilities and the development of new facilities and public spaces are set out in the Facilities Master Plan (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.6.2.1 Dryden Indoor Recreation Facilities

Dryden provides residents with opportunities to utilize municipal facilities to support recreational activities and programming, including the Dryden Public Library, the Dryden and District

Museum, the Dryden Visitor Information Centre, the Seniors' Activity Centre, the Dryden Memorial Arena, the Dryden Recreation Complex, and other facilities.

Sports facilities include:

- The Dryden Memorial Arena and Pronger Rink (Dryden Recreation Complex) was built in 1979 and expanded in 1988 to add a second sheet of ice (Quartek Group 2022). The complex has two ice rinks, a full-service pool, a fitness centre, a pro shop, and a canteen (City of Dryden 2023a). The Arena offers hockey, figure skating and public skating. There are also events and tournaments held at the Arena throughout the year. The complex is considered to be in average to good condition with an expected life in excess of 15 years. The building is a steel frame with steel roof decking with a rubber membrane (Quartek Group 2022). The foundation is a concrete slab on grade with concrete footings (Quartek Group 2022). Upgrades are needed, including to flooring, the refrigerator condenser, and compressor (WSP 2022a). The arena is scheduled for an expansion in 2023 (WSP 2022a).
- The Dryden Recreation Complex is a multi-purpose centre that has numerous recreational activities. The complex includes an indoor 25-meter lap pool (including swimming lessons and aqua fitness programs), a therapy pool, a fitness centre (cardio and weights), squash courts, full-service change facilities, a kitchen, two meeting places, and a community room (Quartek Group 2022, City of Dryden 2023a; SMM and InterGroup 2022). Recreation and Community Services staff operate out of the Dryden Recreation Complex (City of Dryden 2022b). The Complex has a concrete foundation, subgrade concrete foundation and pool, steel framing construction, concrete roof decking, and a rubber membrane on the roof (Quartek Group 2022). The Dryden Recreation Complex has received nearly \$5 million in funding for upgrades to add new amenities including a new multi-purpose space with washrooms, an elevator, and four fully accessible change rooms (Kaufman 2021).
- The Seniors' Activity Centre is leased to the Go-Getters (WSP 2022a). An expansion to the Activity Centre occurred in 2022 and the Centre is in average to good condition with a good exterior finish and an elevator (WSP 2022a). The majority of maintenance is taken care of by the City of Dryden and smaller repairs are managed by the Go-Getters (WSP 2022a). Funding has been approved for a new 2,500 square foot addition that will include office space, a stage, meeting rooms, a kitchenette, an accessible washroom, solar panels, and renovations to the existing kitchen to include senior friendly cabinetry and appliances (Kaufman 2021).

Cultural facilities include:

- The Dryden Public Library was constructed in 1956 and the building is in good condition with an expected life of at least another 20 years (Explorer Solutions 2022a; WSP 2022a). There is need for approximately 2,050 to 2,500 more square feet and more internet stations (WSP 2022a). The Public Library is connected to the City Hall building by a vestibule that needs repair to become more accessible (Explorer Solutions 2022a).
- The Dryden and District Museum is considered to be a 'turn of the century' brick house (WSP 2022a). The Dryden and District Museum features exhibits highlighting the area's history with the use of Indigenous art and artifacts, pioneer tools, and rooms set to particular decades spanning from the 1900's to the 1950's, as well as rotating exhibits that change every two to three months (City of Dryden n.d.d.; NWO Baseline Studies Key Person

Interview Program 2022-2023). The museum has also had virtual exhibits including a Community Memories project and an online catalogue of photographs and narratives depicting stories such as the evolution of fuel, the history of the chainsaw, the mercury poisoning of the Wabigoon/English River systems, and more. An online exhibit, Let's Play Ball, is available and depicts the early history of baseball in Dryden and the Dryden Red Sox team, featuring photographs and uniforms in the museum's collection (Community Stories n.d.; City of Dryden n.d.d.; NWO Baseline Studies Key Person Interview Program 2022-2023). The museum hosts many artifacts and offers activities for children (Explorer Solutions 2022a; NWO Baseline Studies Key Person Interview Program 2022-2023). The travelling exhibits may include scavenger hunts, art workshops, genealogy talks, and many others (NWO Baseline Studies Key Person Interview Program 2022-2023). The Dryden and District Museum is also home to the "Dryden Buck". The Dryden Buck was illegally shot in 2003, after which the police held the buck as evidence while Ontario courts convicted the hunter who killed the buck for hunting at night, trespassing, and abandoning meat. It's display in the museum is important for showing the rich natural resources of the area and serves as a reminder to respect wildlife laws (City of Dryden n.d.d.). The Dryden and District Museum is in a converted residential house and the building is aging as it was not intended for its current use (NWO Baseline Studies Key Person Interview Program 2022-2023). Some of the needed repairs include updating the entry vestibule and washroom sinks to be accessible (WSP 2022a). There is a need for more space for exhibits as some of the collections items are being stored in the airport and other facilities, in addition to a storage warehouse which is filled to capacity (Explorer Solutions 2022a; WSP 2022a; NWO Baseline Studies Key Person Interview Program 2022-2023). The Museum is funded through municipal sources, the Canadian Museums Operating Grant (Federal funding) and through its membership and admissions (NWO Baseline Studies Key Person Interview Program 2022-2023). The Museum keeps its membership and admission fees affordable to help alleviate barriers for entry (NWO Baseline Studies Key Person Interview Program 2022-2023).

- The Dryden Regional Training and Cultural Centre hosts cultural and entertainment events including the Dryden Entertainment Series, Childrens Delight Series, and Theatre 17 Performance Series (City of Dryden n.d.f).

Other indoor facilities and programming include:

- The Dryden Visitor Information Centre is managed by the City's Economic Development/Tourism Manager (WSP 2022a). The building is aging and needs repair (WSP 2022a). The building has a concrete foundation and is a single storey with a basement (Quartek Group 2022). The building is currently rented out to Naked North Art Gallery on the main floor and no tenant in the basement (Quartek Group 2022).
- Additional facilities available to the residents of Dryden include the Agricultural Centre, Masonic Hall, and the Royal Canadian Legion Hall.

2.4.6.2.2 Dryden Outdoor Recreation Facilities

Dryden has a number of outdoor facilities that residents are able to enjoy, including municipal parks, beaches, recreation areas, an outdoor rink, soccer pitches and facilities, skateboard park, ball diamonds with lighting, a golf course, ski club, BMX Track, and a splash park.

Parks include:

- Rotary Park is one of the largest parks in Dryden. Rotary Park has three soccer fields (also called Raposo Fields), a skate park, a new splash pad, and a dog park (WSP 2022a). The skate park is available for bikers, skaters, and scooters (City of Dryden 2017). The park also has a 5,000 ft² building field house complete with a kitchen, four dressing rooms, referee room, lobby/viewing area, and accessible washrooms (Quartek Group 2022, WSP 2022a). On the property and adjacent to the skate park is a small outbuilding containing a washroom and mechanical room that feeds the soccer field irrigation system (Quartek Group 2022). The Park is in good to excellent condition (WSP 2022a). Rotary Park is also home to the community splash park and newly constructed dog park (NWO Baseline Studies Key Person Interview Program 2022-2023).
- The Milestone Park is maintained by the City of Dryden. Milestone Park hosts an outdoor rink for the winter, as well as tennis and pickleball courts for the summer. There are also two washrooms and a heated changing area (City of Dryden 2017; WSP 2022a). The park is in need of renovations (WSP 2022a). The Park, it is not considered to be in good condition and is inappropriately sized with no barrier-free accommodations (WSP 2022a). The outdoor rink has an expected life of approximately 5 to 7 years. The City of Dryden would like to cover its outdoor ice rink if funding becomes available (NWO Baseline Studies Key Person Interview Program 2022-2023).
- The Cooper Park is near downtown Dryden and has a full-service washroom that has been recently updated (WSP 2022a). Cooper Park is a popular waterfront destination for picnicking and birdwatching and the Cooper Park pathway forms part of the Dryden Signature Trail (City of Dryden 2017). Along the Wabigoon River residents can walk, jog, and bike on a brick pathway and many people use the path to walk their dogs (City of Dryden 2017). Volleyball courts and a boat launch are available for public use (City of Dryden 2017).
- Plumridge Park is considered a hidden gem by residents (City of Dryden 2017). The park is used as an outdoor public green space with a splash pad and play structure (City of Dryden 2017).
- Pronger Park is in a private location where residents can spend time under the shade of the trees in the area (City of Dryden 2017). The park is used for family gatherings, is pet friendly, has a playground, and has trails for biking, hiking, skiing, and snowshoeing (City of Dryden 2017). The park has publicly accessible washrooms.
- Johnston Park includes the Roy Wilson suspension bridge and trails, picnic areas, and washroom facilities (City of Dryden 2017; WSP 2022a). The washrooms have been recently upgraded (WSP 2022a). Mosaic artwork was installed in 2010 for the community centennial celebration.
- Kinsmen Park is close to downtown and has mature trees, a playground, splash pad and water fountains, play structures, picnic tables, private play areas, and a washroom in good condition (WSP 2022a). The facilities are expected to last an additional 20 years (WSP 2022a).
- Lions Park was developed by the Lions Club of Dryden and backs onto the Dryden Highschool (City of Dryden 2017).

- Eagle Park is a small, forested park on a hilltop in a residential area of Dryden (City of Dryden 2017).
- Sandy Beach Park is a recreation area that includes a ball diamond pavilion, soccer pitches, a flat rock fishing area, picnic shelter, and washrooms (City of Dryden 2017). There is a seasonal building at the ball diamonds; a two-storey building with concession stands, washrooms, a batting cage and playground, along with a soccer building and shed (WSP 2022a). The picnic shelter has an area for outdoor cooking including grills and barbeque pits (WSP 2022a). The facilities are in good condition, except for the soccer building and shed, which are in need of repairs (WSP 2022a).

Beaches include:

- Thunder Lake has two beaches including Johnson Public Beach (northeast shore of Thunder Lake) and a beach in Aaron Provincial Park (south shore of Thunder Lake (City of Dryden 2017).
- Ghost Lake has one public beach, the Ghost Lake Public Beach, which includes a shallow, sandy beach area, a boat launch, and shade for picnics (City of Dryden 2017). The lake has areas to canoe, kayak, or paddle board (City of Dryden 2017).

Trails include:

- The Laura Howe March is a wetland habitat that has two trails near the marsh, including a short loop (approximately 400 meters) and a long loop (approximately 2 kilometers) (City of Dryden 2017).
- Ghost Lake trails include many trails for skilled bicyclists and hikers. The route is made up of bush roads, forest trails, rocky paths, wetlands, swamps, and forest with a network that spans up to 22 km in length (City of Dryden 2017).
- TransCanada trail was launched in 2017 and parts are still under development. The TransCanada trail travels through Dryden and through the Path of the Paddle water route. The route helps you experience First Nations culture by showing you early explorer paths that explorers and First Nations people may have used centuries ago (City of Dryden 2017). Path of the Paddle extends up through Wabigoon Lake and is also called the Migizi Trail (TransCanada Trail n.d.).
- The City of Dryden has an urban trail network that includes five routes. The trails provide safe, walkable access to stores, neighbourhoods, and community facilities. The trail system is 12.3 kilometers (City of Dryden 2017).
- The Dryden Signature Trail system is made up of two routes and they are designed to give the user a hands-on recreational experience with interpretive signage located throughout. The trail system is 5.4 km in length (City of Dryden 2017).
- The Nature in the City Trail is shaped like a necklace and links the natural areas around the City. The trail is used for walking, hiking, jogging, cycling, or skiing and the trail is 6.8 kilometers long (City of Dryden 2017).

A map of the Ontario Trail Network within the Local Study Area is included in **Section 2.5.10.1**.

Sports facilities include:

- Eagles Landing Golf Course is located in Sandy Beach Park. Eagles Landing Golf Course is a 9-hole course (City of Dryden 2023a).
- Anderson's Homestead Golf Course which is a 9-hole course (Explorer Solutions 2022b).
- The Dryden Ski Club hosts a ski hill. The hill was established in 1953 and has 4 lifts with 7 runs (Ski Dryden 2023). Along with downhill skiing and a terrain park, the Dryden Ski Club also hosts cross country skiing and snow shoeing (Ski Dryden 2023). The Dryden Ski Club also has a chalet which can be rented out. The chalet has a full-service kitchen and washroom.
- The Dryden BMX Track is a space for BMX riders. The track includes jumps, turns, and obstacles for riders (NWO Community and Baseline Studies Key Person Interview Program 2022).

Other outdoor facilities and programming include:

- The Dryden Community Splash Park opened in 2022. The splash park is approximately 2,800 square foot (Ebbeling 2022).
- Additional outdoor activities that residents of Dryden may participate in include horseback riding, archery, sailing, kayaking, canoeing, trapping, Brownies, Scouts, and others (City of Dryden 2017; City of Dryden 2022b; SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022).

2.4.6.2.3 Dryden Community Events

There are a variety of community events in Dryden, including (Quartek Group 2022; City of Dryden n.d.g):

- Dryden Winter Festival in February and March;
- Home and Trade Show in May;
- Tbaytel Walleye Masters Tournament in June;
- Canada's National Indigenous Peoples Day in June;
- Canada Day in June;
- Pride month celebrations in June;
- Dryden Dragon Boat Festival in June;
- Northern Lights Classic Quarter Horse Show in July;
- Max the Moose Birthday in July;
- Dryden Days of Summer in July and August;
- Annual Gun and Collectible Show in August;
- Dryden Fall Fair in August;

- We Run This City Marathon in September;
- Dryden Fall Fest in October; and
- The Santa Claus Parade in November.

2.4.6.3 Machin Recreation Facilities and Programs

Residents of Machin value their community facilities and recreational infrastructure, including its natural surroundings, wilderness, lands, waterways, trails, and outdoor activities (Crupi Consulting 2017). The recreational activities that residents participate in are largely outdoor activities (NWO Baseline Studies Key Person Interview Program 2022-2023). Recreation programming offered in the Municipality of Machin is mostly volunteer based (for example, minor hockey is volunteer based) (NWO Baseline Studies Key Person Interview Program 2022-2023). The small population size constrains the variety of recreational programming available in the community, and results in people needing to travel to Dryden or other communities to access certain programs (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.6.3.1 Machin Indoor Recreation Facilities

The Municipality of Machin maintains and provides residents two facilities where they are able to enjoy recreational activities and programming, including the Woodland Arena and the Eagle River Recreation Centre (NWO Baseline Studies Key Person Interview Program 2022-2023; WSP 2022a).

- The Woodland Arena can be used throughout the year. From October to April, the Arena is used for various sporting activities including hockey games and public skating sessions (North West Health Line 2023 and WSP 2022a). In the spring and fall, the Arena is used for markets and community events. Recent upgrades have been completed to the arena, including a new plant chiller system, a REALice water system, and accessibility improvements. The Arena has a gym that requires upgrades (WSP 2022a). An automatic key system would help the Arena manager track usage and create an easier system for gym usage. There are no current plans for expansion. Currently, there are not enough children in the community to support a hockey team and kids generally go to Dryden to participate in hockey programs (NWO Baseline Studies Key Person Interview Program 2022-2023). Hockey lessons are offered at the Woodland Arena, but there are no community teams (NWO Baseline Studies Key Person Interview Program 2022-2023).
- The Eagle River Recreation Centre is used throughout the year for meetings, parties, and other recreational events (WSP 2022a). The Centre has not had any major upgrades and the upstairs common room has outdated carpet and equipment. There are no current plans for expansion.

2.4.6.3.2 Machin Outdoor Recreation Facilities

The Municipality of Machin maintains the local beaches, ski trails, Eagle River Outdoor Hockey Rink, Coopers Field Baseball Diamond, the Pine Tree Pathways, and two senior centres (Municipality of Machin n.d.b; Thunder Bay Multicultural Association 2023). Outdoor recreation amenities also include camping, fishing, hiking, mountain biking, blueberry picking, waterskiing, hunting, photography, ATVing, snowmobiling, and canoeing (Crupi Consulting 2017; Municipality of Machin 2023). Blue Lake Provincial Park is located 8 kilometers from Vermillion Bay. The

Woodland Arena oversees the maintenance for four parks in Machin, including the Eagle River Hudson Post Park, Eagle River Park, Kinsmen Beach, and Vermillion Bay Pine Tree Park (Ontario North 2023). The community recently received funding for improvements to the dock at Vermillion Bay to improve community access, address drainage and erosion issues, and repave the road and parking area (Kaufman 2021).

2.4.6.3.3 Machin Community Events

There are a variety of community events and additional outdoor recreation services in Machin, including (Municipality of Machin n.d):

- An annual kids camp. The 2022 kids camp had the Canadian Swim Patrol travel to Vermillion Bay to teach swimming strokes and self rescue skills and included special visitors such as the Machin Volunteer Fire Department, MNR, and a pilot who landed his float plane. The final day of the 2022 kids camp included a barbeque, inflatable bouncy castle, and inflatable waterslide.
- Disco rollerblading takes place on Thursdays at the Woodland Arena during the non-ice season. Admission is \$5 for kids under 12 and \$10 for those aged 12 and over. Roller skate rentals are \$10 and the arena has approximately 20 pairs available for rental.
- Community baseball takes place every Wednesday during the summer season at the Coopers Field in Vermillion Bay.
- Armchair Travel is a community organized event that allows the members of Machin to travel to far away places without leaving the comfort of their home. The event provides an opportunity to learn about multicultural foods and music.
- Art classes take place once a month at a senior's centre or the Eagle River Recreation Centre and are free for the community. Local artists teach different designs and crafts for participants. Classes range from a maximum of 10 to 15 participants.

2.4.6.4 Sioux Lookout Recreation Facilities and Programs

Visitors and residents take advantage of a wide variety of outdoor recreational and sporting opportunities and indoor facilities (Municipality of Sioux Lookout 2021; NWO Baseline Studies Key Person Interview Program 2022-2023). Recreational facilities and programs are staffed by a mix of Municipal employees through the Recreation and Culture Department, volunteers, and coordinators (NWO Baseline Studies Key Person Interview Program 2022-2023). A participant from the key person interview program noted that hockey, curling, and golf are near capacity but the municipality would consider offering additional time slots if capacities were reached (NWO Baseline Studies Key Person Interview Program 2022-2023). A participant also noted that they would like to offer programming for target shooting and lacrosse for the community (NWO Baseline Studies Key Person Interview Program 2022-2023). Recreation in the Municipality of Sioux Lookout is overseen by the Recreation and Culture department which has an operations department for supporting different areas of the recreational department and the programming department (NWO Baseline Studies Key Person Interview Program 2022-2023). The Recreation department is responsible for organizing programs and maintaining municipal facilities.

2.4.6.4.1 Sioux Lookout Indoor Recreation Facilities

Sioux Lookout has a number of facilities where residents are able to enjoy recreational activities and programming, including the Memorial Arena, the Sioux Lookout Public Library, and the Sioux Lookout Museum.

Sports facilities include:

- The Memorial Arena was originally built in the 1950s. During the 1970s, there was an addition on the east end, including new dressing rooms. In the 1980s additional dressing rooms were built, as well as a fitness centre with a gym, walking track, and weight rooms (Municipality of Sioux Lookout 2022b; WSP 2022a). The facility also includes two squash courts. The arena is maintained by the Municipality of Sioux Lookout. To accommodate the use of the arena throughout the year, upgrades to the insulation are needed for shoulder season use (WSP 2022a). The arena is in fair condition. The facility is generally operating under capacity, however, is often at capacity during prime ice times (5:00 to 9:00 pm) (NWO Baseline Studies Key Person Interview Program 2022-2023). The fitness facility is fairly busy throughout the year on evenings and weekends.

Cultural facilities include:

- The Sioux Lookout Public Library was built in 1988. The library is currently maintained by the Municipality of Sioux Lookout. The building recently underwent re-shingling and construction was completed to make the basement capable of supporting future office space use or, potentially, for the Sioux Lookout Museum to move into (WSP 2022a). The library is currently operating at capacity.
- The Sioux Lookout Museum was operated out of the Heritage Train Station, but since the beginning of the COVID-19 pandemic the museum has been closed (WSP 2022a). The Municipality is looking for funding to move the museum into the library basement as it will not re-open at the Heritage Train Station (WSP 2022a). The museum is maintained by the Municipality of Sioux Lookout.

Other indoor facilities and programming include:

- Sioux Lookout offers programming for youth through the Positive Recreation Opportunities (P.R.O) for Kids program (Municipality of Sioux Lookout 2022b). The P.R.O for Kids program supports the participation of eligible children and youth 18 years of age and under in sports, arts, recreational, or cultural activities of their choice with financial assistance (Municipality of Sioux Lookout 2022b).

2.4.6.4.2 Sioux Lookout Outdoor Recreation Facilities

Sioux Lookout has outdoor facilities that residents can enjoy including trails, beaches, a golf course and curling club, a skatepark, baseball diamonds, tennis courts, soccer fields, and football fields.

Parks, beaches, and trails include:

- Ojibway Provincial Park is located 25 kilometers southwest of Sioux Lookout on Little Vermillion Lake. The Park offers a beach, boat launches, a playground area, and approximately 11 kilometers of nature trails (Municipality of Sioux Lookout 2022b).

- The Sioux Lookout Town Beach (or Farlinger Town Beach) is a new beach that is currently under construction. A total of \$3 million in funding was secured by Sioux Lookout for beach improvements. The beach is expected to have an administrative building, washroom facilities, a stage, a boardwalk, barrier-free access to the beach, new docks, improved lawn, concrete pads for food trucks, and kayak rentals (WSP 2022a).
- Second Sandy Beach is located 4 kilometers south of Sioux Lookout. The beach has bathrooms, garbage bins, and is available for public use (Municipality of Sioux Lookout 2022).
- Sioux Lookout hosts an extensive trail system that is used by cross country skiers, bikers, and walkers (NWO Baseline Studies Key Person Interview Program 2022-2023). The Umfreville Trail was built in the late 1990s. The trail is maintained by the Municipality. The Umfreville Trail has a paved path along the highway, but in some places the trail is in rough condition (WSP 2022a). The Sioux Mountain hiking trail offers the ability to overlook Sioux Lookout and Pelican Lake with parking near the decommissioned Radar Base Site (Rody 2023).

Sports facilities include:

- The Cedar Bay Recreation Complex offers various trails and an equestrian facility run by users and volunteers. Also offered are cabins for overnight accommodations and a lodge for special events (Sioux Lookout n.d.f). The complex offers boarding of horses and riding lessons. Funding has been approved for upgrades to the Cedar Bay Community Stable to extend electricity to the pavilion, build new accessible washrooms, and purchasing a new tractor (Kaufman 2021).
- The Sioux Lookout Golf and Curling Club includes a 9-hole golf course with power cart rentals, a pro-shop, and a bar (SLGCC 2021). The golf course hosts various tournaments throughout the year. Curling occurs in the winter and there is a recreational league that runs Monday to Friday, including doubles (Monday), men's league (Tuesday), women's league (Wednesday), open curling (Thursday), and a mixed league (Friday) (SLGCC 2021). Various bonspiels, special curling events, and fundraisers occur throughout the season (SLGCC 2021).
- The Hudson outdoor arena is available for public use during the winter months (NWO Baseline Studies Key Person Interview Program 2022-2023).
- The skatepark was built in the 2000s and is maintained by the Municipality of Sioux Lookout. The park is in good condition and the washrooms are located adjacent to the park (WSP 2022a). The skatepark is currently operating within capacity.
- There are three baseball diamonds in Sioux Lookout, built in the 1980s. One of the diamonds is maintained by the Municipality of Sioux Lookout (WSP 2022a). Approximately ten years ago, one diamond had lighting installed (WSP 2022a). Baseball diamonds and the concession stand are available for tournaments and special events (Municipality of Sioux Lookout 2022b). All three diamonds are in fair condition and are operating within capacity.

- There are two tennis courts and bocce courts, both of which are maintained by the Municipality. The courts were built in the 1970s, are considered to be in reasonable condition, and are operating within capacity (WSP 2022a).
- Soccer and football fields are located on the school grounds in Sioux Lookout (WSP 2022a). The KPDSB maintains the soccer and football fields.

2.4.6.4.3 Sioux Lookout Community Events

There are a variety of community events available to residents in Sioux Lookout, including (Municipality of Sioux Lookout 2022b):

- The annual Blueberry Festival occurs in August. It is a 10-day festival with over 100 events held during that time, including escape rooms, self-guided historical cemetery tours, photo contests, blueberry inspired food and drinks, the great bean hunt, the Shrine Club barbeque, Legion steak fry night, baseball tournament, golf tournament, volley ball tournament, pickle ball tournament, cribbage tournament, bocce ball tournament, tennis tournament, mini putt tournament, a largest blueberry by weight competition, blueberry bingo, art contests, a speed knitting/crochet contest, parades, float plane rides, pancake breakfast, book sales, music concerts, trivia night, beading circles, and more.
- Sioux Lookout's annual Walleye Weekend is organized by the Sioux Lookout Anglers and Hunters and is held on the second weekend of June.
- The Northwest Farmers' Market offers locally grown fruits and vegetables, hand-crafted items, and home-baked goods.

2.4.6.5 Unincorporated Communities Recreation Facilities and Programs

Recreation programs and facilities available for the local services boards and unincorporated communities are described below.

2.4.6.5.1 Wabigoon Village

Wabigoon Village has a community hall which hosts events, such as volleyball. Childrens programming and cribbage are held weekly, there are occasionally dances, and in July there is a kids race (NWO Baseline Studies Key Person Interview Program 2022-2023). Wabigoon Village also has many docks and access points to Wabigoon Lake throughout the community (NWO Baseline Studies Key Person Interview Program 2022-2023). Wabigoon Village would like to have a full arena (fully enclosed) with a Zamboni, but residents feel they do not have the population at this time to support a full arena (NWO Baseline Studies Key Person Interview Program 2022-2023). Participants from the interview program indicated that residents feel that the natural environment and associated recreation is key to their community, including fishing, hunting, cross-country skiing, and other activities. The Federal Economic Development Agency for Northern Ontario has made an investment of \$700,000 to support the construction of an outdoor pavilion with a community space for the LSB of Wabigoon (FedNor 2022). The multipurpose, year-round facility is expected to serve as a gathering and event space for the community for both business and recreational activities (FedNor 2022). During the winter season, the space will transition into an ice rink (FedNor 2022). The LSB of Wabigoon has a recreation department for

organizing programming and events but residents typically go to Dryden for any formal recreational programming (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.6.5.2 Melgund

Results of the NWO Baseline Studies Key Person Interview Program 2022-2023 indicated that residents of Melgund feel that the natural environment is important to everyone in Melgund, with residents participating in hunting, fishing, ATVing, gardening, cross country skiing, ice fishing, snowmobiling, snowshoeing, annual sleigh rides, and other activities. Residents take advantage of Melgund Lake and other nearby lakes south of the highway and Basket Lake Road (NWO Baseline Studies Key Person Interview Program 2022-2023). Melgund has a community hall where game nights and music events occur, often held in the winter (NWO Baseline Studies Key Person Interview Program 2022-2023). Melgund is home to the Melgund Lake Conservation Reserve (Thunder Bay Multicultural Association 2023). The Conservation Reserve offers various traditional activities such as shore lunch, camping, and hunting and trapping (Thunder Bay Multicultural Association 2023). Residents have provided that there are not currently gaps in recreational services and facilities in Melgund, but there is always something that could be improved, including an outside enclosure or roof for outdoor events (such as a jam session), improvements to the community hall, and the potential for a pavilion with 10 to 20 picnic tables for outside use (NWO Baseline Studies Key Person Interview Program 2022-2023). The LSB of Melgund Board is responsible for recreational programming in the community (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.6.5.3 Dinorwic

Residents of Dinorwic participate in recreational activities with a focus on the outdoors (NWO Baseline Studies Key Person Interview Program 2022-2023). Dinorwic residents participate in indoor activities at the Wabigoon community hall, such as volleyball (NWO Baseline Studies Key Person Interview Program 2022-2023). Most Dinorwic residents have a boat and truck to access blueberry picking, mushroom picking, fishing, hunting, canoeing, hiking and walking, and other outdoor activities. Most residents have access to the lake and, due to the small population, the lake is not crowded (NWO Baseline Studies Key Person Interview Program 2022-2023). Fishing and being on the lake are important activities for families, as it can be a relatively inexpensive activity, particularly compared to larger communities where you may have other fees (e.g., docking fees) (NWO Baseline Studies Key Person Interview Programs 2022-2023). There are no organized sports in Dinorwic. Kids must go to nearby communities, such as Dryden, for organized sports. Residents have commented that if the population grows, they would like to explore the possibility of a hockey rink (NWO Baseline Studies Key Person Interview Program 2022-2023). Dinorwic does not have a recreational committee or any organized recreational programming, although the Church previously organized a number of events (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.6.5.4 Silver Dollar

Results of the NWO Baseline Studies Key Person Interview Program 2022-2023 indicated that residents of Silver Dollar feel that the natural environment is important to them and is a way of life, with recreational opportunities focused on the outdoors. Residents participate in trapping, ATVing, snowmobiling, ice fishing, snowshoeing, canoeing, kayaking, hunting, gathering

(blueberries, mushrooms, pinecones, and wild rice), northern lights viewing, and other outdoor activities (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents also camp in nearby Crown land and there is a nearby quarry that people cliff dive from (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.6.5.5 Upsala

Results of the NWO Baseline Studies Key Person Interview Program 2022-2023 indicated that residents of Upsala feel that the natural environment is important to them and is a way of life, with recreational opportunities focused on the outdoors. Residents participate in boating, camping, walking, bird watching, fishing, hunting, gathering (picking berries), and other outdoor activities (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents participate in organized activities, with organizations offering programs for seniors and children including a monthly seniors' group and walking club. Upsala has a recreation centre for indoor programming which is maintained by the Upsala Local Services Board (NWO Baseline Studies Key Person Interview Program 2022-2023). It was noted that they would like an outdoor gym and snow removal in the winter for a walking path (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.7 Housing

The current state of housing in each of the Local Study Area communities is described in the sections below. The indicators used to analyze each community include:

- Dwellings counts and conditions;
- Home ownership; and
- Household composition.

This section does not include the cost of housing, which is analyzed in **Section 3.6.3.4**.

Out of the five Local Study Area communities analyzed, three have seen an increase in their total number of occupied dwellings by usual residents between the 2016 Census and the 2021 Census, while two have seen a decrease. Out of the three communities that have seen an increase (Sioux Lookout, Machin, and the LSB of Wabigoon), Sioux Lookout has seen the largest increase in both nominal terms and percent, increasing from 2,010 units to 2,330 (15.9%).

Ignace and Dryden have both seen a decrease in the total number of dwellings in their communities, from 570 to 545 in Ignace and 3,360 to 3,320 in Dryden. It should be noted that the number of single- and semi-detached houses in both of these communities maintained or increased in numbers. (Statistics Canada 2017; Statistics Canada 2022a)

Throughout the Local Study Area, the rate of home ownership is higher than the Ontario average, with the notable exception of Sioux Lookout where 33.3% of households rent their housing unit compared to the Ontario average of 31.4%. The Regional Study Area and Ontario include Indigenous reserves and therefore also have Band housing, which is a dwelling provided by the local government, First Nation, or Indian band. All communities in the Local Study Area have a higher percentage of single- and semi-detached homes than the Ontario average, which are traditionally rented at a lower rate than apartments. The percentage of movable dwellings is also higher than the Ontario average. The proportion of apartments and row houses and other single-attached houses in Local Study Area communities is lower than the Ontario average, with

the highest percentage in Sioux Lookout (Statistics Canada 2022a). Many communities in the Local Study Area recognize the need to expand and diversify their housing stock in order to meet a diverse set of needs in the community. The lack of diversity in the housing stock has a greater affect on vulnerable populations, with a lack of acceptable housing and homelessness existing across Local Study Area communities (KDSB 2021b; Township of Ignace 2021a).

Ignace, Machin, and Dryden all have notably smaller household sizes than the Regional Study Area and the Ontario average. Ignace has the largest percentage of two person households at 46% compared to the Ontario average of 33%. The LSB of Wabigoon has a high percentage of one person households, sitting at 34% compared to the Ontario average of 26%. Sioux Lookout has the highest percentage of households with three or more individuals, coming close to the Ontario average of 41% at 38%. (Statistics Canada 2022a). The smaller household sizes in Ignace, Machin, Dryden, and the LSB of Wabigoon can be attributed to the large proportion of residents who are 55 years and older and may not have any children living at home and the smaller proportion of families with children at home compared to the Regional Study Area (Statistics Canada 1998, 2022). More information on age structure and family characteristics are described in **Section 2.2.4.1** and **Section 2.2.4.2**, respectively.

Throughout the Local Study Area, the proportion of homes requiring major repairs is lower than the Regional Study Area but higher than the Ontario average. The LSB of Wabigoon has the highest percentage of homes requiring major repairs at 14.3%, while Dryden is the lowest at 7.4% (Statistics Canada 2022a)

2.4.7.1 Homeless in the Regional Study Area

A lack of housing options has left some individuals in the Local Study Area communities without a home. Individuals experiencing homelessness or are precariously housed are individuals without a permanent address or residence, appropriate housing, or the immediate prospect, means, and ability to acquire it are considered homeless (KDSB 2021a). These individuals are considered a vulnerable population, individuals who are at greater risk of experiencing adverse effects because of *"disparities in physical, economic, and social status when compared with the dominant population"* (Patrick et al 2018; Rukmana 2014) and are analyzed in **Section 2.2.5.2**.

The KDSB delivers social services in the Kenora District (KDSB 2023a), including those servicing individuals experiencing homelessness in all communities in the Local Study Area and Regional Study Area. Further information about the KDSB can be found in **Section 2.4.7.2**.

The KDSB has been accepted to join the "Reaching Home Designated Community" program under the Government of Canada. Reaching Home is a community-based program aimed at preventing and reducing homelessness (KDSB 2021b). As part of this program, the KDSB has a coordinated access system in place that provides set access points for services, assessments and prioritization of individuals, and matching and referral to specific services in the communities (Government of Canada 2022c).

As part of the coordinated access system, the KDSB collects data on the homeless population throughout the KDSB's service area with a point-in-time count. The information describes the number of unsheltered individuals on a single night in each community. Due to the fact that the data is taken from small rural communities with low density, where some individuals may stay with relatives, friends, acquaintances, neighbours, or strangers because they do not have a

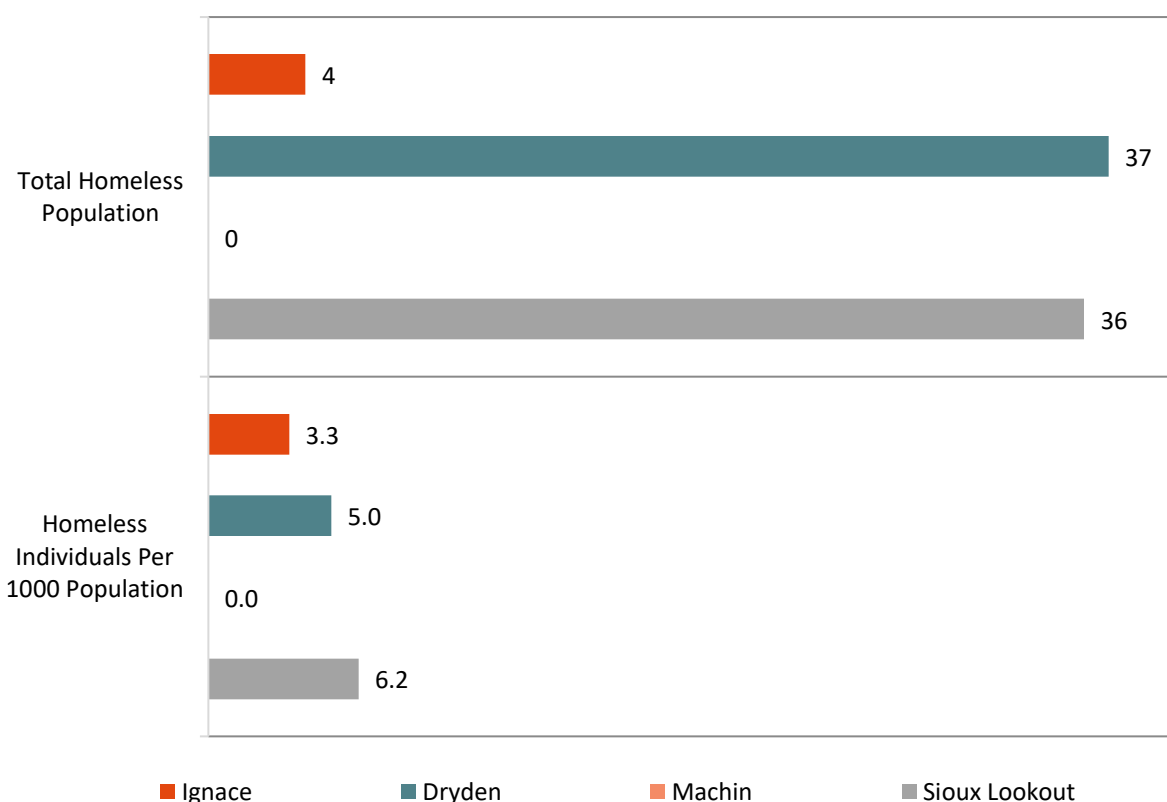
permanent home, the true number of homeless individuals may be higher (KDSB 2021a, GBA Workshop 2023).

Figure 2.4-1 details the number of homeless individuals measures in Ignace, Dryden, Machin, and Sioux Lookout.

The community with the largest homeless population per 1,000 individuals is Sioux Lookout, at 6.2, followed by Dryden at 5.0, and Ignace at 3.3 (KDSB 2021a; Statistics Canada 2022). No homeless individuals were reported in Machin during the point-in-time count. It has been reported that the homeless population is seasonal, and can increase during the summer months (GBA Workshop 2023).

The top five challenges or problems that homeless individuals reported to the KDSB that prevented them from finding suitable housing were having too low of an income, rent being too high, addiction, discrimination, and mental health issues. Indigenous individuals are overrepresented in the homeless population with 88.1% of individuals in the KDSB survey self-identifying as Indigenous. Most homeless individuals (76.0%) are between the ages of 25 to 55, while 15.4% are under the age of 25, and 8.1% are 56 years of age or older (KDSB 2021a).

Figure 2.4-1: Homeless Individuals in Ignace, Dryden, Machin, and Sioux Lookout



Source: KDSB 2021a and Statistics Canada 2022a.

While Indigenous individuals may move off reserves and from their home communities to seek better services, they can struggle to find housing in larger communities (GBA+ Workshop 2023). Communities across the Local Study Area are struggling with a lack of available rental units. Individuals may not be able to travel or commute to locations with more affordable housing due to a lack of transportation. Some residents have reported that discrimination can play a role in not being able to find housing. It has also been reported that some homeowners are reluctant to rent out homes due to a fear of their property being damaged. Housing developments may also receive pushback due to the added population and traffic in communities (GBA+ Workshop 2023).

New housing development has remained relatively stagnant since the 1990s from both public and private investors making it difficult for individuals to afford housing. Barriers to housing development exist in some communities due to increasing costs. The demand for subsidized housing is strong with no subsidized housing currently available in the KDSB's jurisdiction (NWO Baseline Studies Key Person Interview Program 2022-2023). As of January 2022, there were over 1,700 approved applications for housing on the KDSB's waiting list (KDSB 2021a), with currently more individuals on the wait list than there are housed (NWO Baseline Studies Key Person Interview Program 2022-2023). This can force individuals into homelessness due to the lack of available housing. The availability of shelters is covered in social services (**Section 2.4.9**).

2.4.7.2 Kenora District Services Board

The KDSB was created under Ontario law, and uses funds collected from municipalities and unincorporated territories within the Kenora District as well as the Province of Ontario to deliver social services in the Kenora District (KDSB 2023a) including all communities in the Local Study Area and Regional Study Area. The KDSB housing programs are described here while other services they provide are described in **Section 2.4.9**. The KDSB housing units are described in the communities where they are located.

Community Housing Services include several different types of housing programs:

- Supportive housing programs;
- Affordable housing units;
- Market rental housing units;
- Rent-geared-to-income programs; and
- Homelessness prevention programs.

The KDSB provides rental assistance to non-elderly and elderly residents as well as special priority placements (KDSB 2023b).

The KDSB recently undertook a regional housing strategy study to look at the existing housing situation and propose an action plan on how to support housing needs in each of the communities. Barriers to affordable housing that have been identified by the KDSB include:

- The unaffordability of housing stock;
- High costs and delays to construction and development;

- Land use incompatibilities;
- A lack of variety in the available housing stock; and
- The need for more partnerships and collaborations in the region.

The report details community-level recommendations to deal with the above barriers. These recommendations include (KDSB 2023e):

- Providing incentives and financing in order to increase affordability;
- Implementing a streamlined construction development process that encourages infill and densification, alternative construction methods, and a reduction in development delays;
- Expanding land use compatibility by updating zoning and policy documents, creating plans and strategies, increasing developable land, and spreading awareness about housing issues;
- Exploring and prioritizing new housing varieties, building capacity in home maintenance so units remain on the market, and supporting new and existing residents to live in the communities; and
- Establishing partnerships and connections with provincial, regional, and municipal governments as well as private enterprises and community members (KDSB 2023e).

One of the drivers of the housing shortage identified in the regional housing strategy for Ignace, Dryden, Machin, and Sioux Lookout include the lack of specific types of housing such as supportive housing, senior's housing (including smaller homes for seniors to be able to comfortably downsize), higher density/multi-family housing, affordable housing (social housing and rent-geared-to-income) and entry-level housing for first time buyers (KDSB 2023e). Seniors are moving to larger municipalities to find more suitable housing options including senior-living facilities and independent living seniors' housing (KDSB 2023e). The lack of housing for seniors and senior health care support can force seniors into long-term care or hospitals (KDSB 2023e).

2.4.7.3 Ignace

2.4.7.3.1 Dwelling Counts and Conditions

The total occupied private dwellings by usual residents in Ignace has decreased by 10 dwellings, from 560 in the 2016 Census to 550 in the 2021 Census. There was also a decrease in the total number of unoccupied, marginal, and seasonal dwellings from 147 dwellings in 2016 to 113 in 2021 (Statistics Canada 2017, 2022a)³⁴. In Ignace, dwellings are primarily single-detached homes. The number of single and semi-detached homes was maintained between 2016 and 2021 at 520. The number of apartments decreased by 30 from 45 to 15 while the number of row houses and other single-attached houses increased from 0 to 10.

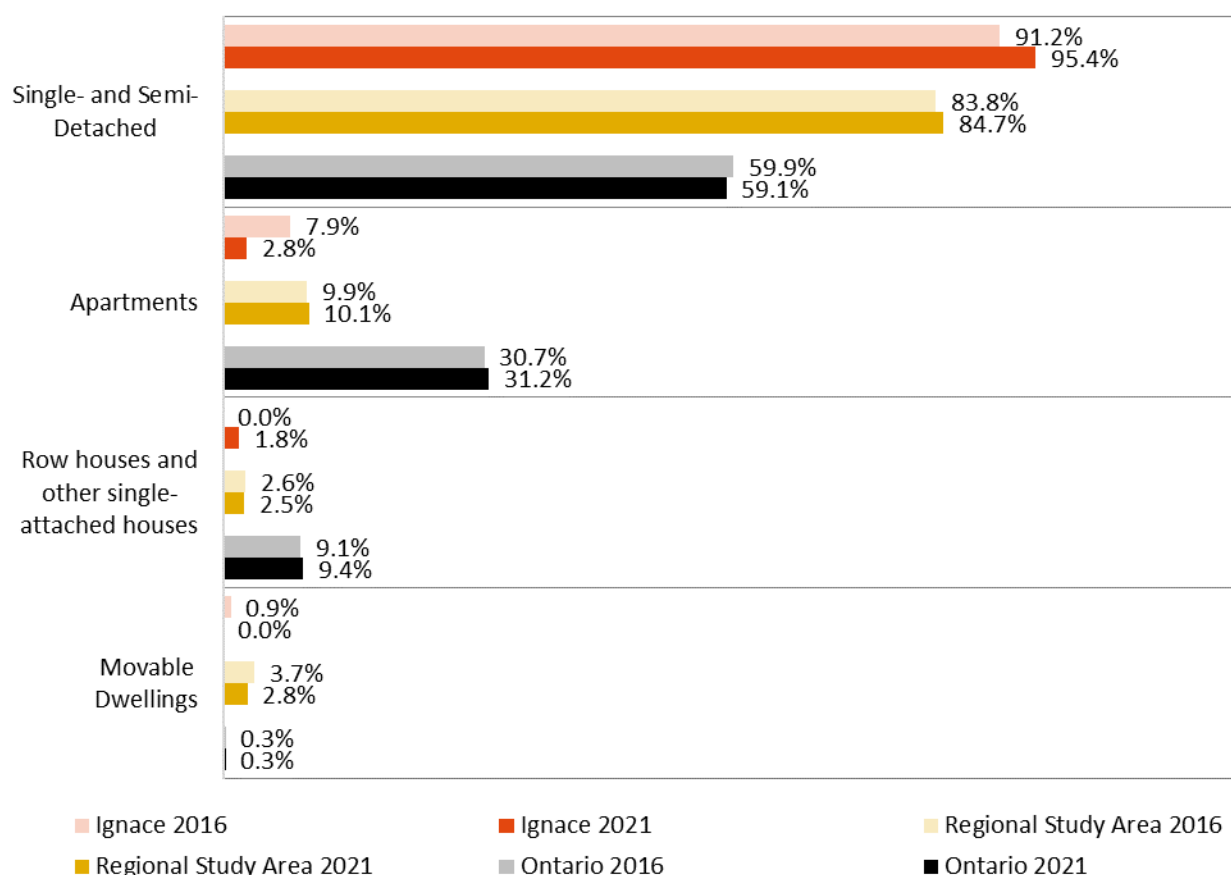
³⁴ Total occupied private dwellings are classified as regular private dwellings and occupied marginal dwellings. Regular dwellings include: occupied dwellings by usual residents, occupied dwellings by foreign or seasonal residents, and unoccupied dwellings. Marginal dwellings are ones which do not meet the needs for year-round occupancy, which requires a source of heat, and an enclosed spaces that provides shelter from the elements (Statistics Canada 2022a).

Figure 2.4-2 shows the types of dwellings in Ignace by percent, compared to the Regional Study Area and Ontario. With over 95% of dwellings classified as single or semi-detached in Ignace, having risen from 91.2% in 2016, Ignace has a higher proportion of single and semi-detached dwellings compared to the Regional Study Area and Ontario. As of 2021, Ignace has a lower percentage of apartments than the Regional Study Area and Ontario, at 2.8% compared to 10.1% and 31.2% respectively.

There is a housing shortage in the Local Study Area communities with workers at the mill in Ignace having difficulty finding housing (HSAL et al 2022b; NWO Community and Baseline Studies Key Person Interview Program 2022). Between 2016 and 2019, Ignace issued 53 building permits, the second highest number of building permits per capita out of the communities in the Local Study Area (HSAL et al 2022b; Statistics Canada 2022).

In the Township of Ignace's Official Plan and Zoning By-Law Review (2019a) the Township of Ignace conducted an analysis of currently available vacant land and the projected amount of land required to accommodate population increases to see if the current amount of vacant land will be suitable for the long term (Township of Ignace 2019a). There are currently around 160 vacant lots in Ignace planned for future development. Within the settlement area in Ignace there are 63.9 hectares of vacant residential land that can be developed with support for a maximum of 5,000 residents in their growth plan (HSAL et al 2022b).

Figure 2.4-2: Types of Dwellings in Ignace, Regional Study Area, and Ontario

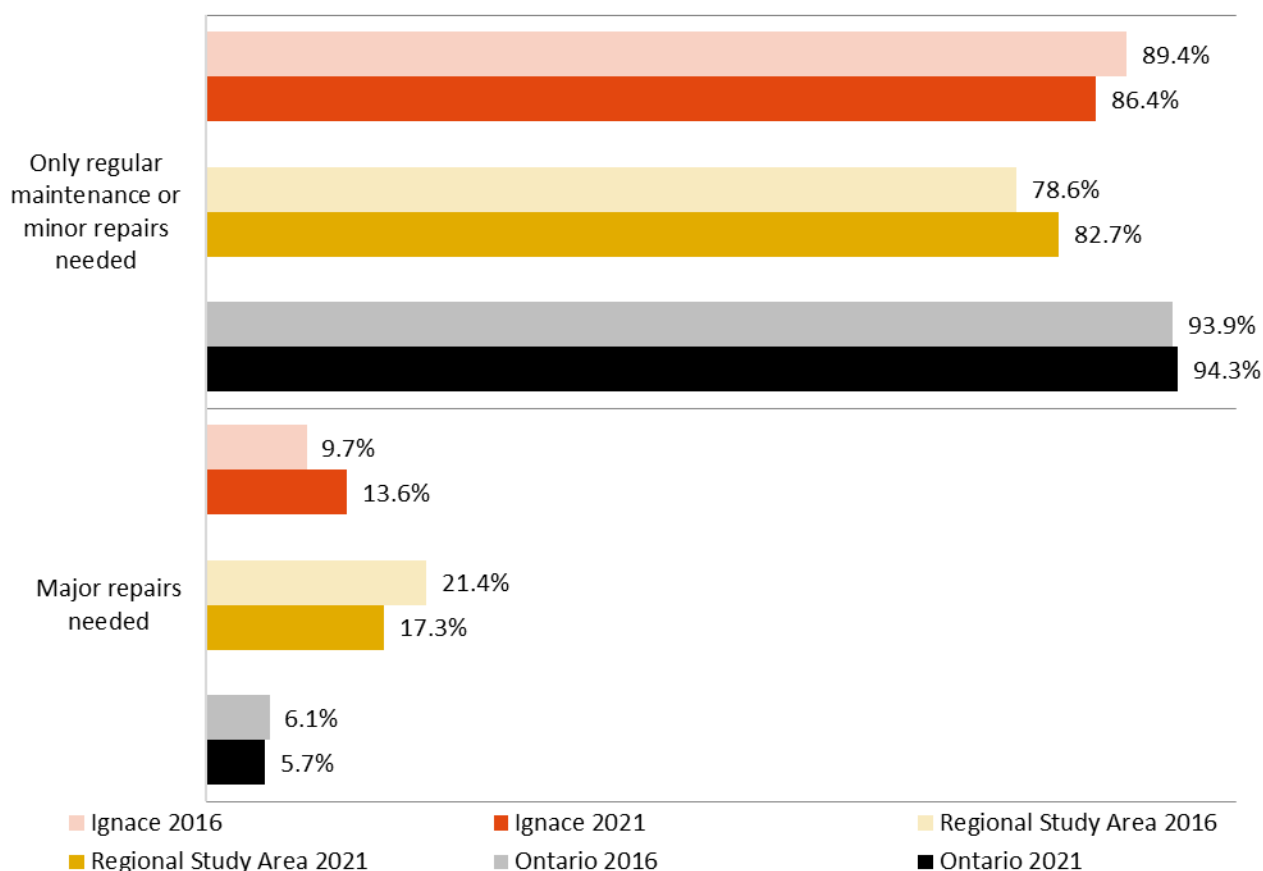


Source: Statistics Canada 2017 and 2022a.

In 2021, most dwellings in Ignace were reported to be in good condition; however, 75 dwellings (13.6% of the total dwellings) required major repairs. **Figure 2.4-3** details the percent of dwellings requiring regular maintenance or minor repairs compared to those requiring major repairs. The number of dwellings requiring major repairs has increased by 20 since 2016, when 55 dwellings were reported to require major repairs. It has been noted that homes built previously to serve the Mattabi Mine (now closed) employees are now aging and requiring renovations (NWO Community and Baseline Studies Key Person Interview Program 2022). While the proportion of houses requiring major repairs has increased in Ignace since 2016, it has been decreasing in the Regional Study Area, which, as of 2021, currently has 17.3% of dwellings requiring major repairs. The proportion of dwellings requiring major repairs in Ignace is more than double the Ontario average, which, as of 2021, currently sits at 5.7%. In addition to dwellings in poor condition, 20 households have been reported to be living in housing that is “not suitable,” meaning too small for the size of the household. The lack of a local hardware store is

believed to contribute to people's ability to effectively maintain their homes. (Local Social Cultural and Health Workshop 2021).

Figure 2.4-3: Dwelling Conditions in Ignace, Regional Study Area, and Ontario

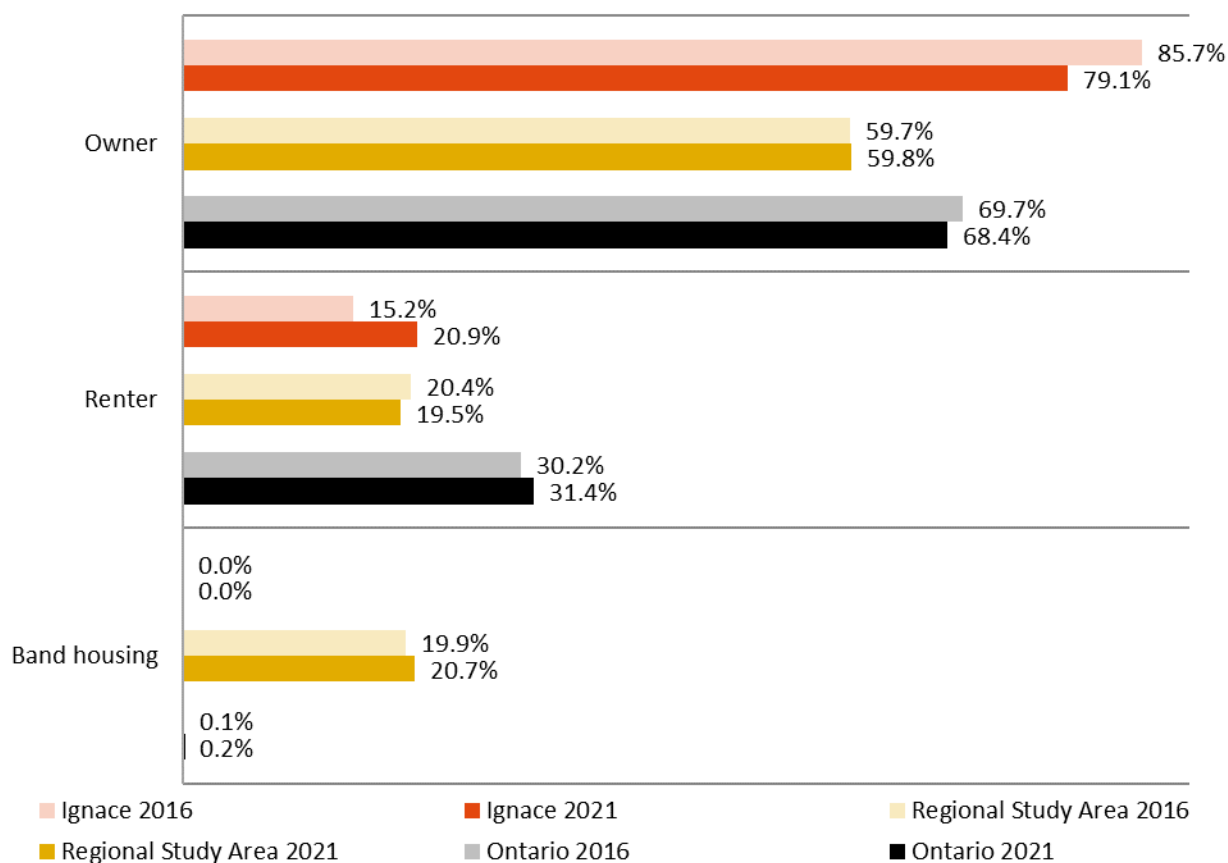


Source: Statistics Canada 2017 and 2022a.

2.4.7.3.2 Home Ownership

There has been a slight shift in household tenure in Ignace since 2016. The number of households that reported living in rental units has increased by 30, and the number of dwellings owned by the household has decreased by 45. In 2016, Ignace had a lower proportion of rental units (15.2%), than the Regional Study Area (20.4%). As shown in **Figure 2.4-4**, the recent shift towards rental units in Ignace and away from rental units in the Regional Study Area has resulted in the proportion of rental units in Ignace being 1.4% higher than the Regional Study Area, at 20.9% compared to 19.5%. The proportion of households that rent is still lower than in Ontario (31.4%). Although there has been an increase in the proportion of households that are renting, a lack of rental units is increasing prices and causing some individuals to live with parents or roommates (NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 2.4-4: Home Ownership in Ignace, Regional Study Area, and Ontario¹



Source: Statistics Canada 2017 and 2022a.

Notes:

1. Band housing is used to define dwellings on reserves. Band housing is a classification used for historical and statutory reasons because shelter occupancy on reserves does not follow usual classification by standard tenure categories (Statistics Canada 2022a).

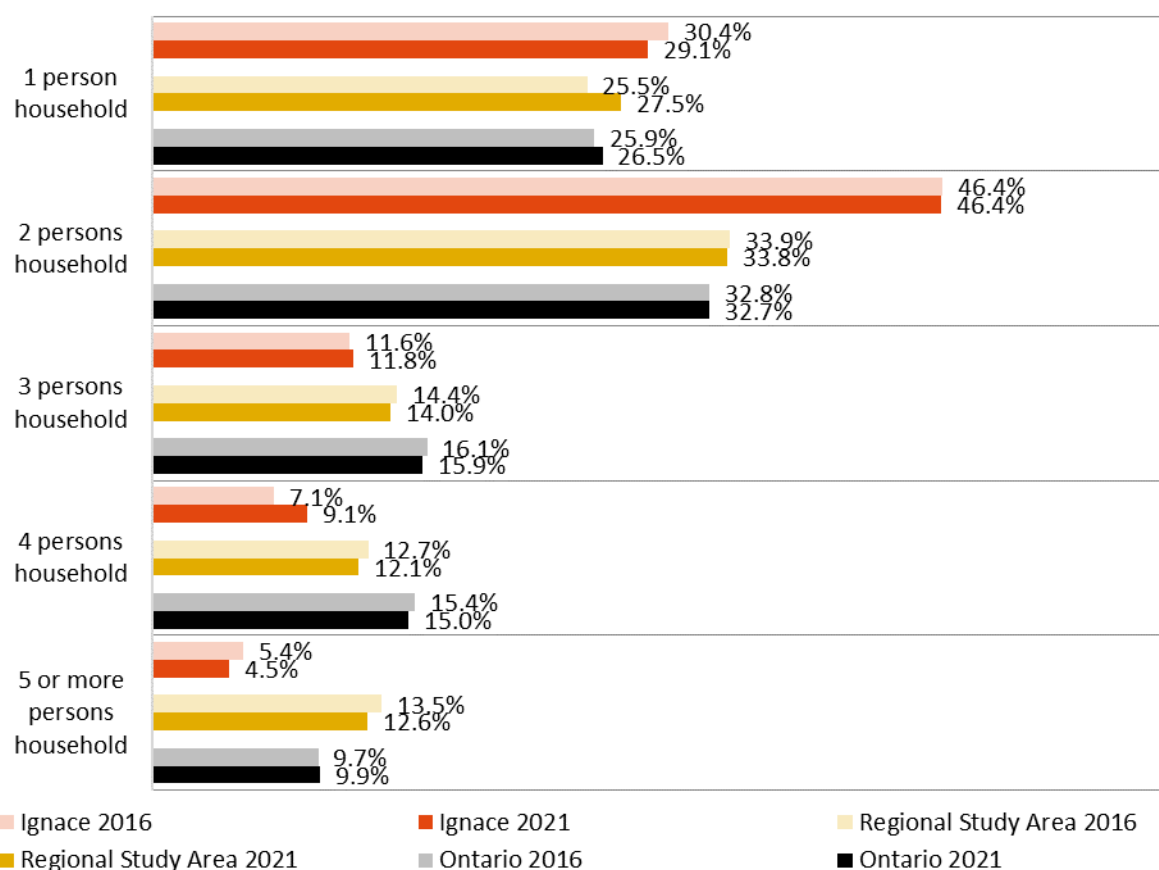
2.4.7.3.3 Household Size

Most dwellings in Ignace house one or two individuals, with these two household sizes making up 160 and 255 of the total 550 dwellings. Both categories have seen decreases since 2016. The number of three person households has been maintained since 2016, at 65 dwellings, while the number of four person households has seen an increase from 40 to 50.

As of 2021, proportionally Ignace has a higher percentage of two person households than the Regional Study Area and Ontario, at 46% compared to 34% and 33%, respectively, as shown in **Figure 2.4-5**. The number of one-person households is similar across all three areas in 2021, ranging from 26% to 29%. Ignace has a higher percentage of households with one or two people

and a lower percentage with three or more person households than the Regional Study Area and Ontario. The proportion of four person households, at 9%, is 3% lower than the Regional Study Area and 6% lower than the Ontario average. The proportion of five or more person households, at 5%, is half as much as the Ontario average and 8% lower than the Regional Study Area.

Figure 2.4-5: Household Sizes in Ignace, Regional Study Area, and Ontario



Source: Statistics Canada 2017 and 2022.

2.4.7.3.4 Affordable and Social Housing

The Ignace community survey results collected as part of the *Ignace Community Safety and Well-Being Plan* (Township of Ignace 2021a) indicated that 92% of respondents feel that their housing needs are being met. The remaining community members brought up issues surrounding limited housing choice and low building standards.

To offer more affordable housing options than currently exists in the community the Township of Ignace is looking to promote a full range of housing options at different levels of density (Township of Ignace 2020). To achieve this goal the Township has stated several objectives including:

- Permitting different forms of housing such as second units, garden suites, apartments, cooperative housing, and tiny homes (as appropriate);
- Promoting housing options including townhouses, low-rise apartments, and semi-detached houses;
- Supporting the development of a range of affordable housing options for seniors; and
- Supporting opportunities for appropriate rural residential development while protecting the natural environment.

Members of the Ignace community have expressed support for alternative housing options that are geared towards seniors and provide more affordable housing options (Township of Ignace 2019a; KPMG 2018). One way in which the Township of Ignace is promoting affordable housing is through its support of the KDSB's Ten Year Housing and Homelessness Plan. Currently, the KDSB has no affordable housing units in Ignace but will work with private landlords on a case-by-case basis to subsidize rent (NWO Baseline Studies Key Person Interview Program 2022-2023). This plan aims to provide adequate and suitable housing for everyone in the region which The Township of Ignace aims to achieve by allowing and encouraging alternative housing options to be built (Township of Ignace 2020). To address senior's concerns with a lack of affordable housing in the region the Ignace Silver Tops are seeking community partners and the provincial and federal governments to help them develop a 20-unit seniors housing complex (Forbes 2023). The development of seniors housing may also provide benefits to non-seniors by alleviating market pressure on other alternative multi-family housing options (IAWG February 24, 2022).

2.4.7.4 Dryden

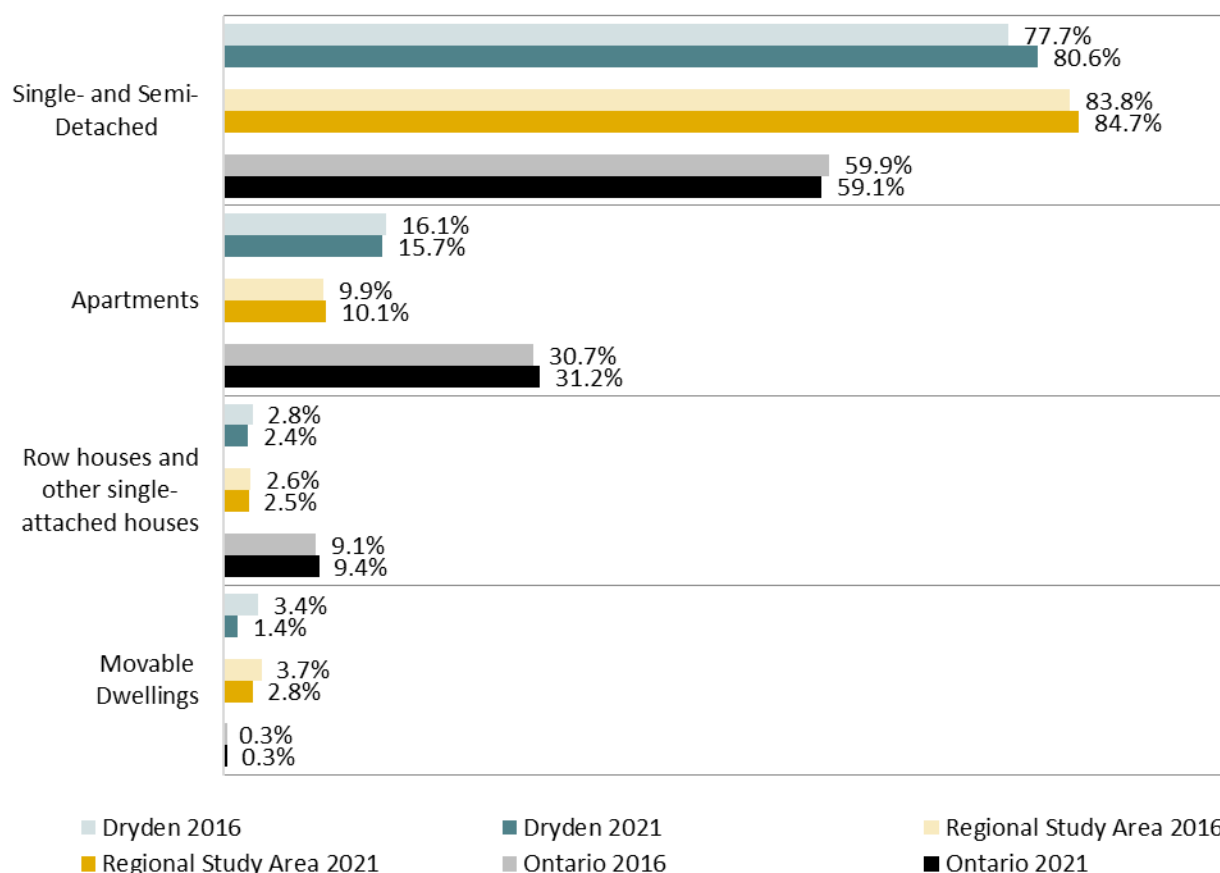
2.4.7.4.1 Dwelling Counts and Housing Conditions

According to the 2021 Census, the City of Dryden has 3,310 occupied dwellings by usual residents, a decrease of 50 from the 2016 Census. Although there was a decrease in the number of occupied dwellings by usual residents in Dryden, there was an increase in the total number of unoccupied, marginal, and seasonal dwellings from 180 dwellings in 2016 to 260 in 2021 (Statistics Canada 2017, 2022a). Consistent with the Regional Study Area and the Province of Ontario, single-detached houses are the most common type of housing in Dryden. While the number of single-detached houses has increased by 65 between 2016 and 2021 for a total of 2,540. All other types of dwellings have either remained constant or decreased from 2016 to 2021. The number of apartments has decreased by 20 units since 2016, from 540 to 520; row houses and other single-attached houses have decreased from 95 to 80; and movable dwellings have decreased from 115 to 45.

Figure 2.4-6 details the percentage of dwellings by type in the City. Despite the decrease in the number of apartments in Dryden, the proportion of dwellings that are apartments remains higher than the Regional Study Area average at 15.7% compared to 10.1%. However, it is lower than the Ontario average of 31.2%. Dryden has a higher proportion of rental unit dwellings compared to the Regional Study Area, at 26.9% compared to 19.5%. Prior to the number of rental units dropping, the proportion of rental units matched the Ontario average. Currently, the Ontario average is higher, at 31.4%. The proportion of detached homes in Dryden is increasing, from

77.7% to 80.6% but still below the levels seen in the Regional Study Area, which is currently at 59.1%.

Figure 2.4-6: Types of Dwellings in Dryden, Regional Study Area, and Ontario



Source: Statistics Canada 2017 and 2022a.

The City of Dryden has a lack of available rental units. Difficulty in finding rental accommodation is seen as a deterrence for “visitors, youth, young professionals and newcomers” in Dryden (Explorer Solutions 2022a). Rental units are expensive, and individuals without adequate jobs are often not able to make it through the application process (NWO Baseline Studies Key Person Interview Program 2022-2023). Additionally, the lack of rental options can affect vulnerable populations in Dryden. Teenagers and young adults, aged 18 to 22, as well as Indigenous people are some of the demographics that have been especially affected by the lack of affordable rental options. Senior Indigenous women have also been noted to be a demographic that have been negatively affected by the housing shortage (GBA+ Workshop 2023).

A lack of seniors housing and long-term care facilities is suggested to be a factor in the observed high demand and low vacancy rates in the housing market in Dryden, and a factor in preventing younger buyers from entering the market (Quartek Group 2022). The City of Dryden and KDSB

are currently addressing this issue by increasing the amount of housing available for seniors. A 41-unit subsidized seniors housing complex in Dryden is opening in the summer of 2023 (KDSB 2022a) as well as two other buildings with a total of 48 units of seniors housing (NWO Community and Baseline Studies Key Person Interview Program 2022). While seniors-oriented units being developed are helping to increase the supply of housing in the community, it tends to be prioritized over other forms of housing due to it being seen as a safe investment. General and affordable housing units are still required in the community (NWO Baseline Studies Key Person Interview Program 2022-2023).

A concern for Dryden's development is the fringe population (see **Section 2.2.2.2**). Many people reside in the unincorporated area surrounding the city. Development in these areas rather than within the municipality poses a challenge, as these residents use Dryden's services but do not pay property taxes, limiting Dryden's tax base and placing pressures on municipal services (NWO Baseline Studies Key Person Interview Program 2022-2023).

One of the goals of the City of Dryden is to increase the amount of housing options by increasing the residential density in the city, especially in the downtown area (City of Dryden 2019; Quartek Group 2022). Affordable and high-density housing is needed so that the required workers are able to move to the community (Law 2023) and new entrants are able to join the housing market (Quartek Group 2022). In order to address the lack of diverse housing options, zoning is being modified for more flexibility in order to allow for more mid and high-density residential development (NWO Baseline Studies Key Person Interview Program 2022-2023). A 48-unit apartment complex is currently under development which will increase the supply of flexible housing options in the community (NWO Baseline Studies Key Person Interview Program 2022-2023).

Several ideas and initiatives have been put forward including redeveloping and building out underutilized properties; converting vacant second-floor commercial properties to residential units; promoting the development of multiplex housing, specifically in areas where previous industrial activities have relocated; the conversion of existing mobile/trailer parks in for the potential redevelopment for tiny homes subdivision; and the designation of large residential land parcels to higher density housing (Explorer Solutions 2022a; Quartek Group 2022). In order to achieve these goals, the City of Dryden would like to attract more developers to the community (Law 2023).

While the housing market is tight (NWO Baseline Studies Key Person Interview Program 2022-2023), the demand for new residential development remains mild (Explorer Solutions 2022a). The amount of residential construction is lower than the levels seen historically (Explorer Solutions 2022a). The City of Dryden issued 217 building permits between 2016 and 2020, the lowest amount per capita out of the Local Study Area communities (HSAL et al 2022b; Statistics Canada 2022a).

Infrastructure costs pose a burden on the City of Dryden for new residential development. Competition with surrounding areas means that charging residential development fees are not a viable option for the City of Dryden as developers will target other communities instead (NWO Baseline Studies Key Person Interview Program 2022-2023). Without development charges, the City must explore other funding opportunities and policy tools to support infrastructure development (Explorer Solutions 2022a). Despite infrastructure costs posing a burden, Dryden has 47 vacant lots in a subdivision ready for development and another 200 to 300 units that

could be developed over 30 acres (NWO Baseline Studies Key Person Interview Program 2022-2023).

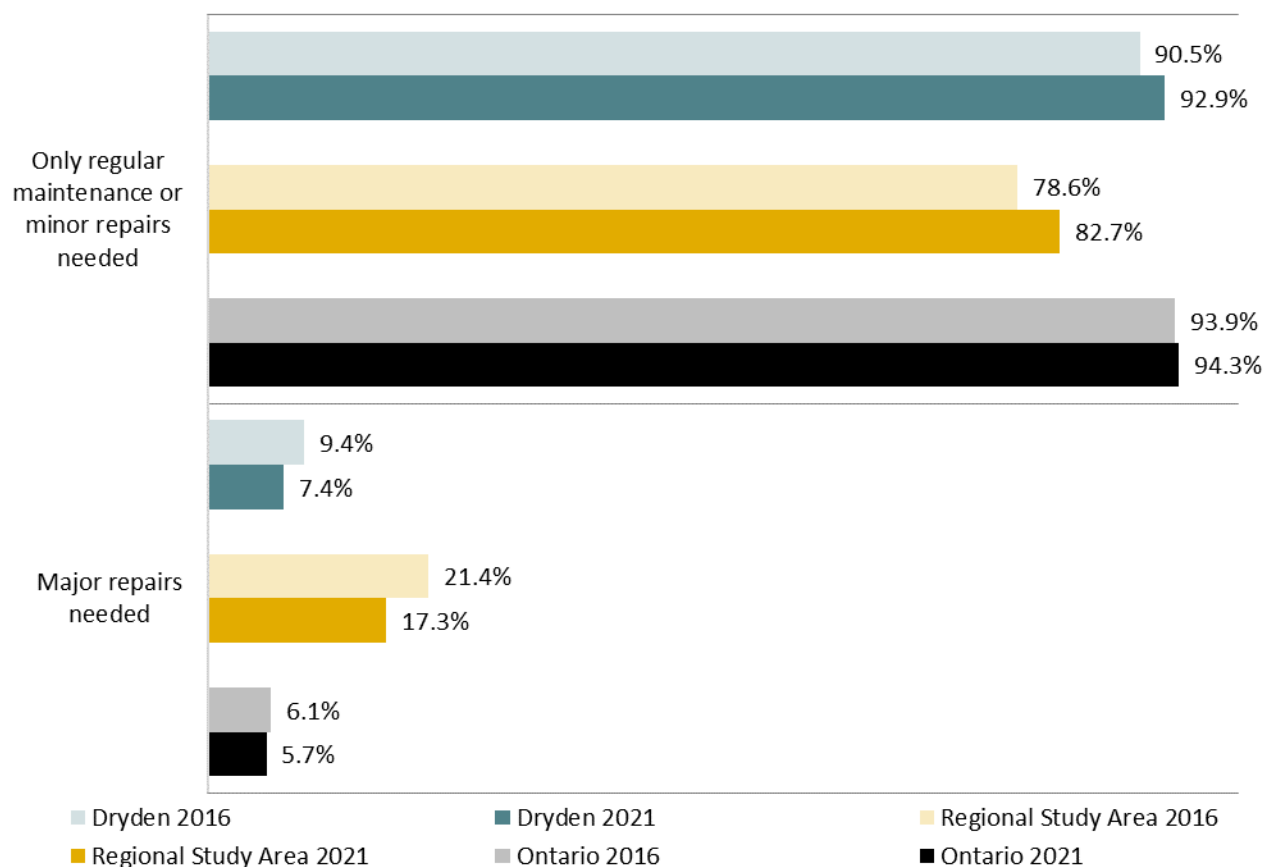
Dryden is preparing for its population to reach 11,762 by 2047 by using a variety of techniques such as (Quartek Group 2022):

- Efficient use of its vacant and occupied lands;
- Higher density development; and
- Redeveloping and building out underutilized properties.

From 2016 to 2021, Dryden saw a decrease in the number of dwellings that need major repairs. **Figure 2.4-7** details the percentage of dwellings requiring only regular maintenance and repairs compared to those that require major repairs. The 2016 Census reported that 315 dwellings in Dryden require major repairs, which has decreased to 245 in the 2021 Census. This has brought Dryden closer to the Canadian average of 5.7%, currently at 7.4% in Dryden, and well below that of the Regional Study Area at 17.3%. (Statistics Canada 2017; Statistics Canada 2022a).

In addition to the dwellings requiring major repairs, 50 dwellings in Dryden have been reported to be “not suitable” or too small for the number of persons in the household.

Figure 2.4-7: Dwelling Conditions in Dryden, Regional Study Area, and Ontario

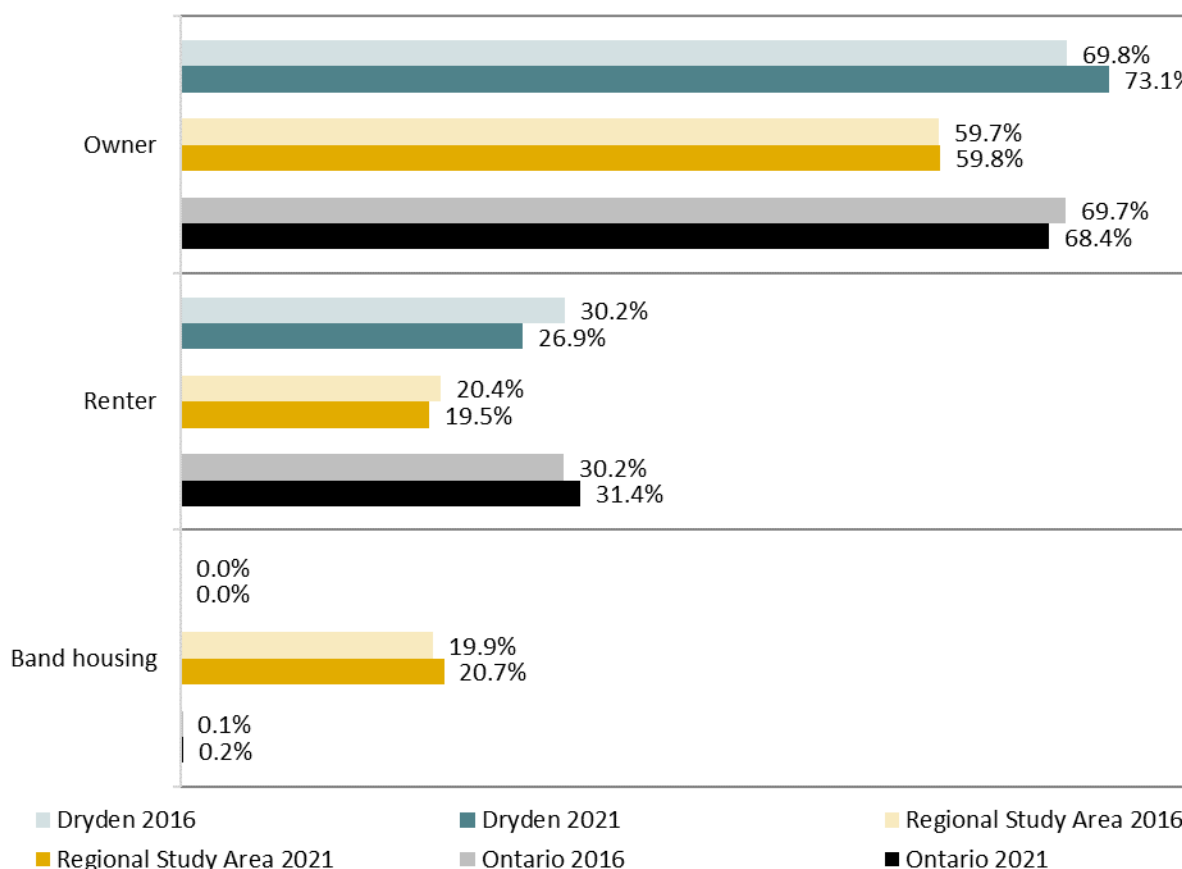


Source: Statistics Canada 2017 and 2022a.

2.4.7.4.2 Home Ownership

Figure 2.4-8 provides a breakdown of the proportion of dwellings that are being rented in the community compared to those that are owned. The number of households that live in units they own has increased by 75, from 2,345 to 2,420. This differs from the number of rental units, which has decreased from 1,015 to 890, a drop of 125. The percentage of households that own their own housing units is higher than the Regional Study Area and Ontario averages, at 73.1% in 2021 increasing from 69.8% in 2016 (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-8: Homes Rented vs. Owned in Dryden, Regional Study Area, and Ontario¹



Source: Statistics Canada 2017 and 2022a.

Notes:

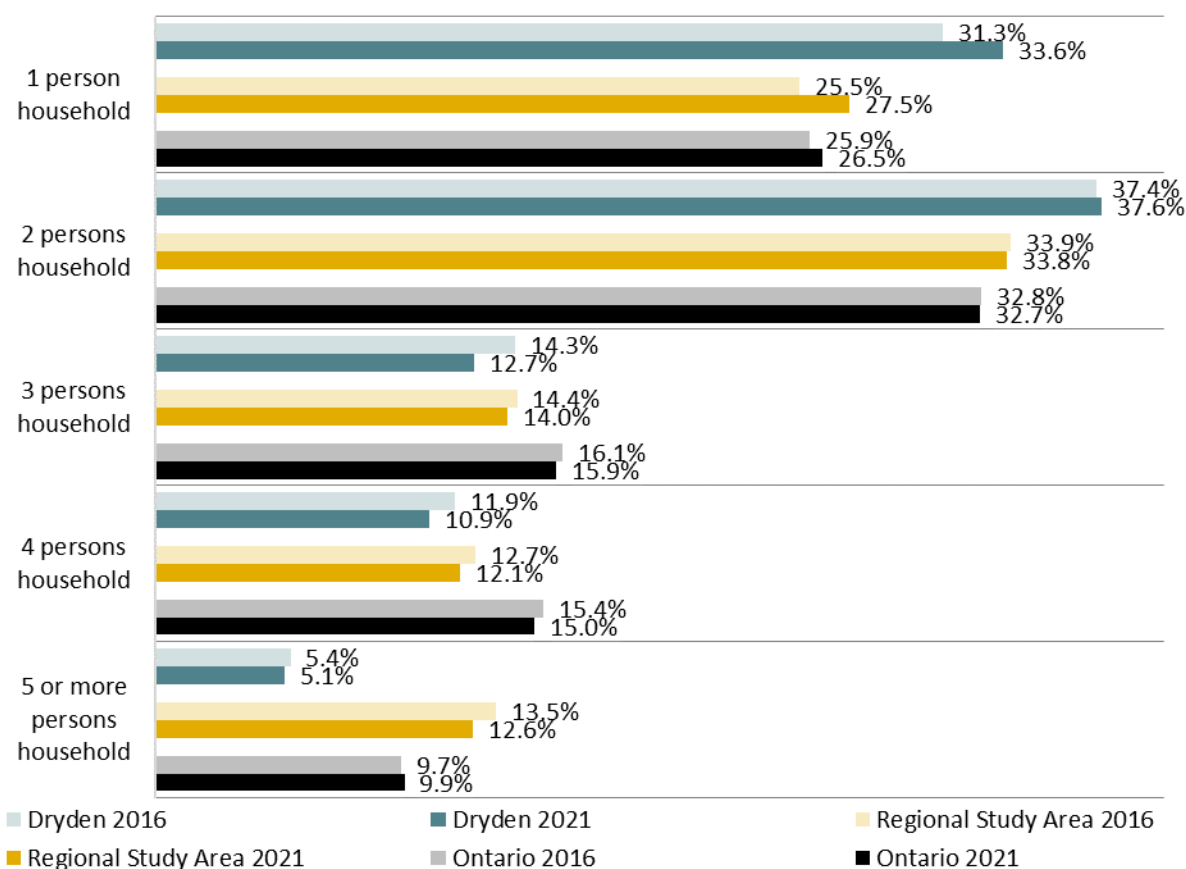
1. Band housing is used to define dwellings on reserves. Band housing is a classification used for historical and statutory reasons because shelter occupancy on reserves does not follow usual classification by standard tenure categories (Statistics Canada 2022a).

2.4.7.4.3 Household Size

While the number of one person households has seen an increase from 2016 to 2021, up by 65 from 1,050 to 1,115, all other categories of households have decreased. **Figure 2.4-9** shows the percentage of households by size ranging from one person to five or more persons. Dryden has a higher proportion of one and two person households compared to both the Regional Study Area and Ontario, making up a combined 72% of total households, compared to 62% in the Regional Study Area and 59% in Ontario. The percentage of other households, with three or more persons, is lower than that of the Regional Study Area and Ontario. The percentage of households with five or more persons is substantially lower, sitting at 5% in Dryden, half of the

Ontario average of 10% and less than half of the Regional Study Area of 13% (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-9: Household Sizes in Dryden, Regional Study Area, and Ontario



Source: Statistics Canada 2017 and 2022a.

2.4.7.4.4 Affordable and Social Housing

Social housing in Dryden is administered by the KDSB, which manages six buildings in Dryden for non-seniors and four buildings for seniors, and Ontario Aboriginal Housing Services, which provides affordable housing for First Nation, Inuit, and Métis people living off-reserve (Explorer Solutions 2022a; KDSB 2023c; OAHs 2023). There has been ongoing effort by the KDSB to secure funding through the Green Municipal Fund and other federal programs to begin developing new affordable housing units and upgrade existing affordable housing (Explorer Solutions 2022a; NWO Baseline Key Person Interview Program 2022-2023). KDSB is also currently developing a 41-unit seniors housing complex in Dryden that will be opened in summer of 2023 (KDSB 2022a).

The City of Dryden's Official Plan highlights the need to encourage and incentivize affordable housing, assisted seniors' housing, and housing for special needs groups. Policies to encourage affordable housing are listed in the City of Dryden's Official Plan and include density bonusing; deferral or waiving of fees and charges; and more flexible zoning (Quartek Group 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.7.5 Machin

2.4.7.5.1 Dwelling Counts and Conditions

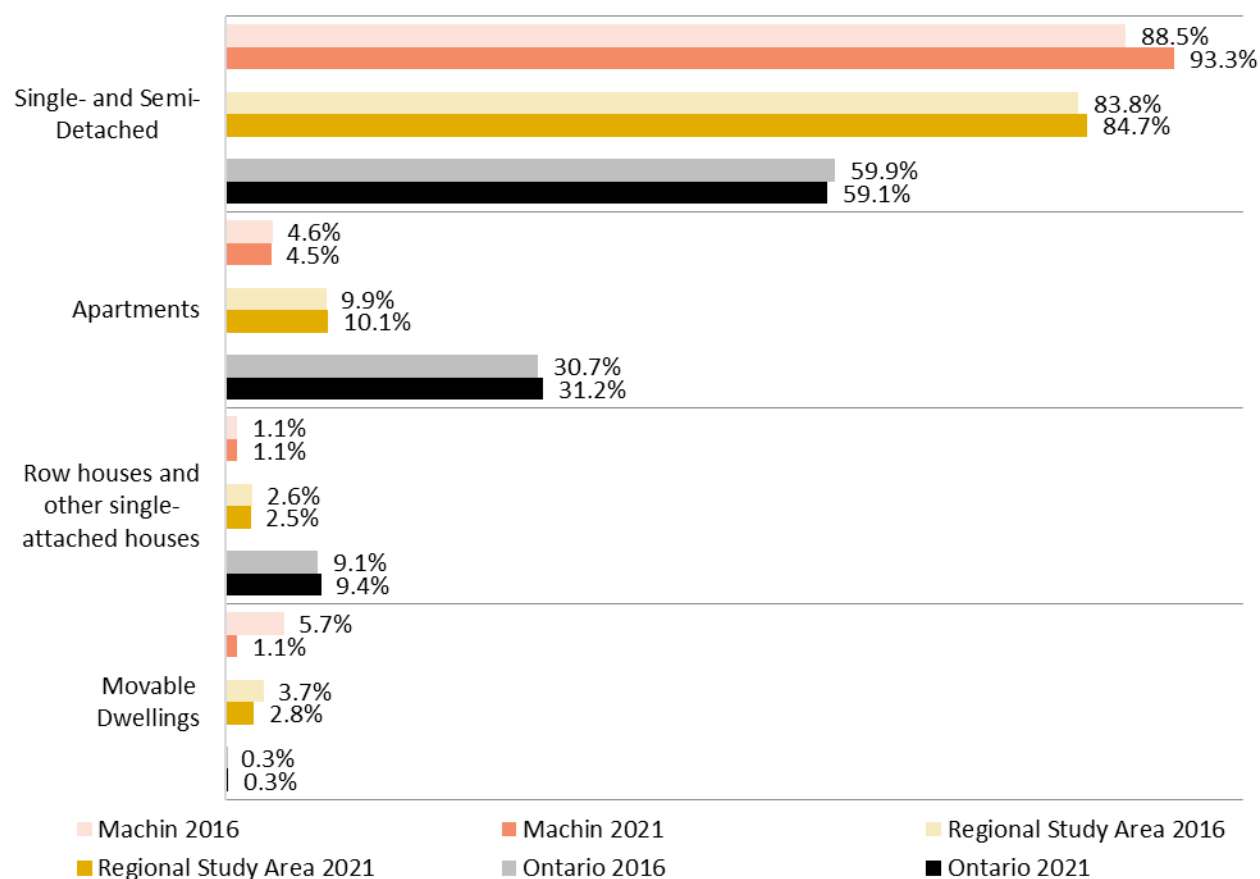
The Municipality of Machin saw an increase of 20 occupied dwellings by usual residents between 2016 and 2021, for a total of 460 dwellings in 2021. Although there was a decrease in the number of occupied dwellings by usual residents in Machin, there was a slight increase in the total number of unoccupied, marginal, and seasonal dwellings from 158 dwellings in 2016 to 175 in 2021 (Statistics Canada 2017, 2022a). The type of dwellings that exists in Machin is mainly single- and semi- detached houses, increasing from 385 in 2016 to 415 in 2021. The number of apartments and row houses and other single-attached houses has remained constant. The amount of row houses has decreased by 20, from 25 in 2016 to 5 in 2021. (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-10 details the percentage of dwellings by type. As of 2021, Machin has an above average proportion of single-attached houses at 93.3% compared to 84.7% in the Regional Study Area and 59.1% in Ontario. The remaining categories are lower than that of the Regional Study Area, with around half of the percentage of dwellings being apartments, at 4.5% compared to 10.1%; the percentage of row houses and other single-attached houses at 1.1% compared to 2.5%; and movable dwellings also at 1.1% compared to 2.8%. As the percentage of single- and semi-detached houses is much higher in Machin than the Ontario average, the proportion of apartments and row houses and other single-attached houses is much lower (Statistics Canada 2022a).

A lack of housing is one of the major issues Machin faces (NWO Baseline Studies Key Person Interview Program 2022-2023). During the period from 2016 to 2019, the Municipality issued 67 building permits (HSAL et al 2022b), the highest amount per capita compared to any other municipality in the Local Study Area. Machin has available land and has the capacity to handle an increase in population but is held back due to a number of issues. Much of the land that would be suitable for new housing is Crown land which is subject to regulations and permits in order to make it usable for future housing (NWO Community and Baseline Studies Key Person Interview Program 2022; HSAL et al 2022b). Other land is private land or farmland where there is limited interest in having property subdivided (NWO Baseline Studies Key Person Interview Program 2022-2023). Machin would also require hard infrastructure, including a sewage plant, and roads, as well as social infrastructure such as health, education, and services (HSAL et al 2022b; NWO Baseline Studies Key Person Interview Program 2022-2023).

With most housing in Machin being that of single- or semi-detached, concerns exist surrounding the availability of housing types suitable for elderly individuals and seniors. Previous reports outlined the need for a second seniors complex as well as support for elderly residents to be able to remain living in their homes (Crupi Consulting 2017). The development of seniors housing has been stated as a way to possibly attract new residents and support growth (BDO 2020).

Figure 2.4-10: Types of Dwellings in Machin, Regional Study Area, and Ontario

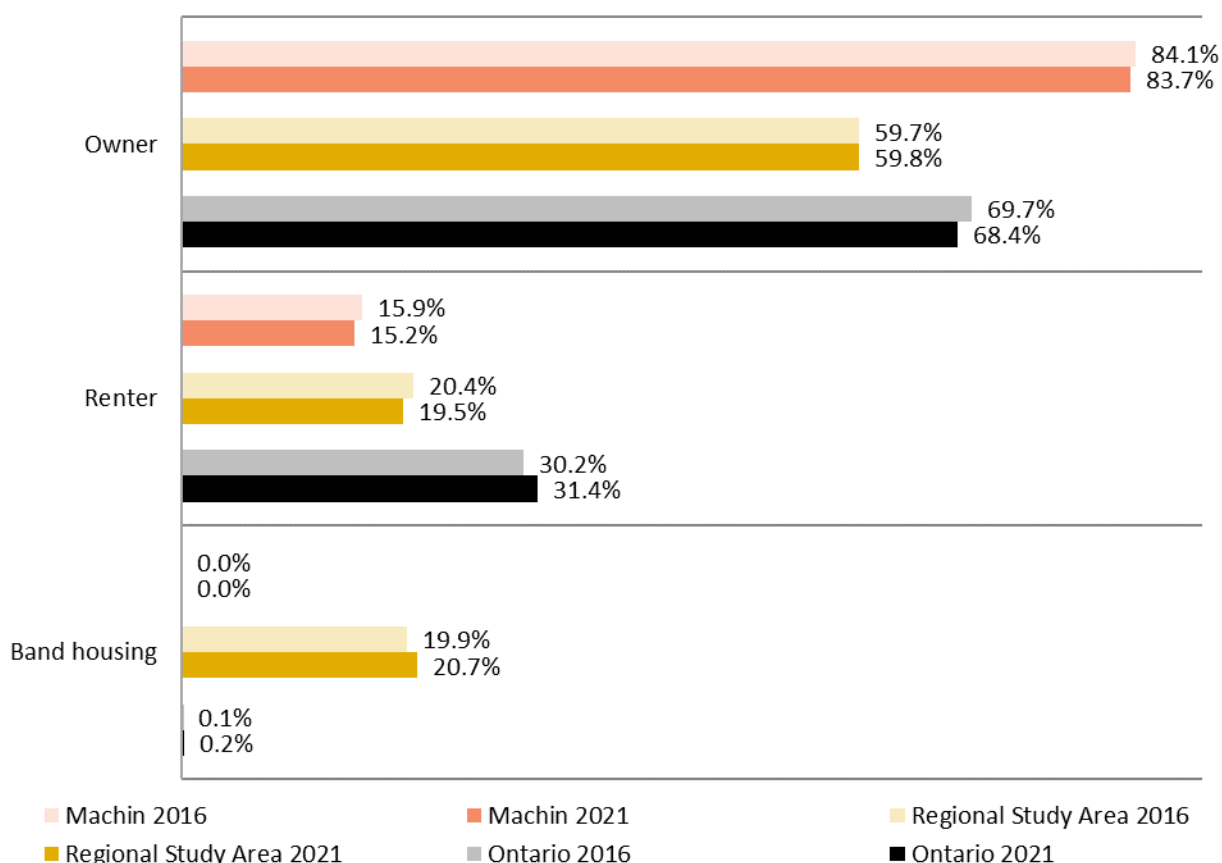


Source: Statistics Canada 2017 and 2022a.

2.4.7.5.2 Home Ownership

The number of owned dwellings in Machin increased from 370 in 2016 to 385 in 2021 while the number of rental units remained flat at 70. **Figure 2.4-11** details the percentage of homes rented compared to those owned in Machin. Most households in Machin live in units that they own, with a lower percentage of rental units compared to the Regional Study Area and the Ontario average at 15.2% compared to 19.5% and 31.4% respectively (Statistics Canada 2017; Statistics Canada 2022a). The low number of available rental units has been noted as an impediment for those who would like to move to Machin (NWO Baseline Studies Key Person Interview Program 2022-2023).

Figure 2.4-11: Homes Rented vs. Owned in Machin, Regional Study Area, and Ontario¹



Source: Statistics Canada 2017 and 2022a.

Notes: 1. Band housing is used to define dwellings on reserves. Band housing is a classification used for historical and statutory reasons because shelter occupancy on reserves does not follow usual classification by standard tenure categories (Statistics Canada 2022a).

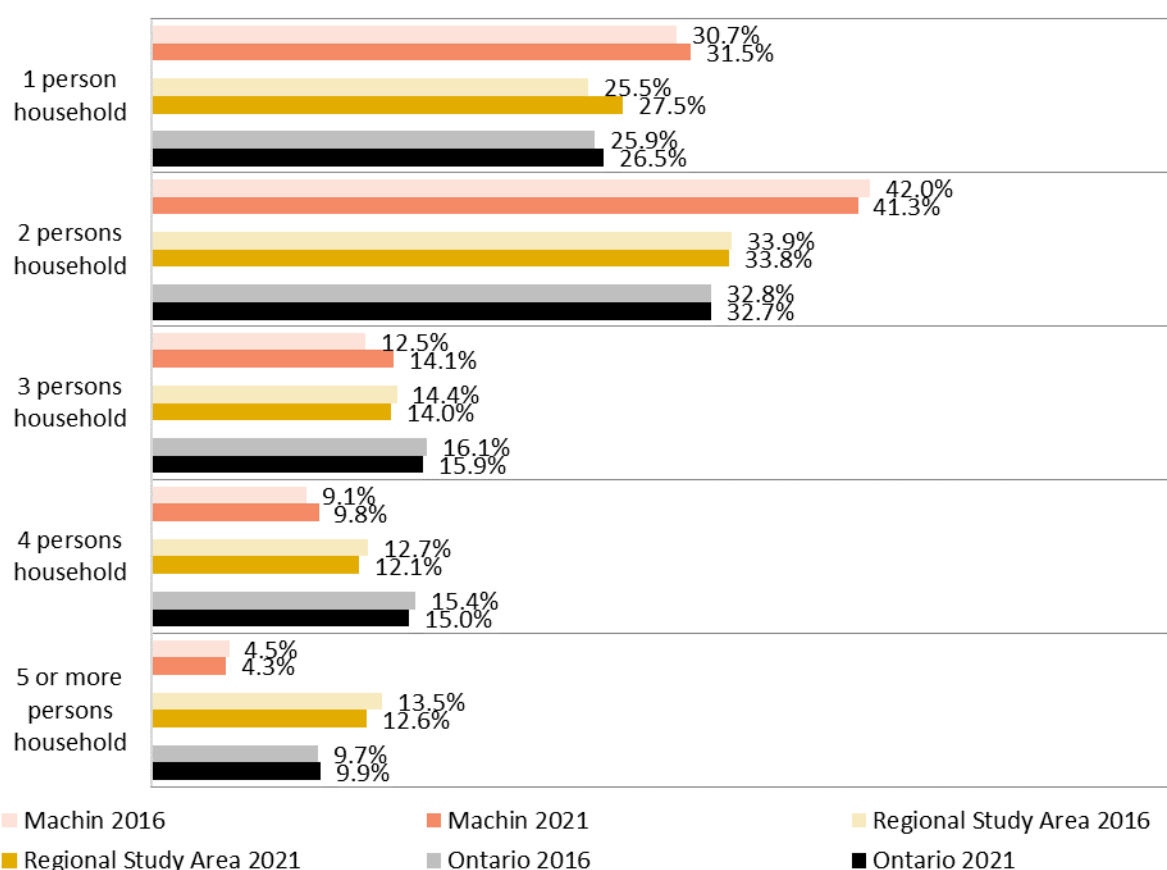
2.4.7.5.3 Household Size

The increase in households in Machin since 2016 has been spread across households of various sizes, ranging from one to four person households, while the number of households with five or more individuals has been maintained. The largest increases were seen in one person households and three person households, both of which saw an increase of ten households. Households with two persons and four persons saw an increase of five. Two person households are the largest category, making up 190 of the total 460 households (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-12 presents the distribution of households by number of individuals. The largest differences seen when comparing Machin to the Regional Study Area and Ontario are in the

households with two and five or more individuals. As of 2021, Machin has a higher proportion of households with two individuals at 41%, 7% higher than the Regional Study Area (34%) and 8% higher than the Ontario average (33%). Machin has a lower proportion of households with five or more individuals (4%), which is 9% lower than the Regional Study Area (13%) and 5% lower than the Ontario average (10%). The overall trend shows that when compared to the Regional Study Area and Ontario, Machin has a higher percentage of one or two person households and a lower percentage of households with three or more individuals (Statistics Canada 2022a).

Figure 2.4-12: Household Sizes in Machin, Regional Study Area, and Ontario

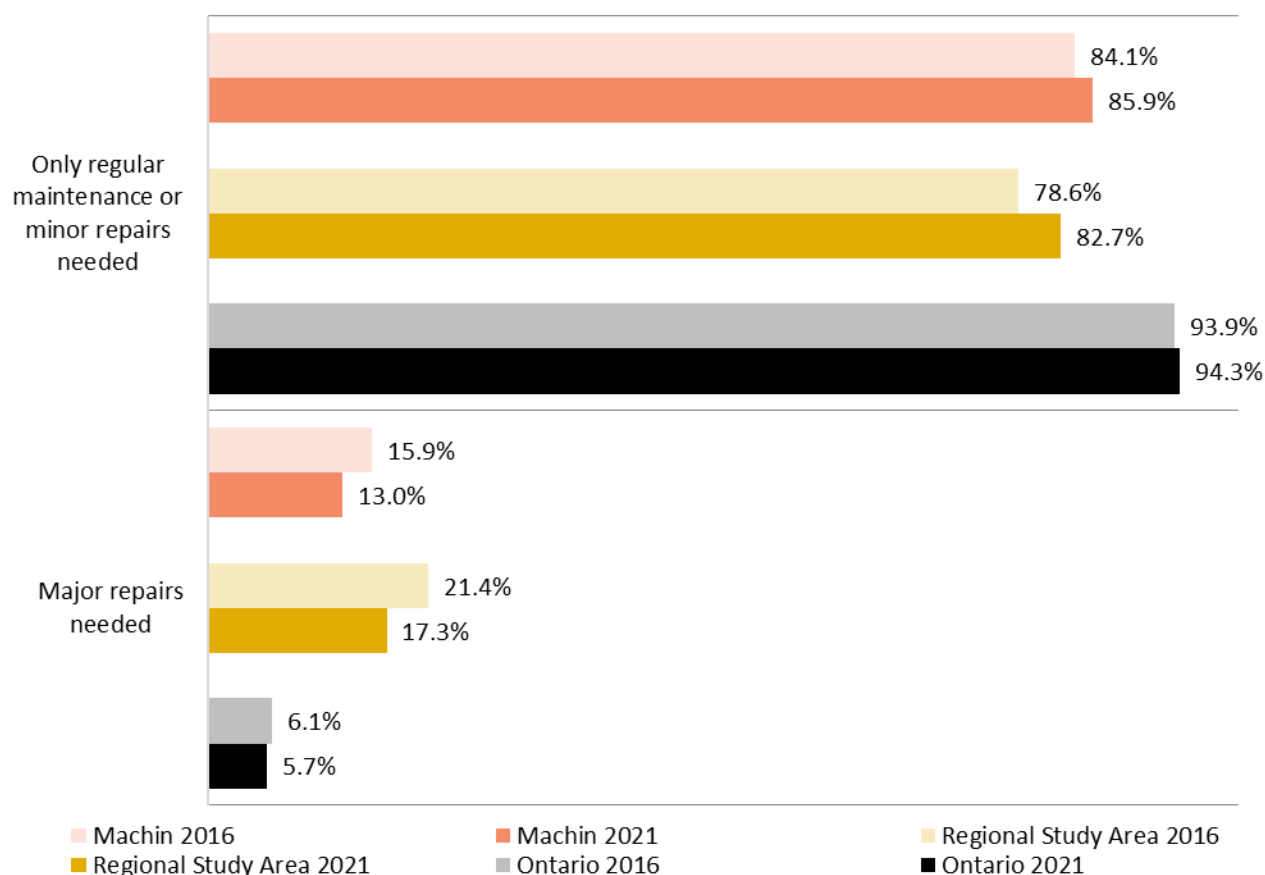


Source: Statistics Canada 2017 and 2022a.

Most dwellings in Machin were reported to be in good condition in the 2021 Census; however, 60 dwellings, equalling 13.0% of total dwellings, require major repairs. This is a decrease of 10 since 2016. **Figure 2.4-13** details the condition of existing dwellings in Machin compared to that of the Regional Study Area and Ontario. The proportion of dwellings requiring major repairs in Machin is lower than that of the Regional Study Area, where 17.3% of dwellings require major repairs, but higher than that of the Ontario average which is currently sitting at 5.7%. As of

2021, all dwellings in Machin were acceptable, meaning that they are of an adequate size for the number of individuals living in them. (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-13: Housing Conditions in Machin, Regional Study Area, and Ontario



Source: Statistics Canada 2017 and 2022a.

2.4.7.5.4 Affordable and Social Housing

The Municipality of Machin Strategic Plan (2017) listed a lack of affordable housing and rental units as an issue the community faces (Crupi Consulting 2017). The KDSB operates both family and seniors housing in Machin with rent subsidized housing existing in Vermillion Bay and Eagle River (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.7.6 Sioux Lookout

2.4.7.6.1 Dwelling Counts and Conditions

As of 2021, the Municipality of Sioux Lookout has 2,340 occupied dwellings by usual residents, an increase of 320 dwellings from 2016. There was also an increase in the total number of

unoccupied, marginal, and seasonal dwellings from 238 dwellings in 2016 to 307 in 2021 (Statistics Canada 2017, 2022a). Single- and semi-detached housing is the largest category of dwellings in Sioux Lookout and that which has seen the most growth. The number of single- and semi-detached houses in Sioux Lookout has increased by 265 units from 1,455 in 2016 to 1,720 in 2021. The second largest category, apartments, has increased from 350 to 430. Out of the two other categories, the amount of row houses and other single-attached houses has decreased to 75 from 110, while the number of movable dwellings has increased from 95 to 105 (Statistics Canada 2017; Statistics Canada 2022a).

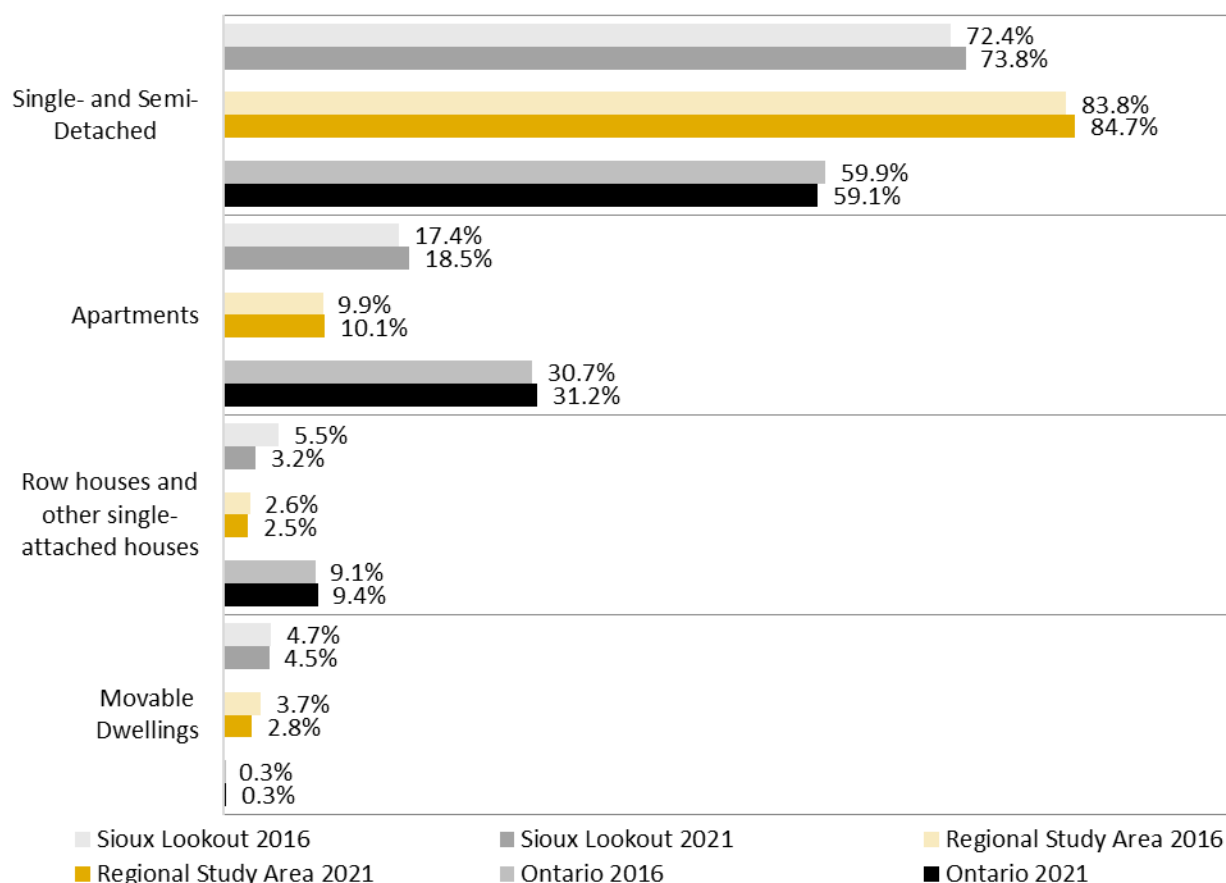
Figure 2.4-14 presents the proportion of different types of dwellings in Sioux Lookout compared to those in the Regional Study Area and the Ontario average. As of 2021, Sioux Lookout has a lower percentage of single- and semi-detached homes compared to the Regional Study Area, at 73.8% compared to 84.7% but a higher percentage than the Ontario average, which sits at 59.1%. The proportion of dwellings in Sioux Lookout that are apartments are higher than that of the Regional Study Area, at 18.5% compared to 10.1%, while below that of the Ontario average of 31.2% (Statistics Canada 2022a).

Sioux Lookout has a larger portion of dwellings that are single- or semi-detached compared to the Local Study Area average. The Official Plan for Sioux Lookout highlights the need to provide a range of dwelling types that can allow residents of the Municipality to age in place or within their neighbourhood (Sioux Lookout 2018). The Municipality has established a target for the amount of low density, medium density, and high density housing in their settlement area (Sioux Lookout 2018).

Between 2016 and 2019, the Municipality issued 156 building permits, which may account for some of the increase in dwellings (HSAL et al 2022b). From 2020 to 2022 between 60 and 80 building permits were issued by the city, primarily for garages, decks, and some residential, commercial, or retail properties (NWO Baseline Studies Key Person Interview Program 2022-2023). The majority of Sioux Lookout's housing growth has come from dwellings owned by individuals, which make up 310 of the 320 dwelling increase for a total of 1,560 owned dwellings. The remaining growth of 10 units comes from rentals, for a total of 780 units (Statistics Canada 2017; Statistics Canada 2022a).

Most houses that come up for sale are sold quickly. Approximately 10-12 houses are built each year including a few fourplexes and a couple duplexes (NWO Baseline Studies Key Person Interview Program 2022-2023). Prices going up over the last few years have made development more challenging, with many homes being rented or sold before they go on the market (NWO Baseline Studies Key Person Interview Program 2022-2023).

Figure 2.4-14: Types of Dwellings in Sioux Lookout, Regional Study Area, and Ontario



Source: Statistics Canada 2017 and 2022a.

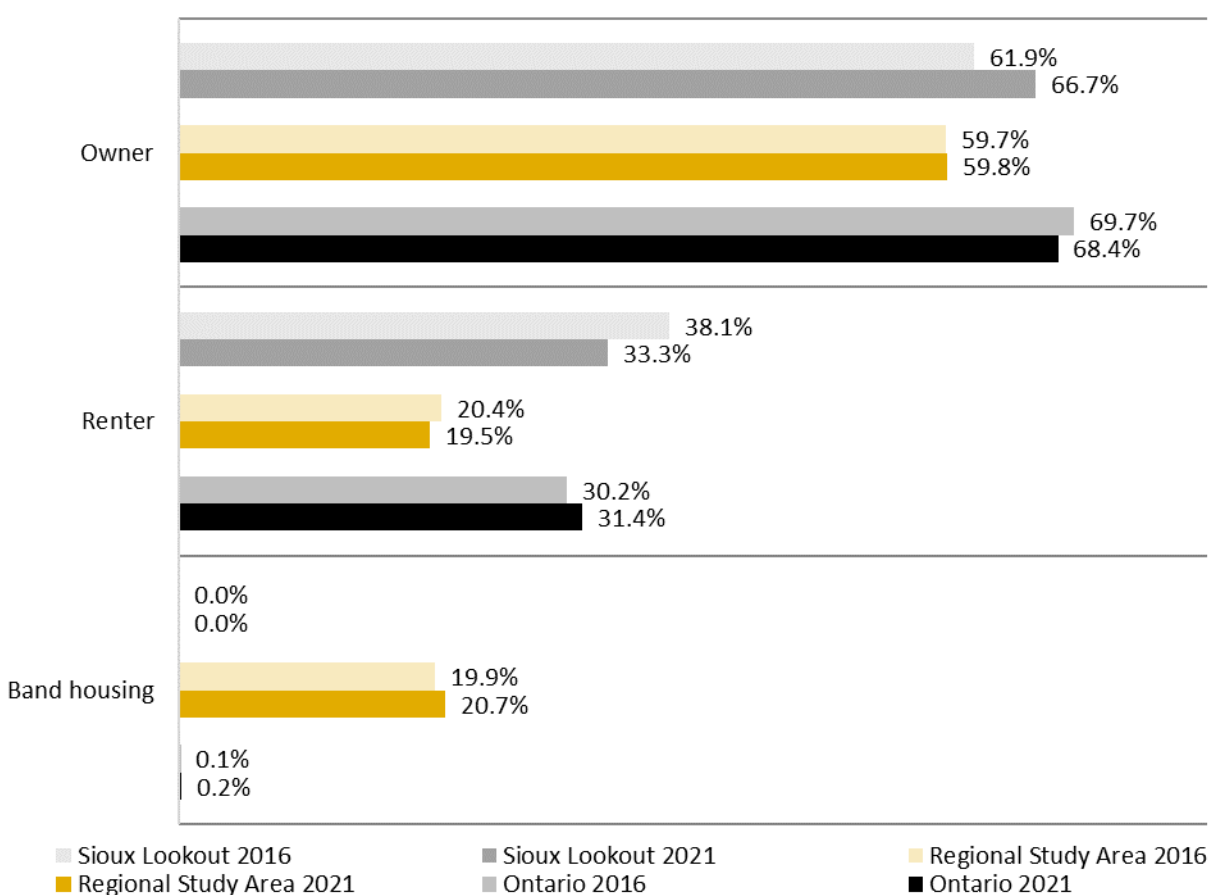
Sioux Lookout is currently experiencing a housing shortage, with some residents citing it as the largest problem the community faces (NWO Community and Baseline Studies Key Person Interview Program 2022). As a result, the community is experiencing high housing prices. There are a higher-than-average number of apartment buildings but a limited number of other residential units. Houses that do come to market sell quickly. A planned condominium development may incentivize some individuals currently living in houses to move, freeing up single family dwellings. While employment is available, a lack of housing is seen as an impediment to those who have found employment in the community and would like to move there. The community administration is actively trying to encourage housing and other development (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.7.6.2 Home Ownership

Figure 2.4-15 details homeownership in Sioux Lookout. Sioux Lookout is unique compared to the Regional Study Area and Ontario in that it has a higher percentage of rental units. As of 2021, 33.3% of units in Sioux Lookout are rentals compared to 19.5% in the Regional Study Area and 31.4% in Ontario.

Despite having a higher-than-average proportion of homes being rented in the community, rental demand remains strong with units being rented out before they go to market. A lack of rental units is cited as being an issue in the community (NWO Baseline Studies Key Person Interview Program 2022-2023).

Figure 2.4-15: Homes Rented vs. Owned in Sioux Lookout, Regional Study Area, and Ontario¹



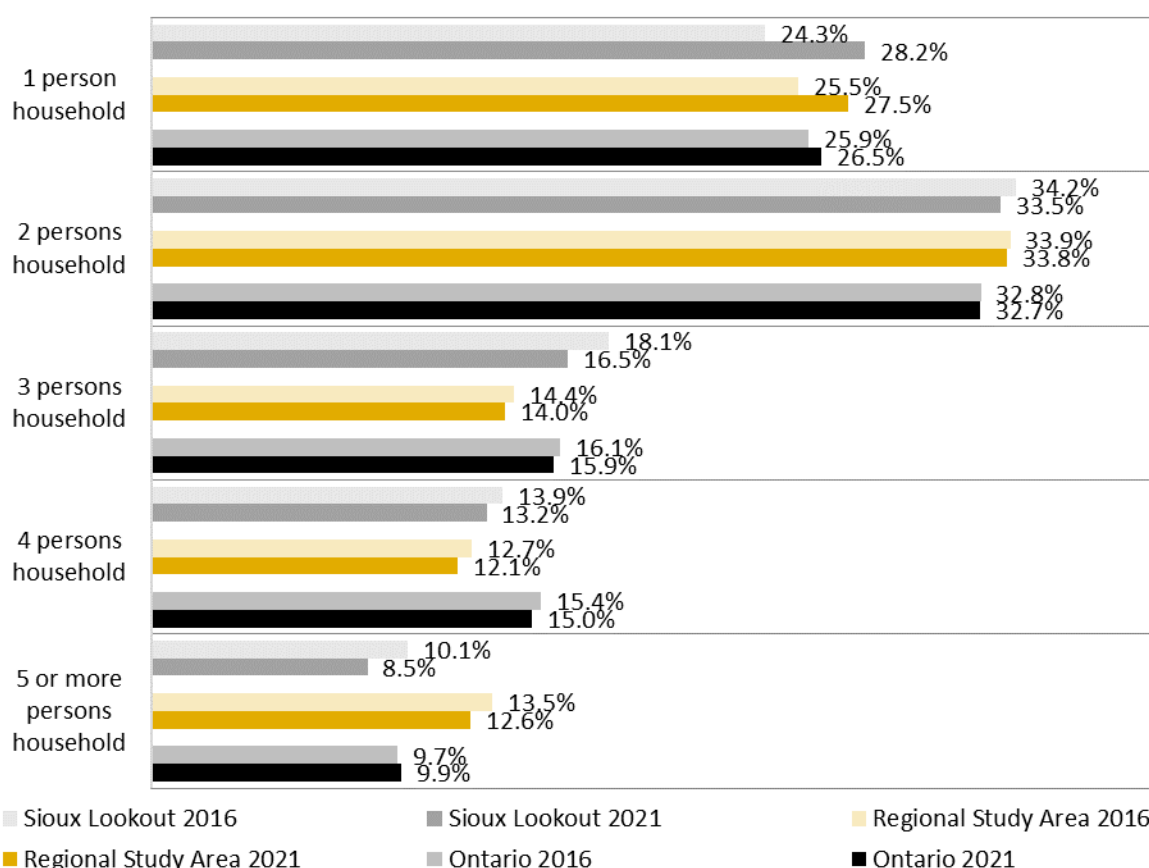
Source: Statistics Canada 2017 and 2022a.

Notes: 1. Band housing is used to define dwellings on reserves. Band housing is a classification used for historical and statutory reasons because shelter occupancy on reserves does not follow usual classification by standard tenure categories (Statistics Canada 2022a).

2.4.7.6.3 Household Size

There has been an increase in households of all sizes in Sioux Lookout except for those with five or more persons, which has seen a decrease. One person households have seen the largest increase, growing from 490 households in the 2016 Census to 660 Households in the 2021 Census. The number of two person households has increased from 690 to 785. The distribution of household sizes in Sioux Lookout closely resembles that of the Regional Study Area and the Ontario average (**Figure 2.4-16**) (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-16: Household Sizes in Sioux Lookout, Regional Study Area, and Ontario

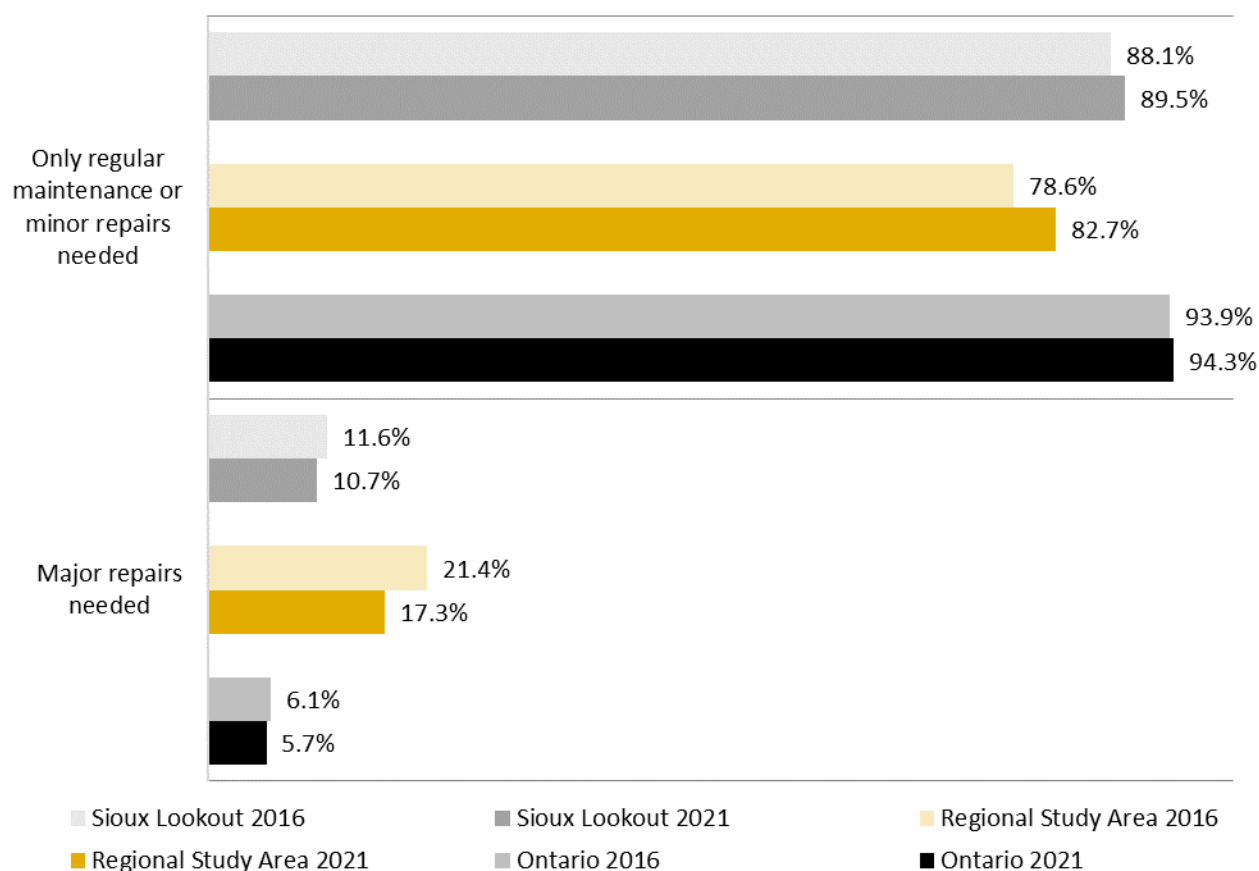


Source: Statistics Canada 2017 and 2022a.

Figure 2.4-17 provides the percentage of dwellings that require regular maintenance and repairs compared to those that require major repairs. While Sioux Lookout has seen an increase in housing, there has also been an increase in the absolute number of dwellings requiring major repairs. As of 2021, 250 dwellings, 10.7% of the total dwellings in Sioux Lookout, require major repairs, an increase of 15 from 2016. This is higher than the proportion of dwellings in Ontario needing major repairs, at 5.7%, but lower than the proportion of dwellings in the Regional Study Area requiring major repairs, at 17.3%. In addition to dwellings requiring major repairs, 105

households have reported living in “not suitable” houses, those that are too small for the number of persons in the household (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-17: Dwellings Condition in Sioux Lookout, Regional Study Area, and Ontario



Source: Statistics Canada 2017 and 2022a.

2.4.7.6.4 Affordable and Social Housing

A lack of affordable housing is cited as an issue in the community (NWO Baseline Studies Key Person Interview Program 2022-2023). According to Sioux Lookout’s community safety and well-being plan, housing is currently the top concern amongst Sioux Lookout residents. Strong population growth has led to a shortage of available housing, including seniors housing, in the Municipality. In the plan, 93% of respondents agreed that access to affordable housing is a challenge. The Municipality of Sioux Lookout has designated housing as an area of priority to increase housing in the community broadly as well as for those which are a part of “hard to house” populations (Municipality of Sioux Lookout 2021). The Municipality of Sioux Lookout has also stated that it supports the location and integration of affordable housing within new or existing development (Sioux Lookout 2018).

KDSB operates family units, seniors housing, and supportive housing programs in Sioux Lookout (NWO Baseline Studies Key Person Interview Program 2022-2023). Their infrastructure includes 11 buildings in Sioux Lookout geared towards singles, couples, or families, and four buildings geared towards seniors (KDSB 2023c). The KDSB is currently working on a 10 unit second-stage housing complex with the First Step Women's Shelter in Sioux Lookout (NWO Baseline Studies Key Person Interview Program 2022-2023).

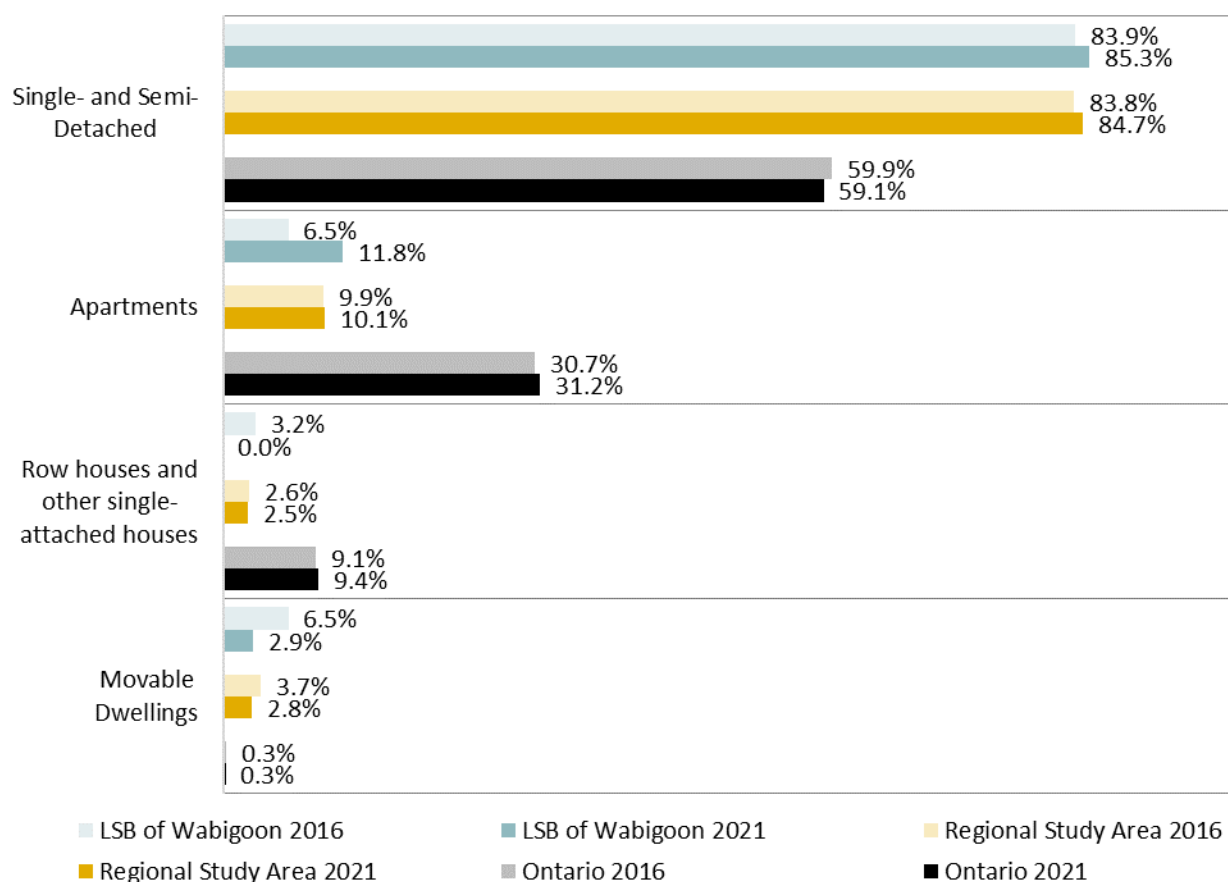
2.4.7.7 The LSB of Wabigoon

2.4.7.7.1 Dwellings Counts and Conditions

From 2016 to 2021 the number of occupied dwellings by usual residents in the LSB of Wabigoon increased from 150 to 245.³⁵ There was also a decrease in the total number of unoccupied, marginal dwellings, and seasonal dwellings from 42 dwellings in 2016 to 21 in 2021 (Statistics Canada 2017, 2022a). Given the small number of unoccupied, seasonal, and marginal dwellings that could potentially be occupied by seasonal residents or are not suitable for year-round occupancy. The vacancy rate in the LSB of Wabigoon is low. As shown in **Figure 2.4-18** the percentage of dwellings that are single- and semi-detached and apartments are similar to that of the Regional Study Area. As of 2021 in the LSB of Wabigoon, 85.3% of dwellings are single- and semi-detached compared to 84.7% in the Regional Study Area. This is much higher than the Ontario average of 59.1%. The number of apartments in the LSB of Wabigoon currently sits at 11.8%, compared to the Regional Study Area at 10.1%. This is lower than the Ontario average of 31.2%. The proportion of dwellings that are movable is also similar between the LSB of Wabigoon and the Regional Study Area, at 2.9% and 2.8% respectively, and higher than the Ontario average of 0.3%. No row houses or other single-attached houses were counted in the LSB of Wabigoon, while in the Regional Study Area they make up 2.5% of the occupied dwellings and in Ontario as a whole they make up 9.4%. (Statistics Canada 2017; Statistics Canada 2022a). A lack of available housing has been noted to be a problem in the community with a low amount of new building occurring (NWO Baseline Studies Key Person Interview Program 2022-2023).

³⁵ Note: 2021 Statistics Canada data for the LSB of Wabigoon shows substantial differences between the long form census data (25% sample data) and 100% sample data. Statistics Canada states that this discrepancy is likely due to the weighted estimates from the long form questionnaire (25% sample data) differing from the census counts (100% sample data). Census counts (100% sample) data are considered by Statistics Canada to be better quality, therefore the number of dwellings in the LSB of Wabigoon will be considered to be 245 for this report. For those statistics that are based off of the 25% sample data only percentages are reported, not actual values.

Figure 2.4-18: Types of Dwellings in the LSB of Wabigoon, Regional Study Area, and Ontario



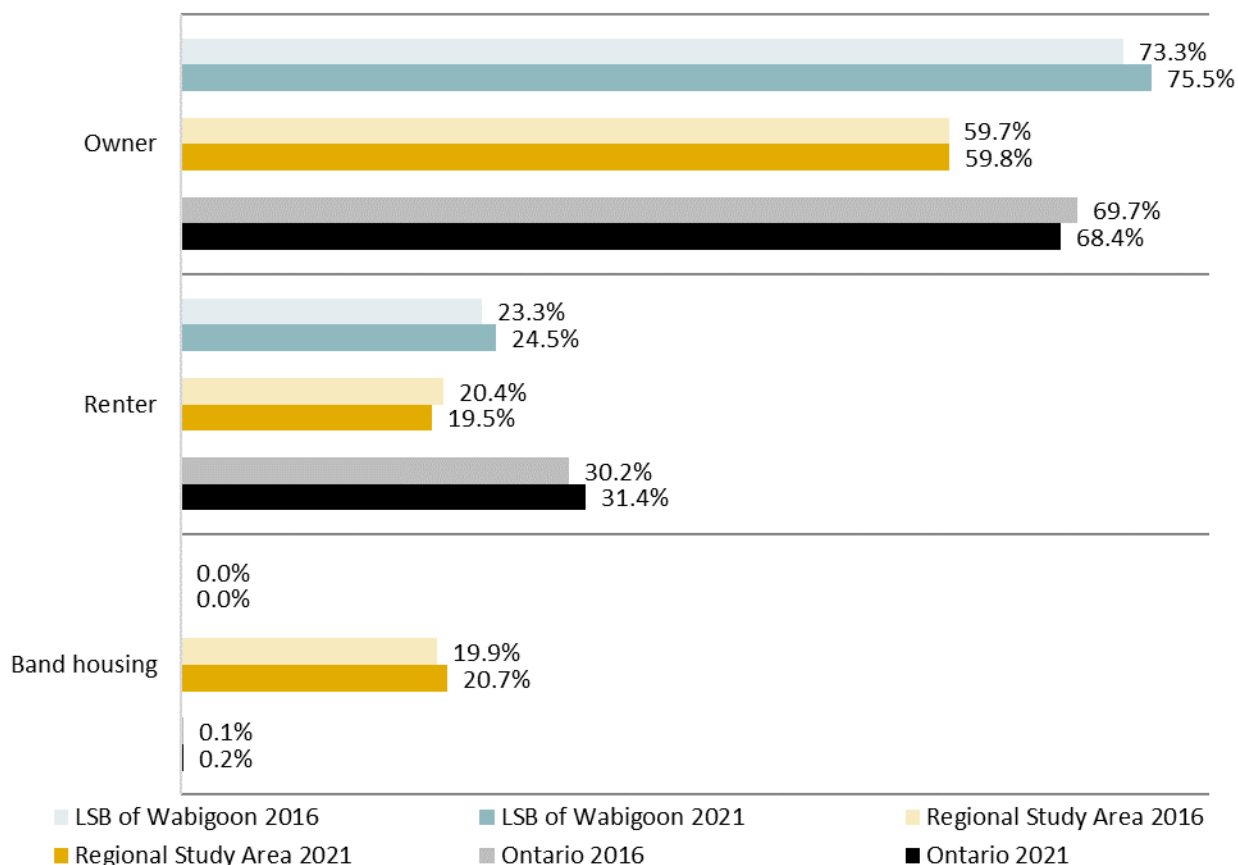
Source: Statistics Canada 2017 and 2022a.

2.4.7.7.2 Home Ownership

The LSB of Wabigoon has seen increases in both rented and owned units, with the number of owned units increasing from 110 to 185 and rented units increasing from 35 to 60 (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-19 presents the proportion of homes being rented and owned in the LSB of Wabigoon. As of 2021, the LSB of Wabigoon has a higher percentage of rentals (24.5%) compared to the Regional Study Area average (19.5%). This is lower than the proportion of homes in Ontario that are being rented, which currently sits at 31.4%.

Figure 2.4-19: Homes Rented vs. Owned in the LSB of Wabigoon, Regional Study Area, and Ontario¹



Source: Statistics Canada 2017 and 2022a.

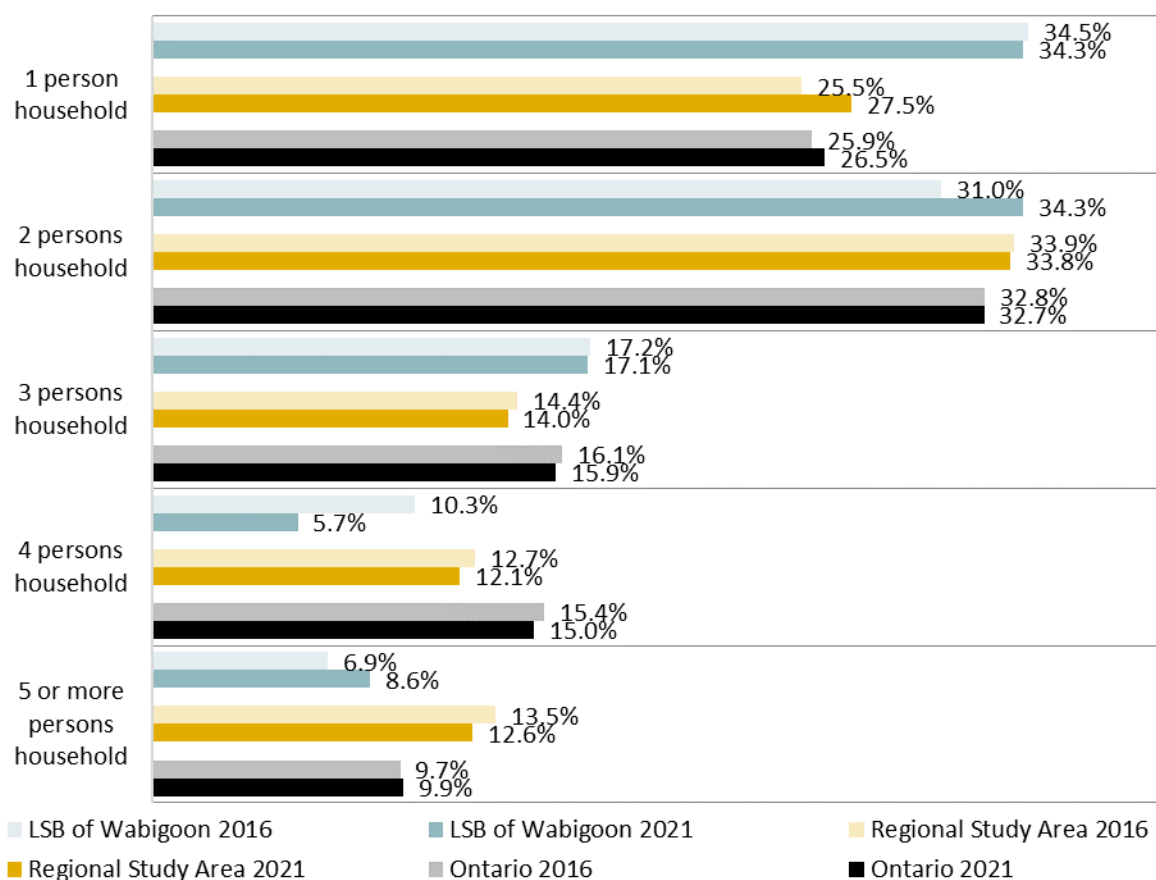
Notes: 1. Band housing is used to define dwellings on reserves. Band housing is a classification used for historical and statutory reasons because shelter occupancy on reserves does not follow usual classification by standard tenure categories (Statistics Canada 2022a).

2.4.7.7.3 Household Size

Figure 2.4-20 details the proportion of dwellings in the LSB of Wabigoon by household size. As of 2021, the percentage of one person and two person households in the LSB of Wabigoon is the same, at 34% in both. This puts the percentage of one person households in the LSB of Wabigoon higher than that of the Regional Study Area and Ontario, which are at 28% and 26%, respectively. The percentage of two person households in the LSB of Wabigoon is identical that that of the Regional Study Area and one percentage point higher than the Ontario average. The proportion of three person households is also higher than that of the Regional Study Area and the Ontario average, at 17% in the LSB of Wabigoon compared to 14% and 16% in the Regional Study Area and Ontario. The number of four and five or more person households, however, is

lower in the LSB of Wabigoon as those categories make up 6% and 9% of the total number of dwellings compared to 12% and 13% in the Regional Study Area and 15% and 10% as the Ontario average (Statistics Canada 2022a).

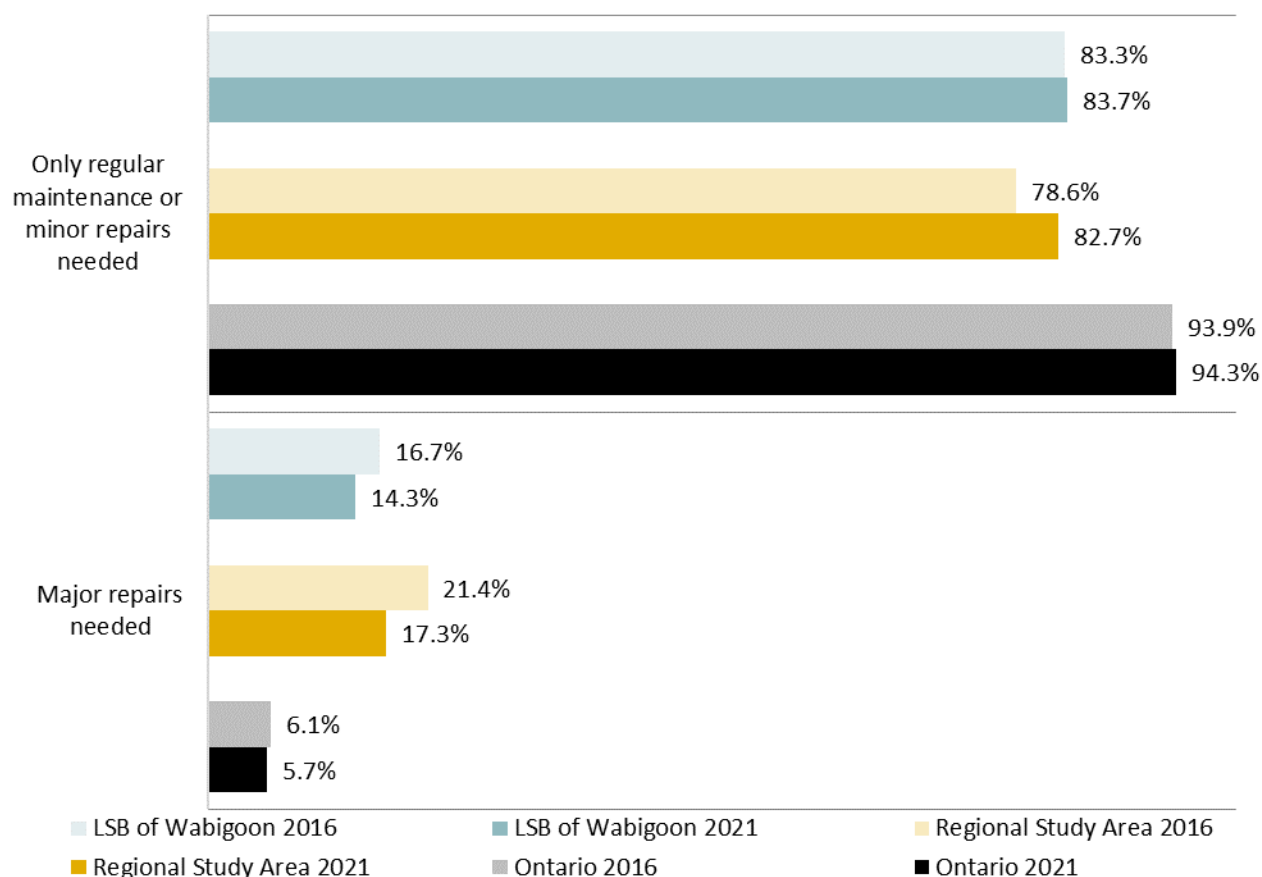
Figure 2.4-20: Household Sizes in the LSB of Wabigoon, Regional Study Area, and Ontario



Source: Statistics Canada 2017 and 2022a.

Between 2016 and 2021 the LSB of Wabigoon saw an increase in dwellings requiring major repairs, up by 10 from 25 to 35. While the number of dwellings requiring major repairs increased, they make up a smaller percentage of total dwellings, down from approximately 16.7% to 14.3%. This can be seen in **Figure 2.4-21** which details the number of dwellings requiring only regular maintenance and repairs compared to those that require major repairs. As of 2021, the proportion of dwellings requiring major repairs makes up a small proportion of the total occupied dwellings compared to the Regional Study Area, where 17.3% of dwellings require major repairs, but is larger than the Ontario average, which is currently 5.7%. As of 2021, no households in the LSB of Wabigoon reported to be living in dwellings that are too small, or “not suitable” for their households (Statistics Canada 2017; Statistics Canada 2022a).

Figure 2.4-21: Dwelling Conditions in the LSB of Wabigoon, Regional Study Area, and Ontario



Source: Statistics Canada 2017 and 2022a.

2.4.7.8 LSB of Melgund, Dinorwic, and Upsala

Dinorwic has approximately 125 to 130 houses in its community, with most of the housing being single family homes. The number of homes in the community has increased in the past 20 years. All of the houses that are in usable condition are currently occupied with no recent sales of any units. Approximately 8 to 10 rental properties exist in the community with some low-income housing that has been purchased from the KDSB (NWO Baseline Studies Key Person Interview Program 2022-2023).

Melgund has approximately 25 full time homes. In 2023 there were no homes available to be purchased in the community but there was land available for development (NWO Baseline Studies Key Person Interview Program 2022-2023).

Homes in Upsala are generally affordable and in suitable conditions but there is a lack of available housing for new residents (NWO Baseline Studies Key Person Interview Program 2022-2023). One challenge noted by interview participants was that if residents vacate their property

and keep ownership of the land but fail to pay taxes, the land reverts to the Crown. Any homes that are available for rent are currently being rented out (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.8 Temporary Accommodations

There are a range of temporary accommodations in the Local Study Area communities, including hotels and motels, RV parks, and campgrounds. Outfitting lodges are described in **Section 2.5.7**. Temporary housing and accommodations (e.g., shelters and transitional housing) are described in **Section 2.4.9**.

2.4.8.1 Ignace

Ignace is reported to have over 90 rooms available throughout its hotels, motels, and bed and breakfasts. **Table 2.4-6** lists the temporary accommodations in Ignace and the number of rooms available in each.

Table 2.4-6: Temporary Accommodations in and near Ignace

Accommodation	Number of Rooms
North Woods Motor Inn	31 rooms
White Otter Inn	20 rooms
Westwood Motel	25 rooms
Lone Pine Inn ¹	15 rooms

Source: Amec Foster Wheeler 2017; Appraisal Group 2018; Ontario Parks 2023a.

Notes: 1. Lone Pine Inn has reduced capacity in the winter.

Ignace also has temporary accommodations at the Sandbar Provincial Park Campground which has 75 campsites (Ontario Parks 2023a).

2.4.8.2 Dryden

Dryden is reported to have over 400 rooms available throughout its hotels, motels, and bed and breakfasts. The Dryden Capacity Study (Explorer Solutions 2022a) also notes that there is a lack of variety in accommodation options for temporary workers and visitors during certain periods throughout the year (i.e., hotels and motels). Currently, there are not enough locations to accommodate temporary worker and transient communities (KDSB 2023e). **Table 2.4-7** lists the temporary accommodations and number of rooms.

Table 2.4-7: Temporary Accommodations in and near Dryden

Accommodation	Number of Rooms
Best Western Dryden Hotel and Conference Centre	89 rooms
Comfort Inn Dryden	61 rooms
Holiday Inn Express	60 rooms
Kowality Motor Inn	30 rooms
Riverview Lodge	12 rooms
Chalet Inn Motel	16 rooms
Dryden Motel and Suites	5 rooms
Evening Star Motel	8 rooms
Hide Away Motel	14 rooms
Timberland Motel	24 rooms
Town and Country Motel	37 rooms
Bonny Bay Camp	8 cabins

Source: Appraisal Group 2018; Bonny Bay Camp n.d.a.; Explorer Solutions 2022a; and Ontario Parks 2023b.

Dryden also has temporary accommodations at the Aaron Provincial Park Campground (100 campsites), Birchland Trailer Park (30 RV sites and 28 campsites), Nature's Inn Tent and RV Park (25 RV sites and 6 campsites), and the Northwestern Tent and RV Park (40 RV sites and campsites). (CAA Club Group n.d.; CAA Club Group 2022; Explorer Solutions 2022a; Nature's Inn 2018; and Ontario Parks 2023b).

2.4.8.3 Municipality of Machin

Machin is reported to have over 25 rooms available throughout its hotels, motels, and bed and breakfasts. **Table 2.4-8** lists the temporary accommodations in Machin and the number of rooms available in each.

Table 2.4-8: Temporary Accommodations in Machin

Accommodation	Number of Rooms
Northside Motel	17 rooms
Andy Myers Lodge	15 cabins
Blue Lake Resource	5 cabins
Pine Grove Motel and Camp	11 rooms
Vermillion Bay Lodge	Rooms in main lodge and 8 cabins

Source: Amec Foster Wheeler 2017; Andy Myers Lodge 2023; Blue Lake Resort 2021; Canadian Real Estate Association (The) 2023; Vermilion Bay Lodge 2023.

Machin also has temporary accommodations at the Blue Bird Trailer and Campgrounds with 50 campsites (Campendium 2023). Temporary residents have been filling up seasonal residences which is reducing housing availability (KDSB 2023e).

2.4.8.4 Municipality of Sioux Lookout

Sioux Lookout is reported to have over 185 rooms available throughout its hotels, motels, and bed and breakfasts. **Table 2.4-9** lists the temporary accommodations in Sioux Lookout and the number of rooms available in each.

Table 2.4-9: Temporary Accommodations in Sioux Lookout

Accommodation	Number of Rooms
Sioux Lookout Inn and Suites	59 rooms
Forest Inn and Conference Centres	42 rooms
Sunset Inn and Suites	61 rooms
Lamplighter Motel	25 rooms
Nutt's Country Cabin	4 cabins
Northumbrian Resort	7 cabins and 6 RV sites

Source: Forest Inn & Conference Centre 2018; Lamplighter Motel 2023; Northumbrian Resort. n.d.; Nutt's Country Cabins 2019; Ontario Parks 2023c; Sioux Lookout Inn and Suites 2023; Sunset Inn & Suites n.d.

Sioux Lookout also has temporary accommodations at the Abram Lake Resort and RV Park (8 cabins, 37 RV sites, and 40 campsites) and Ojibway Provincial Park (59 campsites) (Abram Lake 2022a; Abram Lake 2022b; Ontario Parks 2023c).

2.4.8.5 Wabigoon Village

Wabigoon Village is reported to have at least five rooms available throughout its hotels, motels, and bed and breakfasts. **Table 2.4-10** lists the temporary accommodations in Wabigoon Village and the number of rooms available in each.

Table 2.4-10: Table Temporary Accommodations in Wabigoon Village

Accommodation	Number of Rooms
Lang's Motel	5 rooms
Wabigoon Lake RV Park (campsite)	8 RV sites and 9 tent sites
Bear Paw Landing	5 cabins
Polar Star Lodge	16 cabins

Source: Bear Paw Landing 2023; Lang H., personal communication, June 27, 2023; Polar Star Lodge n.d.;

Wabigoon Village also has temporary accommodations at the Wabigoon Lake RV Park with 8 RV sites and 9 campsites (Wabigoon Lake RV Park n.d.b.).

2.4.8.6 Dinorwic

The Pine Sunset Lodge is near Dinorwic and has 9 cabins and a bunkhouse that can sleep 14 people (Pine Sunset Lodge n.d.).

2.4.9 Social Services

This section describes social services in the Local Study Area communities along with a description of key regional service providers. Social services in the Local Study Area include childcare,³⁶ services for seniors, mental health and substance use services, Indigenous service providers, services to support gender-based violence (e.g., shelters and transitional housing), and child and adult protective services. Social services are key to supporting vulnerable populations, as these populations are often more reliant on the services provided (GBA+ Workshop 2023). Many key service providers, such as the KDSB, Tikinagan Child and Family Services, and FIREFLY operate across the Local Study Area and Regional Study Area.

Providing and accessing social services in the Local Study Area and Regional Study Area is challenging. Service providers noted that they are operating at capacity and that the services offered are insufficient to meet demand. Their ability to provide adequate services is often hampered by difficulties recruiting staff, which is exacerbated by the lack of available housing in Local Study Area communities. Funding, and the broad catchment areas they must serve, are further barriers for social service providers in the region. Funding is not only insufficient, but also it is often inconsistent and earmarked for certain programs or concerns by funders that do not reflect the local situation. Many service providers operate throughout the region, which increases logistical challenges for service providers (GBA+ Workshop 2023; NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

³⁶ Childcare encompasses various types of programs including nursery, daycare, and before and after school programs. Childcare operators and programs vary across Northwest Ontario and are often unique to community needs.

Clients also face challenges accessing services, including not knowing about service availability; changes in service provision; and a lack of transportation meaning access to some services is limited. These challenges disproportionately affect the more vulnerable populations in the community (GBA+ Workshop 2023; NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

Specific challenges in social services for the Local Study Area communities are described below.

2.4.9.1 Regional and Local Services Providers

Not all communities in the Local Study Area are home to the same suite of social services; however, many of the service providers serve multiple communities within the Local Study Area and Regional Study Area. A summary of the key service providers, the areas they serve, and the locations of relevant facilities are provided.

2.4.9.1.1 Kenora District Services Board

The KDSB is a key provider of social services in the Regional Study Area. Formed in 1999 under the *District Social Services Administration Boards Act, 1990*, it is a service system manager for the Local Study Area communities and the Regional Study Area (Government of Ontario 1990f). The delivery model for KDSB focuses on an integrated approach for clients. Social services are often developed independently to address a targeted need. The integrated approach seeks to support the social and economic well-being of clients through coordination with multiple supports and services (KDSB 2022a). Integrated social services include community housing, early years services, employment and financial services, and emergency medical services. Community housing is described for each Local Study Area community in **Section 2.4.7**, employment is described in **Section 3.2**, and emergency medical services are described in police and emergency services in **Section 2.4.4**.

Childcare³⁷ and early years programs are legislated by Ontario's *Child Care and Early Years Act, 2014* (Government of Ontario 2014d). The KDSB is the primary provider of childcare in the Regional Study Area, with early learning and care programs in Ignace, Dryden, Machin, and Sioux Lookout. However, the KDSB does not directly provide childcare. Service agreements are put in place with licensed childcare operators throughout the district (KDSB n.d.a). The KDSB has also partnered with the provincial EarlyON child and family programs. The EarlyON child and family program offers free support services and programs to parents, caregivers, and children under six years of age. EarlyON programs vary across the region, as they are tailored to the needs of the community they are located in. Qualified early childhood professionals help families and caregivers make personal connections and access a network of resources (City of Toronto n.d.). Families and caregivers may attend any EarlyON program across the Kenora District.

The KDSB office headquarters is in Dryden and the full suite of services are provided in the City. Residents from surrounding communities, such as the Municipality of Machin, also travel to Dryden to access KDSB services (NWO Baseline Key Person Interview Program 2022-2023). The KDSB has a case manager in the Ignace office to help clients (NWO Baseline Studies Key Person Interview Program 2022-2023). The KDSB also has an integrated social services office in Sioux Lookout, operating childcare centres and a sexual assault and counselling centre in the

³⁷ "Childcare" encompasses various types of programs (i.e., nursery, before school program, after school program, etc.)

community, as well as supporting (i.e., funding) other organizations in Sioux Lookout for Indigenous childcare and the two EarlyON centres located in the Municipality (NWO Baseline Studies Key Person Interview Program 2022-2023). KDSB does not currently offer full-time childcare in Ignace or Machin but has plans for expanding services there. A primary challenge in expanding childcare services in the region is having access to qualified staff (NWO Baseline Studies Key Person Interview Program 2022-2023).

According to the KDSB 2022-2026 Strategic Plan, mental health and addictions are a growing issue through the region. Existing supports and services are insufficient to address the need, particularly for youth. The demand for mental health and addictions services further strains other services such as EMS and policing.

2.4.9.1.2 Kenora-Rainy River Districts Child and Family Services

Kenora-Rainy River Districts Child and Family Services is a non-profit community organization mandated under the *Child and Family Services Act, 1990* and funded by the Government of Ontario to protect children and youth in the Kenora and Rainy River Districts from abuse and neglect (KRRCS n.d.; Government of Ontario 1990f). The Kenora-Rainy River Districts Child and Family Services main office is located in Kenora, with local offices in Dryden and Sioux Lookout (of the Local Study Area).

The Kenora-Rainy River Districts Child and Family Services provides counselling, teaching, and support programs to children and youth aged 18 years and younger and also work with families to provide guidance and parenting techniques. The Kenora-Rainy River Districts Child and Family Services also works with community partners to ensure the families they work with have access to other programs and services in the community to meet their needs (KRRCS n.d.).

The agency is involved in several in-home and extended support, care, counselling, and training. They also work and train foster parents, support/counsel adoptive parents, assist adolescents with emancipation/independence, and assist with child placement and investigations.

2.4.9.1.3 FIREFLY

FIREFLY provides children's services in the Kenora and Rainy River Districts, delivering a variety of programs and services to support children's well-being in northwestern Ontario, including child development programs, youth justice services, youth mental health services, autism support, and foster care treatment (WSP 2022c). With services in both Dryden and Sioux Lookout, FIREFLY works to provide services that meet the diverse needs of communities in northwestern Ontario (Firefly n.d.a).

FIREFLY offers counselling and therapy to children and youth and also coordinates treatment plans. In 2022, FIREFLY had 139 full-time staff, 22 part-time staff, 19 casual staff, and 13 temporary staff. As of March 2022, 62 staff worked in FIREFLY's developmental services department, 39 in the mental health department, 36 in the child care department, 16 in the coordinated services department, 12 in the early years department, and 30 in the administration department. In 2022, 1,399 referrals were made for Child and Youth Developmental Services and 1,038 referrals were made for Children and Youth Mental Health Services (Firefly 2022). FIREFLY's peak referral month saw 264 referrals; approximately 66 referrals per week and nearly 13 referrals per day (Firefly 2022). FIREFLY's Dryden and Sioux Lookout locations provided

mental health services to 173 and 114 clients over the 2021-2022 period, respectively (Firefly 2022).

FIREFLY programs offered in Dryden and Sioux Lookout include (Firefly n.d.b):

- Child development services for families, children, and youth diagnosed with a developmental delay, disability, or are at risk of development disability;
- Stop Now and Plan ("SNAP") program, for children ages 6 to 11 and their families to help with impulse control, emotion regulation, and problem solving;
- Treatment foster care to support families whose home is designated as a treatment foster home; and
- Youth justice committee provides an alternative to formal court with a focus on restorative justice approaches.

2.4.9.1.4 Tikinagan Child and Family Services

Incorporated in 1984, Tikinagan Child and Family Services ("TCFS") is one of the first Indigenous-controlled agencies in Canada, as well as Canada's first agency to have jurisdiction over both Indigenous and non-Indigenous children. TCFS is also Ontario's first Indigenous agency to be recognized as a child protection organization, along with Payukotayno Family Services (TCFS n.d.a). TCFS provides child and family services to 30 First Nation communities and has an agreement with Kenora-Rainy River District Child and Family Services to provide child protection services to families in Dryden, Ignace, and Sioux Lookout, along with other municipalities in the Regional Study Area. TCFS' service model is led by a belief in community responsibility to protect children and families (TCFS n.d.c). TCFS services are focused on child protection, prevention, foster parenting, and adoption, working to help children and their families stay together when possible (TCFS n.d.b).

TCFS employs over 500 staff across 35 locations in northwestern Ontario, many of which are based in First Nations communities. According to TCFS' 2021-2022 Annual Report, TCFS supported 116 youth over the age 18 years old, 1,061 families, and 347 children to go home to their families (TCFS 2022).

2.4.9.1.5 Community Living Dryden-Sioux Lookout

Since the 1950s, Community Living Dryden-Sioux Lookout ("CLDSL") has been partnering with families and individuals living with intellectual disabilities to support their independent living in the Dryden and Sioux Lookout areas. Ignace is also part of CLDSL's catchment area, however CLDSL does not currently support any individuals living in the Township (NWO Community and Baseline Studies Key Person Interview Program 2022). Through advocacy, mentorship, and collaboration, CLDSL works to foster a sense of community belonging for those living with intellectual disabilities (CLDSL n.d.; GBA+ Workshop 2023). CLDSL provides several programs ranging from clinical services to community inclusion programs, to employment and residential services in order to support independent living (NWO Community and Baseline Studies Key Person Interview Program 2022). In the 2021-2022 fiscal year, CLDSL supported 31 people with their shared living services, 43 people in supported independent living, 94 people with community participation supports, 11 people with the family home program, 19 people with

employment supports, and 18 caregivers and 12 children with the healthy generations program (CLDSL 2022).

2.4.9.1.6 Canadian Mental Health Branch of Fort Frances

The Canadian Mental Health Branch of Fort Frances employs approximately 70 people across the following services: administration, geriatric mental health, community support, psychogeriatric resource consultants, peer support, and safe bed programs (CMHA n.d.). The Canadian Mental Health Branch of Fort Frances mission is to advocate and educate, while providing residents of the Kenora-Rainy River Districts with client-centered, recovery-based services (CMHA n.d.). Within the Local Study Area, service offices are located in Dryden and Sioux Lookout. A mobile crisis line is available from 7 a.m. to 2 a.m.

The Canadian Mental Health Branch of Fort Frances district mental health for older adults program offers community-based services to seniors 60 years of age and older who are living in both community and facility-based environments (i.e. personal residence, supported housing, chronic/acute care, and long-term care) with dementia or other serious mental illness, such as clinical depression, anxiety, schizophrenia, Alzheimer's Disease, and/or mood disorders. Clients can access a number of programs that provide cognitive screening, therapy, counselling, care/treatment, referral/advocacy, education, and community outreach (CMHA n.d.).

2.4.9.1.7 Anishinaabe Abinoojii Family Service

Anishinaabe Abinoojii Family Service ("AAFS") administers child protection and prevention services to 14 First Nations and five communities in the northern region of Treaty #3 Territory, including the communities of Dryden, Wabigoon Village, and Sioux Lookout (AAFS n.d.a). AAFS has an Elder's council consisting of 28 Elders from the communities served (AAFS 2021). The first prevention services program began in 1986 (Anishinaabe Abinoojii Family Services n.d.b). The Anishinaabe Abinoojii Family Service's mission is to protect and support the well-being of children through services including cultural programming, caregiving, and customary care, while also supporting their families with preservation and prevention services. As of March 31, 2021, AAFS supported 210 children in care through 75 alternative care homes. In the month of March 2021, AAFS served 46 families through their family preservation monthly service and 29 youth through their monthly youth supports (AAFS 2021).

2.4.9.1.8 Paawidigong First Nations Forum

Paawidigong First Nations Forum is a not-for-profit organization established in 1996 that provides culturally-appropriate health programs and social services to First Nations communities in the Dryden Area, including Eagle Lake First Nation, Wabigoon Lake Ojibway Nation, Wabauskang First Nation, Lac Seul First Nation, and Lac Des Milles Lacs First Nation (PFNF n.d.). Programs and services through Paawidigong First Nations Forum focus on Indigenous healing and wellness, Indigenous Fetal Alcohol Spectrum Disorder, community health, home and community care nurse, diabetes nurse and diabetes education program, mental wellness, and mental health and addictions (PFNF n.d.).

2.4.9.1.9 Métis Nation of Ontario – Healing and Wellness Branch

The Métis Nation of Ontario (MNO) consists of approximately 400 staff members and has offices located across northwestern Ontario, with an office in Kenora in the Regional Study Area and an office in Dryden in the Local Study Area (MNO 2022). There are over 29,000 citizens of the MNO. The MNO's Healing and Wellness Branch works with Indigenous and non-Indigenous partners to provide community-based and culturally appropriate programs and services to support the mental, physical, and emotional needs of Métis individuals living in the Dryden area, including home care supports, case management services, friendly visits, and transportation for appointments within Dryden (NorthWest Healthline 2022; MNO n.d.). Healing and wellness programs/services offered include mental health and addictions, victim services, justice services, community support, infant well-being, family well-being, cancer care, diabetes, and more (MNO n.d.). Over 2021-2022, MNO served over 1,200 clients with their mental health and addictions services, with an average of 65 referrals per month and a wait time of 3 months for non-urgent service. MNO supported over 674 clients with their restorative justice programming (MNO 2022).

2.4.9.1.10 Northwest Ontario Métis Child and Family Services

Northwest Ontario Métis Child and Family Services ("NWOMCFS") has several locations in northwestern Ontario, with their head office located in Kenora in the Regional Study Area and a branch office located in Dryden in the Local Study Area. NWOMCFS provides prevention services, family preservation, youth services, cultural services, and repatriation services. NWOMCFS' mission is to advocate and facilitate healing and reconciliation for Métis citizens, offer individual and family programming and child safety services that are rooted in and delivered with care and respect, and work collaboratively with other social service agencies and government partners at various levels to ensure positive outcomes for Métis children, youth, and families in northwestern Ontario (NWOMCFS n.d.).

2.4.9.2 Ignace

2.4.9.2.1 Childcare Services

There is currently one licensed childcare provider in Ignace. There is an unmet need for licensed full-time childcare in Ignace, as well as after school care and services that accommodate shift work (NWO Community and Baseline Studies Key Person Interview Program 2022; Ignace EarlyON Child and Family Centre Parent Focus Group 2023). Further, it is likely that demand for full-time childcare will increase as a result of the Canada-Wide Early Learning and Child Care (CWELCC) agreement, which reduces the cost of childcare to an average of \$10 per day for children under the age of six (SMM and InterGroup 2022; Government of Ontario 2022g). In addition to lowering fees for licensed childcare operators enrolled in the system, the new CWELCC system aims to increase access to childcare options by creating approximately 86,000 new licensed spaces by 2026 and support the expansion of childcare spaces in the regions and communities that need it most (Government of Ontario 2022g).

During the Ignace EarlyON Child and Family Centre Parent Focus Group 2023, several challenges were identified as a result of the unmet childcare needs in Ignace. Parents noted that lack of access to childcare affects both the children and parents. Parents would like their children to be able to spend the day outside of the home and to socialize with other children, which could also help relieve the stress and isolation that comes with being a stay-at-home parent. Stay-at-home

parents have found it difficult to go back to work without full-time childcare support and often find unlicensed childcare (i.e., babysitters) unaffordable, as costs range from \$10-\$15 per hour. Parents further noted frustration with a new childcare facility that was supposed to open in 2020 and the lack of communication around that project. Lack of childcare has a disproportionate impact on mothers, who are often the primary caregivers of children (Sharma, Chakrabarti, & Grover 2016). Limited childcare options inhibit mothers who need or want to work from being able to do so (Havens 2023).

Capacity constraints in childcare is an issue across the region and province; according to Ontario's Early Years and Child Care Annual Report 2022, it was estimated that there are enough spaces in licensed child care centres for 24% of children in Ontario³⁸ (Government of Ontario 2023m).

Ignace Nursery School

Currently, the Ignace Nursery School is the only licensed childcare provider in the community but does not offer full-time care.

The Ignace Nursery School is located within the Crossroads Facility. Ignace Nursery School's physical space is in good condition, and the school also has an outdoor play area that is open to the public. The Ignace Nursery School operates from September to June for four half days per week (Monday and Wednesday 1:00 PM to 3:30 PM and Tuesday and Thursday 9:00 AM to 11:30 AM) (NWO Community and Baseline Studies Key Person Interview Program 2022). Through partnership with the KDSB, the Ignace Nursery School is licensed under the Ontario Ministry of Education Childcare Licensing System for 14 children, ages 2 to 4 years, per session. The school employs two part-time staff and a part-time supervisor. The cost for one child per session/day is \$12, however the Nursery School has signed on for the Canada-wide Early Learning and Child Care system to provide their service at \$10 per session/day (NWO Baseline Studies Key Person Interview Program 2022-2023). Each program is staffed with either registered early childhood educators and/or individuals in the process of attaining their early childhood education diploma. Hiring staff is noted as a servicing gap (WSP 2022c). The Ignace Nursery School is operating under capacity; however, this is due to its limited hours of operation (half days).

The Ignace Nursey School Parent Cooperative also oversees the EarlyON drop-in program (WSP 2022c). EarlyON employs one-part time staff and a part-time supervisor (KDSB n.d.c).

Childcare at Ignace Public School

There are currently no licensed full-time childcare services in Ignace. The lack of full-time childcare is one of the primary gaps in the community's social services. However, under the auspices of the KDSB and in partnership with the Keewatin Patricia District School Board, the Ignace Public School underwent an architectural analysis in fall 2022 for the potential of a full-day childcare program and after-school program (WSP 2022c). Results of the analysis determined that the previous high school library would be ideal for a new childcare facility. A full-day program at the school would be for a range of ages ("family age grouping"), as the Township

³⁸ The estimation does not account for children cared for in homes contracted with licensed home child care agencies. All the "Percentage of children aged 0-12 for whom there are licensed child care spaces" are updated with the 2022 Summer child population projection data, Ontario Ministry of Finance (Government of Ontario 2023m).

is not large enough to support programs for individual age groups. The proposed full day childcare program would be licensed as a family mixed grouping for 13 children under 12 years of age.

2.4.9.2.2 Services for Seniors

Services for seniors are a gap in Ignace and the surrounding area. In particular, the lack of seniors housing and a long-term care facility, as well as the distance to Mary Berglund Community Health Centre Hub ("MBCHCH") for health care services, are barriers in the ability for Ignace seniors to age in place (NWO Baseline Studies Key Person Interview Program 2022-2023; WSP 2022c). The Silver Tops Seniors Centre is a key resource for seniors in the community to access social support and activities (NWO Baseline Studies Key Person Interview Program 2022-2023).

Silver Tops

Founded in 1994, the Ignace Silver Tops organization owns and operates their facility for its 60 to 80 members. The facility is located in a former highway motel and tavern constructed in the 1970's that was purchased by Mattabi Mines to house its employees from the early 1980s until 1992.

Today, Silver Tops provides several weekly programs for its members such as lunches, book clubs, exercise/music in motion, paramedicine, crafts, and cooking demonstrations. In addition, Silver Tops hosts community events ranging from anniversary/birthday celebrations and funerals to town hall meetings and workshops/presentations. Silver Tops also reconvened the senior housing committee in May 2023 to help coordinate (with various partners) the development of a 20-unit housing complex to be built in Ignace (Lederer 2009).

In 2022, Silver Tops replaced and updated the flooring, repainted the interior, and upgraded cleaning equipment (i.e., industrial floor scrubber). They are also in the process of replacing the front doors with electric doors and upgrading the HVAC and exterior windows to help meet industry safety, energy, and accessibility standards.

2.4.9.2.3 Mary Berglund Community Health Centre Hub

The MBCHCH provides space to the clinical psychologist and community mental health and Indigenous support worker provided by Dryden Regional Mental Health. Patients can access therapy in-person or virtually. Dryden Regional Mental Health also provides case management services through the MBCHCH (see **Section 4.3** for more information on health facilities) (InterGroup 2022b; NWO Community and Baseline Studies Key Person Interview Program 2022). Mental health supports in the community are limited and noted as a gap (SMM and InterGroup 2022).

A primary challenge in Ignace is the distance from the Township's residential neighbourhoods to MBCHCH. Individuals who do not have a vehicle to transport themselves to the MBCHCH face a challenge in accessing MBCHCH's services, as the MBCHCH is a long walk down Highway 17 with no sidewalks, leaving residents reliant on other community members or walking down the highway to access those services (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.4.9.2.4 Services to Support Survivors of Gender-Based Violence

There are no shelters for victims of gender-based violence located within the Township. The closest shelter for victims of gender-based violence to Ignace is Hoshizaki House in Dryden.

2.4.9.3 Dryden

2.4.9.3.1 Childcare Services

Childcare programs are operating at capacity in Dryden (WSP 2022c). In Dryden, the KDSB is the primary childcare provider, operating four locations, and partnered with the Dryden Nursery School Cooperative and Homeward Bound program at Dryden Native Friendship Centre ("DNFC"). Childcare facilities in Dryden are currently operating at capacity in all locations with a minimal waitlist. Childcare providers have noted that it is likely they will need to double (or triple) their workforce if the universal childcare agreements entered into between Ontario and the federal government results in \$10/day childcare as the demand for spaces is likely to increase (Government of Canada 2022b). A primary barrier in expanding childcare services is a lack of qualified staff available in the region (WSP 2022c). Participants of the NWO Community and Baseline Studies Key Person Interview Program 2022 noted that local and nearby post-secondary institutions are not producing enough early childhood educators each year to support the region's needs, and more planning is required to better attract and prepare individuals for that work.

Early Learning Centres and EarlyON through the KDSB

In Dryden, there are six childcare centres, including Albert Street Early Learning Centre, New Prospect Early Learning Centre – New Prospect School, Open Roads Early Learning Centre – Open Roads School, St. Joseph's Early Learning Centre, Dryden Nursery School Cooperative - New Prospect School, and Homeward Bound (**Table 2.4-11**) (KDSB n.d.c). The costs for care range from half-day care rates (toddler care to after school at \$12/day) to full day care rates (e.g., infant care (\$33.08/day), toddler (\$22.44/day), and preschool (\$21.26/day) (KPDSB n.d.).

As neighbourhood centres, these facilities provide parents, children, and caregivers a place to connect through organized programming. Through the EarlyON child and family centres, programs and community services are provided to assist and support the entire family (KDSB n.d.b). EarlyON child and family centres also offer free, drop-in programs for children and their parents/caregivers, available at the Albert Street Early Learning Centre, the KDSB Head Office (King Street), and Homeward Bound locations.

Table 2.4-11: Childcare Services in Dryden

Name	Space Available (Preschool)	Space Available (Afterschool)	Hours of Operation	Duration
Albert Street Early Learning Centre	Infants: 10 Toddlers: 15	Family Age Grouping: 15	7:30 AM-5:30 PM (Monday-Friday)	September-May
New Prospect Early Learning Centre – New Prospect School	Toddlers: 15 Preschool: 20	Kindergarten: 26 Primary/Junior School Age: 30	7:30 AM-5:30 PM (Monday-Friday)	September-May
Open Roads Early Learning Centre – Open Roads School	Preschool: 16	Kindergarten: 26 Primary/Junior School Age: 30	7:30 AM-5:30 PM (Monday-Friday)	September-May
St. Joseph's Early Learning Centre	Preschool: 20	Kindergarten: 26 Primary/Junior School Age: 30	7:30 AM-5:30 PM (Monday-Friday)	Not specified
Dryden Nursery School Cooperative - New Prospect School	Preschool: 16	-	9:00 AM – 11:30 AM & 1:00 PM-3:30 PM (Monday-Friday)	September-May
Homeward Bound (DNFC)	-	2 Family Age Groupings of 15 each	8:00 AM-5:30 PM (Monday-Friday)	Not specified

Source: KDSB n.d.d.

The majority of childcare options in Dryden are not year-round (see **Table 2.4-11**), which can impact the ability of parents to work fulltime. This barrier particularly impacts women, who are often the primary caregivers of children, who may need or want to work year-round but may be unable to do so due to limited childcare options in their community (Havens 2023).

2.4.9.3.2 Services for Seniors

Services for seniors are limited in Dryden. Gaps and barriers to senior services identified include hours of operation (i.e., facilities are limited on evenings and weekends), limited translation services for Indigenous and new comer seniors, lack of transportation options (with those that are available for seniors being limited on evenings and weekends and only operate within city limits), limited places for seniors to obtain affordable food, unaffordable recreational activities, no centralized location to see available volunteer opportunities, and limited in-home supports (MNP 2021).

Dryden Go Getters Senior Centre

The Dryden Go Getters Senior Centre is open to residents 55 years and older at the cost of \$20/year. The centre offers several recreational, educational, and social activities such as line and square dancing, bingo, board games, darts, carpentry, Swedish embroidery, and walk aerobics. The centre also organizes a potluck dinner and entertainment at the monthly general membership meeting (NorthWest Healthline 2022).

Patricia Region Senior Services

Patricia Regional Senior Services provides various services and programs to help Dryden seniors live an independent lifestyle that maintains their health and safety. Services provided include at-home aids, friendly visits, and transportation (City of Dryden n.d.c).

2.4.9.3.3 Services to Support Survivors of Gender-Based Violence

Hoshizaki House Dryden District Crisis Shelter: Emergency Women's Shelter

The Hoshizaki House Dryden District Crisis Shelter serves communities in and around Dryden, Ignace, and Vermillion Bay. Hoshizaki House has 10 beds to provide a safe and secure emergency shelter for women and children who are victims of domestic violence (Hoshizaki House n.d.). Hoshizaki House is open to any women who are 16 years of age and older who are victims of physical, sexual, financial, and/or emotional abuse, as well as their children (males are accepted up to 16 years of age) (NWO Community and Baseline Studies Key Person Interview Program 2022; Hoshizaki House n.d.).

Emergency shelter stays are usually short-term (approximately two weeks). Single women are often asked to share a room with other single women, while families can share one room. Victims can stay at the emergency shelter for 6 to 8 weeks, but the length of stay is flexible if women are actively seeking housing or employment (NWO Community and Baseline Studies Key Person Interview Program 2022).

In 2022, Hoshizaki House Dryden District Crisis Shelter had 13 staff. The physical space is adequate, as the building is new. The Hoshizaki House Dryden District Crisis Shelter faces challenges with staff retention due to the high-stress work environment and competition with other agencies that can provide higher wages (NWO Community and Baseline Studies Key Person Interview Program 2022).

Dryden Regional Health Centre: Sexual Assault and Domestic Violence Care and Treatment Program

The Sexual Assault and Domestic Violence Care and Treatment Program provides emergency and follow-up care to women, men, and children who have been sexually assaulted and/or are survivors of intimate partner abuse in the communities. In addition to serving residents of Dryden, it also provides services to people from Vermilion Bay, Wabigoon Village, Dryden, Ignace, Eagle Lake First Nation, and Kenora. Care and treatment for sexual assault and domestic violence provided by the Dryden Regional Health Centre includes testing and treatment for sexually transmitted infections, testing and emergency contraception for pregnancy, and supportive crisis counselling (DRHC n.d.b).

2.4.9.3.4 Mental Health and Substance Use Services

Facilities and spaces to support individuals living with mental health and substance use challenges are limited in Dryden, particularly for children and youth (MNP 2021). Psychiatric services, a healing lodge, emergency shelters which serve individuals beyond women and children, residential addictions treatment, and a 24/7 warming or homelessness centre were identified as significant gaps in the Dryden area (WSP 2022c; MNP 2021). Challenges with existing mental health and substance use services in the City include transportation within the

community, wait times/limited spaces, limited hours of operation, and siloed/uncoordinated service delivery (MNP 2021).

Dryden Regional Health Centre: Mental Health and Addictions

Dryden Regional Mental Health and Addiction Services is a community-based agency sponsored by and located in the Dryden Regional Health Centre, with an office also located in the Mary Berglund Community Health Centre Hub in Ignace. Dryden Regional Mental Health and Addiction Services are available to individuals aged 16 years and older and include assessment and treatment, individual and group counselling, anger management, psychiatry, cancer support and counselling, case management (e.g., housing support, medication management, budgeting, etc.), housing support, referrals, as well as child and youth outreach support for individuals aged 25 years and younger. Alcohol, substance use, and problem gambling services are also available for individuals aged 12 years and older (DRHC n.d.a). There is also a full-time Indigenous worker who provides culturally appropriate support (NWO Community and Baseline Studies Key Person Interview Program 2022).

The Rapid Access Addiction Medicine Clinic provides services to individuals living with addictions who require medical services as well as mental health support (Connex Ontario n.d.). The Rapid Access Addiction Medicine Clinic is provided by the Dryden Regional Health Centre and located in the Dryden Area Family Health Team on Goodall Street in Dryden (DRHC 2022). The services do not include detox beds or residential treatment, offering only diabetes outreach and screening, needle exchange, and naloxone overdose response (InterGroup 2022b). People living with addictions who would like residential treatment must travel to larger urban centres to receive care, such as Thunder Bay and Winnipeg (NWO Community and Baseline Studies Key Person Interview Program 2022).

Challenges for DRHC include trouble recruiting staff and difficulty connecting individuals with care in a timely manner (NWO Community and Baseline Studies Key Person Interview Program 2022). In addition, DRHC saw a substantial increase in demand for services following the COVID-19 pandemic.

Ontario Addiction Treatment Centres

As part of the Ontario Addiction Treatment Centre network, the Dryden location provides walk-in treatment to individuals living with addictions, including methadone, suboxone, sublocade, Kadian, Hepatitis C, and naloxone treatment, as well as doctor and pharmacy services and referrals (CATC n.d.a).

2.4.9.3.5 Indigenous Service Providers

Dryden is a hub for service providers for the surrounding Indigenous communities, including Eagle Lake First Nation and Wabigoon Lake Ojibway Nation. The number of Indigenous service providers in Dryden has been growing in recent years (NWO Baseline Studies Key Person Interview Program 2022-2023). The absence or lack of healing lodges and lack of culturally appropriate services was noted as a gap in Indigenous services in the Community Safety and Well-Being Plan (MNP 2021).

Dryden Native Friendship Centre

Founded in 1984, the DNFC provides a gathering place to serve the needs of Indigenous peoples in Dryden and surrounding area (DNFC n.d.a). The DNFC's focus is on off-reserve at-risk Indigenous individuals. The DNFC provides programs relating to children, employment and training, community connections, diabetes education, homelessness, healing and wellness, and EarlyOn child and family centre (DNFC n.d.b). The centre also offers transportation services for individuals to and from the centre and emergency transportation services for individuals who are travelling from other regions (NWO Community and Baseline Studies Key Person Interview Program 2022). Currently, the transportation program and mental health program are at capacity (NWO Community and Baseline Studies Key Person Interview Program 2022).

The DNFC has a main hall and gathering space that can accommodate 35 and 100 people, respectively (DNFC n.d.b). The DNFC also a youth lounge, employment and communications office, on-site kitchens, and a cultural room (DNFC n.d.b). The DNFC membership ranges from 120 to 150 people. The facility is in excellent condition, with recent renovations to its commercial kitchen and gathering space. Since 2019, the DNFC has grown from 21 to 41 staff members and would like to expand further but are limited by their current facility (WSP 2022c). There are also approximately 90 volunteers to help with events, such as holiday dinners, driving for events, and community lunches (NWO Community and Baseline Studies Key Person Interview Program 2022). Future goals for the DNFC are to provide supportive housing and a shelter (NWO Community and Baseline Studies Key Person Interview Program 2022).

In particular, DNFC's Wasa Nabin program provides a culturally appropriate program to support Indigenous youth between the ages of 13 and 18 years old. The program provides youth with support circles, counselling, activities, skills to make nutritious meals, education (e.g., schoolwork, health education, etc.), and health awareness. The Wasa Nabin program also has an outreach component geared toward youth living in care to enable access to culturally appropriate services, working with non-Indigenous guardians of Indigenous youth to educate and remove barriers (DNFC n.d.b).

The DNFC's transportation, lifelong care home maintenance, and mental health programs are currently operating at capacity with high demand (NWO Community and Baseline Studies Key Person Interview Program 2022).

2.4.9.4 Machin

Social services in the Municipality are limited and residents of the Municipality rely on Dryden for many social services. Primary challenges include lack of licensed full-time childcare, mental health and substance use supports, and transportation (MNP 2021).

2.4.9.4.1 Childcare Services

Vermillion Bay Area Nursery School Cooperative

In the Municipality of Machin, the Vermillion Bay Area Nursery School Cooperative, in partnership with the KDSB, provides childcare for infants and toddlers. Located in the Lillian Berg School, the Nursery School has 15 preschool spaces and 13 afterschool spaces (KDSB n.d.d). The Nursery School offers afterschool care from September to June, as well as extended morning programs two days/week from October to May. The costs of care range from half-day rates (toddler care to

after-school care at \$12/day), to full-day care rates (infant care (\$33.08), toddler (\$22.44), and preschool (\$21.26) (KPDSB n.d.). The Machin Early Learning Centre is also located in the school, has 26 kindergarten spaces, and operates from 7:30 AM to 5:30 PM, Monday to Friday (KDSB n.d.d.).

2.4.9.4.2 Services for Seniors

Happy Go Lucky Seniors Club

The Happy Go Lucky Seniors Club is open to Machin residents who are 55 years and older, through paid membership. The Happy Go Lucky Seniors Club offers recreational and educational programs and services, coordinating weekly games (cribbage and cards), potluck suppers, luncheons, coffee breaks, and bus trips to attend events and shopping in Winnipeg, Manitoba (Northwest Behavioural Supports Ontario 2023). In 2015, the Club received \$25,000 for facility and service improvements, including a new roof, furnace, and fridge, and the ability to offer new programs and resources (CKDR 2015). In 2022, the Club further received \$28,600 through the Ministry of Seniors and Accessibility funds to support senior active living (Greg Rickford MPP n.d.).

2.4.9.4.3 Services to Support Survivors of Gender-Based Violence

There are no shelters for victims of gender-based violence located within the Municipality of Machin. The closest shelter for victims of gender-based violence to Machin is Hoshizaki House in Dryden.

2.4.9.5 Sioux Lookout

2.4.9.5.1 Childcare Services

Kenora District Services Board

Four licenced early learning and care facilities operate in Sioux Lookout (**Table 2.4-12**). The KDSB operates the (Biidaaban) Sacred Heart Early Learning Centre – Sacred Heart School and Sioux Mountain Early Learning Centre, and is partnered with Waninawakang Aboriginal Head Start and Waninawakang Childcare Centre, both of which are operated by the Waninawakang Aboriginal Head Start Resource Centre (KDSB n.d.a). The KDSB partners with the provincial EarlyON child and family programs provide free support services and programs to parents, caregivers, and their children aged six and under (KDSB n.d.c). The Waninawakang childcare services focus their programming in six areas, including culture and language, education and school readiness, health promotion, nutrition, social support, and parental and family involvement (Waninawakang Aboriginal Head Start n.d.).

The costs for care range from half-day rates (toddler care to after-school care at \$12/day) to full-day care rates (infant care (\$33.08), toddler (\$22.44), and preschool (\$21.26) (KPDSB n.d.).

Table 2.4-12: Childcare Services in Sioux Lookout

Name	Space Available (Preschool)	Space Available (Afterschool)	Hours of Operation
(Biidaaban) Sacred Heart Early Learning Centre – Sacred Heart School	Toddlers: 25 Preschool: 24	Kindergarten: 26 Primary/Junior School Age: 30	7:30 AM-5:30 PM (Monday-Friday)
Sioux Mountain Early Learning Centre	Toddlers: 15 Preschool: 24	Kindergarten: 26 Primary/Junior School Age: 30	7:30 AM-5:30 PM (Monday-Friday)
Waninawakang Aboriginal Head Start	Toddlers: 16		8:30 AM-3:30 PM (Monday-Thursday)
Waninawakang Childcare Centre	Infants: 9 Toddlers: 30		8:00 AM-5:00 PM (Monday-Friday)

Source: KDSB n.d.d.

2.4.9.5.2 Services for Seniors

Sioux Area Seniors Activity Centre

The Sioux Area Seniors Activity offers recreation and educational programs and services including: weekly card games; exercise classes; craft, knitting, and sewing sessions; a monthly potluck; group bus trips for shopping and events; and sessions with guest speakers (Municipality of Sioux Lookout n.d.g).

Lost Lake Seniors Drop in Centre

The Lost Lake Seniors Drop in Centre is located in Hudson and offers programs and community events including: family dinners, weekly luncheons, bake sales, socials, potlucks, and many other community events (Municipality of Sioux Lookout n.d.g).

2.4.9.5.3 Services to Support Survivors of Gender-Based Violence

First Step Women's Shelter

First Step Women's Shelter is a 14-bed facility located in Sioux Lookout that provides support, assistance, and emergency shelter for women and children who have been physically, sexually, and/or emotionally abused (FSWS n.d.a). Individuals may live at the shelter for up to six weeks (FSWS n.d.a). The shelter is staffed with front line counsellors, a community-based general counsellor, traditional housing and support worker, and a childcare worker, delivering services including safety, counselling, referrals, information, emergency resources (e.g., clothing), advocacy, and transportation (FSWS n.d.a; FSWS n.d.b).

2.4.9.5.4 Mental Health and Substance Use Services

Services to support individuals living with mental health and substance use challenges are limited in Sioux Lookout. Youth are considered to be especially at risk of mental health challenges in the community (Municipality of Sioux Lookout 2020b). In particular, demand for emergency shelters continues to exceed the capacity of services available and lack of residential addictions treatment and detox beds continues to be a challenge in the community (Municipality of Sioux Lookout 2020b).

Ontario Addiction Treatment Centres

As part of the Ontario Addiction Treatment Centre network, the Sioux Lookout location provides walk-in treatment to individuals living with addictions, including Hepatitis C education and prevention, need exchange, and naloxone overdose response (CATC n.d.).

2.4.9.5.5 Indigenous Service Providers

Sioux Lookout Meno Ya Win Health Centre

Operational since 2011, the Sioux Lookout Meno Ya Win Health Centre ("SLMHC") is a fully accredited, 60-bed hospital that also offers free and confidential mental health and addictions services (SLMHC n.d.). The SLMHC's mental health and addictions program includes assault care and treatment, long-term counselling, and crisis counselling (SLMHC n.d.). The SLMHC serves all population ages for assault care and treatment, crisis services, and psychiatric consultations, while mental health counselling and addictions services are restricted to 16 years of age and older and 12 years and older, respectively (SLMHC n.d.). See **Section 4.3** for more on SLMHC.

Nishnawbe-Gamik Friendship Centre

The Nishnawbe-Gamik Friendship Centre, incorporated in 1971, is a non-profit organization serving the needs of Indigenous community members living in Sioux Lookout (of the Local Study Area) (NGFC n.d.b). The Nishnawbe-Gamik Friendship Centre's mission is to provide a centre for recreational and educational activities and programs to support the well-being of Indigenous community members, as well as foster Indigenous language and culture amongst residents. The Nishnawbe-Gamik Friendship Centre offers a wide range of services and programs geared for all ages, from infancy to elders, including lifelong care, Indigenous health and wellness, mental health and addictions, employment, and youth programming (NGFC n.d.a).

2.4.9.5.6 Child and Adult Protective Services

William W. Creighton Youth Services

William W. Creighton Youth Services ("Creighton Youth Services") is mandated to provide youth justice services under the Child and Family Services Act, 1990 and the Youth Criminal Justice Act, 2002 (Creighton Youth n.d.; Government of Ontario 1990g; Government of Canada 2002). Creighton Youth Services works with youth who have committed an offence between the ages of 12 and 18 years old, offering residential programming that features restorative justice and rehabilitation, such as alternatives to custody, community integration, anger management, youth and family counselling, and Indigenous healing with community Elders. The services provided by

Creighton Youth Services are designed to support and challenge youth to take responsibility for their behaviour and actions and change their thinking patterns (Creighton Youth n.d.).

2.4.10 Summary of Infrastructure and Services

A variety of infrastructure and services support the communities in the Local Study Area, although not all communities are home to the same suite of facilities and services. In many instances, people living in smaller communities are required to travel long distances to access appropriate services. The size of the area served by many organizations also presents a challenge to service providers.

Transportation Infrastructure

The Local Study Area communities are located along or just off Highway 17 (Ignace, Dryden, Machin, Wabigoon Village, Melgund, Dinorwic, and Upsala); Highway 72 (Sioux Lookout); and Highway 599 (Valora and Silver Dollar). The average annual daily traffic along Highway 17 was 5,950 vehicles/day, 3,200 vehicles/day for Highway 72, and not exceeding 300 vehicles per day along Highway 599. The average annual daily traffic and summer average daily traffic are currently below capacity for Highway 17. Residents of Local Study Area communities are concerned about road safety. Accidents along the regional highway network within the Local Study Area are primarily due to inclement weather, animal encounters, reduced visibility due to poor lighting, and aggressive driving (WSP 2022d). For Ignace and Dryden, transport trucks will sometimes park or stop alongside the highway, which can lead to reduced visibility for people entering or leaving the communities. (NWO Community and Baseline Studies Key Person Interview Program 2022).

Within the Local Study Area, there are airports in Ignace, Dryden, Sioux Lookout, and Machin; however, the Ignace and Machin airports do not currently have operational status. The Dryden Regional Airport and Sioux Lookout Airport both accommodate airlines which are used for both charter and scheduled flights which operate seven days a week. The Dryden Regional Airport services are busiest during the summer months due to increased activity by MNRF caused by forest fires.

The Canadian Pacific Railway has stations in Ignace, Dryden, and passes through Machin. Canadian Pacific is a freight rail service provider with passenger services limited to luxury tours provided by Royal Canadian Pacific (Canadian Pacific 2023). The Canadian National Rail Line travels through Sioux Lookout with passenger services available through VIA Rail.

Utilities and Associated Infrastructure

The gas pipeline, which roughly twins the Trans-Canada Highway (TC Energy 2017) has rights of way that cross municipal lands for Ignace, Dryden, Machin, Wabigoon Village, and Melgund (WSP 2021; Quartek Group Inc 2022). Ignace, Dryden, and Machin receive natural gas from Union Gas (Enbridge Inc.). All other Local Study Area communities use propane or other alternatives. Hydro One Networks provides electricity to all the Local Study Area communities, except for Sioux Lookout, with electricity. Sioux Lookout Hydro Inc. is owned by the Municipality of Sioux Lookout that delivers electricity to households and businesses within the Municipality. Residents in unincorporated communities (Wabigoon Village, Dinorwic, Melgund) are responsible for their water and sewage. Hydro One Networks provides electricity to the unincorporated communities

but residents are required to pay for the connection to their property. Each Local Study Area community has access to multiple internet providers.

Ignace, Dryden, and Sioux Lookout have water distribution and sewage treatment systems. Machin has a water distribution system, but its residents are responsible for providing their own septic fields and/or tanks.

The water distribution systems in Ignace, Dryden, Machin, and Sioux Lookout are running below capacity; however, to accommodate future growth in Dryden and Sioux Lookout, upgrades or replacement of the water treatment plant assets may be required. Water distribution system assets in Ignace are generally in good condition but water valves are over 45 years old and nearing the end of their lifespan after recent failures suggested 50 years is a reasonable useful life (WSP 2022b). Most watermain in Dryden are in moderate or worse condition (Explorer Solutions 2022a). The water treatment plant in Machin is less than 20 years old but the expected useful life of the facility is between 10 to 50 years, indicating that it may need to be replaced in the next ten years. In Sioux Lookout, a large portion of water system assets are in poor or worse condition, including 73% of booster stations, 37% of hydrants and valves, 98% of water tower assets, and 43% of water treatment plant assets.

The operating capacity of the Ignace wastewater treatment plant is at 63% but due to the performance and operational limits of the plant, it would be unable to support a sizeable change growth in population. Although existing sanitary pipes do not require replacement for over 15 years, most pipes use asbestos cement (WSP 2022b). The wastewater treatment plant in Dryden was built in 2014 and is operating below capacity, but certain sections of the sewer are currently near capacity and may require replacements to accommodate larger future developments. The condition of most sewers in Dryden is moderate or worse, whereas larger sewers were evaluated to be in poor or very poor condition (Explorer Solutions 2022a). The Sioux Lookout wastewater treatment plant was operating at 76% of the daily capacity in 2020. Nearly 85% of the wastewater treatment plant assets are in poor or worse condition and over 60% of manholes and pumping station assets are in poor or worse condition (PSD 2020).

The stormwater assets in Ignace are nearing the halfway point of their useful life. In June 2022, an engineering inspection of the Pine Street culverts revealed issues with structural integrity. As a result, Pine Street was temporarily closed (Township of Ignace n.d.c). In Dryden, most storm sewers in Dryden are in moderate or worse condition (Explorer Solutions 2022a). In Machin, a majority of culverts have exceeded their estimated useful life and over 70% are in very poor condition (PSD 2021). The average condition of stormwater infrastructure in Sioux Lookout is in good condition with a remaining service life of 23 years (PSD 2020).

Solid waste and recycling services varies between community with Ignace only having solid waste collection and disposal services, Dryden offers solid waste and recycling collection and disposal services, Machin offers solid waste collection and recycling can be dropped off at bins at their landfill sites, and Sioux Lookout offers solid waste and recycling collection and disposal services. There is no curbside pickup for residents of Wabigoon Village, Melgund, or Dinorwic but there are landfills where garbage can be dropped off at.

Police, Fire, and Emergency Medical Services

The Ontario Provincial Police are responsible for providing police services in the Local Study Area. The Ontario Provincial Police have detachments in Dryden and Sioux Lookout that provide

services to all the Local Study Area communities. The Dryden detachment has satellite offices in Ignace and Vermillion Bay. Staffing is considered sufficient at the Dryden office, Ignace satellite office, and the Sioux Lookout office but there is no administrative staff at the Ignace office, resulting in all administrative work to be sent to Dryden (WSP 2022d). Policing costs in Dryden have routinely been amongst the highest per capita in Ontario. In 2022, Statistics Canada estimated Dryden had the second highest average policing cost at about \$1,040 per property, over triple the average cost per property in Ontario (\$311). Policing costs in northwest Ontario are generally higher than provincial averages but Dryden's cost are notably higher than other communities (DrydenNow 2021b). In 2023, policing costs are estimated to have increased to close to \$1,400 per property (Fleury 2023).

Ignace, Dryden, Machin, and Sioux Lookout, have fire services which cover a vast area beyond the municipal boundaries that can affect the ability to respond to calls in a timely manner due to road closures during the winter and low volunteer or paid-for-call staffing numbers. Machin and Ignace have volunteer fire stations which nearly all firefighters are volunteers and are only paid when responding to calls. Dryden and Sioux Lookout both have two fire halls with a mix of volunteer and paid staff. The existing fire hall in Ignace and Fire Hall #2 in Dryden both require upgrades (NWO Baseline Studies Key Person Interview Program 2022-2023). Oxdrift and Wabigoon Village both have fire departments which respond to calls in the community and surrounding areas. In the Local Study Area, MNRF has fire bases in Ignace, Dryden, and Sioux Lookout for responding to forest fires. MNRF also operates out of the Dryden Regional Airport for dealing with forest fires.

Northwest Emergency Medical Services is under the KDSB and provides emergency medical services in the Regional Study Area. Within the Regional Study Area, average response times include 2.4 minutes in 2019, 1.35 minutes in 2020, and 1.41 minutes in 2021 within a target plan of two minutes. Call volumes include 22,829 in 2019, 20,893 in 2020, and 19,137 in 2021 (Ministry of Health and Long-term Care 2022). Northwest Emergency Medical Services has nine ambulance bases throughout the Regional Study Area, including a base in the Local Study Area communities of Ignace, Dryden, and Sioux Lookout (KDSB 2023). The KDSB is currently looking to build an ambulance base in Vermillion Bay (WSP 2022d).

Primary and Secondary Educational Facilities

In the Local Study Area there are elementary schools in Ignace, Dryden, Machin, Sioux Lookout, and Upsala. Ignace, Dryden, and Sioux Lookout have at least one high school which have the capacity for more students, and residents of the unincorporated areas or smaller communities often travel to a different community for high school. The schools in the Local Study Area are under the Keewatin Patricia District School Board (Ignace Public School, New Prospect Elementary Public School, Open Roads School, Dryden High School, Lillian Berg Public School, Sioux Mountain Public School, Sioux North High School, and Upsala Public School), Northwest Catholic District School Board (St. Joseph's Catholic School and Sacred Heart School), Conseil Scolaire de District Catholique des Aurores Boréales (École Immaculée Conception and École Catholique de l'Enfant-Jésus), and the Pelican Falls First Nation High School (a private, First Nations operated school).

Recreation Programs and Facilities

In the Local Study Area, residents have access to a variety of indoor and outdoor recreational facilities and community recreation opportunities. Organized programming for youth and seniors were noted as insufficient or not available in Ignace, Machin, Wabigoon Village, Melgund, and Upsala due to small population. Many residents from these communities travel to Dryden to access various programming (NWO Baseline Studies Key Person Interview Program 2022-2023). Barriers noted by interview participants regarding accessing recreational programming is the need for transportation and the costs (NWO Baseline Studies Key Person Interview Program 2022-2023; GBA+ Workshop 2023).

The natural setting provides various opportunities for fishing, forestry, hunting/trapping, tourism, and a passive appreciation of the natural environment, through camping, swimming, hiking, biking, wildlife viewing, boating, canoeing, and berry picking (SMM and InterGroup 2022; NWO Community and Baseline Studies Key Person Interview Program 2022). Ignace, Dryden, Machin, Sioux Lookout, Wabigoon Village and Melgund also have access to indoor recreational facilities such as community halls, recreation centres, and museums.

Housing and Temporary Accommodations

In the Local Study Area homes are most often single- and semi-detached dwellings and only need minor repairs or maintenance. Most households are two-person households and are owned, with about 15% to 25% being rented. Given the lack of available and affordable housing options in the Local Study Area communities, some people face challenges with homelessness. The number of homeless people is largest around Dryden given its function as a regional hub and proximity along Highway 17 (NWO Baseline Studies Key Person Interview Program 2022-2023).

Interview participants noted that housing availability was an issue for each of the Local Study Area communities. Challenges noted by interview participants and in the KDSB regional housing strategy are largely related to development (e.g., costs and delays to develop, land use designations) and availability (e.g., unaffordability, limited variety of homes, homes are only on the market for a short period of time, insufficient options for seniors). (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023; KDSB 2023e). Senior housing options were also identified as insufficient across the Local Study Area with few available options for downsizing and senior-living facilities (KDSB 2023e).

There are many temporary accommodations among the Local Study Area communities in the form of hotels, motels, campgrounds, cabins, and RV parks, but many operate at or near capacity on a frequent basis. Local Study Area communities face challenges with temporary accommodations at capacity due to the large number of transient workers (KDSB 2023e).

Social Services

Social services available in the Local Study Area and Regional Study Area include childcare, senior services, services for victims of gender-based violence (e.g., shelters and transitional housing), mental health and substance use services, Indigenous services, and child protective services. The Regional Study Area has social service providers who operate in multiple Local Study Area communities, including KDSB childcare and early learning services, Kenora Rainy

River Districts Child and Family Services, FIREFLY, Tikinagan Child and Family Services, Community Living Dryden-Sioux Lookout, Canadian Mental Health Branch of Fort Frances, Anishinaabe Abinooji Family Services, Paawidigong First Nations Forum, Métis Nation of Ontario, and Northwest Ontario Métis Child and Family Services. Social services are key to supporting vulnerable populations, as these populations are often more reliant on the services provided (GBA+ Workshop 2023).

Childcare providers have noted that it is likely they will need to double (or triple) their workforce if the universal childcare agreements entered into between Ontario and the federal government results in a \$10/day Canada-wide Early Learning and Child Care system, as the demand for spaces is likely to increase (NWO Community and Baseline Studies Key Person Interview Program 2022; Government of Canada 2022b). Currently, there is an unmet need for licensed full-time childcare in Ignace, as well as after school care and services which accommodate shift work (NWO Community and Baseline Studies Key Person Interview Program 2022). Dryden childcare services are currently operating at capacity (NWO Community and Baseline Studies Key Person Interview Program 2022).

Social supports for seniors are available in Ignace, Dryden, Machin, and Sioux Lookout, but there is a lack of seniors housing and long-term care to address the high proportion of seniors in the Local Study Area. The lack of public transportation and the need to travel outside of their community for various services has been identified as a barrier (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

There are currently no shelters for victims of gender-based violence in Ignace or Machin, with the closest shelter being Hoshizaki House in Dryden. The facility space at the Hoshizaki House in Dryden is adequate but there are challenges with staff retention due to the high-stress work (NWO Community and Baseline Studies Key Person Interview Program 2022). The Sexual Assault and Domestic Violence Care and Treatment Program at the Dryden Regional Health Centre provides emergency and follow-up care to women, men, and children who have been sexually assaulted and/or are survivors of intimate partner abuse in Ignace, Dryden, Machin, and Wabigoon Village. In Sioux Lookout, the First Step Women's Shelter provides support, assistance, and emergency shelter for women and children who have been physically, sexually, and/or emotionally abused.

Facilities and spaces to support individuals living with mental health and substance use challenges are a gap in both the Regional Study Area and Local Study Area. In the Local Study Area, these services are limited to Dryden and Sioux Lookout. In particular, psychiatric services, a healing lodge, emergency shelters which serve individuals beyond women and children, residential addictions treatment, and a 24/7 warming or homelessness centre were identified as significant gaps in the Dryden area (WSP 2022c). Demand for emergency shelters continues to exceed the capacity of services available and lack of residential addictions treatment and detox beds continues to be a challenge in the community (Municipality of Sioux Lookout 2022b). Individuals from other communities must travel to Dryden or Sioux Lookout to receive support.

Indigenous service providers located in the Regional Study Area that serve communities in the Local Study Area include Tikinagan Child and Family Services, who provide services in Ignace, Dryden, and Sioux Lookout; Anishinaabe Abinoojii Family Service, who provides services in Dryden, Wabigoon Village, and Sioux Lookout; Paawidigong First Nations Forum, who provide

services to Eagle Lake First Nation, Wabigoon Lake Ojibway Nation, and Lac Seul First Nation; and Métis Nation of Ontario and Northwest Ontario Métis Child and Family Services, who both have branches in Kenora and Dryden. Indigenous service providers located in the Local Study Area include the Dryden Native Friendship Centre in Dryden, Sioux Lookout Meno Ya Win Health Centre in Sioux Lookout, and Nishnawbe-Gamik Friendship Centre in Sioux Lookout. According to the Dryden, Machin and Area Community Safety and Well-Being Plan, lack of culturally appropriate services remains a gap in Dryden (MNP 2021).

2.5 LAND AND RESOURCE USE

2.5.1 Overview and Approach

Land and resource use describes the land use designations, permitted land uses, and management frameworks for the natural environment, as well as how land and resources in the Local Study Area are used, who uses them, regulations guiding these uses, and the organizations, agencies, and groups involved in these uses. The natural environment is important to residents and visitors of the Local Study Area for recreational and commercial purposes (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents and visitors have strong connections to the surrounding natural environment and is fundamental to their sense of place and quality of life. Topics included in land and resource use are:

- Land management frameworks, policies, and plans;
- Crown land designations, including provincial parks and conservation reserves;
- Commercial and recreational fishing, including subsistence activities;
- Hunting, including subsistence activities;
- Commercial trapping;
- Outfitting and guiding;
- Forestry;
- Current and historical mining activities;
- Cottages and cabins;
- Hiking;
- ATVing;
- Winter recreation; and
- Lakes.

Descriptions of local agencies and user groups in the region are included in the discussion of each activity where relevant. Structures, sites, and locations of historical and cultural significance are described where information is available and are described further in **Section 2.6**.

Commercial land and resource use is important to the economy in the communities closest to the Revell Site and northwestern Ontario (NWO Baseline Studies Key Person Interview Program 2022-2023). Information on commercial land and resource use, such as forestry, outfitting, and mining, and their contributions to the local economy are also considered in the economic base (**Section 3.4**), employment (**Section 3.2**), and income and cost of living (**Section 3.6**).

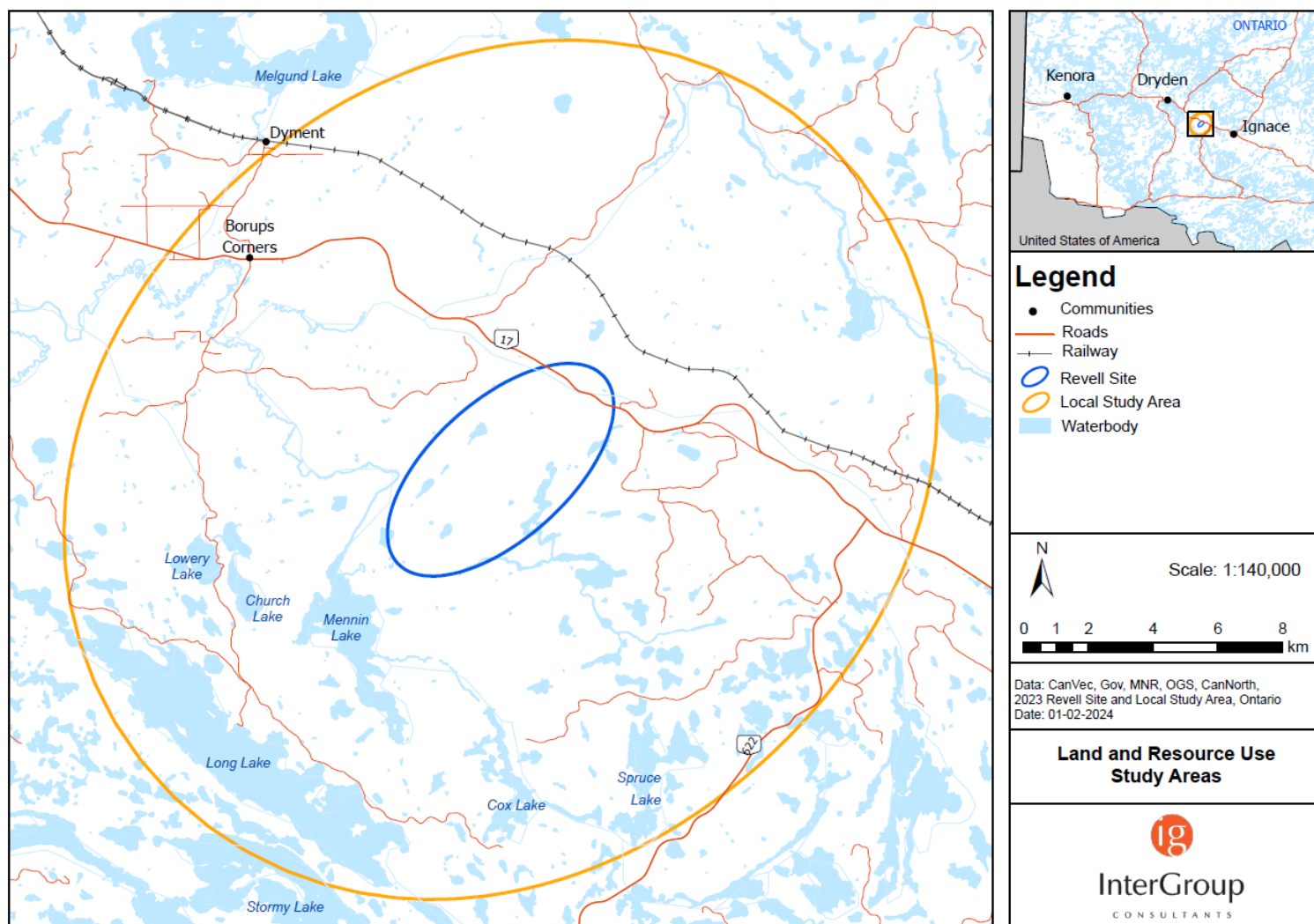
Spatial boundaries for land and resource use are distinct from the spatial boundaries of other social cultural components. Spatial boundaries are discussed in further detail in **Section 2.1.1**. The spatial boundaries for land and resource use are:

- The Local Study Area includes the Revell Site (i.e., the potentially geologically suitable area where borehole drilling has occurred and the Project may be located) with a 10 km buffer to provide additional context. The Local Study Area was also informed with consideration of the local study areas identified for terrestrial and aquatic ecosystems studies (Zoetica 2020), along with the local study areas for sampling for environmental media studies (CanNorth 2020), all of which are captured within the 10km buffer.
- The Regional Study Area will be revisited after site selection and is expected to evolve relative to the results of primary and secondary studies for terrestrial, aquatic, and environmental media studies that are currently underway. Consideration will also be given to studies undertaken by or with Indigenous communities relative to the expression of Indigenous and Treaty Rights.

For the purposes of this report, the Local Study Area is described in detail, while an even broader geographic scope is included on maps to provide context to the topics being described. For example, boundaries for topics such as Forest Management Units or Bear Management Areas are broader in scope than the Local Study Area, so areas of overlap within the region are provided for context. The land and resource use study area is included in **Map 2.5-1**.

Indigenous land and resource use, including access to culturally important resources and country foods, is acknowledged as present in the region, and will be documented in the Indigenous Peoples baseline. **Section 1.5.4** describes that the NWMO's non-prescriptive approach to Indigenous participation in the Baseline Studies supports Indigenous communities in sharing knowledge and information in a fashion and at a time that is appropriate to the community and in accordance with their protocols. The NWMO's approach to Indigenous engagement is being conducted in accordance with the NWMO's Reconciliation Policy (2019) and Indigenous Knowledge Policy (2020b).

Map 2.5-1: Land and Resource Use Study Areas



Temporal boundaries for land and resource use focus on current use and use during the past 10 years to understand trends. To the extent possible, future trends are described based on demand for resources and available management plans, such as forest management plans.

Information on data collection, including desktop research and primary data collection, is provided in **Section 2.1.2**.

2.5.2 Land Use Designations

This section describes land use designations, legislation, policies, and plans for the Local Study Area. The description of land use designations includes permitted uses and a description of the amendment process.

Municipal land use is governed through official community plans, which outline where different types of land use may be located within a municipality. Official plans are intended to be living documents that are reviewed in accordance with the *Planning Act* (Government of Ontario 1990i) and may be amended to reflect changing circumstances and evolving priorities of the municipality (WSP 2020). Amendments of official plans must be initiated by the town council, a public meeting is held, and the amendment is sent to the approval authority, who is often the upper-tier municipality or the Minister of Municipal Affairs and Housing (Government of Ontario 2019c).

See **Section 2.3.4** for more information on official plans and municipal land policies.

The Local Study Area, an area of 55,092 hectares, is comprised of provincial Crown land and private land, as displayed in **Table 2.5-1**. The Local Study Area consists primarily of provincial Crown land. See **Section 2.5.2.1** for more information on land use designations in the Local Study Area.

Table 2.5-1: Lands Comprising the Local Study Area

Land	Area (ha) in Local Study Area	Percentage of Local Study Area
Private	3,479.0	6.3%
Provincial	51,612.6	93.7%
<i>Conservation Reserve</i>	3,139.8	5.7%
<i>General Use</i>	48,472.9	88.0%

Source: Government of Ontario n.d.a

Notes: Calculations were completed by InterGroup Consultants.

The Revell Site, an area of 2,935 hectares, is comprised of provincial Crown land, with all 2,935 hectares designated as General Use Areas.

2.5.2.1 Crown Land Management

Provincial Crown land, which includes shoreline, riverbeds, and lake beds, makes up 87% of Ontario. According to the *Strategic Direction for Management of Ontario Crown Land Policy*, the MNRF has stewardship responsibility over its management, which includes planning and amendments through the *Public Lands Act* (Government of Ontario 1993).

2.5.2.1.1 Crown Land Management Goals

The Ontario Ministry of Natural Resources has articulated the goals of Crown land management as: “to contribute to the environmental, social and economic well-being of the province by providing for orderly use and sustainable development of Ontario Crown Land.” Guiding principles behind Crown land management policy include maintaining ecosystem integrity and healthy natural environments while simultaneously promoting social and economic development. The Government of Ontario’s land management policies state that thorough planning, concern for future generations, as well as stakeholder consultation are essential aspects of Crown land management activities. Self-government of Indigenous communities and natural resources co-management arrangements are also regarded as an important element of Crown land management (Government of Ontario 1993).

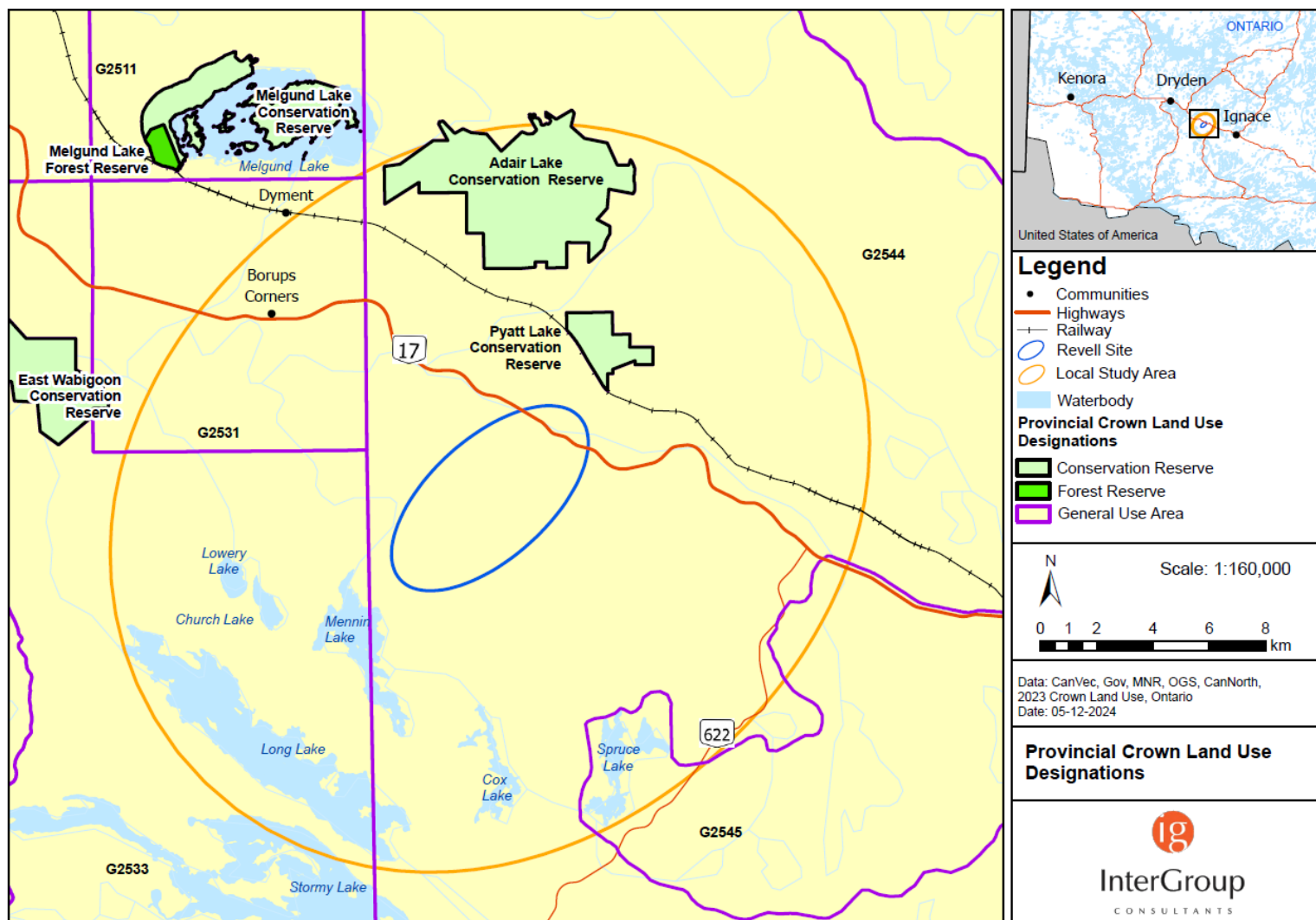
2.5.2.1.2 Land Use Designation Amendments

Land use amendments are required by the Province of Ontario to formally change area-specific land use policy. The approval process required for land use amendments in Ontario varies depending on a variety of factors including the planning processes and the land use designations. Land use amendments generally take place in circumstances where a new land use policy is implemented, boundary changes are being considered, or a more detailed land use policy is being developed. Land use amendments are evaluated by the MNRF based on the amendment’s consistency with government policy, with official Crown land use planning, the similarity to other related projects, as well as several other factors including priority, urgency, and degree of public interest (Government of Ontario 2021a).

Land use amendments are classified into three categories in Ontario: administrative, minor, or major. Administrative land use amendments are intended for administrative purposes and generally include name changes and updates to existing land use designations. Differences between major and minor land use amendments are measured by their effects on general public interest, on local Indigenous communities, and their environmental impact. Major land use amendments require consultation with provincial level stakeholders, while minor amendments require consultation with regional or local stakeholders. The review of proposed land use amendment also considers any obligations to consult with Indigenous communities (Government of Ontario 2021a). Crown land uses in the Local Study Area are presented on **Map 2.5-2**.³⁹

³⁹ The names and boundaries of provincial Crown land use designations are determined by the Province of Ontario and are not an indication of Indigenous land and resource use.

Map 2.5-2: Provincial Crown Land Use Designations in the Local Study Area



The Local Study Area contains seven individual land use areas designated by the MNRF⁴⁰. Five of these areas are general use provincial Crown land and two are conservation areas.

Most provincial Crown lands in Ontario are designated as general use areas. Permitted recreational uses of provincial Crown land include camping, fishing, hunting, snowmobiling, accessing cottages or cabins, and other assorted recreational activities such as hiking, canoeing, and swimming (Government of Ontario n.d.a). In general, Indigenous peoples exercising their Aboriginal and Treaty Rights on Crown land are free to do so (Ministry of Natural Resources 2005). General use areas permit the largest range of resource and recreational uses of the provincial Crown land designations; however, a general use area designation does not mean that all uses must be permitted. The policies for each general use area are established through local land use planning and are defined in the area's policy report (Government of Ontario 2021h).

The five general use areas are only partially represented in the Local Study Area, while the conservation reserves are both located fully in the Local Study Area. **Table 2.5-2** provides a summary of the provincial Crown land areas in the Local Study Area. For official plans of Local Study Area communities, see **Section 2.3.4**.

Table 2.5-2: Provincial Crown Land Use Designations in the Local Study Area

Area ID	Land use designation	Percentage of Local Study Area	Total area in Area ID (ha)
G2511	General use Crown land	0.01%	3.6
G2531	General use Crown land	9.7%	5,365.5
G2533	General use Crown land	20.1%	11,085.3
G2544	General use Crown land	61.4%	33,796.0
G2545	General use Crown land	3.1%	1,701.5
C2307	Conservation Reserve (Pyatt Lake Conservation Reserve)	0.7%	401.3
C2308	Conservation Reserve (Adair Lake Conservation Reserve)	5.0%	2,738.5

Source: Government of Ontario n.d.a.

⁴⁰ The names and boundaries of provincial Crown land use designations are determined by the Province of Ontario and are not an indication of Indigenous land and resource use.

2.5.2.1.3 General Use Crown Land Areas in the Local Study Area

The provincial Crown land general use area G2531 covers 10% of the most northwestern part of the Local Study Area. The majority of this provincial Crown land general use area lies outside of the Local Study Area. The Dryden District Land Use Guidelines (Ministry of Natural Resources 1983a) apply to land use development in this provincial Crown land use area.

The provincial Crown land general use area G2533 covers 20% of the southwestern part of the Local Study Area and contains two tourism lakes. The Wabigoon Forest is also located in this area. The land use policy for this area is focused on maintaining a balance between resource extraction, development and managing recreational activities within the area. The Dryden District Land Use Guidelines of 1983 apply to land use development in this provincial Crown land designation area.

The provincial Crown land general use area G2544 covers most (61%) of the Local Study Area, including the Revell site. This area contains several trout lakes as well as some agricultural land. Land use policy for this area focuses on the development of the timber industry as well as the management of recreational services. Cottage expansion is not permitted in this area. Road access is limited through the restrictions set according to the Ignace Fisheries Management Plan. Guidelines regulating land use include the Ignace District Land Use Guidelines of 1983, while trout lake management is governed by Inland Ontario Lakes Designated for Lake Trout Management (MNRF 2015).

The provincial Crown land general use area G2545 covers 3% of the Local Study Area in the southeastern corner and the provincial Crown land general use area G2511 covers approximately 0.01% of the Study Area in the northwestern corner. No tourism expansion is permitted in this provincial Crown land general use area. Guidelines regulating land use include the Ignace District Land Use Guidelines (Ministry of Natural Resources 1983b).

See **Appendix 2B Supplemental Data** for a detailed list of permitted provincial Crown land uses of the general use areas in the Local Study Area.

2.5.2.1.4 Conservation Reserve Areas in the Local Study Area

Two conservation reserves exist in the Local Study Area: Pyatt Lake Conservation Reserve (C2307) and Adair Lake Conservation Reserve (C2308) (**Map 2.5-2**). Both conservation reserves share identical vegetation types, management policy guidelines, and permitted land uses. Vegetation types include various kinds of open and treed bogs, fens, and swamps. Guidelines governing the management policies of the Conservation Reserves are found in the Provincial Parks and Conservation Reserves Act (Government of Ontario 2006) and Approved Management Direction for Conservation Reserves (Government of Ontario 2014a), as well as both the Adair Lake Conservation Reserve Statement (Government of Ontario 2003a) and the Pyatt Lake Conservation Reserve Management Statement (Government of Ontario 2003b).

2.5.2.1.5 Permitted Land Uses in the Conservation Reserve Areas

Commercial activities are heavily restricted in the conservation reserves, with only existing activity including fishing operations, bear hunting, and wild rice harvesting permitted

(Government of Ontario 2006). Permitted land and resource management activities include only fire suppression and inventory/monitoring. Recreational activities permitted include all-terrain vehicles and snowmobiling on trails only, food gathering, mountain biking, sport fishing, and hunting. The detailed list of permitted uses for the conservation areas are summarized in

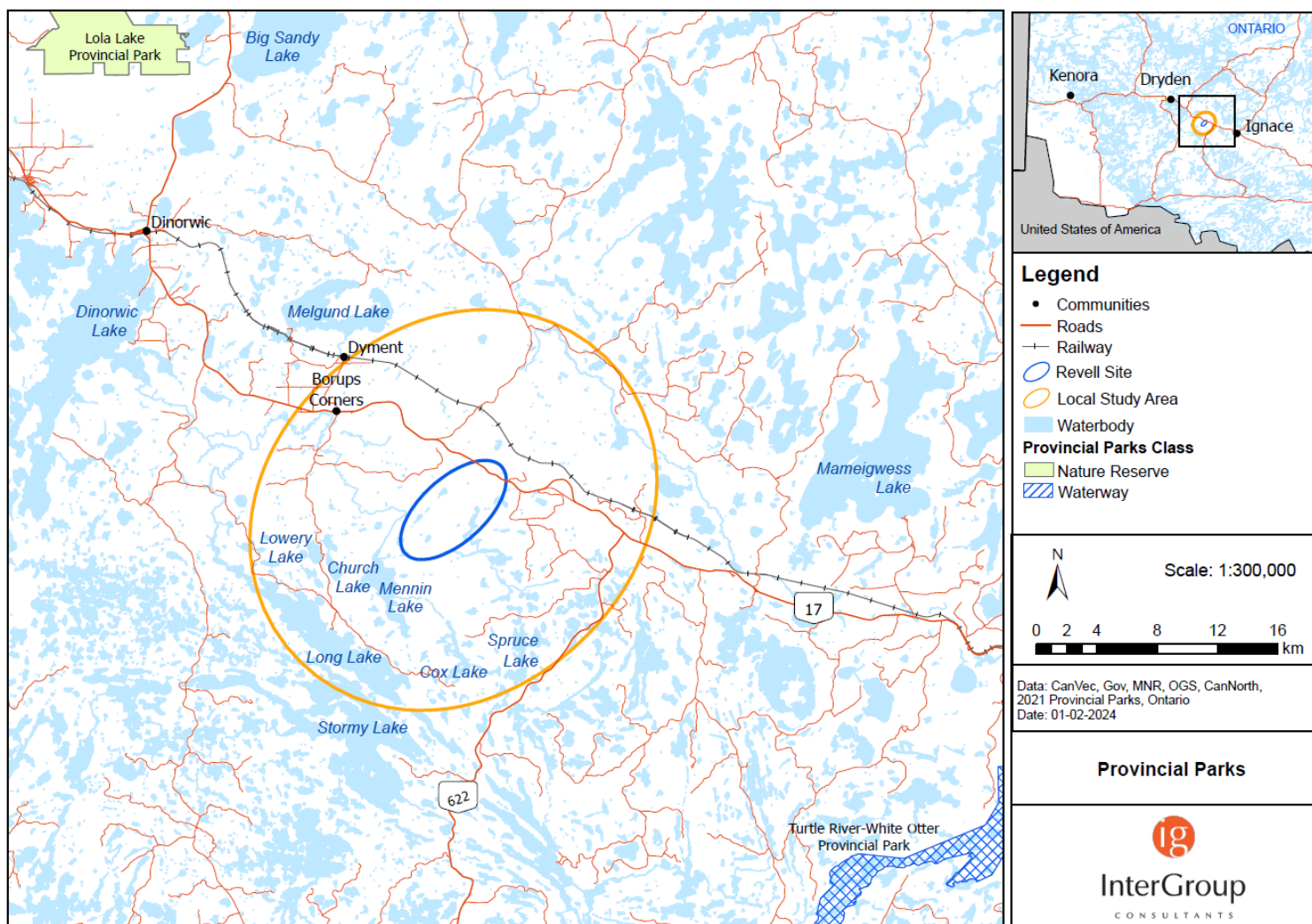
Appendix 2B Supplemental Data.

2.5.2.2 Parks and Protected Areas

There are no provincial parks and two conservation reserves (see **Section 2.5.2.1.2**) located within the Local Study Area.

The closest provincial parks to the Local Study Area are Lola Provincial Park and Turtle-River White Otter Provincial Park (see **Map 2.5-3**). Lola Provincial Park is in the nature reserve class. Turtle-River White Otter Provincial Park is in the waterway class.

Map 2.5-3: Provincial Parks near the Local Study Area



The management of conservation reserves differs from the management of provincial parks only in that conservation reserves do not aim to attract visitors and rather focus on environmental maintenance. As noted in **Section 2.5.2.1.2**, there are two conservation reserves located in the Local Study Area, Adair Lake Conservation Reserve and Pyatt Lake Conservation Reserve (see **Map 2.5-2**). The *Provincial Parks and Conservation Reserves Act* lists the following as objectives for the conservation reserves in Ontario (Government of Ontario 2006):

- To permanently protect representative ecosystems, biodiversity, and provincially significant elements of Ontario's natural and cultural heritage and to manage these areas to ensure that ecological integrity is maintained.
- To provide opportunities for ecologically sustainable land uses, including traditional outdoor heritage activities and associated economic benefits.
- To facilitate scientific research and to provide points of reference to support monitoring of ecological change on the broader landscape.

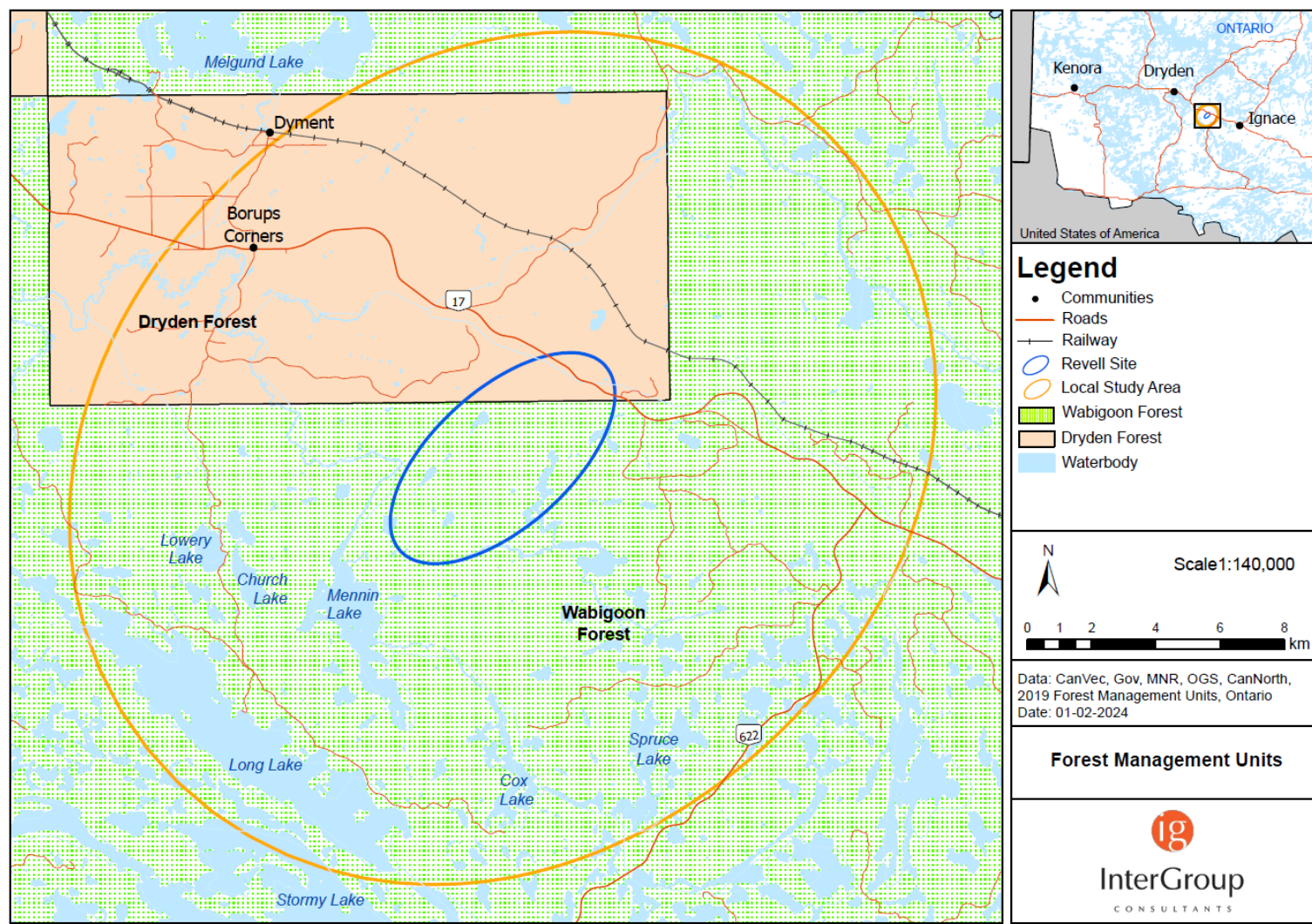
2.5.3 Forestry

Forests cover about 66% of Ontario (70.4 million hectares); over half of these forests (56.3 million hectares) are commercially viable (Government of Ontario 2021d). Ontario's Crown forests are divided into three large Administrative Zones: Northern Boreal, Managed Forest Zone, and Great Lakes/Southern Ontario (Watkins 2021). The Local Study Area is in the Managed Forest Zone, which is currently divided into 39 Forest Management Units (Government of Ontario 2022d). Nearly 75% of the Managed Forest Zone is covered by Crown forests (34.3 million hectares), of which, over 80% are commercially viable (27.8 million hectares) (Government of Ontario 2021d). See **Section 3.4.2.3** for more information on forestry's role in the economy of the Local Study Area.

The Province's Crown Forest Administrative Zones are further divided into geographic planning areas known as management units. Management units are subject to the *Crown Forest Sustainability Act* of 1994 (Government of Ontario 1994) to meet the social, economic, and environmental needs of present and future generations, and outline guidance on access (e.g., roads and bridges), commercial uses (e.g., forestry), recreational uses, maintenance, and more (Government of Ontario 1994). Forestry Management Plans are approved for 10-year periods and are prepared by a Registered Professional Forester with input from Indigenous communities, municipalities, local stakeholders, and the general public to ensure all interested parties' values are recognized (ItTakesaForest n.d.).

Each forest has a Forest Management Plan ("FMP"), which outlines management of its corresponding forest including conditions on operations. Conditions on planned operations include regular harvest, bridging harvest, salvage harvest, operational prescriptions, harvest volumes and wood utilization by mill, contingency harvest areas and contingency harvest volumes, renewal and tending, renewal supporting, forest access and road use management, estimated renewal expenditures, and monitoring and assessment activities. **Map 2.5-4** provides the Forest Management Units in the Local Study Area.

Map 2.5-4: Forest Management Units in the Local Study Area



The Local Study Area is covered by the Wabigoon Forest and Dryden Forest. The Wabigoon Forest stretches from Silvery Lake in the west to Osaquan Lake in the east, and from the southern shore of Lac Seul in the north to Dibble Lake and Nora Lake in the south. The Wabigoon Forest is bordered by the English River Forest in the east, the Boundary Waters Forest in the south, the Kenora and Whiskey Jack Forests in the west, and the Lac Seul Forest in the north and east, with the Dryden Forest located in between the three portions of the Wabigoon Forest. The current outer boundary of the Wabigoon Forest encompasses 732,296 hectares. The Wabigoon Forest is comprised of white pine, red pine, upland cedar, spruce, jack pine, poplar, white birch, and balsam fir trees (Domtar Inc. 2019). Domtar Inc. is the Sustainable Forest Licence holder for the Wabigoon Forest. Domtar was acquired by the Paper Excellence Group in 2021 but operates as a stand-alone business (Paper Excellence 2021). The current FMP period for the Wabigoon Forest is 2019 to 2029. The Sustainable Forest Licence for the Wabigoon Forest permits Domtar to harvest all tree species within the licence area (Government of Ontario 2022d; 2018c).

Table 2.5-3 presents the Wabigoon Forest Harvest Volumes from 2010 to 2017. For the current Wabigoon Forest FMP period, the estimated available net merchantable conifer harvest volume is approximately 4.53 million cubic metres and an additional 1.14 million cubic metres of undersized and defect conifer volume is estimated, while the planned conifer harvest volume is approximately 4.02 million cubic metres. The estimated available net merchantable hardwood harvest volume is approximately 1.84 million cubic metres and an additional 0.7 million cubic metres of undersized and defect hardwood volume is estimated, while the planned hardwood harvest volume is approximately 2.04 million cubic metres (Domtar Inc. 2019).

Table 2.5-3: Harvest Volumes, Wabigoon Forest 2010-2017

Year	Harvest Type	Actual Harvest Volume (m ³)	Undersized Volume (m ³)
2010/2011	Regular	618,852	61,037
2011/2012	Regular	556,001	57,150
2012/2013	Regular	377,436	42,747
2013/2014	Regular	495,526	51,552
	Salvage	1672	162
2014/2015	Regular	789,776	82,907
	Salvage	63,082	0
2015/2016	Regular	633,275	65,452
	Salvage	13,028	0
2016/2017	Regular	612,953	48,498
	Salvage	16,533	0

Source: Domtar Inc. 2019.

According to the Wabigoon Forest 2023-2024 Annual Work Schedule, harvest operations in the Local Study Area will occur in the following areas (**Map 2.5-5**) (Domtar Inc. 2022):

- BLK: BL70 east of Melgund Lake, west of Adair Lake Conservation Reserve;
- BLK: BO168 southeast of Adair Lake Conservation Reserve, northeast of Pyatt Lake Conservation Reserve, south of Hyndman Lake;
- BLK: BO182 north of Bulrush Lake;
- BLK: BO189 on the east side of Garneau Lake;
- BLK: BO189 surrounding the west end of Countess Lake;
- BLK: BO190 west of Bulrush Lake, north side of Highway 17 and south of the railway.
- BLK: BO191 southwest of Garneau Lake, southeast of Pyatt Lake Reserve, north of Highway 17;
- BLK: RA269 south and southeast sides of Spruce Lake, north and northeast of West Hawk Lake;
- BLK: RA270 on the northeast side of Spruce Lake, south of Spruce Road;
- BLK: SB239 northeast of Lowery Lake and Church Lake, north of Mennin Lake, and south of Dymment Road;
- BLK: SB240 north of Lowery Lake and Church Lake; and
- BLK: SB241 east of Tabor Lake, northwest of Lowery Lake.

The Dryden Forest is located along Highway 17, stretching from the western boundary of the Dryden District to 50 km outside of the Township of Ignace in the east. The Dryden Forest is primarily bordered by the Wabigoon Forest to the north, south, and east, and Whisky Jack Forest to the north and west. The current outer boundary of the Dryden Forest encompasses 307,113 hectares. The Dryden Forest is comprised of balsam fir, birch, upland cedar, jack pine, white pine, red pine, poplar, and black spruce trees (Dryden Forest Management Company 2021). Dryden Forest Management Company Limited is the Sustainable Forest Licence holder for licenced harvest in the Dryden Forest. The current FMP period for the Dryden Forest is 2021 to 2031. The Sustainable Forest Licence permits Dryden Forest Management Company Limited to harvest all tree species within the licence area (Government of Ontario 2022d; 2018c). See **Table 2.5-4** for Dryden Forest harvest volumes from 2010 to 2017.

For the current 10-year Dryden Forest FMP period (2007 to 2017), the estimated available conifer harvest volume is approximately 1.2 million cubic metres and an additional 0.38 million cubic metres of undersized and defect conifer volume is estimated, while the planned conifer harvest volume is approximately 1.13 million cubic metres. The estimated available hardwood harvest volume is approximately 0.48 million cubic metres and an additional 0.25 million cubic metres of undersized and defect hardwood volume, while the planned hardwood harvest volume is approximately 0.42 million cubic metres (Dryden Forest Management Company 2021).

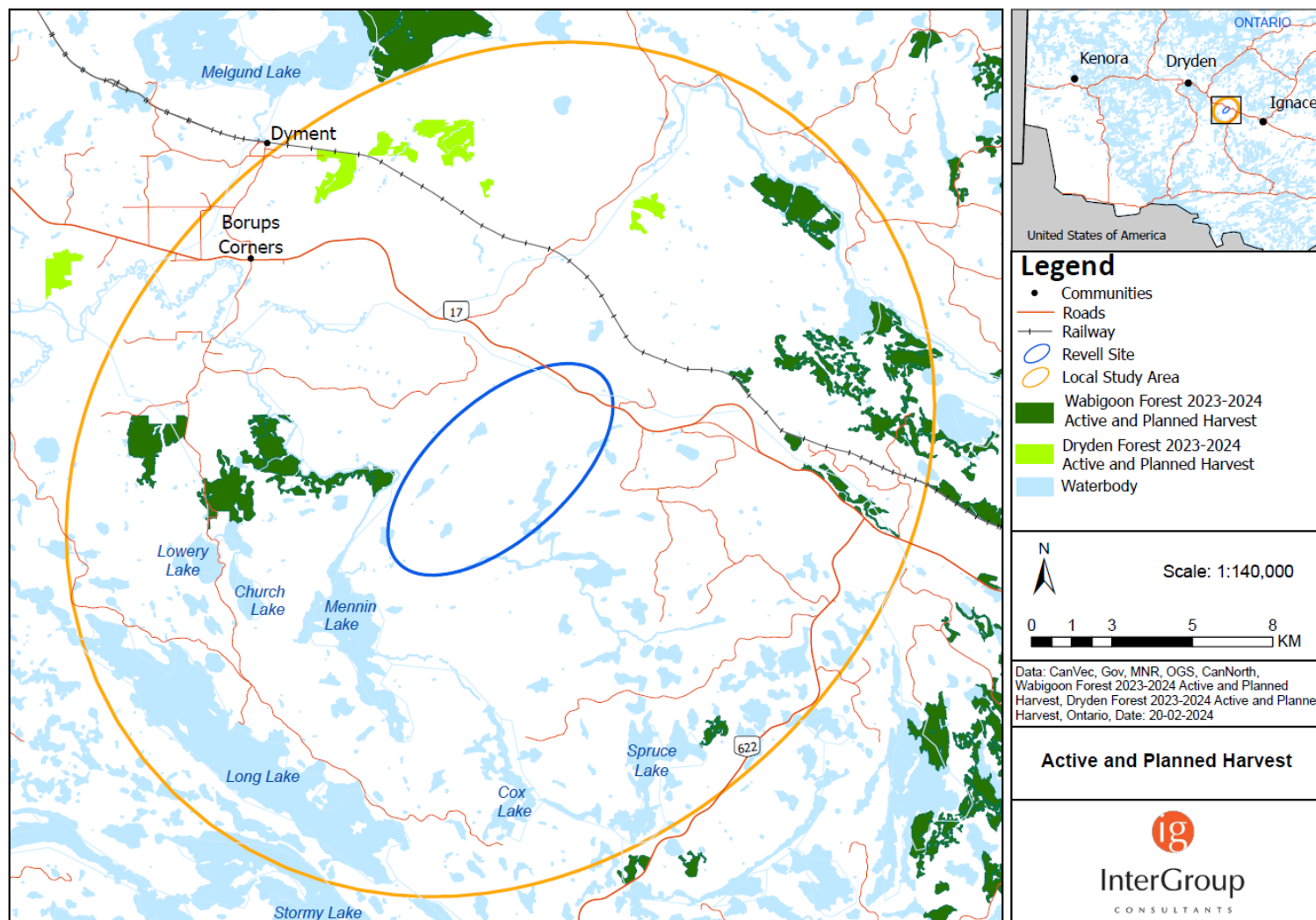
Table 2.5-4: Harvest Volumes, Dryden Forest 2010-2017

Year	Actual Harvest Volume (m ³)		
	Merchantable	Undersize	Defect
2010/2011	164,378	25,290	9,042
2011/2012	129,484	12,592	7,851
2012/2013	81,264	7,483	6,585
2013/2014	103,718	7,111	5,378
2014/2015	54,809	3,121	2,276
2015/2016	103,392	10,484	8,304
2016/2017	141,926	11,627	16,665

Source: Dryden Forest Management Company 2021.

According to the Dryden Forest 2023-2024 Annual Work Schedule, harvest operations in the Local Study Area will occur in OBM 55549 and OBM 56549 (see **Map 2.5-5**) (Dryden Forest Management Company 2022).

Map 2.5-5: Active and Planned Harvest in the Local Study Area, 2023-2024



2.5.4 Fishing

This section describes fishing in the Local Study Area, including fisheries management zones, commercial fishing, and recreational fishing.

2.5.4.1 Fisheries Management Zones

Ontario has 20 Fisheries Management Zones ("FMZ") that set catch limits and seasons based on the needs and nature of each FMZ. The Local Study Area is located along the boundaries of FMZs 4 and 5.

FMZ 4 covers 60,440 square kilometres in northwestern Ontario, 25% of which is privately owned. Fishing in FMZ 4 is an important recreational, commercial, and tourism activity, with species including northern pike, walleye, lake trout, lake whitefish, smallmouth bass, and muskellunge. FMZ 4 also has lakes stocked with brook trout, rainbow trout, and splake. FMZ 4 is part of the Northwest Bait Management Zone, where baitfish and leeches, alive or dead, may not be transported out of the Bait Management Zone. The following lakes are waterbody exceptions, which have different regulations than the rest of FMZ 4: Big Vermilion Lake, Cedar Lake, Cloudlet Lake, Hooch Lake, Lac Seul, Maskinonge Lake, Minnitaki Lake (including Abram Lake, Duck Lake, Pelican Lake, Hidden Lake, Botsford Lake, English River and Rice River), Red Lake and Gullrock System (including Chukuni River, Keg Lake, Ranger Lake, and Two Island Lake), and Sydney Lake Area (Government of Ontario 2023e). None of the FMZ 4 waterbody exceptions are located within the Local Study Area. See **Section 2.5.4.3** for zone-wide seasons and limits. Participants of stakeholder engagement for previous NWMO studies shared that there is a known walleye spawning area between Arethusa Lake and Mit Lake along the Basket River in FMZ 4 (NWMO 2021).

FMZ 5 covers 44,360 square kilometres in northwestern Ontario, 90% of which is Crown land. FMZ 5 is home to 5,000 lakes and thousands of kilometres of rivers and streams. Fishing in FMZ 5 is an important recreation, commercial, and tourism activity, with species including walleye, lake trout, northern pike, smallmouth bass, black crappie, lake whitefish, and muskellunge. FMZ 5 is part of the Northwest Bait Management Zone, where baitfish and leeches, alive or dead, may not be transported out of the Bait Management Zone.

The following are waterbody exceptions, which have different regulations than the rest of FMZ 5: Dinorwic Lake (including Minnehaha Lake, Rock Lake and Turtlepond Lake), Dryberry Lake, Eagle Lake, Experimental Lakes Area, Kakagi Lake, Lake of the Woods, Quetico Provincial Park, Rainy Lake, Rainy River, Seine River System, Shoal Lake, Wabigoon River (including Butler Lake, Larson Lake, Mile Lake, Olsen Lake, Paulson Lake and Trap Lake) and Winnipeg River System (Government of Ontario 2023e). None of the FMZ 5 waterbody exceptions are located within the Local Study Area. See **Section 2.5.4.3** for zone-wide seasons and limits.

According to results from key person interviews, fish populations in FMZs 4 and 5 are among the healthiest in Ontario; however, a challenge in managing these zones is balancing the health of fisheries while being mindful of the economic importance of fishing to the local economy (NWO Baseline Studies Key Person Interview Program 2022-2023). See **Sections 2.5.4.2** and **2.5.4.3** for more information on commercial and recreational fishing in the Local Study Area.

2.5.4.2 Commercial Fishing

Currently, there are no active commercial fishing licences in the Local Study Area. The closest active commercial fishing licence to the Local Study Area is for Sturgeon Lake to harvest lake whitefish, with incidental quotas for walleye, pike, and lake trout (NWO Baseline Studies Key Person Interview Program 2022-2023).

Prior to 1984, commercial fishing activities in Ontario did not have established quotas for commercial fishing licence holders. Commonly known as the modernization of the commercial fishery, quotas were established in 1984 after consultation with the Ontario Fish Producers Association (Kerr 2010). In 2021, Ontario harvested over 25.5 million pounds of fish, valued at roughly \$39.9 million. A 10-year trend, from 2011 to 2021, suggests commercial fishing harvests in Ontario have remained consistent at around 25-30 million pounds of fish per year, with the exception of the years 2018 to 2020, when harvests were under 25 million pounds (OCFA 2021).

FMZ 4 is situated north of FMZ 5, and encompasses the larger communities of Red Lake, Ear Falls, Sioux Lookout, and Ignace. There are 27 commercial licences in FMZ 4, but only 19 are active. Of the active licences, seven are issued for Specially Designated Waters ("SDW") lakes and the remaining 12 are on non-SDW lakes. Lake Whitefish account for 88% of the available quota in FMZ 4. There are 306 commercial baitfish harvest blocks, all of which are allocated.

Lakes in FMZ 5 generally have lower nutrient levels than other zones in the region and therefore have lower production. Within FMZ 5 there are 21 commercial licences/allocations on non-SDW lakes and an additional 25 licences on SDW lakes. There are 311 commercial baitfish blocks; however, because one person may fish multiple blocks, the number of harvesters is less than this. Most fishing in FMZ 5 is done by First Nation individuals or communities and individuals who identify as Métis (Government of Ontario 2021c). As with FMZ 4, the most important commercial species in FMZ 5 is Lake Whitefish, which account for 88% of the allocated quota of 185,700 lbs from non-SDW lakes. There are smaller quota allocations for northern pike, walleye, and black crappie. Quotas also exist for lake sturgeon, although no harvesting occurs due to self-imposed moratoriums by the First Nation communities holding the licences (Government of Ontario 2021c). The estimated value of baitfish and leeches harvested from FMZ 5 was \$5.4 million dollars in 2009 (Government of Ontario 2021c). **Table 2.5-5** provides information on the inactive commercial fishing licences in the Local Study Area and their last date of activity.

Table 2.5-5: Last Active Commercial Fishing Licences in the Local Study Area

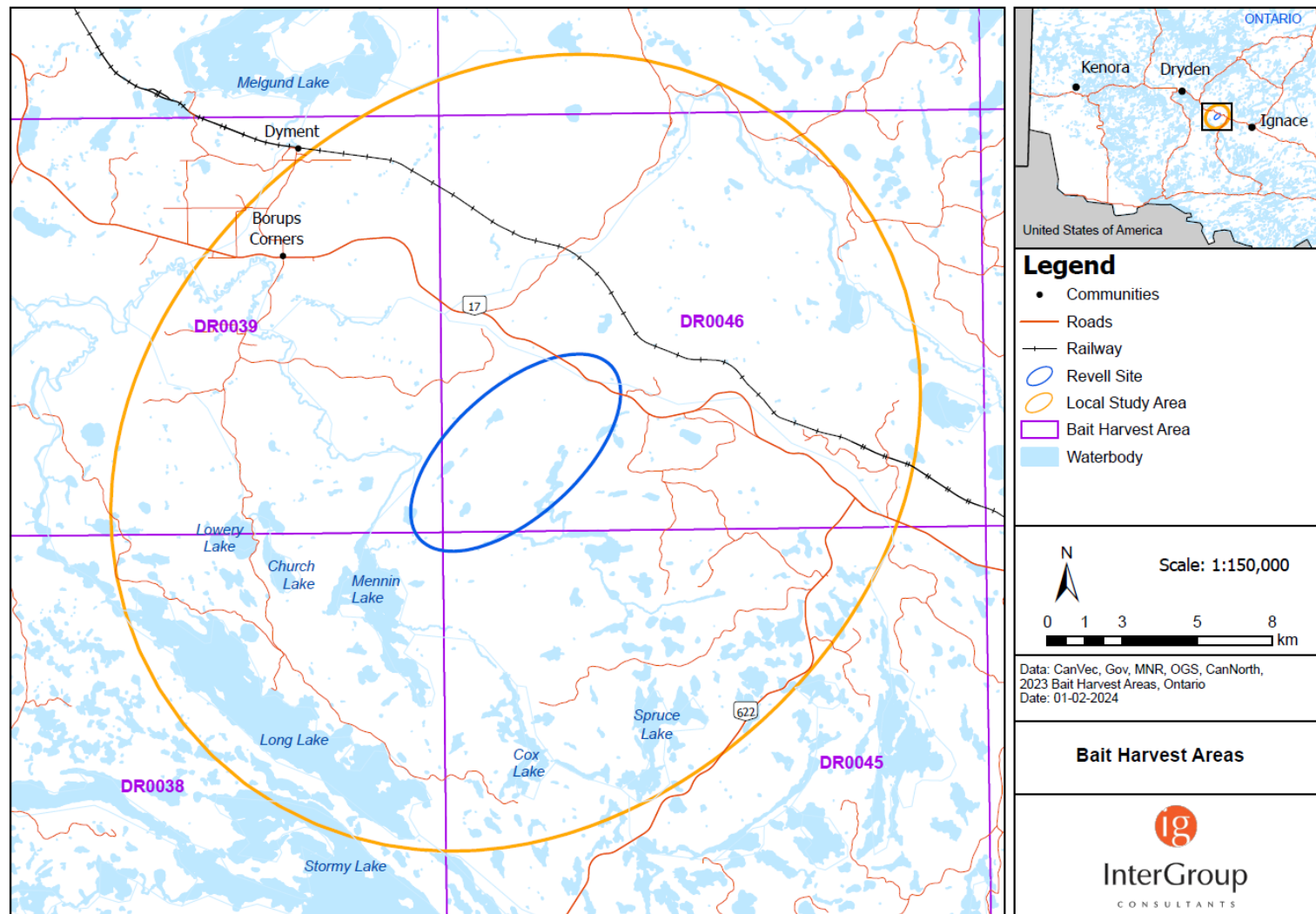
Lake	Year of last active license
Kawashegamuk/Long Lake	2005
Stormy Lake	2005

Source: NWO Baseline Studies Key Person Interview Program 2022-2023; MNRF personal communication, July 21, 2023.

Sustainable harvesting of bait is an important aspect of fishing in Ontario. Ontario has Bait Management Zones (BMZs) to minimize the spread of invasive species and fish diseases amongst waterbodies in the province. The Local Study Area is located in the Northwestern BMZ. Anglers must purchase their baitfish and leeches from a commercial license holder in the BMZ in which they are fishing and use or dispose of baitfish and leeches within two weeks of their purchase while retaining a legible receipt for their bait. A receipt is not required when an angler is using bait in the BMZ where their primary residence is located (Government of Ontario 2021i).

A commercial bait license is required to both harvest and deal (buy or sell) bait. There are 48 species of bait which may be harvested and dealt with for a commercial bait license in Ontario (Government of Ontario 2021i). Bait resources are assigned to harvesters using a bait harvest block system. Across most of the province, there is one harvester assigned per bait block, however, there are some exceptions (e.g., Lake Erie) (Ontario GeoHub 2023). **Map 2.5-6** displays the bait harvest blocks located in the Local Study Area. Six bait harvest areas cross into the Local Study Area.

Map 2.5-6: Bait Harvest Areas in the Local Study Area



[file:///igsvrfs01.intergroup.local/Projects/P959 NWMO baseline/8.0 Socio-cultural/8.4 LRU/Maps for LRU 2023/Third drafts 2023 09 13/Bait Blocks_Sept132023.pdf](file:///igsvrfs01.intergroup.local/Projects/P959%20NWMO%20baseline/8.0%20Socio-cultural/8.4%20LRU/Maps%20for%20LRU%202023/Third%20drafts%202023%2009%2013/Bait%20Blocks_Sept132023.pdf)

2.5.4.3 Recreational Fishing

Recreational fishing is a key activity in the Local Study Area, both for residents and tourists. The most popular species for recreational fishing are walleye, northern pike, lake trout, brook trout, smallmouth bass, lake whitefish, sauger, and yellow perch (NWO Baseline Studies Key Person Interview Program 2022-2023). Participants from key person interviews shared that residents and visitors to the Local Study Area enjoy fishing in the region because of the healthy fish populations, the easy access to remoteness/isolation when out on a lake, and the natural beauty of the area (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents and visitors may participate in fishing derbies, information on fishing derbies and other community events are described in **Section 2.4.6**.

In 2005, a new Ecological Framework for Recreational Fisheries Management in Ontario was approved to ensure resource sustainability while optimizing recreational angling opportunities (Government of Ontario 2020b). The Ecological Framework for Recreational Fisheries Management has evolved since it was initially launched to include specific emphasis on the development of Fisheries Management Plans. The Fisheries Management Plans are a regulatory framework that supports resource sustainability within established zones for the management of major species and fisheries, along with actions and strategies to achieve the objectives (Government of Ontario 2020b; Government of Ontario 2021b; OCFA n.d.).

A fishing licence is required to fish in Ontario, however, fishing licences are not required for individuals under the age of 18 or over the age of 65. Fishing licences can be valid for one or three years and for either conservation (reduced catch limits) or sport (normal catch limits) (Government of Ontario 2023a).

Table 2.5-6 and **Table 2.5-7** describe the species, seasons, and catch limits in FMZs 4 and 5, respectively. There are no species exceptions, waterbody exceptions, or fish sanctuaries for angling in the Local Study Area for FMZs 4 and 5.

Table 2.5-6: FMZ 4 Zone-Wide Season and Catch Limits

Species	Season	Sport Fishing Licence Catch Limit	Conservation Licence Catch Limit
Brook trout	January 1 to Labour Day	5; not more than 1 greater than 30 cm	2; not more than 1 greater than 30 cm
Crappie	Open all year	15	10
Lake sturgeon	Closed all year	Not available	Not available
Lake trout	January 1 to September 30	2; not more than 1 greater than 56 cm	1; no size limit
Lake whitefish	Open all year	12	6
Large and smallmouth bass combined	Open all year	2; must be less than 35 cm from January 1 to June 30 and December 1 to December 31 4; no size limit from July 1 to November 30	1; must be less than 35 cm from January 1 to June 30 and December 1 to December 31 2; no size limit from July 1 to November 30
Muskellunge	Third Saturday in June to December 15	1; must be greater than 102 cm	0
Northern pike	Open all year	4; none between 70-90 cm, not more than 1 greater than 90 cm	2; none between 70-90 cm, not more than 1 greater than 90 cm
Rainbow trout	Open all year	5	2
Splake	Open all year	5	2
Sunfish	Open all year	50	25
Walleye and sauger combined	January 1 to April 14 and third Saturday in May to December 31	4; not more than 1 greater than 46 cm	2; not more than 1 greater than 46 cm
Yellow perch	Open all year	50	25

Source: Government of Ontario 2023e.

Note: cm is centimetres.

Table 2.5-7: FMZ 5 Zone-Wide Seasons and Catch Limits

Species	Season	Sport Fishing Licence Catch Limit	Conservation Licence Catch Limit
Brook trout	Open all year	5	2
Brown trout	Open all year	5	2
Crappie	Open all year	10	5
Lake sturgeon	Closed all year	Not available	Not available
Lake trout	January 1 to September 30	2; not more than 1 greater than 56 cm from September 1 to September 30	1; no size limit
Lake whitefish	Open all year	12	6
Large and smallmouth bass combined	Open all year	4; must be less than 35 cm from January 1 to June 30	2; must be less than 35 cm from January 1 to June 30
Muskellunge	Third Saturday in June to December 15	1; must be greater than 102 cm	0
Northern pike	Open all year	4; none greater than 75 cm	2; none greater than 75 cm
Rainbow trout	Open all year	5	2
Splake	Open all year	5	2
Sunfish	Open all year	50	25
Walleye and sauger combined	January 1 to April 14 and third Saturday in May to December 31	4; not more than 1 greater than 46 cm	2; not more than 1 greater than 46 cm
Yellow perch	Open all year	50	25

Source: Government of Ontario 2023e.

Note: cm is centimetres.

Fish can contain harmful contaminants from human activity or natural sources that make them unsuitable for consumption (Government of Ontario 2023p). The suitability of a fish for consumption can be determined through their type, size, and location. The Province of Ontario analyzes fish for contaminants and provides guidance for specific fish species and/or size ranges. In the Local Study Area, Kawashegamuk/Long Lake and Stormy Lake have fish consumption advisories for fish species including Burbot Ling, Lake Trout, Lake Whitefish, Northern Pike, Walleye, and White Sucker (Government of Ontario 2021m; 2021n).

2.5.5 Hunting

Hunting in the Local Study Area is both a recreational activity and source of food for many residents. Hunting is also an important source of income for local tourist outfitting and guiding businesses.

According to key person interviews (NWO Baseline Studies Key Person Interview Program 2022-2023) hunting in the Local Study Area around the Revell Site occurs for waterfowl.⁴¹ Other game hunted in the area include moose, bear, small game, and grouse.

A hunting licence and Outdoors Card is required to hunt in Ontario. Licences are specific to the game an individual wishes to hunt and this information is listed on the licence summary. In Ontario, firearms for hunting include rifles, shotguns, muzzle-loading guns, air or pellet guns, and bows (including longbows, crossbows, compound bows, and recurve bows). Air and pellet guns are not permitted for hunting big game but may be used to hunt small game (Government of Ontario 2023c). If a person is hunting with a gun, they require proof of firearms accreditation as per the *Firearms Act* (Government of Canada 1995).

Outdoors Cards are identification cards that allow individuals to hunt and fish in Ontario (Government of Ontario 2022b). Tags are required for hunting moose, deer, wolf/coyote (only in certain Wildlife Management Units), wild turkey, black bear, and elk in Ontario. Not all tags are acquired the same way. For example, bear tags can be purchased in Ontario, while moose tags are allocated to Ontario resident applicants through a points-based process with primary and secondary allocation stages (Government of Ontario 2024; 2023b).

Non-residents of Ontario must use the services of a licenced tourist outfitter to hunt in Ontario (Government of Ontario 2022c). To hunt moose and bear with a tourist outfitter, visitors must have an Outdoors Card, and purchase a moose/bear licence prior to arriving at the outfitter (Government of Ontario 2023b; 2023c).

2.5.5.1 Wildlife Management Units

Wildlife Management Units (WMUs) are designated areas in the province used for several wildlife management purposes such as indicating hunting areas, hunting seasons, and harvest quotas (Government of Ontario 2015). Wildlife Management Units are regulated under the *Fish and Wildlife Conservation Act* (Government of Ontario 1997). The Local Study Area includes WMUs 5 and 9A (Government of Ontario 2023c). Residents and visitors in the Local Study Area also hunt in other WMUs (NWO Baseline Studies Key Person Interview Program 2022-2023).

The WMUs are assigned to MNR districts. The Dryden District includes WMU 5. The Dryden District has MNR offices in both Ignace and Dryden. The Fort Frances District includes WMU 9. The Fort Frances District has MNR offices in both Fort Frances and Atikokan (Government of Ontario 2023c).

Table 2.5-8 displays hunting seasons by game type and WMU for rifles, shotguns, muzzle-loading guns, and bows.

⁴¹ Other hunting in the Local Study Area may occur which was not captured through the NWO Baseline Studies Key Person Interview Program 2022-2023.

Table 2.5-8: Hunting Seasons by Species

Game	WMUs	Season
White-tailed deer	5, 9A	October 7 – December 15
Moose	5, 9A	October 14 – December 15
Black bear	5, 9A	May 1 – June 15
Ducks	5, 9A	September 10 – December 25
Canada, Cackling, Snow, and Ross's geese	5, 9A	September 1 – December 16
Ruffed, spruce, and sharp-tailed grouse, ring-necked pheasant, double-crested cormorant, gray and fox squirrel	5, 9A	September 15 – December 31
Snowshoe hare	5, 9A	September 15 – March 31
Raccoon and opossum	5, 9A	October 5 – January 31
Weasel	5, 9A	October 25 – last day of February

Sources: Government of Ontario 2023c; Government of Canada 2022a.

2.5.5.2 Hunting Organizations

The Ontario Federation of Anglers and Hunters ("OFAH") is a non-profit, membership-based organization representing over 100,000 members and 725 member clubs. It works to promote fishing and hunting while advocating for management and conservation of species. The OFAH is divided into nine zones. The Local Study Area is located in OFAH Zone A (OFAH n.d.).

2.5.6 Commercial Trapping

Trapping is the use of a device to capture a fur-bearing mammal remotely, most often to use or sell the pelts and occasionally for food and other products and for nuisance trapping. Trapping plays an important role in the management of wildlife populations. It is important to note that traplines and trapping regulations are a result of colonialism and do not necessarily reflect traditional Indigenous values when it comes to land and wildlife management (Finch 2020). Species typically trapped in the Local Study Area include beaver, pine marten, fisher, red fox, weasel, mink, lynx, and squirrels (NWO Baseline Studies Key Person Interview Program 2022-2023).

2.5.6.1 Trapping Regulations

All trappers must maintain a trapping licence and adhere to its regulations, which outline where a trapper may trap, the harvest quotas for certain species, and the traps that a trapper may use. Trappers must also report their harvest each year by submitting a mandatory Season End Harvest Report that identifies the number of animals they trapped, sold, and kept. Ontario

trapping requirements are set out in the *Fish and Wildlife Conservation Act* (Government of Ontario 1997; Government of Ontario 2021e).

The Ontario Fur Managers Federation was established in 1995 and is the provincial body that represents and advocates for trappers in Ontario. The Ontario Fur Managers Federation issues over 8,000 trapping licences annually (OFMF n.d.a). The Ontario Fur Managers Federation's mission is to promote the conservation and sustainability of furbearers through the promotion of humane harvesting, continued education, and public awareness (OFMF n.d.b).

2.5.6.2 Registered Traplines

A registered trapline is a pre-determined area for trapping on Crown land. Rights to these traplines are managed by the Ontario Ministry of Natural Resources and Forestry and are often passed down through generations within a family. In addition to traplines, trappers may trap on private land with permission from the landowner(s). Every trapline is assigned a head trapper who has the right to commercially harvest fur-bearing mammals in their trapline area. Head trappers may also choose to have helper trappers to assist them, but helper trappers are not assigned a quota, rather, they help the head trapper with their quota (Hunters and Fishers of Ontario 2020).

There are 6 traplines in the Local Study Area as listed in **Table 2.5-9**. **Map 2.5-7** shows the traplines located in the Local Study Area.

Table 2.5-9: Traplines in the Local Study Area

Trapline Area Number	Calculated Area (ha)	Area of Trapline in Local Study Area (ha)	Area of Trapline in Revell Site (ha)
IG033	18,598.8	10,136.7	131.7
IG034	10,793.2	4,236.1	N/A
IG054	24,035.2	12,260.3	N/A
DR010	21,786.7	8,337.6	N/A
DR023	6,599.8	1,390.0	N/A
DR024	32,290.4	18,731.0	2,788.3

Source: Government of Ontario 2023f.

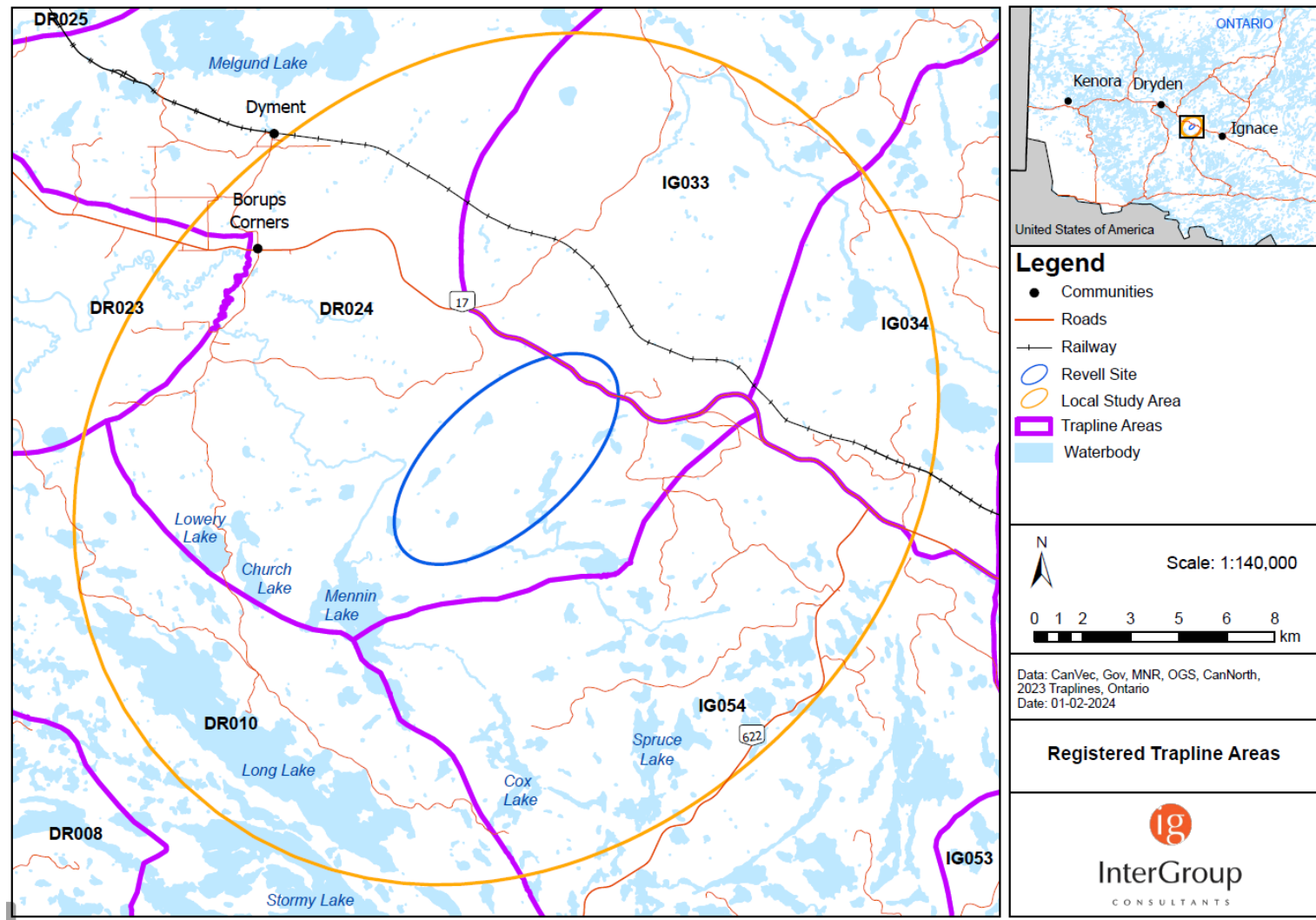
Note: Measurements converted from square meters to hectares by InterGroup Consultants.

Both the Township of Ignace and the City of Dryden have trappers councils. Trappers councils maintain relations with forestry companies in the area to maintain access to traplines, such as getting access to bridge crossings, and also hold regular meetings with the MNRF. Trappers councils also hold trapping classes for new trappers. According to results from key person interviews, uptake of trapping is decreasing amongst youth in the area (NWO Baseline Studies Key Person Interview Program 2022-2023). Trappers councils may also hold trapping workshops for existing trappers.

According to the NWO Baseline Studies Key Person Interview Program 2022-2023, the Ignace Trappers Council used to have regular meetings with MNRF, but engagement at the local level with the MNRF has been less frequent. The Council holds trapping courses for ages 13 to 60. The Council also used to hold trapping workshops, but due to a loss of funds and members the workshops have ceased. The Ignace Trappers Council is currently in the process of working to bring more trappers to the Council, encourage new trappers to get involved in the practice, and host more regular meetings to update trappers on trends (NWO Baseline Studies Key Person Interview Program 2022-2023). The Ignace Trappers Council also runs the nuisance beaver⁴² program for the area (NWO Baseline Studies Key Person Interview Program 2022-2023).

⁴² Beavers may be deemed a 'nuisance' if their dams cause the flooding of roads, harvesting areas, etc.

Map 2.5-7: Registered Trapline Areas in the Local Study Area



2.5.7 Outfitting and Guiding

This section describes the types of services offered by outfitters who are located in the Local Study Area or may use the lands and resources in and around it, including information on Bear Management Areas (**Section 2.5.7.1**). Outfitting and guiding is a critical part of tourism in the Local Study Area and region. Outfitters and guides offer a variety of hunting and fishing experiences by providing direction, assistance, or expertise in hunting and angling. They often organize the services, equipment, and accommodations clients require during their visits. Fishing is the most popular tourism activity, followed by hunting. Key person interviews emphasized the importance of tourism to the local economy, stating that tourism and fishing are the same thing in northwestern Ontario (NWO Baseline Studies Key Person Interview Program 2022-2023).

Tourism is characterized as the “lifeblood” of the small communities in northwestern Ontario, being an economic constant compared to other industries in the area, like forestry and mining. Tourists from the United States make up 90-100% of outfitting and guiding clients in northwestern Ontario. The COVID-19 pandemic had large, negative effects on tourist outfitters in northwestern Ontario, with most operators losing three full tourist seasons as the COVID-19 pandemic regulations at the U.S.A./Canada border were still in place until the fall of 2022 (NWO Baseline Studies Key Person Interview Program 2022-2023).

Key person interviews indicate that tourist outfitters rely on the perception of northwestern Ontario’s pristine natural environment to attract clients (NWO Baseline Studies Key Person Interview Program 2022-2023). The wilderness plays an important role in the reason tourists visit the region to take part in outdoor recreational activities, particularly fishing and hunting. Participants shared that any perceived alteration to the natural environment in the region could affect outfitting and guiding businesses, making participation in outdoor activities less desirable.

Table 2.5-10 identifies resorts and lodges that provide outfitting and/or guiding services north of Ignace along the Highway 599 corridor, along the 325 Road, west to Wabigoon and Dinorwic Lakes, and along Highway 622 and their relative distance to the Local Study Area.⁴³ The table includes outfitting and/or guiding services within 100 km of the Local Study Area. Tourist outfitters located outside of the Local Study Area may use locations within the Local Study Area to carry out their operations/services based on the needs and interests of their clients; however, their main locations are elsewhere (NWO Baseline Studies Key Person Interview Program 2022-2023). Outfitting operators/lodges offer a variety of services and activities, including cabins, campsites, RV sites, outposts, floatplane services, fishing, bear hunting, moose hunting, white-tailed deer hunting, gamebird hunting, timber wolf hunting, hiking, bird watching, and gathering (e.g., berries, mushrooms), and boat/motor rentals, with some also offering winter activities including ice fishing and snowmobiling.

Sandy Point Camp is in the Local Study Area on Kawashegamuk/Long Lake and offers cabin rentals, boat rentals, bear hunting, moose hunting, grouse hunting, and fishing, as well as guiding services for hunting and fishing (Sandy Point Camp n.d.a; n.d.b; n.d.c). Sandy Point Camp’s biggest attraction is hunting and fishing as well as the feeling of ‘remoteness’ provided at the Camp. The Camp’s location provides access to several ATV and hiking trails (NWO Baseline Studies Key Person Interview Program 2022-2023).

⁴³ This list does not include tourist outfitters east of Upsala or on the Lac Des Mille Lacs chain of lakes.

Table 2.5-10: Outfitting and Guiding Operators

Operator ¹	Location	Distance from Local Study Area (km) ^{2,3}	Camping	Cabins	Boat, Motor, and/or Trailer Rental	Float plane ⁴	Hunting						Fishing
							Moose	Bear	White-Tailed Deer	Grouse	Timber Wolf	Waterfowl	
Outfitting and Guiding Operators in the Local Study Area													
Sandy Point Camp	Long Lake	0 km		X	X		X	X		X			X
Outfitting and Guiding Operators Located within 100 km of the Local Study Area													
Agimac Lake Resort	Agimak Lake	27.7	X	X	X		X						X
Agimac River Outfitters	Indian Lake	29.3	X	X	X		X						X
Andy's Graystone Camp	Graystone Lake	83.4		X	X								X
Bear Paw Landing	Wabigoon Lake	18.2		X				X	X				X
Bonny Bay Camp	Wabigoon Lake	29.0		X				X	X	X			X
Breezy Point Camp	Willow Narrows Lake	41.2											X
Brown's Clearwater West Lodge	Clearwater West Lake	51.4	X	X			X	X		X	X		X
Cobb Bay Lodge	Sturgeon Lake	85.4		X			X	X		X			X
Cobblestone Lodge	Raleigh Lake	7.4		X				X					X
Cozy Camp	English River	48.1		X			X	X		X			X
Davy Lake Campground and Resort	Davy Lake/Ignace	29.9	X	X									X
Gummeson's Camp	Mameigwess Lake	16.4	X	X	X								X

Table 2.5-10 Continued: Outfitting and Guiding Operators

Operator ¹	Location	Distance from Local Study Area (km) ^{2,3}	Camping	Cabins	Boat, Motor, and/or Trailer Rental	Float plane ⁴	Hunting						Fishing
							Moose	Bear	White-Tailed Deer	Grouse	Timber Wolf	Waterfowl	
Outfitting and Guiding Operators Located within 100 km of the Local Study Area													
Harris Bay Resort	Sturgeon Lake	73.6		X			X	X		X			X
Huber's Lone Pine Lodge	Wabigoon Lake/ Dinorwic Lake	18.2		X				X					X
Ignace Airways and Outposts	Agimak Lake	28.2		X		X	X						X
Indian Point Camp	Wabigoon Lake	39.1	X	X				X	X	X	X		X
Lumberjack Lodge	Sturgeon Lake	68.5	X	X	X		X	X		X			X
Merkel's Camp	Wabigoon Lake	22.8	X	X			X	X	X	X	X	X	X
Moose Creek Bait and Camp	Elva Lake	33.4	X	X				X	X				
Polar Star Lodge	Wabigoon Lake	24.4		X			X		X	X		X	X
Press Lake Camp	Press Lake	46.8	X	X			X			X		X	X
Raleigh Lake Resort and Outposts	Raleigh Lake	7.4		X	X		X	X			X	X	X
Raven Lake Lodge	Raven Lake	29.3		X									X
Rousseau's Landing	Sandbar Lake	33.0	X	X	X		X	X	X	X			X
Selwyn Lake Outfitter	Selwyn Lake	80.3		X									X

Table 2.5-10 Continued: Outfitting and Guiding Operators^{1,2}

Operator ¹	Location	Distance from Local Study Area (km) ^{2,3}	Camping	Cabins	Boat, Motor, and/or Trailer Rental	Float plane ⁴	Hunting						Fishing
							Moose	Bear	White-Tailed Deer	Grouse	Timber Wolf	Waterfowl	
Outfitting and Guiding Operators Located within 100 km of the Local Study Area													
Silver Dollar Inn and Campground	Silver Dollar	66.8	X	X			X	X					X
Sowden Lake Resort	Sowden Lake	60.0		X			X			X			X
Sturgeon Lake Lodge	Sturgeon Lake	68.1	X	X	X		X	X	X	X			X
Ten Mile Lake Camp	Ten Mile Lake	84.9		X									X
Wabigoon Lake RV Park	Wabigoon Lake	22.6	X										X
White Feather Resort	Dinorwic Lake	-		X									X
Young Lake Lodge	Young Lake	67.6	X	X	X		X	X					X

Source: Agimak Lake Resort n.d.a; Agimak Lake Resort n.d.b; Agimac River Outfitters n.d.; Bear Paw Landing n.d.; Bonny Bay Camp n.d.a; Bonny Bay Camp n.d.b; Cobblestone Lodge n.d.a; Cobblestone Lodge n.d.b; Cobblestone Lodge n.d.c; Cozy Camp n.d.; Davy Lake Campground and Resort n.d.a; Davy Lake Campground and Resort n.d.b; Gummesson's Camp n.d.; Huber's Lone Pine Lodge n.d.; Ignace Outposts n.d.a; Ignace Outposts n.d.b; Indian Point Camp n.d.; Merkel's Camp n.d.a; Merkel's Camp n.d.b; Polar Star Lodge n.d.; Press Lake Camp n.d.a; Press Lake Camp n.d.b; Raleigh Lake Resort and Outposts n.d.a; Raleigh Lake Resort and Outposts n.d.b; Raleigh Lake Resort and Outposts n.d.c; Rousseau's Landing n.d.a; Rousseau's Landing n.d.b; Wabigoon Lake RV Park n.d.; Wabigoon Lake Ojibway Nation n.d.; Andy's Graystone Camp n.d.a; Andy's Graystone Camp n.d.b; Brown's Clearwater Lodge n.d.; Cobb Bay Lodge n.d.; Harris Bay Resort n.d.; Lumberjack Lodge n.d.a; Lumberjack Lodge n.d.b; Moose Creek Bait and Camp n.d.; Silver Dollar Inn n.d.a; Silver Dollar Inn n.d.b; Silver Dollar Inn n.d.c; Sturgeon Lake Lodge n.d.a; Sturgeon Lake Lodge n.d.b; Ten Mile Lake Camp n.d.; Young Lake Lodge n.d.

Note:

1. Services listed are not exhaustive. Operators may offer services beyond those noted in the table.
2. "-" denotes where distance calculation was not available.
3. Distance from the Local Study Area is calculated as the most direct route (i.e., not via roads).
4. Offers fly-in access.

2.5.7.1 Bear Management Areas

Regulations for outfitters and guides depend on the type of hunting/angling they provide to clients. For example, moose and black bear hunting operators have specific requirements and licences to provide clients with moose and bear tags (Government of Ontario 2014b). Bear Management Areas are Crown land areas used by outfitting operators who have been licenced by the MNR to provide black bear hunting services. Bear Management Areas IG-05-088 and IG-09A-040 overlap with the Revell Site (Government of Ontario n.d.b). For information on hunting licences and bear tags see **Section 2.5.5**. **Table 2.5-11** lists the Bear Management Areas located within the Local Study Area and their total area. **Map 2.5-8** depicts the Bear Management Areas in the Local Study Area.

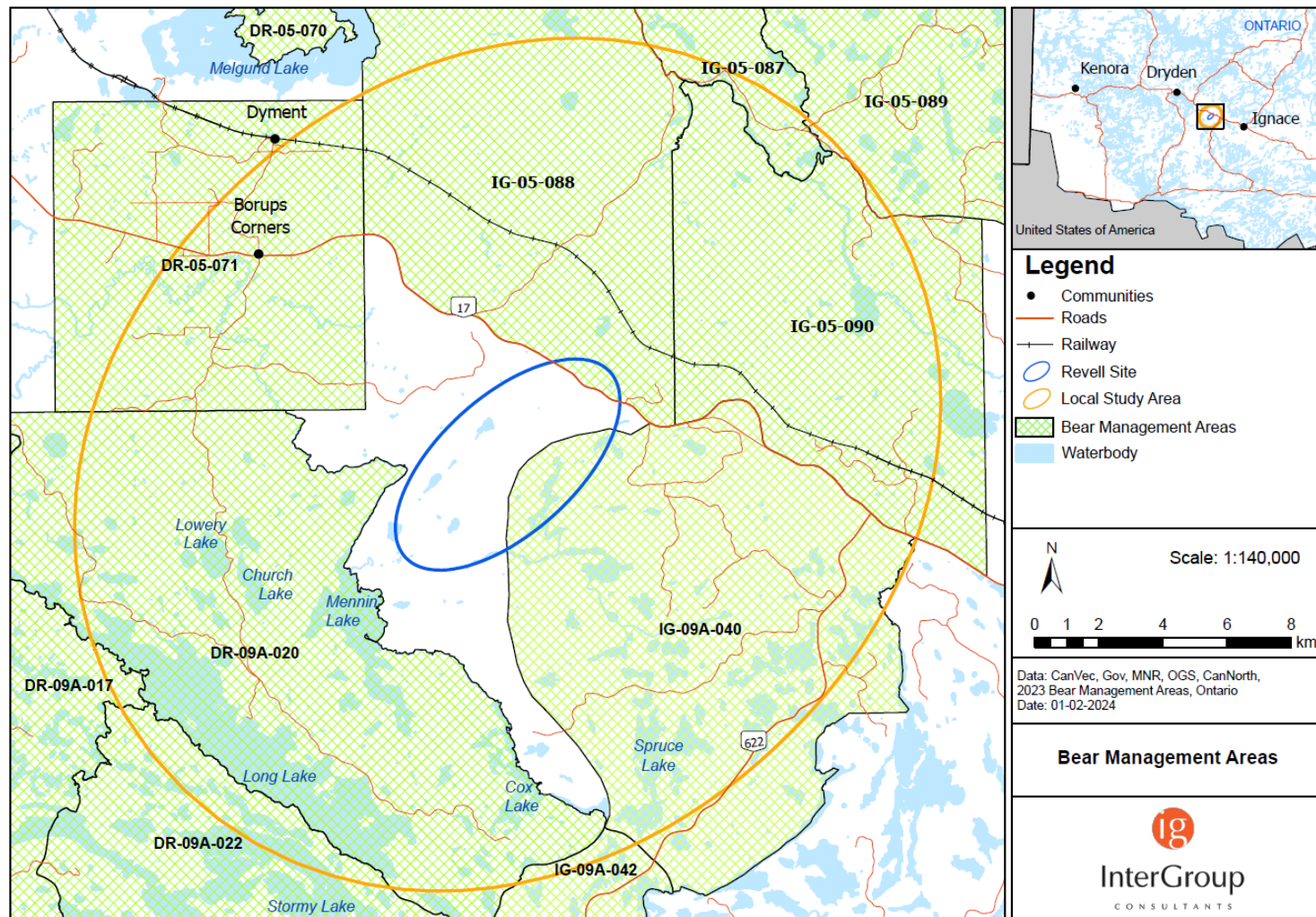
Table 2.5-11: Bear Management Areas in the Local Study Area

Bear Management Area	Total Area (ha)	Area of BMA in Local Study Area (ha)	Area of BMA in Revell Site (ha)
IG-05-088	17,625.2	8,813.4	131.3
IG-05-090	9,455.2	7,597.5	N/A
IG-09A-040	13,195.6	11,193.8	648.3
DR-09A-020	14,975.3	13,068.5	N/A
DR-09A-022	13,175.7	1,079.7	N/A
DR-05-071	9,319.6	5,298.5	N/A
DR-09A-017	20,301.6	158.6	N/A
IG-05-087	20,067.7	634.1	N/A
IG-09A-042	7,842.7	179.9	N/A
IG-05-089	11,613.4	91.6	N/A

Source: Government of Ontario n.d.b.

Note: Measurements converted from square meters to hectares by InterGroup Consultants.

Map 2.5-8: Bear Management Areas in the Local Study Area



2.5.8 Mining

There are no active mines in the Local Study Area. There are mining claims in the Local Study Area however there are no claims in the Revell Site (**Map 2.5-9**). Lac des Iles Mine is the closest active mine to the Local Study Area, located north of Thunder Bay, roughly 150 km direct from Ignace and 200 km by road. Lac des Iles Mine is a palladium operation owned by Impala Canada Ltd. and employs over 700 employees (Impala Canada n.d.).

Mining leases, mining claims, and abandoned mines and quarries are depicted in **Map 2.5-9**. Mining claim holders can explore for minerals on, in, or under the claim cell and can obtain a lease of the claim once the requirements and regulations of the Mining Act (Government of Ontario 1990h) have been met. Mining claim holders do not have the right to develop, take, or dispose of any minerals found on, in, or under the land, unless extraction is below a certain threshold or the government has granted permission to test (Government of Ontario 2022h). A mining lease gives an individual the right, subject to the terms of the lease, to extract and sell minerals from the leased area. A mining lease does not grant ownership of or title to the land, nor is it a permit to mine (Government of Ontario 2022h). There are several claim holders in the Local Study Area, such as (Government of Ontario n.d.d):

- International Lithium Canada Ltd.;
- Ashley Gold Corp.;
- Gravel Ridge Resources Ltd.;
- Last Resort Resources Ltd.; and
- Coleman Roberston.

Current exploration activities⁴⁴ in the Local Study Area include the Howie Lake Project, gold exploration by Ashley Gold Corp in the Kawashegamuk/Long Lake area (Government of Ontario 2023g). See **Section 2.3.2.3.3** for the history of mining in the Local Study Area.

The Local Study Area includes a history of mining and exploratory activity. Abandoned mines are displayed in **Table 2.5-12**. A total of 15 abandoned mine sites were recorded in the Local Study Area. A site may include more than one mine feature type (for example, vertical shafts and trenches). The primary commodity for all sites was gold. All sites include active hazards based on an assessment completed in 1993 (Government of Ontario 2022j). There are no abandoned mines in the Revell Site.

⁴⁴ Mineral exploration activities between January and May 2023, as of June 2023. Smaller operations may be active in the study areas that are not included here.

Table 2.5-12: Abandoned Mines in the Local Study Area

Name of Abandoned Mine or Quarry	Primary Commodity	Mine Feature Type	Hazard Status	Assessment (Completed in 1993)
Glatz	Gold	Vertical exploration shaft	Active	Shaft is 3 meters deep.
Long Lake-McCracken	Gold	Vertical exploration shaft #1	Active	Shaft is 8 meters deep.
		Vertical exploration shaft #2	Active	Shaft is 3 meters deep.
Matson	Gold	Open cut	Active	Open cut is up to 5 meters.
McLean	Gold	Vertical exploration shaft	Active	Reported to include a shaft up to 24 meters deep. Shaft has not been found.
Black Fox	Gold	Vertical compartment shaft	Active	Depth of the shaft is unknown.
V33	Gold	Vertical exploration shaft	Active	Shaft is 18 meters deep.
Lady Marion	Gold	Vertical exploration shaft	Active	Shaft is 6 meters deep.
		Vertical compartment shaft	Active	Shaft is 2.5 meters deep.
99e/93e	Gold	Vertical exploration shaft	Active	Shaft is 3 meters deep.
Hw 673	Gold	Vertical compartment shaft	Active	Shaft is 5 to 10 meters deep.
Copeland	Gold	Open cut	Not a hazard	Open cut is up to 3 meters.
		Vertical compartment shaft	Active	Shaft is 6 meters deep.
		Trench	Not a hazard	Trench is 2.5 meters deep.
Hw 479	Gold	Vertical exploration shaft	Active	Shaft is 12 meters deep.
Mastodon	Gold	Vertical exploration shaft	Active	Shaft is 6 meters deep.

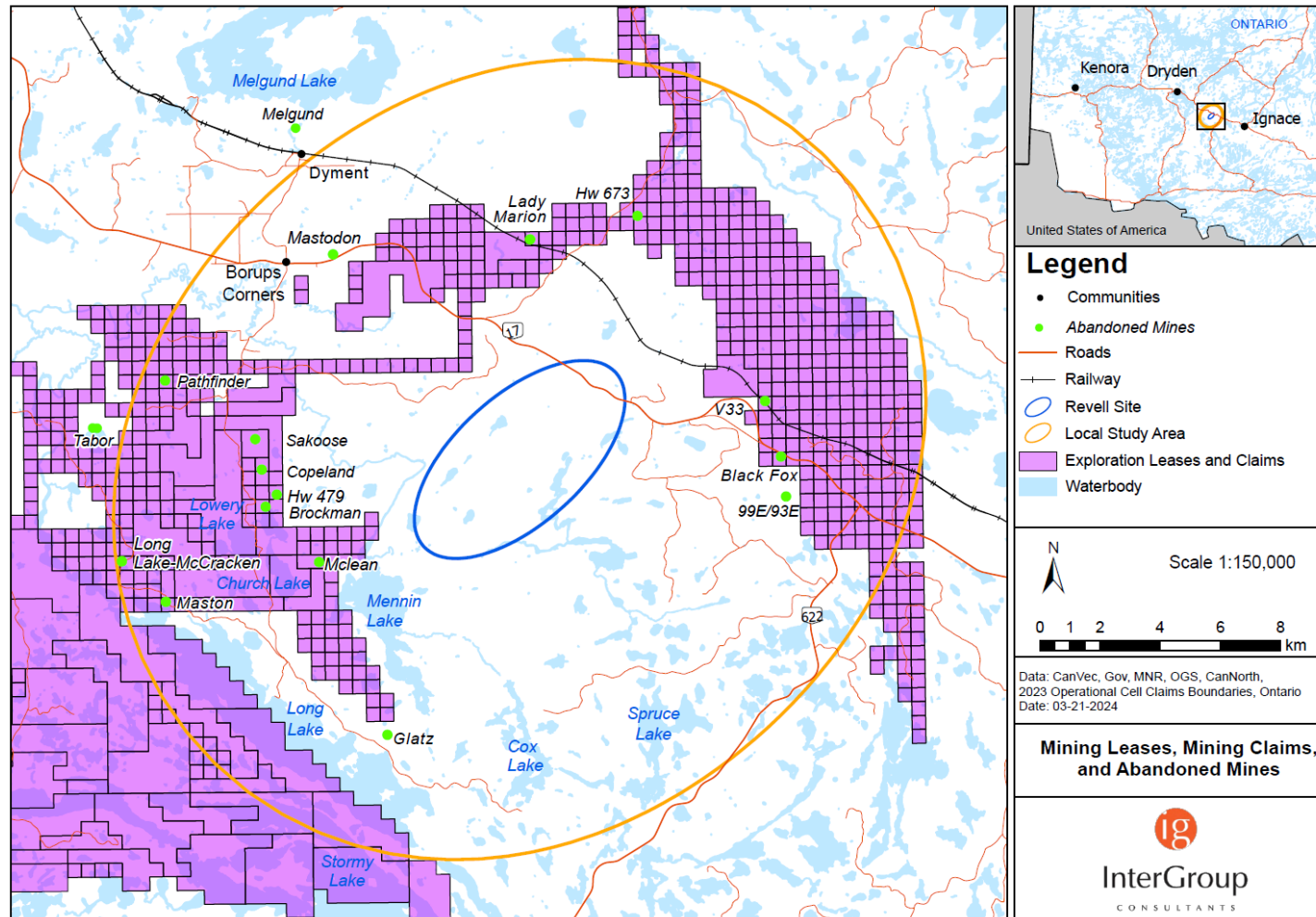
Source: Government of Ontario 2022j.

Table 2.5-12 Continued: Abandoned Mines in the Local Study Area

Name of Abandoned Mine or Quarry	Primary Commodity	Mine Feature Type	Hazard Status	Assessment (Completed in 1993)
Brockman	Gold	Adit	Active	Adit is 15 meters deep.
		Open cut	Active	Open cut is 5 meters deep.
		Vertical compartment shaft	Active	Shaft has been infilled.
Pathfinder	Gold	Vertical compartment shaft #1	Active	Shaft is at least 10 meters deep.
		Vertical compartment shaft #2	Active	Shaft is at least 10 meters deep.
		Trench	Not a hazard	Trenches no deeper than 2 meters.
Sakoose	Gold	Vertical exploration shaft	Active	Depth unknown.
		Heap leach area	Active	10 meter by 10 meter pad with 1 meter high piles.
		Mill	Active	Concrete mill foundations, partially collapsed.
		Open cut	Active	Partially infilled.
		Vertical compartment shaft #1	Active	Depth of the shaft is unknown.
		Vertical compartment shaft #2	Active	Depth of the shaft is unknown.
		Vertical compartment shaft #3	Active	Shaft is up to 76 meters deep.
		Tramway	Active	Tram foundations partially collapsed.

Source: Government of Ontario 2022j.

Map 2.5-9: Mining Leases, Mining Claims, and Abandoned Mines in the Local Study Area



2.5.9 Camps/Cottages

“Camp” is the term used in northwestern Ontario for what may otherwise be referred to as a “cottage” or a small house in the countryside (Allemang 2012). There are no camps/cottages located in the Revell Site, however there are camps/cottages and year-round residences in the Local Study Area. Year-round residences are primarily concentrated near Dymont and Borups Corners, which are also home to numerous seasonal camps and cottages (see **Section 2.2.2.6**). Other camps/cottages are located on Kawashegamuk/Long Lake and northeast of the Revell Site at Highway 17 (NWO Baseline Studies Key Person Interview Program 2022-2023).

Camp and cottage owners who use the Local Study Area point to the natural environment of northwestern Ontario for why they choose the area. Key person interviewees shared that the natural beauty of the area, the level of remoteness that can be achieved, and the easy access to land and resource use activities are some of the biggest draws to the area (NWO Baseline Studies Key Person Interview Program 2022-2023). Some interview participants shared that they acquired their camp/cottage in the Local Study Area for these reasons, while others acquired them through family members, or had previously worked in the region and settled there. Camp and cottage owners in the Local Study Area spend varying amounts of time at their properties; some reside there year-round, while others visit on holidays and weekends throughout the year.

Camp and cottage owners participate in land and resource use activities in the Local Study Area, including fishing, hunting, trapping, hiking, bird watching, ATVing, snowmobiling, gathering berries and mushrooms, wood harvesting, cycling/mountain biking, snowshoeing, cross-country skiing, canoeing, kayaking, and boating. Key person interviewees shared that they enjoy these activities for various reasons, including getting outside and being active, being alone with nature/in the peace and quiet, being able to participate in these activities with friends and family members, and the affordability and accessibility of being outside in comparison to other activities (NWO Baseline Studies Key Person Interview Program 2022-2023). Participants shared that any perceived alteration to the natural environment in the region could affect camp and cottage owners, making participation in outdoor activities less desirable.

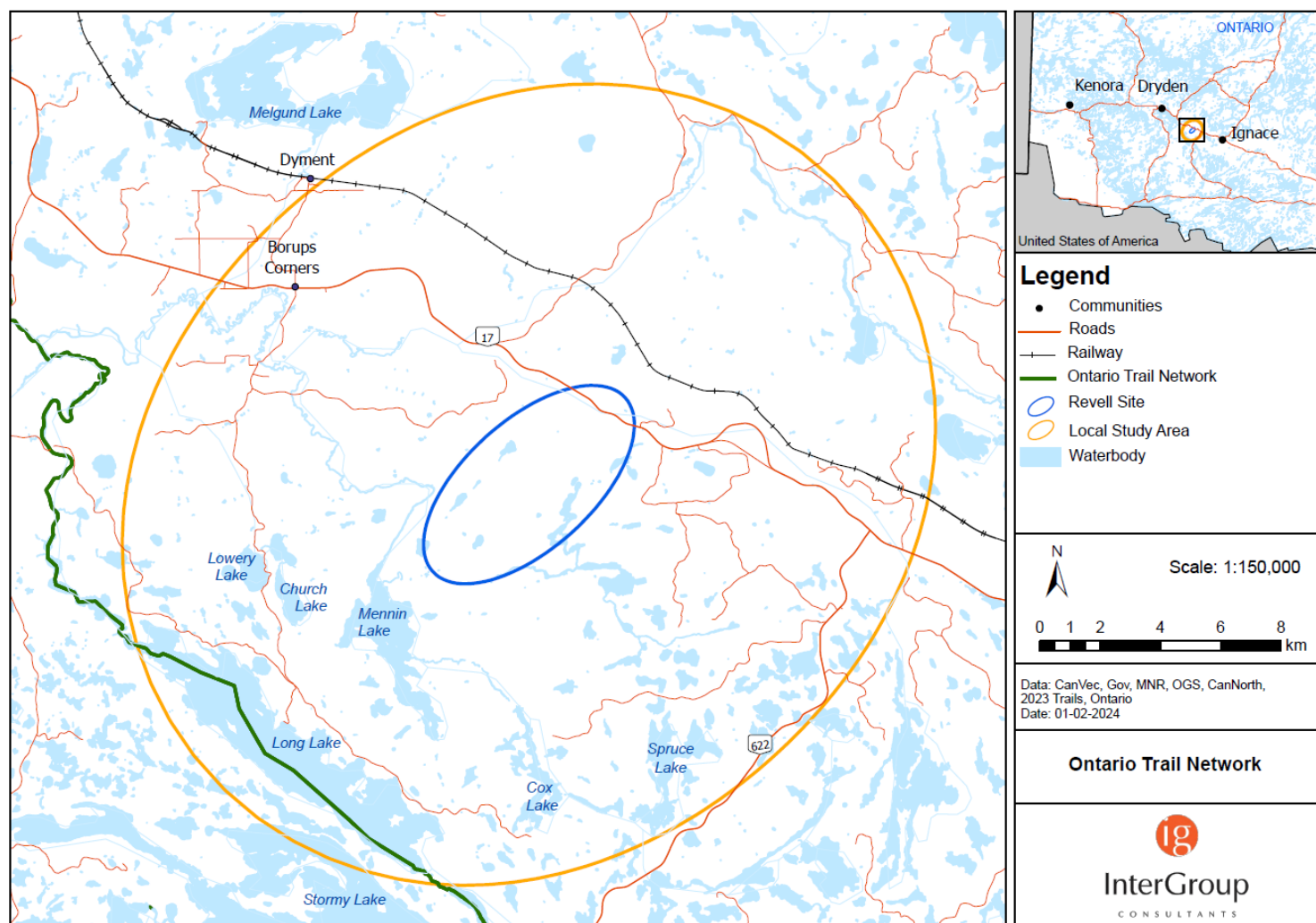
Several participants shared that if changes to the natural environment and the level of remoteness and noise (i.e., increased population and traffic) in the Local Study Area were to occur in the future, the enjoyment of their camps and cottages would decrease, and they feared their property values would decrease.

2.5.10 Other Outdoor Recreation

2.5.10.1 Hiking

Hiking is a free and permitted recreational activity on Crown land in Ontario. **Map 2.5-10** depicts the segment of the Ontario Trail Network in the Local Study Area. The creation of new trails requires approval by the Ministry of Natural Resources and Forestry. According to key person interviews, many residents hike in the Local Study Area and often partake in recreational activities such as bird watching, gathering blueberries, collecting “moose sheds” (i.e. antlers), and harvesting wood. Gathering berries while hiking and wood harvesting occurs in the Local Study Area (NWO Baseline Studies Key Person Interview Program 2022-2023). See **Section 2.4.6** for more on recreation in the Local Study Area.

Map 2.5-10: Ontario Trail Network Segments in the Local Study Area



2.5.10.2 All Terrain Vehicles and Snowmobiling

Participants of key person interviews shared that they use ATVs through the Revell Site and in the Local Study Area using an unofficial trail system (i.e., forestry roads) (NWO Baseline Studies Key Person Interview Program 2022-2023).

Snowmobiling is a widely enjoyed winter activity by many residents and visitors in northwestern Ontario and is generally permitted on Crown land unless it is a restricted area. Snowmobilers in Ontario are subject to the *Motorized Snow Vehicles Act* (Government of Ontario 1990b). Many snowmobilers enjoy the activity as a way to get outside with their friends, family, and neighbours, and take part in other activities while using snowmobile trails in the Local Study Area, such as ice fishing (NWO Baseline Studies Key Person Interview Program 2022-2023).

Snowmobiling in Ontario is administered by the Ontario Federation of Snowmobile Clubs ("OFSC"). The Local Study Area is located in the OFSC's District 17, its most western district, which spans from Kenora to Red Lake to Thunder Bay. The OFSC District 17 representative is the North-West Ontario Snowmobile Trail Association (NWOSTA). NWOSTA is responsible for maintaining snowmobile trails and selling permits for snowmobilers. Snowmobile trails in this district connect several communities including Fort Frances, Atikokan, Ignace, Sioux Lookout, Red Lake, Dryden, and Kenora. NWOSTA also organizes events for its members (NWOSTA n.d.).

2.5.10.3 Winter Outdoor Recreation

Winter outdoor recreation in the Local Study Area include activities such as snowshoeing and ice fishing. Participants in key person interviews noted they ice fish in the same lakes where they open-water fish, sharing the following lakes in the Local Study Area in particular: Kawashegamuk/Long Lake, Lowery Lake, and Mennin Lake (NWO Baseline Studies Key Person Interview Program 2022-2023). See **Section 2.5.4.3** for more on recreational fishing.

2.5.11 Lakes and Navigable Waters

2.5.11.1 Navigable Waters

Navigable waters are waters on which the public has the right to travel and are environmentally protected under the Canadian Navigable Waters Act (Government of Canada 2021; 1985). There are no navigable waters located within the Local Study Area (Government of Canada n.d.).

2.5.11.2 Lakes

This section describes lakes and their key characteristics and/or uses in the Local Study Area⁴⁵. For example, lakes were identified if they were known fish spawning areas, lakes popular for fishing, or lakes that serve as a water source for communities. See **Section 2.5.4** for more information on fishing on these lakes, **Section 2.5.7** for information on outfitting and guiding on these lakes, and **Section 2.5.9** for information on camp and cottage.

⁴⁵ The list of lakes and their key uses and characteristics in the Local Study Area is not exhaustive. Rather, the list reflects the lakes and uses of importance as identified by participants of the NWO Baseline Studies Key Person Interview Program 2022-2023 and stakeholder engagement conducted for previous NWO studies.

There are several boat caches in the Local Study Area. Boat caches are used for commercial, resource harvesting, and recreational/private purposes. Commercial boat caches are used to support commercial tourism activities such as fishing and hunting. Resource harvester boat caches are used to support commercial bait fishing and/or fur harvesting activities. Recreation boat caches are used to support personal recreational activities such as fishing and hunting (Government of Ontario 2018a). Commercial boat caches are the most common type of boat cache in the Local Study Area.

Table 2.5-13 provides the lakes in the Local Study Area. Uses and characteristics provided in the table are included as identified by engagement participants. **Map 2.5-1** includes the lakes in the Local Study Area.

Table 2.5-13: Lakes in the Local Study Area

Lakes	Camps/ Cottages	Outfitting	Recreational Fishing	Commercial Boat Cache	Recreational/ Private Boat Cache	Resource Harvester Boat Cache
Church Lake			✓	✓		
Cox Lake			✓	✓		
Kawashagamuk / Long Lake	✓	✓	✓	✓	✓	✓
Lowery Lake			✓	✓		
Mennin Lake			✓	✓		
Spruce Lake			✓	✓		
Stormy Lake			✓	✓		

Source: NWMO 2018b, 2021; NWO Baseline Studies Key Person Interview Program 2022-2023.

2.5.12 Summary of Land and Resource Use

The natural environment is important to residents and visitors of the Local Study Area. Primary data on land and resource use was collected through key person interviews (NWO Baseline Studies Key Person Interview Program 2022-2023). Secondary data on land and resource use was collected through Government of Ontario sources, such as the Ministry of Natural Resources and Forestry, local organizations and user groups' guides, plans, and webpages, municipal/city/township web sources, and more. This section provides a brief overview of each topic covered in **Section 2.5** Land and Resource Use including land designations, commercial uses, and recreational uses in the Local Study Area.

Land Use Designations

The Local Study Area contains six individual land use areas designated by the Ministry of Natural Resources and Forestry. Four of these areas are designated as general use Crown land and two are designated as conservation areas. Permitted recreational uses of Crown land include

camping, fishing, hunting, snowmobiling, accessing camps/cottages, and other recreational activities such as hiking, canoeing, swimming. (Government of Ontario n.d.a).

Commercial Land and Resource Use

The Local Study Area is in the Wabigoon Forest and Dryden Forest. According to the Wabigoon Forest 2023-2024 Annual Work Schedule, there are 12 regular harvest areas operated by Domtar for 2023-2024 in the Local Study Area (Domtar Inc. 2022).

The Local Study Area is located along the boundaries of Fisheries Management Zones 4 and 5. Fishing in Fisheries Management Zones 4 and 5 is an important recreational, commercial, and tourism activity, with species including northern pike, walleye, lake trout, lake whitefish, smallmouth bass, muskellunge, and black crappie. Currently, there are no active commercial fishing licences in the Local Study Area. The closest active commercial fishing licence to the Local Study Area is for Sturgeon Lake to harvest lake whitefish, with incidental quotas for walleye, pike, and lake trout (NWO Baseline Studies Key Person Interview Program 2022-2023). Six bait harvest areas cross into the Local Study Area.

There are 11 traplines in the Local Study Area. Species typically trapped in the Local Study Area include beaver, pine marten, fisher, red fox, weasel, mink, lynx, and squirrels. The practice of trapping is declining in the region, as there is a loss of interest amongst younger generations (NWO Baseline Studies Key Person Interview Program 2022-2023).

Outfitting and guiding is a critical part of tourism in the Local Study Area. Fishing is the most popular tourism activity, followed by hunting (NWO Baseline Studies Key Person Interview Program 2022-2023). Outfitting operators/lodges who use the Local Study Area to carry out their operations offer a variety of services and activities, including cabins, campsites, RV sites, outposts, seaplane services, fishing, bear hunting, moose hunting, white-tailed deer hunting, gamebird hunting, timber wolf hunting, hiking trails for hiking, bird watching, and gathering (e.g., berries, mushrooms), and boat/motor rentals, with some also offering winter activities including ice fishing and snowmobiling. Sandy Point Camp is the only outfitter located within the Local Study Area, however many operators located in the surrounding area use the lands and resources in the Local Study Area to carry out their operations. Tourists from the United States make up 90-100% of outfitting and guiding clients in northwestern Ontario (NWO Baseline Studies Key Person Interview Program 2022-2023).

There are no active mines in the Local Study Area. Current exploration activities in the Local Study Area include the Howie Lake Project, and gold exploration by Ashley Gold Corporation in the Kawashegamuk/Long Lake area (Government of Ontario 2023g).

Recreational Land and Resource Use

Recreational fishing is a key activity in the Local Study Area. The most popular species for recreational fishing in the region are walleye, northern pike, lake trout, brook trout, smallmouth bass, lake whitefish, sauger, and yellow perch (NWO Baseline Studies Key Person Interview Program 2022-2023). Key person interviews shared that residents and visitors of the Local Study Area enjoy fishing in the region because of the healthy fish populations, the easy access to remoteness/isolation when out on a lake, and the natural beauty of the area. Participants noted

fears that an increase in local population may increase lake traffic and competition for access to resources such as fishing (NWO Baseline Studies Key Person Interview Program 2022-2023).

Participants of key person interviews shared that the biggest draws to the area and the reason they remain at their camps/cottages include the natural beauty of the area, the level of remoteness that can be achieved, and the easy access to land and resource use activities (NWO Baseline Studies Key Person Interview Program 2022-2023). Camp and cottage owners participate in several types of land and resource use activities in the Local Study Area, including fishing, hunting, trapping, hiking, bird watching, ATVing, snowmobiling, gathering berries and mushrooms, wood harvesting, cycling/mountain biking, snowshoeing, cross-country skiing, canoeing, kayaking, and boating.

According to the key person interviews, many residents hike in the Local Study Area and often partake in recreational activities such as bird watching, gathering blueberries, collecting moose sheds, and harvesting wood (NWO Baseline Studies Key Person Interview Program 2022-2023). Gathering berries while hiking and wood harvesting also occurs around the Revell Site. Participants of key person interviews shared that they ATV through the Revell Site and in the Local Study Area using an unofficial trail system (i.e., roads) (NWO Baseline Studies Key Person Interview Program 2022-2023).

Snowmobiling is a widely enjoyed winter activity by many residents and visitors in northwestern Ontario and is generally permitted on Crown land unless it is a restricted area. The Local Study Area is located in the Ontario Federation of Snowmobile Clubs District 17 and is represented by the North-West Ontario Snowmobile Trail Association. Snowmobilers take part in other activities while using snowmobile trails in the Local Study Area, such as ice fishing (NWO Baseline Studies Key Person Interview Program 2022-2023).

Hunting in the Local Study Area is both a lifestyle and source of food for many residents. The Local Study Area includes Wildlife Management Units 5 and 9a. According to key person interviews, hunting in the Local Study Area around the Revell Site occurs for waterfowl (NWO Baseline Studies Key Person Interview Program 2022-2023). Other game hunted in the area include moose, bear, small game, and grouse.

Through engagement participants noted some lakes in the Local Study Area that they wanted to highlight. These lakes include locations where people take part in recreational activities, such as fishing, and may also be the locations of outfitting camps and/or personal camps. Key lakes noted in the Local Study Area include Mennin Lake and Kawashegamuk/Long Lake. Mennin Lake is popular for fishing, particularly for walleye and northern pike (NWO Baseline Studies Key Person Interview Program 2022-2023). Kawashegamuk/Long Lake is popular for fishing, particularly lake trout and perch, and viewing several wildlife species (NWO Baseline Studies Key Person Interview Program 2022-2023). Sandy Point Camp and camp/cottage owners on Kawashegamuk/Long Lake are the closest tourist outfitter and residents to the Revell Site.

2.6 ARCHAEOLOGICAL AND HERITAGE RESOURCES

2.6.1 Overview and Approach

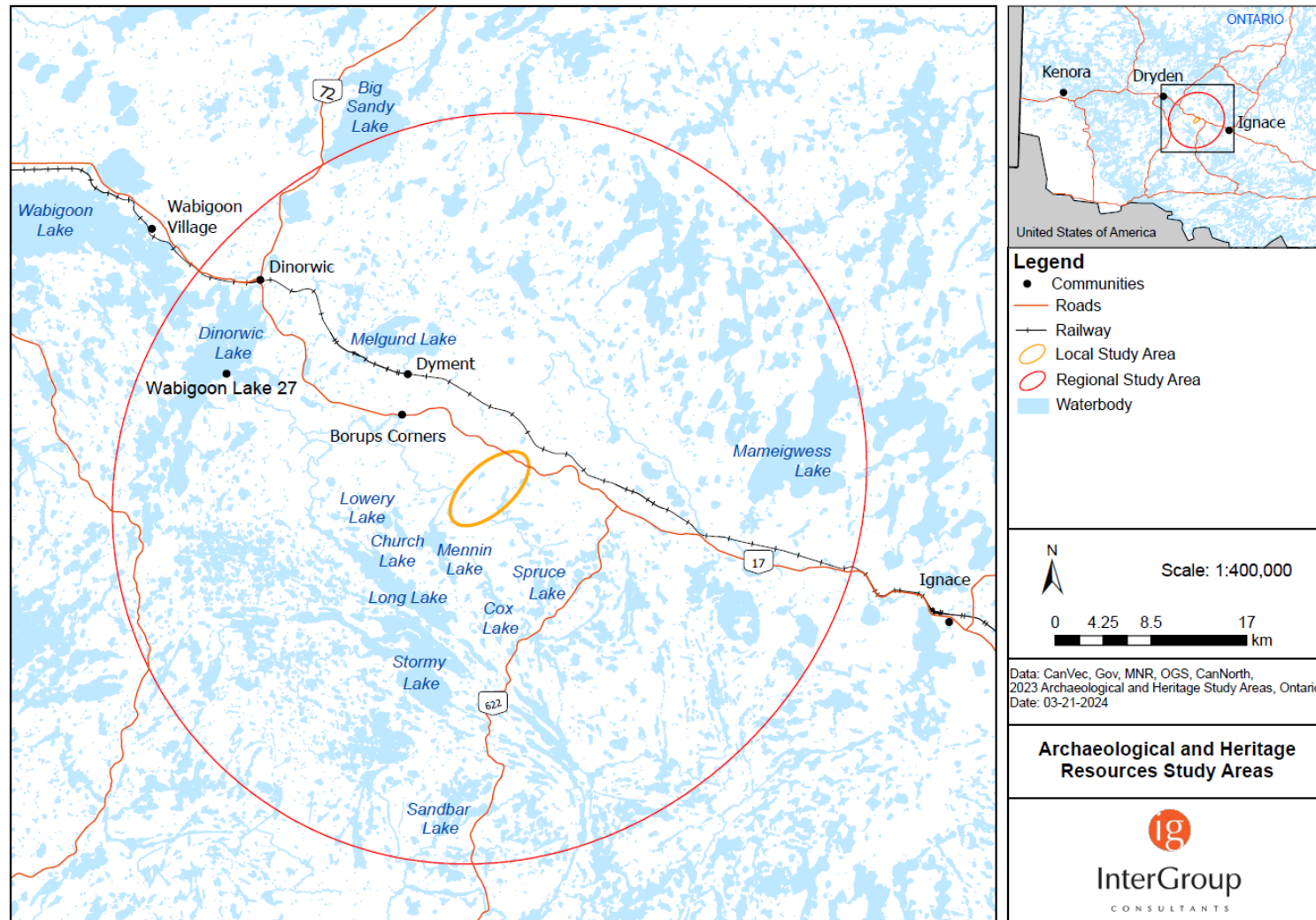
Archaeological and heritage resources are under provincial jurisdiction. In Ontario, the Ministry of Tourism, Culture and Sport enforces Part VI of the *Ontario Heritage Act*. This section of the *Ontario Heritage Act* defines priorities, policies, and programs for the preservation of archaeological resources determined to have cultural heritage value. The Ministry of Tourism, Culture and Sport provides guidance on how to comply with the terms and conditions of licence and other ministry requirements, such as the Standards and Guidelines for Consultant Archaeologists.

To date, the Project footprint has not been defined. Once it is determined, a Stage 1 archaeological investigation including a property assessment will be conducted, involving the appropriate Indigenous communities to the extent they want to be involved to ensure that the property assessment is completed in a respectful and collaborative manner. The NWMO's approach to Indigenous community involvement will be conducted in accordance with the NWMO's Reconciliation Policy (2019) and Indigenous Knowledge Policy (2020b). The archaeological and heritage resources study areas are depicted in **Map 2.6-1**.

This section characterizes the cultural setting, previous screenings of the Revell Site, and the archaeological record for the Local Study Area and Regional Study Area. Land use, which can be an important indication of heritage potential, is described in **Section 2.5**. The Regional Study Area is a 30 km buffer around the Revell Site to provide context for archaeological potential. The Local Study Area is the Revell Site. Heritage resources were characterized for the Local Study Area and Regional Study Area by reviewing locations of previously recorded archaeological sites. In Ontario, archaeological sites include Indigenous hunting camps and villages; battlefields; pioneer homes, burial grounds and cemeteries, shipwrecks; and other evidence of past human activity.

The temporal boundaries for archaeological and heritage resources (**Section 2.6**) focus on previous archaeological research, geographic, land use, and historical/archival information for the Project (all lands that are part of the development proposal) and the relevant surrounding area through a background study. The temporal boundaries include two major time periods: Indigenous and Indigenous-European. The Indigenous Period dates from ca. 300-10,000 years ago, while the Indigenous-European Period dates from ca. 1700 to the present (ca. 300 years ago to present), when Europeans and fur traders entered the area.

Map 2.6-1: Archaeological and Heritage Resources Study Areas



2.6.2 The Revell Site

The NWMO has completed borehole drilling at six locations in the Revell Site. These locations were chosen based on the technical needs of the Project combined with Indigenous and non-Indigenous community and organizational inputs. As part of a cultural verification study in 2017, studies were initiated to verify that the borehole area did not contain sites of cultural significance prior to the start of borehole site establishments. The cultural screening noted that there were no known archaeological or historical sites in or near the borehole sites (NWMO 2018c). Provincially regulated land and resource use in the Revell Site is described in **Section 2.5**.

2.6.2.1 Geography of the Revell Site

The current and historic geography of an area is an important aspect to understanding the potential historical uses of the landscape. The landscape and climate of an area affect the mobility, economy, access to resources, and many other aspects of historic people's lives. The study area is in the Boreal Shield ecozone. The Boreal Shield is Canada's largest ecozone stretching from Alberta to Newfoundland. Sweeping glaciers defined the region through a series of depressions and deposits resulting in the creation of millions of lakes and wetlands. The Precambrian granite bedrock of the Canadian Shield is commonly exposed in this region (McGill, n.d.).

The ecozone is subdivided into smaller areas known as ecoregions which are unique areas defined by a characteristic range and pattern in climate variables (Ministry of Natural Resources and Forestry 2022). The study area is in the 4S ecoregion (Lake Wabigoon Ecoregion).

Gneissic, Granitic, and metavolcanic Precambrian bedrock composes the Lake Wabigoon Ecoregion. The western portion contains exposed bedrock with unconsolidated matter while the eastern portion contains ground moraine and lacustrine deposits from the post-glacial Lake Agassiz. The low-lying sections of the ecoregion contain scattered pockets of clay and silt. (Ministry of Natural Resources and Forestry 2022).

Forests are the primary ground cover for the region. Mixed forest, sparse forest, coniferous forest, and deciduous forest cover 25.2%, 23.8%, 14.3%, and 2.0% respectively. Balsam fir, balsam poplar, black ash, black spruce, jack pine, tamarack, trembling aspen, white birch, and white spruce compose the forests in the northern portion of this ecoregion. American basswood, American elm, aspen, bur oak, ironwood, red maple, red pine, sugar maple, and white pine comprise the forests in the southern portions of this ecoregion (Ministry of Natural Resources and Forestry 2022).

The fauna of the region is diverse and varied. Terrestrial and avian species found within the Lake Wabigoon Ecoregion include the gray wolf, fisher, American mink, moose, bald eagle, and common raven. There are diverse types of aquatic species found within this ecoregion including lake trout, northern pike, and northern redbelly dace (Ministry of Natural Resources and Forestry 2022).

2.6.3 Cultural Setting

The cultural chronology for what is currently Ontario is based on technological innovations and historical events. It includes two major time periods: Indigenous and Indigenous-European. The Indigenous Period dates from ca. 400-11,000 years ago, while the Indigenous-European Period

dates from after ca. 1600 (ca. 400 years ago to present), when Europeans and fur traders entered the area (Ontario Archaeological Society 2024).

2.6.3.1 Indigenous Period

Glacial ice began to retreat in the southern portions of northern Ontario around 10,000 years before common era ("BCE") (Dawson 1984). A large ice dammed lake formed during this period of deglaciation called Lake Agassiz (Thorleifson 1996). It is in the latter stages of this period known as the Paleo-Indian that the first humans arrived on the northern shores of the Lake Huron and Superior. One site approximately 100 km north of current-day Ignace dates their arrival at about 8,100 years before present day (Pilon 2004). These Plano people developed a unique culture known as the Agate Basin. Agate Basin archaeological sites are dated between 7,500 BCE to 6,500 BCE through Agate Basin projectile points and campsites found in northern Ontario (Wright 1982).

The climate changed and rapid forestation occurred as the glacial ice continued to retreat. After 5,000 BCE, a transition occurred with generalized woodworking tools appearing (Dawson 1984). This period became known as the Shield Archaic and the transition was completed by 4,000 BCE. The change in the lithic tool assemblage can be seen in the transition in projectile point morphologies from lanceolate forms to those of side and corner notched varieties with more triangular body shapes of the Shield Archaic (Wright 1982).

Based on his review of the archaeological assemblages, Wright (1972) reasoned that the Shield Archaic likely originated in the far north and spread south and east throughout the Canadian Shield.

These populations occupied this region from the earliest of times until 1,500 BCE to 1,000 BCE when the climate began to cool (Wright 1982). In the south, Shield Archaic peoples practiced metallurgy as they cold forged copper into spear points, adzes, fishhooks, and gorges (Wright 1981). This is attested in the archaeological record as sites in northwestern Ontario have produced copper originating from Lake Superior (Vandervliet 2008).

The introduction of pottery brought the onset of a new period referred to as the Woodland Period around 500 BCE (Dawson 1984). The Laurel culture developed in northern Ontario which can be identified through their ceramic complex. A distinct change occurred in the southern Laurel people who began using burial mounds for inhumation. Furthermore, a Laurel archaeological site known as the Heron Bay site produced bone tools. The site also contained obsidian from Wyoming and shells from Manitoba indicating an extensive trade network in the area (Wright 1982). This area was an important hub for transcontinental trade because all travel was done by canoe and required people to travel through this area (Vandervliet 2008). The Laurel people continued working native copper into tools such as knives, beads, awls, and projectile points (Wright 1982).

Regional differentiations in pottery brought the onset of the Terminal Woodland Period dated from 600 common era ("CE") to European contact (Wright 1982). Blackduck sites are radiocarbon dated from 620 CE to 1560 CE. The Blackduck culture developed from the previous Laurel culture in the area. Burial mounds are found in the southwestern portion of northern Ontario linked to the Blackduck complex, which indicate a continuation of the Laurel culture (Wright 1982).

Pictographs painted by Indigenous groups are scattered throughout the area on rocks and cliffs. These sites are considered sacred by Indigenous peoples. Pictures were not only painted but carved into the rocks. These are known as petroglyphs and several of these sites are located within the Kenora area. The rocks could be gathered and placed into various shapes to form an image known as petroforms (Vandervliet 2008). These sites indicate the long history of Indigenous groups in the area.

2.6.3.2 Indigenous-European Period

The first Europeans to arrive on the northwestern shore of Lake Superior were the French. The first record of the geography and population of the area is attributed to Jesuit Father Allouez who traveled to Lake Nipigon in 1667 (Reimer 1999). However, there is a reference in Champlain's 1610 journal to "Indian diggings" for copper on Lake Superior's shores. Similar French reports exist until the mid-18th century (Dawson 1999).

The French initially had a monopoly on the trade in the area until the establishment of Hudson's Bay Company ("HBC") forts in the Hudson's Bay and James Bay in 1670 (Reimer 1999). The French established Fort Camanistigoyan by present day Thunder Bay in 1678 and a fort at Lake Nipigon to intercept furs from arriving at the English forts (Reimer 1999). The French attempted to push further west by establishing forts at Rainy Lake and Lake of the Woods in 1717 but failed due to ongoing warfare in the area (Reimer 1999). The French managed to establish Fort St. Charles on the western shore of Lake of the Woods in 1732 (Reimer 1999). The French abandoned the area in the 1750's to consolidate their defence against English attacks (Reimer 1999).

The North West Company began establishing trading posts at Lac La Pluie around 1780, Portage de l'Isle near Rat Portage (now Kenora) in 1789, Escabitchewan in 1796, Eagle Lake near Dryden in 1809, Red Lake in 1790, and Lac Seul in 1803. The HBC responded by building Rainy Lake Fort near the fort at Lac La Pluie in 1790. Competition between the HBC and the North West Company lasted until 1816 when the North West Company gave its forts to the HBC. HBC built a fort in 1820 which was renamed Fort Francis in 1830 and another post on Shoal Lake in 1831 (Reimer 1999). The Rainy Lake area had abundant canoe birch and the posts in this area became a centre of canoe manufacture (Reimer 1999).

The HBC established a small trade post at Rat Portage in 1836 and it became the main post north of Lake of the Woods. Several outposts were established at Keewatin, Eagle Lake, Dinorwic, North West Angle, Shoal Lake, and White Dog. Rat Portage became a necessary stop on the journey between Lake Superior and Winnipeg River (Reimer 1999). Colonel Wolseley passed through Rat Portage following the Riel Rebellion in Manitoba (Reimer 1999). Rat Portage remained an active trading post until 1890 (Reimer 1999).

The outposts for Rat Portage were established in the mid-19th century. The post at Shoal Lake was dismantled in 1870 and moved to the North West Angle. The North West Angle was closed in 1878 with the cessation of the Dawson route for travel. The outpost at Eagle Lake has records covering the years 1881 to 1884 only. It operated in the 19th century and Dinorwic was established as its outpost. When the Canadian Pacific Railway was built in the area near Wabigoon Village, Eagle Lake's role diminished, and it became an outpost to Wabigoon. The Dinorwic post was moved in 1899 one mile to the west and continued operations until 1940 (Reimer 1999).

Rat Portage began to benefit from tourism following its closure in 1890. The settlement began to depend further on tourism according to the HBC in 1916. The construction of highways between Kenora and other settlements like Fort Francis, Winnipeg, and Thunder Bay between 1912 and the 1960's resulted in a boom for tourism in northwestern Ontario. A minor gold rush occurred in the area between 1890 and 1901 until other sources of gold were discovered in Alaska and the Yukon. This resulted in a temporary economic boom for the village of Wabigoon (Reimer 1999).

Following the gold rush, the village of Wabigoon established itself in the renewable forest industry by supplying the paper mill in Dryden, two sawmills in Kenora, and other sawmills in the area. The Koochiching Falls dam built in 1910 around Fort Frances supplied power to the lumber mills in the area (Reimer 1999).

2.6.4 Heritage Sites

Ancient land use practices can be observed within the archaeological record. In relation to cultural ecology, archaeologists examine how past cultures lived on particular landscapes or in a particular environment at a particular past time (Cromley 1994). Within this landscape, certain features and areas contain tangible evidence of past people. Heritage resources were characterized for the Local Study Area based on the locations of previously recorded archaeological sites.

The archaeological record provides physical and documented evidence of different cultural occupations that have occurred over millennia. In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database maintained by the Ontario Ministry of Tourism, Culture and Sport.

The archaeological sites identified in the Regional Study Area total 34 registered sites (**Table 2.6-1**).

Table 2.6-1: Registered Archaeological Sites within 30 km of Revell Site

Borden Number	Cultural Period
DhKa-2	Indigenous Period
DhKa-3	Indigenous Period
DhKa-9	Indigenous Period
DhKa10	Indigenous Period
DiJx-2	Indigenous Period
DiKa-1	Indigenous Period
DiKa-2	Indigenous Period
DiKa-3	Indigenous Period
DiKa-4	Indigenous Period
DiKa-5	Indigenous Period
DiKa-6	Indigenous Period
DiKb-1	Unknown
DiKd-1	Unknown
DjJw-2	Unknown
DjJw-9	Indigenous Period
DjJw-10	Indigenous Period
DjJw-12	Indigenous Period
DjJw-14	Indigenous Period
DjJx-1	Indigenous Period
DjJx-2	Indigenous Period
DjJx-3	Indigenous Period
DjJx-4	Indigenous Period
DjJx-6	Unknown
DjJx-7	Indigenous Period
DjJx-8	Unknown
DjKd-1	Indigenous Period
DjKd-2	Indigenous Period
DkJx-2	Indigenous Period
DkJx-3	Indigenous Period
DkJx-4	Indigenous Period
DkKc-1	Indigenous Period
DkKd-2	Indigenous Period
DkKd-3	Indigenous Period
Lead-0002	Unknown

Source: Ministry of Tourism, Culture and Sport

2.6.5 Summary of Archaeological and Heritage Resources

In accordance with the Standards and Guidelines for Consulting Archaeologists (2011), areas of archaeological potential are identified by proximity to previously identified archaeological sites, proximity to water sources, distinctive land formations that might have been special or spiritual places, areas of early Euro-Canadian settlement, and early historical transportation routes. The Regional Study Area is interspersed with 34 recorded archaeological sites as well as other areas which are considered sacred by Indigenous peoples, as they serve as a connection to ancestors and traditional knowledge. In the 19th century there were HBC posts built near the study area, in Eagle Lake by modern day Dryden, and at Wabigoon/Dinorwic. The latter of these two posts operated until 1940. The area was an important historic transportation route with traffic travelling through Rat Portage.

Based on the above-mentioned factors, the area has a rich history of use in both the Indigenous and Indigenous-European Periods. As part of the initial borehole siting in the Revell Site, it was confirmed that there were no known archaeological or historic sites near the boreholes.

Any future archaeological work, such as a Stage 1 or Stage 2 investigation, would require engagement with local First Nations or Métis interest, including potential Indigenous knowledge investigations completed by each nation.

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3.0 ECONOMIC

3.1 OVERVIEW AND APPROACH

An examination of existing and potential future economic conditions in the Local and Regional Study Areas is required to support the impact assessment for the Adaptive Phased Management Project (the “Project”). The scope of the Baseline Studies has been designed to satisfy regulatory requirements under the *Impact Assessment Act* and the Tailored Guidelines template (IAA 2020a), including Gender-based Analysis Plus (“GBA+”) and sustainability considerations. The Baseline Studies are designed to provide sufficient detail to understand current and reasonably foreseeable potential future conditions that may be affected by the Project. Approaches to GBA+ and sustainability are discussed in **Section 1.0**. The Baseline Studies document the current state and relevant historical context for each economic component. Potential foreseeable future conditions without the Project are also examined. Finally, the Baseline Studies incorporate relevant community knowledge, information from the Ignace Area Working Group (“IAWG”), workshops, key person interviews and perspectives from diverse groups within the communities where available. Indigenous Knowledge as defined by the Impact Assessment Agency of Canada (“IAAC”)⁴⁶ (2023) has not been included in this section as the NWMO is working with Indigenous communities as per their Indigenous Knowledge policy (**Section 1.5.6.4**), and information of this type will be collected in collaboration with Indigenous communities in other baseline studies at an appropriate time. However, where data are publicly available for Indigenous peoples residing in the Local Study Area and Regional Study Area, this information is presented.

Table 3.1-1 summarizes the components included in the economic pillar of the Baseline Studies and provides the rationale for including each component, based on the Tailored Guidelines template (IAA 2020a) and the IAAC’s guidance *Analyzing Health, Social, and Economic Effects Under the Impact Assessment Act* (IAA 2020b).

⁴⁶ The IAAC (2023) defines Indigenous Knowledge as “a holistic system embedded in the various cultures of different Indigenous peoples. For the purposes of (an) assessment processes under the IAA, generally, Indigenous Knowledge is understood as a body of knowledge built up by a group of Indigenous people through generations of living in close contact with the land. Indigenous Knowledge is cumulative and dynamic. It builds upon the historic experiences of a people and adapts to social, economic, environmental, spiritual, and political change.”

Table 3.1-1: Components Included in Economic Conditions

Economic Component	Rationale for Inclusion
Employment (Section 3.2)	The Tailored Guidelines template and the IAAC's guidance ¹ require description of employment rates, labour force characteristics, and wages.
Labour Force Skills and Training (Section 3.3)	The Tailored Guidelines template and the IAAC's guidance ¹ require reporting on the prevalence and availability of skilled and unskilled labour, and availability of training opportunities relevant to the Project.
Economic Base (Section 3.4)	The Tailored Guidelines template and the IAAC's guidance ¹ require reporting on the presence of businesses that may provide supplies and services to the Project, and sectors that may be indirectly impacted.
Government Finances (Section 3.5)	The Tailored Guidelines template and the IAAC's guidance ¹ require a description of government spending on services, goods, and infrastructure.
Income, Property Values, and Cost of Living (Section 3.6)	The Tailored Guidelines template and the IAAC's guidance ¹ require reporting on salaries and income, spending on housing (both owned and rented), energy, food, and fuel.

Notes:

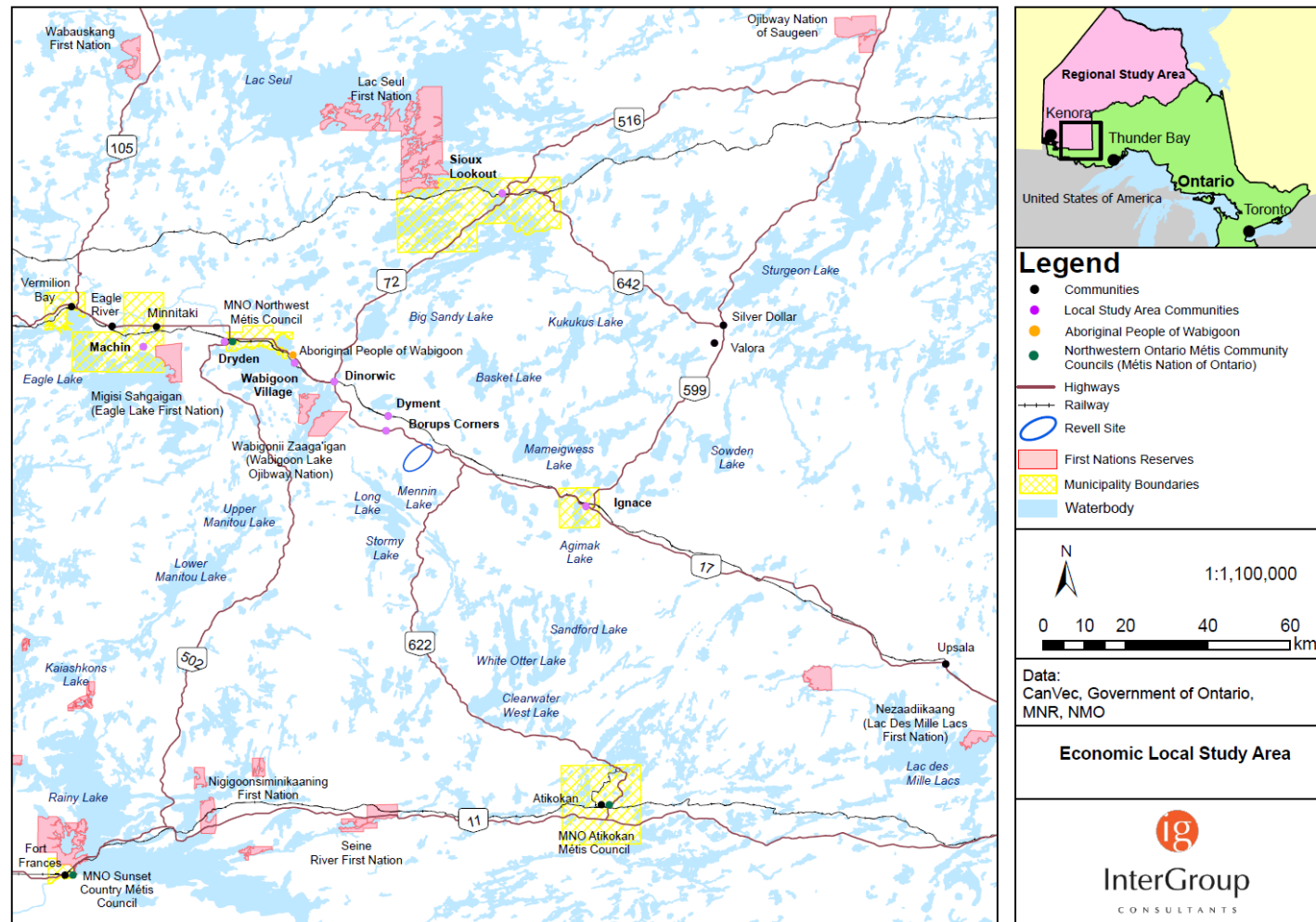
1. IAAC guidance includes *Analyzing Health, Social, and Economic Effects Under the Impact Assessment Act*.

3.1.1 Spatial and Temporal Boundaries

3.1.1.1 Spatial Boundaries

Spatial boundaries for economic conditions were selected to reflect the geographic areas where economic impacts from the Project are likely to be detectable and measurable. The economic pillar includes a Local Study Area and a Regional Study Area. Economic impacts extending beyond the Local Study Area and Regional Study Area are likely to be diffused. **Section 1.0** describes the approach to selecting spatial boundaries. **Figure 3.1-1** provides a map of the Local Study Area and **Figure 3.1-2** provides a map of the Regional Study Area for the economic pillar.

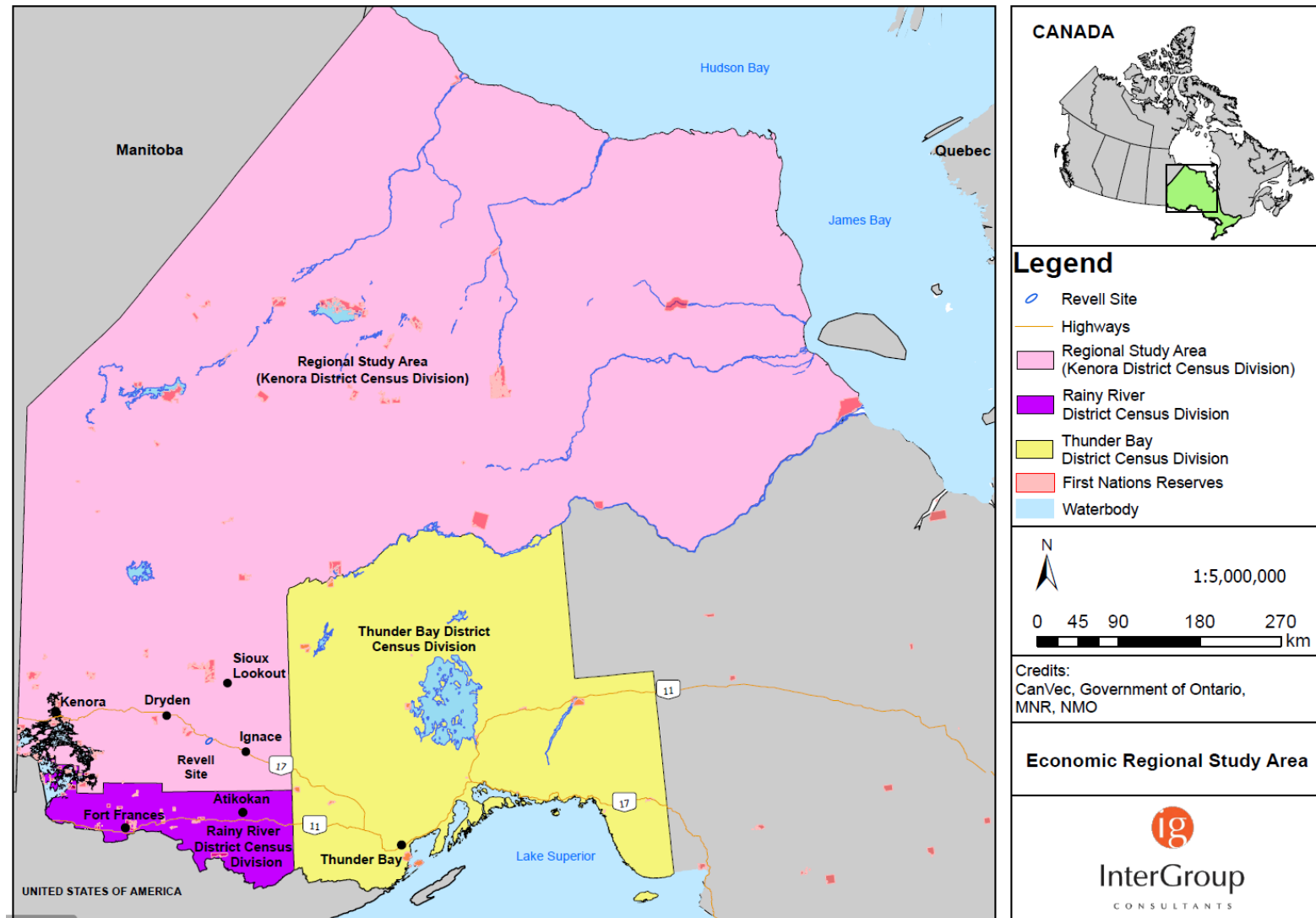
Map 3.1-1: Economic Local Study Area^{1,2}



Note:

1. Local Services Board of Wabigoon is a designated place according to Statistics Canada, but residents refer to the community as Wabigoon or Wabigoon Village.
2. The unincorporated communities Dyment and Borups Corners are part of the Local Services Board of Melgund.

Map 3.1-2: Economic Regional Study Area



3.1.1.1.1 Local Study Area

The Local Study Area for the economic components includes:

- Township of Ignace ("Ignace");
- City of Dryden ("Dryden");
- Municipality of Machin ("Machin");
- Municipality of Sioux Lookout ("Sioux Lookout"); and
- Local Services Boards ("LSBs") and unincorporated communities, to the extent information is available:
 - LSB of Wabigoon ("LSB of Wabigoon" or "Wabigoon Village");⁴⁷
 - LSB of Melgund (includes the unincorporated communities Dymont and Borups Corners) ("LSB of Melgund" or "Melgund");⁴⁸ and
 - Dinorwic.

The Local Study Area includes Indigenous peoples who reside in the communities of the Local Study Area but is not representative of any specific Indigenous community or nation.

The Local Study Area refers to the communities/areas that are most likely to experience future direct, indirect, and induced impacts of the Project, and considers those locations where people can commute to the Revell Site and/or the Centre of Expertise within an hour drive. The selection of spatial boundaries was informed by local residents through the IAWG, key person interviews, and workshops.⁴⁹

Where detailed Statistics Canada data for the LSBs and unincorporated communities are not available, general characteristics may be captured through broader Statistics Canada data for the Kenora Unorganized Census Subdivision and key person interviews.

⁴⁷ Statistics Canada identifies the Local Services Board of Wabigoon as a designated place, but residents refer to the community as Wabigoon or Wabigoon Village. In the report, the naming convention of the Local Services Board of Wabigoon will only be used when speaking to Statistics Canada data or when referring to the Local Services Board as an organization. When not referring to the Local Services Board organization or Statistics Canada data, the report will use the name of the community used by Local Study Area residents ("Wabigoon Village") (NWO Baseline Studies Key Person Interview Program 2022-2023).

⁴⁸ In the report the naming convention of the Local Services Board of Melgund will only be used when referring to the Local Services Board as an organization (Local Services Board of Melgund). When not referring to the Local Services Board organization, the report will use the name of the community used by Local Study Area residents ("Melgund") (NWO Baseline Studies Key Person Interview Program 2022-2023).

⁴⁹ The Local Economy Workshop (2021), IAWG meeting #3 (IAWG August 19, 2021), IAWG meeting #4 (IAWG October 06, 2021), and IAWG meeting #5 (IAWG December 2, 2021) provided feedback to revise the Local Study Area spatial boundaries to include Sioux Lookout.

3.1.1.1.2 Regional Study Area

The Regional Study Area for the economic components is the Kenora District Census Division ("Kenora Census Division"). The Kenora Census Division includes people living in municipalities, unincorporated communities, and Indigenous reserves and settlements.⁵⁰ This includes Indigenous people living both on- and off-reserve. The Regional Study Area provides context and comparison information for the Local Study Area and may experience more discernible regional-level impacts in comparison to areas outside of the Kenora Census Division. The selection of spatial boundaries for the Regional Study Area was informed by local residents through the IAWG, key person interviews, workshops, and a consideration of administrative boundaries and data availability.⁵¹

Where appropriate, additional contextual information from other areas is provided. For example:

- **Section 3.3** includes information on workforce development organization in Northern Ontario and postsecondary institutions in Northern Ontario and Winnipeg that may be accessed by residents of the Local Study Area and Regional Study Area.
- **Section 3.4 and Section 3.6** includes the Northwestern Ontario Economic Region (Kenora, Rainy River, and Thunder Bay Census Divisions) as the Regional Study Area as economic impacts may extend beyond the Kenora Census Division.
- **Section 3.6** provides information for some indicators for the City of Thunder Bay, Ontario, and Canada to provide context and comparisons to the Regional Study Area or where information is not available at the Regional Study Area level.

It is acknowledged that some economic impacts could occur beyond the Regional Study Area; however, the boundaries were selected consistent with the approach described in **Section 1.5.3** with consideration of both administrative and technical boundaries.

⁵⁰ The Kenora Census Division includes people living in municipalities, unincorporated communities, Indigenous reserves and settlements, and the surrounding areas. This includes Indigenous people living both on- and off-reserve. Indigenous communities can consist of one or multiple reserve parcels. The reserve parcels or settlements does reflect the names of the communities used by people from the communities and only reflect the names used by the Government of Canada. The reserve parcels and settlements which are included in the Kenora Census Division include: Whitefish Bay 32A, Whitefish Bay 33A, Eagle Lake 27, Slate Falls, Fort Alban (Part) 67, Attawapiskat 91A, Marten Falls 65, Fort Hope 64, Cat Lake 63C, Osnaburgh 63B, Lac Seul 28, Wabigoon Lake 27, English River 21, Weagamow Lake 87, Northwest Angle 33B, Wabaseemoong, Sabaskong Bay 35D, Shoal Lake 34B2, Lake of the Woods 37, Kenora 38B, Poplar Hill, Shoal Lake 39A, Rat Portage 38A, Deer Lake, Sandy Lake 88, Kitchenuhmaykoosib Aaki 84, Sachigo Lake 1, Pikangikum 14, Fort Severn 89, Webequie, North Spirit Lake, Lansdowne House, Shoal Lake (Part) 40, Whitefish Bay 34A, Wabauskang 21, Wunnumin 1, Summer Beaver, Wapekeka 2, The Dalles 38C, Peawanuck, Neskantaga, Bearskin Lake, Kasabonika Lake, Muskrat Dam Lake, Kingfisher Lake 1, Wawakapewin, and Kee-Way-Win (Statistics Canada 2022a). The Indigenous settlements or reserves are not always inhabited on a full-time basis by members of the reserves due to various reasons, but the land is used at the discretion of the community and its members.

⁵¹ The Local Economy Workshop (2021), IAWG meeting #3 (IAWG August 19, 2021), and IAWG meeting #5 (IAWG December 2, 2021) provided feedback and confirmation on the Regional Study Area spatial boundaries.

3.1.1.2 Temporal Boundaries

Section 1.0 describes the approach to selecting temporal boundaries. Temporal boundaries for employment, labour force skills and training, economic base, and income, property values, and cost of living include data back to 2006, and are limited by the availability and continuity of data. However, there are instances where temporal boundaries are restricted to current use (for example, current business and industry operating in the region, cost of living, and housing costs). The temporal boundaries for government finances are established based on the availability of data, with an upper limit of approximately ten years of history.

Forward looking temporal boundaries for the labour force projections without the Project are defined as:

- Near-term: 2024 to 2032 (which aligns with the site preparation stages of the Project);
- Mid-term: 2033 to 2042 (which aligns with the construction phase of the Project); and
- Long-Term: 2043 and beyond (which covers operations, monitoring, and decommissioning of the Project).

Baseline labour force projections are focused on the near- and mid-term time horizons. Sample years are used to help illustrate the range of near-term and mid-term projections:

- Sample year 2028 aligns with the mid point of the near-term temporal bound;
- Sample year 2033 aligns with the start of the mid-term horizon; and
- Sample year 2042 aligns with the end of the mid-term horizon.

Sample year projections are based on historical trendlines from the last three, five, and ten years (Lightcast n.d.b). The further out the long-term projection horizon, errors may accumulate as projection errors tend to increase for most methods and models (Chatfield 2001), so near and mid-term time horizons are the focus of the discussion.

3.1.2 Data Collection

The characterization of the baseline environment relies on both primary and secondary data sources. Data collection began with a review of existing literature and databases from a variety of public sources. Primary data collection was undertaken in the form of the IAWG, workshops, and key person interviews.

3.1.2.1 Secondary Data Collection

The review of literature and databases included the following sources:

- Statistical data sources, for example, Statistics Canada Census of Population, Labour Force Survey, National Travel Survey, Canadian Income Survey, Housing Price Index, Lightcast, and Manifold Data Mining Inc.
- Federal, provincial, and municipal government reports and data (e.g., Government of Ontario and Ministry of Municipal Affairs and Housing).

- Regional reports including community profiles, business gap analysis studies, strategic plans, and official plans.
- Ignace Area Community Studies, including the Economic Development Study (HSAL et al. 2022a), Housing Study (HSAL et al. 2022b), Labour Baseline (HSAL et al. 2022c), and Workforce Development Study (InterGroup and HSAL et al. 2022).
- Publicly available reports and profiles.
- Online sources (e.g., community websites).

3.1.2.1.1 Limitations of Secondary Data Collection

Statistics Canada

Statistics Canada enumerates Ignace, Dryden, Machin, Sioux Lookout, and the LSB of Wabigoon. Statistics Canada does not enumerate the LSB of Melgund (Dyment or Borups Corners) or Dinorwic. Statistics Canada indicators for the Local Study Area typically include Ignace, Dryden, Machin, Sioux Lookout, and the LSB of Wabigoon and do not include the LSB of Melgund or Dinorwic.

Statistics Canada Census of Population data contributed to developing an understanding of the Local Study Area and Regional Study Area for employment, educational attainment, economic base, and income, cost of living, and property values, and how they have changed over time. Data should be interpreted with caution because of issues of comparability across years, confidentiality, data quality, and response error. Limitations relative to specific indicators are provided as notes to tables and figures. In 2011, a shift occurred in how the Census was administered, with a National Household Survey replacing the long-form census. One of the key differences was a change from a mandatory to an optional response requirement. This resulted in reduced survey response rates and variability of response rates at lower geographic levels. As a result, trends over time should be interpreted with caution.

The Census of Population suppresses data for confidentiality or data quality. Data suppression for confidentiality reasons is meant to prevent the disclosure of data that could be used to identify individuals, particularly in small communities. Data suppression due to data quality is done for a variety of reasons, including incompletely enumerated communities. The Census of Population also relies on a random rounding procedure, where actual values are randomly rounded up or down to the nearest integer of five to enhance confidentiality. This can impact very small populations but is not believed to have a material impact on the Local Study Area reporting.

The 2006, 2011, and 2016 Census disaggregate information by sex and the 2021 Census disaggregates information by gender. The sex variable (male and female) in census years prior to 2021 and the two-category gender variable (men+ and women+) in the 2021 Census may be included in figures that display trends across time. Although sex and gender refer to two different concepts, the introduction of the two-category gender variable is not expected to have a significant impact on data analysis and historical comparability, given the small size of the transgender and non-binary populations. The 2021 Census reports that the transgender

population (0.19% of Canada's population) and non-binary population (0.14% of Canada's population) in Canada is small (Statistics Canada 2023e). Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories (men+ and women+) and are denoted by the "+" symbol (Statistics Canada 2022a). When analyzing trends across time (2006, 2011, 2016, and 2021 Census) the terms sex or gender are used, along with male and female. When analyzing trends prior to the 2021 Census (2006, 2011, and/or 2016 Census) the term sex is used, along with male and female. When analyzing only 2021 Census data, the term gender is used, along with men+ and women+ in figures or men and women in the analysis. Footnotes expand on the explanation, where relevant, within sections.

Statistics Canada defines 'Indigenous identity' to include persons who are First Nations (North American Indian), Métis, or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is registered under the Indian Act of Canada) and/or those who have membership in a First Nation or Indian band. Aboriginal peoples of Canada are defined in the Constitution Act 1982 section 35(2) as including the Indian, Inuit, and Métis peoples of Canada (Statistics Canada 2022a). Indigenous identity refers to whether a person identified with the Indigenous peoples of Canada and should be interpreted as such when referring to Statistics Canada data throughout the report.

It is acknowledged that baseline conditions will continue to evolve and an artificial data cut off was implemented in order to draft this report (see **Section 1.5.5.3.1** for further detail).

Lightcast and Manifold Data Mining Inc.

Lightcast datasets incorporate labour market data from several sources including from the Survey of Employment, Payrolls and Hours ("SEPH"), the Labour Force Survey, Canadian Business Counts, the Census of Population, Canadian Occupational Projection System ("COPS") and Postsecondary Student Information System. Lightcast also reports information on job postings. Historical data are available from 2001 to 2022. Forecasts are available to 2028. Jobs by Industry are used directly from the Canadian Business Counts with no modifications. Industry job counts and earnings are derived from the SEPH. Data from the Census and Canadian Business Counts are combined with the SEPH data to fill in details for jobs in agriculture, fishing, and trapping; private household services; religious organizations; and military personnel of defense services. The Census and Canadian Business Counts data are also used to disaggregate SEPH data to the Census Subdivision level by industry.

Manifold Data Mining Inc. ("Manifold") data sources for household spending, dwelling characteristics, and education include the Survey of Household Spending, the Census of Population, other Statistics Canada surveys, Royal LePage's Quarterly Survey of Canadian Housing Price, Canadian Mortgage and Housing Corporation, Cleanlist, municipal building permits statistics and trends, and the Numeris Return-to-Sample survey. Information from surveys conducted by Agriculture Canada, Egg Farmers of Canada, Health Canada, Citizenship and Immigration Canada, Canada Post Corporation, and publications from credit bureaus are also

used. Manifold provides historical data from 2001 to 2022 and projections up to 10 years into the future.

Financial Information Returns

Financial information returns are a standardized reporting of a municipality's financial activities for a fiscal year (Government of Ontario 2022a). The Ministry of Municipal Affairs and Housing financial information return data has been collected by the Government of Ontario since 1978. Data are posted on the site regularly, thus at any given point in time, data may be missing or incomplete. In addition, previously posted data (including prior years) may be updated. The Government of Ontario's financial information return dataset is designed to include many automatic calculations, including formulas which carry forward data from one schedule to another. To further assist a municipality with completing their financial information return, over 1,400 data verification checks are built into the template. Once submitted, a municipality's financial information return is reviewed and compared with the audited financial statements to ensure consistency.

3.1.2.2 Labour Force Modelling

Labour force projections are sourced from Lightcast. Labour force projections for jobs by industry and occupation are modelled using data from the 2016 Census of Population. The modelling uses an average of three linear regressions of historical job counts: three, five, and ten years into the past. All projections are adjusted to reconcile with higher regional level totals, that is, the aggregate Census Divisions are adjusted to reconcile with provincial totals, and aggregate Census Subdivisions are adjusted to reconcile to Census Division totals.

Lightcast forecasts the number of jobs by industry and occupation. The methodology for the projections of jobs by industry and occupation is as follows:

- **Jobs by Industry** – Base job projections were prepared using a regression methodology. The annual growth rates produced in the forecasts are adjusted by industry for Class of Worker 1⁵² (i.e., employees) to the projections produced by the COPS. This method was used to prepare industry job count projections for 2021 to 2028.
- **Jobs by Occupation** – Base occupation projections were prepared using a regression methodology. Occupational data was projected 10 years but adjusted to the COPS growth rates (Class of Worker 1), and then adjusted to industry totals (Classes of Worker 1 and 2) (Lightcast n.d.b). Data from the Labour Force Survey and Census were used to determine self-employee counts by industry, but no earnings data are available for self-employed individuals.

Forecasts for 2033 and 2042 were estimated using the average annual growth rate between 2021 and 2028 from the projections completed by Lightcast. Gender or sex breakdowns were estimated using ratios from the 2016 and 2021 Census of Population (HSAL et al. 2022c).

⁵² Class of worker 1 refers to employees and Class of Worker 2 refers to self-employed people.

The projections were reviewed and tested for reasonableness. The projections were compared with projected annual growth rates by industry from the COPS (Lightcast n.d.a). The reasonableness of the sample years used for the projections were reviewed through IAWG meetings and workshops (IAWG August 19; 2021, IAWG December 2, 2021; IAWG February 24, 2022; IAWG March 3, 2022; IAWG April 7, 2022; Local Economy Workshop 2021).

3.1.2.2.1 Limitations of Labour Force Modelling

The labour force modelling was completed by Lightcast using an average of multiple regressions at the Census Division and the Census Subdivision levels. The forecasts at the Census Subdivision level are ensured to be able to be reconcile with the Census Division level forecast. The labour force projections were reviewed at IAWG meetings to test the reasonableness of the projections (IAWG February 24, 2022; IAWG March 22, 2023). Limitations for labour force projections include that the modelling is completed by Lightcast using their own regressions and modelling parameters and does not reconcile to COPS. However, the projections are similar to occupational and industry projections completed by COPS. The accuracy and reasonableness of projections was compared to the projections completed by COPS and did not identify any notable differences compared to national trends from 2021 to 2033.

Jobs by occupation projections are not easily tied to business registers and businesses. Occupational classes are collected from individuals and are more prone to error. Lightcast uses data from the Labour Force Survey and Census to derive jobs by occupation projections which are adjusted to SEPH totals so occupation job counts and earnings match industry job counts and earnings. Lightcast adjust projections to SEPH totals due to the higher margin of error of data collections for occupational classes. As a result, comparisons can be made between jobs by industry and occupational classes.

Another limitation is Lightcast projections are only completed for 2021 to 2028. The average annual growth rate from the initial 2021 to 2028 projections are assumed to be maintained for the remainder of the forecast from 2028 to 2042 (HSAL et al. 2022c). The projections use the most recently available data sets but implement current modeling assumptions based on recent trends. For example, the projections for occupations use 2016 Census data but incorporate current parameters and assumptions for projections completed in 2023. This assumes that the historical observed trends in employment remain consistent throughout the projection period. In other words, the trends which occurred from 2013 to 2023 are forecasted to continue 20 years into the future without accounting for the cumulative changes which do not recognize capacity constraints, governmental funding and initiatives, and newly emerging trends throughout the forecast period.

Lightcast uses the most recently available information to complete projections. The 2016 Census of Population was used for the industry and occupational classes' projections as Statistics Canada is in the process of releasing detailed tabulations throughout 2023 for the 2021 Census of Population. This means that the jobs by occupation projections do not reflect more recent trends that emerged between 2016 and 2021, including the effects of the COVID-19 pandemic on employment outcomes. Lightcast projections report some occupations and industry categories as

having less than 10 jobs. Any instance where Lightcast reported less than 10 jobs, Hardy Stevenson and Associates, and Avaanz input 5 jobs. This may skew the numbers slightly for smaller communities (e.g., Machin), but does not have a material impact on forecasting.

Lightcast does not explicitly forecast jobs by industry or occupation by gender or sex. Hardy Stevenson and Associates and Avaanz uses the gender or sex ratio from the 2021 Census for the employment indicator and the 2016 Census for occupational classes indicator and maintains the same ratio throughout the forecast. This results in the forecasts to not reflect the observed trends in gender composition of jobs by industry or occupation.

3.1.2.3 Primary Data Collection

Primary data are used to support the inclusion of community knowledge and local perspectives, confirm the reasonableness and relevance of secondary information, and qualitatively fill gaps in literature review, including information on GBA+ and sustainability considerations. Primary data collection was undertaken through 16 IAWG meetings (as of August 2023), workshops (including a Local Economy Workshop), key person interviews, along with other primary data to characterize factors related to the cost-of living in the Local Study Area. **Section 1.0** provides additional information on primary data collection in the Baseline Studies, including for the IAWG, workshops, and key person interviews.

3.1.2.3.1 Limitations to Primary Data Collection

Limitations for the IAWG, workshops, and key person interviews include that the information reflects the lived experiences and perspectives of the participants. This information could not always be validated through triangulation of data sources but is still considered as valid. In some instances, individuals or organizations were invited to participate in these processes and declined – thus primary data could not be readily collected. An informed consent process was used with all participants, and the option to not respond to questions or redact sensitive information was offered.

Limitations on food price and gasoline price data include that data reflect snapshots at specific points in time, the small sample size of the data collected, and market fluctuations (such as economic supply chain constraints) that may have an impact on price.

Limitations of property values include that data collection does not capture private sales and reflect snapshots at specific points in time.

3.2 EMPLOYMENT

3.2.1 Overview and Approach

Employment is a primary indicator of economic well-being, and a significant contributor to individual health (see **Section 4.2** Social Determinants of Health). This section summarizes current and historical employment conditions in the Local Study Area and examines employment and wage trends in the Regional Study Area and at the provincial level, for context. Wage trends are sourced from Lightcast Data Mining and are only available at the Census Division and provincial level.

Employment is described using employment, unemployment, and participation rates, as defined by Statistics Canada (2022). These metrics are reported in both the Census of Population and the Labour Force Survey, though each source provides different views on geography and time. GBA+ considerations are discussed using disaggregated data for sex, age, and Indigenous identity where available and of sufficient robustness. The employment analysis reflects learnings from the IAWG, the community studies (**Section 1.0**), and other primary data collection processes. Additional information on GBA+ is provided in **Section 1.0**. Sustainability is considered through historical trends and linkages to health (**Section 4.0**) and social-cultural (**Section 2.2**) components.

A description of wages applicable to the local and Regional Study Areas is provided based on published wage rates for municipal and unionized workforces and information obtained through primary data collection. Wage ranges are described by sector, aligning as much as possible with a description of employment by industry sector (**Section 3.4.3**). A description of employment services, where residents seek job postings, and barriers to employment are also discussed.

The future Impact Assessment will provide details on Project employment opportunities in the Local and Regional Study Area, including for Indigenous communities. Information on the spatial boundaries, temporal boundaries, and data collection for employment is provided in **Section 3.1**.

The Regional Study Area for employment is the Kenora Census Division and is sometimes extended to provide additional context or comparison. The Regional Study Area is inclusive of Indigenous communities and reserves. Comparable statistics for Ontario are summarized as available to provide context. The Local Study Area for employment includes the Township of Ignace, City of Dryden, Municipality of Machin, Municipality of Sioux Lookout, and, to the extent information is available, the LSB of Wabigoon, the LSB of Melgund (Dyment and Borups Corners) and the unincorporated community of Dinorwic. The Local Study Area spatial boundaries for employment are based on the understanding that individuals will be willing to travel approximately an hour (each way) for lucrative employment opportunities. However, it is understood that willingness to travel will vary by individual and the quality of the employment opportunity.

The temporal boundaries for employment across the Local Study Area consider trends from the 2006 Census through to 2021, as available, however, data sources are unlikely to be uniform like Statistics Canada and may be constrained to the more recent past.

3.2.2 Labour Force Characteristics

Labour force is a foundational concept in describing the labour economy. Statistics Canada defines the labour force as the portion of the working age population (those aged 15 years old and over) who identify as able and available to work (Statistics Canada 2017).

Individuals can occupy one of three statuses in the labour market: employed (full-time or part-time), unemployed, or not in the labour force. Those not in the labour force can include people who are permanently unable to work, retired, full-time students, and discouraged workers.

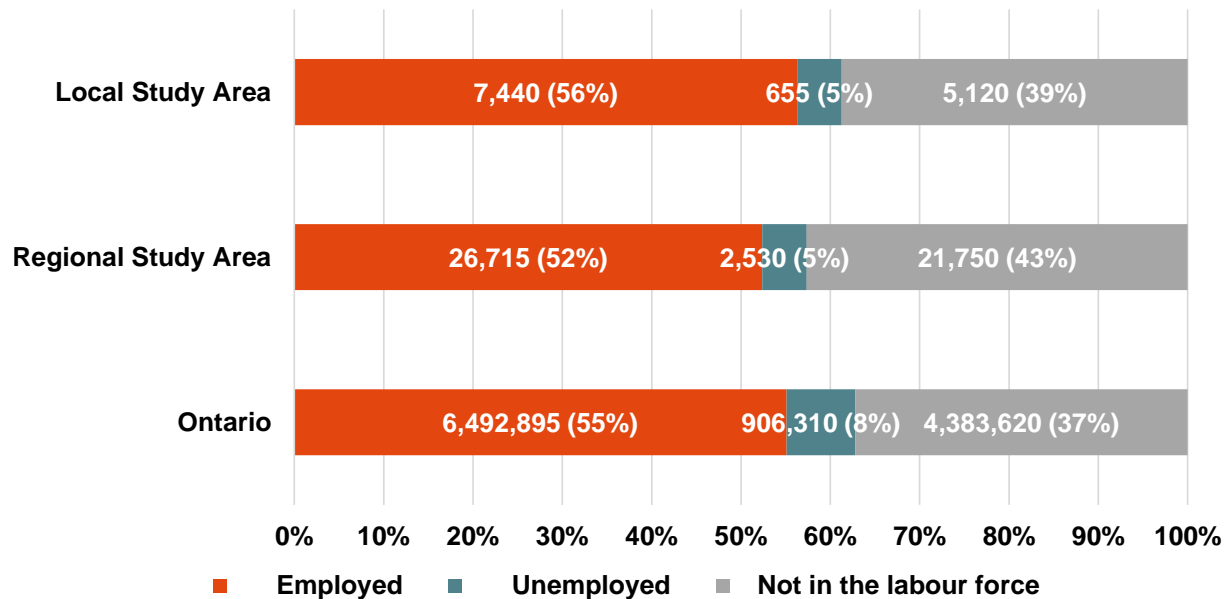
- **Participation rate** is the proportion of people working (employed) or able and available to work (unemployed), from the entire working age population (15 years old and over) (Statistics Canada 2022a).
- **Employment rate** is the number of people employed as a percentage of the working age population (15 years and over), in the specified reference week (Statistics Canada 2022a). Conceptually, the employment rate is the proportion of people working out of all people who could theoretically work.
- **Unemployment rate** refers to the number of people unemployed, expressed as a percentage of the labour force, in the specified reference week (Statistics Canada 2022a). Conceptually, the unemployment rate represents the proportion of people who want to work but do not have work. The definition of unemployment rate relies on the definition of the Labour Force, which includes people who are working (employed) and those who are not working, but able and available to work (unemployed).

3.2.2.1 Labour Force Status

The 2021 labour force for the Local Study Area is 8,090 people, with the largest concentrations in Dryden (3,605 people, or 45%), Sioux Lookout (3,325 people, or 41%), and Ignace (500 people, or 6%)⁵³. In 2021, the Local Study Area labour force (8,090 people) represented about 28% of the Regional Study Area labour force (29,245 people). **Figure 3.2-1** shows the total population employed and unemployed (i.e., in the labour force) and not in the labour force for the Local Study Area, Regional Study Area (i.e., Kenora Census Division), and Ontario, in 2021.

⁵³ The Local Study Area includes Ignace, Dryden, LSB of Wabigoon, Machin, Sioux Lookout, LSB of Melgund (Dyment and Borups Corners) and the unincorporated community of Dinorwic. However, data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

Figure 3.2-1: Labour Force Ages 15 Years and Older in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes:

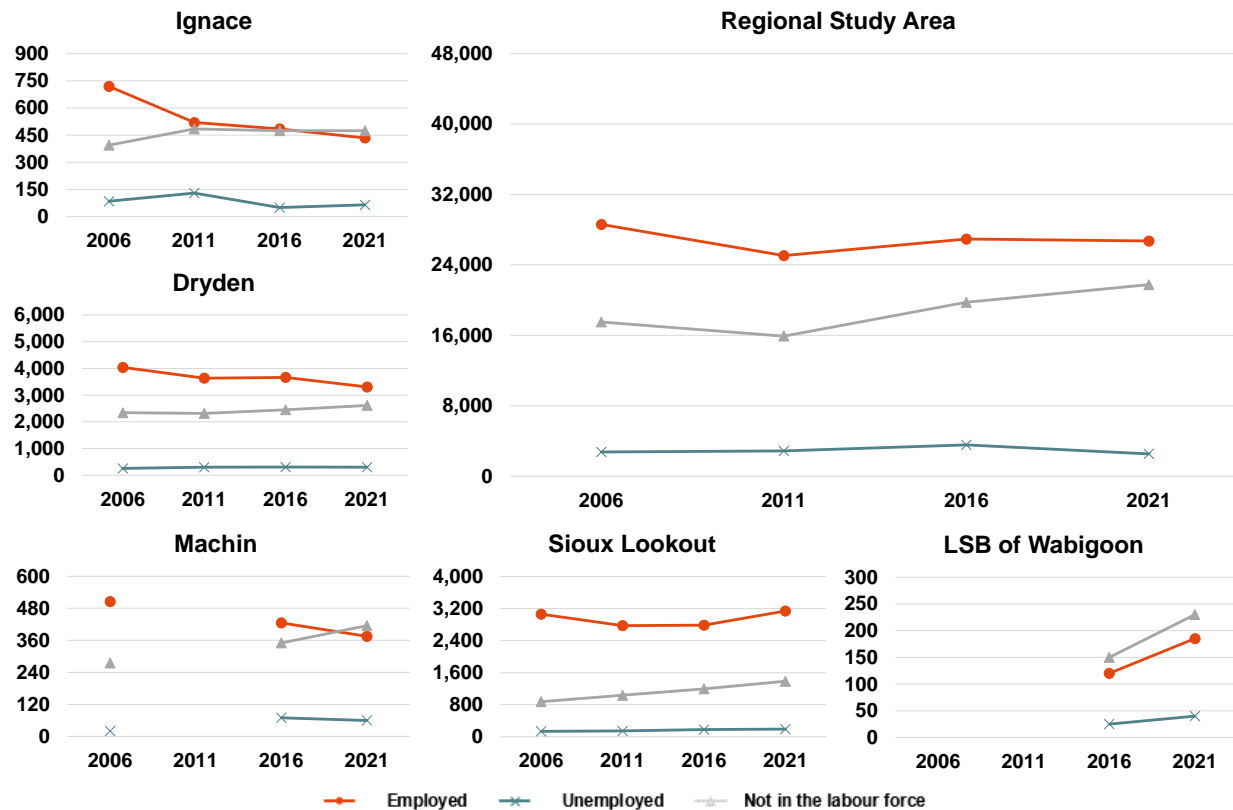
1. Data were not available for the LSB of Melgund and Dinorwic for 2021.

In 2021, the number of people in the labour force relative to the number of people not in the labour force varies across the Local Study Area, Regional Study Area, and Ontario:

- In the Regional Study Area, 26,935 people are employed, 2,530 are unemployed, and 21,750 are not in the labour force in 2021. Of the population who are 15 years and older, 57% are in the labour force.
- In the Local Study Area, 7,440 people are employed, 655 are unemployed, and 5,120 are not in the labour force in 2021. Of the population who are 15 years and older, 61% are in the labour force.
- In the Ontario, 6,492,895 people are employed, 906,310 are unemployed, and 4,383,620 are not in the labour force in 2021. Of the population who are 15 years and older, 63% are in the labour force.

Figure 3.2-2 shows the change in the number of people employed, unemployed, or not in the labour force for the Regional Study Area and Local Study Area communities from 2006 to 2021.

Figure 3.2-2: Labour Force Status in the Local Study Area Communities and Regional Study Area, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2022a. Statistics Canada 2011 NHS. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

From 2006 to 2021, there was a decrease in the number of people who are employed and an increase in the number of people who are in not in the labour force in the Regional Study Area and all Local Study Area communities except Sioux Lookout. Notable trends in labour force status in the Regional Study Area and Local Study Area communities include:

- In the Regional Study Area, the number of people employed decreased from 28,595 in 2006 to 26,715 in 2021. Similarly, there was a decrease in the number of people unemployed from 2,745 in 2006 to 2,530 in 2021. These decreases were offset by the number of people who are not in the labour force which increased from 17,520 in 2006 to 21,750 in 2021.

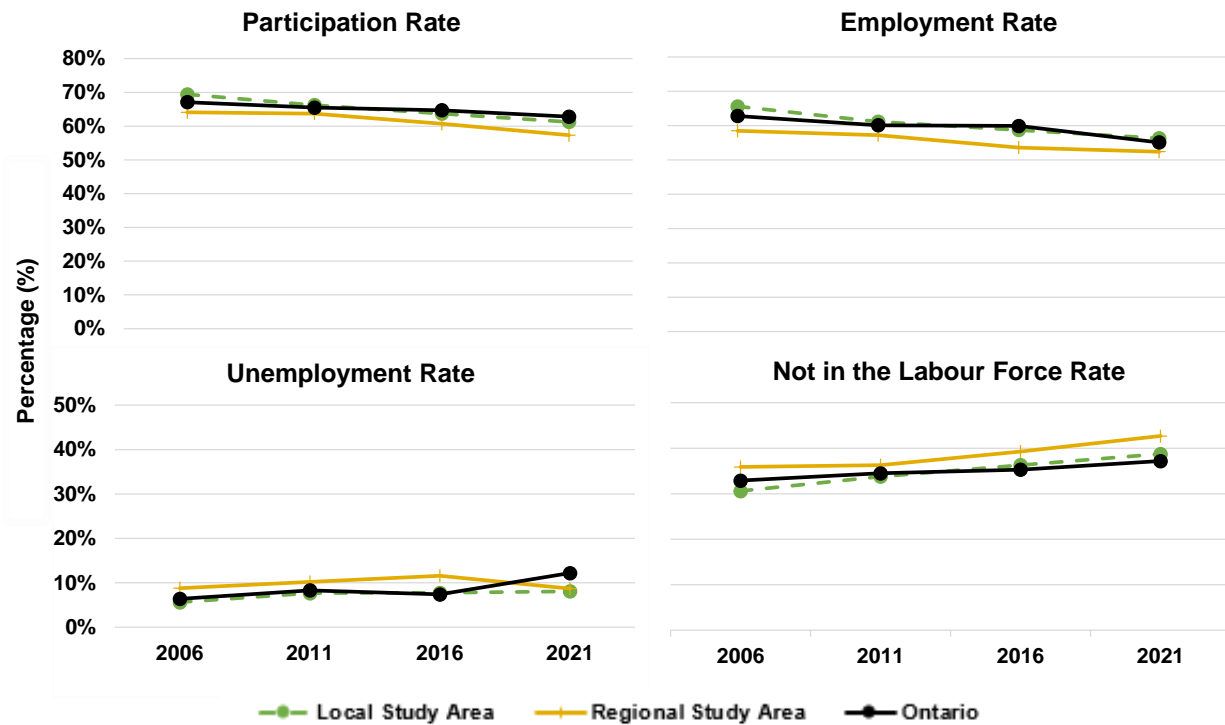
- In Ignace, the number of employed people decreased from 720 in 2006 to 435 in 2021. There was also a slight decrease in the number of unemployed people from 85 in 2006 to 65 in 2021. The number of people who are not in the labour force increased from 395 in 2006 to 475 in 2011 and has remained consistent since (475 in 2021).
- In Dryden, the number of employed people decreased materially from 4,040 in 2006 to 3,305 in 2021. The number of unemployed people increased slightly from 255 in 2006 to 300 in 2011 and has remained constant around 300 people since 2011. The number of people not in the labour force remained around 2,340 people in 2006 and 2011 before increasing to 2,615 by 2021.
- In Machin, the number of employed people decreased from 505 in 2006 to 375 in 2021. The decrease in the number of employed people was offset by an increase in the number of unemployed people from 20 in 2006 to 60 in 2021 and an increase in the number of people not in the labour force from 275 in 2006 to 415 in 2021.
- Sioux Lookout experienced an increase in the number of employed people (from 3,040 in 2006 to 3,140 in 2021), unemployed people (135 in 2006 to 190 in 2021), and people not in the labour force (875 in 2006 to 1,385 in 2021).
- The LSB of Wabigoon experienced an increase in the number of employed people (from 120 in 2016 to 185 in 2021), unemployed people (25 in 2016 to 40 in 2021), and people not in the labour force (150 in 2016 to 230 in 2021).

The increase in the number of people not in the labour force in each Local Study Area community is due in part to an aging population (See **Section 2.2.3.1**) and an increasing proportion of seniors (i.e., 65 years and older). Between 2006 and 2008, a change in the scope of operations at Domtar and the closure of the Resolute Forest Products location in Ignace resulted in reductions to the workforce in the Local Study Area communities. This contraction of operations and closure of a mill at major regional employers may have contributed to the increase in the number of people unemployed in Ignace and decreases to the number of people employed in Ignace, Dryden, Machin, and Sioux Lookout in 2011 (NWO Community and Baseline Studies Key Person Interview Program 2022).

The seasonal operations of outfitters, camps, and the Ministry of Natural Resources and Forestry result in an increase in employment in the Local Study Area communities. For example, the Ministry of Natural Resources and Forestry has seasonal employment can more than double during the summer months and throughout the fire season (NWO Baseline Studies Key Person Interview Program 2022-2023).

Figure 3.2-3 shows the participation rate, employment rate, unemployment rate, and the percentage of people not in the labour force for the Local Study Area, the Regional Study Area and Ontario from 2006 to 2021.

Figure 3.2-3: Labour Force Characteristics in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

The labour force characteristics of the Local Study Area have been similar to the Regional Study Area and Ontario since 2006. The only notable difference is that the Local Study Area experienced a smaller increase in the unemployment rate than Ontario, while the Regional Study Area had a slight decrease to the unemployment rate in 2021. The proportion of people not in the labour force has increased in the Local Study Area, Regional Study Area, and Ontario since 2006. Notable trends in the Local Study Area, Regional Study Area, and Ontario include:

- In the Local Study Area, the participation rate decreased from 69.4% in 2006 to 61.2% in 2021. Similarly, the employment rate decreased from 58.5% in 2006 to 52.4% in 2021. Since 2006, the unemployment rate has remained the lowest compared to the Regional Study Area and Ontario but increased from 5.6% in 2006 to 8.1% in 2021.

- In the Regional Study Area, the participation rate decreased from 64.1% in 2006 to 57.3% in 2021. Similarly, the employment rate decreased from 58.5% in 2006 to 52.4% in 2021. The unemployment rate increased from 8.8% in 2006 to 11.6% in 2016 but returned to 8.7% in 2021.
- In Ontario, the participation rate decreased from 67.1% in 2006 to 62.8% in 2021. Similarly, the employment rate also decreased from 62.8% in 2006 to 55.1% in 2021. The unemployment rate has increased materially since 2006 from 6.4% to 12.2% in 2021. This represents the largest increase to the unemployment rate and the highest unemployment rate in 2021 compared to the Local and Regional Study Areas.

The declining participation rate across all regions reflects an aging population with many retirements since 2006 and stagnant population growth, which is consistent with national trends (Cross 2021). Most of Canada's projected labour force growth is due to an increase in the number of immigrants in the labour force. However, the growth in the labour force from immigration in the past has been minimal in the Regional Study Area where less than 5% of the population identifies as a visible minority (See **Section 2.2.3.2**) or came to the Regional Study Area as an immigrant prior to 2021 (Statistics Canada 2023). The majority of growth from immigration is forecast to be in metropolitan areas (e.g., Toronto, Montreal). The decrease in the participation rate could worsen labour shortages in smaller municipalities due to the lack of in-migration, but vacant positions from retirements pose opportunities for the younger population to capitalize on (Cross 2021). Further details on the participation rate, employment rate, and unemployment rates for the Local Study Area communities are offered in **Section 3.2.2.2**, **Section 3.2.2.3**, and **Section 3.2.2.4**, respectively.

3.2.2.1.1 Challenges to Youth Employment

The Government of Canada defines youth as residents who are between the ages of 15 and 29 years old (Canadian Heritage 2021). "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 childhood to adulthood typically brings greater opportunity for "economic independence, political involvement, and participation in community life" (United Nations 2020). Youth represent an important labour force within the region 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).

Youth across Canada face a variety of challenges in finding employment, including "lack of access to technology, professional networks, and career development opportunities. Youth that come from low-income or marginalized communities are disproportionately impacted by these barriers" (Canadian Heritage 2021). Within the Local Study Area, some of these challenges are exacerbated by conditions such as poor internet connectivity, affordability, lack of access to a vehicle, and lack of public transportation options within and between communities (NWO Community and Baseline Studies Key Person Interview Program 2022).

Table 3.2-1 shows the participation, employment, and unemployment rates for people aged 15 to 24 in the Local and Regional Study Areas.⁵⁴ Youth generally experience lower rates of employment than other Canadians, in part because many are attending school on a full-time basis.

Table 3.2-1: Labour Force Rates for People Aged 15 to 24 Years Old in the Local Study Area and Regional Study Area, 2016¹

	Participation Rate		Not in the Labour Force Rate		Employment Rate		Unemployment Rate	
	Ages 15-24	Overall Rates	Ages 15-24	Overall Rates	Ages 15-24	Overall Rates	Ages 15-24	Overall Rates
Ignace	48.1%	53.5%	51.9%	46.5%	44.4%	48.0%	15.4%	9.3%
Dryden	75.1%	61.8%	24.9%	38.2%	61.1%	57.0%	18.7%	7.7%
Machin	60.4%	71.2%	39.6%	28.8%	53.0%	66.9%	11.1%	6.1%
Sioux Lookout	65.2%	58.3%	34.8%	41.7%	56.5%	50.6%	13.3%	14.3%
LSB of Wabigoon	-	50.0%	-	50.0%	-	40.0%	-	16.7%
Local Study Area	67.2%	64.6%	32.8%	35.4%	56.6%	59.6%	15.7%	7.7%
Regional Study Area	51.7%	60.7%	48.3%	39.3%	40.4%	53.6%	21.8%	11.6%

Source: Statistics Canada 2017. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for the youth population in the LSB of Wabigoon are not available.

In the Local Study Area, participation rates for people between the ages of 15 to 24 are higher than the overall population participation rate. However, employment rates for people between the ages of 15 to 24 are slightly lower in the Local Study Area and unemployment rates are materially higher compared to the overall population. In the Regional Study Area, participation and employment rates for people between the ages of 15 to 24 are lower than the overall population. The unemployment rate for people between the ages of 15 to 24 is materially higher than the overall population in the Regional Study Area. Key observations of the labour force rates in the Local Study Area communities, Local Study Area, and Regional Study Area include:

⁵⁴ Although youth are defined as those between the ages of 15 and 29 years old, Statistics Canada breaks out labour force characteristics in different age cohorts.

Participation rates:

- Participation rates for people between the ages of 15 to 24 are higher in the Local Study Area (67.2%) compared to the Regional Study Area (51.7%). Participation rates are higher for people between the ages of 15 to 24 than the overall rates in the Local Study Area.
- Among the Local Study Area communities, participation rates for people between the ages of 15 to 24 are highest in Dryden (75.1%). In Dryden and Machin, participation rates are higher for people between the ages of 15 to 24 compared to the overall rates. The participation rate for people between the ages of 15 to 24 is lowest in Ignace (48.1%).
- The proportion of people between the ages of 15 to 24 not in the labour force are materially higher in the Regional Study Area (48.3%) compared to the Local Study Area (32.8%).
- Among the Local Study Area communities, the proportion of people between the ages of 15 to 24 not in the labour force are highest in Ignace (51.9%). The proportion of people between the ages of 15 to 24 who are not in the labour force are higher compared to population 15 years and older in Ignace and Sioux Lookout. The proportion of the population 15 years and older who are not in the labour force is highest in the LSB of Wabigoon in 2016.
- People between the ages of 15 to 24 in Ignace have lower participation and employment rates compared to other communities in the Local Study Area, but similar rates to people between the ages of 15 to 24 in the Regional Study Area.

Employment rates:

- Employment rates for people between the ages of 15 to 24 are materially higher in the Local Study Area (56.6%) compared to the Regional Study Area (40.4%). Unemployment rates for people between the ages of 15 to 24 are higher in the Regional Study Area (21.8%) compared to the Local Study Area (15.7%).
- Employment rates for people between the ages of 15 to 24 are highest in Dryden (61.1%) and Machin (56.5%). Employment rates are also higher for people between the ages of 15 to 24 compared to the overall rates in Dryden and Machin. Employment rates for people between the ages of 15 to 24 are lowest in Ignace (44.4%).

Unemployment rates:

- Unemployment rates for people between the ages of 15 to 24 are highest in Dryden (18.7%). Machin is the only community where unemployment rates for people between the ages of 15 to 24 are lower than the overall unemployment rate. Unemployment rates for people between the ages of 15 to 24 are lowest in Sioux Lookout (11.1%) and Machin (13.3%).

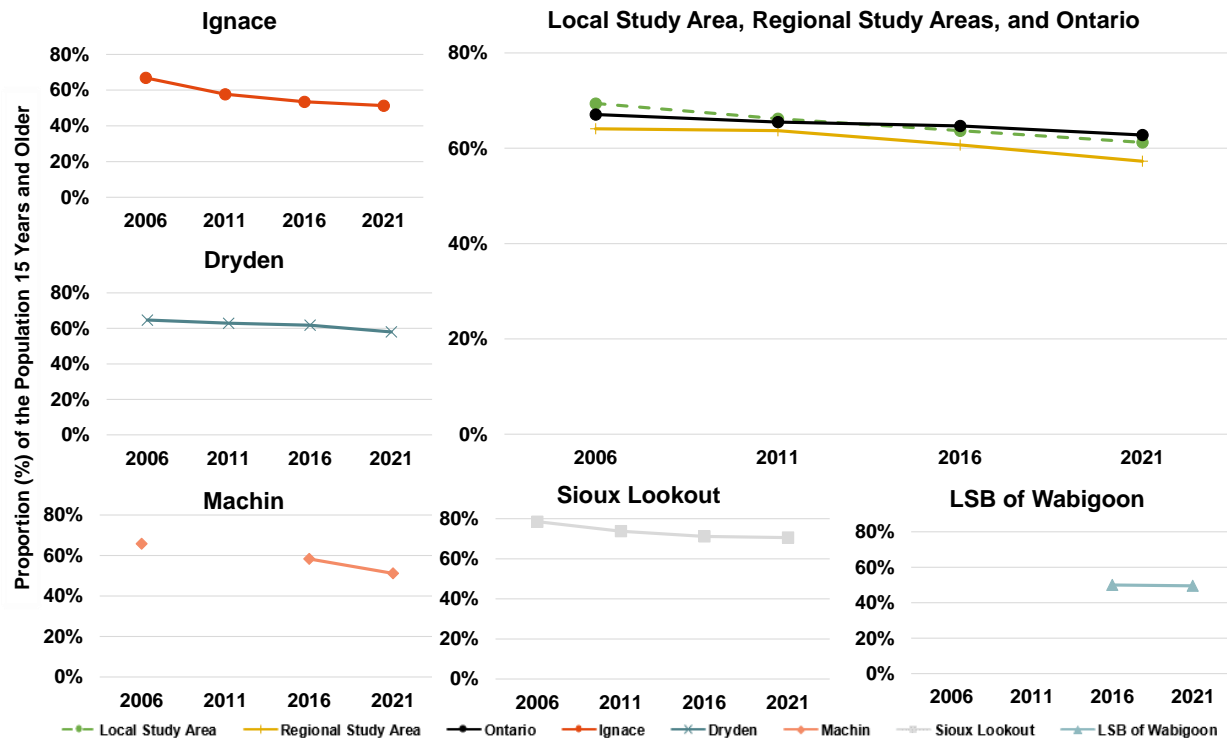
Although unemployment rates are generally similar across the board, the rate at which for people between the ages of 15 to 24 are not in the labour force (i.e., the opposite of the participation rate) is materially higher for Ignace and the Regional Study Area compared to other communities in the Local Study Area. Participation rates are generally lower for people between the ages of 15 to 24 (See **Section 3.2.2.2**). This may be due to youths only working during the summer months, as they are more likely to be attending school full-time (See

Section 3.4.4). It was noted during the Economy Workshop that employment in Ignace can be seasonal, as there are more opportunities in the summer with camps up and running and more visitors (Local Economy Workshop 2021; NWO Baseline Studies Key Person Interview Program 2022-2023). Lower participation rates may also be attributed to a lack of willingness to work in entry level positions and physically demanding occupations, such as working at a restaurant or at Resolute Forest Products. There are frequent vacancies in these jobs, which could be attributed to low wages and the physical nature of the positions (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

3.2.2.2 Participation Rate

The participation rate represents the proportion of the population who are 15 years and older, and are either employed or unemployed (e.g., actively seeking employment or have a job lined up). **Figure 3.2-4** shows the participation rates for the population in the Local Study Area communities, Local Study Area, Regional Study Area, and Ontario, from 2006 to 2021.

Figure 3.2-4: Participation Rates in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

Participation rates have decreased in each region and Local Study Area community since 2006. In 2006, the Local Study Area had the highest participation rate (69.4%) compared to the Regional Study Area (64.1%) and Ontario (67.1%). In 2021, Ontario had the highest participation rate (62.8%) compared to the Local Study Area (61.2%) and Ontario (62.8%). Notable trends in the Local Study Area community's participation rates are as follows:

- In 2006, Ignace had the second highest participation rate (66.9%) among Local Study Area communities. However, in 2021, the participation rate in Ignace (51.3%) was near the lowest participation rate among Local Study Area communities.
- The participation rate in Dryden decreased from 64.7% in 2006 to 58.0% in 2021. In 2021, Dryden had the second highest participation rate among Local Study Area communities.

- The participation rate in Machin decreased materially from 65.8% in 2006 to 51.2% in 2021. In 2021, the participation rate in Machin is the second lowest among Local Study Area communities.
- The participation rate in Sioux Lookout decreased from 78.5% in 2006 to 70.6% in 2021. The participation rate in Sioux Lookout has remained the highest among all Local Study Area communities since 2006.
- The participation rate in the LSB of Wabigoon decreased slightly from 50.0% in 2016 to 49.5% in 2006. The participation rate in the LSB of Wabigoon has been the lowest among Local Study Area communities in both 2016 and 2021.

In Ignace, a key driver of the decline in labour force participation since 2006 is an aging and declining population (See **Section 2.1.1 Population**). Despite the declining population, there has been a relatively constant number of individuals not in the labour force since 2011 (around 475 people). In 2021, Ignace, Machin, and LSB of Wabigoon each had participation rates around 50%, compared to around 60% in the Local Study Area, Regional Study Area, Ontario, and Dryden. Although Machin has not experienced a decrease in population similar to Ignace, the aging demographic of both communities are closely linked to their lower participation rate (**Section 2.2.2** and **Section 3.2.2.2**). Ignace's labour force has been reliant on the mining and forestry industries, which has made the community susceptible to cyclical downturns in these industries (NWO Community and Baseline Studies Key Person Interview Program 2022).

3.2.2.2.1 Labour Force Participation by Sex

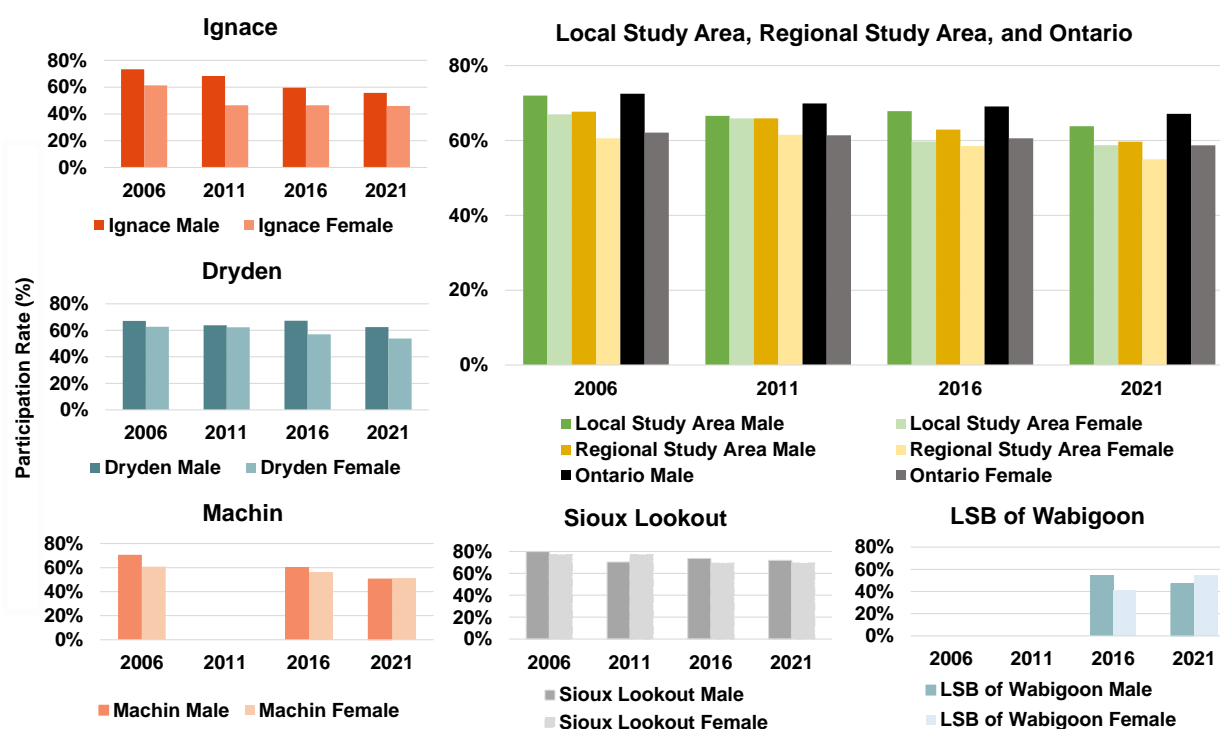
Figure 3.2-5 shows the change in participation rate for males and females from 2006 to 2021.⁵⁵ In 2021 Statistics Canada began to report on gender identity in the Census of Population, as opposed to sex-assigned at birth in previous censuses. Gender identity is an individual's personal

⁵⁵ The 2006, 2011, and 2016 Census disaggregate by sex and the 2021 Census disaggregates by gender. The sex variable (male and female) in census years prior to 2021 and the two-category gender variable (men+ and women+) in the 2021 Census are included together in **Figure 3.2-5**. Although sex and gender refer to two different concepts, the introduction of gender is not expected to have a significant impact on data analysis and historical comparability, given the small size of the transgender and non-binary populations. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories (men+ and women+) and are denoted by the "+" symbol (Statistics Canada 2022a).

Gender refers to an individual's personal and social identity as a man, woman, or non-binary person (a person who is not exclusively a man or a woman). Gender includes the following concepts: (1) gender identity, which refers to the gender that a person feels internally and individually; (2) gender expression, which refers to the way a person presents their gender, regardless of their gender identity, through body language, aesthetic choices, or accessories (e.g., clothes, hairstyle, and makeup), which may have traditionally been associated with a specific gender. A person's gender may differ from their sex at birth, and from what is indicated on their current identification or legal documents, such as their birth certificate, passport, or driver's license. A person's gender may change over time. Some people may not identify with a specific gender (Statistics Canada 2022a).

and social identity as a man, woman, or non-binary person (Statistics Canada 2022a).⁵⁶ Gender identity is reported as Men+ (i.e., cisgender men, transgender men, and some non-binary persons) and Women+ (i.e., cisgender women, transgender women, and some non-binary persons).

Figure 3.2-5: Participation Rate by Sex or Gender in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for all years for the LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

Since 2006, participation rates have been similar in the Local Study Area and Ontario. Males have generally had a higher participation rate than females since 2006 in each of the Local Study Area, Regional Study Area, and Ontario. The participation rate for males and females in the Regional Study Area are slightly lower compared to males and females in the Local Study Area

⁵⁶ A cisgender person is an individual whose gender identity is the same as their sex-assigned at birth. A transgender person is an individual whose gender does not correspond to their sex assigned at birth. A non-binary person is an individual who is not exclusively a man or woman (e.g., fluid, Two-Spirit).

and Ontario. Trends in participation rates for males and females in the Local Study Area communities are as follows:

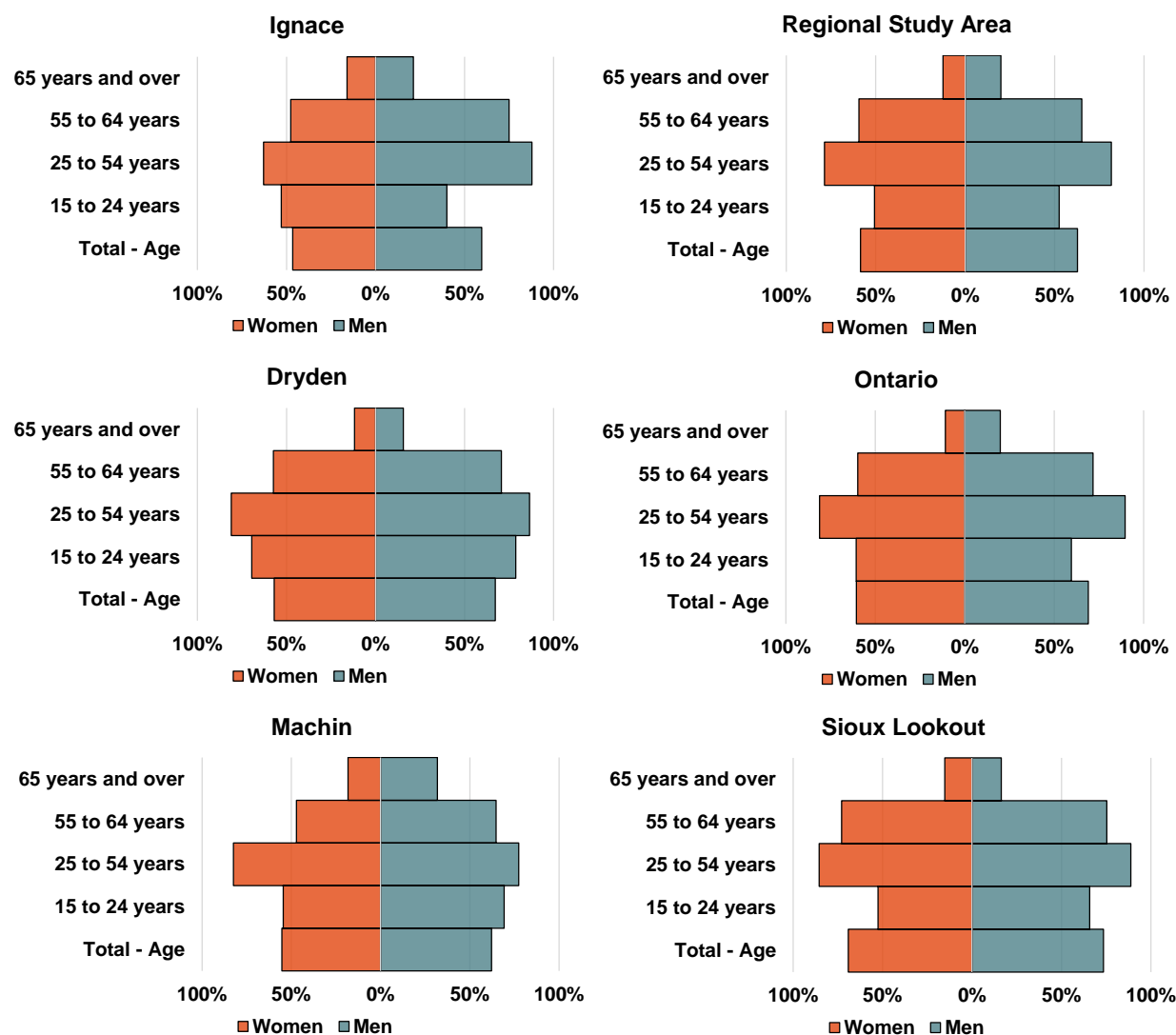
- In 2021, the gap in participation rates between males and females are most pronounced in the Local Study Area, Ontario, Ignace, and Dryden; ranging between five percentage points in the Local Study Area to ten percentage points in Ignace. The gap between the participation rate for males and females is smaller in the Regional Study Area and Sioux Lookout, ranging between one percentage point in Sioux Lookout to five percentage points in the Regional Study Area.
- The LSB of Wabigoon females had a participation rate of 55.0% compared to 47.1% for males in 2021. Similarly, Machin females had a participation rate of 51.3% compared to 50.5% for males in 2021. Since 2006, Sioux Lookout in 2011 was the only other community to have a higher participation rate for females (77.1%) than males (70.3%).

Between 2006 and 2011, there was a material decline in the Ignace labour force for both males and females. The decline in the participation rate for males (73.4% in 2006 to 68.4% in 2011) was attributed in part to downturns in the forestry sector and the resulting out-migration of part of the working age population. The participation rate for females declined from 61.4% in 2006 to 46.5% in 2011, although no specific driver for this decline was identified. The decline may be related to an aging population, a decline in employment in the forestry sector, or a variety of other complex socio-economic factors. The effects of the economic downturn in forestry also had a material impact on employment and unemployment rates (see **Section 3.2.2.3** and **Section 3.2.2.4**), whereas the spin-off of this downturn likely slowed down economic growth in other sectors.

3.2.2.2.2 Age and Labour Force Participation

Figure 3.2-6 shows the 2016 participation rates disaggregated by age cohort for the Regional Study Area, Ontario, and Local Study Area communities. Labour force participation was generally similar across age cohorts between the Regional Study Area and Ontario.

Figure 3.2-6: Participation Rate by Age Cohorts and Sex in Local Study Area Communities, the Regional Study Area, and Ontario, 2016¹



Source: Statistics Canada 2017. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund and Dinorwic for 2016.

In 2016, participation rates were generally higher across age cohorts in Ontario for both males and females compared to the Regional Study Area. Other notable highlights of the participation rates for age cohorts are as follows:

- The participation rates are generally higher for the 25 to 54 age cohort, followed by the 55 to 64 age cohort, and are lowest for the 65+ cohort.
- For the 15 to 24 age cohort, participation rates vary among the Local Study Area communities and the Regional Study Area but are generally similar for the 65+ age cohort.
- For the 25 to 54 age cohort, participation rates for males were generally between 80% to 90% for all Local Study Area communities and the Regional Study Area. The participation rate for females in Ignace (62.9%) was materially lower compared to the other Local Study Area communities which were all around 80%.
- For the 55 to 64 age cohort, participation rates were between 65% to 75% for males and 45% and 60% for females, excluding females in Sioux Lookout which had a participation rate of 72.9%.
- Participation rates were generally lower in Ignace and Machin compared to Sioux Lookout and Dryden. Ignace has a participation rate of 53.5% for the working age population, which was the lowest amongst Local Study Area communities in 2016. The lower participation rate in Ignace is due to lower rates for the 15 to 24 age cohort for both males and females and the 25 to 54 age cohort for females. The lower participation rate in Machin is partially due to a lower participation rate for the 25 to 54 age cohort for males.

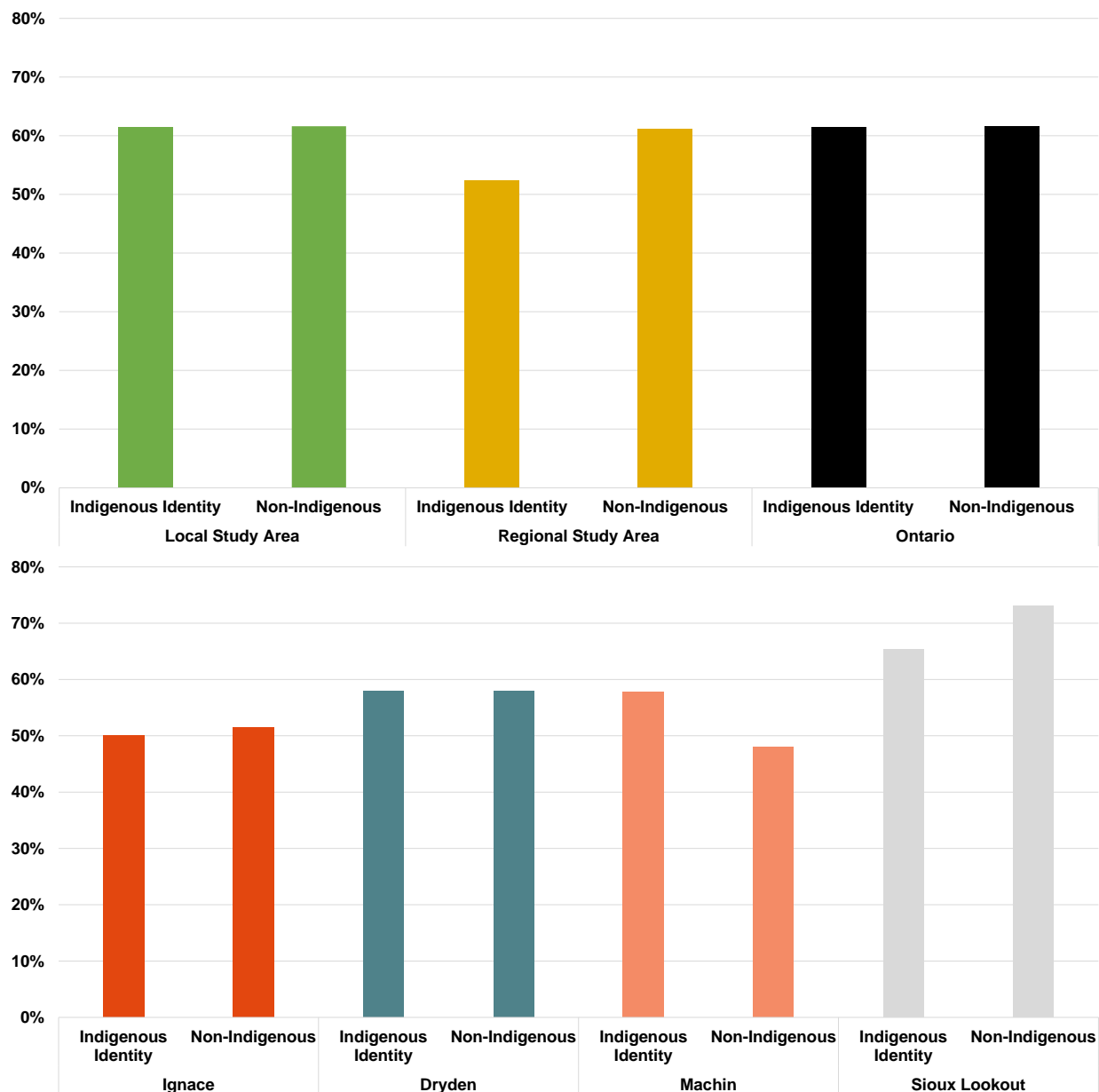
Participation rates peak between 25 and 54 years old because many individuals enter the workforce after completing their education and training between 20 and 30 years old. On the other hand, participation rates generally decline after 55 years old as people approach retirement.

3.2.2.2.3 Indigenous Peoples Labour Force Participation

Indigenous people include those who identify as First Nation (North American Indian), Métis, or Inuit, and/or those who reported as a Treaty Indian or Registered Indian and/or have membership in a First Nation or Indian Band (Statistics Canada 2022a). Over 15% of the population identifies as Indigenous in each Local Study Area community as of 2021 (see Section 2.2.2). Limitations associated with disaggregated Indigenous identity data are provided in Section 3.1.2.1.1.

Figure 3.2-7 shows the participation rate for the portion of the population who identify as Indigenous, and the remaining portion who do not identify as Indigenous for the Local Study Area, the Regional Study Area, and Ontario. The information is aggregated and reflects Indigenous people from a variety of communities. The figures are not representative of any individual Indigenous community.

Figure 3.2-7: Participation Rate by Indigenous and Non-Indigenous Identity in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

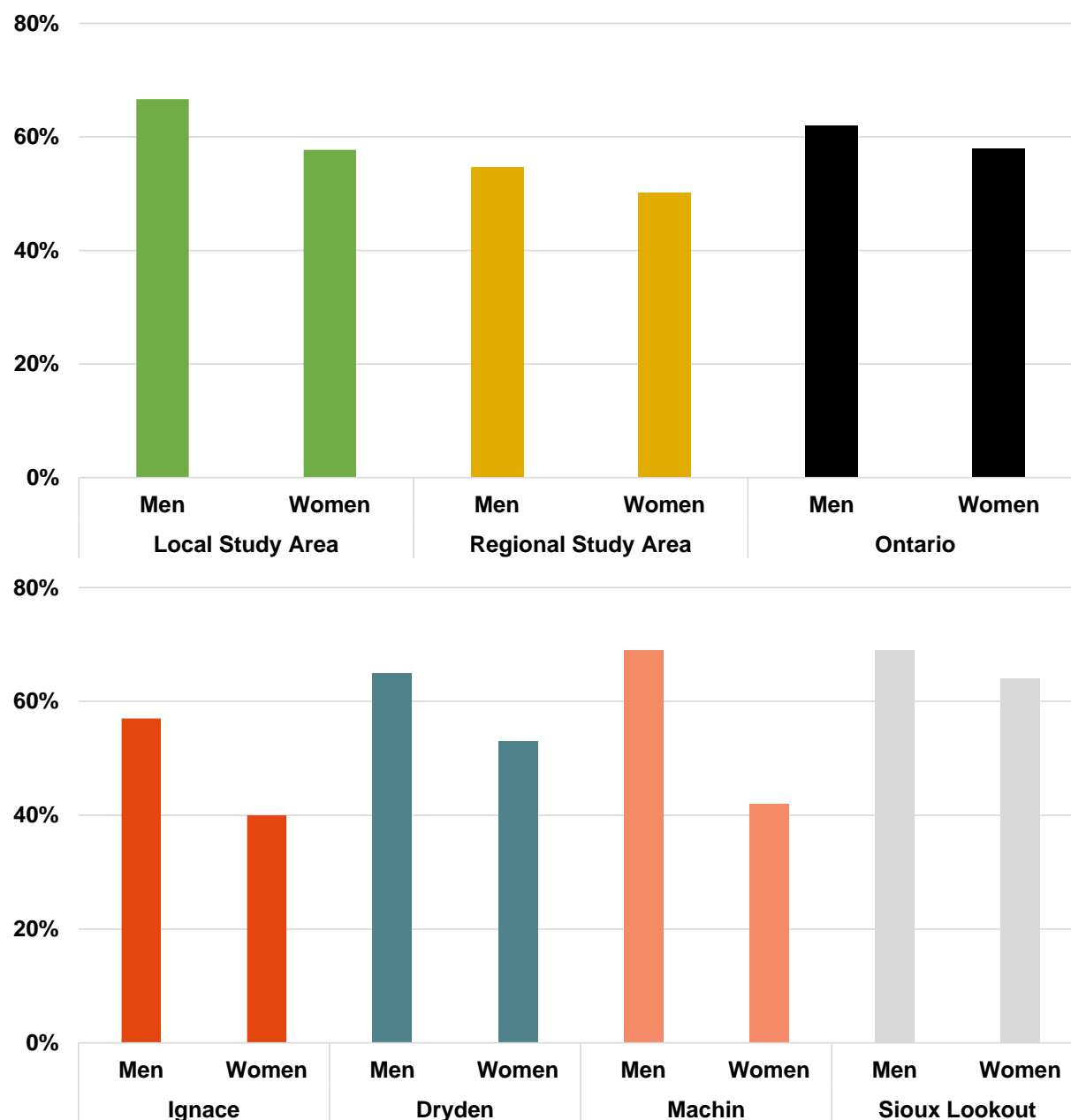
1. Data were not available for the LSB of Wabigoon, LSB of Melgund, and Dinorwic for 2021.

Participation rates are similar for Indigenous peoples and non-Indigenous peoples in the Local Study Area and Ontario. In the Regional Study Area, participation rates for Indigenous peoples are lower than non-Indigenous peoples and lower than Indigenous peoples in the Local Study Area and Ontario. Key observations on participation rates for Indigenous and non-Indigenous peoples in the Local Study Area communities for 2021 are as follows:

- In Ignace, the participation rate for Indigenous peoples (50.0%) is similar to the participation rates for non-Indigenous peoples (51.5%).
- In Dryden, the participation rate for Indigenous peoples (58.0%) is similar to the participation rate for non-Indigenous peoples (57.9%).
- In Machin, the participation rate for Indigenous peoples (57.8%) is higher than non-Indigenous peoples (48.0%). Machin is the only community in the Local Study Area where Indigenous peoples have a higher participation rate than non-Indigenous peoples.
- Sioux Lookout has the highest participation rates for Indigenous peoples (65.3%) and non-Indigenous peoples (73.0%) among all Local Study Area communities, the Regional Study Area, and Ontario.

Figure 3.2-8 shows the participation rate for Indigenous peoples disaggregated by gender for the Local Study Area, Regional Study Area, Ontario, and Local Study Area communities, in 2021.

Figure 3.2-8: Participation Rate by Indigenous Identity and Gender in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund and Dinorwic for 2021.

Participation rates are similar for Indigenous men and women in the Local Study Area and Ontario but are slightly lower in the Regional Study Area. Among the Local Study Area, Regional Study Area, and Ontario, participation rates for Indigenous men are highest in the Local Study Area (66.7%) and participation rates for Indigenous women are highest in the Local Study Area (57.7%) and Ontario (58.0%). Notable observations of participation rates for Indigenous men and women in the Local Study Area communities in 2021 include:

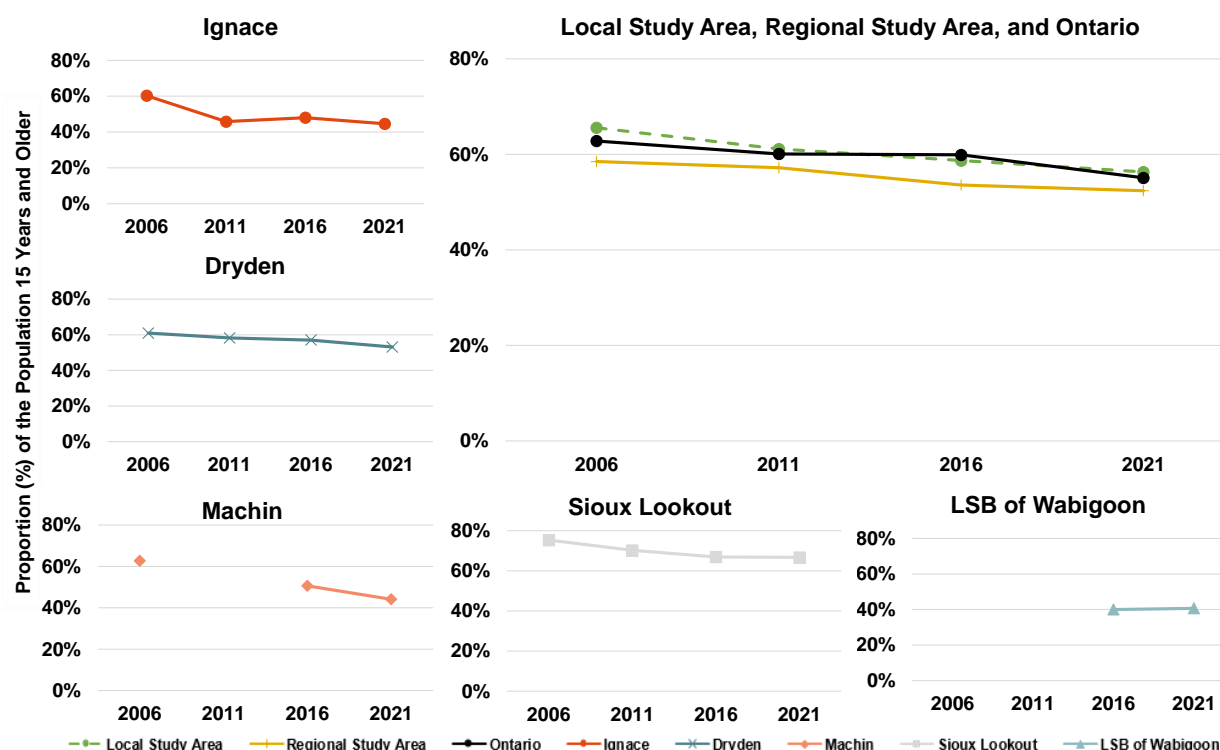
- Indigenous women in each community had lower participation rates than Indigenous men. Indigenous women have lower participation rates compared to Indigenous men, ranging from a 27 percentage point difference in Machin to a 5 percentage point difference in Sioux Lookout.
- Indigenous men have the highest participation rate in Sioux Lookout and Machin (approximately 69.0%) amongst the Local Study Area communities. Indigenous women have the highest participation rate in Sioux Lookout (64.0%) amongst the Local Study Area communities.
- Indigenous men have the lowest participation rate in Ignace (57.0%) amongst the Local Study Area communities and Indigenous women have the lowest participation rate in Ignace (40.0%) amongst the Local Study Area communities.

Participation rates for Indigenous peoples are generally lower than non-Indigenous peoples (See **Figure 3.2-7**). Further, participation rates for Indigenous women are materially lower than Indigenous men in the Local Study Area. Participation rates are generally lower for older communities with a large portion of seniors but can also be due to the household role of an individual. Other factors can include a lack of opportunities due to lower education levels and barriers to employment (See **Section 2.3.2 and Section 3.2.3.4**). In Machin, the materially lower participation rate for Indigenous women compared to Indigenous men could be attributed to the large proportion of Indigenous women who have not obtained a high school diploma or degree (See **Section 3.3.2.3.2**).

3.2.2.3 Employment Rate

Figure 3.2-9 shows the 2021 employment rates in the Local and Regional Study Areas and for each community in the Local Study Area.

Figure 3.2-9: Employment Rates in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for all years for the LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

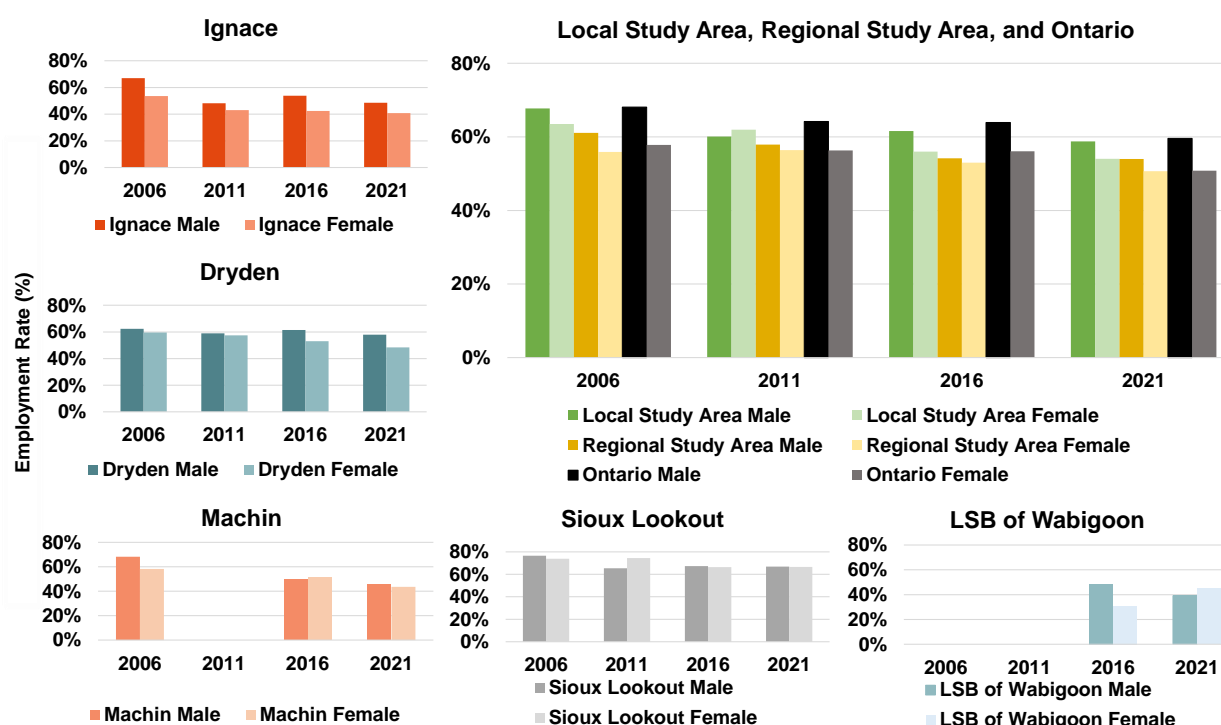
Employment rates have decreased in the Local Study Area, Regional Study Area, and Ontario since 2006. Employment rates decreased in all Local Study Area communities from 2006 to 2021, with the most notable declines in Ignace (from 60.3% to 44.6%) and Machin (from 62.7% to 44.1%). Other trends in employment rates in the Local Study Area include:

- Sioux Lookout had the highest employment rate among Local Study Area communities over this period (75.3% in 2006 to 66.7% in 2021).
- The employment rate for the LSB of Wabigoon has been around 40% since 2016.
- The employment rate in Dryden has shown a similar trend to the employment rates in the Regional Study Area and Ontario decreasing slightly from around 60% in 2006 to 55% by 2021.

3.2.2.3.1 Employment by Sex

Figure 3.2-10 shows employment rates by sex for the Local Study Area, Regional Study Area, and Ontario for 2006 to 2021.

Figure 3.2-10: Employment Rate by Sex or Gender in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for all years for the LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

Employment rates decreased from 2006 to 2021 for both men and women among Local Study Area communities. Similar to participation rates, employment rates for men have generally been higher than employment rates for women, but the gap is marginal and appears to be converging over time. Notable trends in employment rates for men and women are as follows:

- In 2006, among the Local Study Area, Regional Study Area, and Ontario, employment rates were highest for men in Ontario (68.1%), and women in the Local Study Area (63.5%). By 2021, employment rates remained highest for men in Ontario (59.6%) and women in the Local Study Area (54.0%).

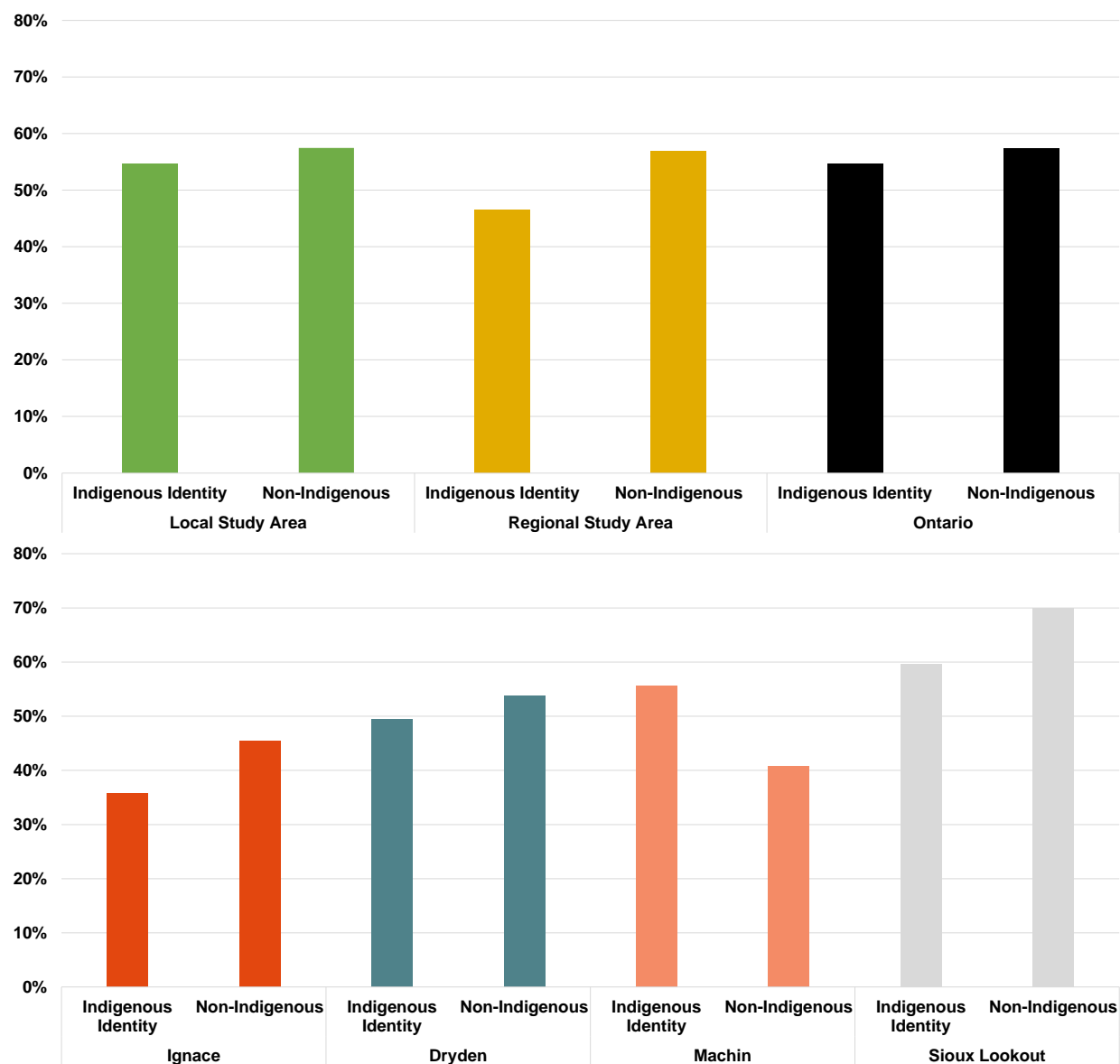
- The Regional Study Area had the lowest employment rates for both men and women from 2006 to 2021 compared to the Local Study Area and Ontario.
- In Ignace, the employment rate for women decreased from 53.5% in 2006 to 40.8% in 2021. Similarly, the employment rate for men decreased from 66.9% in 2006 to 48.5% in 2021. From 2006 to 2011 the employment rate declined materially for men from 66.9% to 48.2%.
- Employment rates have been highest in Sioux Lookout compared to other Local Study Area communities since 2006. In 2006, the employment rate was 76.6% for men and 73.8% for women; however decreased by 2021 to 66.9% and 66.5% for women by 2021. Between 2006 and 2011, the employment rate for women in Sioux Lookout increased from 73.8% in 2006 to 74.4% in 2011, while the employment rate for men decreased from 76.6% to 65.4%. This was one of the few instances where a Local Study Area community had a higher employment rate for women compared to men.
- In 2021, the employment rate for women in the LSB of Wabigoon was 45.0% compared to 39.2% for men. The employment rate for men in the LSB of Wabigoon decreased materially from 48.4% in 2016 to 39.2% in 2021 and the employment rate for women increased materially from 31.0% in 2016 to 45.0% in 2021.
- Employment rates for both men and women have declined materially in Ignace and Machin since 2006. In 2021, employment rates are below 50% for both men and women in each of Ignace, Machin, and the LSB of Wabigoon. Dryden women also had an employment rate below 50% in 2021, which is near the employment rate for women in Ontario.

The material decreases in the employment rate for Ignace men in 2011 was due to a decrease in the population, an increase in the number of unemployed people (see **Section 3.2.2.4.1**), and a slight increase in the number of people not in the labour force (see **Section 3.2.2.1**). The reason for this sudden drop in employment has been linked to the downturn in forestry operations between 2005 and 2015 (NWO Community and Baseline Studies Key Person Interview Program 2022). See **Section 3.4.4** for more information on the forestry sector. Across all Local Study Area communities, the Regional Study Area, and Ontario there was a slight decrease in the employment rate in 2021. This is likely due to the COVID-19 pandemic and the resulting transition to working remotely and social distancing in workplaces (Statistics Canada 2023a; NWO Community and Baseline Studies Key Person Interview Program 2022). Industries which could not make the transition to working remotely or had to reduce their workforce are likely the drivers to the lower employment rate in 2021 compared to 2016.

3.2.2.3.2 Indigenous Peoples and Employment

Figure 3.2-11 shows the employment rate for the Indigenous population and the non-Indigenous population for the Local Study Area, Regional Study Area, Ontario, and Local Study Area communities, in 2021. Limitations associated with disaggregated Indigenous identity data are provided in **Section 3.1.2.1.1**.

Figure 3.2-11: Employment Rate by Indigenous and Non-Indigenous Identity in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, LSB of Wabigoon, and Dinorwic for 2021.

The employment rate for Indigenous peoples is lower than the rate for non-Indigenous peoples in the Local Study Area, Regional Study Area, Ontario, Ignace, Dryden, and Sioux Lookout. The employment rate in Machin was higher for Indigenous peoples than for non-Indigenous peoples. Key observations of employment for Indigenous and non-Indigenous peoples in the Local Study Area, Regional Study Area, and Ontario are as follows:

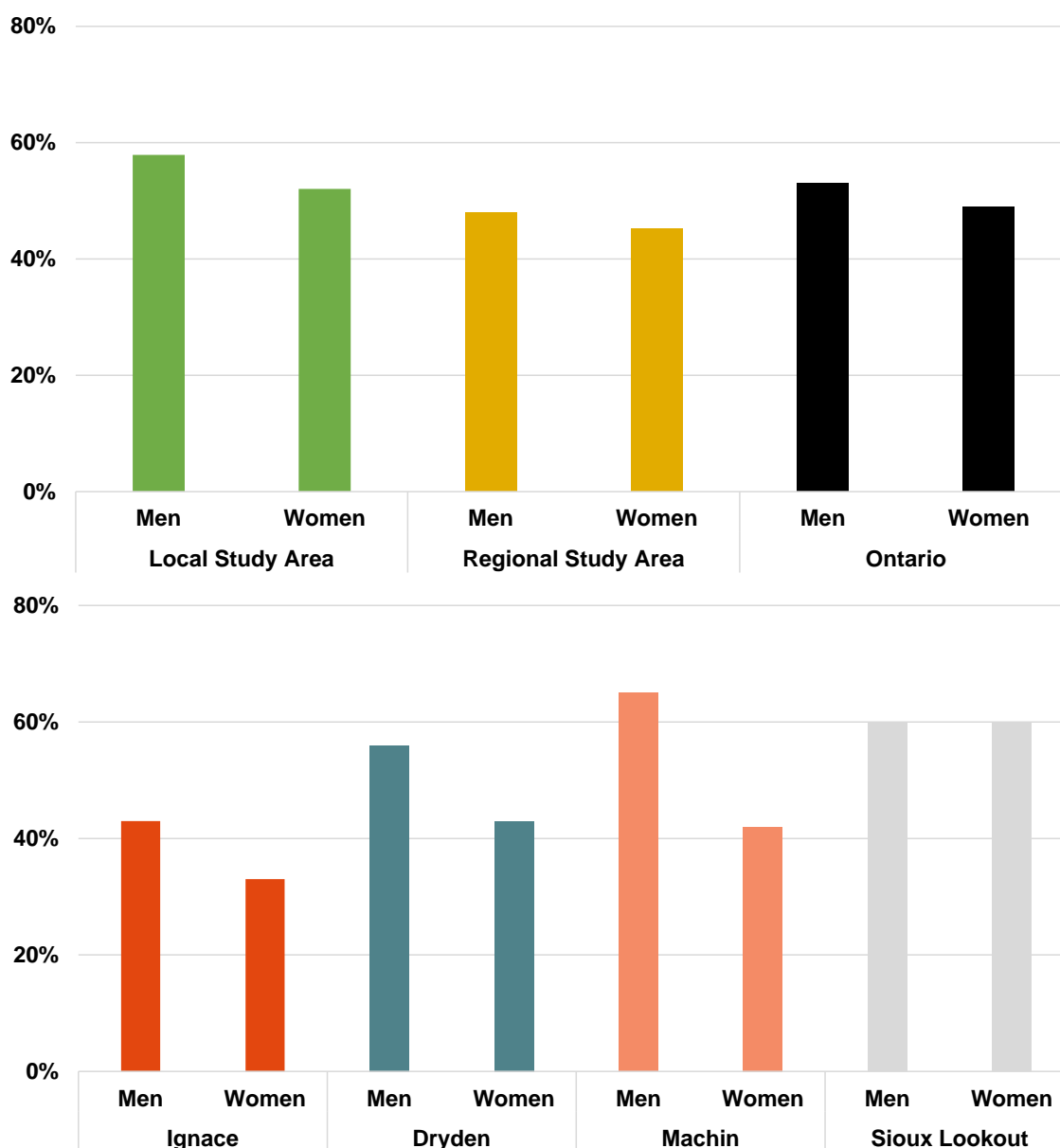
- The employment rate for Indigenous peoples in the Local Study Area (54.7%) is similar to the employment rate for Indigenous peoples in Ontario (54.7%) but higher than the employment rate for Indigenous peoples in the Regional Study Area (46.6%).
- The employment rate for non-Indigenous peoples is approximately 57.5% for the Local Study Area, Regional Study Area, and Ontario. The employment rate for non-Indigenous peoples in the Regional Study Area is materially higher than the employment rate for Indigenous peoples in the Regional Study Area.

Key observations on employment rates among Local Study Area communities include:

- The employment rate for Indigenous peoples in Ignace (35.7%) is materially lower than the employment rate for Indigenous peoples in the Local Study Area as a whole (54.7%).
- The employment rate for Indigenous peoples is highest in Sioux Lookout (59.6%) among the Local Study Area communities.
- The employment rate for non-Indigenous peoples is highest in Sioux Lookout (70.0%) and lowest in Ignace (45.5%) and Machin (40.8%).

Figure 3.2-12 shows the employment rate for Indigenous peoples disaggregated by gender for the Local Study Area, Regional Study Area, Ontario, and the Local Study Area communities, in 2021.

Figure 3.2-12: Employment Rate for Indigenous Peoples by Gender in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, LSB of Wabigoon, and Dinorwic for 2021.

Indigenous women in most communities had lower employment rates than Indigenous men, excluding Sioux Lookout where it was similar. The employment rates for Indigenous men and women in the Local Study Area (57.9% for men and 52.1% for women) are higher than the employment rates for Indigenous men and women in the Regional Study Area (47.9% for men and 45.3% for women) and Ontario (53.0% for men and 49.0% for women).

Notable highlights of the employment rates for Indigenous men and women among Local Study Area communities include:

- The employment rate for Indigenous men was highest in Machin (65.0%) and lowest in Ignace (43.0%). The employment rate for Indigenous women was highest in Sioux Lookout (60.0%) and lowest in Ignace (33.0%).
- Sioux Lookout was the only Local Study Area communities where Indigenous men (60.0%) and women (60.0%) had similar employment rates.
- In Ignace (43.0% men and 33.0% women), Dryden (56.0% men and 43.0% women), and Machin (65.0% men and 42.0% women) there were material differences in the employment rates between Indigenous men and women.

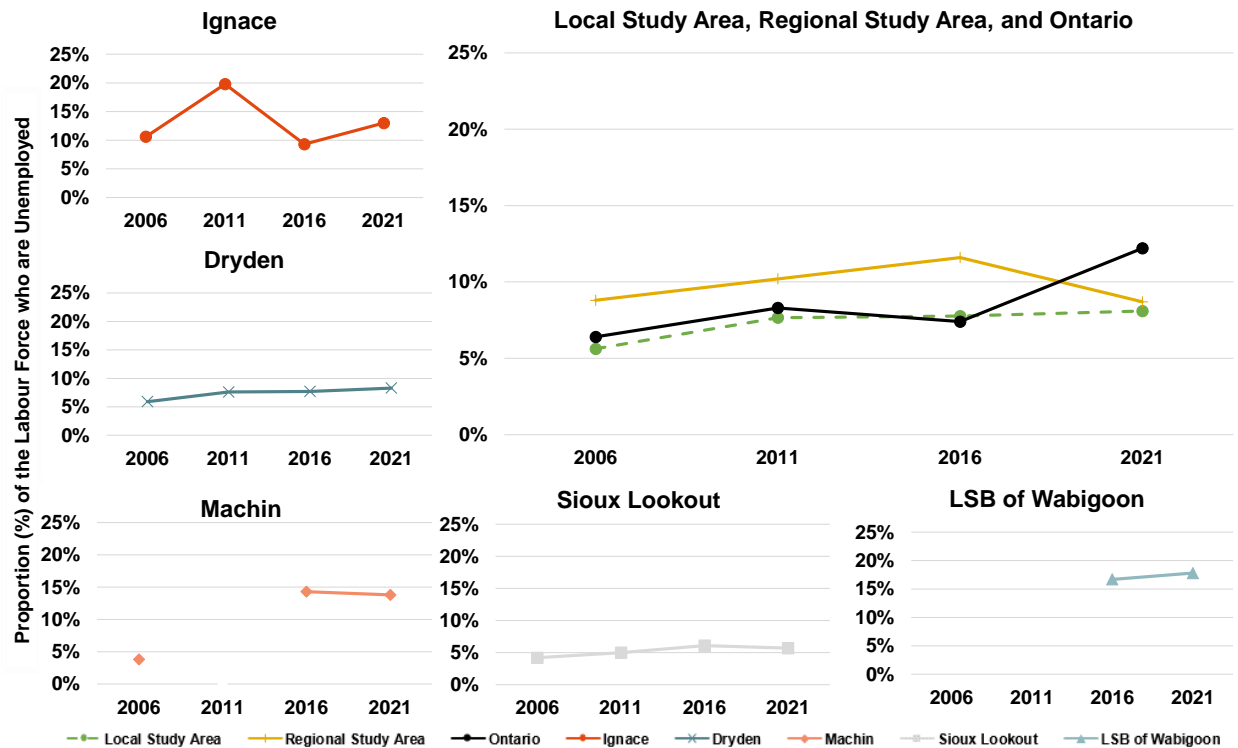
The low employment rate for Indigenous women in Ignace and Machin, which is consistent with a higher unemployment rate (**Section 3.2.2.4.3**), may be due to the large proportion (approximately 60%) of the working age population of Indigenous women not in the labour force. The large number of Indigenous women who are not employed could be attributed to a high proportion without a high school diploma or degree (See **Section 3.3.2.5**). Other reasons for the low employment rate among Indigenous women may related to barriers in obtaining employment or the inability to find a job which meets the lowest wage a person is willing to accept at a new position (see **Section 3.2.3.1**).

3.2.2.4 Unemployment Rate

Unemployment can be influenced by a number of factors including access to childcare, the requirement of personal transportation to commute to work, lack of education, cultural influences, mental health and substance dependencies, social anxiety from extended periods of unemployment (Pohlan 2019), seasonal employment variations, and an individual's lowest wage they are willing to accept (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). Unemployment rate refers to the number of people unemployed, expressed as a percentage of the labour force, in the specified reference week (Statistics Canada 2022a).

Figure 3.2-13 shows the unemployment rate for the Local Study Area, Regional Study Area, Ontario, and the Local Study Area communities from 2006 to 2021. Given the small population and labour force in some Local Study Area communities, unemployment rates can be subject to large swings due to random rounding and, therefore, changes should be interpreted with caution.

Figure 3.2-13: Unemployment Rates in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

The unemployment rate has increased in each region, excluding the Regional Study Area, since 2006. The unemployment rate in the Regional Study Area increased from 8.8% in 2006 to 11.6% in 2016 before decreasing to 8.7% by 2021. Notable observations of the unemployment rate for the Local Study Area, Regional Study Area, and Ontario include:

- From 2006 to 2016 the Local Study Area and Ontario had similar unemployment rates, which were lower than the Regional Study Area.
- The Regional Study Area had the highest unemployment rate from 2006 to 2016 amongst the Regional Study Area, Local Study Area, and Ontario.
- In 2021, Ontario had the highest unemployment rate (12.2%), and the Local Study Area had the lowest unemployment rate (8.1%) amongst the Local Study Area, Regional Study Area, and Ontario. The reason behind Ontario having the highest unemployment rate is likely due

to the COVID-19 pandemic and the inability of a large proportion of businesses to transition working remotely or maintain social distancing in the workplace (Statistics Canada 2023a; NWO Baseline Studies Key Person Interview Program 2022-2023).

The trends in the unemployment rate for Local Study Area communities are as follows:

- In 2006, amongst the Local Study Area communities, Ignace had the highest unemployment rate (10.6%) and Machin had the lowest unemployment rate (3.8%). By 2021, the LSB of Wabigoon had the highest unemployment rate (17.8%) and Sioux Lookout had the lowest unemployment rate (5.7%) among Local Study Area communities.
- The unemployment rate in Ignace has remained higher than in the Local Study Area. In 2011, the unemployment rate in Ignace increased materially to 19.8%, which was the highest unemployment rate among Local Study Area communities from 2006 to 2021. The unemployment rate has increased in each Local Study Area community since 2006.
- Since 2006, unemployment rates have remained lower in Sioux Lookout (4.2% in 2006 to 5.7% in 2021) and Dryden (5.9% in 2006 to 8.3% in 2021) compared to the other Local Study Area communities. Sioux Lookout has had the lowest unemployment rate, excluding 2006 where it had the second lowest unemployment rate (4.2%).
- In 2006, Machin had the lowest unemployment rate among Local Study Area communities but had the second highest unemployment rate in 2016 (14.3%) and 2021 (13.8%).
- The LSB of Wabigoon had the highest unemployment rate in both 2016 (16.7%) and 2021 (17.8%).

There was a material increase in the unemployment rate in Ignace in 2011, though that declined in 2021. A downturn in forestry operations between 2006 and 2008 may have contributed to the higher unemployment rate in 2011 (NWO Community and Baseline Studies Key Person Interview Program 2022). The large increase to unemployment (and decline in labour force participants) from 2006 to 2011 is partially attributed to downturns in the forestry industry from 2000 to 2008. The Bowater Mill in Ignace closed in 2006. Between 2005 and 2008, Domtar mill in Dryden changed its operating scope to strictly pulp operations and shut down two paper machines (Pulp and Paper Canada 2006; Northern Ontario Business 2008; NWO Community and Baseline Studies Key Person Interview Program 2022). The Bowater Mill in Ignace later changed its name to Resolute Forest Products in 2011 before reopening in 2015 (Resolute Forest Products 2022). This is sometimes referred to as cyclical unemployment, which is the change in the number of unemployed people over a business cycle, and prominent in industries which are limited by government regulations and subject to the change in prices of primary resources (e.g., gold, oil) and fluctuating exchange rates (Johnson and Kneebone 1993).

Although unemployment rates are above 10% in most Local Study Area communities in 2021, there is an abundance of vacant positions, particularly in the skilled trades and entry-level positions across all sectors (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). The higher levels of unemployment in 2021 are likely the result of the COVID-19 pandemic. Unemployment

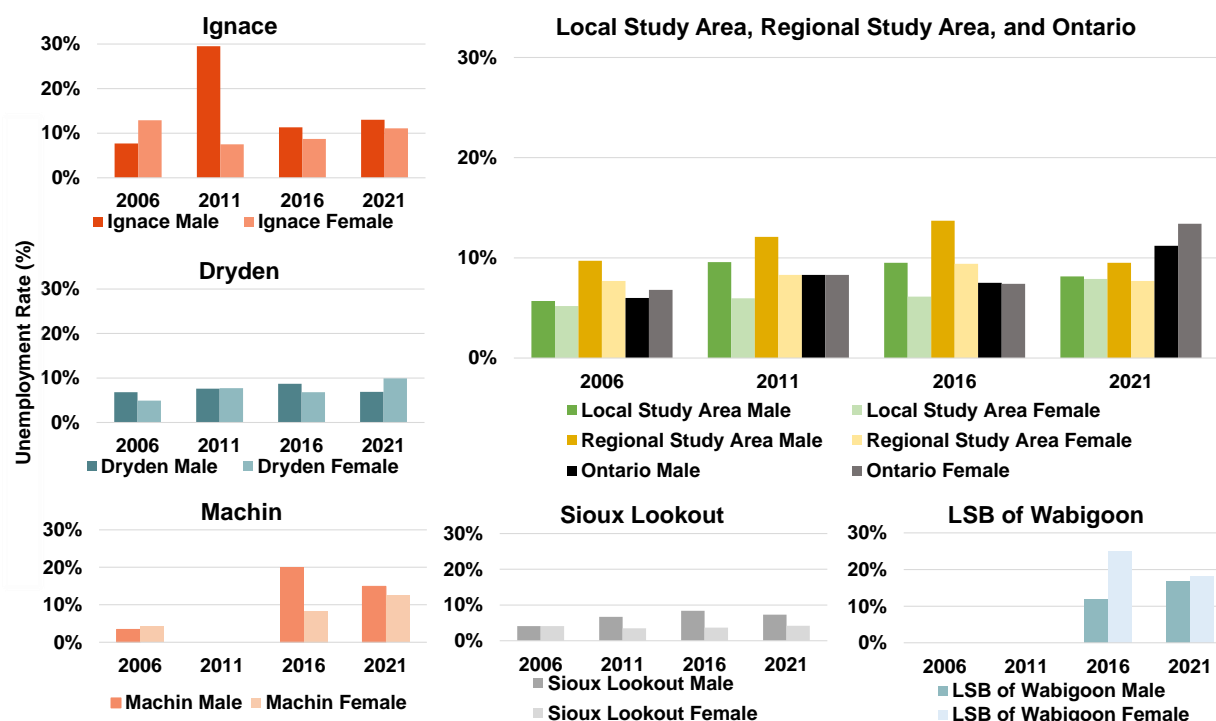
associated with the time required for job searching and matching is referred to frictional unemployment. Some of the current unemployment is likely related to job matching as businesses were returning to pre-covid operations still in 2021 (Osberg and Lin 2000). The current level of unemployment may also be attributed to structural unemployment (Osberg and Lin 2000), which occurs when people are unwilling to accept a job at the provided wage or there are no available jobs in their desired occupation (NWO Community and Baseline Studies Key Person Interview Program 2022).

The COVID-19 pandemic also likely contributed to the increase in unemployment rate in the Local Study Area communities in 2021. Key person interview participants noted the current labour shortage began in 2020 after the onset of the pandemic (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). Some of the challenges of labour shortages in the Northwest could be attributed to challenges with labour matching (i.e., finding qualified individuals for the requirements of a vacant position) as some companies are resourcing from out of province, and in some instances from other countries, for skilled trades and labourers in the mining and forestry sectors (NWO Community and Baseline Studies Key Person Interview Program 2022). The need to procure people from out of province and out of the country is not unique to the natural resource sectors, with there being similar challenges to recruit physicians and doctors in Northwest Ontario communities (NWO Community and Baseline Studies Key Person Interview Program 2022). There are many available workers to address the challenges of resourcing for skilled tradespeople and professionals, but these people likely do not possess the required levels of education and training. Unemployment related to not having the required training and educational qualifications is typical of structural unemployment (Osberg and Lin 2000). It was noted in key person interviews that some employers in the Local Study Area offer on-the-job training, but the jobs remain vacant which is also typical of structural unemployment (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

3.2.2.4.1 Unemployment by Sex

Figure 3.2-14 shows the change in unemployment rates for males and females in the Local Study Area, Regional Study Area, Ontario, and Local Study Area communities, from 2006 to 2021.

Figure 3.2-14: Unemployment Rate by Sex or Gender in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

The unemployment rates for males were higher than the unemployment rates for females from 2006 to 2021 for the Local and Regional Study Areas, but, in Ontario, females had higher unemployment rates in 2006 and 2021. Notable trends in the unemployment rates for males and females in the Local Study Area, Regional Study Area, and Ontario are as follows:

- In 2021, the highest unemployment rate for males was 12.2% in Ontario and the lowest was 8.2% in the Local Study Area. The highest unemployment rate for females was 11.2% in Ontario and the lowest was 7.7% in the Regional Study Area.
- In the Local Study Area, the unemployment rate for males increased from 5.7% in 2006 to 8.2% in 2021 and for females increased from 5.2% in 2006 to 7.9% in 2021. The unemployment rate for males increased to 9.6% in 2011 and stagnant until decreasing to 8.2% in 2021. The unemployment rate for females increased slightly to 6.0% in 2011 and was stagnant until increasing to 7.9% by 2021.

- In the Regional Study Area, the unemployment rate for males increased from 9.7% in 2006 to 13.7% in 2016 before decreasing to 9.5% in 2021. Similarly, the unemployment rate for females increased from 7.7% in 2006 to 9.4% in 2016 before decreasing back to 7.7% by 2021.

Among the Local Study Area communities, males have generally had higher unemployment rates than women, excluding the LSB of Wabigoon. Other notable trends in unemployment rates among Local Study Area communities are as follows:

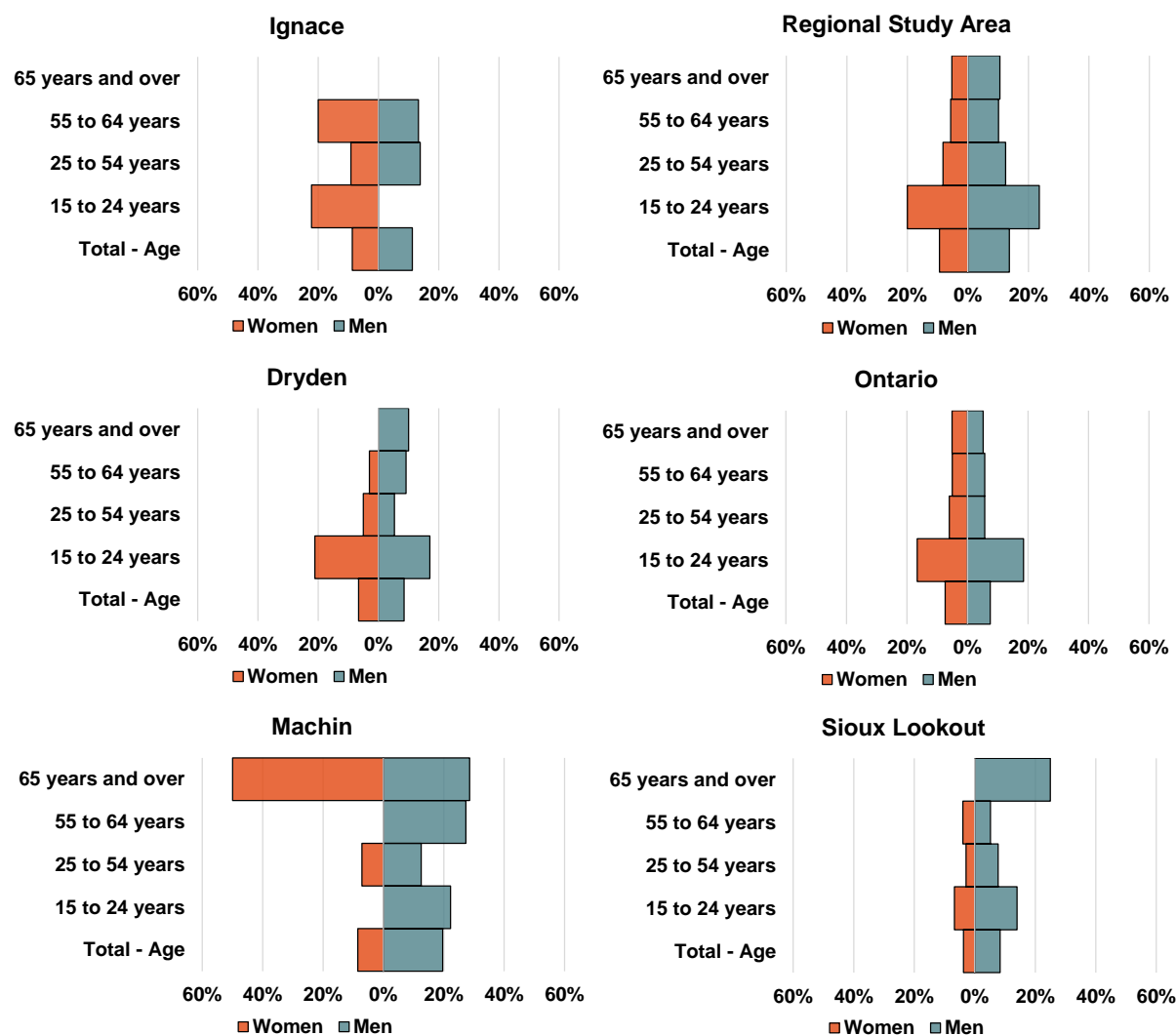
- In 2021, among Local Study Area communities, the highest unemployment rate for males was 16.7% in the LSB of Wabigoon and the lowest was 7.3% in Sioux Lookout. The highest unemployment rate for females was 18.2% in the LSB of Wabigoon and the lowest was 5.7% in Sioux Lookout.
- In Ignace, the unemployment rate for males increased from 7.7% in 2006 to 29.5% in 2011 before decreasing to 11.3% in 2016. Among the Local Study Area communities, the unemployment rate for Ignace males in 2011 (29.5%), was the highest for males or females over the entire timeframe. The unemployment rate for females decreased from 12.9% in 2006 to 7.5% in 2011 and gradually increased to 11.1% by 2021.
- In Dryden and Sioux Lookout, unemployment rates for both males and females have generally been lower than other Local Study Area communities.
- In Machin, unemployment rates for males were quite low in 2006 at 3.4% but increased to 20.0% in 2016 before decreasing to 14.9% in 2021. For females, the unemployment rate steadily increased from 4.2% in 2006 to 12.5% in 2021.
- In the LSB of Wabigoon, the unemployment rate for females was the highest among Local Study Area communities in both 2016 (25.0%) and 2021 (18.2%). In 2016, the unemployment rate for males was 11.8%, which was similar to males in Ignace and Machin, but increased to 16.7% in 2021.

Increases in unemployment in Machin during 2016 coincided with the closing of two popular local restaurants (See **Section 3.4.2**). The first instance was a restaurant and store which burned down and was commonly referred to as the “million-dollar corner” given how popular it was. The other restaurant closed prior to the pandemic (NWO Community and Baseline Studies Key Person Interview Program 2022). Since then, employment in these industries has decreased materially (see **Section 3.4.3**).

3.2.2.4.2 Age and Unemployment

Figure 3.2-15 shows the 2016 unemployment rates disaggregated into age cohorts for the Regional Study Area, Ontario, and Local Study Area communities. The unemployment rates are generally higher for the 15 to 24 age cohort compared to other age cohorts.

Figure 3.2-15: Unemployment Rate by Age Cohorts and Sex in the Local Study Area Communities, Regional Study Area, Ontario, 2016¹



Source: Statistics Canada 2017. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund, and Dinorwic for 2016.

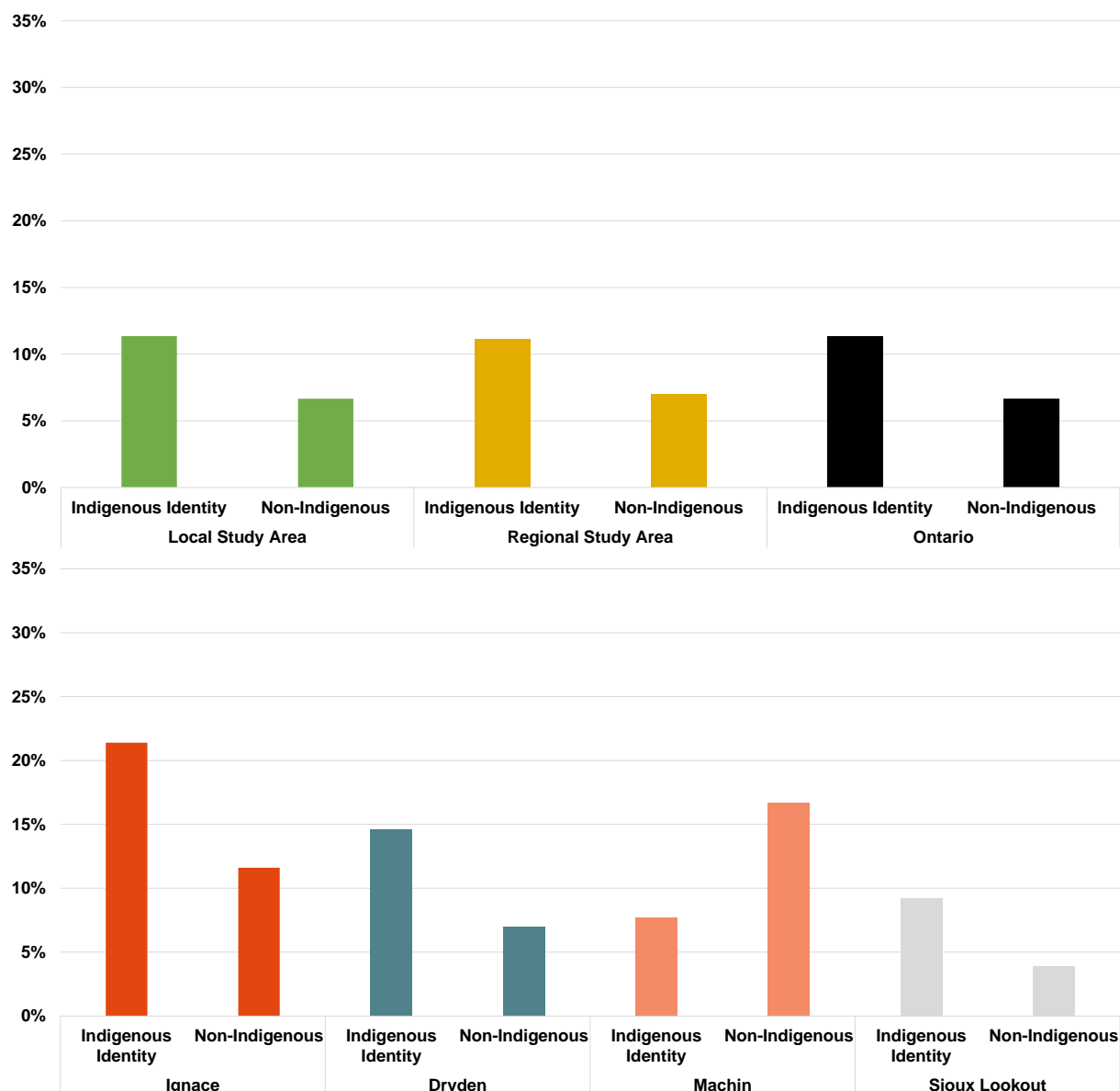
In the Regional Study Area and Ontario, unemployment rates are highest for the 15 to 24 age cohort and generally similar for the other age cohorts. Notable unemployment rates by age cohorts for the Local Study Area communities are as follows:

- Unemployment rates are generally higher in Ignace and Machin across all age cohorts, excluding the 15 to 24 years old cohort where Dryden has the highest unemployment rate for both males and females.
- For the 65 years and older age cohort, Sioux Lookout males and Machin males and females have materially higher unemployment rates compared to the other communities.
- For the 65 years and older age cohort, Ignace males and females have a 0% unemployment. This could reflect random rounding on small sample sizes or because people are either employed or retired and therefore not in the labour force.

3.2.2.4.3 Indigenous Peoples and Unemployment

Figure 3.2-16 shows the unemployment rate for Indigenous peoples and non-Indigenous peoples in the Local Study Area, Regional Study Area, and Ontario, in 2021. Limitations associated with disaggregated Indigenous identity data are provided in **Section 3.1.2.1.1**.

Figure 3.2-16: Unemployment Rate by Indigenous and Non-Indigenous Identity in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund and Dinorwic for 2021.

The unemployment rates for Indigenous peoples are higher than for non-Indigenous peoples in all areas except Machin. Among the Local and Regional Study Areas and Ontario, the gap in unemployment rates between Indigenous peoples and non-Indigenous peoples ranges from 4.1 percentage points in the Regional Study Area to 4.7 percentage points in the Local Study Area and Ontario. Notable differences between the unemployment rates for Indigenous peoples and non-Indigenous peoples among the Local Study Area communities include:⁵⁷

- The unemployment rate for Indigenous peoples was highest in Ignace (21.4%) and lowest in Machin (7.7%). The unemployment rate for non-Indigenous peoples was highest in Machin (16.7%) and lowest in Sioux Lookout (3.9%).
- The gap between unemployment rates for Indigenous peoples and non-Indigenous peoples was highest in Ignace at approximately 9.8 percentage points and lowest in Sioux Lookout at approximately 5.3 percentage points.
- In Dryden, unemployment rates are higher for Indigenous peoples (14.6%) compared to non-Indigenous peoples (7.0%). However, participation rates in Dryden are similar for Indigenous peoples (58.0%) and non-Indigenous peoples (57.9%). Together these indicate that, proportionally, more of the Indigenous population 15 years and older was in the labour force, but also unemployed. More information on participation rates and for those in the labour force for Indigenous peoples is provided in **Section 3.2.2.2.3** and **Appendix 3B Supplemental Data**.

Employment is a social determinant of health (See **Section 4.2**) as it has a causal relationship to an individual's income. Financial insecurity can result in negative impacts on mental health, nutrition, and well-being (Social Determinants of Health 2017). Lower high school completion and postsecondary attainment rates (see **Section 3.3.2**) may contribute to the unemployment rates of Indigenous peoples in the Local and Regional Study Areas. In the Local Study Area, a higher proportion of the Indigenous population have not obtained a high school certificate or equivalent (34%) compared to the non-Indigenous population (16%) (see **Section 3.3.2.5**). Key person interview participants noted that Local Study Area residents who have not obtained a high school certificate or equivalent face challenges in obtaining employment (NWO Baseline Studies Key Person Interview Program 2022-2023).

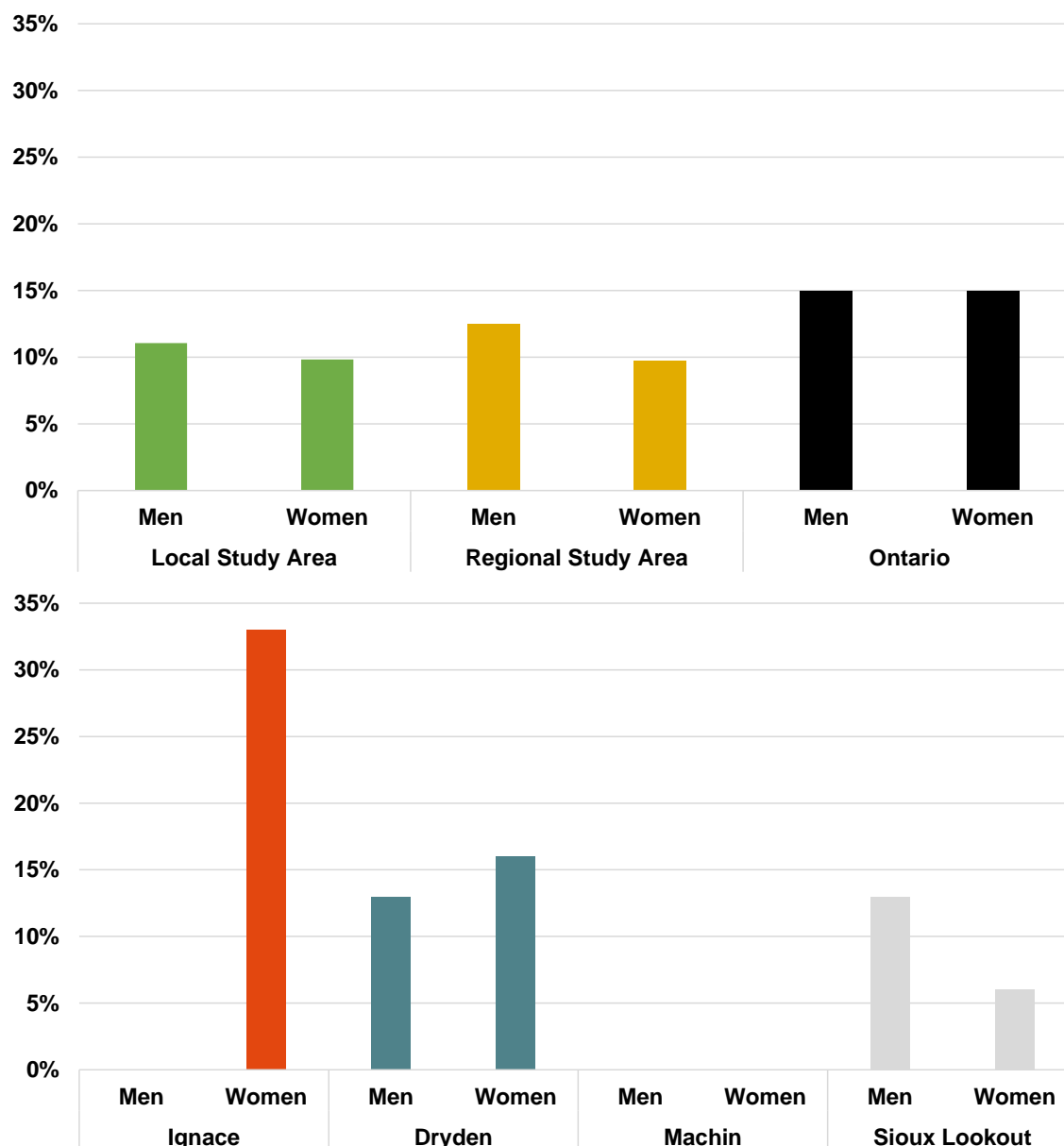
Indigenous peoples with higher levels of education generally have higher incomes and lower unemployment rates (Bougie et al. 2013). There are also issues with biased recruitment and selection practices for Indigenous peoples and systemic barriers such as racism, discrimination, and negative stereotypes that can be discouraging for Indigenous peoples to accept jobs at certain organizations (Social Determinants of Health 2017). Colonialism has also had lasting effects which can be linked to lower levels of education and literacy. Although local employment service offices (see **Section 3.2.3.1**) offer services to assist individuals trying to improve their

⁵⁷ Unemployment rates for Indigenous peoples in smaller communities should be interpreted with caution due to random rounding. Random rounding for a small population group can materially affect data. For example, Machin had an unemployment rate of 9.5% (10 Indigenous peoples) but that would change materially if the actual observed amount was closer to 5 or 20 people.

basic life skills or seek training, other barriers an individual may face can affect their willingness to seek these services.

Figure 3.2-17 shows the unemployment rate for Indigenous peoples disaggregated by gender for the Local Study Area, Regional Study Area, Ontario, and Local Study Area communities, in 2021. The Indigenous population and the number of unemployed men and women is small in Ignace and Machin. Data are not discussed further for these two communities due to the small population sizes and the influence of random rounding on the data.

Figure 3.2-17: Unemployment Rate by Indigenous Identity and Gender in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund, and Dinorwic for 2021.

The unemployment rate for Indigenous men is highest in Ontario (15.0%), followed by the Regional Study Area (12.5%) and the Local Study Area (11.1%). The unemployment rate for Indigenous women is highest in Ontario (15.0%), while rates for the Local Study Area (9.8%) and the Regional Study Area (9.7%) are similar.

The unemployment rate for Indigenous men is lower than for women in Dryden (13.0% for men and 16.0% for women) and the unemployment rate for Indigenous men is higher than for women in Sioux Lookout (13.0% for men and 6.0% for women).

3.2.3 Employment Trends and Wage Distribution

3.2.3.1 Employment and Wage Trends

Table 3.2-2 shows the average annual number of jobs by industry for the Local Study Area and the Regional Study Area for 2011, 2016, and 2020. Average annual jobs are inclusive of both full- and part-time jobs and are counted equally. Jobs do not include self-employed workers. By treating full- and part-time jobs equally this could result in a shift in jobs if multiple part-time jobs replace a full-time job. The selected industries are consistent with those discussed throughout **Section 3.4.2**. The industries presented are ones which have historically provided a large proportion of jobs in the Local Study Area.

Table 3.2-2: Average Annual Jobs by Industry in the Local Study Area and Regional Study Area, 2011, 2016, and 2020¹

	Local Study Area			Regional Study Area		
	2011	2016	2020	2011	2016	2020
Agriculture, forestry, fishing, and hunting	201	339	239	371	587	401
Mining, quarrying, and oil and gas extraction	<10	81	80	1,363	1,976	2,236
Construction	299	317	333	1,175	1,284	1,345
Manufacturing	510	460	337	846	922	826
Retail trade	1,112	1,314	1,324	2,741	3,076	2,954
Transportation and warehousing	513	804	716	923	1,340	1,169
Educational services	845	885	1,034	1,944	2,744	2,938
Health care and social assistance	1,879	2,073	2,420	4,573	5,269	5,876
Accommodation and food services	892	1,150	798	1,989	2,497	1,631
Public administration	1,019	1,114	1,270	4,350	6,147	7,692
Industry Total	8,386	9,818	9,694	23,499	29,285	30,097

Source: Estimates prepared by Lightcast 2022.3 based on, Survey of Employment, Payrolls, and Hours for 2011, 2016, and 2020, Input Output Symmetric Tables for 2011, 2016, and 2020, Census of Population for 2011 and 2016, and the Labour Force Survey: for 2011, 2016, and 2020. Lightcast 2023a. Retrieved June 12, 2023. See **Appendix 3B Supplemental Data**.

Notes:

1. Lightcast uses an input-output model with several sources to calculate the average annual number of jobs.

The five largest industries in terms of jobs in the Local Study Area were health care and social assistance, retail trade, public administration, educational services, and accommodation and food services in 2020. This is similar to the largest industries in terms of jobs in the Regional Study Area where the main difference was that mining, quarrying, and oil and gas extraction in 2020 has a higher number and proportion of jobs regionally. The number of jobs increased between 2011 and 2020 for all industries, excluding manufacturing and accommodation and food services for both the Local and Regional Study Areas. Other observations of growth in jobs include:

- The number of jobs for the mining, quarrying, and oil and gas extraction industries increased materially for the Local Study Area (less than 10 in 2011 to 80 in 2020) and the Regional Study Area (1,363 in 2011 to 2,236 in 2020) from 2011 to 2020.
- The number of jobs for the healthcare and social assistance industry increased materially for the Local Study Area (1,879 in 2011 to 2,420 in 2020) and the Regional Study Area (4,573 in

2011 to 5,876 in 2020) from 2011 to 2020. In both regions this represented about a 29% increase in jobs between 2011 and 2020. The increase in jobs in the healthcare and social assistance industry between 2016 and 2020 in the Local and Regional Study Areas are likely in response to the Covid-19 pandemic.

- The number of jobs for the educational services industry increased materially for the Local Study Area (845 in 2011 to 1,034 in 2020) and the Regional Study Area (1,944 in 2011 to 2,938 in 2020) from 2011 to 2020. In the Local Study Area, this represented a 23% increase in jobs compared to a 51% increase in jobs in the Regional Study Area.

Between 2016 and 2020 there were notable decreases in the number of jobs in the agriculture, forestry, fishing, and hunting industries and in the accommodation and food services industries for both the Local and Regional Study Area.

- In the Local Study Area, the number of jobs in the agriculture, forestry, fishing, and hunting industries decreased by 32% from 587 in 2016 to 401 in 2020. Similarly, the number of jobs in the accommodation and food services industry decreased by 31% from 1,150 in 2016 to 798 in 2020.
- In the Regional Study Area, the number of jobs in the agriculture, forestry, fishing, and hunting industries decreased by 29% from 339 in 2016 to 239 in 2020. Similarly, the number of jobs in the accommodation and food services industry decreased by 35% from 2,497 in 2016 to 1,631 in 2020.

The decrease in the number of jobs between 2016 and 2020 for the accommodations and food services and agricultural, forestry, fishing, and hunting industries is attributed to the Covid-19 pandemic where businesses were forced to reduce staff to maintain social distancing for the accommodations and food services industry and border closures and travel restrictions limited the number of people who could go to camps and outfitters. The closure of borders and travel restrictions resulted in most outfitters and camps to close operations between 2020 and 2022 (NWO Baseline Studies Key Person Interview Program 2022-2023).

Table 3.2-3 shows the average annual wages by industry for the Local Study Area for 2011, 2016, and 2020. The industries presented are ones which have historically provided a large proportion of jobs in the Local Study Area and are likely to be impacted by a large influx of people if the Project is sited in the Wabigoon Lake Ojibway Nation – Ignace area ("WLON-Ignace area"). The industries presented are ones which have historically provided a large proportion of the jobs in the Local Study Area.

Table 3.2-3: Average Annual Wages by Industry in the Local Study Area and Regional Study Area, 2011, 2016, and 2020¹

	Local Study Area			Regional Study Area		
	2011	2016	2020	2011	2016	2020
Agriculture, forestry, fishing and hunting	\$53,491	\$61,582	\$68,449	\$43,613	\$59,005	\$64,533
Mining, quarrying, and oil and gas extraction	\$72,802	\$100,057	\$109,138	\$78,676	\$93,541	\$104,443
Construction	\$41,618	\$44,073	\$48,078	\$41,236	\$42,200	\$45,598
Manufacturing	\$67,612	\$75,146	\$69,819	\$61,036	\$68,213	\$67,726
Retail trade	\$22,850	\$23,887	\$26,001	\$22,023	\$23,514	\$25,777
Transportation and warehousing	\$54,867	\$47,330	\$54,292	\$49,237	\$46,148	\$52,322
Educational services	\$46,521	\$46,708	\$52,232	\$45,493	\$46,606	\$51,672
Health care and social assistance	\$41,941	\$44,076	\$48,977	\$40,496	\$43,337	\$48,975
Accommodation and food services	\$17,722	\$19,279	\$22,212	\$17,451	\$19,503	\$23,003
Public administration	\$48,169	\$53,295	\$63,554	\$41,548	\$41,418	\$49,270
Industry Average	\$39,965	\$41,528	\$47,116	\$39,570	\$43,060	\$49,941

Source: Estimates prepared by Lightcast 2022.3 based on, Survey of Employment, Payrolls, and Hours for 2011, 2016, and 2020, Input Output Symmetric Tables for 2011, 2016, and 2020, Census of Population for 2011 and 2016, and the Labour Force Survey: for 2011, 2016, and 2020. Lightcast 2023a. Retrieved June 12, 2023. See **Appendix 3B Supplemental Data**.

Notes:

1. Lightcast uses an input-output model with several sources to calculate the average annual wages.
2. Data include both full- and part-time jobs. As such, sectors which typically have a larger number of part-time jobs could skew the average annual wages downwards than if they were averages to full-time equivalents.

In the Local Study Area, the average annual wage among all industries in 2011 was about \$40,000 and increased by 18% to \$47,100 by 2020. In the Regional Study Area, the average annual wage among all industries in 2011 was about \$39,600 and increased by 26% to about \$49,900 by 2020. Notable observations among the industries in the Local Study Area include:

- Mining, quarrying, and oil and gas extraction had the highest average annual wage, which increased by 50% from \$72,800 in 2011 to \$109,100 in 2020. This represented the largest total and percentage wage increase among industries in the Local Study Area.
- Accommodation and food services had the lowest average wage, which increased by 25% from \$17,700 in 2011 to \$22,200 in 2020.
- Transportation and warehousing industry average annual wages decreased slightly from 2011 to 2020.
- Manufacturing industry average annual wages remained relatively constant from 2011 to 2020. The average wage for manufacturing increased by 3% from \$67,600 in 2011 to \$69,800 in 2020.
- Of the five largest industries, only retail trade and accommodation and food services average annual wages were below the average across all industries.

Notable observations among the industries in the Regional Study Area include:

- Mining, quarrying, and oil and gas extraction had the highest average annual wage, which increased by 33% from \$78,700 in 2011 to \$104,400 in 2020.
- Accommodation and food services had the lowest average annual wage, which increased by 32% from \$17,500 in 2011 to \$23,000 in 2020.
- Agriculture, forestry, fishing, and hunting industries had the largest rate of increase in the average annual wage by 48% from \$43,600 in 2011 to \$64,500 in 2020.
- Transportation and warehousing industry had the lowest rate of increase in the average annual wage by 6% from \$49,200 in 2011 to \$52,300 in 2020.
- Of the five largest industries, only educational services and mining, quarrying, and oil and gas extraction have a higher average annual wage than the average across all industries.

The average annual wage across all industries is slightly higher in the Regional Study Area compared to the Local Study Area. However, within the Local Study Area the average annual wages for the five largest industries are generally higher compared to the Regional Study Area. Some industries which have higher average annual wages have a larger concentration of men employed (see **Figure 3.4-5**). For example, men's employment in the manufacturing sector represented 87% of total employment. The large proportion of men in higher paying sectors may contribute to income disparities among men and women in the Local Study Area and Regional Study Area. More information on personal and household incomes are discussed in **Section 3.6.2**. More information on industries is discussed in **Section 3.4.2**.

3.2.3.2 Wages of Unionized Workers for the Regional Study Area

Union hiring halls help employers fulfill their needs for organized labour. They help ensure that the labour force has the skill and qualifications required by the employer. Within the Regional Study Area, there are a limited number of union hiring halls. Hiring halls representing key sectors around the Regional Study Area include:

- 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

The ranges of posted wages for unions in Thunder Bay from 2021 to 2023 included:

- International Brotherhood of Electrical Workers (IBEW) – In 2023, electricians ranged between \$31.56/hr. to \$58.94/hr. for apprentices, \$72.63/hr. for journeymen, and \$86.23/hr. for foremen (IBEW n.d.).
- United Brotherhood of Carpenters and Joiners of America (UBCJA) – In 2021, carpenters hourly wages ranged between \$18.43/hr. to \$36.86/hr. for apprentices and \$40.96/hr. for journeymen. Acoustic/Drywall hourly wages range between \$22.53/hr. to \$34.82/hr. for apprentices and \$40.96/hr. for journeymen. Caulkers hourly wages range between \$16.68/hr. to \$28.35/hr. for apprentices and \$33.35/hr. for journeymen. Resilient floor workers hourly wages range between \$15.80/hr. to \$35.55/hr. for apprentices and \$39.50/hr. for journeymen (UBCJLA 2019).
- Cement Masons and Plasters Union – In 2021, hourly wages ranged between \$22.18/hr. to \$31.42/hr. for apprentices and \$36.96/hr. for journeymen (CFLRA 2019).

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

Other unionized workforces in the Local Study Area and Regional Study Area include:

- Northwestern Health Unit; and
- North West Local Health Integration Network.

The ranges of wages for the Northwestern Health Unit and North West Local Health Integration Network for 2021, 2022, and 2023 are:

North West Local Health Integration Network – In 2021, waitlist planners started at \$30.12 and ranged up to \$33.87 after three years. For community care coordinators, wages started at \$36.50 and ranged up to \$46.80 after 9 years. For nurse practitioners, wages started at \$56.76 and ranged up to \$67.72 after 6 years (North West Local Health Integration Network 2019).

- Northwestern Health Unit – In 2022, registered nurses (RN) and public health nurses (PHN) started at \$35.27 and ranged up to \$49.38 after 15 years. For program specialists, wages

started at \$37.46 and ranged up to \$51.63 after 15 years. In 2023, registered nurses (RN) and public health nurses (PHN) start are \$35.98 and range up to \$50.37 after 15 years. For program specialists, wages start at \$38.21 and range up to \$52.66 after 15 years (Northwestern Health Unit 2022).

3.2.3.3 Employment Services

Within the Local Study Area there are employment service offices in Ignace, Dryden, and Sioux Lookout to help individuals who are seeking employment. Employment services offices in the Local Study Area include Crossroads Employment Services in Ignace, Northwest Employment Works in Dryden, Sioux-Hudson Employment Services in Sioux Lookout, and the Sioux Lookout Area Aboriginal Management Board. Services are available for people who require help with job searching, up-skilling, or updating resumes and cover letters. People who are most likely to experience barriers to employment include youth, Indigenous peoples, seniors, people with disabilities or limited abilities, and new Canadians (GBA+ Workshop 2023). Information tracked at the employment service office includes demographics of individuals, anyone who enters or exits a program, employment during intake and exit, and the number of workshops attended (NWO Baseline Studies Key Person Interview Program 2022-2023).

In addition to employment service office job boards, people in the Local Study Area often obtain jobs through online job boards, Facebook, Kijiji, word of mouth, community bulletin boards with job postings, and jobs mentioned on the CKDR radio station (NWO Baseline Studies Key Person Interview Program 2022-2023).

Table 3.2-4 shows the number of accessed services for job seekers at Employment Ontario employment service offices in the Regional Study Area for the 2019, 2020, and 2021 fiscal years.

Table 3.2-4: Employment Services Accessed in the Regional Study Area, 2019/20 to 2021/22¹

Employment Service	2019/20	2020/21	2021/22
Assisted Employment Services	657	357	374
Unassisted Employment Services	2,842	1,352	2,101
Literacy and Basic Skills	591	360	403
Apprenticeship Training	284	317	362

Source: NTAB 2022, 2023. See **Appendix 3B Supplemental Data**.

Notes:

1. Data is for Employment Ontario Employment Service offices.

There was a material decrease in the number of people seeking assisted employment services from 2019/20 to 2021/22. This is likely attributed to the COVID-19 pandemic, but the unassisted employment services have still not reached the 2019/20 level of uptake. Literacy and basic skills are now the second most sought after service in 2021/22. Apprenticeship training is becoming increasingly popular, as it has increased in uptake each year since 2019/20.

Among the Local Study Area communities, some Employment Ontario services are not available at certain employment service offices, and people must travel to Dryden or Thunder Bay to access the services. For example, the office in Ignace cannot provide service for employers seeking to obtain funding from the Canada Ontario Job Grant which is used to subsidize training for employees and potential employees (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). Similarly, the employment service office in Dryden does not offer student career services; and youths must travel to Thunder Bay for these services. Although the Dryden office does not offer student career advisory services, they do offer employer services and job matching.

There is a strong sense of collaboration between social service providers, adult education, and employment service offices in the region (NWO Baseline Studies Key Person Interview Program 2022-2023). In Dryden, the employment service office is in constant contact with several organizations including the Bridges Adult Learning Centre, Community Living Dryden, Dryden Native and Friendship Centre, Métis Nation, and the Keewatin Patricia District School Board (KPDSB). The collaboration between educators and service providers are important for addressing the labour shortage and other constraints on the economy such as the housing shortage and supports for vulnerable populations (NWO Baseline Studies Key Person Interview Program 2022-2023). (See **Section 2.2.4**).

3.2.3.4 Barriers to Employment

Barriers to employment can include individuals who lack job experience, are transitioning back to work after an extended period, or lack life skills and self-reliance. Barriers noted in key person interviews include absence of a high school diploma or certificate, struggles with housing, lack of transportation, quality of education, work experience, life skills, and mental health and substance use (NWO Baseline Studies Key Person Interview Program 2022-2023; GBA+ Workshop 2023). People who are most likely to experience barriers to employment include youth, Indigenous peoples, seniors, people with disabilities or limited abilities, and new Canadians (GBA+ Workshop 2023).

There are a large number of job vacancies for restaurant and service-related positions. In Dryden, there are sometimes as many as 150 available jobs on the job boards (NWO Baseline Studies Key Person Interview Program 2022-2023). There is also a lack of skilled trades, medical professionals, and a growing need for more teachers, particularly in more remote areas. The vast availability of jobs suggest that it is a job seekers market (NWO Baseline Studies Key Person Interview Program 2022-2023).

Some barriers to employment relate to a lack of skills, education, or experience. Other barriers can be related to home care obligations, access to affordable and appropriate child care, limited

access to a vehicle, access to affordable living accommodations, underrepresentation in upper-level positions, hiring and retention challenges related to hostile workplace cultures, and social stigmas (Health Focus Groups 2023; GBA+ Workshop 2023). Many of these barriers are applicable to women, visible minorities, persons with disabilities, and Indigenous peoples (Government of Canada 2022). These barriers can pose challenges for somebody trying to find a suitable job and, in some circumstances, lead to a reluctance to seek work in certain industries or occupations. In the Local Study Area, historical factors which pose a barrier to employment include diversity and inclusion, medical factors, working remotely, family circumstances, unfamiliarity by employers of Indigenous ceremonial and cultural practices (GBA+ Workshop 2023).

Although there has been an increase in the uptake of apprenticeship applications at employment service offices, the proportion of people who have an apprenticeship as their highest level of education has declined over the Local Study Area communities, the Regional Study Area, and Ontario, since 2006 (See **Section 3.3.4**). It was noted in key person interviews that this could be attributed to parents not wanting their children to do the same type of work they did, which is physically demanding and mentally taxing. They want them to do something better than work as a labourer and to have a less stressful office work type of employment (NWO Community and Baseline Studies Key Person Interview Program 2022).

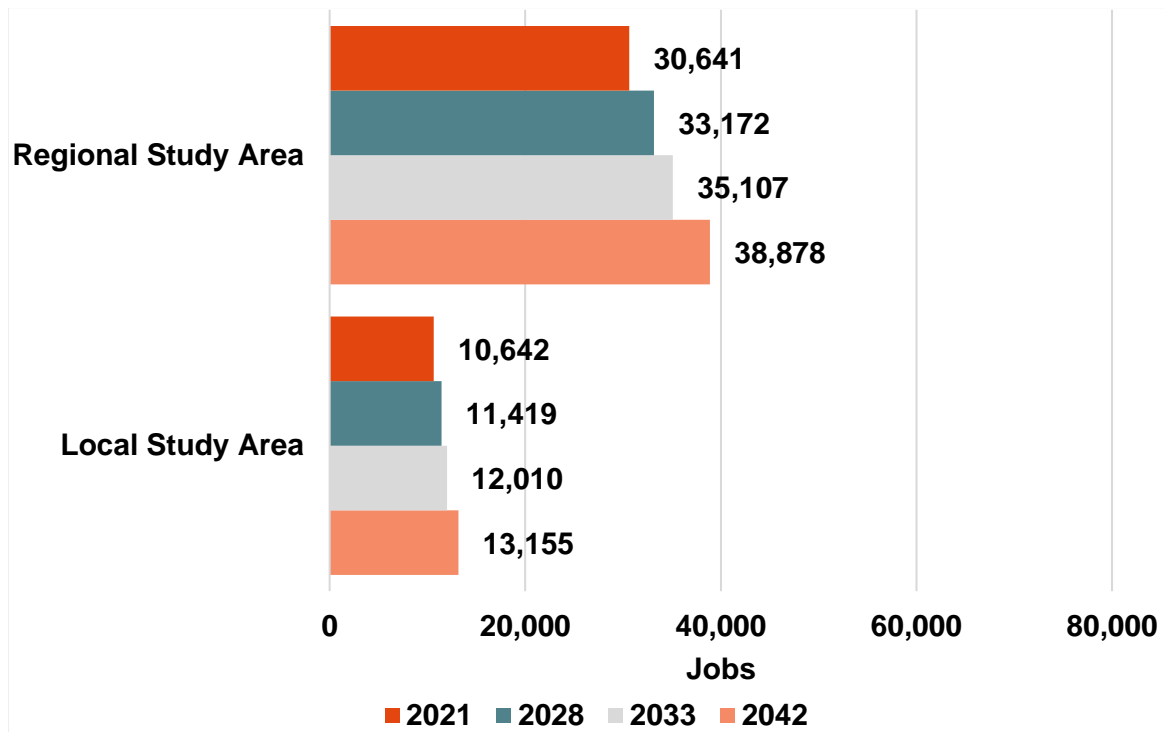
3.2.4 Labour Force Projections

Labour force modelling was prepared using an average of multiple regressions by the Census Division and the Census Subdivision levels as described in **Section 3.1.2.2**. The modelling projections were based on historic trends and are not premised on the Project occurring.

3.2.4.1 Near- and Mid-Term Projected Job Growth

Figure 3.2-18 shows the near- and mid-term job projections for the Local Study Area and the Regional Study Area between 2021 and 2042.

Figure 3.2-18: Near- and Mid-Term Job Growth in the Local Study Area and Regional Study Area, 2021 to 2042^{1,2}



Source: Lightcast 2023a. Retrieved April 28, 2023; HSAL et al. 2022c; Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

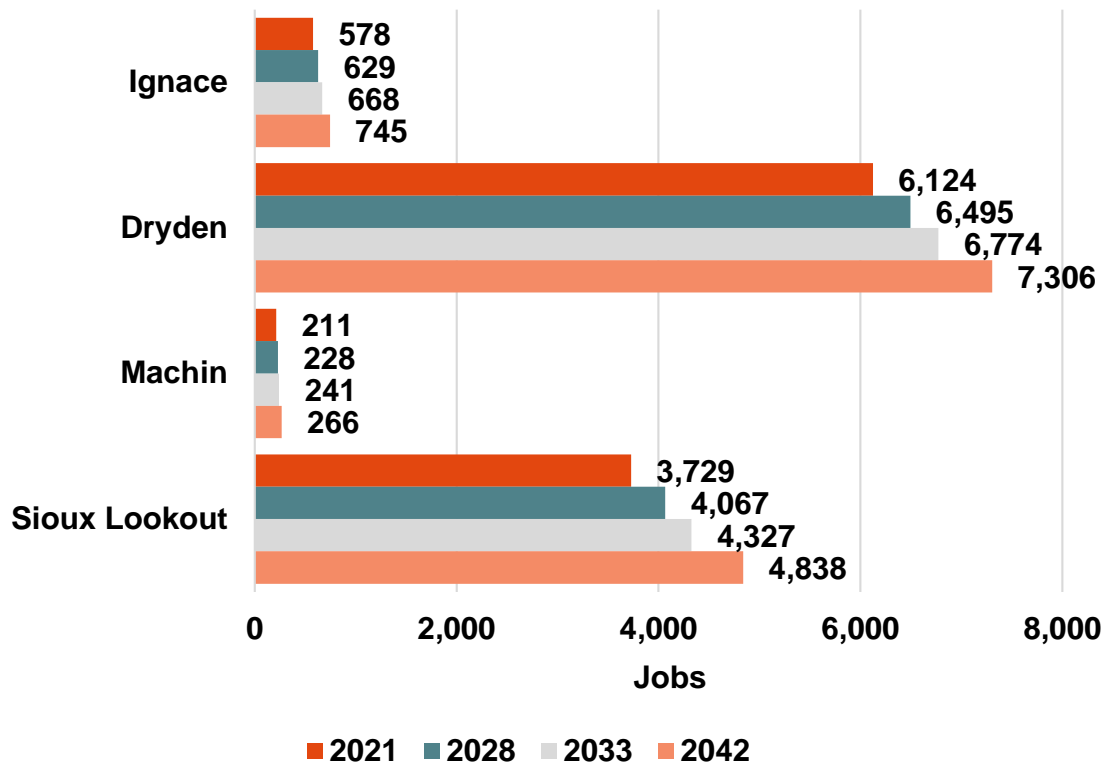
Notes:

1. Projections for 2033 and 2042 were estimated using a compound annual growth rate between 2021 and 2028 projections.
2. Data were not available for the Local Study Area communities for LSB of Wabigoon, LSB of Melgund, and Dinorwic.

Between 2021 and 2042, jobs in the Regional Study Area are expected to grow by 26.9%, from approximately 30,600 jobs in 2021 to 38,900 jobs by 2042. In the Local Study Area, jobs are expected to grow by 23.6%, from approximately 10,600 jobs in 2021 to 13,200 jobs by 2042.

Figure 3.2-19 shows the near- and mid-term job projections for the Local Study Area communities between 2021 and 2042.

Figure 3.2-19: Near- and Mid-Term Job Growth in the Local Study Area Communities, 2021 to 2042^{1,2}



Source: Lightcast 2023a. Retrieved April 28, 2023; HSAL et al. 2022c; Statistics Canada 2022a. See **Appendix 3B Supplemental Data.**

Notes:

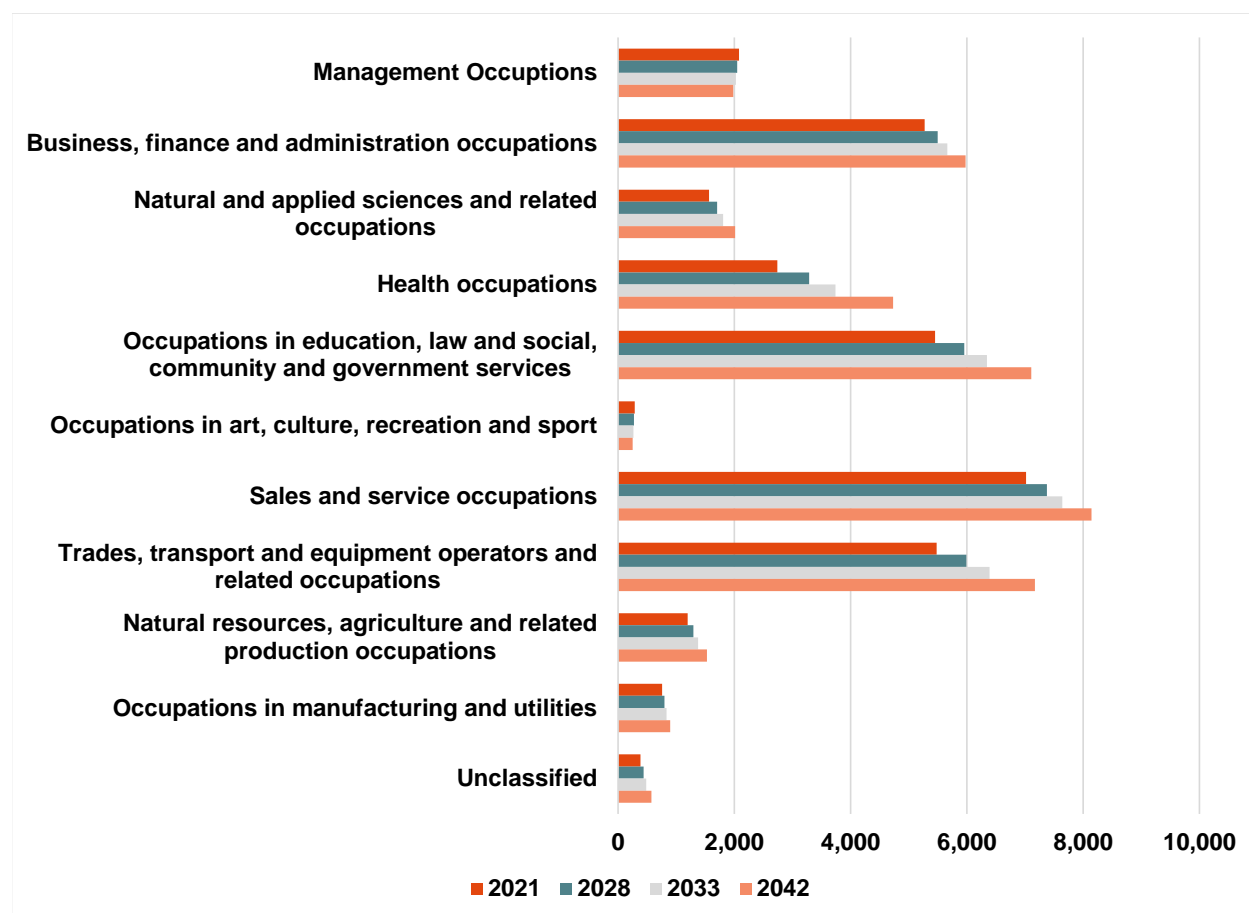
1. Projections for 2033 and 2042 were estimated using a compound annual growth rate between 2021 and 2028 projections.
2. Data were not available for the Local Study Area communities for LSB of Wabigoon, LSB of Melgund, and Dinorwic.

Between 2021 and 2042, jobs in the Local Study Area are forecast to grow by 23.6% from approximately 10,600 in 2021 to 13,200 by 2042. Dryden and Sioux Lookout account for 91.2% of the job growth over this period. Dryden and Sioux Lookout are service hubs in the Local Study Area with larger populations and labour bases, making them well-positioned to capture growth in the area.

3.2.4.2 Near- and Mid-Term Projected Jobs by Occupational Category

Figure 3.2-20 sets out the near and mid-term projected jobs by occupational category in the Regional Study Area.

Figure 3.2-20: Near- and Mid-Term Projected Jobs by Occupational Category in the Regional Study Area, 2021 to 2042¹



Source: Lightcast 2023a. Retrieved April 28, 2023; HSAL et al. 2022c; Statistics Canada 2017. See **Appendix 3B Supplemental Data.**

Notes:

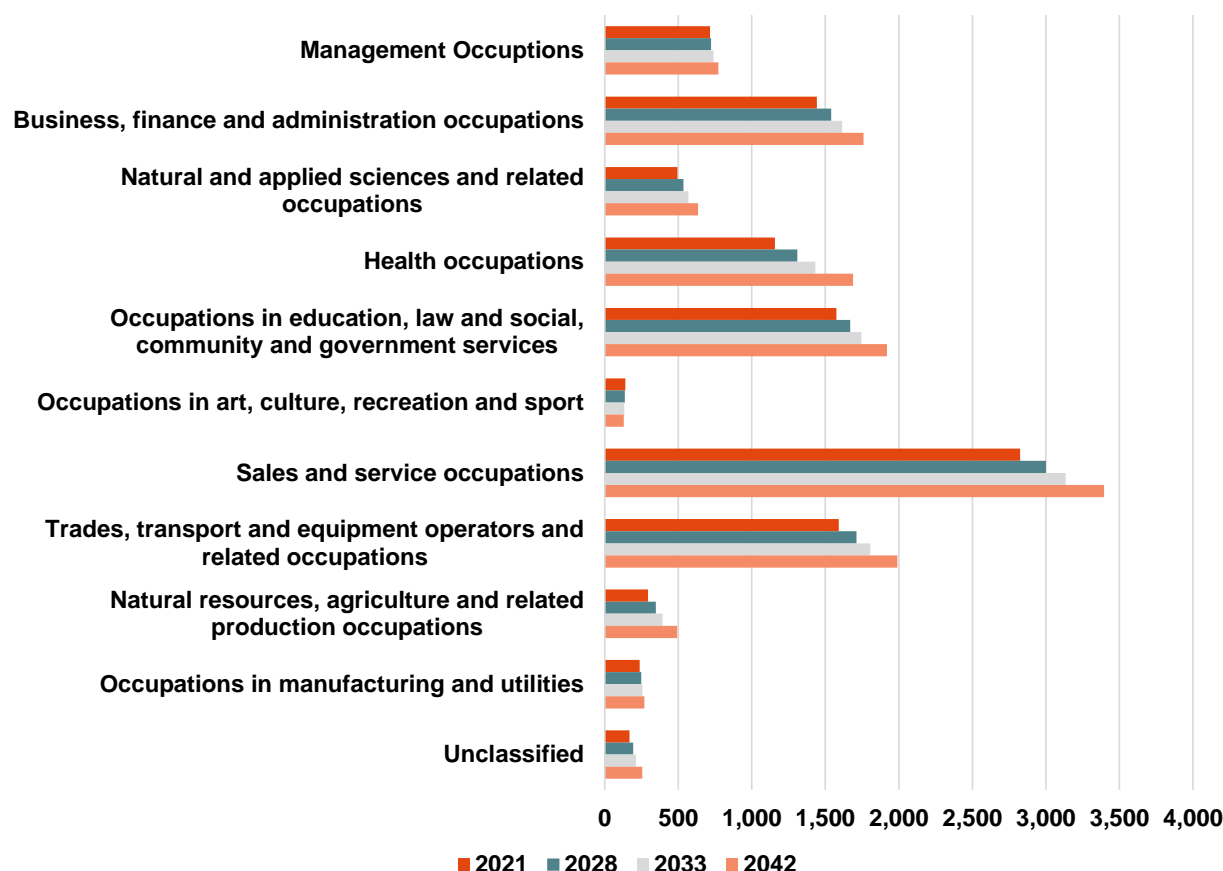
1. Projections for 2033 and 2042 were estimated using a compound annual growth rate between 2021 and 2028 projections.

In 2021, the top three occupations were sales and service occupations (7,020); business, finance, and administration occupations (5,273); and trades, transport, and equipment operators and related occupations (5,479). The bottom three occupations in 2021 included occupations in art, culture, recreation, and sport (289); manufacturing and utilities related occupations (757); and natural resources, agriculture, and related production occupations (1,196). By 2042, the top and bottom ranking occupations are the same. The occupations in art, culture, recreation, and

sport (from 289 in 2021 to 252 in 2042) and management occupations (2,082 in 2021 to 1,985 in 2042) are the only two categories forecast to decrease in the number of jobs by 2042.

Figure 3.2-21 shows the near- and mid-term projected total jobs by occupational category in the Local Study Area from 2021 to 2042.

Figure 3.2-21: Near and Mid-Term Projected Jobs by Occupational Category in the Local Study Area, 2021 to 2042^{1,2}



Source: Lightcast 2023a. Retrieved April 28, 2023; HSAL et al. 2022c; Statistics Canada 2017. See **Appendix 3B Supplemental Data.**

Notes:

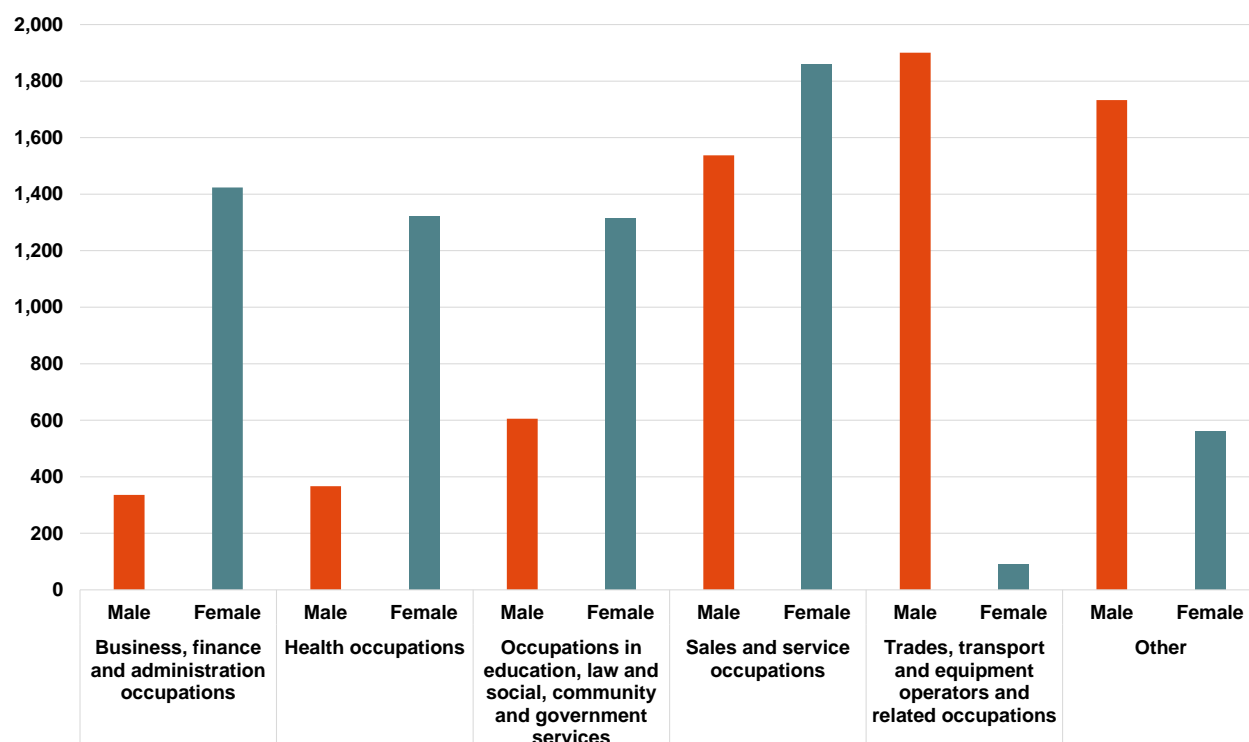
1. Projections for 2033 and 2042 were estimated using a compound annual growth rate between 2021 and 2028 projections.
2. Data were not available for the Local Study Area communities for LSB of Wabigoon, LSB of Melgund, and Dinorwic.

In 2021, the top occupations in the Local Study Area were sales and service occupations (2,824); trades, transport and equipment operators and related occupations (1,592); and occupations in education, law and social, community and government services (1,575). Occupations with the lowest number of jobs in 2021 included occupations in art, culture, recreation, and sport (140); manufacturing and utilities occupations (238); and natural resources, agriculture, and related production occupations (294). In 2042, the top and bottom

ranking occupations are the same. Occupations in art, culture, recreation, and sport ranking is the only category which is forecast to decrease from 2021 (140) to 2042 (129).

Figure 3.2-22 shows the mid-term projected total jobs by occupational category and sex in the Local Study Area for 2042.

Figure 3.2-22: Mid-Term Projected Jobs by Occupation and Sex in the Local Study Area, 2042¹



Source: Lightcast 2023b. Retrieved April 28, 2023; HSAL et al. 2022c; Statistics Canada 2017. See **Appendix 3B Supplemental Data**.

Notes:

1. Projections for 2042 were estimated using a compound annual growth rate between 2021 and 2028 projections. Gender breakdown is derived using the 2016 Census of Population "Occupation - Broad Category - National Occupational Classification" data.

Females are projected to account for a large portion of jobs in four of the top five occupational categories by 2042. Some other highlights for the forecasted top five occupational categories by sex for the Local Study Area are as follows:

- Sales and service occupations are forecast to have 1,858 jobs held by females compared to 1,537 by men.
- Trades, transport, and equipment operators and related occupations are forecast to have 89 jobs held by females compared to 1,901 by males.
- Occupations in education, law and social, community and government services are forecast to have 1,313 jobs held by females compared to 605 by males.
- Business, finance, and administration occupations are forecast to have 1,424 jobs held by females compared to 336 by men.
- Over 70% of health-related occupations are forecast to be held by females and, of the remaining occupations, over 70% are forecast to be held by men.

The labour force projections require an approximately 1% average annual growth between 2021 and 2042 to reach the 2042 number of jobs. The 1% average annual growth is similar to a high growth scenario modelled for Canada (Cross 2021). The Local Study Area labour force has an increasing proportion of people obtaining a postsecondary education (see **Section 3.3.1.2**) and industry-specific training and education in some of the largest occupational categories (see **Section 3.3.1.3**). However, additional efforts will be required to attract and retain residents to the Local Study Area communities to reach these projections as the labour force is aging (See **Section 3.2.2.2**) and the population has generally been stagnant over the past decade (See **Section 2.2**).

3.2.5 Summary of Employment

The labour force in the Regional Study Area and Local Study Area communities are generally declining, excluding Sioux Lookout and the LSB of Wabigoon. This is largely due to an increase in the number of individuals who are not in the labour force, as the labour force is aging with an increasing proportion of seniors. This has resulted in a decline in participation rates across all Local Study Area communities. However, this is not unique to the Local Study Area, as a similar trend can be observed for the Regional Study Area, Ontario, and even Canada (Cross 2021).

Participation and employment rates are generally higher for both men and women in Sioux Lookout and Dryden, and lowest in Ignace, Machin, and the LSB of Wabigoon. This could be attributed to the limited variety of employment opportunities available in Ignace and Machin and the need for transportation to work outside of these communities. This may also be attributed to the seasonal nature of industries such as forest fire suppression and outfitters and camps, where there are employment opportunities for additional fire fighters and helpers and cleaners at camps. Participation rates are generally lower for youths and highest for the population between the ages of 25 to 54 years old.

Unemployment rates have generally increased in each region since 2006, excluding women in Sioux Lookout who have maintained an unemployment rate below 5%. Unemployment rates are highest in Ignace, Machin, and the LSB of Wabigoon. Unemployment rates in Ignace and Machin peaked in 2011 and 2016, respectively. For Ignace, this has been attributed to the closure of Resolute Forest Products from 2006 to 2015 and the large number of lay offs at Domtar Inc. in

2008 after their second paper machine was shut down. The unemployment rate in Machin increased in 2016 due to the permanent closure of a popular restaurant and store, with no new store or restaurant filling its role as the local hot spot for food. Unemployment rates by age cohorts vary by community but there is generally a higher level of unemployment for the 15 to 24 age cohort.

The participation rates for Indigenous peoples in the Local Study Area are similar compared to non-Indigenous peoples and the employment rates for Indigenous peoples in the Local Study Area are lower compared to non-Indigenous peoples. As a result, unemployment rates are generally materially higher for Indigenous peoples in the Local Study Area. This disparity between Indigenous and non-Indigenous peoples may be attributed to the barriers to employment that Indigenous peoples face. Indigenous peoples generally have lower levels of postsecondary attainment and a lower proportion have a high school diploma or degree. Other barriers to employment include a lack of literacy skills, systemic discrimination, lack of access to childcare, social isolation, and an individual's lowest wage they are willing to accept. Most of these barriers are not unique to Indigenous peoples, but Indigenous people can be subject to discrimination and problematic workplace cultures.

The labour force is projected to increase by approximately 25% in the Local and Regional Study Areas between 2021 and 2042. Most of this growth will be in occupations related to health services; sales and services; business, finance, and administration; and trades and transport. To achieve this level of growth in the number of jobs, efforts will be required to attract and retain more workers as population growth has been generally stagnant over the last decade and the labour force is aging with many retirements annually.

3.3 LABOUR FORCE SKILLS AND TRAINING

3.3.1 Overview and Approach

Labour force skills reflect the degree of education and experience that help qualify an individual for employment. The Ontario College of Trades categorizes skill levels into two groups:

- Skilled labour is defined as a person having completed a diploma, degree, or higher level of post secondary education, or a skilled trade that has been designated as compulsory under the Ontario skilled trades and apprenticeship system (Ontario College of Trades 2020). According to the National Occupational Classification, skilled labour is classified as TEER categories 0, 1, 2, or 3 for education, training, experience, and responsibility qualifications (Statistics Canada 2022c). The TEER categories related to skilled labour include management, completion of a postsecondary education, occupations with supervisory experience, or several years of experience in unskilled labour positions.
- Unskilled labour is defined as an individual who has not completed secondary school, only completed secondary school, or trained in a trade for which certification is not legally required to practice in Ontario (Ontario College of Trades 2020). Unskilled labour is classified as TEER categories 4 or 5, and generally includes people without a high school certificate or equivalent, or a secondary education. However, it is now recognized that with enough experience or on-the-job training a person may be considered a skilled labourer (Statistics Canada 2022c).

Quantitative indicators reviewed in this section include:

- Educational attainment of the workforce population ages 15 years and older.
- Major fields of study for the working age population of 15 years and older. The population between the ages of 25 to 64 years old are also described.

Educational attainment and major fields of study statistics are disaggregated by sex (or gender for 2021 data), age, and Indigenous identity, where available and of sufficient robustness.

GBA+ considerations will be addressed by comparing educational attainment of different sub-populations with the broader population, and examining opportunities and barriers that may affect educational attainment for different groups.

Secondary and postsecondary training opportunities and programming levels are described. Education and training program opportunities are organized to align with the Classification of Instructional Programs and skilled trades in Ontario. Educational attainment and major field of study are described, including trend analysis as data are available.

The Regional Study Area for labour force skills and training includes the Kenora Census Division and other Census Divisions where relevant. Comparable statistics for Ontario will be provided as available to provide context. For the summary of educational institutes, the Regional Study Area is extended across Northern Ontario and includes Winnipeg given the limited number of colleges, universities, and programs in Northwestern Ontario. Winnipeg is included given the wide variety of colleges and universities and the similar driving distance to Winnipeg or Thunder Bay from

Local Study Area communities. The Local Study Area for labour force skills and training includes the Township of Ignace, City of Dryden, Municipality of Machin, Municipality of Sioux Lookout, and, to the extent information is available, the LSB of Wabigoon, the LSB of Melgund (Dyment and Borups Corners), and the unincorporated community of Dinorwic.

Temporal boundaries for labour force skills and training across the Local Study Area extend to the 2006 Census as available, to provide consistency with the employment and income analysis.

Information on the spatial boundaries, temporal boundaries, and data collection for labour force skills and training is provided in **Section 3.1**.

3.3.2 Educational Programming

3.3.2.1 Secondary Education

Within the Local Study Area there are four high schools, one in Ignace, one in Dryden, and two in Sioux Lookout. All of the schools offer the courses that are required in the Ontario core curriculum, including English, science, math, Canadian history, and physical education (Government of Ontario 2022b).

In 2022, Ignace Public School had 160 students, with less than 60 enrolled in grades 9 through 12 (NWO Community and Baseline Studies Key Person Interview Program 2022). With 14 teaching staff, Ignace Public School has a low teacher-to-student ratio which allows more personalized lesson plans and one-on-one teaching to the students. For example, 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 Key Person Interview Program 2022). Business classes are not currently offered due to low student uptake of these classes but could be made available with sufficient interest by students. More programs are beginning to be offered virtually which could help expand the range of courses available for courses where only a few students are interested (NWO Community and Baseline Studies Key Person Interview Program 2022).

For the 2021-22 school year, Dryden High School had approximately 575 students enrolled, and Sioux North High School had approximately 545 students (Government of Ontario 2023a). Pelican Falls First Nation High School in Sioux Lookout had about 180 students enrolled in 2019 (Bonello 2019). Pelican Falls First Nation High School serves 23 communities and includes boarding homes for students from reserves across Ontario (Keewaytinook Okimakanak Board of Education 2016).

Ignace Public School, Dryden High School, and Sioux North High School offers all the compulsory courses required by the Ministry of Education, and a range of optional courses which are provided based on student demand. Also offered are co-op programs, focused learning on a specific economic sector through the Specialist High Skills Major (SHSM) Programs, the Ontario Youth Apprenticeship Program, and dual credit courses which can be used towards both the Ontario Secondary Diploma and an eligible post-secondary certificate or diploma.

Dual credit programs help support potentially 'at-risk' students, including those without clear plans after high school. Dual credit programs increase awareness of different college and

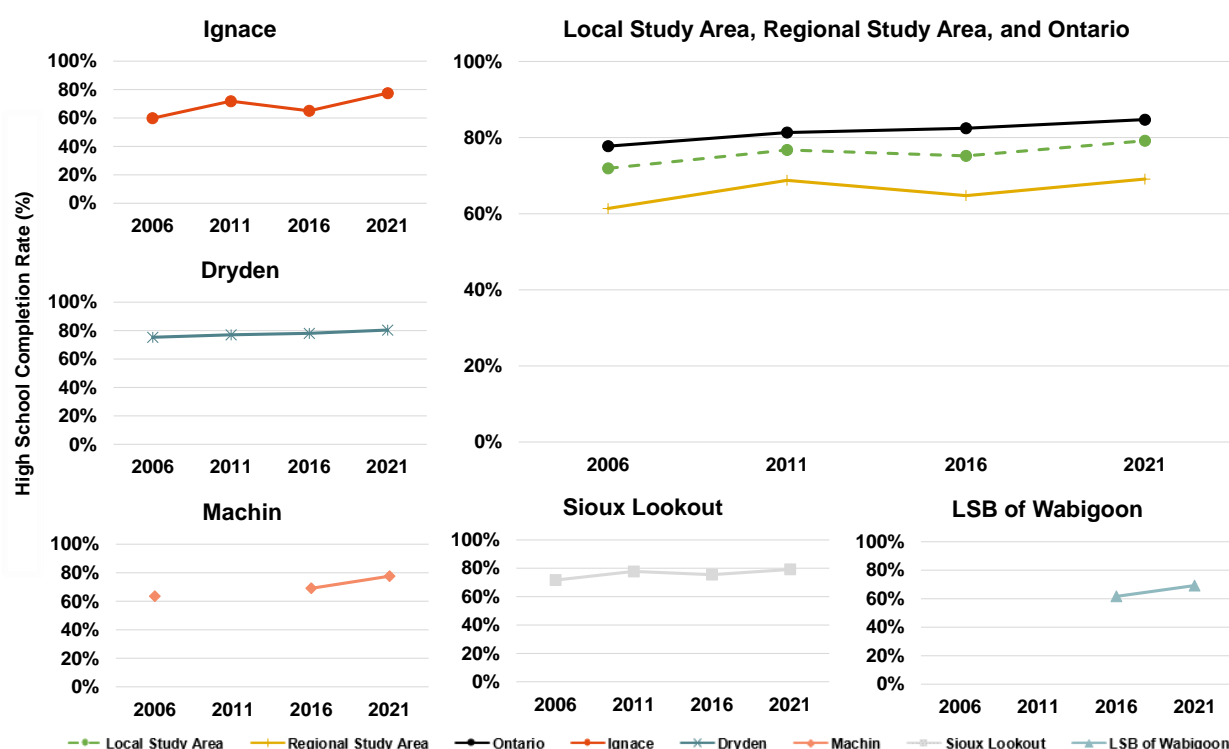
apprenticeship pathways. Students receive assistance while making education and career planning decisions and learn skills which will help them in obtaining a job.

A SHSM Program is a bundle of credits which allows students to complete occupation-specific courses in preparation for a postsecondary program. For example, the automotive SHSM Program has a requirement of two courses and two co-op credits (NWO Community and Baseline Studies Key Person Interview Program 2022). The Ontario Youth Apprenticeship Program is a specialized program to explore skilled trades and generally starts in grade 11 or 12 through the co-op education program. The Ontario Youth Apprenticeship Program is similar to the SHSM Programs, except it has a focus on completing an apprenticeship, whereas the SHSM Programs are applicable to apprenticeship training, or preparation for college, university, or the workplace. The Ontario Youth Apprenticeship Program, SHSM 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 has different offerings based on the proximity of the school to businesses, availability of qualified teachers, and community demand. For example, Red Lake has a mining SHSM Program (NWO Community and Baseline Studies Key Person Interview Program 2022). In 2022, Dryden High School offered five SHSM Programs: automotive, manufacturing, health and wellness, construction, and business (NWO Community and Baseline Studies Key Person Interview Program 2022). In 2022, the SHSM courses and other occupation-specific courses offered at Ignace Public School included health and wellness, transportation, construction, welding, mechanics, and technical design.

Within the Local Study Area, Seven Generations Education Institute offers adult education in Ignace, Dryden, and Sioux Lookout for people looking to obtain or upgrade their Ontario Secondary School Diploma. The adult education programming allows students to prepare for a workplace, college, or university, and includes opportunities to earn credits through co-op or dual credit courses (Seven Generations n.d.).

Figure 3.3-1 shows the high school completion rate (i.e., the proportion of the population 15 years and older who have completed a high school certificate or equivalent) for the Local Study Area, Regional Study Area, Ontario, and Local Study Area communities for 2006 through 2021.

Figure 3.3-1: High School Completion Rate in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

The high school completion rate has increased in the Local and Regional Study Areas, Ontario, and all Local Study Area communities since 2006. High school completion in the Local Study Area increased from 71.9% in 2006 to 79.2% in 2021. High school completion has historically been lower in the Regional Study Area compared to the Local Study Area but increased from 61.4% in 2006 to 69.1% in 2021. Both the Local Study Area and the Regional Study Area have lower high school completion rates than Ontario as a whole. The high school completion rate for Ontario was 84.7% in 2021. Trends observed in high school completion for Local Study Area communities include:

- In 2006, Ignace had the lowest rate of high school completion at 59.8% but increased to 77.4% by 2021.

- In 2021, Ignace, Dryden, Machin, and Sioux Lookout each have a high school completion rate around 80%.
- The high school completion rate in the LSB of Wabigoon increased materially from 61.7% in 2016 to 69.2% in 2021 but has remained the lowest rate among Local Study Area communities.

It was noted during key person interviews that individuals without a high school certificate face barriers to obtaining employment (NWO Baseline Studies Key Person Interview Program 2022-2023). In the past, not having a high school certificate or equivalent was not as much of a barrier to employment as it is today. For example, when the Mattabi mine was open in the 1980s, an individual could work at the mine without any formal education or completion of high school (IAWG March 22, 2023). In Canada, the gap between unemployment rates for younger Canadians with higher and lower levels of education widened between 1971 and 2005. The growth in unemployment rates for Canadians over that period was notably higher for people without a high school certificate or equivalent compared to other levels of education (Berger and Parkin 2009).

3.3.2.2 Postsecondary Education

Postsecondary educational attainment refers to the completion of an apprenticeship or trades certificate or diploma, college, Collège d'enseignement général et professionnel ("CEGEP") or other non-university certificate or diploma, and university certificates, diplomas, or degrees (Statistics Canada 2022a). Higher levels of education have a notable impact on wages. People with a postsecondary education tend to have higher wages compared to people with a high school certificate or lower. The wage premium is the difference in average wages between various levels of education. The wage premium is not as notable as it was in the past, but Canadians still earn more on average if they have a postsecondary education (Cross 2021).

Postsecondary institutes in the Local Study Area include Confederation College (satellite campuses in Dryden and Sioux Lookout; main campus in Thunder Bay), Seven Generations Education Institute, and Sioux Lookout Mining Centre of Excellence. There are limited program options available at institutions in the Local Study Area which presents a challenge for residents in obtaining a postsecondary education. The main campuses for Confederation College and Lakehead University are located in Thunder Bay, just outside the Regional Study Area, and offer a comprehensive selection of programs. In Northeastern Ontario, there are several institutions which offer programming related to mining, geology, environmental sciences, and other STEM-related (science, technology, engineering, and math) programs. The driving distance from Local Study Area communities to Winnipeg is similar to Thunder Bay, and there are a number of major postsecondary educational institutes in Winnipeg.

Table 3.3-1 summarizes the types of certificate and diplomas offered at some Northern Ontario-based and Winnipeg universities and colleges as of 2022.

Table 3.3-1: College and University Programs in Northern Ontario and Winnipeg, 2023

College and University Institutions	Location of Institution	Duration and Types 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 programming 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.).
Northern Ontario School of Medicine	Thunder Bay	Graduate level programming	Offers a four-year Doctor of Medicine (MD), master's of medical studies (MMS), and a dietetic internship program (NOSM n.d.).
University of Manitoba	Winnipeg, MB	Bachelor and graduate level programming	Offers undergraduate and graduate diplomas in arts, agriculture, art, environmental science, social work, social science, education, health, management, science, Indigenous studies, engineering, and architecture (U of M n.d.a; U of M n.d.b).

Table 3.3-1 Continued: College and University Programs in Northern Ontario and Winnipeg, 2023

College and University Institutions	Location of Institution	Duration and Types of Programs	Programs Offered
University of Winnipeg	Winnipeg, MB	Bachelor and graduate level programming	Offers undergraduate and graduate diplomas in arts, social science, environmental science, education, health, management, science, Indigenous studies, engineering, and architecture (U of W n.d.a; U of W n.d.b). Also offers joint programs with Red River College Polytech including applied environmental science and business administration (U of W n.d.c).
Red River College Polytechnic	Winnipeg, MB	Programs are typically one to three-year certificates or diplomas.	Offers programs in business, engineering and construction technology, skilled trades, health, education, culinary, community services, computer and information systems technology, and transportation technology (RRC n.d.)
University of St. Boniface	Winnipeg, MB	Bachelor and graduate level programming	Offers programs in business, education, health, arts, science, engineering, social works, and translation (University of St. Boniface n.d.a). Graduate programs are offered in education and Canadian and intercultural studies (University of St. Boniface n.d.b).
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.).

Table 3.3-1 Continued: College and University Programs in Northern Ontario and Winnipeg, 2023

College and University Institutions	Location of Institution	Duration and Types of Programs	Programs Offered
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 programming 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).
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 include 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).

There are a limited number of postsecondary institutions and course offerings in the Local Study Area, but interview participants noted there is some flexibility to meet community and employer needs (NWO Community and Baseline Studies Key Person Interview Program 2022). For example, in Sioux Lookout, Confederation College worked with the Aboriginal Management Board and Sioux Lookout Meno Ya Win Health Centre to deliver a program on culturally appropriate and language supported services. Confederation College has offered welding courses at Dryden High School through a collaboration with Domtar (NWO Community and Baseline Studies Key Person Interview Program 2022).

There are no postsecondary institutions located in Ignace and no universities available in any Local Study Area communities. The nearest universities are Lakehead University in Thunder Bay and universities in Winnipeg which are generally more than a three-hour drive for the Local Study Area communities. For example, Lakehead University is closer to Ignace than any university in Winnipeg, but in Dryden it takes residents roughly the same time to drive to the University of Manitoba or Lakehead University.

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 Key Person Interview Program 2022). The Sioux Lookout Mining Centre of Excellence offers ten different programs that include courses in mineral processing (i.e., separating valuable minerals from rocks), underground mining, surface diamond drilling, and heavy equipment operations. The program started in 2022 and 137 participants were expected to complete the program, of which 51% are women (NWO Community and Baseline Studies Key Person Interview Program 2022).

Seven Generations offers postsecondary programs at their satellite campus in Sioux Lookout. The programs offered at the campus are focused on the health services field but also offer programming for a bachelor of arts and human resourcing (Seven Generations n.d.). Seven Generations also offers postsecondary programs at their main campus in Fort Frances and satellite campus in Kenora (NWO Baseline Studies Key Person Interview Program 2022-2023).

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 Key Person Interview Program 2022).

A summary of college-level programming available in the Local Study Area as of 2022 is provided in **Table 3.3-2**.

Table 3.3-2: College Programs in the Local Study Area, 2023

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 Key Person Interview Program 2022).
Keewaytinook Centre of Excellence	Dryden	One day to multiple day programming	Offers certification for water and wastewater plant operators in distribution and treatment systems. Additional courses on water sources and characteristics, meter reading and servicing and water storage are offered (Keewaytinook Centre of Excellence n.d.)
Seven Generations Education Institute	Sioux Lookout	Programs are typically one to three-year Ontario College certificates/diplomas. Some programs are bachelor level programming 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.).

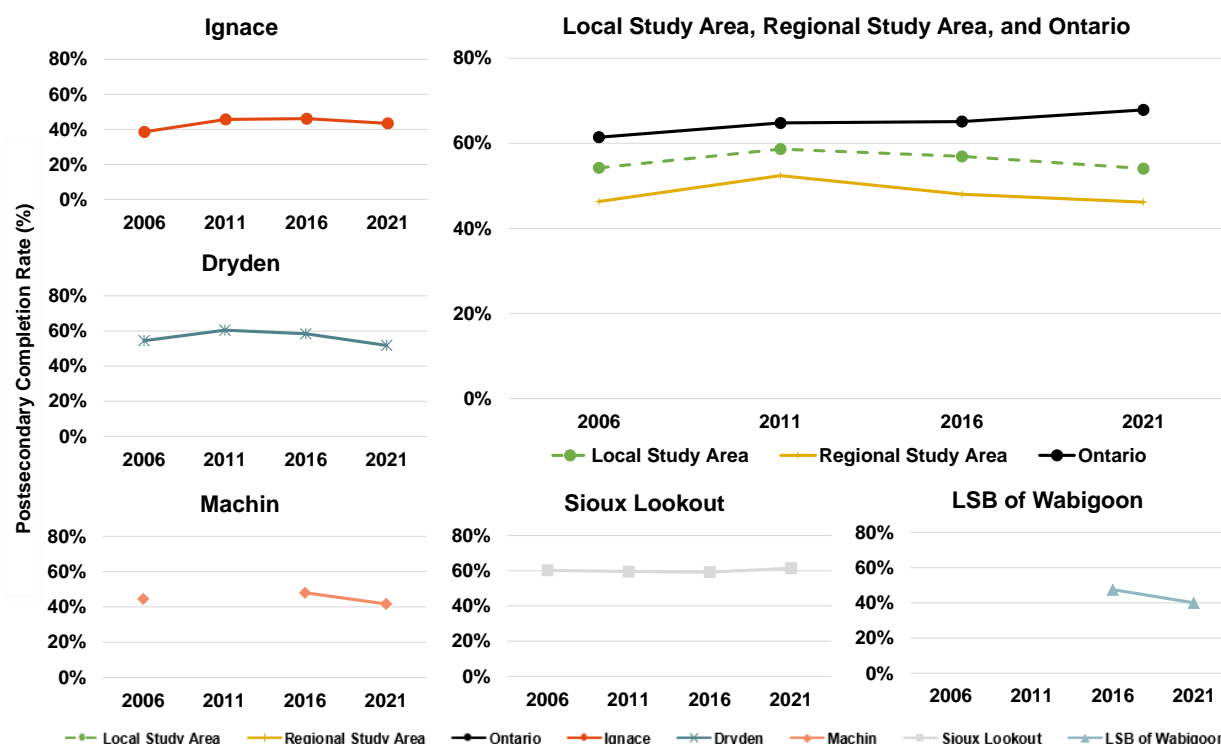
Table 3.3-2 Continued: College Programs in the Local Study Area, 2023

Institutions	Location of Institution	Duration of Programs	Description of Programs
Contact North	Dryden and Sioux Lookout	Programs are typically one to three-year Ontario College certificates/ diplomas. Some programs are bachelor level programing and require four years.	Offers on-line secondary and postsecondary courses, certificates, diplomas, and degrees in a wide variety of professions from colleges and universities across Ontario (Contact North 2023).
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.

Some interview participants raised concerns about the long commutes and the limited availability of course options in the Local Study Area (NWO Community and Baseline Studies Key Person Interview Program 2022). The lack of nearby educational institutes and limited variety of programs within the Local Study Area contributes to youths leaving their home communities and not returning. People from all Local Study Area communities described challenges in retaining youth due to a lack of relevant employment and training opportunities for their desired profession (NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 3.3-2 shows the postsecondary completion rate (i.e., the proportion of the population between 25 and 64 years old who have completed postsecondary education) in the Local Study Area, Regional Study Area, and Local Study Area communities.

Figure 3.3-2: Postsecondary Completion Rate in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

The postsecondary completion rate remained relatively flat between 2006 and 2021 for both the Local Study Area (about 54%) and the Regional Study Area (about 46%). The postsecondary completion rate for Ontario increased from 61.4% in 2006 to 67.8% in 2021. The postsecondary completion rate is lower in all Local Study Area communities than in Ontario as a whole. Notable trends in postsecondary completion among Local Study Area communities are as follows:

- In 2021, among Local Study Area communities, Sioux Lookout had the highest proportion of the population with a postsecondary education (61.5%) and the LSB of Wabigoon had the lowest (40.0%).
- Ignace had a notable increase in the postsecondary completion rate from 38.6% in 2006 to 43.4% in 2021.

- The postsecondary completion rate for Sioux Lookout was relatively stable from 2006 through 2021 at about 61%. The postsecondary completion rate decreased for Dryden, Machin, and LSB of Wabigoon, from 2006 through 2021. The largest decrease was in the LSB of Wabigoon (from 47.5% in 2016 to 40.0% in 2021). Postsecondary completion decreased slightly in Dryden from 54.5% in 2006 to 51.8% in 2021 and in Machin from 44.5% in 2006 to 41.7% in 2021.

Lower postsecondary completion rates can be attributed in part to the lack of educational institutions in the Regional Study Area, stress from being away from home, limited transportation options, financial constraints from having to live close to campus, and difficulty retaining youth after the completion of their education (IAWG March 03, 2022; NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). Local Study Area representatives noted some students return after completing an engineering degree but leave after they have gained a few years of experience. One key person interview highlighted that the real challenge is maintaining regular contact with youths who leave for postsecondary education or training to attract them back to the community (NWO Community and Baseline Studies Key Person Interview Program 2022).

The declining postsecondary completion rate in Dryden and Machin is partly attributed to a large proportion of seniors with a postsecondary education being replaced with a smaller proportion of youths with a postsecondary education. In both communities, in 2016 the proportion of seniors with a postsecondary education represents over 20% of the population with a postsecondary education (See **Section 3.3.2.3.1**).

Table 3.3-3 shows the number of graduates at Northern Ontario universities and colleges for 2006, 2011, 2016, and 2021. This includes all people who received a diploma, degree, or certificate, including people from outside of Ontario and Canada.

Table 3.3-3: Postsecondary Graduates at Northern Ontario Schools, 2006, 2011, 2016, and 2021^{1,2}

College or University	2006	2011	2016	2021
Cambrian College	1,569	1,818	2,779	2,590
Laurentian University	1,815	2,302	2,408	2,643
Lakehead University	2,164	2,478	2,015	2,937
Confederation College	1,146	1,351	1,401	1,002
Collège Boréal d'arts Appliqués et de Technologie	558	623	671	533
Northern College of Applied Arts and Technology	570	794	579	832
Seven Generations Education Institute	35	45	69	50
Northern Ontario School of Medicine	0	56	64	64
Total	7,857	9,467	9,986	10,651

Source: Estimates prepared by Manifold 2023a based on data from institutions, governmental sources, and student surveys. Retrieved May 30, 2023. See **Appendix 3B Supplemental Data**.

Notes:

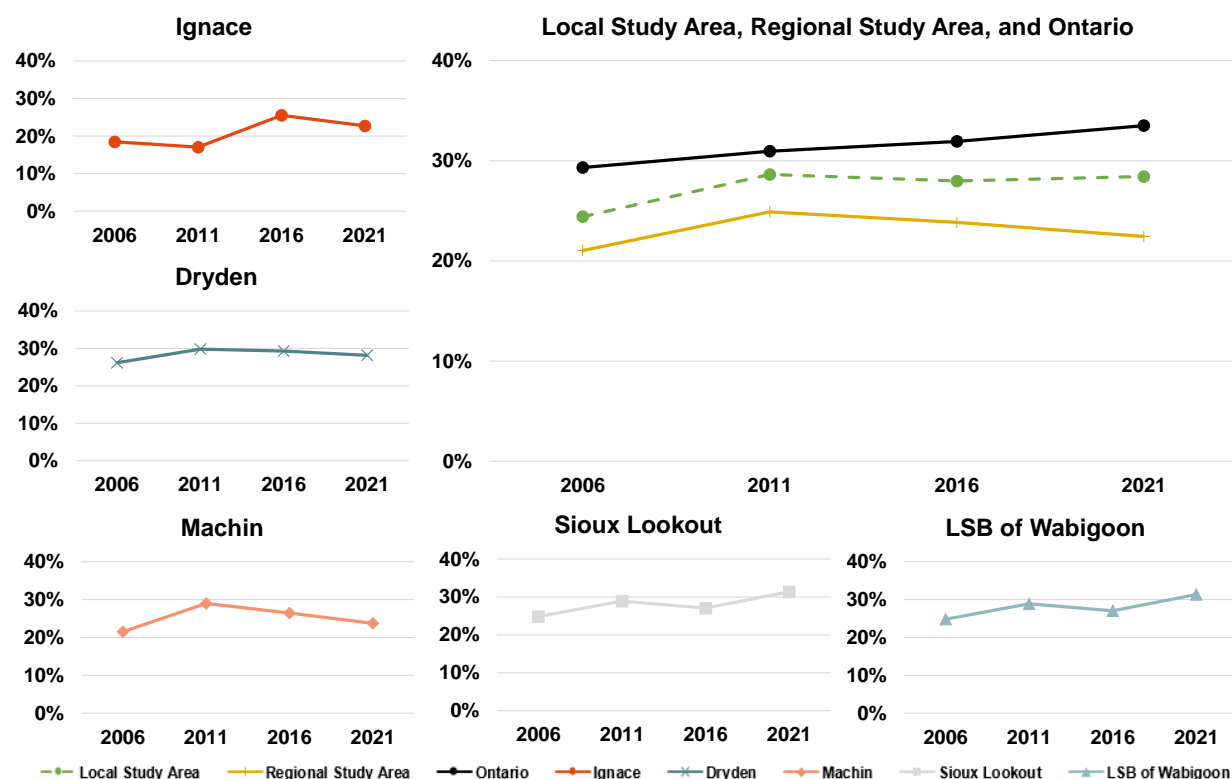
1. The Northern Ontario School of Medicine was founded in 2005 and there were no completions in 2006 as most programs are four years.
2. The table includes all reported graduations including people from another province or country.

The number of graduates at Northern Ontario colleges and universities increased from 2016 to 2021 despite a decrease in postsecondary completion rates from 2016 to 2021 for the population between the ages of 25 to 64 years old in some Local Study Area communities (see **Figure 3.3-1**). Although graduations at Ontario postsecondary schools also reflects graduates from people living outside the Regional and Local Study Areas, interview participants noted that after people graduate from a postsecondary school, they usually do not return to the Local Study Area given

the lack of available opportunities (IAWG October 06, 2021; NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 3.3-3 compares the proportion of people with STEM-related qualifications for the population 15 years and older in the Local Study Area, Regional Study Area, and Ontario for 2006, 2011, 2016, and 2021. STEM-related qualifications are defined to include postsecondary completions for: social and behavioural sciences and law; physical and life sciences and technologies; mathematics, computer, and information sciences; architecture, engineering, and related technologies; agriculture, natural resources, and conservation; and health and related fields educational programs. This is consistent with how STEM-related qualifications are defined in the Workforce Development Community Study (InterGroup and HSAL et. al 2022). With more businesses and organizations looking to modernize there will be an increasing demand for people with STEM-related backgrounds (Government of Canada 2021b).

Figure 3.3-3: Proportion of the Population who have STEM-related Qualifications in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021^{1,2}



Source: Estimates prepared by Manifold 2023b based on Statistics Canada 2007, 2012, 2017, and 2022a. Manifold 2023b. See **Appendix 3B Supplemental Data**.

Notes:

1. Modelling for the number of completions by major field of study and the population 15 years and older were completed by Manifold.
2. Data were not available for the LSB of Melgund and Dinorwic.

The proportion of the Local Study Area population with STEM-related qualifications increased from 24.4% in 2006 to 28.4% in 2021. The proportion of the population with STEM-related qualifications remained relatively flat between 2006 and 2021 for the Regional Study Area (about 23%). The proportion of the Ontario population with STEM-related qualifications increased from 29.3% in 2006 to 33.5% in 2021 which is a similar to the increase in the Local Study Area. Notable trends in STEM-related postsecondary completion among Local Study Area communities include:

- The proportion of the population with STEM-related qualifications increased slightly for each of the Local Study Area communities between 2006 and 2021.

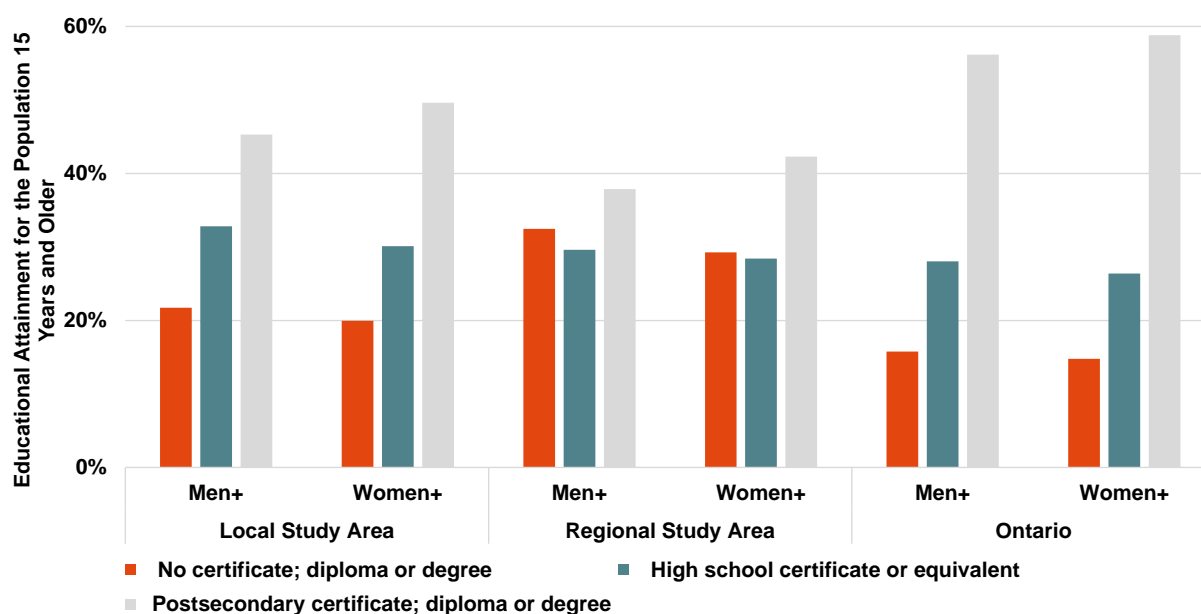
- In 2021, among Local Study Area communities, Sioux Lookout had the highest proportion of the population with STEM-related qualifications (31.4%) and the LSB of Wabigoon had the lowest (20.3%).
- The LSB of Wabigoon had a notable increase in the proportion of the population with STEM-related qualifications from 8.5% in 2006 to 20.3% in 2021.
- In Machin, the proportion of the population with STEM-related qualifications decreased from 29.0% in 2011 to 23.7% in 2021 but remained higher than the proportion in 2006 (21.5%).
- The proportion of the population with STEM-related qualifications decreased slightly in Dryden from 29.8% in 2011 to 28.2% in 2021 and in Ignace from 25.5% in 2016 to 22.7% in 2021.

3.3.2.3 Educational Attainment by Gender

Educational attainment is the highest level of education an individual possesses. Obtaining postsecondary education allows people to be eligible for a wider variety of jobs. Through exposure to a wider spectrum of occupations, people can gain diverse experience and on-the-job training. This may lead to more senior roles with higher wages later in life. Higher levels of education are typically correlated with higher incomes in Canada (Statistics Canada 2017).

Figure 3.3-4 shows the educational attainment for the population aged 15 years and older for the Local Study Area, Regional Study Area, and Ontario disaggregated by gender in 2021.

Figure 3.3-4: Educational Attainment by Gender in the Local Study Area, Regional Study Area, and Ontario, 2021



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund and Dinorwic for 2021.

The largest proportion of the population has a postsecondary education as their highest level of education for both men and women in the Local Study Area, Regional Study Area, and Ontario. A higher proportion of men and women in Ontario have completed postsecondary education compared to the Local and Regional Study Areas. Further details on the breakdown of postsecondary attainment are provided in **Section 3.3.2.3**. Other notable highlights are as follows:

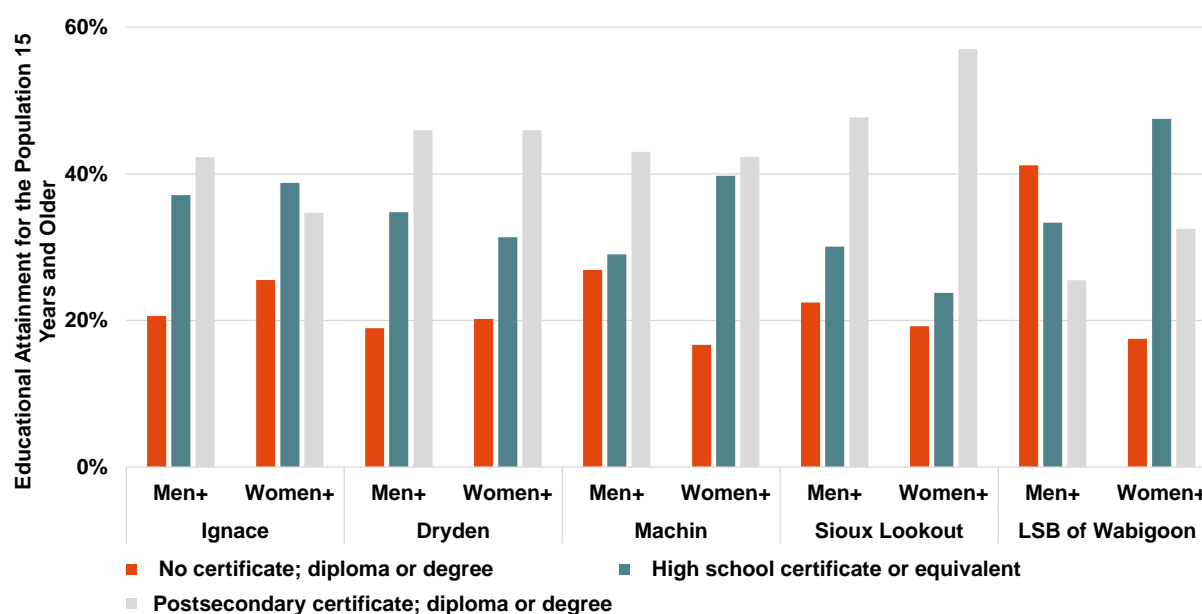
- In all three regions, a higher proportion of women have a postsecondary education compared to men. In the Local Study Area, 49.6% of women have obtained a postsecondary education compared to 42.3% for women in the Regional Study Area, and 58.8% of women in Ontario.
- In the Local Study Area, 45.3% of men have obtained a postsecondary education compared to 37.9% of men in the Regional Study Area, and 56.2% of men in Ontario.

The lower rate of postsecondary educational attainment in the Local Study Area and Regional Study Area as compared to Ontario is primarily due to a lack of educational facilities and availability of jobs in northern communities (NWO Community and Baseline Studies Key Person Interview Program 2022). It has been noted that one of the common barriers to employment in

the Local Study Area is related to not having obtained a high school certificate or equivalent (NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 3.3-5 shows the educational attainment for the population aged 15 years and older for Local Study Area communities disaggregated by gender in 2021.

Figure 3.3-5: Educational Attainment by Gender in the Local Study Area Communities, 2021



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes: Data were not available for the LSB of Melgund and Dinorwic for 2021.

Key observations on educational attainment within Local Study Area communities include:

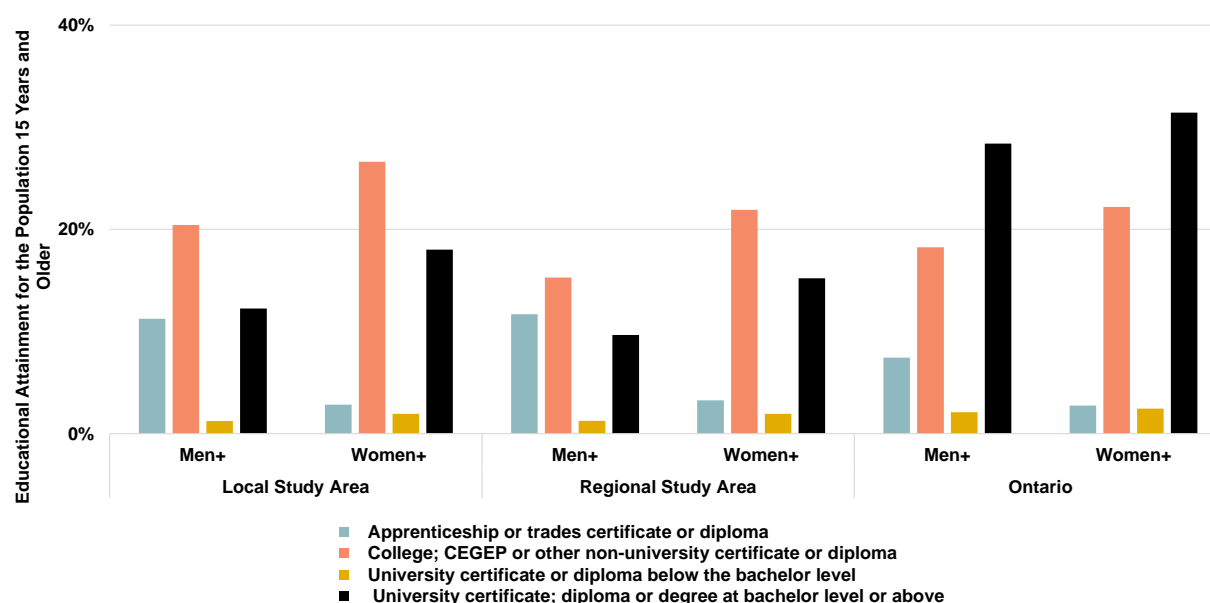
- Among Local Study Area communities, Sioux Lookout has the highest proportion of women with a postsecondary education at 57.0% and the highest proportion for men at 47.7%. Postsecondary educational attainment is lowest among Local Study Area communities in the LSB of Wabigoon with 25.5% of men and 32.5% of women having a postsecondary education.
- Ignace is the only community where a materially higher proportion of men have obtained a postsecondary education compared to women. With 42.3% of men have a postsecondary education compared to 34.7% of women.

- In Dryden, 46% of both men and women have a postsecondary education which is the second highest among Local Study Area communities. In Dryden, only 18.9% of men do not have a high school or equivalent which is the lowest among Local Study Area communities.
- In Machin, about 43% of men and women have a postsecondary education but 39.7% of women have a high school certificate or equivalent as their highest level of education compared to 29.0% for men.
- In LSB of Wabigoon, 41.2% of men do not have a high school certificate or equivalent which is materially higher than any other Local Study Area community.
- In the LSB of Wabigoon, the proportion of men between 25 and 64 years old who do not have a high school certificate or equivalent is somewhat higher than the average for the total population over the age of 15 (26.5%). Similarly, the proportion of women who have a postsecondary education is 53.8%.

Figure 3.3-6 shows the proportion of postsecondary educational attainment for the population aged 15 years and older for the Local Study Area, Regional Study Area, and Ontario, disaggregated by gender in 2021. The classification of postsecondary programs is disaggregated into four categories:

- An apprenticeship or trades certificate or diploma;
- A college, CEGEP, or other non-university certificate or diploma;
- A university certificate or diploma below the bachelor level; and
- A university certificate or diploma at or above the bachelor level: this includes a bachelor's degree, a master's degree, a doctorate, or a degree in medicine, dentistry, veterinary medicine, or optometry.

Figure 3.3-6: Postsecondary Educational Attainment by Gender in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes:

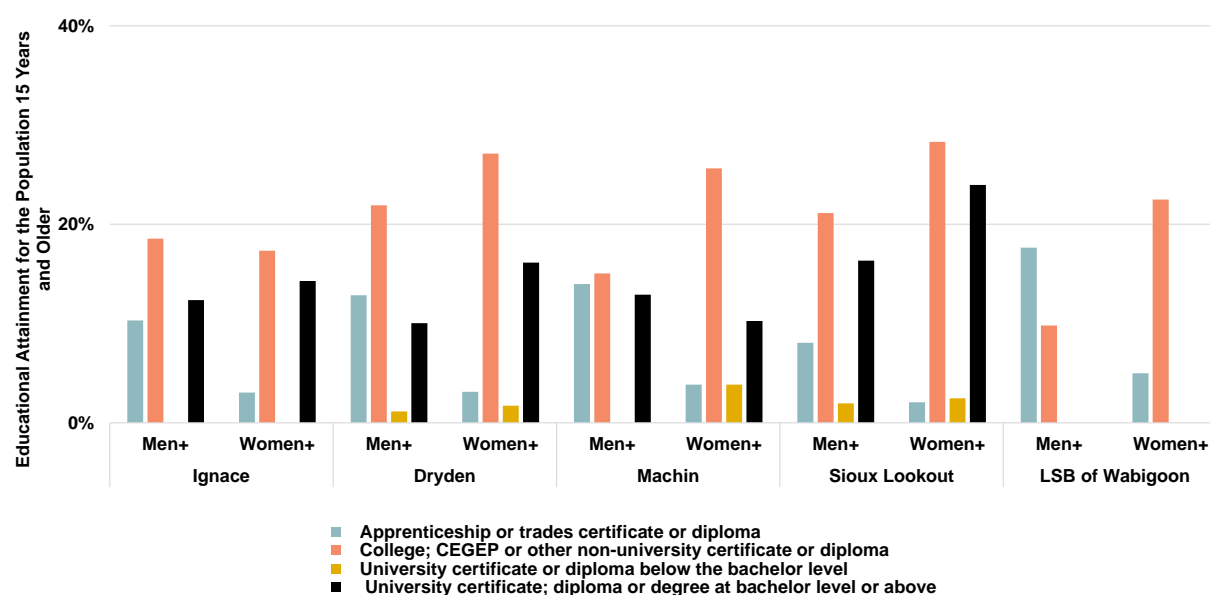
1. Data were not available for the LSB of Melgund and Dinorwic for 2021.

Within the Local and Regional Study Areas, a college certificate or diploma is the most common type of postsecondary education completed. By comparison, the most common postsecondary qualification in Ontario as a whole is a university education at or above the bachelor level. In each region, a higher proportion of women have a college or university education compared to men, but a higher proportion of men have an apprenticeship or trades certificate or diploma compared to women. Other notable highlights of postsecondary educational attainment are as follows:

- The Local Study Area has the highest proportion of the population with a college, CEGEP or other non-university certificate of diploma for men (20.4%) and women (26.6%).
- The Regional Study Area has the highest proportion of the population with an apprenticeship or trades certificate for men (11.7%) and women (3.3%).
- The proportion of the population in Ontario with a university education at or above the bachelor level is materially higher for both men (28.4%) and women (31.4%) compared to the Local and Regional Study Areas.

Figure 3.3-7 shows the proportion of postsecondary educational attainment for the population aged 15 years and older for the Local Study Area communities, disaggregated by gender in 2021. Similar to **Figure 3.3-6**, postsecondary educational attainment is disaggregated into trades or apprenticeship, college or equivalent, a university degree below the bachelor level, and a university degree at or above the bachelor level.

Figure 3.3-7: Postsecondary Educational Attainment by Gender in the Local Study Area Communities, 2021¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund and Dinorwic for 2021.

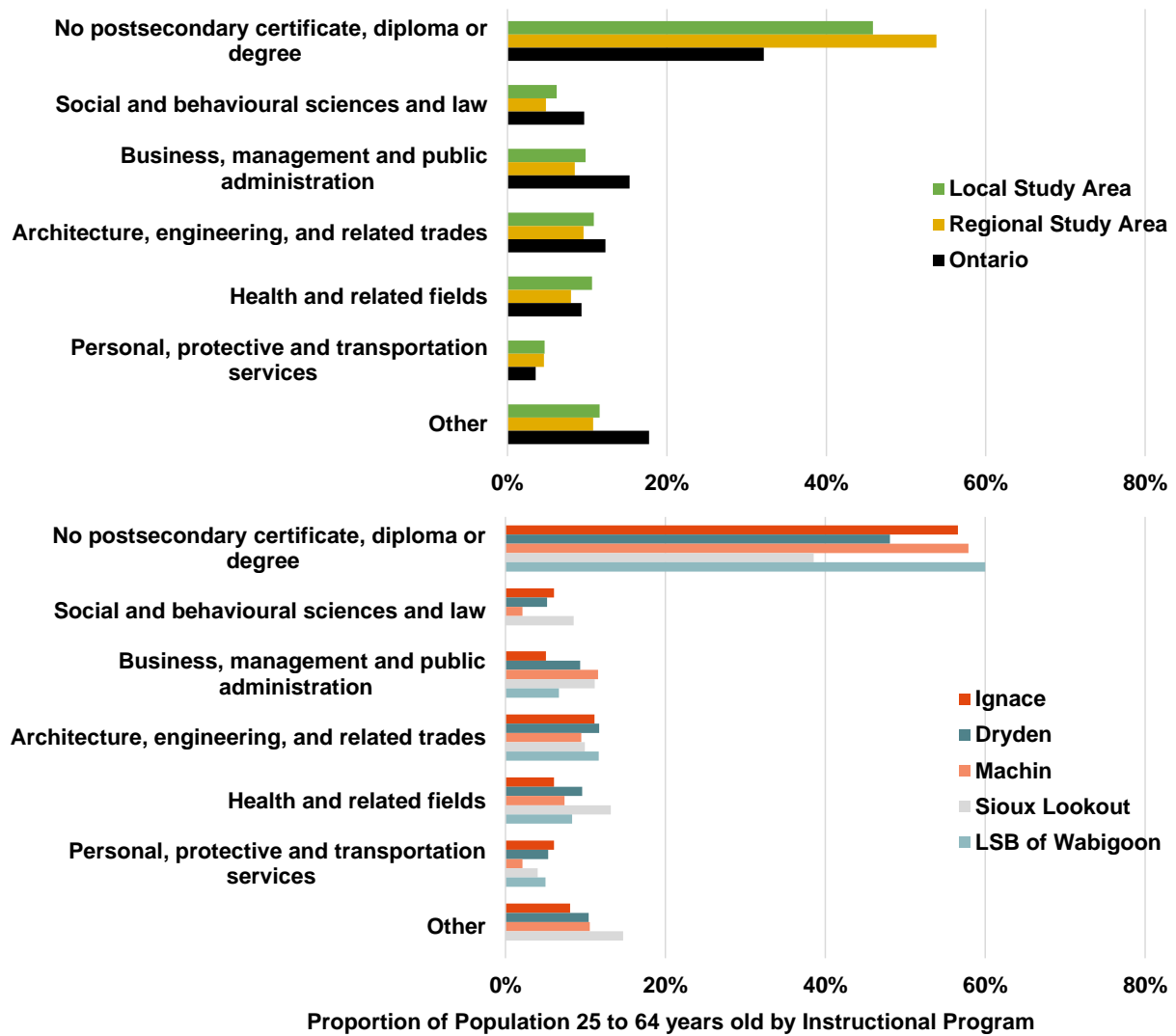
For each Local Study Area community, a larger proportion of men have an apprenticeship or trades certificate or diploma compared to women but, generally, a larger proportion of women have a college education or university education at or above the bachelor level compared to men. Other notable highlights of postsecondary educational attainment among the Local Study Area communities are as follows:

- Among Local Study Area communities, the LSB of Wabigoon has the largest proportion of men (17.6%) and women (5.0%) with an apprenticeship or trades certificate or diploma.
- Dryden men (21.9%) and Sioux Lookout women (28.3%) have the largest proportion of population with a college, CEGEP or other non-university certificate of diploma. This could be attributed to Confederation College having a satellite campus in both Dryden and Sioux Lookout.

- Sioux Lookout has the highest proportion of the population with a university education at or above the bachelor level for both men (16.3%) and women (24.0%).
- Ignace is the only community with a larger proportion of men (18.6%) having a college education compared to women (17.3%). Similarly, Machin is the only community with a larger proportion of men (12.9%) having a university education at or above the bachelor level compared to women (10.3%).

Figure 3.3-8 shows the breakdown of postsecondary educational programs completed by people between 25 and 64 years old for the Local Study Area, Regional Study Area, Ontario, and Local Study Area communities in 2021.

Figure 3.3-8: Completion of Postsecondary Educational Programs in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund and Dinorwic for 2021.

The largest proportion of the population between 25 and 64 years old have not completed a postsecondary educational program in the Local Study Area, Regional Study Area, and Ontario.

Among the Local Study Area, Regional Study Area, and Ontario, the most common postsecondary fields of study are business management and public administration; architecture, engineering, and related trades; or health and related fields. Other notable highlights of completion of postsecondary educational programs include:

- Among the Local Study Area, Regional Study Area, and Ontario, the largest proportion of the population who completed an educational program in health and related fields in the Local Study Area (10.6%) and the lowest proportion is in the Regional Study Area (8.0%).
- Ontario has the largest proportion of the population who completed a business, management, and public administration program (15.3%) and who completed an architecture, engineering, and related trades program (12.3%).

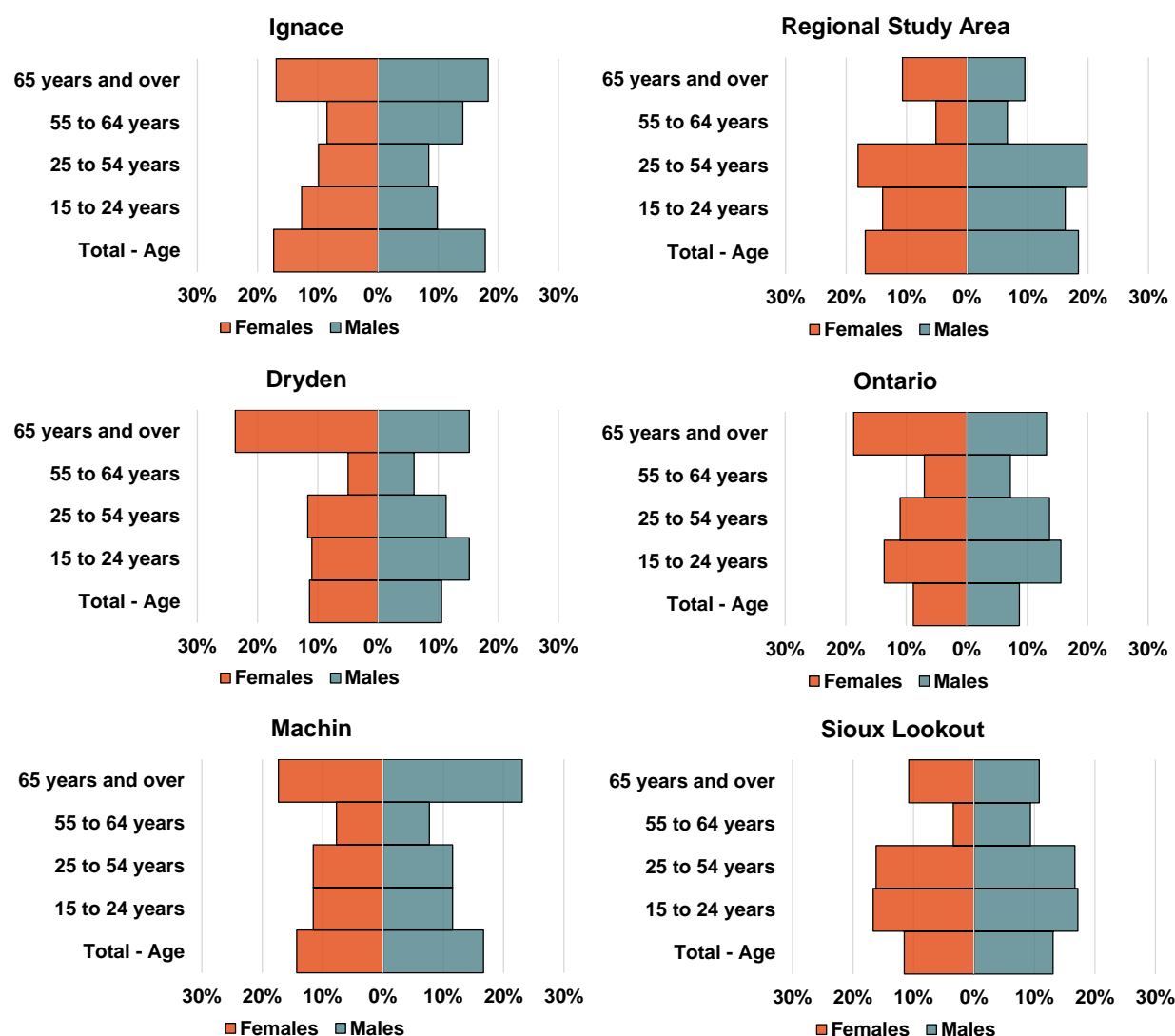
Among the Local Study Area communities, the largest proportion of the population have not completed a postsecondary educational program; the highest proportion is in the LSB of Wabigoon (60.0%) and the lowest proportion is in Sioux Lookout (38.5%). Other notable trends in the completion of postsecondary educational programs are as follows:

- Among all Local Study Area communities, Sioux Lookout has the largest proportion of the population who have completed a health and related fields (13.2%) educational program and a social and behavioural sciences and law educational program (8.5%).
- A large proportion of the population in each Local Study Area community has completed an architecture, engineering, and related fields educational program, with Dryden (11.7%) and the LSB of Wabigoon (11.7%) having the largest proportion. The lowest proportion is in Machin (9.5%).
- Machin has the largest proportion of the population who completed a business, management, and public administration educational program (11.6%) and Ignace has the lowest proportion (5.1%).

3.3.2.4 Educational Attainment and Age

Examining the relationship between educational attainment and age provides insight into the evolving trends in educational attainment across age cohorts. Interview participants noted that when the Mattabi mine was operating there was less of a need for a high school education, as you could go work for the mine without any prior formal education (IAWG March 22, 2023). More recently, the lack of a high school education has been identified as a potential barrier to employment. **Figure 3.3-9** shows the educational attainment of no high school or equivalent disaggregated into age cohorts for the Regional Study Area, Ontario, and Local Study Area communities, for 2016.

Figure 3.3-9: No High School Certificate or Equivalent by Age Cohorts and Sex in the Local Study Area Communities, Regional Study Area, Ontario, 2016¹



Source: Statistics Canada 2017. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund and Dinorwic for 2016.

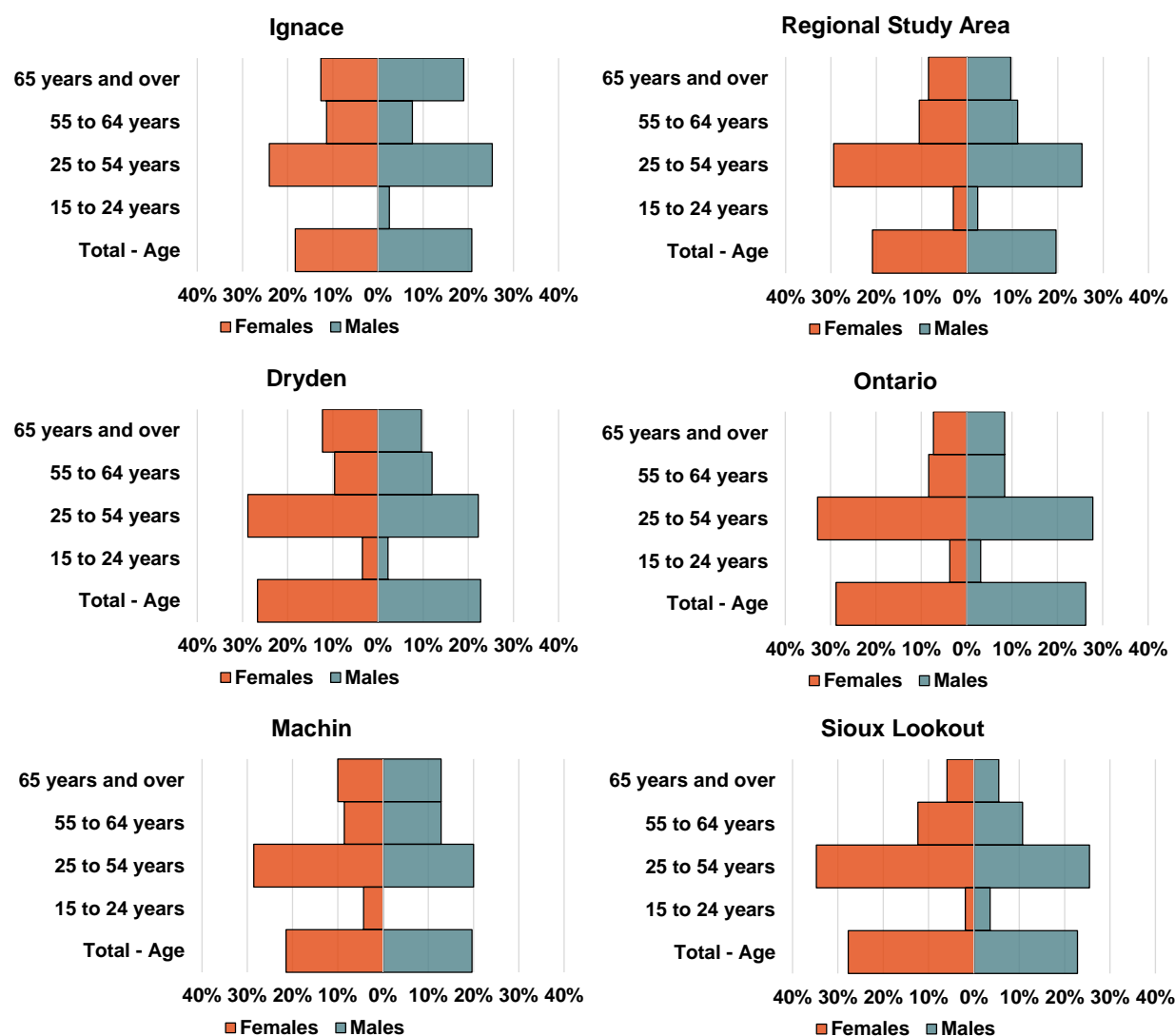
A large proportion of the population in the 65 and older age cohort do not have a high school certificate or equivalent in the Regional Study Area (9.6% for males and 10.7% for females) and

Ontario (13.2% for males and 18.7% for females). Within the Regional Study Area, a large proportion of the population in the 25 to 54 age cohort do not have a high school certificate or equivalent (19.8% for males and 18.0% for females). Notable highlights of the population without a high school certificate or equivalent disaggregated by age cohorts in the Local Study Area communities are as follows:

- A large proportion of the population in the 65 years and older age cohort do not have a high school certificate or equivalent in each of the Local Study Area communities. The largest proportion without a high school certificate or equivalent for males among the Local Study Area communities is in Machin (23.1%). The largest proportion for females without a high school certificate or equivalent is in Dryden (23.7%).
- In Ignace, for the 55 to 64 age cohort, a large proportion do not have a high school certificate or equivalent for both males (14.1%) and females (8.5%).

Figure 3.3-10 shows the postsecondary educational attainment disaggregated into age cohorts for the Regional Study Area, Ontario, and Local Study Area communities, for 2016.

Figure 3.3-10: Postsecondary Educational Attainment by Age Cohorts and Sex in the Local Study Area Communities, Regional Study Area, Ontario, 2016¹



Source: Statistics Canada 2017. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund, and Dinorwic for 2016.

Postsecondary educational attainment for the 55 to 64 and 65 years and older age cohorts are similar between the Regional Study Area and Ontario. Postsecondary educational attainment for the 25 to 54 age cohort is slightly higher for both men and women in Ontario (27.8% for males and 32.9% for females) compared to the Regional Study Area (25.3% for males and 29.4% for females). Notable highlights of the postsecondary education attainment by age cohorts in the Local Study Area communities are as follows:

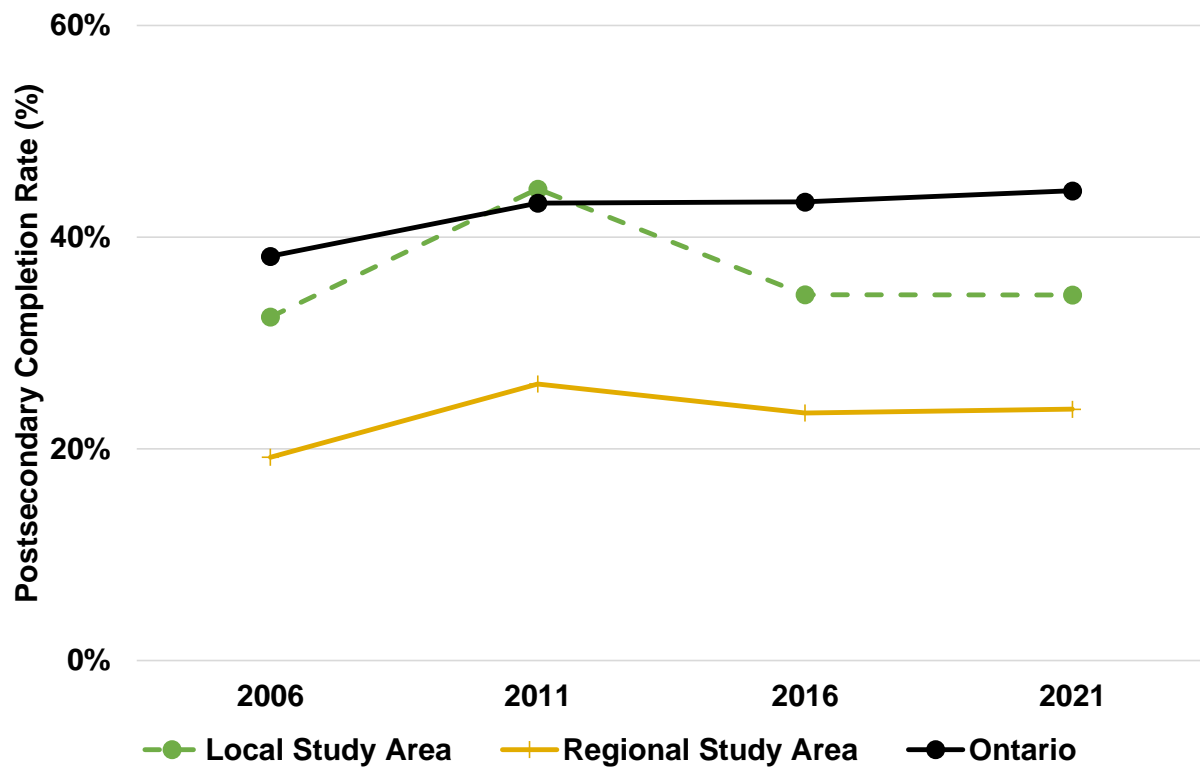
- For the 25 to 54 age cohort, postsecondary educational attainment is highest in Sioux Lookout for both males (25.5%) and females (34.8%). Postsecondary educational attainment for the 25 to 54 age cohort is lowest for males in Machin (20.0%) and females in Ignace (24.1%).
- For the 65 years and older age cohort, postsecondary educational attainment is highest in Ignace for both males (19.0%) and females (12.7%).
- The 65 years and older age cohort in Ignace has a large proportion with a postsecondary education and a large proportion without a high school certificate or equivalent as their highest level of education.

Postsecondary educational attainment will generally report a small proportion for the 15 to 24 age cohort given they are likely still in school. For the older age cohorts, having a large proportion of the population with a postsecondary education suggests future vacancies could be made available for higher level positions if they are still employed. This could pose as an opportunity for people early in their careers to advance to more senior roles as more vacancies are made available.

3.3.2.5 Indigenous Educational Attainment

Figure 3.3-11 shows the proportion of the population 15 years and older who identify as Indigenous and have completed postsecondary education for the Local Study Area, Regional Study Area, and Ontario from 2006 to 2021. Data on Ignace and Machin were not available prior to 2016, and thus only included in 2016 in the Local Study Area. Although, this only accounts for a small portion of the decrease between 2011 and 2021. Limitations associated with disaggregated Indigenous identity data are provided in **Section 3.1.2.1.1**.

Figure 3.3-11: Postsecondary Educational Attainment of Indigenous Peoples in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, and 2023f. See **Appendix 3B Supplemental Data**.

Notes:

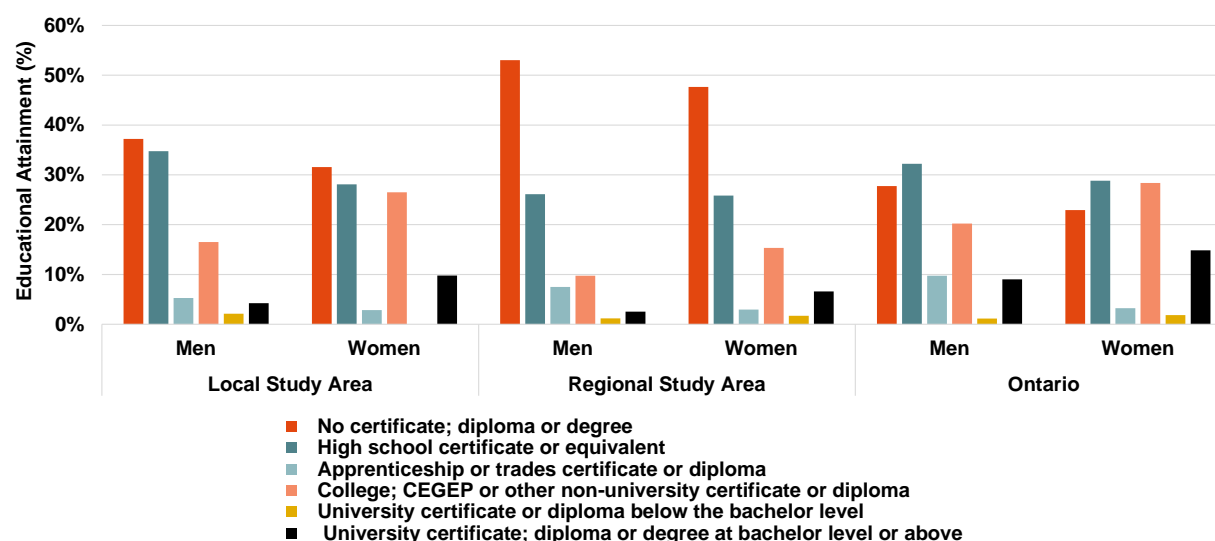
1. Data for Local Study Area communities were not available for all years for Ignace (2006 and 2011) and Machin (2006 and 2011). Data were not available for the LSB of Melgund, LSB of Wabigoon, and Dinorwic for 2006 to 2021.

The postsecondary completion rate for Indigenous peoples in 2021 was higher in Ontario as a whole (44.4%) compared to the Local Study Area (34.6%) and the Regional Study Area (23.8%). Other notable trends in postsecondary educational attainment include:

- The proportion of the Indigenous population with a postsecondary education was similar from 2006 (32.5%) to 2021 (34.6%) in the Local Study Area.
- The proportion of the Indigenous population with a postsecondary education increased from 19.2% in 2006 to 23.8% in 2021 in the Regional Study Area.

Figure 3.3-12 shows the highest level of educational attainment of the population 15 years and older who identify as Indigenous in the Local Study Area, Regional Study Area, and Ontario disaggregated by gender for 2021.

Figure 3.3-12: Highest Educational Attainment of Indigenous Peoples by Gender in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund, LSB of Wabigoon, and Dinorwic for 2021.

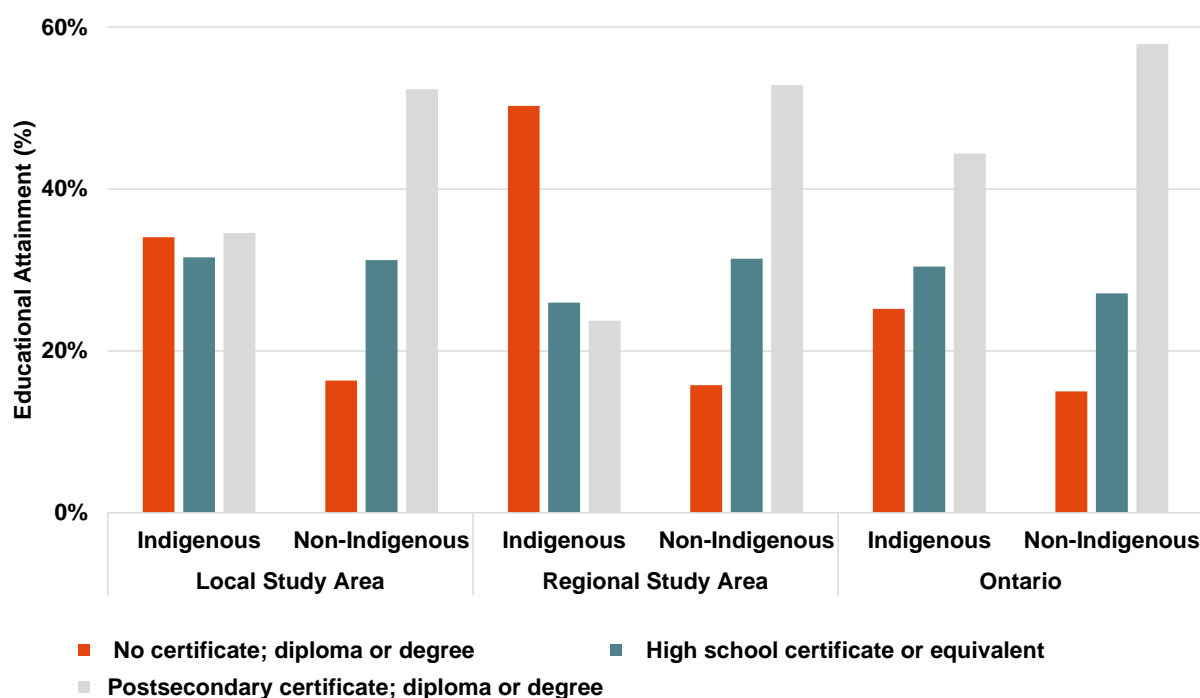
A larger proportion of Indigenous women have completed a secondary or postsecondary education compared to Indigenous men in the Local Study Area, Regional Study Area, and Ontario. Other notable highlights include:

- The proportion of Indigenous peoples who have not obtained a high school certificate, diploma, or degree was highest in the Regional Study Area for both men (53.0%) and women (47.6%).
- Apprenticeship or trades certificates or diplomas attainment was highest in Ontario for Indigenous men (9.7%) and women (3.2%), followed by the Regional Study Area for Indigenous men (7.5%) and women (2.9%).
- College certificate or diploma attainment rates for Indigenous men (16.5%) and women (26.5%) in the Local Study Area are slightly lower than for Ontario (Indigenous men 20.2%; and women 28.4%).

- University degree attainment rates were somewhat lower in the Local Study Area for Indigenous men (4.2%) and women (9.8%) than in Ontario (Indigenous men 9.0%; and women 14.8%).

Figure 3.3-13 shows the highest level of educational attainment of the population 15 years and older for the Indigenous population and the non-Indigenous population for the Local Study Area, Regional Study Area, and Ontario in 2021.

Figure 3.3-13: Highest Level of Educational Attainment of Indigenous Peoples and Non-Indigenous in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

- Data were not available for the LSB of Melgund, LSB of Wabigoon, and Dinorwic for 2021.

A larger proportion of the non-Indigenous population has completed a postsecondary education compared to the Indigenous population in the Local Study Area, Regional Study Area and Ontario. Notable highlights of educational attainment among Indigenous and non-Indigenous peoples include:

- In the Local Study Area, 34.6% of the Indigenous population has obtained a postsecondary education compared to 52.3% of the non-Indigenous population.
- In the Local Study Area, 34.1% of the Indigenous population have not obtained a high school or equivalent compared to 16.4% for the non-Indigenous population.
- In the Regional Study Area, 50.3% of the Indigenous population have not obtained a high school certificate or equivalent compared to 15.8% for the non-Indigenous population.

Within the Regional Study Area, approximately 50% of the Indigenous population has not completed a high school certificate or equivalent. The reasons behind this are complex and a full understanding would require engagement and discussion with Indigenous communities. One possible contributing factor is the remoteness of northern Indigenous communities and challenges associated with completing high school for communities which do not have a high school within or near the community. There are also youths who do not return after leaving their community to attend high school or obtain a postsecondary education (GBA+ Workshop 2023). Other challenges include recruiting and retaining teachers, infrastructure and capital needs for First Nation schools, and a lack of funding (Social Determinants of Health 2017; Indigenous Corporate Training 2023). Challenges Indigenous peoples face off-reserve include racism, transportation limitations, and challenges recruiting and retaining tutors (GBA+ Workshop 2023; Indigenous Corporate Training 2023).

Educational attainment does not capture other forms of education or training such as informal education or on-the-job training. Informal education is the knowledge a person gains through life experiences. This cannot be easily measured but can be reflected in an individual's ability to perform simple life tasks such as managing time and finances. Other forms of informal education include self-directed reading, watching how-to videos, or attending seminars. One limitation of obtaining informal education through these means is that an individual is more likely to encounter misleading information (Passion in Education 2019; Globale 2020). Another form of informal education is specialized educational programs for an identified group (e.g., adult education, fitness programs, software learning). These programs can be offered for literacy, learning basic life skills, and other basic skills or jobs. Delivery methods can include individualized instruction and distance learning. One limitation of this type of informal education is that programs are tailored to the students' schedules and availability which may lead to an irregular schedule and ineffective learning (Globale 2020).

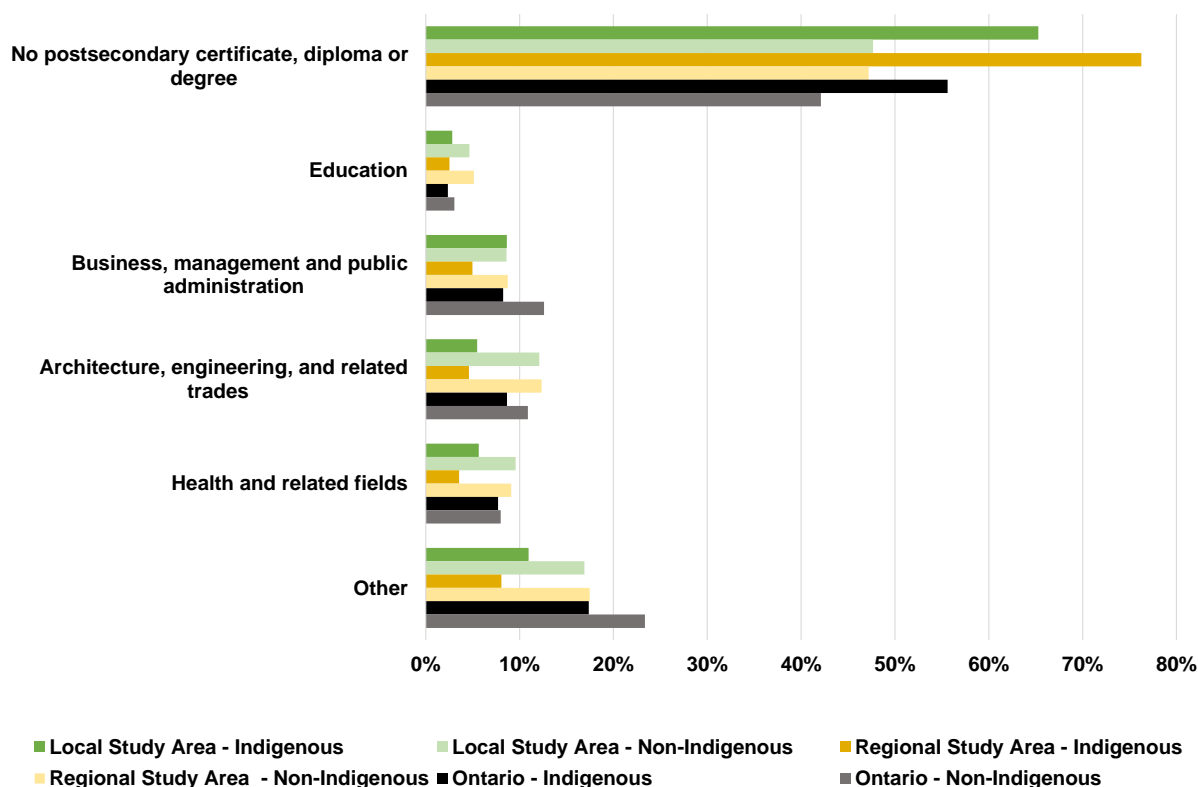
Through on-the-job training, employees can learn practical skills and knowledge to perform their job through teaching, mentorship, and collaboration with other employees. This is a hands-on approach which can be a cost-effective measure for onboarding new employees (Waters 2022). Some business and industry knowledge must be learned through on-the-job training and can be tailored to the business or employee. On-the-job training has the benefits of encouraging collaboration which can improve productivity, job satisfaction, and employee retention (Waters 2022).

Although there is a large proportion of Indigenous peoples who have not completed a high school certificate or equivalent, this does not capture the informal education obtained in everyday life, job training, training programs or certificates required for employment, and Indigenous

knowledge which may reflect their community culture, language, values, or governance (Government of Canada 2022). Indigenous land-based education is a form of education that uses an Indigenous and environmentally focused approach which recognizes the importance of the physical, mental, and spiritual connection to the land for Indigenous cultures (Cherpako 2019).

Figure 3.3-14 shows the breakdown of postsecondary educational programs completed by Indigenous and non-Indigenous peoples for the population aged 15 years and older for the Local Study Area, Regional Study Area, and Ontario, in 2021.

Figure 3.3-14: Completion of Postsecondary Educational Programs by Indigenous Peoples in the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

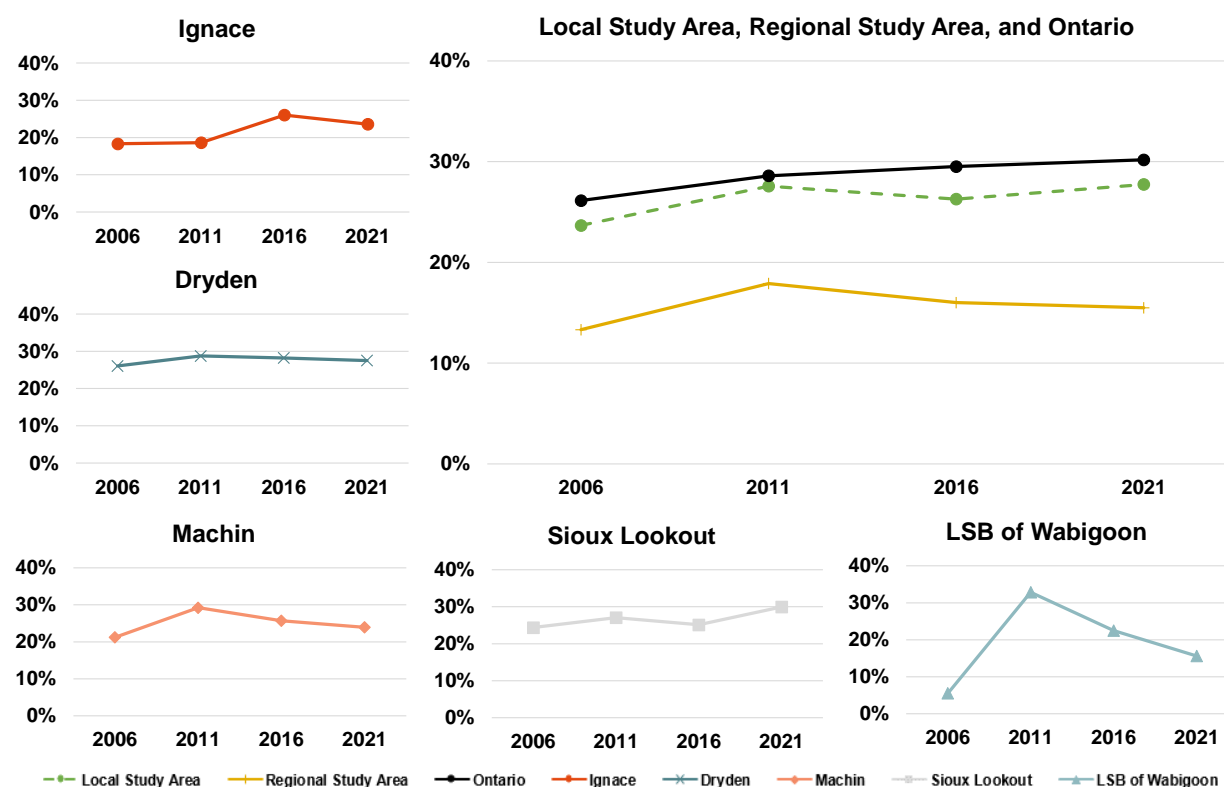
1. Data were not available for the LSB of Melgund, LSB of Wabigoon, and Dinorwic for 2021.

Among the Local Study Area, Regional Study Area, and Ontario, the largest proportion of the population 15 years and older have not completed a postsecondary educational program for both Indigenous and non-Indigenous peoples. In each area, the proportion of the Indigenous population who have not completed a postsecondary educational program is materially higher compared to non-Indigenous peoples. Notable highlights of completion of postsecondary educational programs are as follows:

- The largest proportion of the population for both Indigenous and non-Indigenous peoples have completed a business, management, and public administration; architecture, engineering, and related trades; or health and related services educational program.
- For the business, management, and public administration educational programs, the largest proportion of the Indigenous population who completed a program is in the Local Study Area (8.9%), which is similar to the non-Indigenous population (8.6%).
- For the architecture, engineering, and related trades programs, the largest proportion of the Indigenous population who completed a program is in Ontario as a whole (8.7%) and the lowest proportion was in the Regional Study Area (4.6%). In both regions, the proportion of the non-Indigenous population who completed a program is materially higher than the Indigenous population (10.9% in Ontario and 12.4% in the Regional Study Area for the non-Indigenous population).
- For the health and related services programs, the largest proportion of the Indigenous population who completed a program is in Ontario as a whole (7.7%) and the lowest proportion was in the Regional Study Area (3.6%). The proportion of the non-Indigenous population in the Local Study Area (9.6%) who completed a program is materially higher than the Indigenous population (5.6%).

Figure 3.3-15 compares the proportion of Indigenous peoples with STEM-related qualifications for the population 15 years and older in the Local Study Area, Regional Study Area, and Ontario for 2006, 2011, 2016, and 2021. STEM-related qualifications are defined as postsecondary completions for: social and behavioural sciences and law; physical and life sciences and technologies; mathematics, computer, and information sciences; architecture, engineering, and related technologies; agriculture, natural resources, and conservation; and health and related fields educational programs.

Figure 3.3-15: Proportion of the Indigenous Population who have STEM-related Qualifications in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021^{1,2}



Source: Estimates prepared by Manifold 2023b based on Statistics Canada 2007, 2012, 2017, and 2022a. Manifold 2023b. See **Appendix 3B Supplemental Data**.

Notes:

1. Modelling for the number of completions by major field of study and the population 15 years and older were completed by Manifold.
2. Data were not available for the LSB of Melgund and Dinorwic.

The proportion of the Indigenous population with STEM-related qualifications in the Local Study Area increased from 23.7% in 2006 to 27.7% in 2021. The proportion of the Indigenous population with STEM-related qualifications remained relatively flat between 2006 and 2021 for the Regional Study Area (about 14%). The proportion of the Ontario Indigenous population with STEM-related qualifications increased from 26.1% in 2006 to 30.2% in 2021 which is similar to the increase in the Local Study Area.

A notable trend among the Local Study Area communities include that the proportion of the Indigenous population with STEM-related qualification increased slightly for each of the Local Study Area communities between 2006 and 2021. In 2021, among Local Study Area

communities, Sioux Lookout had the highest proportion of the Indigenous population with STEM-related qualifications (30.0%) and the LSB of Wabigoon had the lowest (15.6%).

3.3.3 Industry-led Training Opportunities and Programs

A number of employers in the Local Study Area conduct their own industry-related training to ensure their staff have the necessary qualifications for their jobs (NWO Community and Baseline Studies Key Person Interview Program 2022). For example, Domtar offers co-op opportunities with the Dryden High School for programs including steam engineering, operations, and accounting. Domtar also conducts a two-and-a-half-day Conservation Camp program for Grade 9 students which teaches students about water, soils, trapping, harvesting, seeding, and the Ministry of Natural Resources and Forestry. The program has a sizable uptake by students who benefit from credit towards a year-end science assignment (NWO Community and Baseline Studies Key Person Interview Program 2022).

Within the Local Study Area there are employment service offices in Ignace and Dryden, and Seven Generations has a campus in Sioux Lookout which offers employment training courses. Although Ignace has an employment service office which is funded by Employment Ontario, the services offered are limited and some clients must be referred to the Dryden or Thunder Bay offices for certain services (NWO Community and Baseline Studies Key Person Interview Program 2022).

Table 3.3-4 summarizes a variety of workforce development organizations in the Local Study Area and across Northern Ontario.

Table 3.3-4: Workforce Development Organizations in the Local Study Area and Northern Ontario, 2023

Institutions	Description of Institution and Services Offered
Local Study Area	
Contact North	Locations in both Sioux Lookout and Dryden. Offers online secondary and postsecondary courses, certificates, diplomas, and degrees in a wide variety of professions from colleges and universities across Ontario.
Northwest Employment Works	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.

Table 3.3-4 Continued: Workforce Development Organizations in the Local Study Area and Northern Ontario, 2023

Institutions	Description of Institution and Services Offered
Local Study Area	
Patricia Area Community Endeavors ("PACE")	Offers lending services to businesses and entrepreneurs if they have been declined by the bank. PACE also offers counselling 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 counselling and assistance with resumes for job seekers but are constrained by provincial funding.
Keewaytinook Centre of Excellence	Located in Dryden. Offers certification and courses for water and wastewater plant operators in distribution and treatment systems.
Northern Ontario	
Northern Centre for Advanced Technology	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	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.
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.

Table 3.3-4 Continued: Workforce Development Organizations in the Local Study Area and Northern Ontario, 2023

Institutions	Description of Institution and Services Offered
Northern Ontario	
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	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 a business, developing a clientele, resources for office space, obtaining funding, and programs for youth entrepreneurs.
Professional Association of Residents of Ontario	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 its 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. NTAB also has 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 No.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.

3.3.3.1 Apprenticeship and Skilled Trades

During an apprenticeship, students learn a skilled trade through on the job training and are paid for their work. In addition to the practical job experience, apprenticeships have an educational component where students learn from instructors who know the trade. This education generally takes place on a college campus or in a union training centre. For most trades, a person will work for about a year and then complete course work for eight to twelve weeks, either part-time or full-time. The duration of an apprenticeship varies depending on the trade, but usually takes between two to five years to complete (Government of Ontario 2022b).

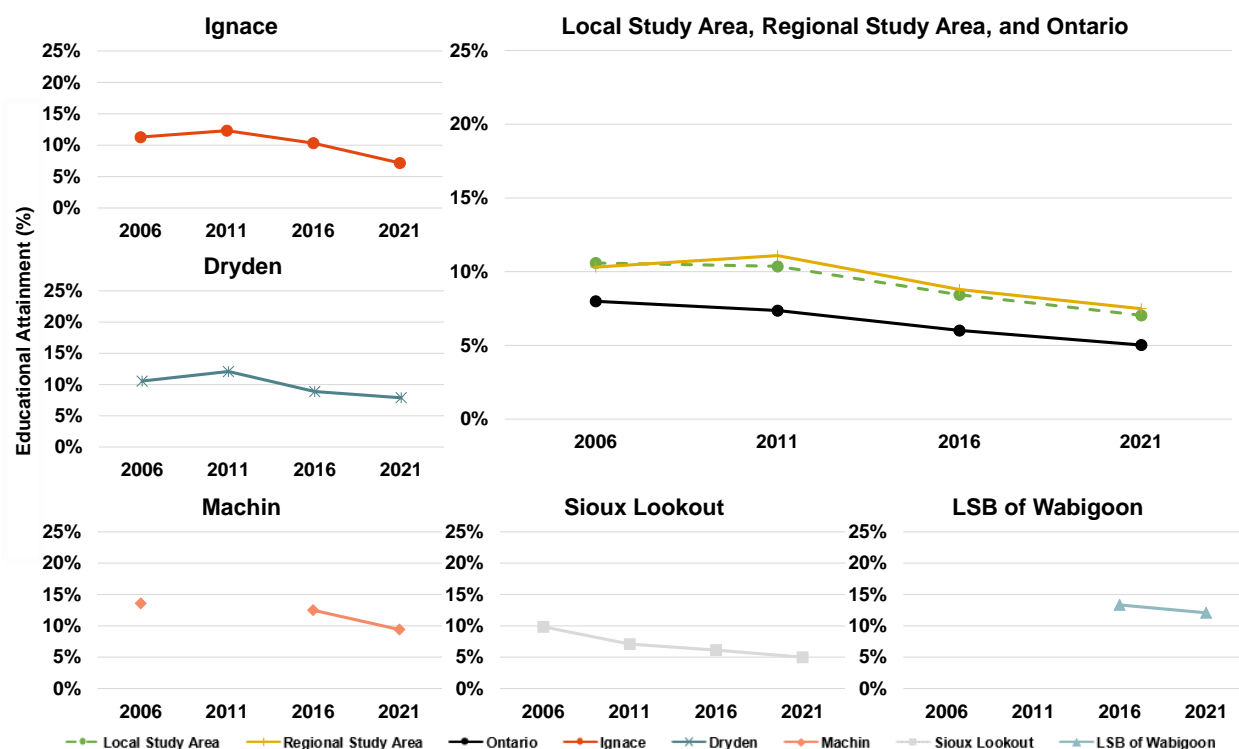
Several interview participants noted there are not enough contractors, and certain trades (e.g., electricians and plumbers) are scarce in Ignace and other Local Study Area communities. Given the current demand for skilled trades and local contractors for new housing development and home renovations, there is an excess demand for skilled trades and contractors in the Local Study Area (NWO Community and Baseline Studies Key Person Interview Program 2022).

Within the Regional Study Area, most apprenticeship courses can be taken at the Confederation College Thunder Bay campus but some trades, such as plumbing, are not offered and require residents to complete the course work in Winnipeg or another institution in Northern Ontario. Many trades, such as plumbing, require students to go to college in Northeast and Southern Ontario. The distance contributes to most students having to pay for living expenses away from home in addition to tuition (NWO Baseline Studies Key Person Interview Program 2022-2023). Within the Local Study Area, there are no apprenticeship courses offered at the Dryden or Sioux Lookout Confederation College satellite campuses. The need to travel to Thunder Bay, Winnipeg, or another community for apprenticeship courses could pose a barrier for some individuals.

In addition to the course work, students must find employers to provide work to obtain their hours towards completing each level of their apprenticeship. Some interview participants said it can be a challenge to find employers who are willing to take on apprentices unless they have some family or friend connection. This is partly due to a lack of ticketed skilled trades professionals looking to take on an apprentice and a lack of certain trade professionals in the area to engage for certain trades (e.g., carpenters, plumbers).

Figure 3.3-16 shows the proportion of the population 15 years and older with an apprenticeship or trades certificate or diploma for the Local Study Area, Regional Study Area, Ontario, and Local Study Area communities from 2006 to 2021.

Figure 3.3-16: Proportion of Population with Apprenticeship or Trades Certificate in the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

The proportion of the population with an apprenticeship or trades certificate or diploma has decreased in all regions and Local Study Area communities since 2006. A higher proportion of the population has an apprenticeship or trades certificate or diploma in both the Local and Regional Study Areas compared to Ontario as a whole. However, the proportion of the population with an apprenticeship or trades certificate or diploma decreased in both the Local Study Area (from 10.6% in 2006 to 7.0% in 2021) and the Regional Study Area (from 10.3% in 2006 to 7.5% in 2021).

Notable trends in the attainment of an apprenticeship or trades certificate or diploma among Local Study Area communities are as follows:

- The proportion of individuals who have obtained an apprenticeship or trades certificate or diploma was highest in Machin at 13.6% in 2006 but decreased to 9.4% by 2021.
- The LSB of Wabigoon has the highest proportion of residents with an apprenticeship or trades certificate or diploma among Local Study Area communities at 12.1% in 2021 which decreased from 13.3% in 2016.
- Sioux Lookout has the lowest proportion of the population with an apprenticeship or trades certificate or diploma at 5.0% in 2021 which decreased from 9.8% in 2006.
- The proportion of the population with an apprenticeship or trades certificate or diploma was 7.2% in Ignace and 7.9% in Dryden, both of which declined slightly since 2006.

One of the largest challenges is attracting people into the skilled trades. Some of the primary reasons include distance to educational institutions, employers' willingness to take on apprentices, and financial costs associated with tuition, travel costs, and living accommodations while away (NWO Baseline Studies Key Person Interview Program 2022-2023). One interview participant noted that it has been discussed among residents in the Local Study Area that if a trade school was available to accommodate multiple trades in the region, it would be at capacity (NWO Baseline Studies Key Person Interview Program 2022-2023). Another interview participant noted that in some instances parents do not encourage their children to pursue a skilled trade and prefer their children obtain other education and training (NWO Community and Baseline Studies Key Person Interview Program 2022).

When the Mattabi mine was operating, Mattabi would encourage people to go to school and provide work experience to obtain their apprenticeship hours. Local employers in the forestry sector who take on apprentices noted it was something they previously engaged in more frequently and would consider doing again (NWO Community and Baseline Studies Key Person Interview Program 2022). Another measure to increase apprenticeships suggested by some interview participants would be to offer a sponsorship program that pays for tuition if students complete the required courses and work hours (NWO Community and Baseline Studies Key Person Interview Program 2022). It was also noted that the current apprenticeship system and processes must be reviewed to improve affordability and accessibility for youths in Northern Ontario (NWO Baseline Studies Key Person Interview Program 2022-2023). Currently, the grant and loan programs available do not align with cost of living expenses and the financial burden of loans adds to the barriers for those who are interested in attending university or entering a trade program (NWO Baseline Studies Key Person Interview Program 2022-2023).

Recent efforts made by Keewatin Patricia District School Board for the Ontario Youth Apprenticeship Program included hiring Upriver Media Inc. to make a video series highlighting alumni from the Keewatin Patricia District School Board schools working in skilled trades. Other programs include Women in Trades and Indigenous Students in Trades, where a girls-only welding course with a female Red Seal welder was held and a video series with all Indigenous female leads were shared with students (NWO Community and Baseline Studies Key Person Interview Program 2022).

3.3.3.2 Entrepreneurship

Entrepreneurship can generate economic empowerment and can begin at any age. New small businesses play a pivotal role in competition in emerging sectors and are critical for economic development and innovative capacity (Ribeiro-Soriano 2017). In 2016, small businesses accounted for 41.9% of Gross Domestic Product ("GDP") generated by the private sector (Government of Canada 2020). 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 across Canada (Government of Canada 2020). Small- and medium-sized businesses contributed to 85% of net job creation in the first two years of recovery following the 1981, 1990, and 2008 recessions (MDB Insight 2011). This demonstrates the importance of encouraging entrepreneurship for local economic sustainability.

Table 3.3-5 summarizes organizations that provide entrepreneurial supports in the Local Study Area and Northern Ontario.

Table 3.3-5: Entrepreneurial Organization in the Local Study Area and Regional Study Area, 2023

Organization	Location	Services Offered
Patricia Area Community Endeavors	Dryden	<p>PACE provides business counselling and support, loans, non-profit funding, mentorship, and a small business incubator program (PACE n.d.a).</p> <p>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).</p>
Futurepreneur Canada	Available online	<p>Non-profit organization which supports business owners in the age range of 18-39 years old.</p> <p>Provides financing, mentoring, and supports including online resources and pre-launch coaching (Futurepreneur n.d.).</p>
FedNor - Federal Economic Development Initiative for Northern Ontario	Northern Ontario, available online	<p>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).</p>
Shooniyaa Wa-Biitong	Kenora and Fort Frances	<p>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 n.d.).</p> <p>Shooniyaa Wa-Biitong also offers a self-employment program which is designed to help support entrepreneurs with a small business start-up.</p>
Northwest Business Centre	Kenora	<p>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).</p> <p>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).</p>

Table 3.3-5 Continued: Entrepreneurial Organization in the Local Study Area and Regional Study Area, 2023

Organization	Location	Services Offered
Summer Company	Thunder Bay	The Summer Company Program is for young entrepreneurs aged 15-29 years old who are returning to school in the fall. Provides up to a \$3,000 grant to help start a business and will also provide business coaching and mentoring from local community business leaders (Thunder Bay CEDC n.d.).
Northern Ontario Angels	Sudbury	Northern Ontario Angels is an organization where northern Ontario entrepreneurs can look to grow their capital and help entrepreneurs find investors to help the entrepreneurs grow (NOA 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 (NWO 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 are 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 generate a business idea with the guidance of counselors and run their business during the last day of the camp (NWO Innovation n.d.b). The TechKids Program provides youths with 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, 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).

There are no organizations specifically providing supports to entrepreneurs in Ignace, but the Ignace and Area Business Association holds public monthly meetings to facilitate business development discussions and networking. PACE also offers services remotely to Ignace and other communities in the Local Study Area, with the nearest office being in Dryden (NWO Community and Baseline Studies Key Person Interview Program 2022). Ignace, Dryden, Machin, and Sioux Lookout each have set goals to support local businesses and entrepreneurs (Millier Dickinson Blais 2015; Machin 2017; Ignace 2019; Sioux Lookout 2019). Sioux Lookout's Community Improvement Plan discusses lobbying public and private sectors to invest and support local entrepreneurs.

The youth workshop and key person interviews indicated there is not a strong sense of youth entrepreneurship in the Local Study Area. Some participants noted entrepreneurship is more often pursued either in the later stages of youth after completing a postsecondary education, or as part of adulthood (Youth Workshop 2022; NWO Community and Baseline Studies Key Person Interview Program 2022).

3.3.4 Summary of Labour Force Skills and Training

Within the Local Study Area there are four high schools. In the Local Study Area, postsecondary educational institutes include: two Confederation College satellite campuses located in Dryden and Sioux Lookout, the Sioux Lookout Mining Centre of Excellence, and Seven Generations Educational Institute with satellite campuses located in Dryden and Sioux Lookout. The Regional Study Area for postsecondary educational institutions extends to Winnipeg and Northern Ontario and includes several universities and colleges with a wide variety of programs.

The educational attainment of the Local and Regional Study Areas and Local Study Area communities has improved since 2006. There are more people who complete a high school or equivalent or postsecondary education as their highest level of education. There is a lower proportion of the population with a high school or equivalent or postsecondary education as their highest level of education compared to the Local Study Area and Ontario. This is due to a large proportion of Indigenous peoples who do not have a high school or equivalent compared to non-Indigenous peoples. When only examining non-Indigenous peoples, educational attainment is similar between the Local Study Area, Regional Study Area, and Ontario.

Within the Local Study Area communities, educational attainment of a postsecondary education is highest in Sioux Lookout and Dryden and lowest in Ignace and the LSB of Wabigoon. For Ignace, this is partially attributed to a large proportion of the population who are seniors without a high school or equivalent.

For the Local Study Area, Regional Study Area, Ontario, and all Local Study Area communities, of the population who have completed a postsecondary education, a large proportion have completed a program in business, management, and public administration; architecture, engineering, and related trades; or health and related fields. These trends are consistent for both Indigenous and non-Indigenous peoples.

Within the Local Study Area and Regional Study Area there are many entrepreneurial support organizations and workforce development organizations for access to training opportunities and programs. Some of the workforce development organizations offer training opportunities and programs for the skilled trades. The educational attainment of skilled trades has decreased for each of the Local Study Area communities, the Regional Study Area, and Ontario. The lack of available and willing skilled tradespeople with a ticket to take on an apprentice could be attributed to this decline, but there are likely several factors contributing to the overall decrease in uptake of skilled trades. Interview participants from the Local Study Area and Regional Study Area indicated some of the primary reasons include distance to educational institutions, lack of employers willing to take on apprentices, and financial costs associated with tuition, travel costs, and living accommodations while away (NWO Baseline Studies Key Person Interview Program 2022-2023). Currently, the grant and loan programs available do not align with cost of living expenses and the financial burden of loans adds to the barriers for those who are interested in attending university or entering a trade program (IAWG March 03, 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

Key person interviews and the youth workshop identified the lack of local education and training institutions as a barrier to employment for youths. There are no universities within the Local Study Area, and training for skilled trades and other employment often requires travel within or beyond the Local Study Area. As there is no guarantee of employment within their chosen field, many youths do not return to their home communities after pursuing postsecondary education (NWO Community and Baseline Studies Key Person Interview Program 2022). Youth also have concerns about the financial burden associated with postsecondary 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 Key Person Interview Program 2022).

3.4 ECONOMIC BASE

3.4.1 Overview and Approach

Economic base refers to the key industries and sectors that generate income and jobs in a community or region. A strong and diverse economic base can help provide stability and resiliency to a community or regional economy. This section describes and quantifies the contribution of major industries to the local and regional economy. Major employers and local businesses that provide goods and services relevant to the Project are also described.

Quantitative indicators reviewed in this section include:

- Employment by sector as defined by North American Industry Classification System for the labour force ages 15 years and older;
- Output and wages by industry are described for the Regional Study Area; and
- Gross Domestic Product, by industry is summarized for Ontario but are not available at the Census Division or Census Subdivision level.

Employment is classified by industry sector according to the North American Industry Classification System ("NAICS") which is used by statistical agencies in Canada, United States, and Mexico. The classification of employment by industry sectors relates to the general type of work carried out by a business where a person works (Statistics Canada 2022a). Employment by industry statistics are disaggregated by sex (or gender for 2021 data), age, and Indigenous identity, where available and of sufficient robustness. Sustainability is considered through a review of historical trends and industry diversity.

A local business inventory was developed that summarizes businesses involved in primary industries (e.g., mining and forestry), businesses which provide essential services to the local population and visitors (e.g., food services, accommodations, construction), and businesses which provide tourist related services in the Local Study Area. The business inventory relies on information from local business development associations, chambers of commerce, town, municipal, and Indigenous business directories.

An inventory of local business development associations and chambers of commerce is presented for Ignace, Dryden, the Municipality of Machin, Sioux Lookout, and other regional associations relevant to the Local Study Area. GBA+ and sustainability considerations are described qualitatively, relying on primary data collected through key person interviews.

Employment by sector is summarized in detail for the mining, forestry, health care and social assistance, and tourism sectors. Mining and forestry have historically been important industries to Local Study Area communities. The healthcare and social assistance industry represents the largest share of employment in the Local Study Area. Tourism has become increasingly important to the economies of Local Study Area communities and was identified as an important sector in community strategic plans, key person interviews, and working groups.

Tourism activity is documented and quantified based on the prevalence of visits to the region using the Travel Survey of Residents of Canada, for details on visits to region, purpose of trip,

type of accommodation, and expenditures. Qualitative aspects of tourism in the region, such as description of outfitters and lodges, and trail-keeping organizations is provided in **Section 2.0 Social Cultural**.

The future Impact Assessment will provide details on business opportunities related to the Project in the Local and Regional Study Areas, including for Indigenous communities and Indigenous-owned businesses.

The Regional Study Area for economic base includes the Kenora, Rainy River, and Thunder Bay District Census Divisions. Comparable statistics for Ontario are provided as available to provide context. The Local Study Area for economic base includes the Township of Ignace, City of Dryden, Municipality of Machin, the Municipality of Sioux Lookout, and, to the extent information is available, the LSB of Wabigoon, the LSB of Melgund (Dyment and Borups Corners), and the unincorporated community of Dinorwic.

Travel and tourism data is available for Tourism Region 13c, which is spatially analogous to the Northwestern Ontario Economic Region and the Regional study area. Tourism regions are defined by Ontario's Ministry of Tourism, Culture and Sport Industries.

Temporal boundaries for the economic base extend to the 2006 Census, as available, to provide consistency with the employment and income analysis. For tourism, the National Travel Survey is not comparable to previous surveys (e.g., Travel Survey of Residents of Canada 2005-2017) and only extends back to 2018.

Temporal boundaries for the inventory of local businesses, and business development associations, are restricted to the businesses and industries operating in the region as of the time of writing this report in 2023 or the most current publicly available information.

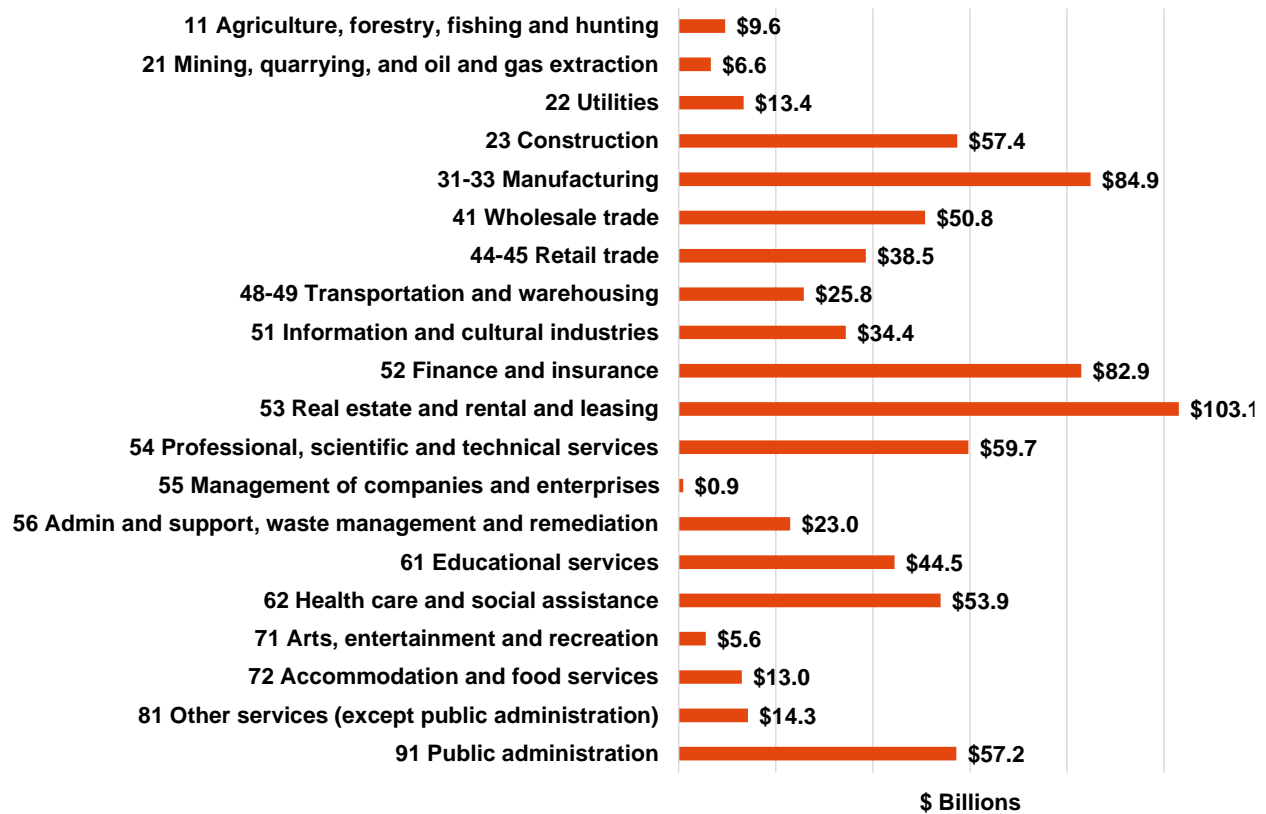
Information on the spatial boundaries, temporal boundaries, and data collection for economic base is provided in **Section 3.1**.

3.4.2 Industry

Understanding economic activity by industry can provide insight into the health of different sectors of the economy. Analyzing trends in employment and other economic indicators across different industries can identify areas of growth or decline and help inform policy decisions and investments.

Figure 3.4-1 shows the GDP by industry for Ontario in 2022.

Figure 3.4-1: GDP (\$ Billions) by Industry for Ontario, 2022¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

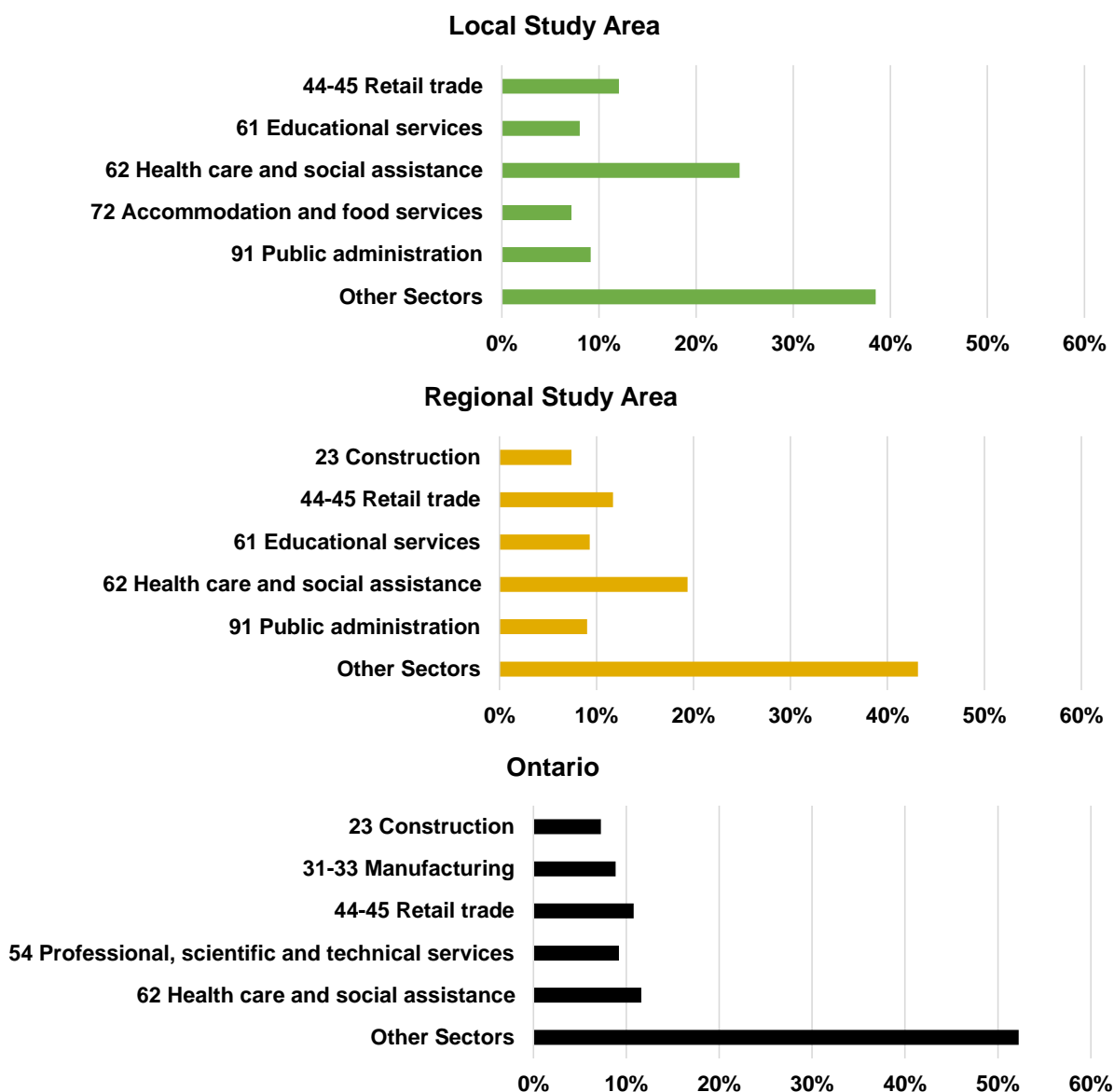
Notes:

1. Data for GDP are not available for the Regional Study Area or Local Study Area.

In Ontario, the industries which contribute the most to GDP are real estate, rental, and leasing (\$103.1 billion), manufacturing (\$84.9 billion), and finance and insurance (\$82.9 billion). The three industries which have the smallest direct contribution to GDP are management of companies and enterprises (\$0.9 billion), arts, entertainment, and recreation (\$5.6 billion), and mining, quarrying, and oil and gas extraction (\$6.6 billion).

Figure 3.4-2 shows the proportion of employment in the top five industries for the Local Study Area, Regional Study Area, and Ontario in 2021.

Figure 3.4-2 Employment by Industry for the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund and Dinorwic for 2021.

The health care and social assistance and retail trade sectors are among the largest employers in all of the regions. For the Local and Regional Study Areas, employment in the largest five industries represents over 60% of the labour force, compared to about 50% for Ontario. Notable highlights in the share of employment by industry for the Local Study Area, Regional Study Area, and Ontario are as follows:

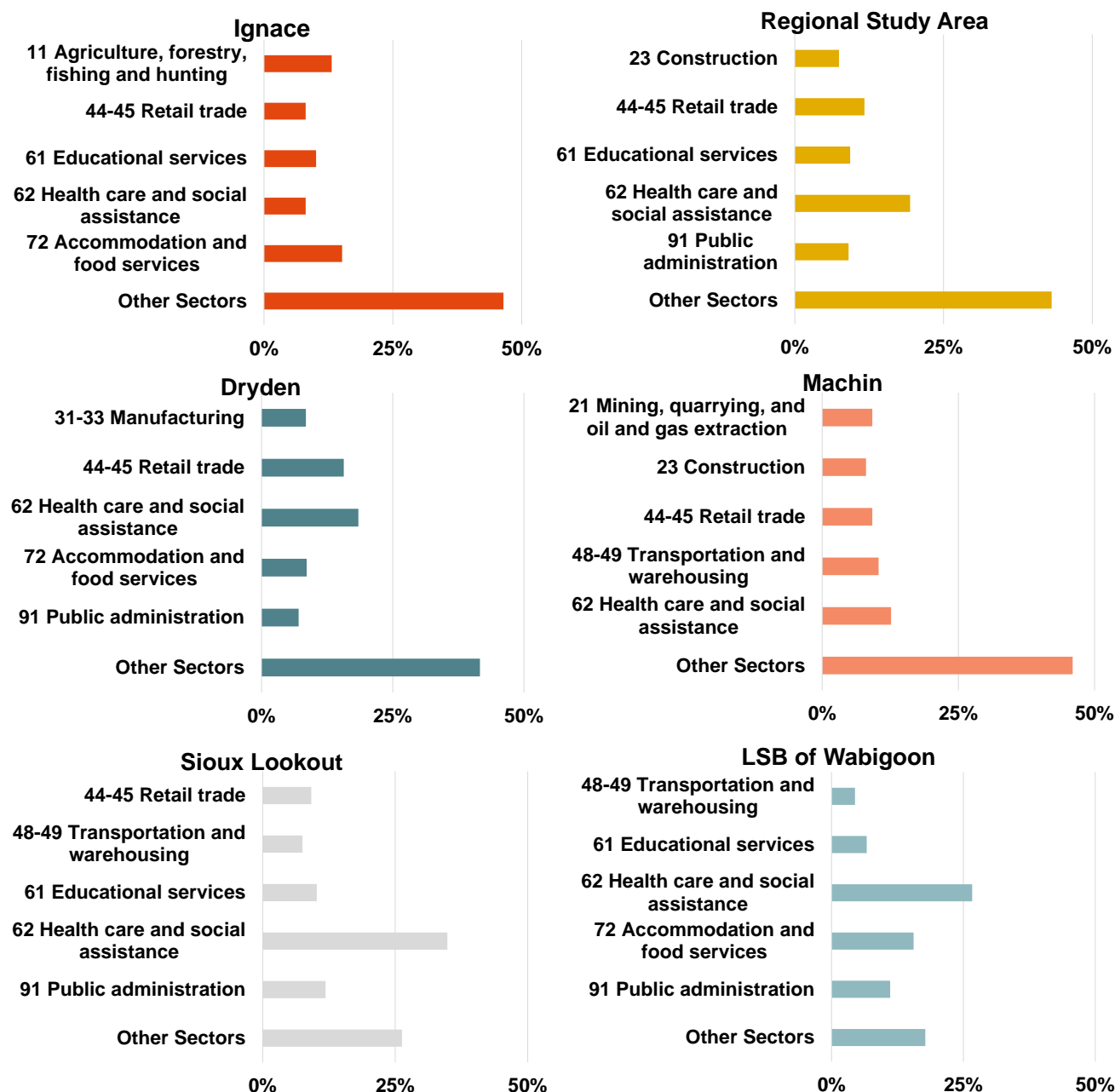
- The healthcare and social assistance industry represent the largest share of employment in the Local Study Area (24.5%), Regional Study Area (19.4%), and Ontario (11.6%) in 2021.
- Retail trade represents the second largest share of employment in the Local Study Area (12.1%), Regional Study Area (11.7%), and Ontario (10.8%) in 2021
- In the Local Study Area, public administration (9.1%) represents the third largest share of employment in 2021.
- In the Regional Study Area, educational services (9.3%) represent the third largest share of employment in 2021.
- In Ontario, professional, scientific, and technical services (9.2%) represent the third largest share of employment in 2021.

A key person interview identified that the main economic drivers in Northwest Ontario are regional offices, mining, forestry, pulp and paper sawmills, and healthcare (NWO Community and Baseline Studies Key Person Interview Program 2022).

In the Local Study Area, some of the largest local employers are involved in forestry (see **Section 3.4.4**) but many of the jobs are included in transportation and warehousing, and manufacturing industries. This is because many positions with pulp and paper mills require employees to drive trucks or work on a production line. Many industries in the Local and Regional Study Areas struggle to acquire skilled labour to fill available positions. During key person interviews, several mining and forestry firms in the Local Study Area noted that recruiting for skilled trades positions was difficult and they have brought in labourers from Manitoba and Quebec (NWO Community and Baseline Studies Key Person Interview Program 2022). There is also difficulty recruiting non-skilled labour positions, as people are not as willing to engage in physically demanding labour despite the high wages. Key person interviews noted there is competition in recruiting both skilled and unskilled labourers (NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 3.4-3 shows the proportion of employment in the top five industries for the Local Study Area communities and the Regional Study Area in 2021.

Figure 3.4-3: Employment by Industry for the Local Study Area Communities and Regional Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund and Dinorwic for 2021.

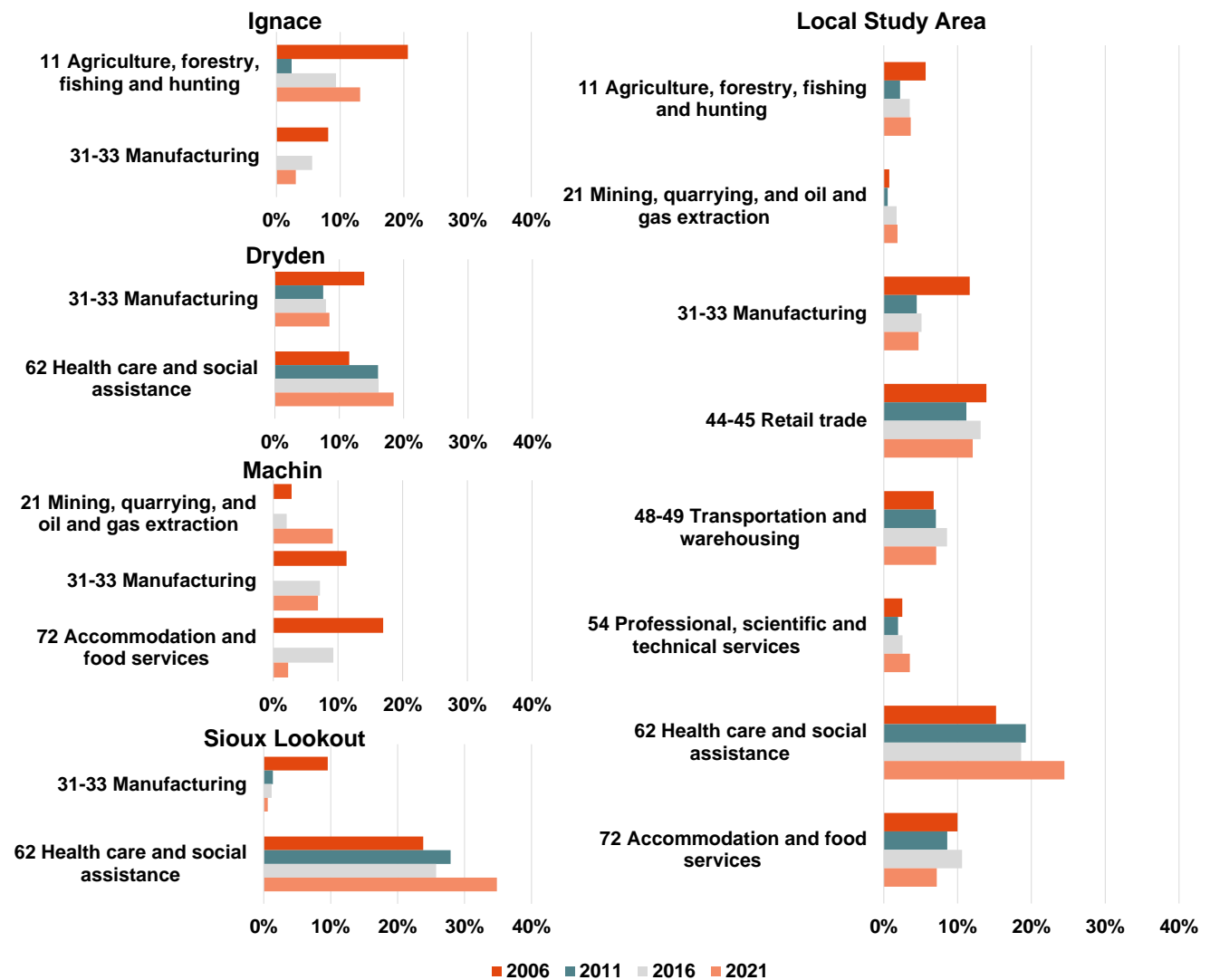
In each of the Local Study Area communities, the share of employment in the health care and social assistance and retail trade sectors represents one of the top five industries the respective labour forces are employed in. Employment in the largest five industries represents over 50% of the labour force in all of the Local Study Area communities. Notable highlights in the share of employment by industry for the Local Study Area communities are as follows:

- Health care and social assistance represent the largest share of employment in the Regional Study Area (19.4%), Dryden (18.4%), Machin (12.6%), Sioux Lookout (34.8%), and the LSB of Wabigoon (26.7%) in 2021. The proportion of employment in the health and social assistance sector in Sioux Lookout is the largest across all the Local Study Area communities. Ignace is the only community where the healthcare and social assistance industry does not represent the industry with the largest share of employment.
- In Ignace, the accommodation and food services (15.2%) industry represent the largest share of employment in 2021. Ignace is the only Local Study Area community where the agriculture, forestry, fishing, and hunting industry is one of the top five largest share of employment in 2021. The agriculture, forestry, fishing, and hunting (13.1%) industry represents the second largest share of employment followed by the educational service (10.1%) industry.
- In Dryden, retail trade (15.7%) and accommodation and food services (8.6%) represent the second and third largest share of employment in 2021, respectively.
- In Machin, transportation and warehousing (10.3%) and retail trade (9.2%) represent the second and third largest share of employment in 2021, respectively.
- In Sioux Lookout, public administration (11.9%) and educational services (10.2%) represent the second and third largest share of employment in 2021, respectively.
- In the LSB of Wabigoon, accommodation and food services (15.6%) and retail trade (11.1%) represent the second and third largest share of employment in 2021, respectively.

Dryden is a unique community given it has a substantial number of people living in the unincorporated areas surrounding Dryden (Noga 2021), which although captured in the Regional Study Area do not reflect their proximity to Dryden itself. This fringe population for Dryden, as described in **Section 2.2.2.2** is not included in Census employment data but represented a meaningful proportion of the local workforce including employees at major employers such as Domtar, Dryden Regional Health Centre, Kenora District Services Board, Keewatin Patricia District School Board, City of Dryden, Ministry of Natural Resources and Forestry). Additionally, people who work and live in Dryden seasonally would not necessarily be counted.

Figure 3.4-4 shows the proportion of employment by industries for the Local Study Area and notable trends in Local Study Area communities, from 2006 to 2021. The selected industries correspond to sectors which are economic drivers and relevant to the major employers in the Local Study Area. Forestry operations are captured by the agriculture, forestry, fishing, and hunting; manufacturing; and transportation and warehousing industries, and mining operations are captured by mining, quarrying, and oil and gas extraction; and professional, scientific, and technical services industries.

Figure 3.4-4: Trends in Employment by Industry for the Local Study Area, Ignace, Dryden, Machin, and Sioux Lookout, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

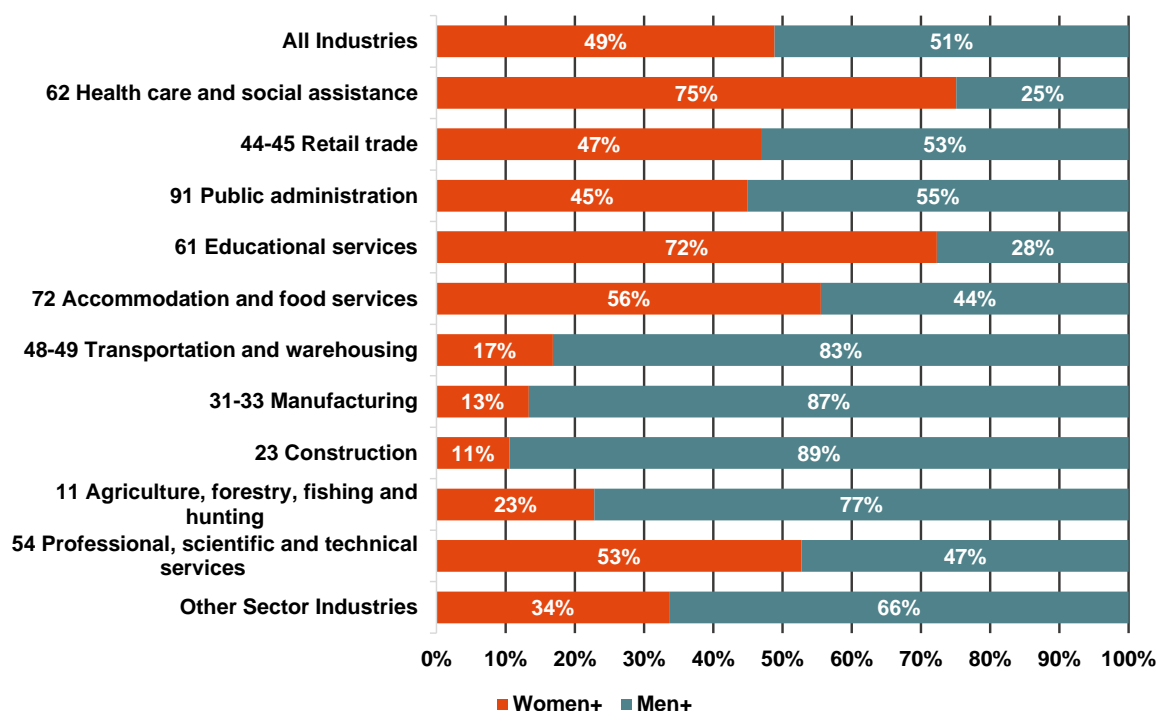
1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

There was a material increase in the share of employment in the Local Study Area in the healthcare and social assistance industry from 15.2% in 2006 to 24.5% in 2021. There was also a material decrease in the share of employment in the manufacturing industry in the Local Study Area from 11.6% in 2006 to 4.7% in 2021. Jobs at pulp and paper mills involving working on a production line are classified as manufacturing industry jobs. Paper machines at Domtar were shut down in 2005 and 2008 which contributed to the decline in the manufacturing sector over this period (Northern Ontario Business 2008; NWO Community and Baseline Studies Key Person Interview Program 2022). Notable trends in employment in the Local Study Area communities reflect some of the trends observed in the Local Study Area:

- The share of employment in the manufacturing industry declined in Ignace, Dryden, Machin, and Sioux Lookout. The largest decline occurred in Sioux Lookout where in 2006 it represented 9.6% of employment but represents only 0.5% in 2021.
- In Ignace, there was a large decrease in the share of employment in the agriculture, forestry, fishing, and hunting industry from 20.6% in 2006 to 2.3% in 2011, but has since recovered to 13.1% in 2021. The decline in the share of employment from 2006 to 2011 has been attributed to the contraction of the forestry industry through the closure of paper machines around 2008 and the closure of Resolute Forest Products in 2006 (Resolute Forest Products 2022; NWO Community and Baseline Studies Key Person Interview Program 2022). The increase since 2011 is likely related to two of the largest private sector employers in Ignace being involved in forestry (See **Section 3.4.3**).
- The increase in the share of employment in the healthcare and social assistance industry for the Local Study Area is driven by material increases of employment in the industry in Sioux Lookout from 23.8% in 2006 to 34.8% in 2021 and in Dryden from 11.5% in 2006 to 18.4% in 2021.
- In Machin, there was a material decline in the share of employment in the accommodation and food service industry from 17.0% in 2006 to 2.3% in 2021. This is primarily attributed to a popular restaurant and convenience store that burned down and another which shut down over the previous several years (NWO Community and Baseline Studies Key Person Interview Program 2022). Another notable trend in Machin is the increase in the share of employment in the mining, quarrying, and oil and gas extraction industry from 2.8% in 2006 to 9.2% in 2021.

Figure 3.4-5 shows the distribution of employment by industry and gender in the Local Study Area in 2021. The figure shows the employment distribution by gender for the top 10 largest industries, for all industries, and the other industries which are not plotted. The top 10 largest industries are plotted in descending order by number of employees.

Figure 3.4-5: Distribution of Employment by Industry and Gender in the Local Study Area, 2021¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Melgund and Dinorwic for 2021.

In the Local Study Area, total employment is relatively evenly distributed between men and woman across all industries. However, the gender distribution within individual sectors is less balanced. Women represent over 70% of employment in the educational services (72%) and health care and social assistance (75%). Men represent over 70% of employment in the transportation and warehousing (83%), manufacturing (87%), construction (89%), and agriculture, forestry, fishing, and hunting (77%) industries. The five largest industries in the Local Study Area in 2021 are as follows:

1. Health care and social assistance (75% women);
2. Retail trade (53% men);
3. Public administration (55% men);
4. Educational services (72% women); and
5. Accommodation and food services (56% women).

There is considerable variation in the representation of men and women in some of the industries within the Local Study Area. Women represent a large proportion of employment in health care and social assistance and educational services. Health care and caregiving is sometimes perceived as feminine given the high proportion of women working in the sector (Davidson et al. 2022). Men in nursing sometimes face discrimination from patients and staff due to assumptions that women are better suited for these types of jobs (Davidson et al. 2022). Men in the education sector sometimes experience similar stereotypes.

Mining, forestry, manufacturing, and construction have typically employed many more men than women. A number of initiatives have been undertaken to increase the participation of women in these industries. Initiatives in the Local Study Area include women-only welding classes at local high schools and a video series of Indigenous women working in different trades (NWO Community and Baseline Studies Key Person Interview Program 2022). There has been a 92% increase in the representation of women in mining, quarrying, and oil and gas extraction from 2006 to 2021 (from 255 to 490 women) (see **Appendix 3B**).

Women make up nearly half of the students at the Sioux Lookout Mining Centre of Excellence and 48% of the Treasury Metals workforce (NWO Community and Baseline Studies Key Person Interview Program 2022). Forestry companies in the area generally have less than 30% of staff who are women but are trying to increase their representation (NWO Community and Baseline Studies Key Person Interview Program 2022).

Table 3.4-1 show the number of businesses, jobs, average number of jobs, total wages, and revenues by industry for the Regional Study Area in 2020. Only businesses which have at least one employee are reported, which excludes people who are self-employed but have no employees. For example, many people in the real estate, rental, and lease industry have a business with no employees. Average annual jobs are inclusive of both full- and part-time jobs and are counted equally. Jobs do not include self-employed workers. By treating full- and part-time jobs equally this could result in a shift in jobs if multiple part-time jobs replace a full-time job. The industries presented are ones which have historically provided a large proportion of jobs in the Local Study Area and are likely to be impacted by a large influx of people if the Project is sited in the WLON-Ignace area.

Table 3.4-1: Business Characteristics (\$Millions) by Industry in the Regional Study Area, 2020^{1,2,3}

	Businesses	Jobs	Average Number of Jobs	Wages	Revenues
Agriculture, forestry, fishing, and hunting	257	2,117	8	\$77.5M	\$588.0M
Mining, quarrying, and oil and gas extraction	43	3,695	86	\$359.9M	\$3,040.9M
Construction	834	6,773	8	\$339.0M	\$1,600.6M
Manufacturing	178	4,126	23	\$253.9M	\$2,796.8M
Retail trade	964	12,069	13	\$308.3M	\$845.4M
Transportation and warehousing	349	4,853	14	\$260.1M	\$1,059.9M
Educational services	96	9,770	102	\$554.7M	\$1,059.5M
Health care and social assistance	798	21,708	27	\$1,032.2M	\$2,283.9M
Accommodation and food services	671	6,609	10	\$130.0M	\$509.7M
Public administration	136	15,254	112	\$866.6M	\$3,713.8M

Source: Canadian Business Patterns December 2020, retrieved using Lightcast 2022.3. Estimates prepared by Lightcast 2022.3 based on, Survey of Employment, Payrolls, and Hours for 2011, 2016, and 2020, Input Output Symmetric Tables for 2011, 2016, and 2020, Census of Population for 2011 and 2016, and the Labour Force Survey: for 2011, 2016, and 2020. Lightcast 2023b and 2023c. Retrieved June 12, 2023. See **Appendix 3B Supplemental Data**.

Notes:

1. Calculations and modelling of wages and sales were completed by using an input-output model. Number of businesses were sourced from the Canadian Business Patterns. InterGroup calculated the average number of jobs by taking the number of jobs per businesses.
2. Revenues are calculated as a measure from production. For margin industries (e.g., retail trade, wholesale trade) revenues are calculated as revenues less cost of goods sold.
3. Revenues for public industries (e.g., educational services, health care and social assistance, and public administration) reflects sources of revenue for the industry such as grants or public funding.
4. **Table 3.4-1** does not include self-employed persons. The Canadian Business Patterns Survey reports self-employed persons as a business with an indeterminate number of employees and is not included in the table as it would increase the number of businesses and not the number of jobs. This would distort the calculation of the average number of jobs per business. The Canadian Business Patterns Survey only reports businesses that are incorporated and have a minimum of \$30,000 in revenue. The Survey of Employment, Payrolls, and Hours, the Input Output Symmetric Tables, the Census of Population, and the Labour Force Survey do not report self-employed persons in the industry calculations for total jobs, wages, or revenues due to challenges associated with the tracking and reporting of earnings and income of self-employed persons.

In 2020, the five largest industries in the Regional Study Area by number of jobs were health care and social assistance, public administration, retail trade, educational services, and construction. Notable observations of business characteristics by industry include:

- Public administration had the largest number of revenues (\$3,713.8 million) and average number of jobs (112) among all industries in 2020. Despite having one of the largest number of jobs, public administration had less than 150 businesses.
- The number of businesses by industry ranges from 43 for mining, quarrying, oil and gas extraction industry to 964 for retail trade.

Table 3.4-2 shows the number of businesses, jobs, average number of jobs, total wages, and revenues by industry for the Local Study Area in 2020. Only businesses which have at least one employee are reported, which excludes people who are self-employed but have no employees. Average annual jobs are inclusive of both full- and part-time jobs and are counted equally. Jobs do not include self-employed workers. The industries presented are ones which have historically provided a large proportion of jobs in the Local Study Area and are likely to be impacted by a large influx of people if the Project is sited in the WLON-Ignace area.

Table 3.4-2: Business Characteristics (\$Millions) by Industry in the Local Study Area, 2020^{1,2,3,4}

	Businesses	Jobs	Average Number of Jobs	Wages	Revenues
Agriculture, forestry, fishing and hunting	31	700	8	\$16.4M	\$99.0M
Mining, quarrying, and oil and gas extraction	1	47	79	\$8.7M	\$44.0M
Construction	69	211	7	\$16.0M	\$75.5M
Manufacturing	7	1,290	48	\$23.5M	\$253.3M
Retail trade	96	1,633	15	\$34.4M	\$93.5M
Transportation and warehousing	44	702	18	\$38.9M	\$166.3M
Educational services	12	702	86	\$54.0	\$103.1M
Health care and social assistance	71	1,595	35	\$118.5M	\$262.2M
Accommodation and food services	79	1,145	12	\$17.7M	\$73.2M
Public administration	8	1,089	156	\$80.7M	\$335.4M

Source: Canadian Business Patterns December 2020, retrieved using Lightcast 2022.3. Estimates prepared by Lightcast 2022.3 based on, Survey of Employment, Payrolls, and Hours for 2011, 2016, and 2020, Input Output Symmetric Tables for 2011, 2016, and 2020, Census of Population for 2011 and 2016, and the Labour Force Survey: for 2011, 2016, and 2020. Lightcast 2023b and 2023c. Retrieved June 12, 2023. See **Appendix 3B Supplemental Data**.

Notes:

1. Calculations and modelling of wages and sales were completed by using an input-output model. Number of businesses were sourced from the Canadian Business Patterns. InterGroup calculated the average number of jobs by taking the number of jobs per businesses.
2. Revenues are calculated as a measure from production. For margin industries (e.g., retail trade, wholesale trade) revenues are calculated as revenues less cost of goods sold.
3. Revenues for public industries (e.g., educational services, health care and social assistance, and public administration) reflects sources of revenue for the industry such as grants or public funding.
4. **Table 3.4-2** does not include self-employed persons. The Canadian Business Patterns Survey reports self-employed persons as a business with an indeterminate number of employees and is not included in the table as it would increase the number of businesses and not the number of jobs. This would distort the calculation of the average number of jobs per business. The Canadian Business Patterns Survey only reports businesses that are incorporated and have a minimum of \$30,000 in revenue. The Survey of Employment, Payrolls, and Hours, the Input Output Symmetric Tables, the Census of Population, and the Labour Force Survey do not report self-employed persons in the industry calculations for total jobs, wages, or revenues due to challenges associated with the tracking and reporting of earnings and income of self-employed persons.

In 2020, the five largest industries in the Local Study Area by number of jobs were retail trade, health care and social assistance, manufacturing, accommodation and food services, and public administration. Notable observations of business characteristics by industry include:

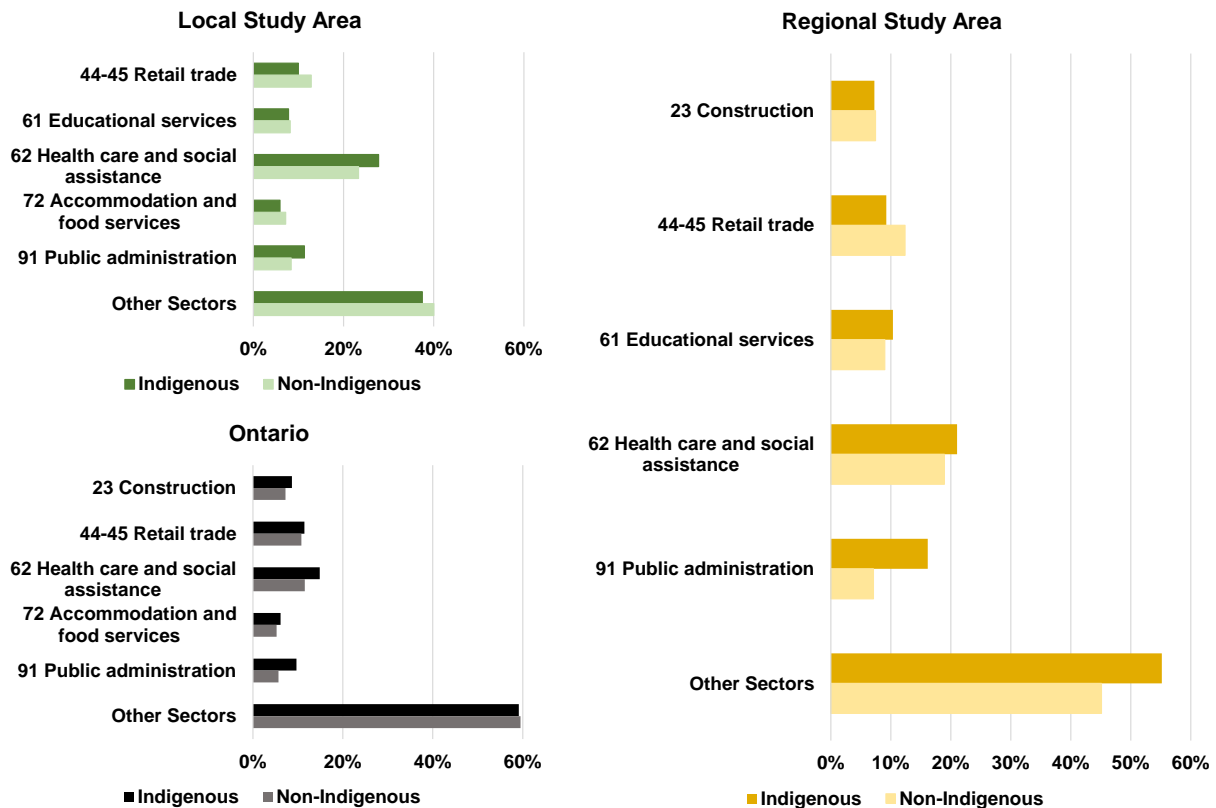
- Public administration had the largest number of revenues (\$335.4 million) and average number of jobs (156) among all industries in 2020. Despite having one of the largest number of jobs, public administration had less than 10 businesses.
- The number of businesses by industry ranges from one business for mining, quarrying, and oil and gas extraction to 96 for retail trade.

The largest industries by number of jobs, average number of employees, and total output are similar between the Local and Regional Study Area. There are also similarities in average annual wages by industry which are discussed in **Section 3.2.3**.

3.4.2.1 Indigenous Peoples

Figure 3.4-6 shows the distribution of employment by industry for Indigenous peoples and non-Indigenous peoples in the Local Study Area, Regional Study Area, and Ontario, in 2021. Employment in the five largest industry sectors represents over 60% of the employment of Indigenous peoples in the Local Study Area, Regional Study Area, and Ontario. Limitations associated with disaggregated Indigenous identity data are provided in **Section 3.1.2.1.1**.

Figure 3.4-6: Employment by Industry of Indigenous and non-Indigenous Peoples for the Local Study Area, Regional Study Area, and Ontario, 2021¹



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

1. Data were not available for the LSB of Wabigoon, LSB of Melgund, and Dinorwic for 2021.

Employment in the healthcare and social assistance industry represents the largest share of employment of Indigenous peoples in the Local Study Area (27.8%), Regional Study Area (21.0%), and Ontario (14.8%) in 2021. The share of Indigenous peoples employed in the healthcare and social assistance industry is larger than the share of non-Indigenous peoples for each region. There is only a slight variation between employment by industry of Indigenous peoples within the Local and Regional Study Areas and Ontario in 2021:

- Public administration is an important contributor to employment of Indigenous peoples for the Local Study Area (11.3%), Regional Study Area (16.2%), and Ontario (9.7%). A greater proportion of Indigenous peoples are employed in public administration than non-Indigenous peoples.
- Employment in retail trade represents one of the largest shares of Indigenous employment in the Local Study Area (10.0%), Regional Study Area (9.2%), and Ontario (11.4%). The

proportion of employment in retail trade for Indigenous peoples is slightly lower than the share of non-Indigenous peoples employed.

- In the Local Study Area, educational services (7.8%) represents one of the largest shares of employment of Indigenous peoples. This is slightly lower than the proportion of non-Indigenous peoples (8.2%) employed in the sector. There is also a notable proportion of Indigenous peoples employed in the accommodation and food services industry in the Local Study Area (5.9%).
- In the Regional Study Area, there is a notable proportion of Indigenous peoples employed in the educational services (10.4%) and construction (7.3%) industries. The share of employment of Indigenous peoples is similar to the share of employment of non-Indigenous peoples for each sector.
- In Ontario, the top five largest shares of employment by industry for Indigenous peoples are similar to both the Local and Regional Study Areas.

Dryden and Sioux Lookout are local service hubs and may have a number of non-residents visiting or working for periods throughout the year. Dryden, also has a large number of people living in the fringes of the City who primarily work in Dryden but may not be reflected in employment statistics in Dryden (NWO Baseline Studies Key Person Interview Program 2022-2023).

For the Local and Regional Study Area, the industries with the largest share of employment for the total population are the same for the Indigenous population (See **Figure 3.4.6**). One of the major barriers to employment for Indigenous peoples in the Local and Regional Study Areas is the lack of a high school certificate. The Truth and Reconciliation Commission's final report stated it is the responsibility of employers to ensure Indigenous peoples have equitable access to jobs, training, and educational programs (Truth and Reconciliation Commission of Canada 2015) (See **Section 3.3.3** and **Section 3.2.3.4**).

3.4.2.2 Tourism

Tourism plays an important role in the local and regional economies in Northwest Ontario. Tourism has been identified as an important economic driver for the Local Study Area communities. Ignace, Dryden, Machin, and Sioux Lookout each have strategic goals related to improving tourism and the beautification of the community (Millier Dickinson Blais 2015; Machin 2017; Ignace 2019; Sioux Lookout 2022).

Section 3.4.5 discusses economic development planning and goals, with most Local Study Area communities having a priority to promote tourism. In Northwest Ontario, sports and recreation (e.g., tournaments, fishing derbies, hiking), community events (more information is found in Section 2.3.5), Indigenous-related community and sporting events (e.g., local Pow Wows and hockey tournaments), fishing, hunting, and outfitters are key drivers of visits to the region and economic activity (NWO Community and Baseline Studies Key Person Interview Program 2022).

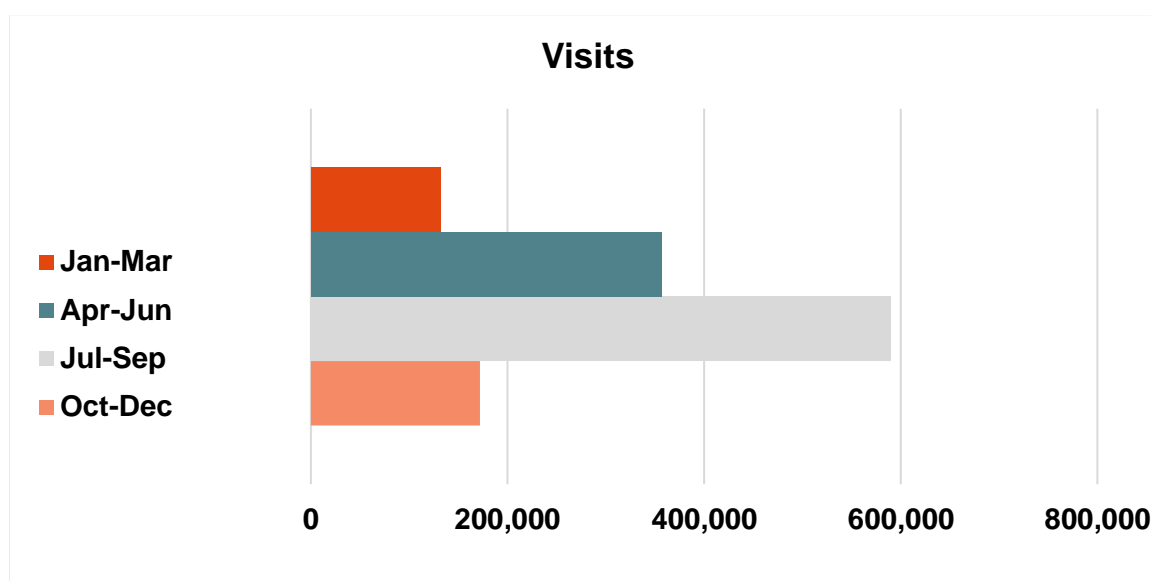
The Ministry of Tourism, Culture and Sport collects tourism data for Ontario Tourism Region 13c which coincides with the Northwest Ontario – Regional Study Area. The National Travel Survey reports on visits to Region 13c and the expenditures incurred during the trip. Also reported are the duration, occasion, and accommodations used during the trip. The survey reports on Canadian, domestic, and international traveler visits to Region 13c. A visit is classified as

travelling to another census subdivision, excluding flight layovers. For travelers from the United States, information on the number of trips is not reported due to lack of reliable data, but the Ministry of Tourism, Culture and Sport has begun reporting on the expenditures of U.S travelers.

Given the data does not include information on trip details of United States residents, the number of visits to Tourism Region 13c is slightly understated. Within the Local Study Area, a large majority of outfitter clientele are from the United States, with some outfitters estimating over 95% of their clientele are coming from the United States (NWO Baseline Studies Key Person Interview Program 2022-2023). Most outfitters in the Northwest charge in USD\$ given such a large proportion of their clientele are from the United States. During the COVID-19 pandemic, many outfitters were not open for operations due to their clientele being unable to cross the border (NWO Baseline Studies Key Person Interview Program 2022-2023).

Figure 3.4-7 shows the number of trips by Canadians and international travellers (excluding the United States) to Northwest Ontario in 2019, by quarter. Not included are trips where people are travelling to their primary residence or travelling by air with a layover in an airport in Northwest Ontario.⁵⁸

Figure 3.4-7: Visits to Northwest Ontario by Quarter, 2019¹



Source: Statistics Canada National Travel Survey 2019. See **Appendix 3B Supplemental Data**.

Notes:

1. Computations were completed by The Ontario Ministry of Tourism, Culture and Sport.

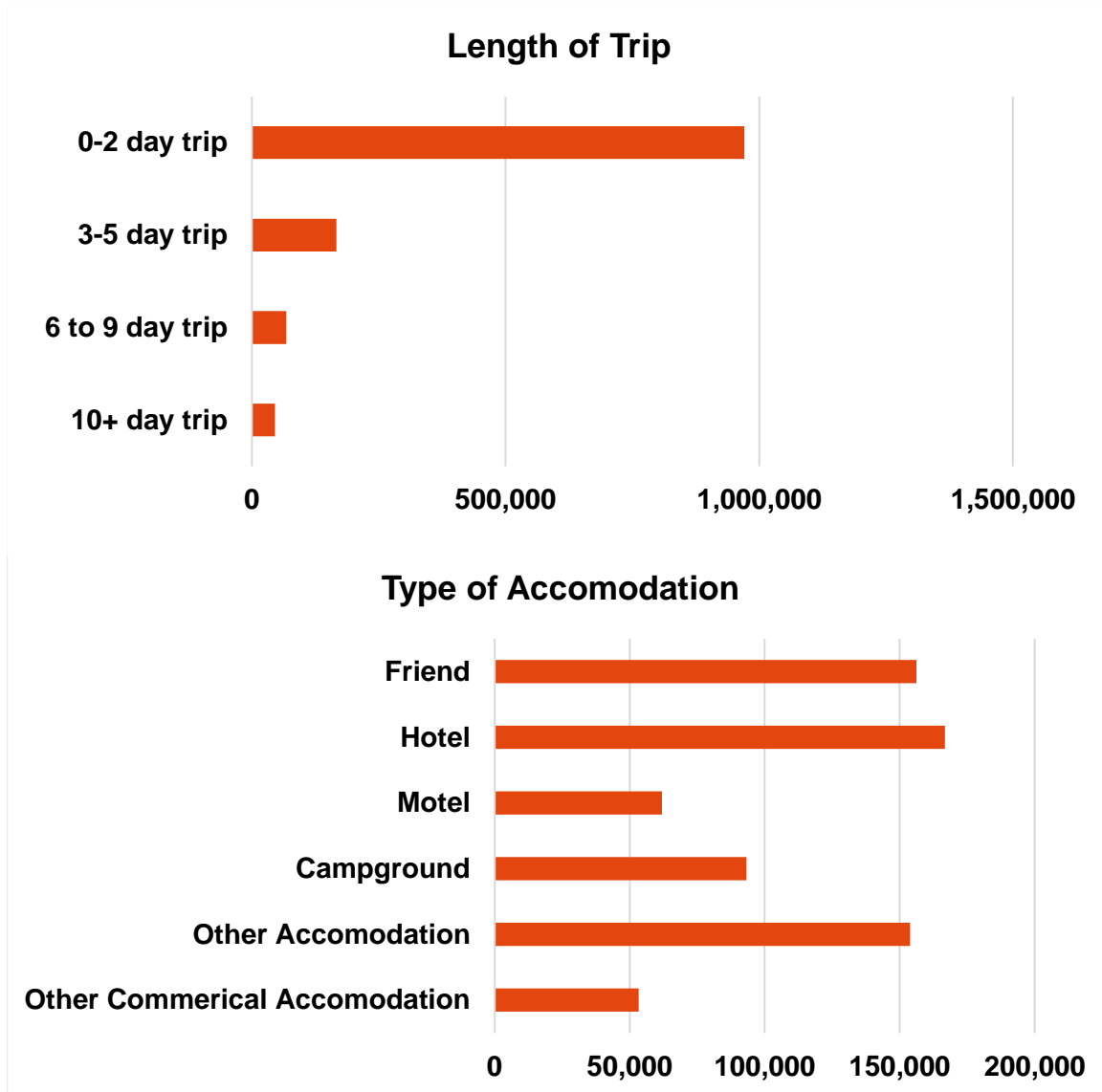
⁵⁸ The two classifications of trips not considered a visit are origin and air. Origin refers to travel to a primary address or within the same census division as their home address. A trip by air refers to travel by air where only a layover takes place in a certain tourism region.

In 2019 there were a total of approximately 1.25 million trips to Northwest Ontario, with most trips taking place in the summer months (quarter 3) from July to September (0.59 million). The fewest number of trips occurred during the winter from January to March (0.13 million). The large difference in trips between the first and third quarter is attributed to most outfitters closing in November after the hunting season is completed and not starting again until the spring. Similarly, fishing operations generally pick up in the spring after the lakes have thawed (NWO Baseline Studies Key Person Interview Program 2022-2023).

Figure 3.4-8 shows the duration of trips to Northwest Ontario and the accommodation used during their trip. Most trips to the Northwest were 0 to 2-day trips and the most common forms of accommodations were hotels, a friend's place, and other accommodations.⁵⁹

⁵⁹ Other accommodations include unpaid accommodations such as visits to a personal cabin.

Figure 3.4-8: Summary of Trips to Northwest Ontario, 2019¹



Source: Statistics Canada National Travel Survey 2019. See **Appendix 3B Supplemental Data**.

Notes:

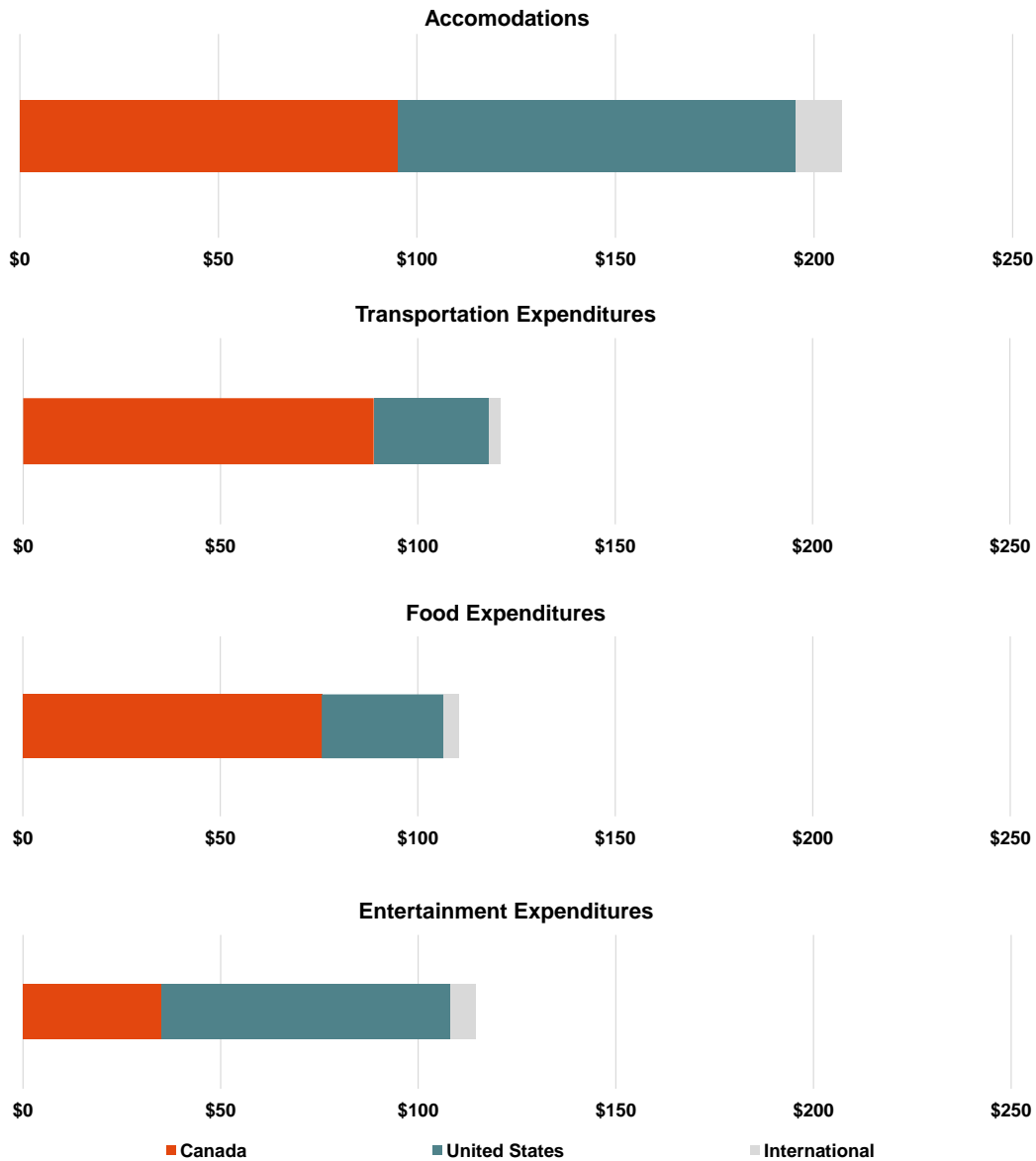
1. Computations were completed by The Ontario Ministry of Tourism, Culture and Sport.

In 2019, approximately 971,000 visits were 0 to 2-day trips and 166,000 visits were three to five-day trips. When visiting, people were most likely to stay at a hotel (167,000 visits), a friend's place (156,000 visits), or other accommodation (154,000 visits).

Understanding the length of visits and the types of accommodations provides insight on the nature of the visits. For example, shorter trips or staying with friends may result in lower expenditures on accommodations and restaurants or entertainment venues.

Figure 3.4-9 shows the breakdown of expenditures of visits to Northwest Ontario by Canadians, Americans, and international visitors. Total expenditures of all visits to the Northwest were approximately \$552.8 million, visits by Canadians totaled \$294.7 million, and visits by Americans totaled \$233.4 million.

Figure 3.4-9: Expenditures (\$ Millions) of Trips to Northwest Ontario for Canadians, Americans, and International Travelers, 2019¹



Source: Statistics Canada National Travel Survey 2019. See **Appendix 3B Supplemental Data**.

Notes:

1. Computations were completed by The Ontario Ministry of Tourism, Culture and Sport.

In 2019, total spending on visits to the Northwest was \$552.8 million. Expenditures for Canadians and Americans visiting the Northwest are similar for accommodation expenses but vary considerably for each of the other spending categories:

- Americans spent a larger amount compared to Canadians on expenditures related to accommodations and entertainment, recreation, leisure, and retail. All American visits to the Northwest totaled to approximately \$100.1 million in expenses related to accommodations and \$73.2 million in expenses related to entertainment, recreation, leisure, and retail. The expenses related to leisure and entertainment were over double the spending by Canadians (\$35.0 million).
- Canadians spent over double what Americans did on expenses related to transportation (\$88.8 million) and food (\$75.6 million).

Tourism in the Northwest is centered around the natural environment with some of the biggest attractions include sports, culture, and recreational tourism and fishing and hunting. A majority of the clientele of outfitters and camps are from the United States, with many camps closing down in 2020 and 2021 during the pandemic due to travel restrictions (NWO Baseline Studies Key Person Interview Program 2022-2023). The data on expenditures confirms the importance of American travelers to the Northwest given the large amount of spending related to accommodations and entertainment, recreation, leisure, and retail. It is important for outfitters, camps, and other tourist organizations to build the domestic market given the current reliance on American customers and the effects border closures can have on the industry (NWO Baseline Studies Key Person Interview Program 2022-2023).

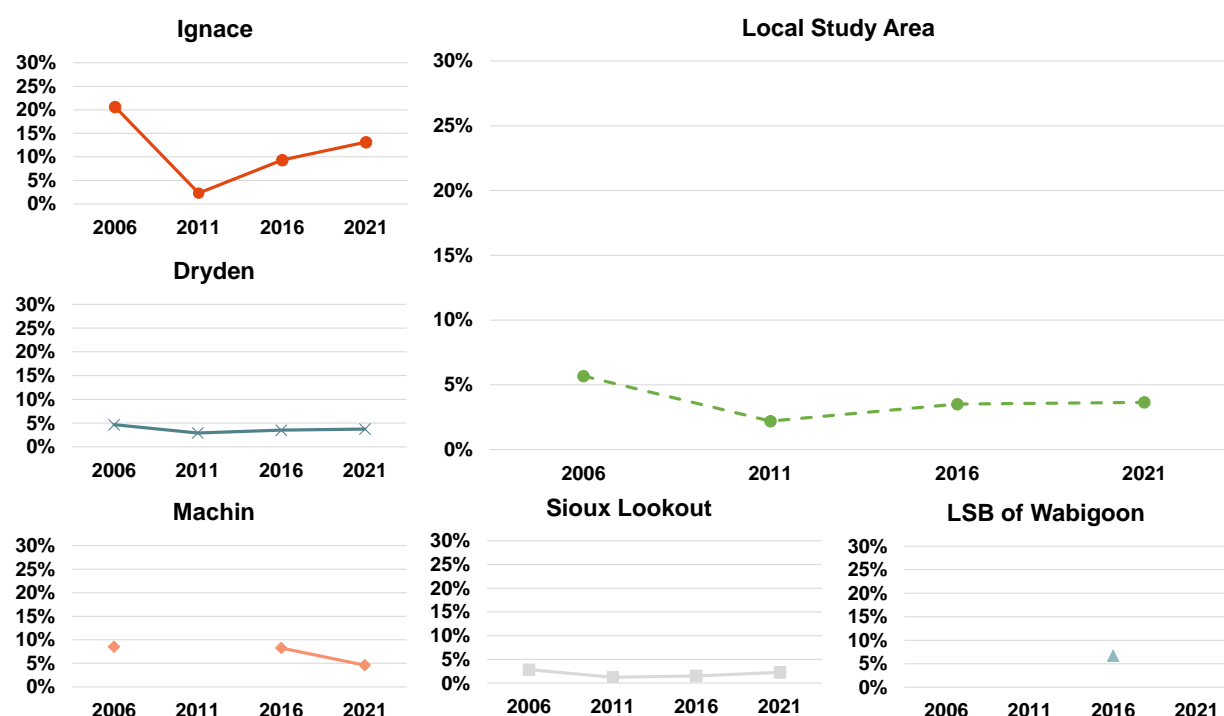
3.4.2.3 Forestry

Forestry operations are some of the largest private sector employers in the Local Study Area (see **Section 3.4.4**). Key person interviews noted that forestry companies are employing youths right out of high school. These jobs are typically financially attractive compared to other employment opportunities available to recent high school graduates (NWO Community and Baseline Studies Key Person Interview Program 2022). One of the forestry companies noted that the average salary is between \$80,000 to \$100,000 a year. Forestry has also had an impact on employment (See **Section 3.3.4**) in the Local Study Area, with operations downsizing at Domtar between 2005 and 2008 and Resolute Forest Products closing from 2006 to 2015 having notable impacts to employment (Northern Ontario Business 2008; NWO Community and Baseline Studies Key Person Interview Program 2022; Resolute Forest Products 2022). In 2023, Domtar announced they sold the Dryden pulp mill to First Quality Enterprises Inc. First Quality intends to continue business operations consistent with past practices with commitments to the employees and surrounding community (Domtar 2023).

The four primary forestry companies in the Local Study Area are Domtar, Resolute Forest Product, Ricci's Trucking, and Raleigh Falls Ltd. Ricci's Trucking and Raleigh Falls are harvesting and hauling contractors, whereas the other forestry businesses are pulp and stud mills who hire contractors for the harvesting and hauling (NWO Community and Baseline Studies Key Person Interview Program 2022). Prior to 2008, Domtar was also involved in paper making, but in 2005 and 2008 it shut down its paper machines and has since been a 100% pulp mill (NWO Community and Baseline Studies Key Person Interview Program 2022). See **Section 2.5** for more information on forestry operations.

Figure 3.4-10 shows the proportion of employment in agriculture, forestry, fishing, and hunting in the Local Study Area and Local Study Area communities, from 2006 to 2021.

Figure 3.4-10: Employment by Agriculture, Forestry, Fishing, and Hunting for the Local Study Area and Local Study Area Communities, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

Employment in agriculture, forestry, fishing, and hunting captures the harvesting and hauling forestry operations but also includes agriculture and commercial fishing and hunting (including trapping and managing commercial game preserves) operations. Trends and employment proportions for the industry should be interpreted with caution when attributing it to the forestry sector as it also includes changes in operations of agriculture, hunting, and fishing operations.

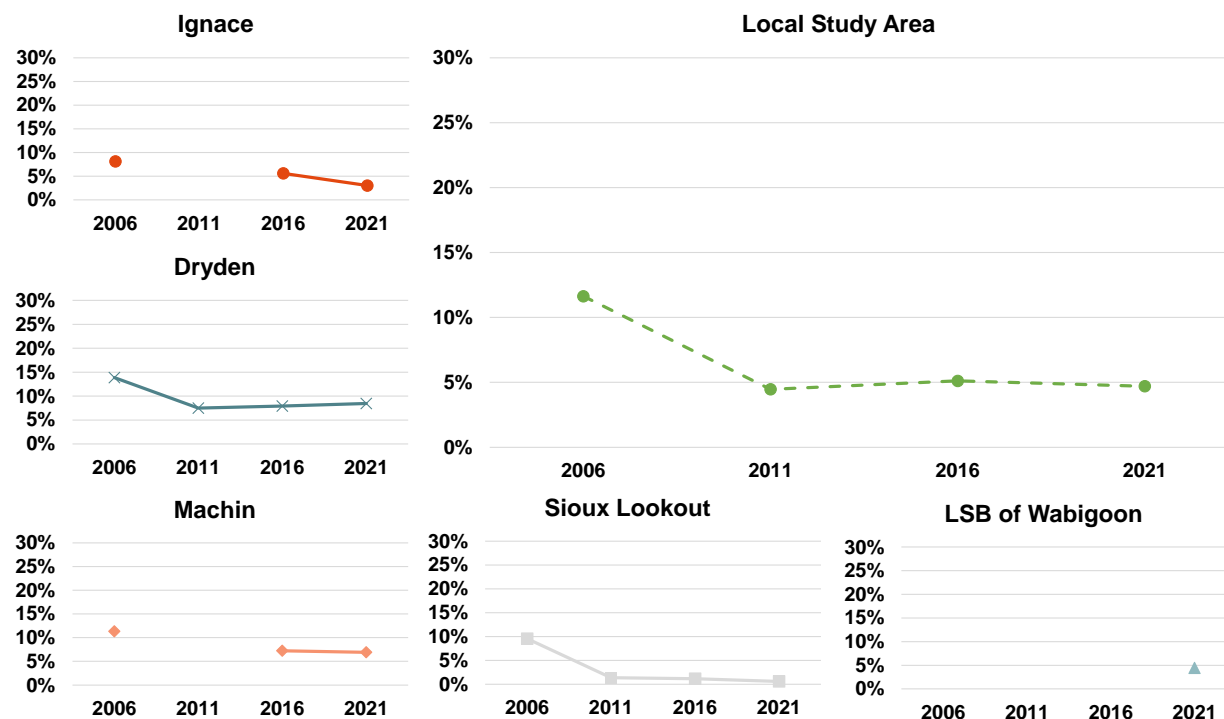
Employment in the agriculture, forestry, fishing, and hunting sector has decreased in the Local Study Area from 5.7% in 2006 to 3.6% in 2021. Although there has been an overall decrease in the agriculture, forestry, fishing, and hunting sector in the Local Study Area, employment has increased from 2.2% in 2011 to 3.6% in 2021. Notable trends in the agriculture, forestry, fishing, and hunting sector among the Local Study Area communities are as follows:

- In 2006, the agriculture, forestry, fishing, and hunting sector represented 20.6% of employment in Ignace but decreased materially to 2.3% in 2011 before increasing to 13.1% in 2021.
- Employment in the agriculture, forestry, fishing, and hunting sector has generally been highest in Ignace, and lowest in Sioux Lookout since 2006.
- Employment in the agriculture, forestry, fishing, and hunting sector in Machin represented 8.5% of employment in 2006 but decreased from 8.2% in 2016 to 4.6% in 2021.

Overall employment in the agriculture, forestry, fishing, and hunting sector has decreased since 2006 but has generally increased since 2011. Despite the decrease in employment in the agriculture, forestry, fishing, and hunting sector, the forestry sector still plays a crucial role in employment and economic activity in the region.

Forestry is not the only sector which is captured in the agriculture, forestry, fishing, and hunting NAICS industry so trends and employment proportions should be interpreted with caution when attributing them to the forestry sector. Although Resolute Forest Product shut down in 2006 and Domtar contracted operations in 2008, some of the change in employment from 2006 to 2011 could have occurred in agriculture, fishing, or hunting. Some of the local employers in forestry run a mill which is considered a production line and are captured in the manufacturing industry. **Figure 3.4-11** shows the proportion of employment in manufacturing for the Local Study Area and Local Study Area communities, from 2006 to 2021.

Figure 3.4-11: Employment by Manufacturing for the Local Study Area and Local Study Area Communities, 2006 to 2021¹



Source: Statistics Canada Census 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

Manufacturing is likely to capture other production line-oriented businesses which would not be associated with the forestry sector. This will overstate the proportion of employment in manufacturing but the change between 2006 and 2011 is likely reflective of changes to operations at Domtar and Resolute Forest Products over the same timeframe.

Since 2006, there has been a decrease in employment in manufacturing in the Local Study Area (11.6% in 2006 to 4.7% in 2021) and the Local Study Area communities. Notable trends in employment in manufacturing for the Local Study Area communities are as follows:

- Employment in manufacturing was highest in each of the Local Study Area communities in 2006 but has not changed much since 2011.
- In 2006, employment in manufacturing was highest in Dryden (13.9%) and lowest in Ignace (8.1%). By 2021, employment in manufacturing was highest in Dryden (8.5%) and lowest in Sioux Lookout (0.6%).

- Employment in manufacturing in Ignace decreased from 8.1% in 2006 to 0% in 2011 but has increased slightly to 3.0% by 2021.
- Employment in manufacturing decreased materially in Sioux Lookout from 9.6% in 2006 to 0.6% in 2021.

The large decrease in employment in manufacturing from 2006 to 2011 has been attributed to the closing of paper machines at Domtar and the resulting large decrease in staff, from as many as 650 employees to 400 (Northern Ontario Business 2008; NWO Community and Baseline Studies Key Person Interview Program 2022). Although employment in forestry and manufacturing is not as high as it once was in the early 2000s, the forestry sector still employs a substantial number of people and plays a vital role in the local economies of the Local Study Area communities.

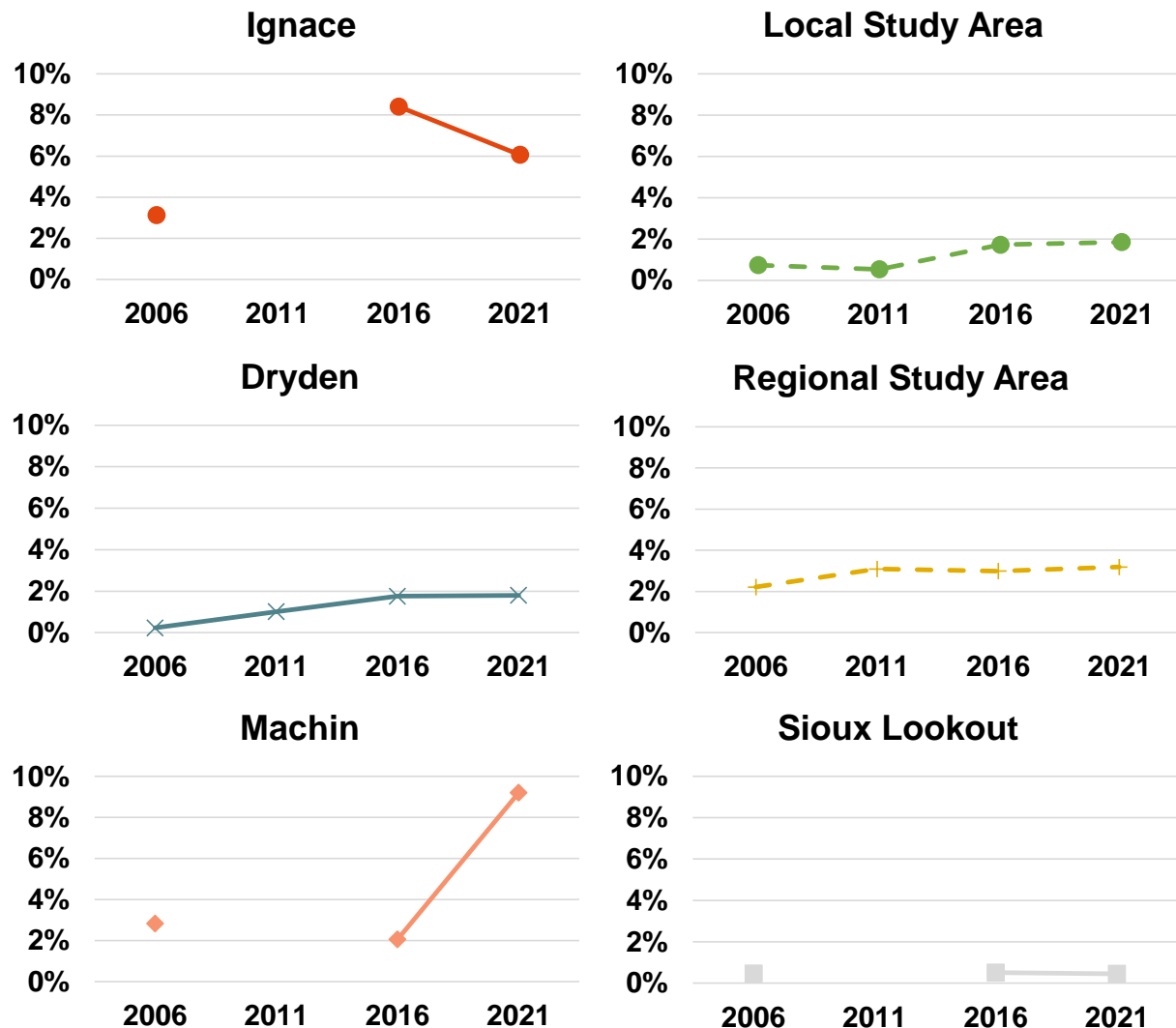
3.4.2.4 Mining

Mining is an important industry in Northwest Ontario. Historically, communities in the Local Study Area have had a large number of people engaged in mining operations. There were many residents from Ignace and other Local Study Area communities working at the Mattabi mines in the 1980's. Since the mine closed, the population and labour force in communities such as Ignace declined materially (See **Section 2.2**). With mining investments in Ontario increasing, it is expected that more people will work on mines with the addition of miners migrating to the Local Study Area (NWO Community and Baseline Studies Key Person Interview Program 2022).

Mining activities are regulated under the *Mineral Industry Environmental Protection Regulations, 1996*. Within the Regional Study Area as of 2022, there were five active mines, which included Musselwhite Mine, Rainy River Mine, Red Lake Mine, Williams Mine, and Lac des Iles Mine (Ontario Mining Association 2022). Mines in the Northwest mine a variety of precious metals including gold, silver, platinum group elements and many others (Ontario Mining Association 2022). There are no active mines in the Local Study Area, but Treasury Metals is completing an Environmental Impact Assessment for the Goliath Gold Complex which will be located just west of Dryden. A pre-feasibility summary for the prospective mine indicates an expected mine life of 13 years (Newswire 2023). See **Section 2.5** for more information on commercial mining. There are numerous aggregate sites and quarries in the Local Study Area. Within a 10 km radius there are seven aggregate pits around Ignace, one aggregate pit around Dryden, two quarries and five aggregate pits around Machin, 12 aggregate pits around Sioux Lookout, one quarry and two aggregate pits around the LSB of Wabigoon, two quarries around the LSB of Melgund, and one aggregate pit around Dinorwic (Government of Ontario 2023c).

Figure 3.4-12 shows the proportion of employment in mining, quarrying, oil and gas extraction in the Regional Study Area and Local Study Area communities, from 2006 to 2021. In addition to mining, the NAICS industry includes quarrying and oil and gas extraction. These sectors are not expected to have a material effect on employment by industry for the Local Study Area or Regional Study Area, but are likely to be slightly higher than strictly employment in local mining.

Figure 3.4-12: Employment by Mining, Quarrying, and Oil and Gas Extraction for the Local Study Area and Regional Study Area, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021. There was no employment in the mining sector for residents of the LSB of Wabigoon in 2016 or 2021.

Employment in the mining, quarrying, and oil and gas extraction sector has increased in both the Local Study Area (0.7% in 2006 to 1.9% in 2021) and Regional Study Area (2.2% in 2006 to

3.2% in 2021). Notable trends in the mining, quarrying, and oil and gas extraction industry among the Local Study Area communities are as follows:

- Employment in the mining, quarrying, oil, and gas extraction industry varies considerably among the Local Study Area communities.
- The proportion of people employed in the mining, quarrying, oil, and gas extraction industry were highest in Ignace (3.1% in 2006 to 6.1% in 2021) and Machin (2.8% in 2006 to 9.2% in 2021). Employment in the mining, quarrying, and oil and gas extraction industry represents a small proportion of employed people in Dryden (1.8% in 2021) and Sioux Lookout (0.5% in 2021).
- Employment in the mining, quarrying, oil, and gas extraction industry was reported as 0% in Ignace in 2011. This is likely partially attributed to the voluntary aspect of the 2011 NHS.

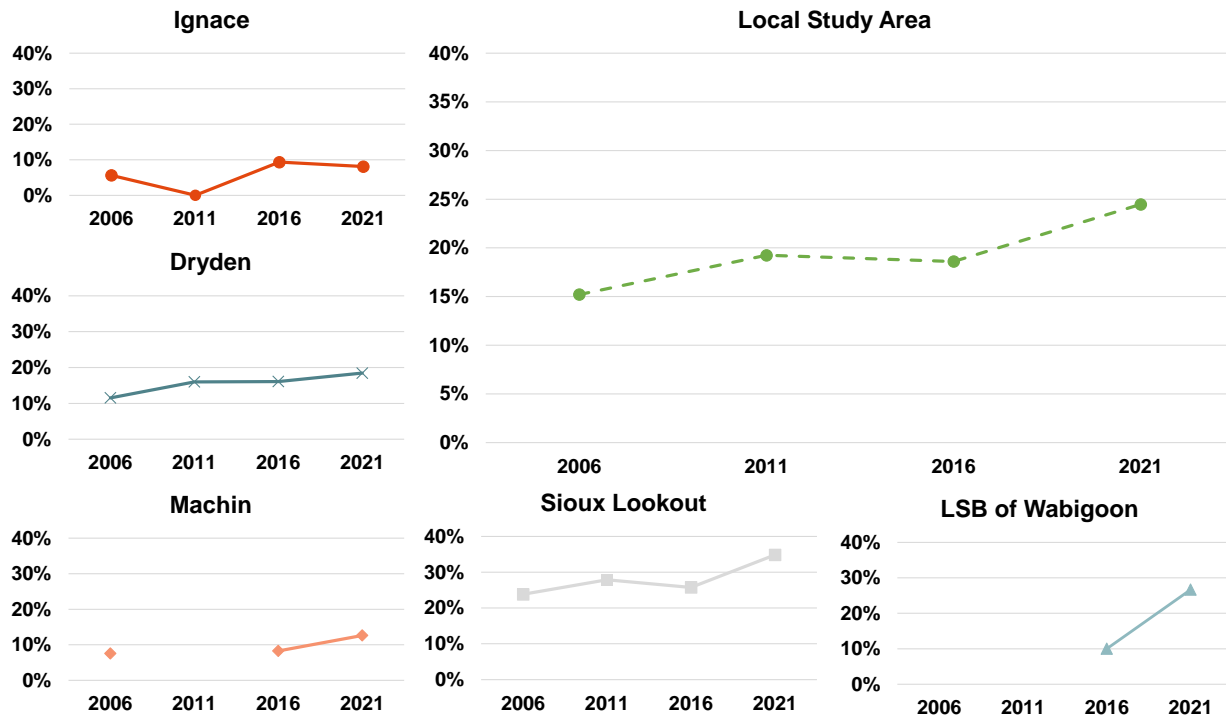
In 2021, Ontario produced over \$11.1 billion worth of minerals which accounted for 20% of Canada's total mineral production (Government of Ontario 2023a). Recently, Ontario released its Critical Mineral Strategy which is a five-year plan to increase investment in mining through smoothing out the regulatory process to get mines built more efficiently (Government of Ontario 2022b). Many key person interviews identified an anticipated increase in mining activity in the Local Study Area with the Goliath Gold Complex and an increase in lithium mining (NWO Community and Baseline Studies Key Person Interview Program 2022). The expected increase in mining activity in the region places increased importance on engaging the labour force to consider pursuing a career in mining-related professions. With an abundance of educational and training programs in Northern Ontario and the Sioux Lookout Mining Centre of Excellence in the Local Study Area, the labour force has the resources available to participate in a lucrative industry (See **Section 3.3.3.2**).

3.4.2.5 Health Care and Social Assistance

Health care and social assistance is a vital industry to every local economy. In each of the Local Study Area, Regional Study Area, and Ontario, the healthcare and social assistance industry represent the largest share of employment (See **Figure 3.4-2**). Employers involved in the healthcare and social assistance industry are also some of the largest employers (See **Section 3.4.4**) and include: Mary Berglund Community Health Centre (Ignace), Dryden Regional Health Centre, Kenora District Services Board (regional office in Dryden), Dryden Native Friendship Centre, Tikinagan Child & Family Services (Sioux Lookout), Sioux Lookout First Nation Health Authority, and Sioux Lookout Meno-Ya-win Health Centre.

Figure 3.4-13 shows the proportion of employment in healthcare and social assistance industry in the Local Study Area, from 2006 to 2021.

Figure 3.4-13: Employment by Health Care and Social Assistance for the Local Study Area, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities were not available for all years for LSB of Wabigoon (2006 and 2011) and Machin (2011). Data were not available for the LSB of Melgund and Dinorwic for 2006 to 2021.

Employment in the healthcare and social assistance sector has increased in the Local Study Area from 15.2% in 2006 to 24.5% in 2021. This represented the largest increase in employment share and number of people employed in a sector over this timeframe. Notable trends in the healthcare and social assistance industry among the Local Study Area communities are as follows:

- Employment in the healthcare and social assistance industry increased materially in Dryden, Sioux Lookout, and the LSB of Wabigoon.
- The proportion of people employed in the healthcare and social assistance industry was highest in Sioux Lookout (23.8% in 2006 to 34.8% in 2021).
- The proportion of people employed in the healthcare and social assistance industry increased materially in both Dryden (11.5% in 2006 to 18.4% in 2021) and the LSB of Wabigoon (10.0% in 2006 to 26.7% in 2021).

- The proportion of people employed in the healthcare and social assistance industry was lowest in Ignace (5.6% in 2006 to 8.1% in 2021).
- Sioux Lookout has a substantial proportion of the population engaged in the healthcare and social assistance industry given it is a service hub for northern communities with the presence of the Sioux Lookout Meno Ya Win Health Centre, Sioux Lookout First Nations Health Authority, four tribal councils, and the Pelican Falls First Nation High School. Both health centres provide services to people in Sioux Lookout and the surrounding areas (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

Dryden is also a regional service hub for many goods and services (See **Section 3.4.3**) with the presence of several key health and social service providers which include Dryden Regional Health Centre, Kenora District Services Board (regional office in Dryden), and Dryden Native Friendship Centre.

3.4.3 Local Business

This section summarizes local businesses that have relevance if the Project were sited in the WLON-Ignace area. Local businesses that might provide goods and services to meet community needs in addition to meeting the needs of potential future major projects include: food, accommodations, tourism, construction, mining, geology, forestry, and utility businesses. Also summarized are Indigenous-owned businesses as reported by the Government of Canada Indigenous Business Directory.

Local businesses play an important role in supporting the economy. A wide variety of goods and services are needed to support and attract people into a community. Without basic services such as food and accommodations, residents must travel to nearby towns or regions to get simple things such as groceries, gas, or something to eat at a restaurant. Many of the local businesses in the Local Study Area are classified as small- (i.e., between 1-99 employees) or medium-sized (i.e., between 100-499 employees) businesses. Small- and medium-sized enterprises (SMEs) are significant contributors to Canada's economy, and, in 2021, small businesses made up 98.1% of all employer businesses in Canada (Statistics Canada 2022d). Also, in 2021, SMEs employed nearly 85% (or 13.7 million) of the total labour force in Canada. Small businesses contribute to approximately 40% of the national GDP in Canada and play an important role in economic growth, recovery, and long-term stability of the Canadian economy (CanadianSME 2023).

Residents of Dymont, Borups Corners, and the community of Dinorwic noted that a lack of local businesses means they must travel to the Wabigoon Village for basic goods such as snacks, liquor, and gas, or travel to Dryden for any larger shopping trips (NWO Community and Baseline Studies Key Person Interview Program 2022). Many of the Local Study Area communities have outfitters and camps operating within or around the communities, which are discussed in **Section 2.5**.

3.4.3.1 Local Business in Ignace

Table 3.4-3 summarizes a list of food, accommodations, tourism, construction, mining, geology, forestry, and utility businesses which operate in Ignace.⁶⁰

Table 3.4-3: Ignace Business Inventory

Industry	Business Inventory
Food services	Evergreen Produce (grocery store) Northwoods Motor Inn Restaurant (restaurant) Clooch's Tavern (restaurant) Robin's Express (fast food and bakery) The Burger Scoop – closed during winter (fast food) Subway (fast food)
Accommodations	Ignace White Otter Inn Lone Pine Inn Northwoods Motor Inn Westwood Motel
Tourism	List of outfitters and camps are described in Section 2.5.7
Construction	G. Routhier Contracting Ltd. (contractor) Ignace Carpentry (contractor) K & M Construction (contractor) Mr. Fix It (contractor) RJ's Home Improvements (contractor) Rene Nadeau Construction (contractor) Rog's Renovations and Woodworking (contractor) Sunset Carpentry (contractor) Woods Welding – Mike Woods (welding services) Ignace Public Works (municipal building management services)
Mining, forestry, geology, and utilities	Ricci's Trucking Inc. and Raleigh Falls Timber (forestry) Resolute Forest Products (forestry) Nuclear Waste Management Organization (mining/geology) Brad's Water Treatment (utilities) Northwest Sewage (utilities)

Source: Ignace Business Directory n.d. Accessed April 21, 2023. Township of Ignace n.d. Accessed August 10, 2023.

Ignace has a limited selection of food services with only one grocery store and a few traditional restaurants. Most construction businesses are focused on general contracting services. In key

⁶⁰ An inventory of businesses is compiled using the most up to date sources but may not reflect the current list of businesses as new businesses continue to open shop within a community or are closed or relocated to another community.

person interviews, it was noted there is large demand for contracting services within the community. A lack of plumbing and electrical services presents a barrier for contractors and residents, as the nearest contractors for these services are in Dryden (NWO Community and Baseline Studies Key Person Interview Program 2022). Within Ignace there are outfitters and camps which would be classified as tourism-related businesses.

There are no Indigenous-owned businesses in Ignace which are registered with the federal Indigenous business directory (Government of Canada n.d.). Ignace currently contracts Northern Waterworks which are headquartered in Red Lake to oversee the water and sewer distribution system in Ignace (Township of Ignace n.d.). Ignace does not have any building management related services but has the Ignace Public works oversee the building management services of municipal buildings. Workshop participants also noted there is no larger grocery store (e.g., Walmart, Superstore), hardware store, and lack of a variety of retail stores. This required residents to drive an hour to go purchase items such as paint or make larger shopping trips for clothes or groceries (Social Cultural and Health Workshop 2021).

3.4.3.2 Local Business in Dryden

Table 3.4-4 summarizes a list of food, accommodations, tourism, construction, mining, geology, forestry, and utility businesses which operate in Dryden.

Table 3.4-4: Dryden Business Inventory

Industry	Dryden Business Inventory
Food services (grocery)	AgriTech North (grocery store) No Frills (grocery store) M&M Food Market (grocery store) Safeway (grocery store) Shoppers Drug Mart (grocery store) Walmart (grocery store) 807 Food Co-op (grocery store) Cloverbelt Country Meats (meat/fish market) Huber's Bavarian Meats (meat/fish market) Milkwell Farms (meat/fish market) Bulk Zone (food store) Kano Reid (food store)

Table 3.4-4 Continued: Dryden Business Inventory

Industry	Dryden Business Inventory
Food services (restaurant)	B&B Roadhouse Bar and Grill (restaurant) Ho Ho's (restaurant) Hong Kong House (restaurant) Masala Restaurant (restaurant) Mulligan's Restaurant (restaurant) Pizza Hut (restaurant) Springwater Café (restaurant) The PI (restaurant) The Riverview Lodge (restaurant) Timber Lanes (restaurant) Twin Towers (restaurant) A&W (fast food) The Chip Box (fast food) Crooked Arrow Catering (food truck & catering) Dairy Queen (fast food) Domino's Pizza (fast food) Husky Restaurant (restaurant) Just G's (fast food) Kano Reid (limited-service restaurant) Kathy's Catering (food catering) KFC (fast food) McDonald's (fast food) Subway (fast food) Tim Hortons (fast food) Your Choice Catering (food catering) Street Food & Royal Catering (food truck & catering)
Accommodations	Best Western Plus Dryden Hotel & Conference Centre Holiday Inn Chalet Inn Motel Comfort Inn Evening Star Motel Hide Away Holiday Inn Express Dryden Kowality Motor Inn Patricia Inn The Riverview Lodge Timberland Motel Town & Country Motel

Table 3.4-4 Continued: Dryden Business Inventory

Industry	Dryden Business Inventory
Tourism	Aaron Park List of outfitters and camps are described in Section 2.5.7
Construction (residential construction)	Dale Woods Contracting Horst Lang Construction Lakeview Contracting McKay Construction Renew Construction Rostek Contracting
Construction (heavy equipment construction)	SunTrac Contracting and Rentals Rostek R B Construction Wildwood Contracting Steven Blair Contracting Allan Hutchison Contracting LTD Kupper Contracting Miller Northwest LTD Allan Marion General Contracting Cory Henderson Contracting EMCON Dryden

Table 3.4-4 Continued: Dryden Business Inventory

Industry	Dryden Business Inventory
Construction (specialized services)	First General (general repairs) Service Master (general repairs) Fedorchuk Masonry (masonry/concrete) Jason Anderson Concrete (masonry/concrete) Basic Machining (welding) D J's Propeller & Skeg Repair & Aluminum Welding (welding) Brisson Electric Feduik Electric Hoover Electric (electric) KPE Electrical Kusnick Electric (electric) M.C. Lough Electric Inc. RTL Electric (electric) REZ Electric (electric) Copperite Plumbing and Heating (plumbing/HVAC) Energy Tech Services (plumbing/HVAC) Fediuk's Plumbing & Heating (plumbing/HVAC) Graf's Plumbing (plumbing/HVAC) Lakeland Plumbing & Heating Lyle's Plumbing Superior Plumbing + Heating (plumbing/HVAC) iPaint (painting) Northern Moonworks (tile/flooring/renovations) Sunset Granite (finishing) Horst Lang Construction (architectural services) All-City Landscaping (landscape architectural services) Ground Effex Landscaping (landscape architectural services) Wildwood Contracting (landscape architectural services) United Rentals (equipment rentals) Basic Machining (machine shop) Solomon & Sons Ltd. (machine shop) Dryden Building Inspections – City of Dryden (building management services)

Table 3.4-4 Continued: Dryden Business Inventory

Industry	Dryden Business Inventory
Mining, forestry, geology, and utilities	Tamarac Nurseries (forestry) Dryden Forest Management Company (forestry) Ricci's Trucking Inc. and Raleigh Falls Timber (forestry) Nuclear Waste Management Organization (mining/geology) Mastrangelo Fuels (utilities) City of Dryden (utilities) Morgan Fuels (utilities) Superior Propane (utilities)

Source: Explorer Solutions 2022; NWO Community and Baseline Studies Key Person Interview Program 2022.

Dryden has many businesses to support Local Study Area residents and visitors for shopping, food services, accommodations, and construction. Some of the businesses listed are located in the fringe area around the City, and not within municipal boundaries (NWO Baseline Studies Key Person Interview Program 2022-2023). During key person interviews, Dryden was commonly referred to as the local hub for businesses and services in the Local Study Area (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). Within Dryden there is a wide variety of construction and skilled trades-related businesses. Dryden has contractors which are typically located in most Local Study Area communities but also has specialized skilled trades and construction companies such as plumbers, electricians, and heavy-duty construction. Although there are many contractors and a variety of specialized services in Dryden, it was noted that there is a shortage of skilled trades for anything including plumbers, electricians, welders, and pipefitters (Local Economy Workshop 2021; NWO Community and Baseline Studies Key Person Interview Program 2022).

AgriTech North is an Indigenous-owned grocery store registered with the federal Indigenous business directory (Government of Canada n.d.). The City of Dryden has trained internal staff who oversee the water and sewer treatment and distribution (NWO Baseline Studies Key Person Interview Program 2022-2023). Dryden also conducts its own building management services but will contract out some specialized work (e.g., plumbing, electrical) or larger jobs (NWO Baseline Studies Key Person Interview Program 2022-2023).

3.4.3.3 Local Business in Machin

Table 3.4-5 summarizes a list of food, accommodations, tourism, construction, mining, geology, forestry, and utility businesses which operate in Machin.

Table 3.4-5: Machin Business Inventory

Industry	Machin Business Inventory
Food services	Bayview Bar and Motel (restaurant) Bobby's Bites at Bobby's Corner (restaurant) Jiggers Pub (restaurant) Quackers Diner (restaurant) Nowhere Craft Chocolate and Coffee Roastery (bakery) Co-op, Vermillion Bay Food Store (grocery)
Accommodations	Bayview Bar and Motel Northside Motel Pine Grove Motel
Tourism	Borealis Sled Dog Adventures List of outfitters and camps are described in Section 2.5.7
Construction	Bruyere's Bobcat Services Jim's Electrical Services North Country Plumbing
Mining, forestry, geology, and utilities	NA

Source: Machin Business Directory n.d.

Machin has a number of outfitters and lodges but a limited number of businesses in the food service and accommodation industries. There are a number of food services with more traditional restaurants in Machin compared to more fast-food businesses. For construction there are only a few contractors, but there is some variety in general contracting, electrical, and plumbing. Although there are no mining, forestry, geology, or utility companies operating in Machin, a notable proportion of residents live in Machin and work at the mines (See **Section 3.4.2**).

There are no Indigenous-owned businesses in Machin which are registered with the federal Indigenous business directory (Government of Canada n.d.). Machin owns and operates the Vermillion Bay Water Treatment Plant (Machin 2019). Machin does not have any building management related contractors within the municipality.

3.4.3.4 Local Business in Sioux Lookout

Table 3.4-6 summarizes a list of food, accommodations, tourism, construction, mining, geology, forestry, utility, and transportation businesses which operate in Sioux Lookout.

Table 3.4-6: Sioux Lookout Business Inventory

Industry	Sioux Lookout Business Inventory
Food services	The Hazel Tree/Sugar Shack Food Truck (fast food) The Red Brick Café (fast food) Dairy Queen Grill & Chill (fast food) Forest Bar and Grill (restaurant) Wellington Centre (restaurant) Chicken Chef (fast food) Tim Hortons (fast food) Sioux Lookout Golf & Curing Club (restaurant) Good News Books (restaurant) Fresh Market Foods (grocery) Giant Tiger (grocery) Drayton Cash and Carry (fast food) Fifth Avenue Bar & Grill (restaurant) Pelican Lake Sandwiches (fast food)
Accommodations	Laketime B & B Wellington Centre Sunset Inn & Suites Great Northwest Bed & Breakfast Lamplighter Motel Forest Inn & Conference Centre Sioux Lookout Inn & Suites
Tourism	Sioux Hudson Entertainment Series Northern Lights Community Theatre Abram Lake Park/Lincoln Park List of outfitters and camps are described in Section 2.5.7

Table 3.4-6 Continued: Sioux Lookout Business Inventory

Industry	Sioux Lookout Business Inventory
Construction	Rockshore Holding Inc. Perron Contracting Full Span Construction Finn Way General Contracting White Pines Development Details A. J. Positano Paving Nissley Construction J R Carpentry Fred J Cook Construction Sioux Lookout Public Works and Development Services
Mining, forestry, geology, utilities, and Transportation	Sioux Lookout Hydro (utilities) Morgan Fuels (utilities) Keay Contracting and Septic (utilities) CN Rail (transportation) VIA Rail (transportation) Sioux Lookout Municipal Airport (transportation) Hub Transit (transportation)

Source: Sioux Lookout Chamber of Commerce n.d. Yellowpages n.d.a, Yellowpages n.d.b, Sioux Lookout 2021.

Sioux Lookout is a hub for the north, connecting people across 29 northern First Nation communities to their health care and social assistance industries (Sioux Lookout n.d.b). Sioux Lookout has bus, rail, and flight transportation options for its residents and the vast number of people who come to visit the community from northern communities and even the United States (Sioux Lookout 2021). Sioux Lookout has a number of accommodation and food service-related businesses. Given the size and population of Sioux Lookout, there are not many construction companies. **Figure 3.4-3** shows over half the jobs in Sioux Lookout are in health care and social services, educational services, and public administration. Sioux Lookout's major employers are the public sector (e.g., hospitals), leading to a stable economy. Sioux Lookout has a few different tourism and entertainment related businesses which include two theatres. Although there are no mining, forestry, geology, or utilities businesses, Sioux Lookout is located near the Treasury Metals Goliath Complex which could begin operations in the near future.

Maawuhsuk Aatahsinnokamik Regional Distribution Centre Inc. is an Indigenous-owned transportation warehouse registered with the federal Indigenous business directory that rents warehouse and office space for First Nation communities. (Government of Canada n.d.). Sioux Lookout owns its water systems and wastewater treatment plant. The systems are operated by the public works department with contracted support services from Northern Waterworks (Sioux Lookout n.d.a). The Sioux Lookout facilities division is responsible for building management services of municipal buildings (Sioux Lookout n.d.a)

3.4.4 Major Employers

This section discusses the largest employers for each Local Study Area community and their number of employees, which may not all reside within the community the business is located in. For example, 88% of residents who live in Ignace also work in the community. Similarly, 89% of residents work and live in Dryden, 96% of residents work and live in Sioux Lookout, but only 31% of residents work and live in Machin, and 0% of residents work and live in the LSB of Wabigoon (Statistics Canada 2022a; See **Appendix 3B Supplemental Data**). Major employers in a community or region play an important role in the economy as they typically hire locally. They also may purchase goods and services locally or within the region which helps support businesses to stay open and pay their employees.

3.4.4.1 Major Employers in Ignace

Table 3.4-7 shows the top ten major private and public sector employers in Ignace and the approximate number of employees in 2018.

Table 3.4-7: Top 10 Major Employers in Ignace

Sector	Business	Approximate Number of Employees
Public Sector	Keewatin-Patricia District School Board	34
	Mary Berglund Community Health Centre	8 full-time; 18 part-time
	Ontario Provincial Police	14
	Ministry of Natural Resources	9
	Township of Ignace	18
Private Sector	Resolute Forest Products	41
	Ricci's Trucking	24
	Northwood's Motor Inn	21
	Canadian Pacific Railways	19
	Clooch's Tavern	9 full-time; 2 part-time

Source: Township of Ignace 2018; Resolute Forest Product n.d.

3.4.4.2 Major Employers in Dryden

Table 3.4-8 shows the top ten major private and public sector employers in Dryden and the approximate number of employees in 2023.

Table 3.4-8: Top 10 Major Employers in Dryden

Sector	Business	Approximate Number of Employees
Public Sector	MNR District Fire Centre	225-250
	Kenora District Services Board	220 full-time; 80 part-time
	Keewatin-Patricia District School Board	200-225
	Dryden Regional Health Centre	200-225
	Provincial Government	175-200
Private Sector	Domtar Inc.	350 full-time; 35 part-time
	PRT Group	150 full-time; 15 part-time
	Walmart	125 full-time; 13 part-time
	Safeway	75 full-time; 8 part-time
	Canadian Tire	50 full-time; 5 part-time

Source: NWO Baseline Studies Key Person Interview Program 2022-2023.

3.4.4.3 Major Employers in Machin

In Machin, the largest employer is likely Temple Bay Lodge which employs around 60 people. There is also another outfitter starting up in 2023 which is anticipated to have approximately 10 employees (NWO Baseline Studies Key Person Interview Program 2022-2023). Most residents work seasonally with tourist outfitters in Machin or full-time in Dryden or Ear Falls for the sawmills or the transportation industry driving trucks. Two important employers were the Village Corner, which burned down several years ago, and Buster's BBQ which shut down a few years ago. The Village Corner was referred to as the "Million Dollar Corner" because it was busy all the time (NWO Community and Baseline Studies Key Person Interview Program 2022). The Village Corner was important to the community as it was a convenience store, rest stop, and motel, and employed school-aged youths (NWO Community and Baseline Studies Key Person Interview Program 2022).

3.4.4.4 Major Employers in Sioux Lookout

Table 3.4-9 shows the top ten major private and public sector employers in Sioux Lookout and the approximate number of employees in 2021.

Table 3.4-9: Top 10 Major Employers in Sioux Lookout

Sector	Business	Approximate Number of Employees
Public Sector	Tikinagan Child & Family Services	690
	Sioux Lookout First Nation Health Authority	483
	Sioux Lookout Meno-Ya-win Health Centre	450
	Municipality of Sioux Lookout	140
	Keewatin-Patricia District School Board	118
Private Sector	Fresh Market Foods	130
	Canadian National Railway	102
	Wasaya Airways LP	56
	Bearskin Airlines	50
	Morgan Fuels	19

Source: Sioux Lookout 2021.

3.4.4.5 Major Employers in Unorganized Communities

There are no business directories for the LSB of Melgund or Dinorwic. The LSB of Melgund and LSB of Wabigoon are not able to monitor or track a local business directory (NWO Baseline Studies Key Person Interview Program 2022-2023). The LSB of Wabigoon has a convenience store, a motel, and RV Park (NWO Baseline Studies Key Person Interview Program 2022-2023; Bear Paw Landing 2023; Lang H., personal communication, June 27, 2023). More information on temporary accommodation in the surrounding region is discussed in **Section 2.4.8**.

3.4.5 Economic Development Planning

Economic development planning includes strategies, initiatives, and partnerships required to improve economic activity in a municipality. The Local Study Area communities each have their own economic development goals and aspirations but have common goals in attracting investments, residential development, collaborating with nearby communities, and promoting tourism to enhance economic development within the communities and the region.

Table 3.4-10 summarizes the current economic development goals for Local Study Area communities based on the temporal periods identified by each community.

Table 3.4-10: Economic Development Goals of Local Study Area Communities

Goals	Ignace (2019 to 2024)	Dryden (2022 to 2047)	Sioux Lookout (2019 to 2038)	Machin (2017 to 2022)
Attract investment	✓	✓	✓	✓
Beautification, revitalization, commercial development	✓	✓	✓	✓
Residential development	✓	✓	✓	
Promote tourism	✓	✓	✓	✓
Develop, attract, and retain well-trained workforce	✓	✓	✓	✓
Collaboration with businesses, organizations, and other communities	✓	✓	✓	✓

Table 3.4-10 Continued: Economic Development Goals of Local Study Area Communities

Goals	Ignace (2019 to 2024)	Dryden (2022 to 2047)	Sioux Lookout (2019 to 2038)	Machin (2017 to 2022)
Unique elements	Promote natural features of community and shop local program.	Regional food network; maximize airport related activities; downtown development; support senior services and housing; facilitate a more sustainable relationship between regional Indigenous communities; and support development of regional hospital, Confederation College, and regional cultural centre.	Maximize airport replated activities; promote community as health care hub; engage Indigenous groups or communities on relevant issues to Indigenous peoples; and support establishment of multimodal transportation system.	Infrastructure improvements; shop local program; and create a community economic development entity.

Source: Millier Dickinson Blais 2015; Machin 2017; TD Graham and Associates 2018; Ignace 2019; Sioux Lookout 2019; Quartek Group 2022; HSAL et al. 2022a; NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023.

The similar economic development goals pose an opportunity for municipal and business collaboration with the common goal of attracting businesses and investment, and to further develop the area as a regional tourism hub (HSAL et al. 2022a).

The unorganized communities of the LSB of Wabigoon, Dinorwic, and Borups Corners and Dymont (i.e., LSB of Melgund) only tax properties but do not manage any within the Local Services Board boundaries, excluding any properties owned by the Local Services Boards. Due to limited funding and the lack of full-time staff the goals of the unorganized communities are limited. For the LSB of Wabigoon, they have a goals of expanding street lighting to the back end of the community and a fully enclosed arena with a proper Zamboni (NWO Baseline Studies Key Person Interview Program 2022-2023). The LSB of Melgund has goals surrounding their community hall but are constrained by available funding and a limited tax base (NWO Baseline Studies Key Person Interview Program 2022-2023). Dinorwic is an unorganized community and although there is a strong sense of community, there is no formal community planning or goals. It was noted that if an outside organization such as the NWMO was involved in planning that

people would likely be interested in getting involved (NWO Baseline Studies Key Person Interview Program 2022-2023).

Organizations involved in economic development planning in the Local Study Area include chambers of commerce, municipal governments, and private and non-profit organizations who facilitate planning, partnerships, and strategies for businesses and communities trying to improve economic activity and foster new relationships. **Table 3.4-11** summarizes the chambers of commerce and economic development associations in the Local and Regional Study Areas.

Table 3.4-11: Business Development Associations in the Local Study Area and Regional Study Area, 2023

Organizations and Chambers of Commerce	Description of Mandates and Services Offered
Local Study Area	
Ignace Area Business Association	Maintains a business directory to promote member businesses and hold networking events for their members.
Dryden District Chamber of Commerce	Maintains a business directory to promote member businesses, facilitates discussions between businesses and all levels of government to foster partnerships, and holds chamber events and workshops to promote networking and business development.
Sioux Lookout Chamber of Commerce	Maintains a business directory to promote member businesses, with the goal of promoting the growth of a tourism economy through strategic partnerships and the support of local businesses.
Patricia Area Community Endeavors	Offers lending services to businesses and entrepreneurs if they have been declined by the bank. PACE also offers counselling services and a business incubator program. The business incubator program has three offices that can be used for up to 12 months by clients.

Table 3.4-11 Continued: Business Development Associations in the Local Study Area and Regional Study Area, 2023

Organizations and Chambers of Commerce	Description of Mandates and Services Offered
Regional Study Area	
Kenora Chamber of Commerce	Maintains a business directory to promote member businesses, with the goal of promoting municipal, commercial, industrial, and agricultural progress. Another goal is to work for effective legislation and administration for the community and all levels of government.
Atikokan Chamber of Commerce	Maintains a business directory to promote member businesses and facilitates discussions between businesses, private citizens, and the community.
Thunder Bay Chamber of Commerce	Maintains a business directory to promote member businesses, facilitates discussions between businesses and the community to foster relationships, and holds events for professional development, training, and business development.
Indigenous Services Canada – Indigenous Business Directory	The Indigenous Business Directory is a directory which allows for the public to identify Indigenous businesses. A business is eligible if they have Indigenous persons who have at least 51% ownership and control (Government of Canada n.d.). Indigenous Services Canada is not a business association but provides services to all First Nations in the region with the nearest regional office in Fort William First Nation.
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	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.
The Northwest Training and Adjustment Board	Facilitates the connections and processes to develop the workforce with local and regional employers. NTAB also has a thorough understanding of the local and regional labour forces through research and community engagement.

Economic development is being driven by forestry and mining and is likely masking opportunities in other sectors given their prominence in the Northwest. These industries offer higher wages and are hiring youth coming out of high school which creates challenges in pursuing other economic development opportunities (NWO Community and Baseline Studies Key Person Interview Program 2022). Many of the Local Study Area communities also have a focus on supporting entrepreneurs, local businesses, and boosting the tourism industry to enhance local economic development.

Another economic development goal shared by the Local Study Area communities is to increase residential and commercial development to address the housing shortage in the Northwest (NWO Community and Baseline Studies Key Person Interview Program 2022). Ongoing collaboration between organizations, the Kenora District Services Board, and municipal government are taking place to address the housing shortage as it is partially due to challenges attracting developers, but also a shortage of skilled trades. The Kenora District Services Board has outlined priorities to address the housing shortage which include: increasing affordability, streamline construction development, expanding land use capabilities, increasing housing availability and quality, and supporting partnerships and collaboration (KDSB 2023). Organizations such as the chambers of commerce, NTAB, and PACE are working with governments to address the skilled trades labour shortage which is limiting economic development.

3.4.6 Summary of Economic Base

Employment by Industry Sectors

Employment by industry sectors in the Local Study Area are concentrated in the health care and social assistance, retail trade, public administration, accommodation and food services, and educational services industries. The proportion of employment of Indigenous peoples by industry sectors are similar to the total and non-Indigenous population within the Local Study Area, Regional Study Area, and Ontario.

In the Local Study Area, a large proportion of people are employed in tourism-related and supporting sectors (e.g., accommodation and food services), and each municipality has the common goal of promoting and developing the tourism sector. Other important industries to the Local Study Area are mining, forestry, and health care and social services. The number of people employed in the forestry-related industries notably decreased between 2006 and 2011 when there was a contraction of the industry but has slightly increased since then.⁶¹ Historically, mining has played an important role in the economic development of the Local Study Area communities. Since 2006, employment in mining has increased slightly, but with a potential mine opening in the Local Study Area in the near future employment in this sector is likely to continue to increase. The healthcare and social assistance industry represents the largest proportion of employment in the Local Study Area and increased from 15% of employment in 2006 to 25% by 2021. The mining, forestry, health care and social services, and tourism sectors play an

⁶¹ The forestry related industries include the NAICS agriculture, forestry, fishing, and hunting and manufacturing industries. Both industries capture other sectors and operations which would not be attributed to forestry. This could overstate the magnitude in changes in employment and employment in the industries which would be attributed to the forestry sector.

important role in the local and regional economies and are typically at the forefront of economic development planning.

Local Businesses and Major Employers

Within the Local Study Area, a large number of businesses are located in Dryden. In Ignace, Machin, and Sioux Lookout there are a limited number of accommodations, food services, and contractors within the communities. Although Dryden has a variety of contractors, it has still been noted that there is a shortage of skilled trades within the community and the Local Study Area which has been attributed to the absence of a local educational institution which offers programming in the skilled trades (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

Major employers in the Local Study Area include hospitals and social service organizations (e.g., Kenora District Services Board), forestry operators, grocery stores, school boards, municipal governments, and the provincial government and related ministries. Sioux Lookout is a unique community among the Local Study Area communities given that its major employers are all in the public sector which results in a stable economy.

Economic Development Planning

Economic development planning in the Local Study Area communities prioritize the following common goals:

- Attracting investments;
- Beautification, revitalization, commercial development;
- Residential development;
- Promoting tourism;
- Develop, attract, and retain a well-trained workforce; and
- Collaboration with businesses, organizations, and other communities.

Given the role forestry and mining plays in the Regional Study Area, economic development also tends to have a focus on these industries given the investments and increased economic activity these industries can bring to the region. The main barriers to economic development in the Regional Study Area relate to the availability of skilled trades labour and the current regional housing shortage. These barriers pose challenges for economic development planning of the Local Study Area communities as it is difficult to improve economic activity without being able to attract new residents and businesses to the Local Study Area. It will be important for the municipal governments to continue to collaborate with each other, local businesses and organizations, regional Indigenous communities and organizations, and business development associations to improve labour market conditions. Through improved collaboration and strategic planning, governments can promote the attractiveness of visiting and relocating the Local Study Area while leveraging the natural environment as a foundational attraction for visitors to the region.

Diversified economies are generally considered more sustainable economies than those that depend on a small number of industries. Diversified economies are less vulnerable to market

shocks or downturns affecting a single industry. In the past, Ignace and other Local Study Area communities had a large concentration of employment in forestry and mining. The Local Study Area economies experienced an economic downturn when these industries contracted.

Although there is still a notable amount of employment in the agriculture, forestry, fishing, and hunting sector in Local Study Area communities, there is a large concentration of employment in publicly-funded industries such as health care and social assistance, public administration, and educational services. Retail trade and accommodation and food services are also substantial employers in the Local Study Area. These industries are typically more insulated from market downturns but may still experience contractions due to population declines, budget cuts, or broader economic downturns. Each of the municipalities in the Local Study Area have economic development goals to promote and support tourism. A steady stream of spending in a local economy from tourism is an effective diversification strategy. This is because tourists spending power are generally unaffected by the current economic conditions in a community.

3.5 LOCAL GOVERNMENT FINANCES

3.5.1 Overview and Approach

This section examines revenue and expenditures related to operating and maintaining local government services and infrastructure. Local government sources of revenue may include property taxes, levies, service fees, and transfers. Local government expenditures may include:

- Protection services (police and fire departments);
- Transport (road construction and maintenance);
- Environmental Services (water, sewer, and garbage collections);
- Health Services (district health and ambulance service);
- Social Spending (housing, seniors' residences, etc.); and
- Recreational services (arena, pool, library, golf course, etc.).

Key person interviews are used to qualitatively describe the impact of local government finances on people and communities. Sustainability considerations are discussed including diversity of income sources, spending priorities, and intergenerational implications of local government finances including debt obligations.

Spatial boundaries for the Local Study Area for local government finances include the Township of Ignace, City of Dryden, Municipality of Machin, the Municipality of Sioux Lookout, and, where available, the LSB of Wabigoon, the LSB of Melgund (Dyment and Borups Corners), and the unincorporated community of Dinorwic.

Temporal boundaries for the review of local government finances are based on the most recent ten years of data where available (generally 2011 to 2020).

Additional information on the selection of spatial and temporal boundaries, and approaches to data collection for local government finances is provided in **Section 3.1**.

3.5.2 Structure for Municipalities, Local Services Boards, and Unincorporated Communities

3.5.2.1 Municipalities

The *Ontario Municipal Act* (2001) distinguishes between three types of municipalities: upper-tier municipalities, lower-tier municipalities, and single-tier municipalities. Each type of municipality has different legal powers and responsibilities. All municipalities in Northern Ontario are single-tier municipalities (MMAH 2022). Single-tier municipalities are also referred to as local municipalities. The single-tier municipalities in the Local Study Area are the Township of Ignace, the City of Dryden, the Municipality of Machin, and the Municipality of Sioux Lookout.

3.5.2.2 Local Service Boards

The majority of the geographic area of Northern Ontario is not part of an incorporated municipality (Government of Ontario 2020a). These unincorporated territories or areas are not municipalities. LSBs are established under the *Northern Services Boards Act* (1990). A LSB is a volunteer organization that has the authority to deliver approved powers or services to residents.

LSBs may be funded through user fees, levies, fundraising, operating grants, and/or Provincial and Federal program supports (Government of Ontario 2020a). Levies include the LSB levy and the provincial land tax collected on behalf of the LSB by the Ministry of Finance (Government of Ontario 2020a).

An LSB can be approved to deliver any of nine approved services, to residents within the board's geographical area:

2. Water supply;
3. Fire protection;
4. Garbage collection;
5. Sewage;
6. Street or area lighting;
7. Recreation;
8. Roads;
9. Public library service; and
10. Emergency telecommunications.

These boards are set up in rural areas where there is no municipal structure to deliver services. Area residents vote to determine an LSB's boundaries. Some LSBs choose to provide only one or two services while others can have up to the full nine services that are available under the *Northern Services Boards Act*.

The LSBs in the Local Study Area are the LSB of Melgund (includes Dymont and Borups Corners) and the LSB of Wabigoon. The LSB of Melgund provides recreation and garbage collection services. LSB of Wabigoon provides fire protection, street and area lighting, recreation, and emergency telecommunication (Government of Ontario 2022a).

3.5.2.3 Unincorporated Communities

Dinorwic is an unincorporated community in the Local Study Area and is not governed by a local municipal corporation or a LSB (Government of Ontario 2022a). Community services in unincorporated areas of Northern Ontario can be funded through a provincial land tax collected by the Province of Ontario (Government of Ontario 2022a). Services are minimal in unincorporated communities. Key person interviews with a resident of Dinorwic identified that fire protection is shared with the LSB of Wabigoon and the Ministry of Transportation of Ontario is responsible for provincial roads, including winter snow clearing (NWO Baseline Studies Key Person Interview Program 2022-2023).

3.5.3 Local Government Reporting Requirements, Revenues, Expenditures, Surplus/Deficit and Reserves and Accumulated Surplus

This section describes local government finances in the Local Study Area, including reporting requirements, revenues, expenditures, reserve funds, and accumulated surplus.

3.5.3.1 Municipal Reporting Requirements

Municipalities in Ontario are required under the *Ontario Municipal Act* (2001) to report budgets, audited financial statements and financial information returns to the Ministry of Municipal Affairs and Housing.

- Budgets are “forward looking” documents that report a municipality’s planned revenue and the cost of public services for an annual or multi-year period. Budgeting can help municipalities to manage spending and identify revenue to support their long-term financial plans. The *Ontario Municipal Act* (2001) requires every Ontario municipality to prepare and approve a budget each year and outlines the regulations for a municipality’s annual budget or multi-year budgeting process. Municipal budgets must be balanced, and municipalities must comply with Generally Accepted Accounting Principles set by the Public Sector Accounting Board (Government of Ontario 2022a). Municipalities may take slightly different approaches to approving their budget. All municipalities follow best practices that include (1) preliminary budget forecast, (2) a detailed budget preparation, including management and finance department review, (3) council budget discussion, and (4) budget approvals and adoption (Government of Ontario 2022a). Municipalities also collect public input or hold public meetings to gather feedback during the budget process. Municipalities have an option to draft and submit an annual budget or a multi-year budget. Ignace, Dryden, and Sioux Lookout follow an annual budgeting process for both its operating and capital budget (City of Dryden 2023; Municipality of Sioux Lookout 2020; Ignace 2019).
- Financial statements are “backward looking” documents and report on the actual resources used by municipalities and the full cost of the services delivered to the public in that year. The *Ontario Municipal Act* (2001) requires that municipalities prepare their financial statements using accrual accounting, in accordance with Public Sector Accounting Board standards. Audited financial statements must be published 60 days after the municipality has received them. Municipalities are required to submit their financial information returns annually to the Ministry of Municipal Affairs and Housing, which are posted publicly. Financial information returns provide a standardized reporting of a municipality’s financial activities in the previous fiscal year (January to December) (MMAH 2021). The *Ontario Municipal Act* (2001) outlines how the Ministry of Municipal Affairs and Housing may also make regulations requiring a municipality to establish a reserve fund and make payments into the reserve fund, prohibit a municipality from changing the purpose for which the reserve fund is designated, and the conditions under which a municipality can borrow from the reserve fund. Reserve and reserve fund levels are typically monitored and reported on a regular basis, generally within the budgeting process. Municipal staff routinely assess the adequacy of the balance by reviewing the actual balance versus specific targets.

3.5.3.2 Local Services Board Reporting Requirements

LSBs are required under the *Northern Services Boards Act* (1990) to report on budgets and are encouraged to consult an accounting professional regarding the most effective bookkeeping system or process to use.

- Budgeting requirements defined under the *Northern Services Boards Act* (1990) include that the LSB must prepare and adopt annual estimates (operating budget) for the current fiscal

year for submission to the Minister of Northern Development. The Ministry supplies the LSB with an instruction booklet and excel workbook to be used for budget submission.

- Bookkeeping and recordkeeping, defined under the *Northern Services Boards Act* (1990), encourages LSBs to consult an accounting professional regarding the most effective system or process to use in consideration of Generally Accepted Accounting Principles as well as a system that ensures easy transfer of information from the bookkeeping system to the financial reporting forms (excel budget workbook). The Ministry recommends that LSBs maintain financial records for a minimum of 7 years, where financial records are specific to a government program (funding program such as the Northern Heritage Fund) the records should be retained, and records should record minutes of meetings, by-laws, correspondence, financial records, and legal documents. The *Northern Services Boards Act* (1990) includes two provisions for financial audits (1) that an audit be performed by a public accountant on, at minimum, an annual basis or (2) that the Minister may, at any time, cause the accounts of a LSB to be audited. The LSB must send a copy of the annual audit report to the Minister. The LSB may also establish a by-law to set aside reserves from revenues as considered appropriate for expenditures in subsequent fiscal year(s).

3.5.3.3 Sources of Local Government Revenues

Municipal revenues typically include:

- **Property taxes** are a tax levy that property owners pay based on the assessed value of the property (residential and non-residential). Property taxes are typically calculated by multiplying the municipal property tax rate by the weighted assessed property value (MMAH 2021). Property taxes are the largest revenue source for the municipalities in the Local Study Area.
- **Payments in lieu of taxation** are payments made to compensate the municipal government for some or all of the property tax revenue lost due to a tax-exempt ownership or use of the real property (MMAH 2021).
- **Government transfers** are transfer payments, other than a grant or contribution, based on legislation or other arrangements (MMAH 2021). The Ontario Municipal Partnership Fund ("OMPF") is the primary source of government transfer revenues for municipalities in the Local Study Area:
 - The OMPF is an unconditional grant from the Ontario Ministry of Finance and is distributed primarily to northern and rural municipalities. This funding provides financial aid to municipalities facing more challenging fiscal circumstances. Additionally, the funding is intended to support municipalities with a narrowly bounded property assessment. The OMPF is comprised of the following funding sources (Government of Ontario 2023b):
 - Assessment Equalization Grant provides funding to eligible municipalities with below average property assessment values.
 - Northern Communities Grant provides funding to all northern municipalities.
 - Rural Communities Grant provides funding to eligible municipalities based on the proportion of their population residing in rural areas/small communities.

- Northern and Rural Fiscal Circumstances Grant is based on the relative economic circumstances of a municipality.
- Transitional Assistance helps provide year-over-year consistency in the funding.
- o As a municipality grows in terms of population and the number of properties, the OMPF grant increases. As a municipality becomes more urban, as their economic circumstances improve, and as their assessed property values increase, the OMPF grant decreases (Government of Ontario 2023b).
- o Other examples of government transfers include the Ontario Cannabis Legalization Implementation Fund, The Safe Restart Agreement, and Evacuation Revenue.
- **Conditional grants** are monetary transfers to municipalities that are conditional and designated for a specific purpose. Conditional grants include transfers from the Federal and Provincial governments. Federal transfers include Canada conditional grants, Canada grants for tangible capital assets, and Canada Gas Tax funding. Provincial transfers include Ontario conditional grants, Ontario grants for tangible capital assets, and Provincial Gas Tax funding. The Canada Gas Tax and Provincial Gas Tax funding are permanent sources of annual funding to provinces and territories who provide this funding to their local municipalities to support local infrastructure priorities (Infrastructure Canada 2019).
- **Revenue from other municipalities** represents cash transfers across municipalities for shared capital projects (Financial Accountability Office of Ontario 2020).
- **User fees and service charges** are charges levied on residents for services provided (Financial Accountability Office of Ontario 2020). This includes water and wastewater charges, use of recreational facilities, and other services provided.
- **Licenses, permits, and rent** include revenues through license and permits, trailer revenue and permits, rent concessions, and franchises, and royalties (MMAH 2022).
- **Fines and penalties** include revenues through the Provincial Offences Act, penalties and interest on taxes and overdue accounts, and other fines (MMAH 2022).

Other revenues include investment income, interest earned on reserves and reserve funds, gain or loss on sale of land and capital assets, deferred revenue earned, donations, the sale of publications and equipment, and other revenues (e.g., NWMO contributions).

Local services board and unincorporated community funding:

- LSBs may be funded through user fees, levies, fundraising, operating grants, and/or Provincial and Federal program supports (Government of Ontario 2020a). Levies may include the LSB levy and the provincial land tax, collected by the Ministry of Finance on behalf of the LSB (Government of Ontario 2020a).
- Funding received by unincorporated areas of Northern Ontario is collected through a provincial land tax and the Province of Ontario collects the tax to help fund important community services on behalf of the unincorporated areas (Government of Ontario 2022a).

Table 3.5-1 summarizes sources of local government revenue for Ignace (2019), Dryden (2020), Machin (2020), Sioux Lookout (2020), the LSB of Wabigoon (2023), the LSB of Melgund

(2023), and Dinorwic (2023) (MMAH 2021; NWO Baseline Studies Key Person Interview Program 2022-2023). Ignace is currently in the process of reconciling its 2020 audited financial statements. It plans to release its 2020 audited financial statements towards the end of 2023.

Table 3.5-1: Sources of Local Government Revenues

Revenue Source	Ignace 2019	Dryden 2020	Machin 2020	Sioux Lookout 2020	LSB Wabigoon 2023	LSB Melgund 2023	Dinorwic 2023
Property taxes	✓	✓	✓	✓			
LSB levy or Provincial land tax					✓	✓	✓
Payments in lieu of taxation	✓	✓	✓	✓			
Government transfers	✓	✓	✓	✓			
Conditional grants	✓	✓	✓	✓			
<i>Canada Gas Tax funding</i>	✓	✓	✓	✓			
<i>Provincial Gas Tax funding</i>		✓	✓				
Revenue from other municipalities	✓		✓	✓			
User fees and service charges	✓	✓	✓	✓			
Licenses, permits, and rent	✓	✓	✓	✓			
Fines and penalties	✓	✓	✓	✓			
Other revenues	✓	✓	✓	✓	✓	✓	

Source: MMAH 2021; NWO Baseline Studies Key Person Interview Program 2022-2023.

Note: ✓ represents source of local government revenue.

Differences in **Table 3.5-1** indicate that Ignace in 2019 and Sioux Lookout in 2020 did not receive Provincial Gas Tax funding and Dryden in 2020 did not receive revenue from other municipalities.

The LSB of Wabigoon, LSB of Melgund, and Dinorwic received revenue from the LSB levy or the provincial land tax and/or other revenues.

Local Study Area communities may also apply for funding through the Northern Ontario Heritage Fund Corporation, such as the Community Enhancement Program, or the Federal Economic Development Agency for Northern Ontario, such as the Northern Ontario Development Program (NOHFC 2023; FedNor 2019). The Northern Ontario Heritage Fund Corporation's Community Enhancement Program is designed to help communities with infrastructure investments to upgrade or repair existing assets to improve community quality of life (NOHFC 2023). Through its Northern Ontario Development Program, the Federal Economic Development Agency for Northern Ontario invests in projects led by municipalities, First Nations, and other organizations and institutions that support community economic development, diversification, job creation, and to help communities become self-reliant (FedNor 2019). Additional information on economic development specific to the Local Study Area communities is provided in **Section 3.4**.

3.5.3.4 Sources of Local Government Expenses

Municipal expenses include (MMAH 2022):

- **General government expenses** for governance and administration, corporate management, and program supports.
- **Protection services expenses** for fire, police, court security, protective inspection and control, and emergency services.
- **Transportation expenses** for roads (paved, unpaved, and bridges and culverts), traffic operations, winter control, transit expenses (including for disabled and special needs), parking, street lighting, air transport, and facilities and vehicles.
- **Environmental services expenses** for water and wastewater, storm sewer, and solid waste.
- **Health services expenses** include public health services, ambulance services, and cemeteries.
- **Social and family services expenses** for general assistance, assistance to aged persons, and childcare.
- **Social housing expenses** include expenses for public housing.
- **Recreation and cultural services expenses** for parks, recreational and cultural programs and facilities, libraries, and museums.
- **Planning and development expenses** for planning and zoning, residential development, and commercial and industrial development.

Municipal expenses are typically categorized by (MMAH 2021):

- Salaries, wages, and employee benefits;
- Materials;
- Contracted services;
- Rents and financial expenses;
- External transfers;
- Interest on long term debt; and
- Amortization

For further information on municipal expense categorization see **Appendix 3B Supplemental Data**.

The LSB and unincorporated community expenses are **described in Section 3.5.2**.

Table 3.5-2 provides a summary of local government expenditures reported for Ignace (2019), Dryden (2020), Machin (2020), Sioux Lookout (2020), the LSB of Wabigoon (2023), the LSB of Melgund (2023), and Dinorwic (2023) (MMAH 2021; NWO Baseline Studies Key Person Interview Program 2022-2023).

Table 3.5-2: Categories of Local Government Expenditures

Expenditures	Ignace 2019	Dryden 2020	Machin 2020	Sioux Lookout 2020	LSB Wabigoon 2023	LSB Melgund 2023	Dinorwic 2023
General government							
Governance, corporate mgmt., & program support	✓	✓	✓	✓			
Protection services							
Fire	✓	✓	✓	✓	✓		✓
Police & emergency services	✓	✓	✓	✓			
Protective inspection & control	✓	✓	✓	✓			
Emergency telecom.					✓		
Transportation							
Roads and winter control	✓	✓	✓	✓			
Transit (incl. disabled needs) & parking		✓		✓			
Street lighting	✓	✓	✓	✓	✓		
Air transport	✓	✓	✓	✓			
Environmental							
Water services	✓	✓	✓	✓			
Wastewater services	✓	✓		✓			
Storm sewer services	✓	✓		✓			
Solid waste services	✓	✓	✓	✓		✓	
Health services							
Public health services, including ambulance	✓	✓	✓	✓			
Social and family services							
General assistance, assistance to aged persons, & childcare	✓	✓	✓	✓			
Social housing							
Public housing	✓	✓	✓	✓			
Recreation and cultural services							
Parks, programs, & facilities	✓	✓	✓	✓			
Libraries, museums, & cultural services	✓	✓		✓			
Recreation services					✓	✓	
Planning and Development							
Planning and development	✓	✓	✓	✓			

Source: MMAH 2021; NWO Baseline Studies Key Person Interview Program 2022-2023.

Note: ✓ represents categories of local government expenditure.

Table 3.5-2 indicates Ignace, Dryden, Machin, and Sioux Lookout have expenditures across all nine local government expenditures categories. The LSB of Melgund provides recreation and garbage collection services, The LSB of Wabigoon provides fire services, street and area lighting,

recreation, and emergency telecommunication (MMAH 2021; NWO Baseline Studies Key Person Interview Program 2022-2023). Services are minimal in Dinorwic. Key person interviews identified that fire protection is shared with the LSB of Wabigoon and the Ministry of Transportation of Ontario is responsible for provincial roads, including winter snow clearing (NWO Baseline Studies Key Person Interview Program 2022-2023).

3.5.3.5 Local Government Surplus or Deficits

In a local government budget, the annual calculation for the surplus or deficit of the previous year shows whether the planned revenues for the previous year were enough to cover the planned expenses. Any differences are carried forward into the budget year period as revenue (surplus) or an expense (deficit) (Government of Ontario 2022a).

The surplus or deficit for a local government is an indicator of its financial health and indicates whether its revenues cover its expenditures. Successive years of deficits can indicate sustainability challenges for local government finances. Intergenerational equity is an important part of real financial sustainability (Association of Municipalities of Ontario 2018). Intergenerational equity implications include the need for appropriate fiscal planning so that the generation of people who benefit from the local government and its assets are also the ones paying for it (Association of Municipalities of Ontario 2018; Johal et al 2019). A key principle of financial sustainability is the need to share local government cost burdens equitably between generations (Association of Municipalities of Ontario 2018; Johal et al 2019).

Section 3.5.3.1 describes how *the Ontario Municipal Act* (2001) requires every Ontario municipality to prepare and approve a budget each year and outlines the regulations for a municipality's annual or multi-year budgeting process. Municipal budgets must be balanced. Requirements to prepare and approve a balanced budget contribute to the sustainability and financial health of a municipality. If a surplus occurs at the end of a fiscal year, a municipality can transfer the amount to the accumulated surplus or to a reserve fund for future use, including operating related reserves or for capital-related initiatives (Government of Ontario 2001). If a deficit occurs at end of fiscal year, a municipality may draw down the accumulated surplus from prior years or the deficit could be funded by the appropriate reserves (Government of Ontario 2001).

3.5.3.6 Local Government Reserve Funds and Accumulated Surplus

Ignace, Dryden, Machin, and Sioux Lookout have reserve funds and accumulated surpluses that support expected future spending. Understanding a municipality's reserve funds and accumulated surplus helps provide context on the funding available for expected future expenses, its intergenerational equity, and financial sustainability. **Section 3.5.3.1** summarizes certain provisions of the *Ontario Municipal Act* (2001) including that the Ministry of Municipal Affairs and Housing may make regulations requiring a municipality to establish a reserve fund and make payments to a reserve fund. Reserve fund levels are typically monitored and reported on a regular basis, generally within the budgeting process, and municipal staff routinely assess the adequacy of the balance by reviewing the actual balance versus specific targets. The requirements of the Ministry of Municipal Affairs and Housing and the routine assessment and adequacy checks on municipal reserves contributes to the sustainability and financial health of a

municipality's reserve funds. Ontario financial information returns categorize reserve funds for a municipality as (MMAH 2021):

- **Obligatory reserve funds** include funds earmarked for specific purposes and committed for future spending that municipalities are obligated to provide, either by contract or law, which includes agreements with other levels of government or spending on capital projects funded through development charges.
- **Discretionary reserve funds** include funds set aside by municipalities to fund discretionary services and other expected future expenses, such as spending on capital projects, replacement of equipment, and employee benefits.
- **Reserves** include reserve funds available for budget stabilization after accounting for reserve funds that have been earmarked for specific purposes.

A municipality's accumulated surplus is what remains after the revenues have been used to meet the expenses from prior years (Government of Ontario 2021). These remaining funds are available to provide services for future expenses (MMAH 2021). If a surplus occurs at the end of a fiscal year, a municipality can transfer the amount to accumulated surplus for future use (Government of Ontario 2001). If a deficit occurs at the end of a fiscal year, a municipality may use the accumulated surplus as a funding source from prior years (Government of Ontario 2001). Accumulated surplus is an indicator of the financial health of a municipality. Accumulated surplus consists of both cash (for example reserves) and non-cash components (for example equity in tangible capital assets such as roads, buildings, vehicles, equipment, etc.) (MMAH 2021).

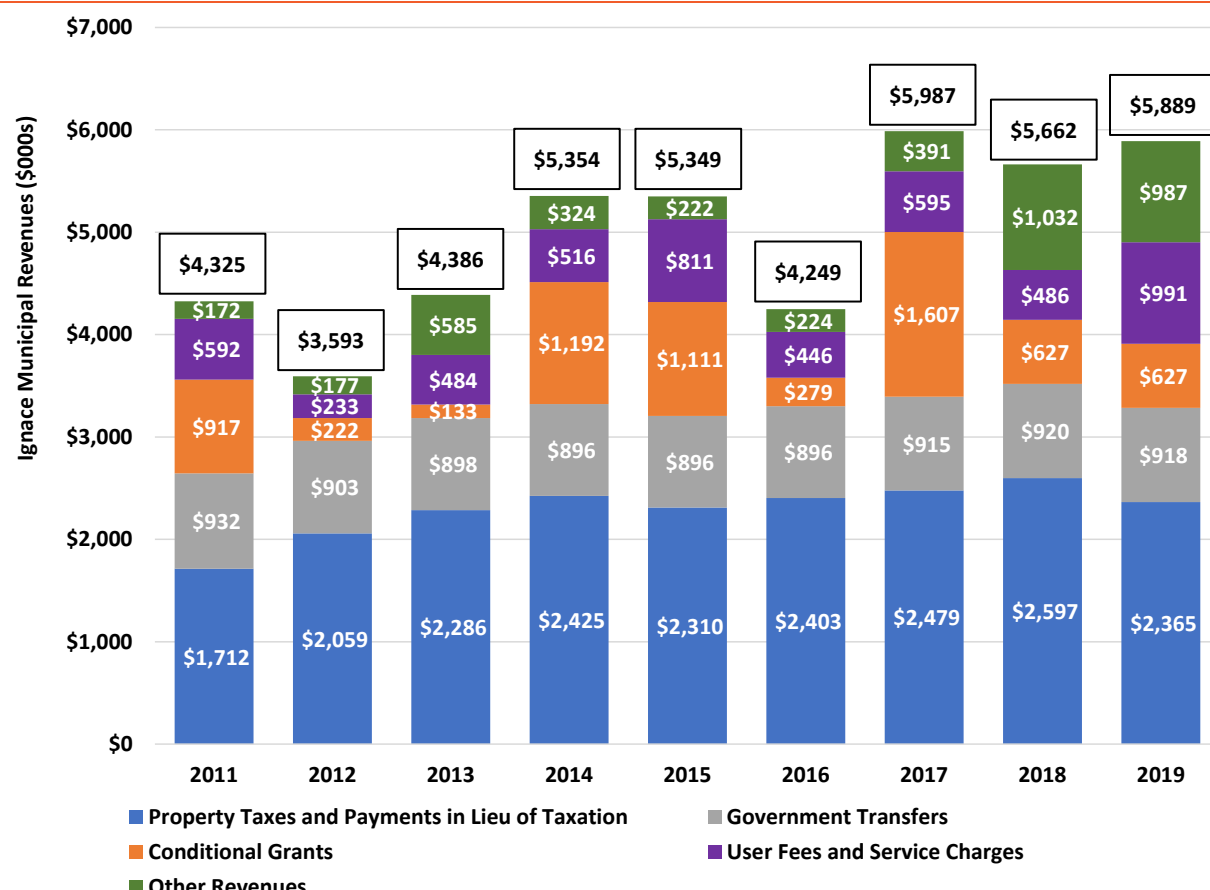
The *Northern Services Boards Act* (1990) identifies that LSBs may establish a by-law to set aside reserves from revenues as considered appropriate for expenditures in subsequent fiscal year(s). The LSB of Wabigoon and the LSB of Melgund provided that they are allowed to have a reserve fund, but it is typically a small fund used for emergencies (NWO Baseline Studies Key Person Interview Program 2022-2023). The unincorporated community of Dinorwic does not have a reserve fund (NWO Baseline Studies Key Person Interview Program 2022-2023).

3.5.3.7 Ignace Municipal Finances

3.5.3.7.1 Revenues

Ignace municipal revenues are summarized in **Figure 3.5-1** for 2011 to 2019 (MMAH 2021).

Figure 3.5-1: Ignace Municipal Revenues (\$000s), 2011 to 2019



Source: MMAH 2021.

Notes

1. Other revenues include revenue from other municipalities, revenue from licenses, permits, and rent, revenue from fines and penalties, and other revenues (investment income, gain/loss on sale of land and capital assets, donations, interest earned on revenues and reserve funds, and/or the NWMO).
2. Revenue from government transfers include the OMPF.
3. Conditional grants included Ontario conditional grants, Ontario Grants for Tangible Capital Assets, Canada Grants for Tangible Capital Assets, Canada conditional grants, and/or deferred revenue earned (Canada Gas Tax). Canada Gas Tax from 2013 to 2016 included transportation services (paved roads) and from 2018 to 2019 general government and environmental services (water and wastewater distribution and transmission). No Canada Gas Tax in 2011, 2012, and 2017.
4. Revenue from licence, permits, and rent came from trailer revenue and permits.
5. Revenue from fines and penalties came from penalties and interest on taxes.

Ignace municipal revenues were \$4.3 million in 2011 and by 2019 revenues were \$5.9 million or an increase of approximately 37.2% (MMAH 2021). The variation in revenues from 2011 through 2019 was primarily due to changes in conditional grants, user fees and service charges, other revenues, and an increase to property taxes and payments in lieu of taxation. Government transfers have been consistent over the timeframe. In 2019, property taxes and payments in lieu of taxation were the largest revenue sources for Ignace (40.2% of total revenues), followed by user fees and service charges (16.8%), other revenues (16.8%), government transfers (15.6%), and conditional grants (10.6%). Observations in **Figure 3.5-1** include:

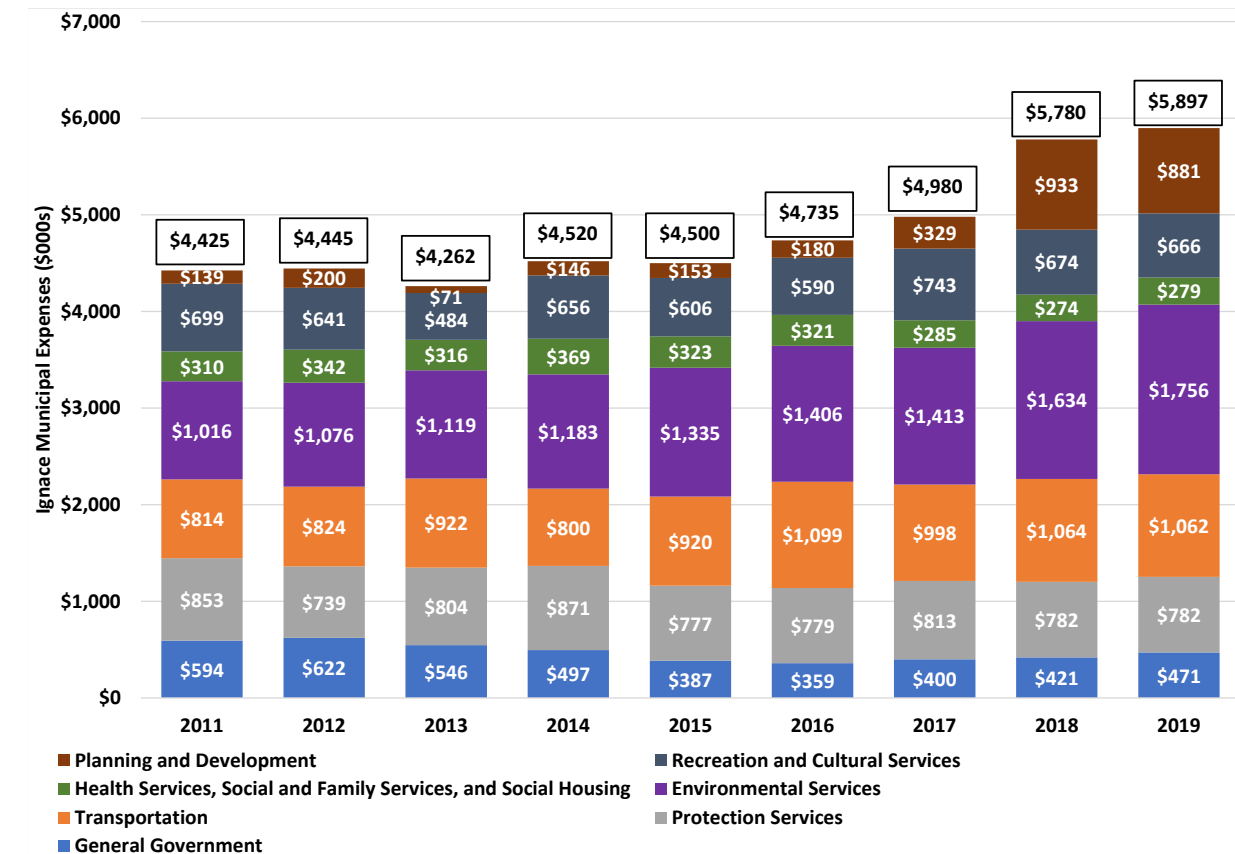
- Property taxes and payments in lieu of taxation increased from 2011 (\$1.7 million) to 2018 (\$2.6 million) by approximately 52.9%, however property taxes decreased from 2018 to 2019 (\$2.4 million) by approximately 7.7%. The decrease in property tax revenue in 2019 was a result of write-offs on properties and the removal of these properties from the tax base (NWO Community and Baseline Studies Key Person Interview Program 2022).
- Conditional grants saw a large increase in 2017 compared to other years reported primarily due to an Ontario grant for tangible capital assets of \$1.1 million for paved roads and for water treatment and distribution (MMAH 2021). Conditional grants also included Canada Gas Tax funding, which ranged from \$70,000 in 2014 to \$150,000 in 2019 (MMAH 2021).
- The increase to total revenues in 2019 compared to 2018 was primarily due to an increase to user fees and service charges for water and wastewater rates of approximately 20% (NWO Community and Baseline Studies Key Person Interview Program 2022). The Township began a water utility metering program where the majority of its customers were metered in 2019 along with the introduction of an infrastructure fee. Prior to 2019, the majority of customers were on a flat rate (NWO Community and Baseline Studies Key Person Interview Program 2022).
- The increase to other revenues in 2018 and 2019 was primarily the result of NWMO contributions. NWMO contributions from 2013 to 2019 ranged from \$100,000 to \$900,000 (MMAH 2021). The Township has used the NWMO contributions to reimburse for expenses related to participating in the Project, including salaries and benefits, administrative costs, youth and Indigenous engagement, community studies, legal fees, consulting fees, investments in community well being and education skills, and taxes and utilities.

Further details on revenues sources are provided in **Appendix 3B Supplemental Data**. Information on municipal reporting requirements, including budgeting and financial statements, under the *Ontario Municipal Act* (2001) are included in **Section 3.5.2**.

3.5.3.7.2 Expenditures

Ignace municipal expenses are summarized in **Figure 3.5-2** for 2011 to 2019 (MMAH 2021).

Figure 3.5-2: Ignace Municipal Expenses (\$000s), 2011 to 2019



Source: MMAH 2021.

Ignace municipal expenses were consistent from 2011 to 2015 and increased each year from 2016 to 2019, from \$4.7 million in 2016 to \$5.9 million in 2019 or 25.5% (MMAH 2021). The increase in expenses from 2016 to 2019 is primarily the result of an increase in environmental services and planning and development expenses beginning in 2018. All other expenses were generally consistent over the timeframe. In 2019, the largest expenses for Ignace include environmental services (29.8% of total expenses), followed by transportation expenses (18.0%) and planning and development (14.9%). Observations in **Figure 3.5-2** include:

- Environmental service expenses increased in 2018 when compared to previous years due to an increase to water treatment and wastewater treatment and disposal expenditures.
- Planning and development expenses increased in 2018 compared to 2016 and 2017 because of increased expenses for planning and zoning.

Increases in planning and development expenses and environmental service expenses are due in part to economic development expenditures and for the water utility meter installation program (NWO Community and Baseline Studies Key Person Interview Program 2022). The wastewater plant is nearing the end of its 50 year life and will require upgrades to accommodate population growth (NWO Community and Baseline Studies Key Person Interview Program 2022). IAWG

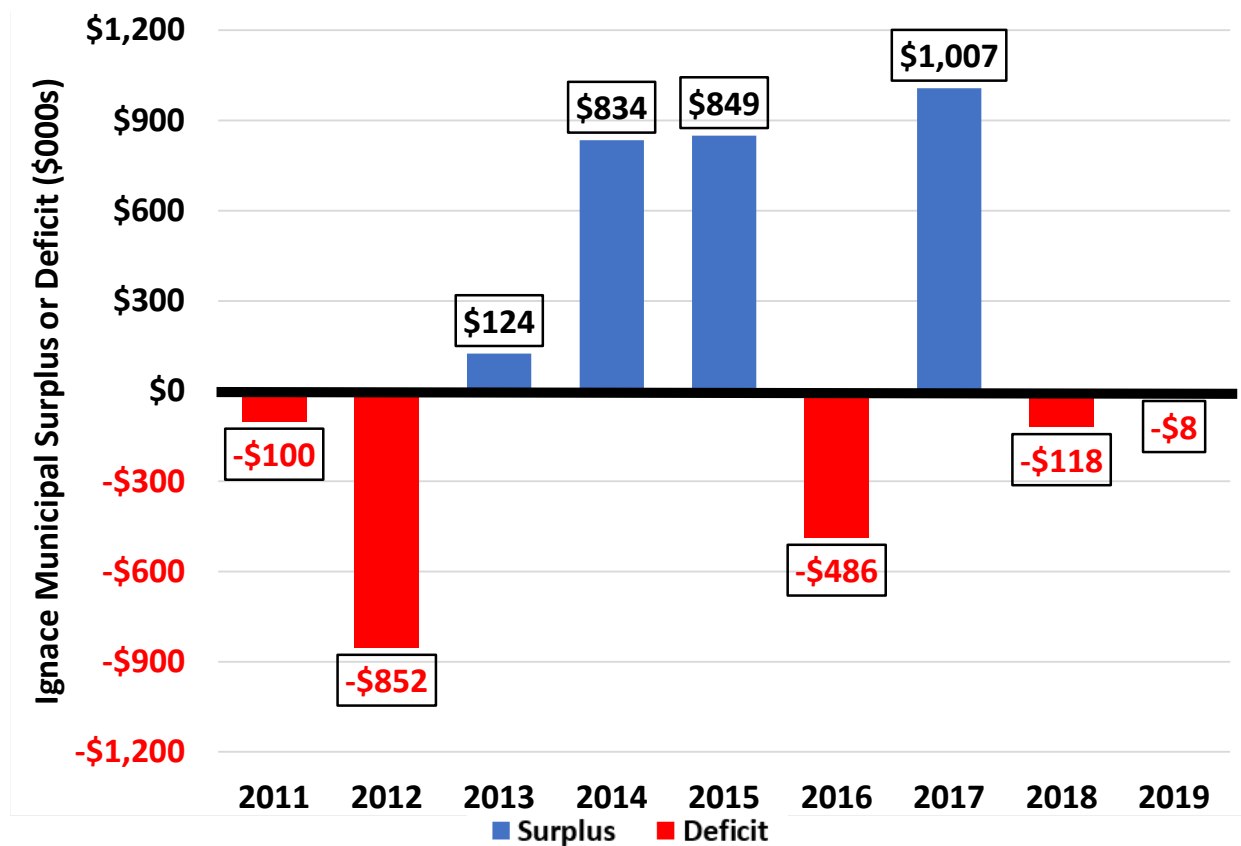
members stated that residents of unincorporated communities may use Ignace’s municipal services, such as parks, public buildings, and waste disposal, but do not pay municipal taxes to support the services, which may put an additional burden on the municipal services provided by Ignace (IAWG October 06, 2021). Further details on municipal expenditures are provided in

Appendix 3B Supplemental Data.

3.5.3.7.3 Surplus or Deficits

Ignace’s annual surplus or deficits are summarized in **Figure 3.5-3** for 2011 to 2019 (MMAH 2021). Understanding the surplus or deficit for a municipality is an indicator of its financial health and helps provide context on whether a municipality’s revenues cover its expenditures.

Figure 3.5-3: Ignace Municipal Surplus or Deficit (\$000s), 2011 to 2019



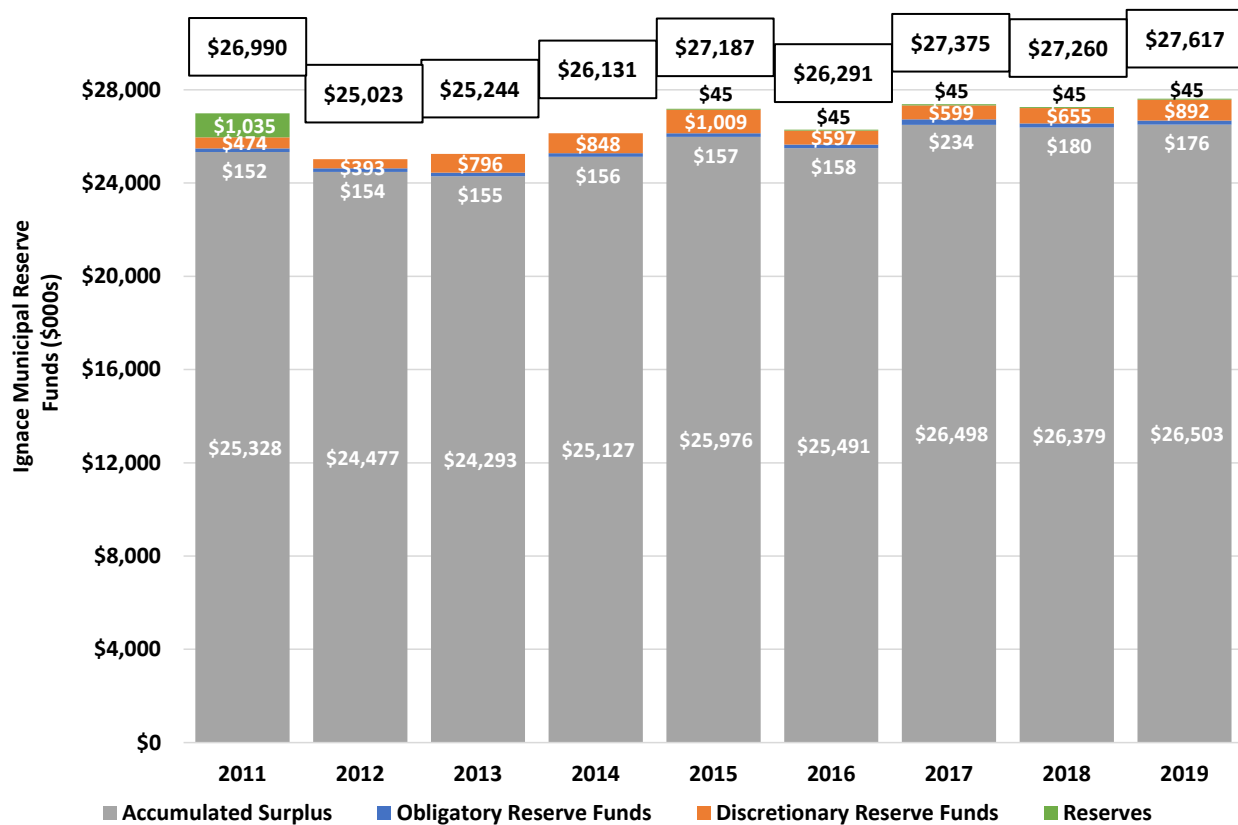
Source: MMAH 2021.

Ignace had deficits in 2011 (\$100,000), 2012 (\$852,000), 2016 (\$486,000), 2018 (\$118,000), and 2019 (\$8,000) and surpluses in 2013 (\$124,000), 2014 (\$834,000), 2015 (\$849,000), and 2017 (\$1,007,000). The surplus in 2017 was primarily a result of an increase to conditional grants. When considering the financial health and intergenerational equity of a municipality, Ignace’s surplus or deficit has varied from 2011 to 2019 but in aggregate the surpluses have exceeded the deficits.

3.5.3.7.4 Reserve Funds and Accumulated Surplus

Ignace municipal reserve funds and accumulated surplus are summarized in **Figure 3.5-4** for 2011 to 2019 (MMAH 2021). Understanding a municipality's reserve funds and accumulated surplus helps provide context on the funding available for expected future expenses and financial sustainability.

Figure 3.5-4: Ignace Municipal Reserve Funds and Accumulated Surplus (\$000s), 2011 to 2019¹



Source: MMAH 2021.

Notes:

1. A municipality's accumulated surplus is what remains after the municipal revenues have been used to meet the expenses from prior years and includes both cash and non-cash components (MMAH 2021).

From 2012 to 2019, Ignace reserve funds and accumulated surplus have ranged from a low of \$25.0 million in 2012 to a high of \$27.6 million in 2019 (MMAH 2021). The change in reserves and accumulated surplus from 2012 to 2019 was primarily a result of changes to the accumulated surplus. Observations in **Figure 3.5-4**:

- The accumulated surplus has been used as a funding source to address deficits (for example, the accumulated surplus decreased in 2012, 2016, and 2018 where deficits occurred). The accumulated surplus increased from 2011 (\$25.3 million) to 2019 (\$26.5 million) (MMAH 2021).

- The obligatory reserve funds include Ontario Community Infrastructure Funding and is earmarked for certain infrastructure projects, such as for roads, water and wastewater, and conservation projects (NWO Community and Baseline Studies Key Person Interview Program 2022).
- Discretionary reserves are set aside for public works, equipment, and infrastructure projects (NWO Community and Baseline Studies Key Person Interview Program 2022).
- The reserves fund in 2011 exceeded \$1.0 million and was used in 2012 for budget stabilization (NWO Community and Baseline Studies Key Person Interview Program 2022).

In regard to the financial health and sustainability of Ignace's collective reserve funds and accumulated surplus, since 2011 Ignace has consistently had reserve funds and an accumulated surplus in excess of \$25 million to help plan for and support expected future expenses.

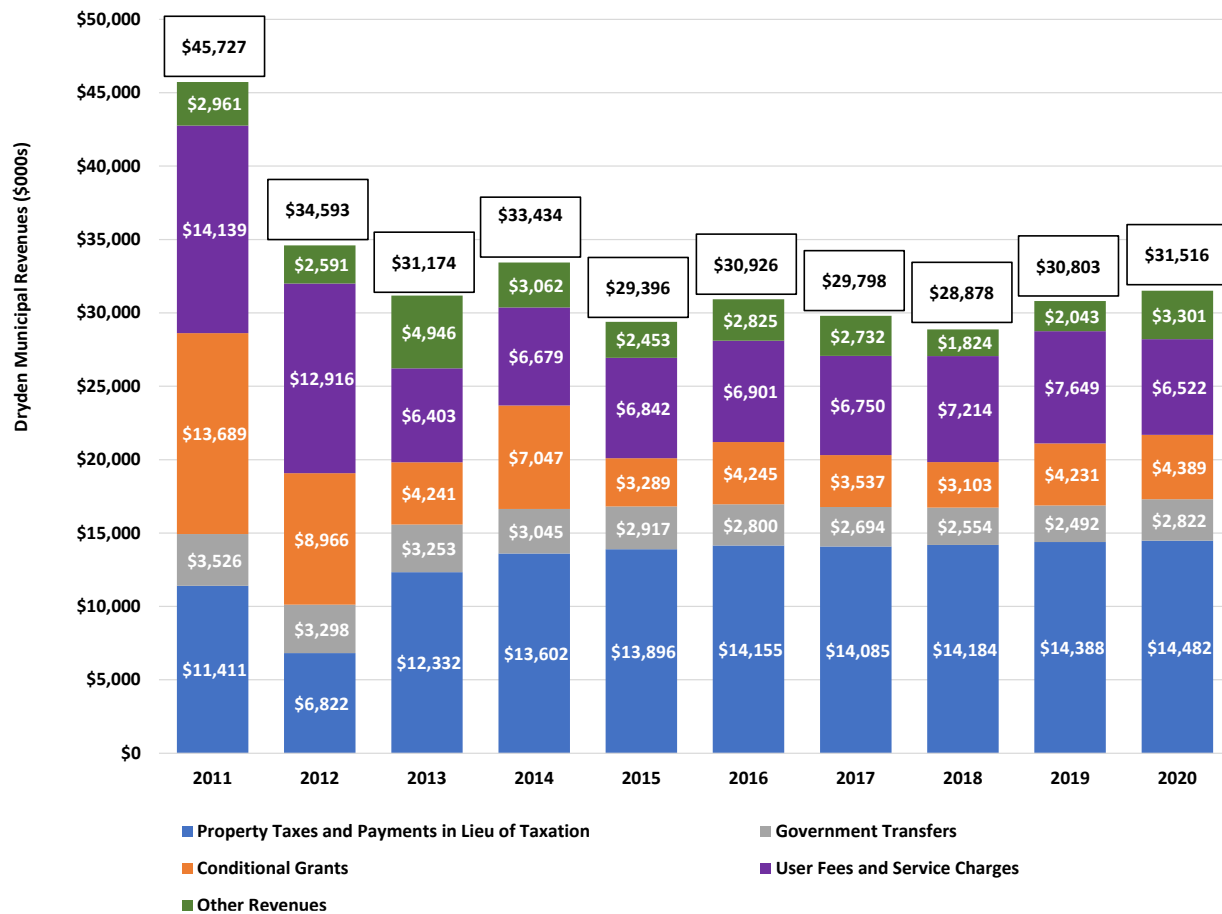
Further details on Ignace's financial information returns, including reserves and accumulated surplus, are also provided in **Appendix 3B Supplemental Data**.

3.5.3.8 Dryden Municipal Finances

3.5.3.8.1 Revenues

Dryden municipal revenues are summarized in **Figure 3.5-5** for 2011 to 2020 (MMAH 2021).

Figure 3.5-5: Dryden Municipal Revenues (\$000s), 2011 to 2020



Source: MMAH 2021.

Notes

1. Other revenues include revenue from other municipalities, revenue from licenses, permits, and rent, revenue from fines and penalties, and other revenues (investment income, interest earned on reserves and reserve funds, gain/loss on sale of land and capital assets, donations, library, recycling, fire and police, Save Ontario Energy, the Dryden Municipal Telephone Service, NWMO contributions, and/or miscellaneous).
2. Revenue from government transfers include the OMPF from 2011 to 2020, the Ontario Cannabis Legalization Implementation Fund in 2019, and the Safe Restart Agreement and public transit funding in 2020.
3. Conditional grants included Ontario conditional grants, Ontario Grants for Tangible Capital Assets, Canada conditional grants, Canada Grants for Tangible Capital Assets, deferred revenue earned (Provincial Gas Tax), and/or deferred revenue earned (Canada Gas Tax). Provincial Gas Tax funding included transit operating expenses from 2013 to 2020. Canada Gas Tax funding included transportation services and recreation facilities from 2017 to 2020 and environmental services from 2011 to 2020.
4. Revenue from licence, permits, and rent include licences and permits and rents, concessions and franchises.
5. Revenue from fines and penalties include Provincial Offences Act, other fines, and penalties and interest on taxes.

Dryden municipal revenues varied from \$28.9 million in 2018 to \$45.7 million in 2011 (MMAH 2021). However, from 2013 to 2020 the total of revenue sources typically had similar variation across the timeframe. Among revenues from 2013 to 2020, variation was seen in conditional grants, user fees and service charges, and other revenues. The difference in revenues for 2011 and 2012, compared to 2013 to 2020, was primarily a difference in user fees and service charges and conditional grants. In 2020, the largest revenue source for Dryden was property taxes and payments in lieu of taxation (46.0% of total revenues), followed by user fees and service charges (20.7%), conditional grants (13.9%), other revenues (10.5%), and government transfers (9.0%). Observations in **Figure 3.5-5** include:

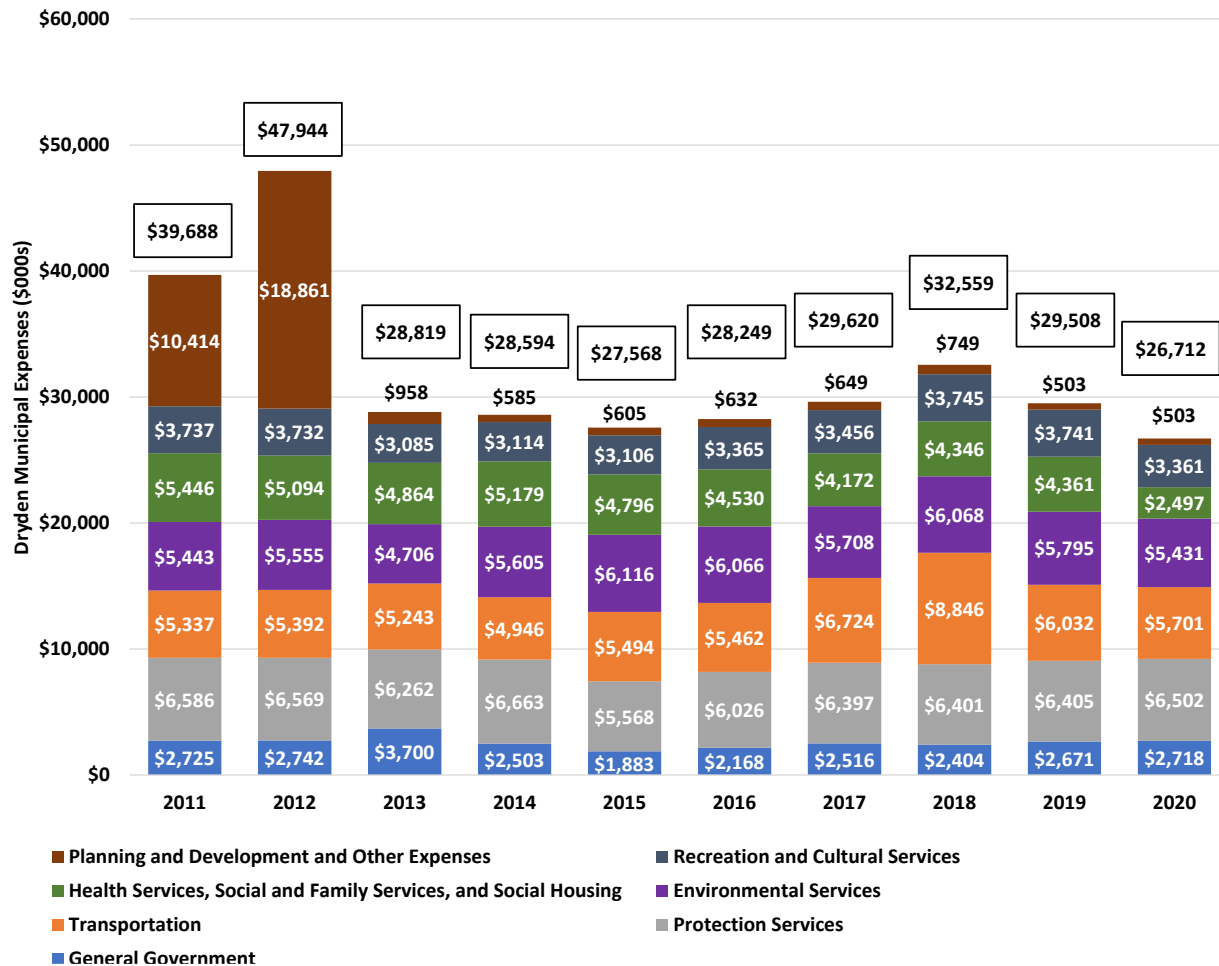
- The change in conditional grants from 2013 to 2020 was primarily the result of change to the grant amounts for Ontario grants for tangible capital assets for paved roads and/or water and wastewater treatment and for Ontario conditional grants for social and family services. Canada Gas Tax funding over this timeframe included transportation services and recreation facilities (2017 to 2020) and environmental services (2011 to 2020). The total funding from the Canada Gas Tax ranged from \$82,000 in 2015 to \$854,000 in 2017 (MMAH 2021). Provincial Gas Tax funding included transit operating expenses from 2013 to 2020 and ranged from \$31,000 in 2018 to \$48,000 in 2019.
- User fees and service charge revenue from 2013 to 2020 is primarily from environmental services (water and wastewater rate revenues), however environmental service revenues were consistent over this time frame. The change in user fees and service charge revenues were primarily a result of changes to air transportation revenues and recreation facilities revenues which, in particular, saw a decrease from 2019 to 2020 (a combined decrease from \$1.4 million in 2019 to \$0.7 million in 2020 or 50.0%) due to the COVID-19 pandemic traffic restrictions and facility closures (NWO Baseline Studies Key Person Interview Program 2022-2023). The additional user fees and service charge revenues seen in 2011 and 2012, when compared to 2013 to 2020, were associated with the Dryden Municipal Telephone Service (including \$7.5 million in 2011 and \$6.3 million in 2012), which was sold at the end of 2012 to Bell Canada (NWO Baseline Studies Key Person Interview Program 2022-2023). Additionally, in 2020, the City of Dryden transferred childcare services to the Kenora District Services Board and user fees associated with that service ceased (NWO Baseline Studies Key Person Interview Program 2022-2023).
- The change in government transfers from 2011 (\$3.5 million) to 2020 (\$2.8 million) was the result of annual minor reductions in OMPF funding. There was a slight increase in government transfers from 2019 (\$2.5 million) to 2020 (\$2.8 million) related to the COVID-19 pandemic for the Safe Restart Agreement and public transit funding (NWO Baseline Studies Key Person Interview Program 2022-2023).
- The change to other revenues from 2011 to 2020 was primarily the result of change in the gain/loss on sale of land and capital assets and change in miscellaneous revenues. Other revenue also included NWMO contributions which ranged from \$40,000 to \$140,000 from 2018 to 2020.

Further details on revenues sources are provided in **Appendix 3B Supplemental Data**. Information on municipal reporting requirements, including budgeting and financial statements, under the *Ontario Municipal Act* (2001) are included in **Section 3.5.2**.

3.5.3.8.2 Expenditures

Dryden municipal expenses are summarized in **Figure 3.5-6** for 2011 to 2020 (MMAH 2021).

Figure 3.5-6: Dryden Municipal Expenses (\$000s), 2011 to 2020



Source: MMAH 2021.

Dryden municipal expenses were largely consistent from 2013 to 2017, increased in 2018, and then decreased in 2019 and 2020. This resulted in an increase from 2013 of \$28.2 million to 2018 of \$32.6 million, or 15.6%, and a decrease from 2018 to 2020 of \$26.7 million, or -18.1%. In 2020, the largest expenses for Dryden include protection services (24.3% of total expenses), followed by transportation expenses (21.3%) and environmental services (20.3%). Among the Local Study Area communities Dryden, proportionally, has the highest protection services expenditures. Observations in **Figure 3.5-6** include:

- The increase in 2018 expenses is primarily the result of an increase in transportation expenses (i.e., paved road expenses).
- The additional expenses in 2011 and 2012, when compared to 2013 to 2020, were associated with the Dryden Municipal Telephone Service, including \$9.6 million in 2011 and \$17.6

million in 2012. Bell Canada purchased the Dryden Municipal Telephone Service in 2012 and Bell continues to use the brand name for landline and internet service (DMTS 2023).

- General government, protection services, environmental services, health services, social and family services, social housing, and recreation and cultural services generally had consistent expenditures from 2011 to 2020. Health services, social and family services, and social housing saw a reduction from 2019 (\$4.4 million) to 2020 (\$2.5 million) associated with the transfer of childcare services to the Kenora District Services Board. It is noted that the decrease in protection services from 2014 (\$6.7 million) to 2015 (\$5.6 million) was the result of cost savings associated with contracting out police dispatching services (NWO Baseline Studies Key Person Interview Program 2022-2023). Protection services as of 2020 (\$6.5 million) are similar to 2014.

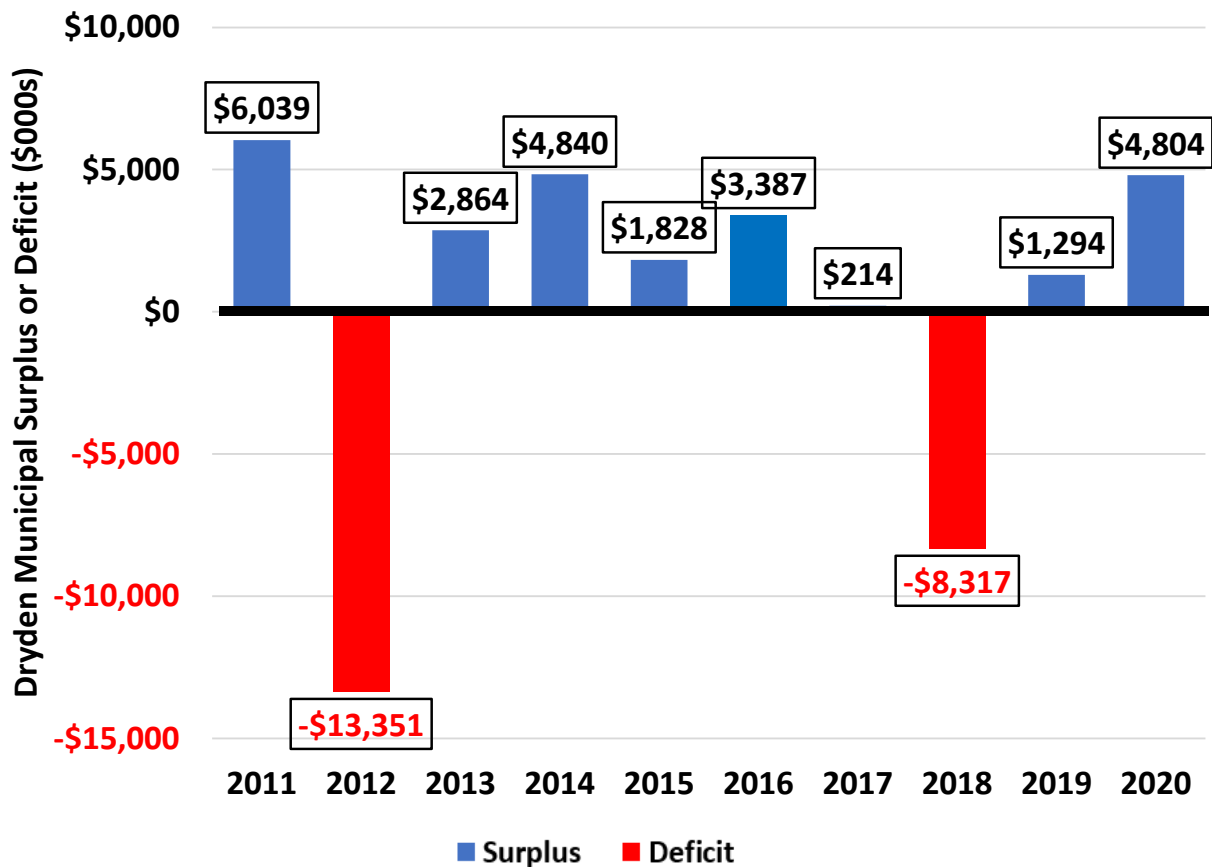
Ignace Area Working Group members provided that residents of unincorporated communities may use Dryden's municipal services, such as parks, public buildings, and the landfill, but do not pay municipal taxes to support the services, which may put an additional burden on the municipal services provided by Dryden (IAWG October 06, 2021). The Northern Policy Institute estimates that the unincorporated population surrounding Dryden, as of 2016, is approximately 3,600 (Noga 2021).

Further details on municipal expenditures are provided in **Appendix 3B Supplemental Data**.

3.5.3.8.3 Surplus or Deficits

Dryden's annual surplus or deficits are summarized in **Figure 3.5-7** for 2011 to 2020 (MMAH 2021). Understanding the surplus or deficit for a municipality is an indicator of its financial health and helps provide context on whether a municipality's revenues cover its expenditures.

Figure 3.5-7: Dryden Municipal Surplus or Deficit (\$000s), 2011 to 2020



Source: MMAH 2021.

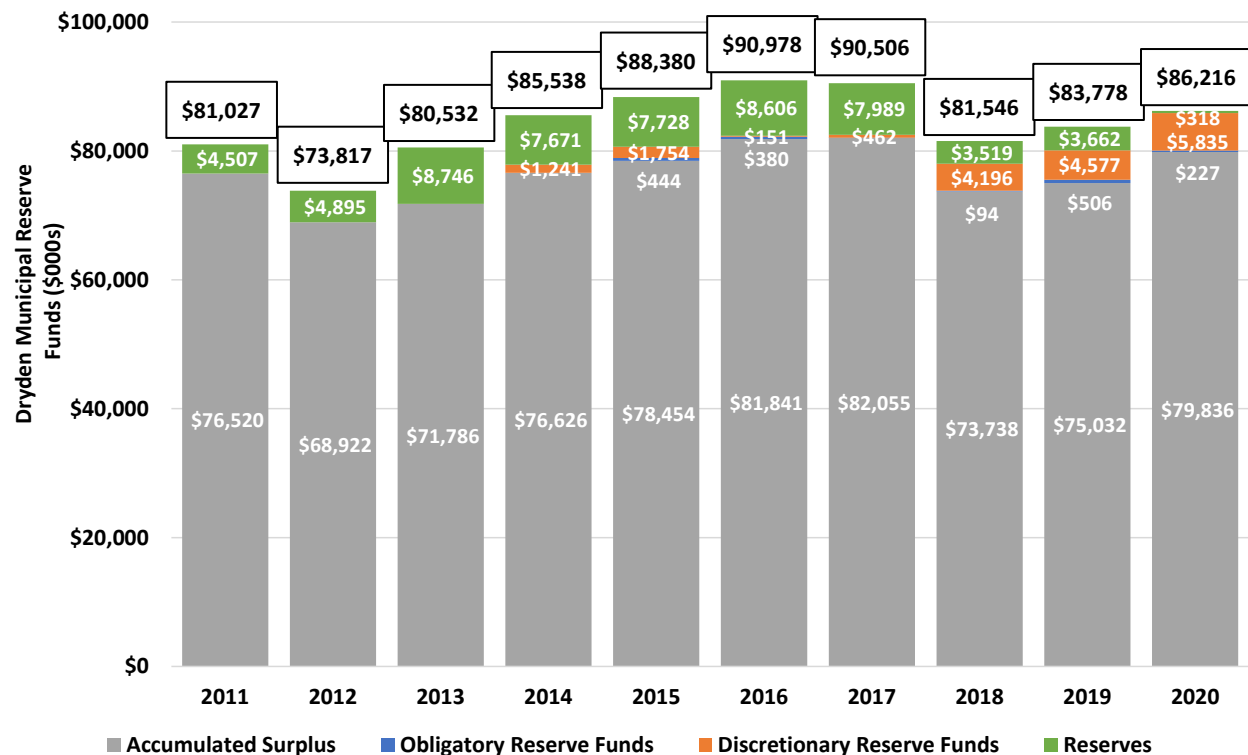
Dryden had a surplus in 2011 (\$6.0 million), 2013 (\$2.9 million), 2014 (\$4.8 million), 2015 (\$1.8 million), 2016 (\$3.4 million), 2017 (\$0.2 million), 2019 (\$1.3 million), and 2020 (\$4.8 million). In 2012 Dryden had a deficit of \$13.4 million and in 2018 Dryden had a deficit of \$8.3 million. The deficit in 2018 is primarily the result of an increase in transportation expenses (an increase of over \$2.1 million compared to other years) and Public Sector Accounting Board adjustments of -\$4.6 million.

When considering the financial health and intergenerational equity of a municipality, Dryden's surplus or deficit has varied from 2011 to 2020 but in aggregate the surpluses have exceeded the deficits.

3.5.3.8.4 Reserve Funds and Accumulated Surplus

Dryden municipal reserve funds and accumulated surplus are summarized in **Figure 3.5-8** for 2011 to 2020 (MMAH 2021). Understanding a municipality's reserve funds and accumulated surplus helps provide context on the funding available for expected future expenses and financial sustainability.

Figure 3.5-8: Dryden Municipal Reserve Funds and Accumulated Surplus (\$000s), 2011 to 2020¹



Source: MMAH 2021.

Notes:

1. A municipality's accumulated surplus is what remains after the municipal revenues have been used to meet the expenses from prior years and includes both cash and non-cash components (MMAH 2021).

Dryden reserve funds and accumulated surplus have ranged from a low of \$73.8 million in 2012 to a high of \$91.0 million in 2016. The change in reserves and accumulated surplus is a result of changes to the discretionary reserve fund, the reserve funds, and accumulated surplus. The accumulated surplus has been used as a funding source to address deficits (for example, the accumulated surplus decreased in 2012 and 2018). Accumulated surplus consistently increased from 2012 to 2017 and from 2018 to 2020 (MMAH 2021). Regarding the financial health and sustainability of Dryden's collective reserve funds and accumulated surplus, since 2013 Dryden has consistently had reserve funds and an accumulated surplus in excess of \$80 million to appropriately plan for and support expected future expenses. Further details on Dryden's

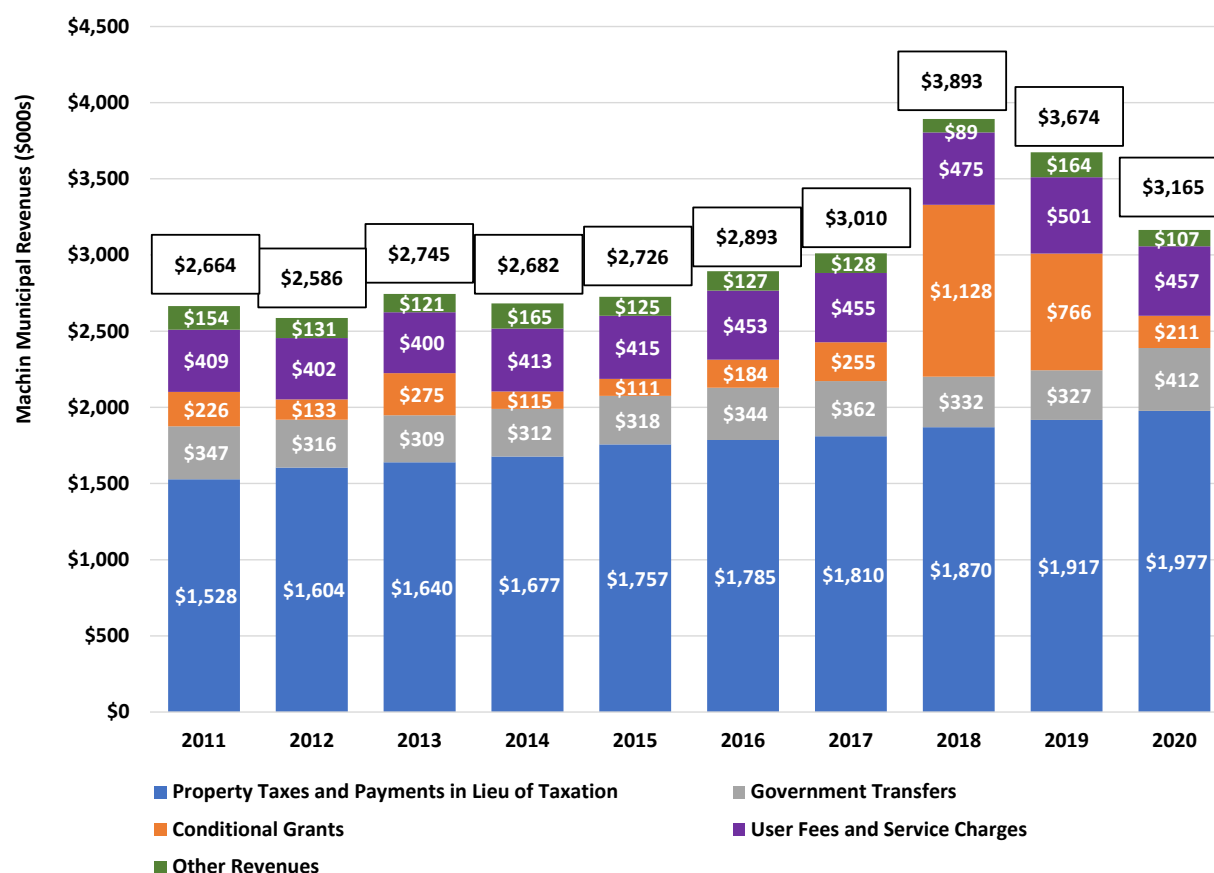
financial information returns, including reserves and accumulated surplus, are also provided in **Appendix 3B Supplemental Data**.

3.5.3.9 Machin Municipal Finances

3.5.3.9.1 Revenues

Machin municipal revenues are summarized in **Figure 3.5-9** for 2011 to 2020 (MMAH 2021).

Figure 3.5-9: Machin Municipal Revenues (\$000s), 2011 to 2020



Source: MMAH 2021.

Notes

1. Other revenues include revenue from other municipalities, revenue from licenses, permits, and rent, revenue from fines and penalties, and other revenues (investment income, donations, miscellaneous, sale of water, and/or gain/loss on sale of land and capital assets).
2. Revenue from government transfers include the OMPF from 2011 to 2019 and the Ontario Cannabis Legalization Implementation Fund in 2019.
3. Conditional grants included Ontario conditional grants, Ontario Grants for Tangible Capital Assets and Canada Grants for Tangible Capital Assets, deferred revenue earned (Provincial Gas Tax) and/or deferred revenue earned (Canada Gas Tax). Provincial Gas Tax fund included transit operating expenses and the Canada Gas Tax fund included environmental services (water treatment).
4. Revenue from licence, permits, and rent included licences, permits, and rents, concessions, and franchises.
5. Revenue from fines and penalties include penalties and interest on taxes.

Machin municipal revenues varied from \$2.6 million in 2012 to \$3.9 million in 2018 (MMAH 2021). In 2020, the largest revenue source for Machin was property taxes and payments in lieu of taxation (62.5% of total revenues), followed by user fees and service charges (14.4%), government transfers (13.0%), conditional grants (6.7%), and other revenues (3.4%).

Observations in **Figure 3.5-9** include:

- Revenues were generally consistent from 2011 to 2017 and saw an increase in 2018 and 2019. The increase in 2018 and 2019 is primarily the result of an increase to conditional grants. Property taxes and payments in lieu of taxation, government transfers (i.e., Ontario Municipal Partnership Fund), user fees and service charges, and other revenues were similar for 2011 to 2020.
- The increase to conditional grants in 2018 is primarily due to an Ontario grant for tangible capital assets of \$934,000 for paved roads, which included the completion of Townline Road (NWO Baseline Studies Key Person Interview Program 2022-2023). The increase to conditional grants in 2019 was primarily due to an Ontario conditional grant of \$362,000 for general government and an Ontario grant for tangible capital assets of \$312,000 for paved roads, including disaster funding to replace roads and culverts from the 2019 flood (NWO Baseline Studies Key Person Interview Program 2022-2023). Canada Gas Tax funding from 2011 to 2020 was used for water treatment and varied from \$54,000 in 2015 to \$60,000 in 2011, 2012, 2013, and 2018. Provincial Gas Tax funding from 2011 to 2019 was minimal and ranged between \$7,000 to \$9,000. There was no Provincial Gas Tax funding in 2020.

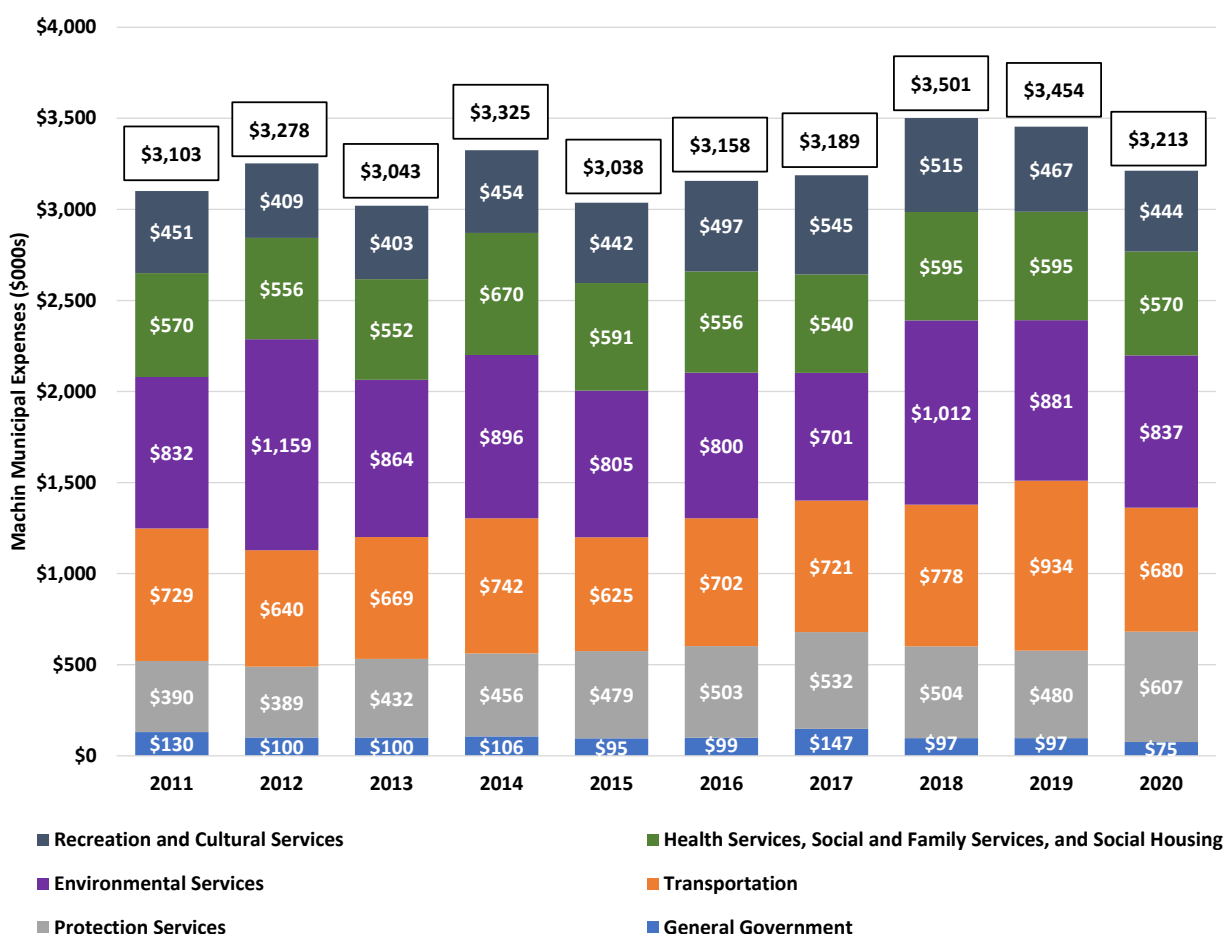
Further details on revenue sources are provided in **Appendix 3B Supplemental Data**.

Information on municipal reporting requirements, including budgeting and financial statements, under the *Ontario Municipal Act* (2001) are included in **Section 3.5.2**.

3.5.3.9.2 Expenditures

Machin municipal expenses are summarized in **Figure 3.5-10** for 2011 to 2020 (MMAH 2021).

Figure 3.5-10: Machin Municipal Expenses (\$000s), 2011 to 2020¹



Source: MMAH 2021.

Notes:

1. The Municipality of Machin planning and development expenses were minimal from 2011 to 2020 and are not provided in the figure.

Machin municipal expenses were generally consistent from 2011 to 2017 and in 2020 and saw an increase in 2018 and 2019. Overall, expenses increased from 2011 to 2018 from approximately \$3.1 million in 2011 to \$3.5 million in 2018, or 12.9% (MMAH 2021). In 2020, the largest expenses for Machin include environmental services (26.1% of total expenses), followed by transportation expenses (21.2%) and protection services (18.9%). Observations in **Figure 3.5-10** include:

- The increase in 2018 expenses is largely the result of an increase in environmental services, which was primarily the result of ongoing maintenance and expenses for the water treatment plant. Machin completed upgrades to the water treatment plant in 2018, including moving to

a computerized operating system (NWO Baseline Studies Key Person Interview Program 2022-2023).

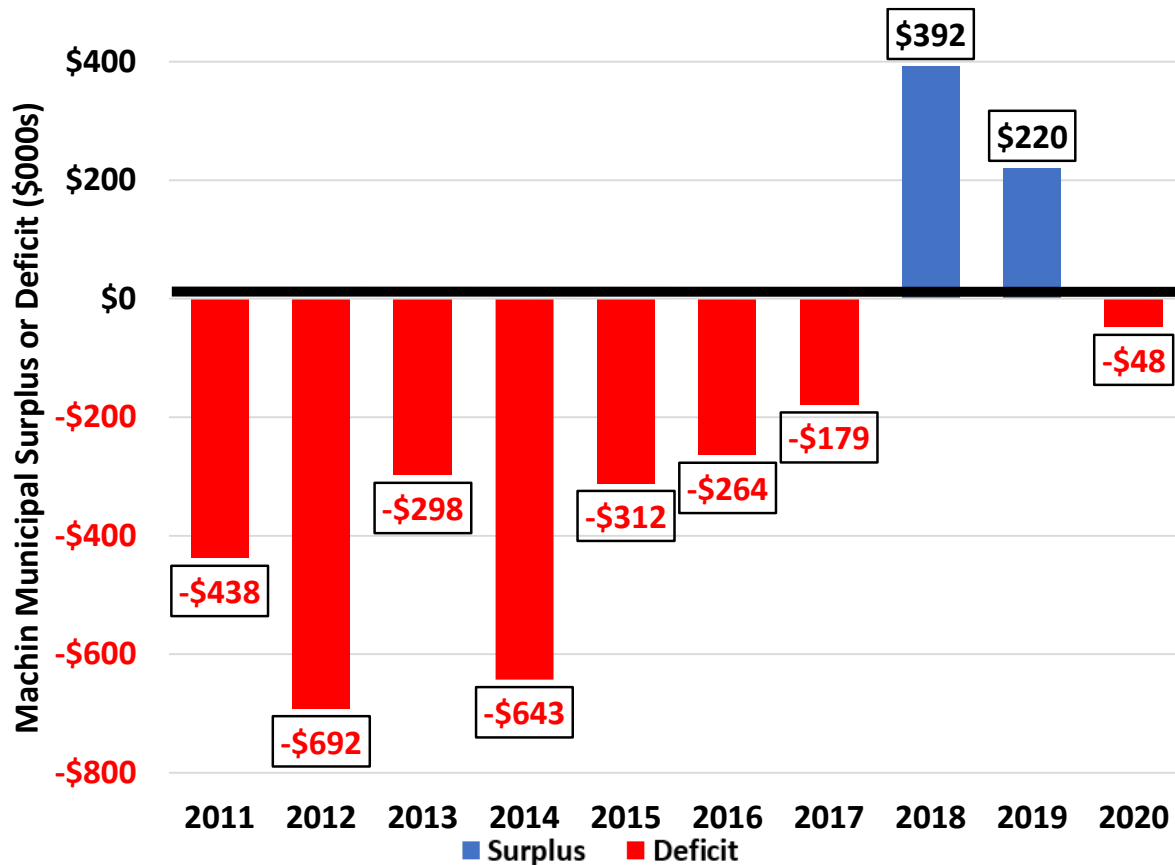
- The increase in 2019 expenses is primarily the result of an increase to transportation expenses (unpaved road expenses).
- General government, protection services, health services, social and family services, and social housing, and recreation and cultural services generally had consistent expenditures from 2011 to 2020.

The Municipality of Machin has stated that they have a very limited budget, including that upgrades and maintenance of infrastructure often rely on grants, of which they have a hard time acquiring (NWO Community and Baseline Studies Key Person Interview Program 2022). For example, the water treatment plant is only operating at 18% and the municipal sewer system is not sustainable or cost efficient, both require maintenance and/or upgrades (NWO Community and Baseline Studies Key Person Interview Program 2022). Further details on municipal expenditures are provided in **Appendix 3B Supplemental Data**.

3.5.3.9.3 Surplus or Deficits

Machin's annual surplus or deficits are summarized in **Figure 3.5-11** for 2011 to 2020 (MMAH 2021). Understanding the surplus or deficit for a municipality is an indicator of its financial health and helps provide context on whether a municipality's revenues cover its expenditures.

Figure 3.5-11: Machin Municipal Surplus or Deficit (\$000s), 2011 to 2020



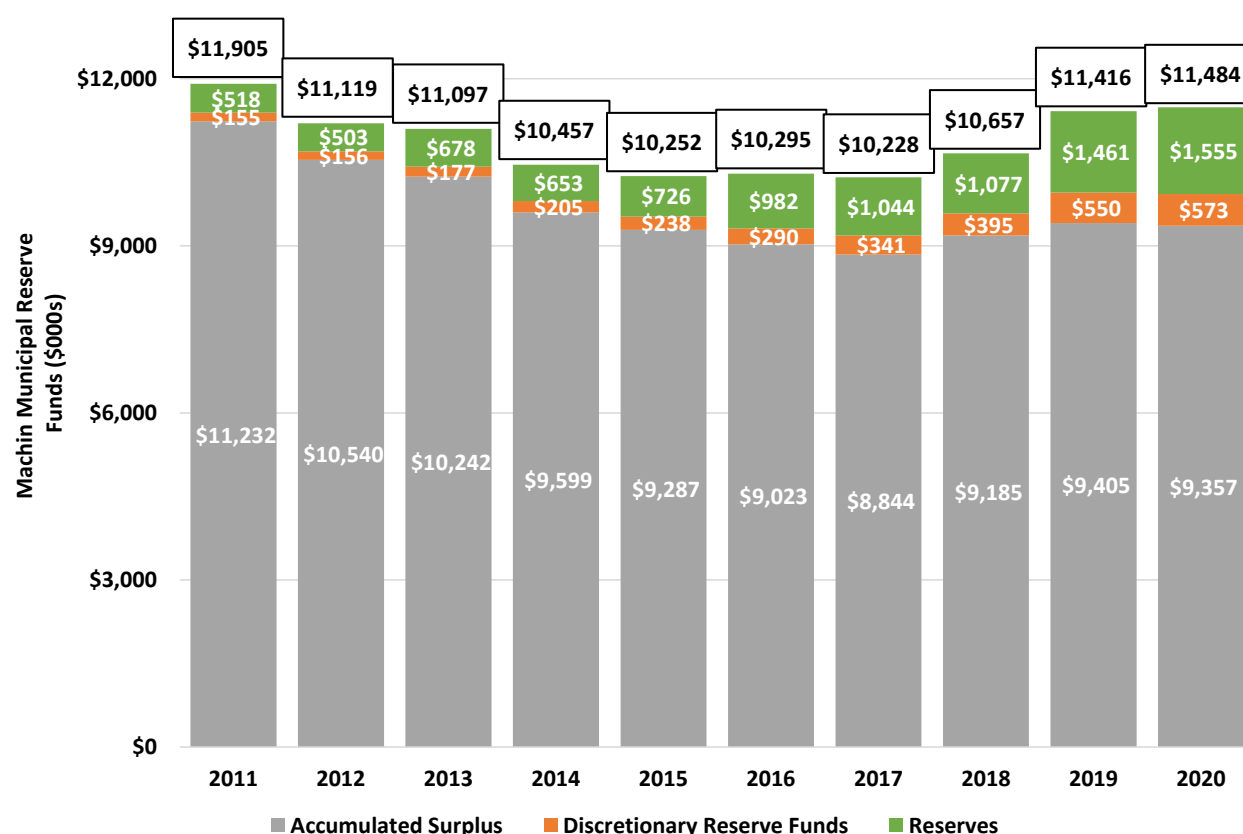
Source: MMAH 2021.

Machin had a surplus in 2018 (\$392,000) and 2019 (\$220,000) and a deficit in 2011 (\$438,000), 2012 (\$692,000), 2013 (\$298,000), 2014 (\$643,000), 2015 (\$312,000), 2016 (\$264,000), 2017 (\$179,000), and 2020 (\$48,000). When considering the financial health and intergenerational equity of a municipality, Machin's surplus or deficit has varied from 2011 to 2020 and in aggregate the deficits have exceeded the surplus. Annual deficits have been addressed by drawing down the accumulated surplus (NWO Baseline Studies Key Person Interview Program 2022-2023).

3.5.3.9.4 Reserve Funds and Accumulated Surplus

Machin municipal reserve funds and accumulated surplus are summarized in **Figure 3.5-12** for 2011 to 2020 (MMAH 2021). Understanding a municipality's reserve funds and accumulated surplus helps provide context on the funding available for expected future expenses and financial sustainability.

Figure 3.5-12: Machin Municipal Reserve Funds and Accumulated Surplus (\$000s), 2011 to 2020¹



Source: MMAH 2021.

Notes:

1. A municipality's accumulated surplus is what remains after the municipal revenues have been used to meet the expenses from prior years and includes both cash and non-cash components (MMAH 2021).

Machin reserve funds and accumulated surplus decreased from 2011 to 2017 and increased from 2017 to 2019. The decrease from 2011 to 2017 is a result of a decrease in accumulated surplus to fund deficits associated to those years (MMAH 2021). Similarly, the increase in reserves and accumulated surplus (2017 to 2019) is primarily a result of an increase associated to the annual surplus seen in 2018 and 2019 and transferred to accumulated surplus (MMAH 2021). The change in the reserve funds was primarily a result of changes to reserves, as well as minimal increases to discretionary reserves. Machin did not have obligatory reserve funds from 2011 to

2020. Machin identified that the reserves fund has been set aside for general emergencies (NWO Baseline Studies Key Person Interview Program 2022-2023).

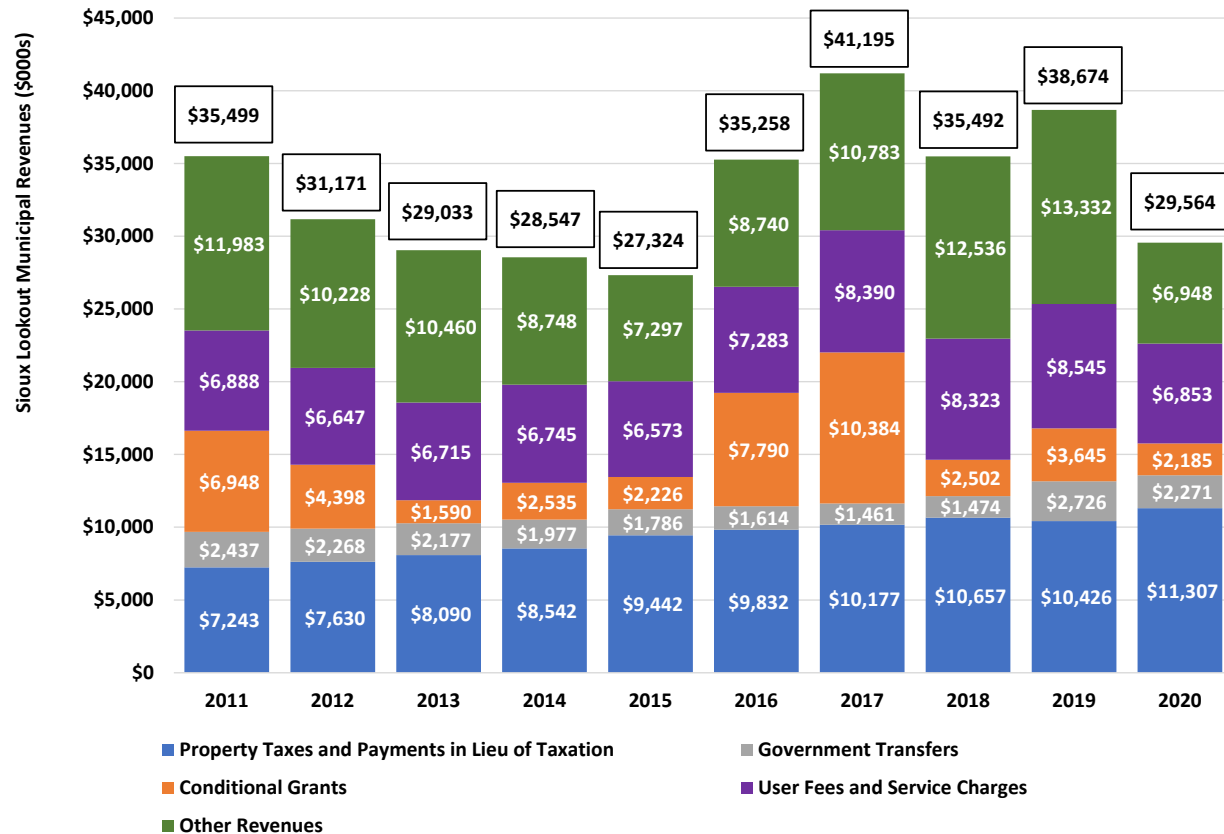
Regarding the financial health and sustainability of Machin's collective reserve funds and accumulated surplus, Machin consistently decreased its collective reserves and accumulated surplus from 2011 to 2017 to fund its annual deficits. The change in Machin's reserves and accumulated surplus from 2011 to 2020 is an indication of the Municipality's financial health and sustainability as the Municipality has the ability, when needed, to fund deficits and, as of 2018 and 2019, is experiencing an annual surplus to help fund its reserves and accumulated surplus to support future expenses. Further details on Machin's financial information returns, including reserves and accumulated surplus, are also provided in **Appendix 3B Supplemental Data**.

3.5.3.10 Sioux Lookout Municipal Finances

3.5.3.10.1 Revenues

Sioux Lookout municipal revenues are summarized in **Figure 3.5-13** for 2011 to 2020 (MMAH 2021).

Figure 3.5-13: Sioux Lookout Municipal Revenues (\$000s), 2011 to 2020



Source: MMAH 2021.

Notes

1. Other revenues include revenue from other municipalities, revenue from licenses, permits, and rent, revenue from fines and penalties, and other revenues (investment income, gain/loss on sale of land and capital assets, donations, sale of publications and equipment, Government business enterprise (i.e., dividends), prior year surplus revenue, and/or interest earned on reserves and reserve funds).
2. Revenue from government transfers include the OMPF from 2011 to 2020, the Ontario Cannabis Legalization Implementation Fund and Evacuation Revenue in 2019, and the Safe Restart Agreement in 2020.
3. Conditional grants included Ontario conditional grants and Canada Grants for Tangible Capital Assets, deferred revenue earned (Canada Gas Tax), Canada conditional grants, Ontario Grants for Tangible Capital Assets. Canada Gas Tax funding included transportation services.
4. Revenue from licence, permits, and rent included licences, permits and rents, concessions, and franchises.
5. Revenue from fines and penalties included other fines and penalties and interest on taxes.

Sioux Lookout municipal revenues varied from a low of \$27.3 million in 2015 to a high of \$41.2 million in 2017. The change in revenue across years is primarily a result of change in conditional grants, user fees and service charges, and other revenues. Property taxes and payments in lieu of taxation has increased slightly over this time frame and government transfers (i.e., Ontario Municipal Partnership Fund) have been consistent over this time frame. In 2020, the largest revenue source for Sioux Lookout was property taxes and payments in lieu of taxation (38.2% of

total revenues), followed by other revenues (23.5%), user fees and service charges (23.2%), government transfers (7.7%), and conditional grants (7.4%). Observations in **Figure 3.4-13** include:

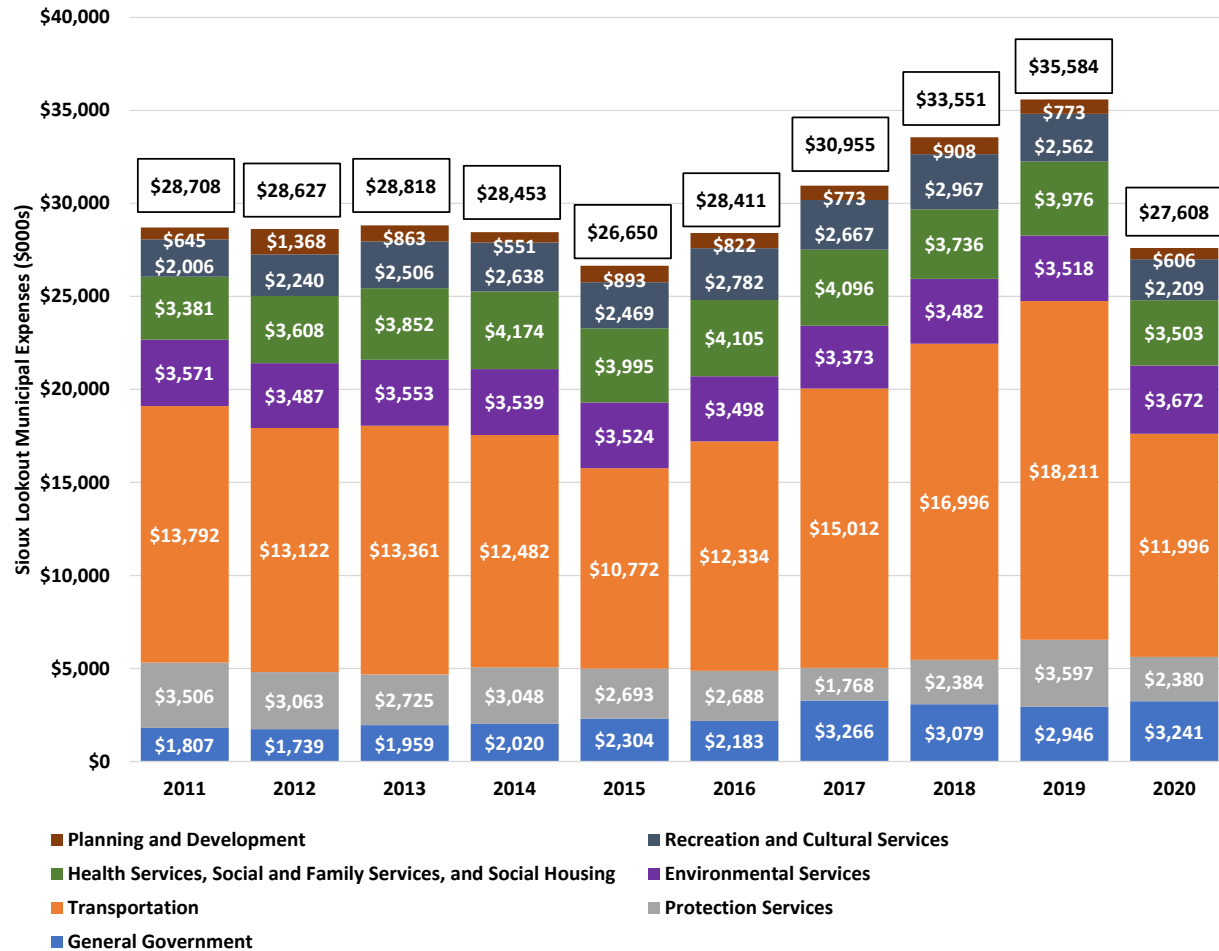
- Conditional grants in 2011 (\$6.9 million), 2016 (\$7.8 million), and 2017 (\$10.4 million) were larger than other years reported and were primarily from Ontario and Canada grants for tangible capital assets and Ontario conditional grants. Conditional grants were for cultural services, planning and zoning, social and family services, childcare, and air transportation. Canada Gas Tax funding for 2011, 2012, and 2016 to 2020 was used for transportation services and ranged from \$0.3 million in 2020 to \$0.9 million in 2019. There was no Canada Gas Tax funding in 2013, 2014, and 2015 and no Provincial Gas Tax funding from 2011 to 2020.
- Revenues from user fees and service charges were consistent from 2011 to 2015, then increased from 2016 (\$7.3 million) to 2019 (\$8.5 million) and decreased in 2020 (\$6.9 million). Revenue from user fees and service charges is primarily from environmental services (water and wastewater rate revenue) and air transportation revenues.
 - Environmental services revenue was generally consistent from 2016 to 2020.
 - In 2016, air transportation revenues were \$2.9 million and increased to \$3.9 million in 2019 (or 34.5%). In 2020, air transportation revenues were \$2.3 million, this represents a decrease of 41.6% from 2019 to 2020. The decrease to air transportation revenues was largely a result of the COVID-19 pandemic (NWO Community and Baseline Studies Key Person Interview Program 2022). On top of providing service to Sioux Lookout residents, the Sioux Lookout airport provides air services and health care for First Nations north of Sioux Lookout (many of which went into lockdown during the COVID-19 pandemic), and as a result, the airport is typically very active (NWO Community and Baseline Studies Key Person Interview Program 2022). The COVID-19 pandemic resulted in lost revenues for the airport, including for air services, user fees for memberships (the facility was shut down temporarily), long term parking fees, short term parking fees, and other revenues (NWO Community and Baseline Studies Key Person Interview Program 2022).
- Changes in other revenues from 2011 to 2020 were from the change in sales of publications or equipment for air transportation (NWO Community and Baseline Studies Key Person Interview Program 2022).

Further details on revenues sources are provided in **Appendix 3B Supplemental Data**. Information on municipal reporting requirements, including budgeting and financial statements, under the *Ontario Municipal Act* (2001) are included in **Section 3.5.2**.

3.5.3.10.2 Expenditures

Sioux Lookout municipal expenses are summarized in **Figure 3.5-14** for 2011 to 2020 (MMAH 2021).

Figure 3.5-14: Sioux Lookout Municipal Expenses (\$000s), 2011 to 2020



Source: MMAH 2021.

Sioux Lookout municipal expenses were largely consistent from 2011 to 2016, increased from 2016 to 2019, and then decreased from 2019 to 2020. This resulted in an increase from 2016 (\$28.4 million) to 2019 (\$35.6 million) of 25.4% and a decrease from 2019 (\$35.6 million) to 2020 (\$27.6 million) of -22.5% (MMAH 2021). In 2020, the largest expenses for Sioux Lookout include transportation expenses (43.5% of total expenses), followed by environmental services (13.3%) and health services, social and family services, and social housing (12.7%).

The change in expenses from 2016 to 2020 is primarily a result of changes in transportation expenses, which were \$12.3 million in 2016, increased to \$18.2 million in 2019, and then decreased to \$12.0 million in 2020. The change in transportation expenses from 2016 to 2020 were primarily due to change in air transportation expenses for airport renovations and expansion (NWO Community and Baseline Studies Key Person Interview Program 2022). Airport renovations and expansion were completed in 2018, and portions of ongoing associated debt are

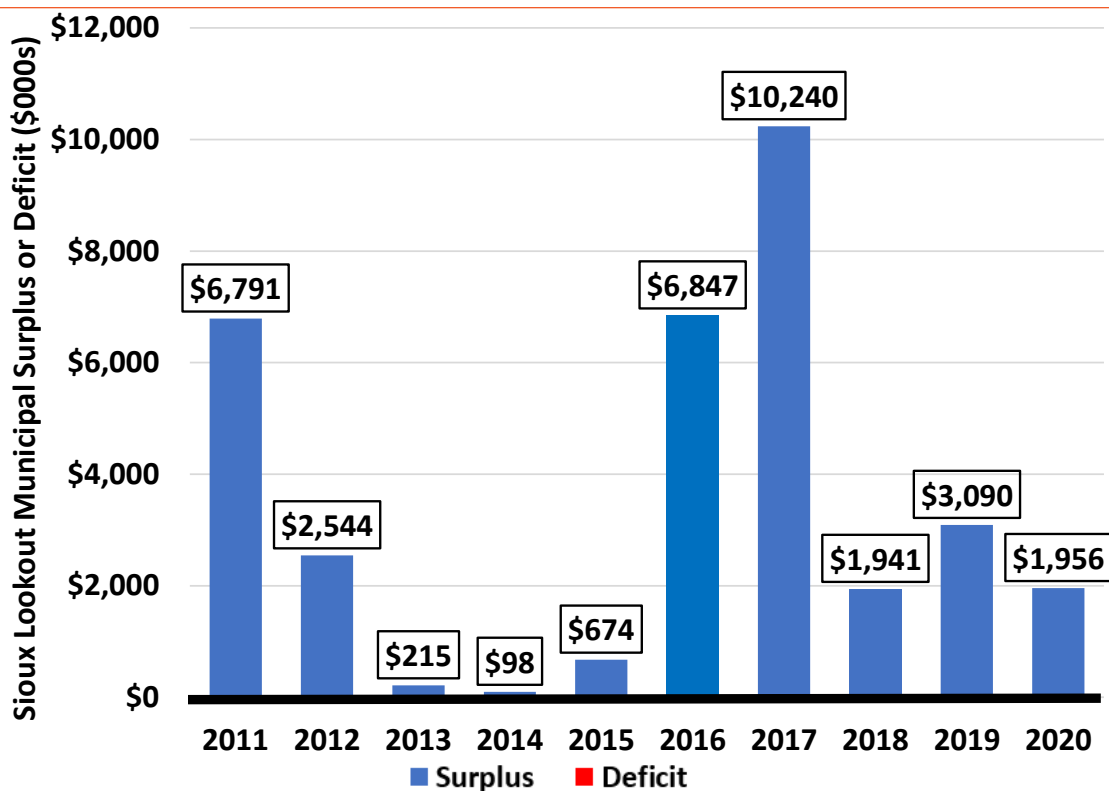
decreasing and being paid off (NWO Community and Baseline Studies Key Person Interview Program 2022).

Further details on municipal expenditures are provided in **Appendix 3B Supplemental Data**.

3.5.3.10.3 Surplus or Deficits

Sioux Lookout's annual surplus is provided in **Figure 3.5-15** for 2011 to 2020 (MMAH 2021). Understanding the surplus or deficit for a municipality is an indicator of its financial health and helps provide context on whether a municipality's revenues cover its expenditures.

Figure 3.5-15: Sioux Lookout Municipal Surplus (\$000s), 2016 to 2020



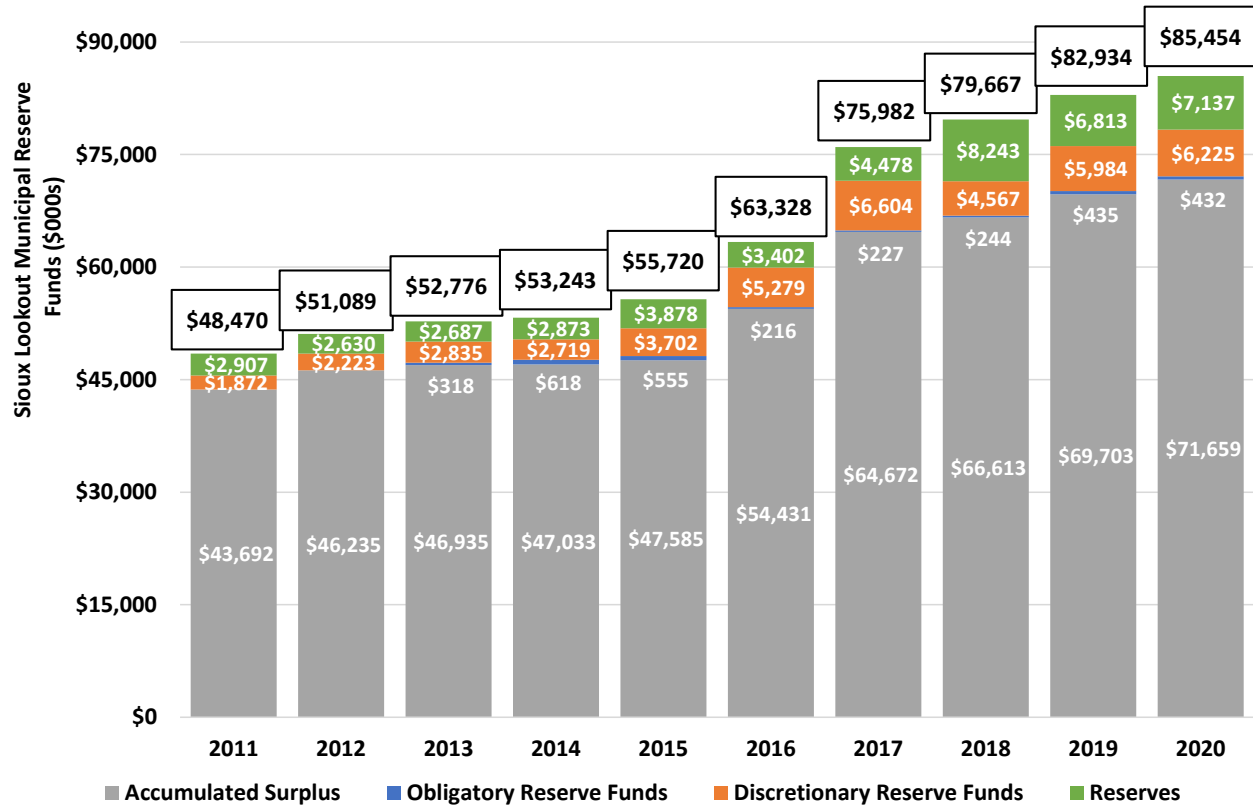
Source: MMAH 2021.

Sioux Lookout had a surplus each year from 2011 to 2020. The surplus ranged from a high of \$10.2 million in 2017 to a low of \$0.1 million in 2014. When considering the financial health and intergenerational equity of a municipality, Sioux Lookout has consistently had a surplus from 2011 to 2020.

3.5.3.10.4 Reserve Funds and Accumulated Surplus

Sioux Lookout municipal reserve funds and accumulated surplus are summarized in **Figure 3.5-16** for 2011 to 2020 (MMAH 2021). Understanding a municipality's reserve funds and accumulated surplus helps provide context on the funding available for expected future expenses and financial sustainability.

Figure 3.5-16: Sioux Lookout Municipal Reserve Funds and Accumulated Surplus (\$000s), 2011 to 2020¹



Source: MMAH 2021.

Notes:

1. A municipality's accumulated surplus is what remains after the municipal revenues have been used to meet the expenses from prior years and includes both cash and non-cash components (MMAH 2021).

Sioux Lookout reserve funds and accumulated surplus have increased each year from 2011 to 2020. The increase was a result of changes to its discretionary reserve funds, reserves, and the accumulated surplus. Sioux Lookout has a minimal balance to its obligatory reserve fund in comparison to discretionary reserve funds, reserves, and accumulated surplus.

- The accumulated surplus has consistently increased each year from 2011 to 2020, with a notable increase from 2015 through 2017, which aligns with the larger annual surplus seen in 2016 and 2017 (see **Figure 3.5-16**) (MMAH 2021).
- Sioux Lookout has earmarked discretionary reserve funds for airport improvements, land development, and other infrastructure.
- Sioux Lookout has earmarked reserves funds for landfill expenses, policing costs, utilities, and elections (NWO Community and Baseline Studies Key Person Interview Program 2022).

When Sioux Lookout incurs an annual surplus, council meets to discuss where best to place the surplus, which typically gets set aside for infrastructure or the airport in the event major

renovations, maintenance, or upgrades are needed (NWO Community and Baseline Studies Key Person Interview Program 2022). The consistent increase in Sioux Lookout's reserves and accumulated surplus is an indication of its financial health and sustainability and may allow for the Municipality to better plan for and support expected future expenses. Further details on Sioux Lookout's financial information returns, including reserves and accumulated surplus, are provided in **Appendix 3B Supplemental Data**.

3.5.3.11 Local Services Board of Wabigoon Local Government Finances

The budgets and bookkeeping records for the LSB of Wabigoon are not publicly available. During key person interviews respondents noted (NWO Baseline Studies Key Person Interview Program 2022-2023):

- Funding is sourced from a LSB levy, the provincial land tax (collected on behalf of the LSB by the Ministry of Finance), and other sources of revenue. Other sources of revenue may include fundraising, charity contributions, and donations. The LSB of Wabigoon typically has a budget in the range of \$145,000 to \$150,000 per year. In recent years, the LSB has had success working with various partners, including the Federal government, Provincial government, Wabigoon Lake First Nation, and the NWMO, and has collected over \$1 million for community services and upgrades.
- Expenses relate to the approved services provided by the LSB. The LSB of Wabigoon is approved to provide fire protection, street and area lighting, recreation, and emergency telecommunications. Fire protection services are shared with Dinorwic. The LSB is responsible for maintaining the fire hall, the memorial hall, and for clearing snow in parking lots and around fire hydrants. A portion of the funding collected from various partners, including the Federal government, Provincial government, Wabigoon Lake First Nation, and the NWMO, went towards building a pavilion for skating in the winter. Homeowners are responsible for water and wastewater service, and garbage and recycling drop off (generally in Dryden), among other services.
- Reserve funds are not typical of LSBs, however the LSB of Wabigoon is allowed to have one. In the past, the reserve fund has been used for larger projects, for example, the paving of the memorial hall parking. Currently, the reserve fund is a small fund for emergencies only and ranges between \$20,000 and \$50,000.

Information on LSB reporting requirements, including budgeting and bookkeeping, under the *Northern Services Boards Act* (1990) are included in **Section 3.5.2**.

3.5.3.12 Local Services Board of Melgund Local Government Finances

The budgets and bookkeeping records for the LSB of Melgund are not publicly available. Key person interview respondents note (NWO Baseline Studies Key Person Interview Program 2022-2023):

- Funding is sourced from an LSB levy, the provincial land tax (collected on behalf of the LSB by the Ministry of Finance), and other sources of revenue. Other sources of revenue may include fundraising and donations. In the past five years, the LSB has received donations from the NWMO.

- Expenses relate to the approved services provided by the LSB. The LSB of Melgund is approved to provide recreation and garbage collection services. Recycling is not provided by the LSB, and homeowners are responsible for recycling drop off (typically in Dryden). Homeowners are also responsible for water and wastewater service. The LSB has no fire hall and no streetlights to maintain. Donations received from the NWMO in the previous five years have been used to upgrade the community hall.
- Reserve funds are not typical of LSBs, however the LSB of Melgund is allowed to have one. Currently, the balance of the reserve fund is minimal.

Information on LSB reporting requirements, including budgeting and bookkeeping, under the *Northern Services Boards Act* (1990) are included in **Section 3.5.2**.

3.5.3.13 Dinorwic Local Government Finances

Dinorwic does not have a budget or bookkeeping record (NWO Baseline Studies Key Person Interview Program 2022-2023). Key person interviews identified (NWO Baseline Studies Key Person Interview Program 2022-2023):

- Funding received by Dinorwic is collected through the provincial land tax (collected on behalf of Dinorwic by the Ministry of Finance) to help fund important community services.
- Expenses are minimal in unincorporated communities and the majority of services are the responsibility of the homeowner (including garbage and recycle, water service, and wastewater service). Key person interviews identified that fire protection is shared with the LSB of Wabigoon and the Ministry of Transportation of Ontario is responsible for provincial roads, including winter snow clearing. Homeowners may hire independent contractors to collect garbage and recycle.
- Dinorwic does not have a reserve fund (NWO Baseline Studies Key Person Interview Program 2022-2023).

3.5.4 Summary of Local Government Finances

Key observations based on the review of local government finances in the Local Study Area, including for Ignace, Dryden, Machin, Sioux Lookout, the LSB of Wabigoon, the LSB of Melgund, and Dinorwic include:

- The largest source of revenue for Ignace, Dryden, Machin, and Sioux Lookout is property taxes. In 2019 property taxes were 40.2% of Ignace's revenues and in 2020 were 46.0% of Dryden's revenues, 62.5% of Machin's revenues, and 38.2% of Sioux Lookout's revenues. The second largest source of revenue was typically user fees and service charges, which were 16.8% of Ignace's revenues, 20.7% of Dryden's revenues, 14.4% of Machin's revenues, and 23.2% of Sioux Lookout's revenues.
- The largest expenditures for Ignace, Dryden, Machin, and Sioux Lookout varied, however environmental service expenses and transportation expenses were generally the largest expenses. The largest source of expenditures for Ignace in 2019 and Machin in 2020 were environmental service expenses (29.8% and 26.1% of expenses respectively) followed by transportation expenses (18.0% and 21.2% of expenses respectively). Whereas the largest expenses for Dryden in 2020 were protection services (24.3% of expenses) followed by transportation expenses (21.3%). Environmental service expenses were also a large expense for Dryden (20.3% of total expenditures). The largest expenses for Sioux Lookout in 2020 were transportation expenses (43.5%) followed by environmental service expenses (13.3%). In particular, airport expenses made up the majority (approximately 80%) of transportation expenses for Sioux Lookout.
- The surplus or deficit for a local government is an indicator of its financial health and helps provide context on whether its revenues cover its expenditures. Intergenerational equity is an important part of real financial sustainability and includes the need for appropriate fiscal planning so that the generation of people who benefit from the local government and its assets are also the ones paying for it (Association of Municipalities of Ontario 2018; Johal et al 2019). A key principle of financial sustainability is the need to share local government cost burdens equitably between generations (Association of Municipalities of Ontario 2018; Johal et al 2019). An indicator to help understand the financial health of a local government is whether local government revenues are consistently covering planned expenses. In consideration of the financial health and intergenerational equity of a municipality, Sioux Lookout has consistently had a surplus from 2011 to 2020. Ignace (2011 to 2019) and Dryden (2011 to 2020) have had a surplus or deficit that varied over the timeframe, but in aggregate the surpluses have exceeded the deficits. Machin's surplus or deficit has varied from 2011 to 2020 and in aggregate the deficits have exceeded the surplus. Machin's annual deficits have been addressed by drawing down the accumulated surplus from prior years (NWO Baseline Studies Key Person Interview Program 2022-2023).
- Understanding a municipality's reserve funds and accumulated surplus helps provide context on the funding available for expected future expenses, its intergenerational equity, and financial sustainability. If a surplus occurs at the end of a fiscal year, a municipality can transfer the amount to accumulated surplus or to the appropriate reserve funds for future use (Government of Ontario 2001). If a deficit occurs at end of fiscal year, a municipality may use the accumulated surplus as a funding source from prior years or the deficit may be

funded by the appropriate reserves (Government of Ontario 2001). In consideration of the financial health and sustainability of a municipality, Sioux Lookout had a consistent increase to its collective reserves and accumulated surplus from 2011 (\$48.5 million) to 2020 (\$85.5 million), which coincides with its consistent annual surplus. Ignace and Dryden have both had consistent and stable reserves and accumulated surpluses, which coincide with how the municipality's surpluses, or deficits have varied over the time frame, but in aggregate the surpluses have exceeded the deficits. Since 2011 Ignace's reserve funds and accumulated surplus have been in excess of \$25 million and since 2013 Dryden's reserve funds and accumulated surplus have been in excess of \$80 million to help plan for and support expected future expenses. Machin consistently decreased its collective reserves and accumulated surplus from 2011 to 2017 to fund its annual deficits. The change in Machin's reserves and accumulated surplus from 2011 to 2020 is an indication of the Municipality's financial health and sustainability as the Municipality has the ability, when needed, to fund deficits and, as of 2018 and 2019, is experiencing an annual surplus to help fund its reserves and accumulated surplus to support future expenses.

- Funding for the LSB of Wabigoon and the LSB of Melgund was sourced from the LSB levy, the property land tax, and other sources of revenue. Expenses for the LSBs largely relate to the services they provide. Approved services for the LSB of Wabigoon include fire protection, street and area lighting, recreation, and emergency telecommunications. Approved services for the LSB of Melgund include recreation and garbage collection services.
- Dinorwic's primary source of funding is the provincial land tax. Expenses for Dinorwic are minimal as the majority of services are the responsibility of the homeowner, however key person interviews identified that fire protection is shared with the LSB of Wabigoon.

3.6 INCOME, PROPERTY VALUES, AND COST OF LIVING

3.6.1 Overview and Approach

Income, property values, and cost of living documents the economic status of individuals and families, by exploring personal, household, and family income, cost of living metrics, spending patterns, housing costs, and residential real estate values.

Personal and household income is derived from employment, government transfers, and other sources and is described on an individual, household, and family basis, by average, median, and by income range as reported by Statistics Canada. Personal income statistics are disaggregated by sex, age, and Indigenous identity, where available and of sufficient robustness.

Cost of living considers the cost to purchase typical consumer goods and services consistent with the quality of life enjoyed in contemporary average Canadian households. The examination of cost of living describes and estimates key components of cost of living in the Local Study Area and reports on the Consumer Price Index in the Regional Study Area. Local estimates for existing costs of food, shelter, and utility costs are reported. The analysis of food costs is based on a basket of goods, mirroring the Consumer Price Index basket as much as practical. Shelter costs include rent (Statistics Canada and based on advertised monthly rent, as available). Utility costs are based on utility tariffs for water and wastewater, electricity, natural gas, internet, and cellular phone, presented on a unit basis and on a monthly basis, as available, assuming average single family consumption levels. The examination of cost of living also includes a qualitative description of spending patterns for individuals and households, to describe the extent of local spending and the types of spending that are most likely to be made outside the Local Study Area. Property values are surveyed through Statistics Canada and local realtors.

The Regional Study Area includes the Northwestern Ontario Economic Region (Kenora, Rainy River, and Thunder Bay District Census Divisions). Comparable statistics for Ontario and Canada are provided as available to provide context and comparisons for Regional Study Area information. The Local Study Area includes the Township of Ignace, City of Dryden, Municipality of Machin, Municipality of Sioux Lookout, and, to the extent information is available, the LSB of Wabigoon (the "LSB of Wabigoon" or "Wabigoon Village"), the LSB of Melgund (the "LSB of Melgund" or "Melgund") and the unincorporated community of Dinorwic. The LSB of Melgund includes the unincorporated communities of Dymont and Borups Corners. Statistics Canada enumerates Ignace, Dryden, Machin, Sioux Lookout, and the LSB of Wabigoon and Statistics Canada does not enumerate the LSB of Melgund (Dymont or Borups Corners) or Dinorwic. When referring to Statistics Canada, the name of the designated place (i.e., the LSB of Wabigoon) is used. In all other instances the community is referred to as the name community members use (i.e., Wabigoon Village or Melgund).

Income trends are described from 2005 through 2020 where available. Temporal boundaries for cost of living in the Regional Study Area extend from 2006 to 2021 where possible. Base prices for the Consumer Price Index are set to 2002 levels and are also expressed in today's dollars. The Consumer Price Index basket composition evolves over time and is not adjusted. Food, housing costs, and shelter costs for the Local Study Area use the most recent published information and estimates available, with trends over time described where possible, along with inputs from primary data collection (key person interviews, the IAWG, workshops, and food

basket collection). Further information on the spatial boundaries, temporal boundaries, and data collection for income, property values, and cost of living is provided in **Section 3.1**.

3.6.2 Income

Income is an important indicator of the economic health of people and communities. Income provides economic resources that shape choices about housing, education, childcare, food, and many other aspects of life (Population of Health Institute 2023). Income provides options for healthy lifestyle choices and is a social determinant of health, particularly as Canadians with higher incomes are often healthier than those with lower incomes (Public Health Agency of Canada 2022). Higher income and financial stability can allow access to better quality materials, such as food and shelter, and better, easier, or faster access to services (e.g., access to health services or education) (Bushnik et al. 2020).

Personal and household income is derived from employment income, government transfers and other sources of income. Income statistics are reported for the calendar year prior to the Census year (e.g., for the 2021 Census, the reference period is the calendar year 2020 for all income variables). Due to the small population size of Machin and the LSB of Wabigoon, income data may be suppressed to protect confidentiality. Statistics Canada does not report income data for the LSB of Melgund or Dinorwic. Average incomes for the Local Study Area are calculated based on the data available for each year. Income statistics are disaggregated by sex, age, and Indigenous identity where available.

The following income statistics are described:

- **Personal income** for the population aged 15 years and over refers to the total monetary receipts received during the calendar year prior to the Census year and before income taxes and deductions (Statistics Canada 2022a).⁶²
- **Household income** refers to the total monetary receipts received at the household level during the calendar year prior to the Census year, and before income taxes and deductions. Private household refers to a person or a group of persons (other than foreign residents) who occupy the same dwelling and do not have a usual place of residence elsewhere in Canada. A household may consist of a family group (census family) with or without other persons, of two or more families sharing a dwelling, of a group of unrelated persons, or of one person living alone. For census purposes, every person is a member of one and only one household (Statistics Canada 2022a).
- **Economic family income** refers to the total monetary receipts received for an economic family during the calendar year prior to the Census year, and before income taxes and

⁶² Sources of income for personal income: wages and salaries, net farm income; net non-farm income from unincorporated business and/or professional practice; child benefits; Old Age Security pension and Guaranteed Income Supplement; benefits from Canada Pension Plan; benefits from Employment Insurance; other income from government sources; dividends, interest on bonds, deposits and savings certificates and other investment income; retirement pensions, superannuation and annuities, including those from Registered Retirement Savings Plans and Registered Retirement Income Funds; and other monetary receipts. Not included in all Census years as income: income tax refunds, lump sum inheritance payments, gambling revenue, lump sum insurance policy settlements, capital gains or losses, receipts from the sale of property or belongings, loan repayments, property tax rebates or refunds of pension contributions (Statistics Canada 2022a).

deductions. Economic families include couple-only (no children) economic families, couple-with-children economic families, one-parent economic families, and persons not in an economic family. Persons not in economic family refers to those who live with people none of whom are related by blood, marriage, common-law, or adoption or foster; persons living alone are included in this category. Vulnerable populations in the Local Study Area may include one-parent economic families and person's living alone.

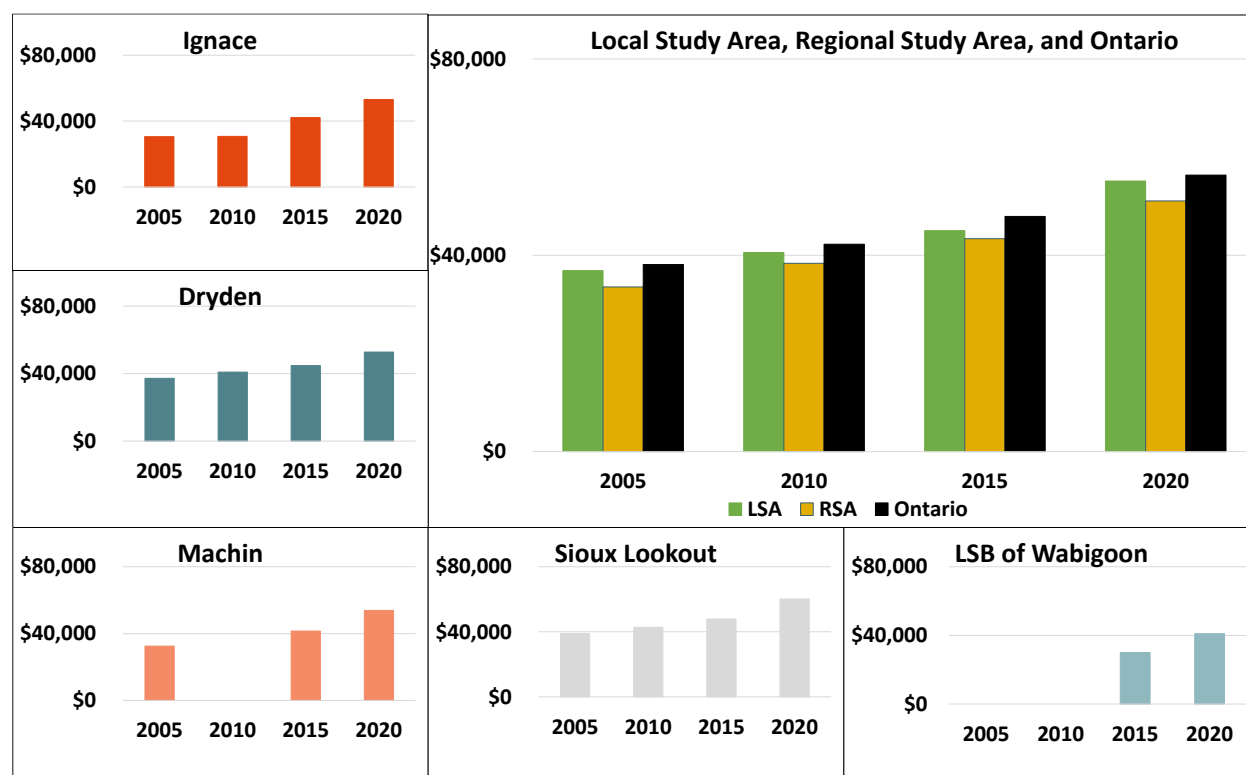
- **Sources of income** refers to employment income, government transfers, and other sources of income (Statistics Canada 2022a):
 - Employment income is all income received as wages, salaries, and commissions from paid employment and net self-employment income from farm or non-farm unincorporated business and/or professional practice during the reference period.
 - Government transfers include all cash benefits received from federal, provincial, territorial, or municipal governments during the Census reference period.⁶³
 - Other income includes net self-employment income from farm or non-farm unincorporated business and/or professional practice, investment income, private retirement income, and other income from market sources during the reference period.

⁶³ Government transfers include: Old Age Security pension Guaranteed Income Supplement Allowance or Allowance for the Survivor; Retirement disability and survivor benefits from Canada Pension Plan and Québec Pension Plan; Benefits from Employment Insurance and Québec parental insurance plan; Child benefits from federal and provincial programs; Social assistance benefits; Workers' compensation benefits; Working income tax benefit; Goods and services tax credit and harmonized sales tax credit; Other income from government sources

3.6.2.1 Personal Income

Figure 3.6-1 presents the average of personal income for the Local Study Area, Regional Study Area, and Ontario for 2005, 2010, 2015, and 2020.

Figure 3.6-1: Average Personal Income for the Local Study Area, Regional Study Area, and Ontario, 2005 to 2020¹



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality, including Machin for 2010 and the LSB of Wabigoon for 2005 and 2010.

Figure 3.6-1 shows that as of 2020, the average personal income for the Local Study Area was \$55,100, which was 8.0% higher than the Regional Study Area (\$51,100) and similar to Ontario as a whole (\$56,400) (Statistics Canada 2022a). Average personal income increased from 2005 to 2020 for the Local Study Area, the Regional Study Area, and Ontario (Statistics Canada 2007; 2022a):

- The Local Study Area saw an average increase of 49.3% from 2005 (\$36,900) to 2020 (\$55,100);
- The Regional Study Area saw an increase of 52.5% from 2005 (\$33,500) to 2020 (\$51,100); and
- Ontario saw an increase of 48.0% from 2005 (\$38,100) to 2020 (\$56,400);

Observations among the Local Study Area communities include that the highest average personal income as of 2020 was in Sioux Lookout (\$60,200), followed by Machin (\$53,900), Ignace (\$53,100), Dryden (\$52,850), and the LSB of Wabigoon (\$41,000). As a regional health centre, Sioux Lookout has a higher proportion of salaried medical workers, who typically have higher incomes (HSAL et al. 2022c). Based on the Northwestern Ontario Community and Baseline Studies Key Person Interview Program (2022), participants provided that skilled labour is often paid a higher salary, with incomes six figures and over being the norm. All Local Study Area communities experienced an increase in average personal income from 2005 to 2020, trends include (Statistics Canada 2007; 2022a):

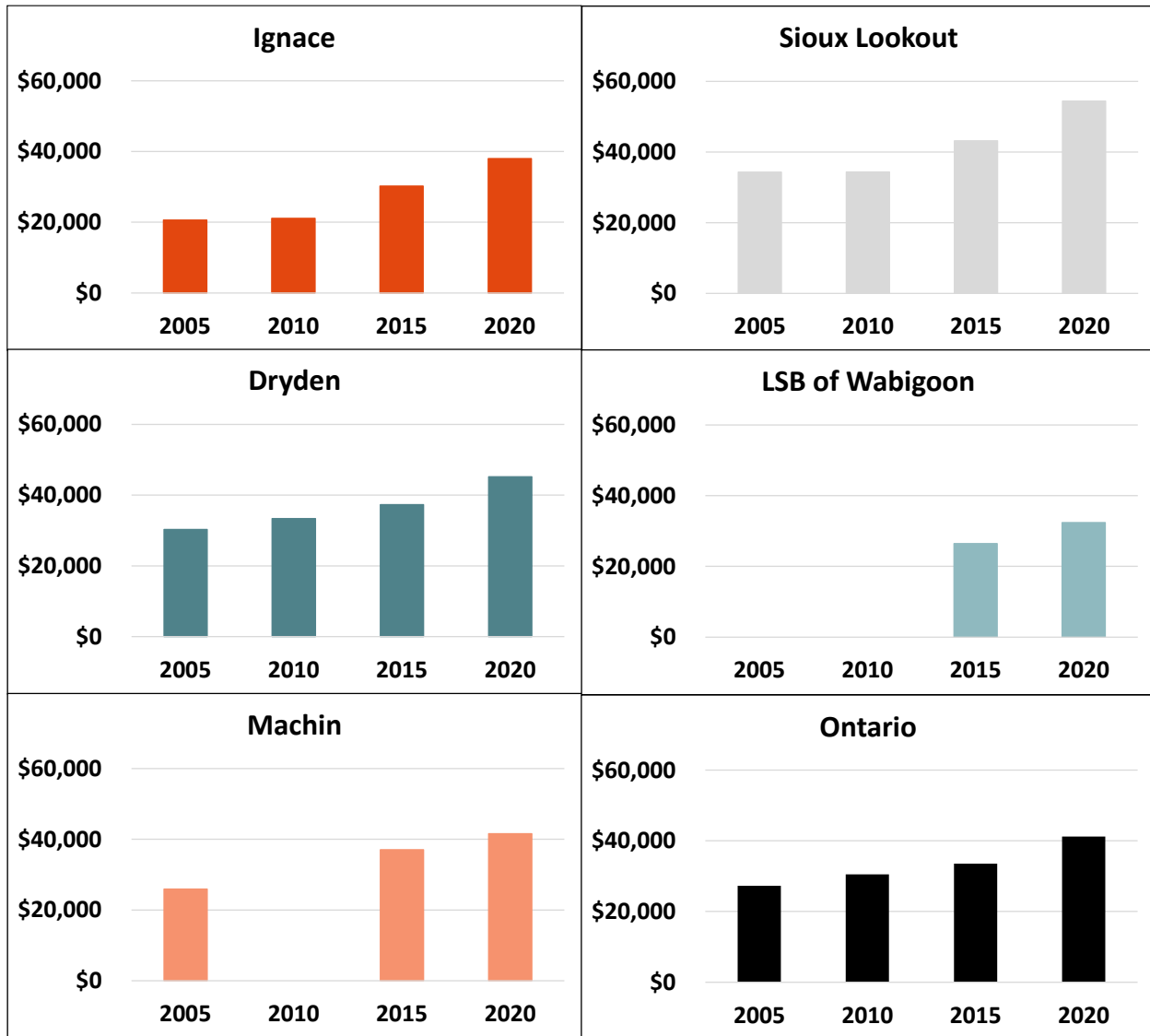
- Ignace experienced the highest proportional increase of 74.1% from 2005 (\$30,500) to 2020 (\$53,100);
- Dryden experienced the lowest proportional increase of 41.8% from 2005 (\$37,300) to 2020 (\$52,900).
- The LSB of Wabigoon saw an increase of 36.2% from 2015 (\$30,100) to 2020 (\$41,000).

Education (**Section 3.3**) and employment (**Section 3.2**) are drivers of income, as a higher education can result in higher skilled jobs and higher paying jobs.

Figure 3.6-2 presents the median of personal income for the Local Study Area communities and Ontario for 2005, 2010, 2015, and 2020.⁶⁴ The median personal income is the 'middle' income, amongst the group surveyed, meaning that half of the population had a higher income and half had a lower income.

⁶⁴ A median cannot be calculated for compiled Statistics Canada geographies, including for the Local Study Area and Regional Study Area.

Figure 3.6-2: Median Personal Income for Local Study Area Communities and Ontario, 2005 to 2020^{1,2}



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. The Local Study Area and Regional Study Area median income could not be calculated.
2. Data may be suppressed for confidentiality, including Machin for 2010 and the LSB of Wabigoon for 2005 and 2010.

Figure 3.6-2 shows that the highest median personal income in 2020 was in Sioux Lookout (\$54,400), followed by Dryden (\$45,200), Machin (\$41,600), Ignace (\$38,000), and the LSB of Wabigoon (\$32,400). All Local Study Area communities experienced an increase in median personal income from 2005 to 2020. Trends include (Statistics Canada 2007; 2022a):

- Ignace experienced the highest proportional increase of 84.5% from 2005 (\$20,600) to 2020 (\$38,000);
- Dryden experienced the lowest proportional increase of 49.2% from 2005 (\$30,300) to 2020 (\$45,200); and
- The LSB of Wabigoon saw an increase of 22.7% from 2015 (\$26,400) to 2020 (\$32,400);

Table 3.6-1 provides the ratio of average to median personal income for Local Study Area communities in 2020. The comparison and ratio of average to median income can provide an indication of the measure of income inequality, as a higher ratio means a higher income disparity (WLI 2022). Income inequality and income disparity helps provide context on GBA+ considerations. For instance, while the median remains the middle, or centre value, an average that appears above (or below) the median suggests that the income distribution is influenced by the presence of a greater number of higher (or lower) values that draw the average away from the median.

Table 3.6-1: Ratio of Average to Median Personal Income for the Local Study Area Communities and Ontario, 2020

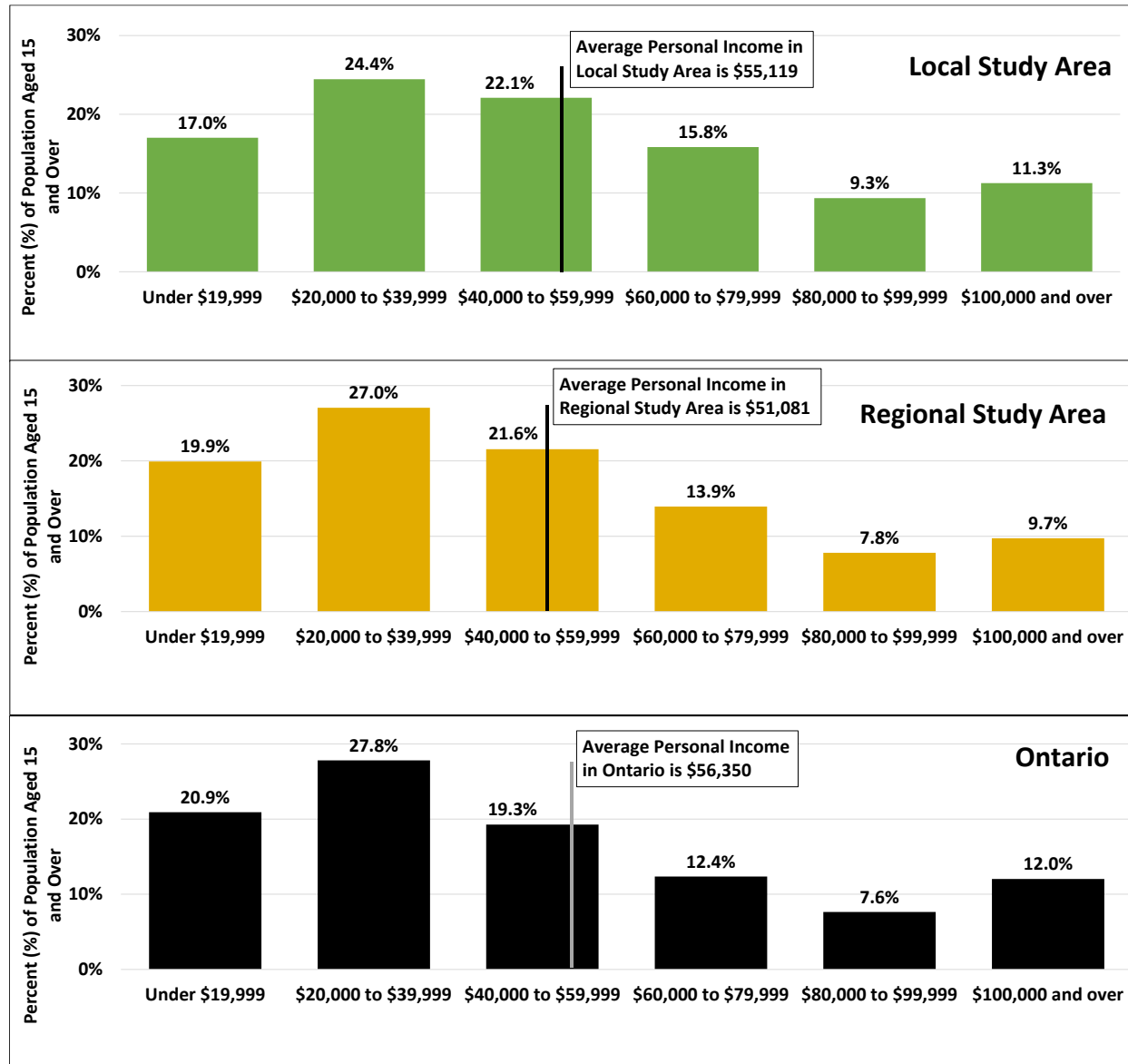
Location	Ratio of Average to Median Income
Ignace	1.40
Dryden	1.17
Machin	1.30
Sioux Lookout	1.11
LSB of Wabigoon	1.27
Ontario	1.37

Source: Statistics Canada 2022a.

Ratios of average to median personal income values from 2020 (**Table 3.6-1**) indicated average personal income levels were higher than median levels for all Local Study Area communities. This result is expected, as income distributions are positively skewed, meaning the range of possible income levels above the median is greater than below. This is consistent with the common perspective that, often, a few people may make materially more income than the typical person. The higher the average to median income ratio, the less symmetrical the income distribution. The ratio of average to median incomes for the population ranged from 1.11 in Sioux Lookout to a high of 1.40 in Ignace. The ratio of average to median personal income for Ignace (1.40) is similar to the province of Ontario (1.37), while all other Local Study Area communities have a ratio of average to median person income that is lower than the province of Ontario. Meaning average to median personal incomes for Dryden, Machin, Sioux Lookout, and the LSB of Wabigoon have a more similar distribution than the province as a whole.

Figure 3.6-3 presents the range (\$) of personal income for the Local Study Area, Regional Study Area, and Ontario for 2020.

Figure 3.6-3: Personal Income Ranges for the Local Study Area, Regional Study Area, and Ontario, 2020



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

As of 2020, the average personal income for the Local Study Area was \$55,100, which was 8.0% higher than the Regional Study Area (\$51,100) and similar to Ontario as a whole (\$56,400) (Statistics Canada 2022a). **Figure 3.6-3** shows that the Local Study Area, Regional Study Area, and Ontario had similar proportions of income range across the population. A large proportion of the population has an income of \$39,999 and under, including 41.4% of the Local Study Area, 46.9% of the Regional Study Area, and 48.7% of Ontario (Statistics Canada 2022a). The Local Study Area had the largest proportion of the population with an income of \$60,000 and over

(36.4%) compared to the Regional Study Area (31.4%) and Ontario (32.0%) (Statistics Canada 2022a).

Appendix 3B Supplemental Data provides information on trends across time by income range, including for the Local Study Area communities.

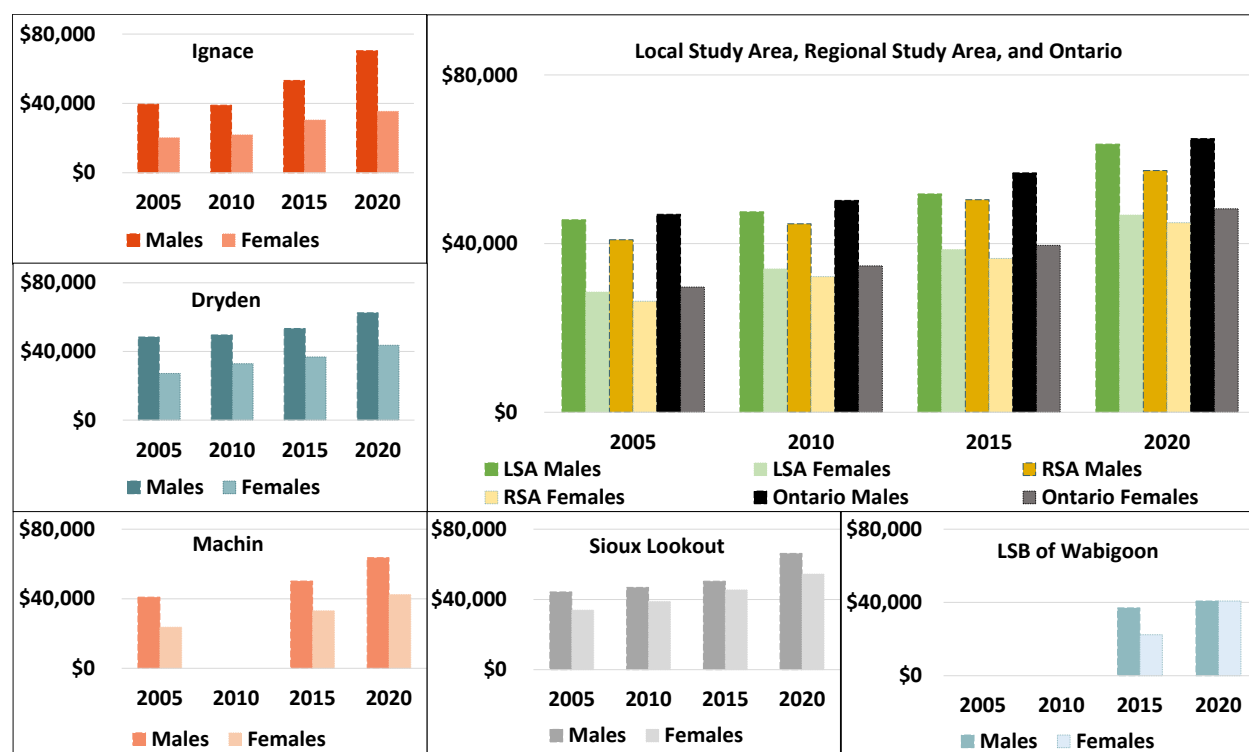
3.6.2.1.1 Personal Income by Sex or Gender

Figure 3.6-4 presents the average personal income by sex or gender⁶⁵ for the Local Study Area, Regional Study Area, and Ontario for 2005, 2010, 2015, and 2020. The 2006, 2011, and 2016 Census disaggregates by sex and the 2021 Census disaggregates by gender. For further information on sex and gender see **Section 3.1.2.1.1**.

⁶⁵ The 2006, 2011, and 2016 Census disaggregate by sex and the 2021 Census disaggregates by gender. The sex variable (male and female) in census years prior to 2021 and the two-category gender variable (men+ and women+) in the 2021 Census are included together in **Figure 3.6-4**. Although sex and gender refer to two different concepts, the introduction of gender is not expected to have a significant impact on data analysis and historical comparability, given the small size of the transgender and non-binary populations. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories (men+ and women+) and are denoted by the "+" symbol (Statistics Canada 2022a).

Gender refers to an individual's personal and social identity as a man, woman, or non-binary person (a person who is not exclusively a man or a woman). Gender includes the following concepts: (1) gender identity, which refers to the gender that a person feels internally and individually; (2) gender expression, which refers to the way a person presents their gender, regardless of their gender identity, through body language, aesthetic choices or accessories (e.g., clothes, hairstyle, and makeup), which may have traditionally been associated with a specific gender. A person's gender may differ from their sex at birth, and from what is indicated on their current identification or legal documents such as their birth certificate, passport, or driver's license. A person's gender may change over time. Some people may not identify with a specific gender (Statistics Canada 2022a).

Figure 3.6-4: Average Personal Income by Sex or Gender for the Local Study Area, Regional Study Area, and Ontario, 2005 to 2020^{1,2}



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality, including Machin for 2010 and the LSB of Wabigoon for 2005 and 2010.
2. The 2006, 2011, and 2016 Census disaggregate by sex and the 2021 Census disaggregates by gender. The sex variable (male and female) in census years prior to 2021 and the two-category gender variable (men+ and women+) in the 2021 Census are included together in **Figure 3.6-4**. Although sex and gender refer to two different concepts, the introduction of gender is not expected to have a significant impact on data analysis and historical comparability, given the small size of the transgender and non-binary populations. Given that the non-binary population is small, data aggregation to a two-category gender variable is sometimes necessary to protect the confidentiality of responses provided. In these cases, individuals in the category "non-binary persons" are distributed into the other two gender categories (men+ and women+) and are denoted by the "+" symbol.

Figure 3.6-4 shows that males have a higher average personal income than females. Both men and women experienced increases to average personal income from 2005 to 2020. Other observations include (Statistics Canada 2022a):

- In 2020, males (\$63,600) in the Local Study Area had an average personal income that was 35.9% higher than females (\$46,800).
- In 2020, males (\$57,300) in the Regional Study Area had an average personal income that was 27.3% higher than females (\$45,000).

- In 2020, males (\$64,900) in Ontario had an average personal income that was 34.4% higher than females (\$48,300).

Within the Local Study Area Communities, males also have a higher average personal income than females. Observations include (Statistics Canada 2022a):

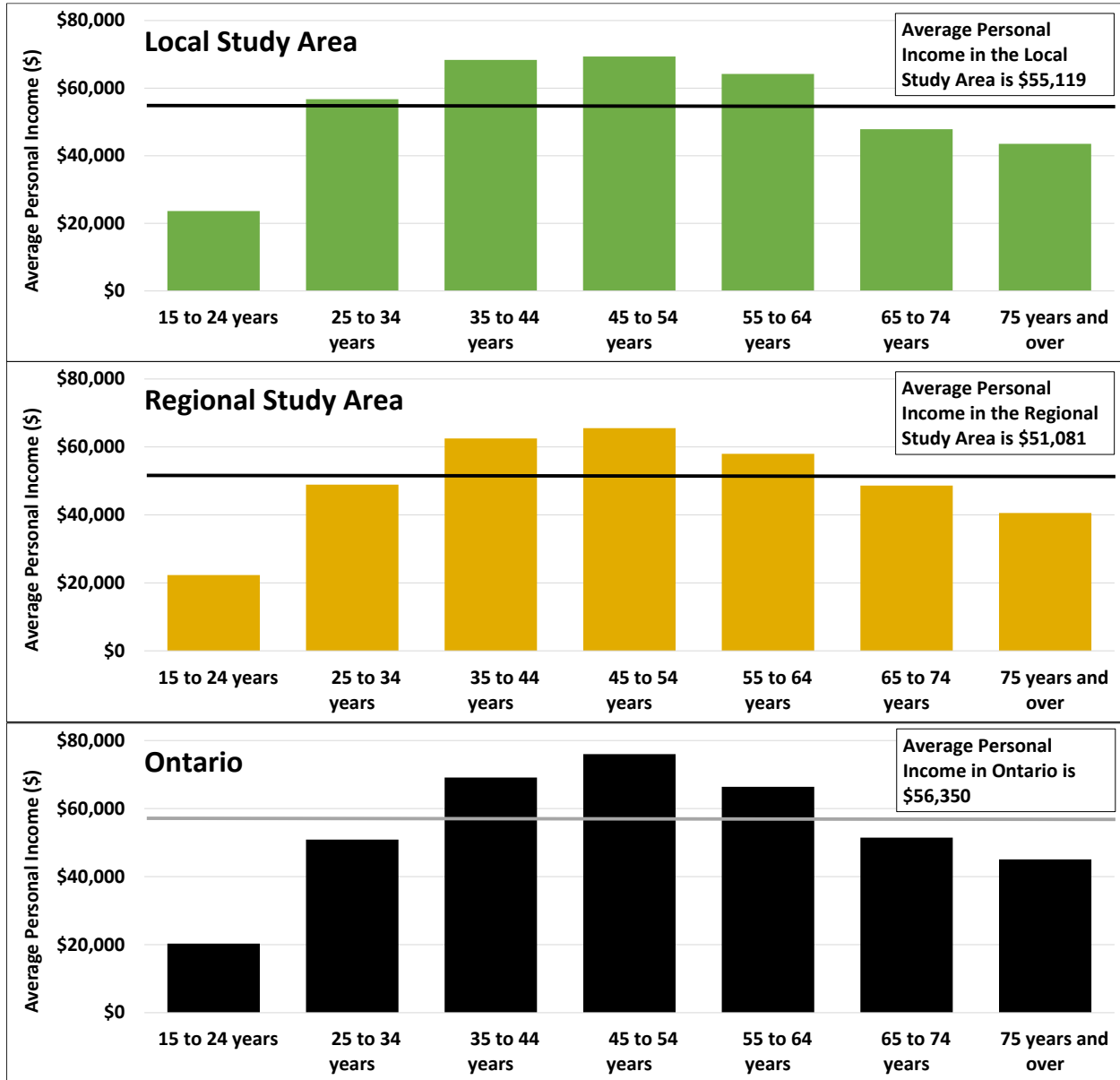
- In 2020, males in Ignace (\$70,400) had the largest proportional difference in income compared to females (\$35,400), where males had an average personal income that was 98.9% greater than females.
- In 2020, males (\$40,800) and females (\$40,800) in the LSB of Wabigoon had similar average personal income.

Key person interviews confirmed findings that men tend to make more than women within the Local Study Area (NWO Baseline Studies Key Person Interview Program 2022-2023). These trends are consistent with national findings on the gender pay gap in Canada, including that women make 89 cents for every dollar men make (Canadian Women's Foundation 2022). The gender pay gap is larger for racialized women, Indigenous women, and women with disabilities (Canadian Women's Foundation 2022). The gender pay gap persists throughout employment, from a young age and into senior years (Canadian Women's Foundation 2022). Pay inequity is important to understand because earnings are a key determinant of economic well-being in Canada.

3.6.2.1.2 Personal Income by Age

Figure 3.6-5 presents the average personal income by age for the Local Study Area, Regional Study Area, and Ontario for 2020.

Figure 3.6-5: Average Personal Income by Age for the Local Study Area, Regional Study Area, and Ontario, 2020



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Figure 3.6-5 shows that the Local Study Area, Regional Study Area, and Ontario had a similar trend in the distribution of average personal income by age in 2020. In particular, the age range with the highest average personal income tends to be ages 35 to 64 for the Local Study Area, Regional Study Area, and Ontario. Other observations include (Statistics Canada 2022a):

- In 2020, the age range with the highest average personal income is 45 to 54 year olds in the Local Study Area (\$69,400), Regional Study Area (\$65,600), and Ontario (\$76,000).

- In 2020, the age range with the lowest average personal income is 15 to 24 year olds in the Local Study Area (\$23,600), Regional Study Area (\$22,300), and Ontario (\$20,300).
- A notable increase in average personal income is experienced from the 15 to 24 age range to the 25 to 34 age range. The increase in income signifies that career advancement typically occurs during this period and may be bolstered by various factors, including skill development, educational attainment, and work experience (Haan 2023; Statistics Canada 2023c).
- A notable decrease in average personal income is experienced from the 45 to 54 age range to the 65 and over age range and coincides with the typical start of retirement (Statistics Canada 2023c).

Education (**Section 3.3**) and employment (**Section 3.2**) are drivers of income, as a higher education can result in higher skilled jobs and higher paying jobs. Age is also a factor, as an individual ages they typically develop and advance their skill set and gain work experience, which can lead to higher average income (Haan 2023; Statistics Canada 2023c). Participants of the key person interview program identified that gained work experience and skilled labour may result in a higher personal income (NWO Community and Baseline Studies Key Person Interview Program 2022).

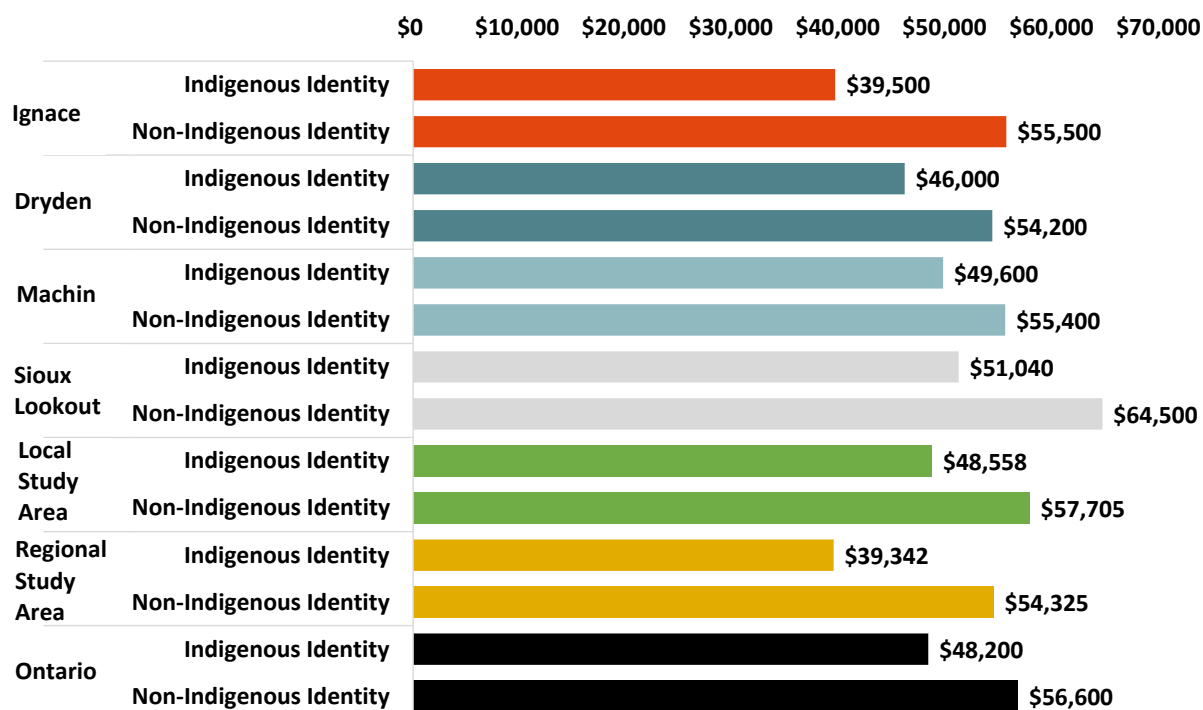
Appendix 3B Supplemental Data provides information on average personal income by age and gender for the Local Study Area, Regional Study Area, and Ontario. In 2020, across all age ranges for the Local Study Area, Regional Study Area, and Ontario men have a higher average personal income than women. For additional information on personal income by sex or gender see **Section 3.6.2.1.1**.

Appendix 3B Supplemental Data provides information on average personal income by age for the Local Study Area communities. Of note, similar income trends by age were seen across the Local Study Area communities as displayed in **Figure 3.6-5**. Those aged 15 to 24 had the lowest average personal income compared to all other age ranges reported for all Local Study Area communities. Further, the highest average personal income for the Local Study Area communities is between the ages of 35 to 64, including for 45 to 54 year olds in Dryden (\$70,800), Machin (\$80,000), and the LSB of Wabigoon (\$60,00), for 35 to 44 year olds in Sioux Lookout (\$75,000) and 55 to 64 year olds in Ignace (\$88,000).

3.6.2.1.3 Personal Income by Indigenous Identity

Figure 3.6-6 presents the average personal income by Indigenous identity for the Local Study Area, Regional Study Area, and Ontario for 2020. Limitations associated with disaggregated Indigenous identity data are provided in **Section 3.1.2.1.1**.

Figure 3.6-6: Average Personal Income by Indigenous Identity for the Local Study Area, Regional Study Area, and Ontario, 2020^{1,2}



Source: Statistics Canada 2023f. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality, including the LSB of Wabigoon for 2020.
2. 'Indigenous identity' includes persons who are First Nations (North American Indian), Métis, or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is registered under the Indian Act of Canada) and/or those who have membership in a First Nation or Indian band. Aboriginal peoples of Canada are defined in the Constitution Act 1982 section 35(2) as including the Indian, Inuit, and Métis peoples of Canada.

Figure 3.6-6 shows that, across the Local Study Area communities, the Regional Study Area, and Ontario, Indigenous people have lower average personal income than non-Indigenous people. Observations include (Statistics Canada 2023f):

- As of 2020, the Local Study Area and Ontario had a similar proportional difference between Indigenous and non-Indigenous average personal income, including that those in the Local Study Area who are non-Indigenous have an income that is 18.8% higher (or an income that is \$9,200 higher) than those who identify as Indigenous. A similar proportion was apparent in Ontario at 17.4% higher, or an income that is \$8,400 higher for those who are non-Indigenous. The Regional Study Area had a larger proportional difference, where those who are non-Indigenous have an income that is 38.1% higher (or an income that is \$15,000 higher) than those who identify as Indigenous.

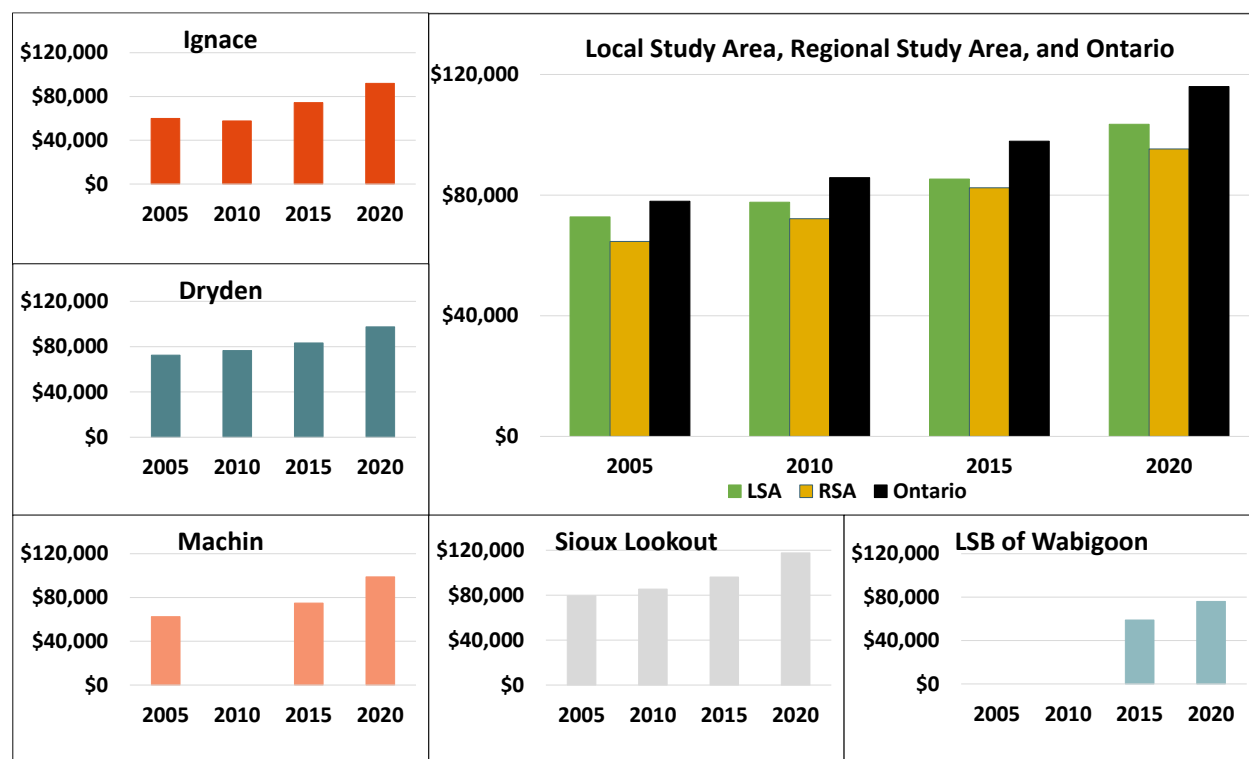
- As of 2020, incomes ranged from 11.7% higher for those who identify as non-Indigenous in Machin (average non-Indigenous identity income is \$5,800 higher than Indigenous identity income) to 40.5% higher in Ignace (average non-Indigenous identity income is \$16,000 higher than Indigenous identity income). Similar trends were observed for the Local Study Area communities in 2015 (Statistics Canada 2017).

The income gap between Indigenous and non-Indigenous people is consistent with other recent studies, such as Raphael et al. (2020), who reported that the average income of Indigenous people was lower than non-Indigenous people in Canada, regardless of place of residence. The same study noted Indigenous people living off-reserve typically earned higher incomes than Indigenous people living on-reserve (Raphael et al. 2020). A study completed by the Organization for Economic Cooperation and Development found Indigenous income is lower than non-Indigenous income in Canada, particularly for those on-reserve, and was the result of a range of factors including lack of access to markets and capital (OECD 2023). Statistics Canada reported that barriers to educational and economic opportunities have perpetuated the experiences of poverty and the income gap between Indigenous and non-Indigenous populations in Canada (Statistics Canada 2023c).

3.6.2.2 Household Income

Household income is the combined income from all sources of all members of a household aged 15 years and older. Households refer to a person or a group of persons who occupy the same dwelling and do not have a usual place of residence elsewhere in Canada (Statistics Canada 2022a). It may consist of a family group (census family) with or without other persons, of two or more families sharing a dwelling, of a group of unrelated persons, or of one person living alone. Vulnerable populations in the Local study Area may include one-parent families and persons living alone, for further information on one-parent families and persons living alone see **Section 3.6.2.3**. **Figure 3.6-7** provides the average household income for the Local Study Area, Regional Study Area, and Ontario from 2005 to 2020.

Figure 3.6-7: Average Household Income for the Local Study Area, Regional Study Area, and Ontario, 2005 to 2020¹



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality, including Machin for 2010 and the LSB of Wabigoon for 2005 and 2010.

Figure 3.6-7 shows that as of 2020, the average household income for the Local Study Area was \$103,500, which was 8.6% higher than the Regional Study Area (\$95,300) and 10.8% lower than Ontario as a whole (\$116,000) (Statistics Canada 2022a). Household income increased in the Local Study Area, the Regional Study Area, and Ontario from 2005 to 2020. Observations include (Statistics Canada 2007; 2022a):

- The Local Study Area saw an increase of 42.2% from 2005 (\$72,800) to 2020 (\$103,500);
- The Regional Study Area saw an increase of 47.5% from 2005 (\$64,600) to 2020 (\$95,300);
- Ontario saw an increase of 48.7% from 2005 (\$78,000) to 2020 (\$116,000);

Among the Local Study Area communities Sioux Lookout had the highest average household income as of 2020 (\$117,700), followed by Machin (\$98,800), Dryden (\$97,500), Ignace (\$92,000), and the LSB of Wabigoon (\$76,000). Notable trends across time for the Local Study Area communities include (Statistics Canada 2007; 2022a):

- Machin had the highest proportional increase of 58.1% from 2005 (\$62,500) to 2020 (\$98,800);

- Dryden had the lowest proportional increase of 34.7% from 2005 (\$72,400) to 2020 (\$97,500); and
- The LSB of Wabigoon saw an increase of 29.0% from 2015 (\$58,900) to 2020 (\$76,000);

In 2020, average Indigenous household⁶⁶ income in the Local Study Area was \$106,000⁶⁷ which is similar to the total average household income of \$103,500 (including both Indigenous and non-Indigenous households in the Local Study Area) (Statistics Canada 2023f). Indigenous household income varied among the Local Study Area communities (Statistics Canada 2023f):

- Average Indigenous household income was lower in Ignace and Sioux Lookout in comparison to the total average household income. Ignace had an average Indigenous household income of \$82,000 and a total average household income of \$92,000 and Sioux Lookout had an average Indigenous household income of \$113,200 and a total average household income of \$117,700;
- Dryden saw an average Indigenous household income (\$99,400) that was similar to the total average household income (\$97,500); and
- Machin saw an average Indigenous household income (\$112,000) that was higher than the total average household income (\$98,800).

Appendix 3B Supplemental Data provides further details on average household income.

The Province of Ontario's economic outlook and fiscal review indicates household income growth is projected to remain relatively strong, supported by employment growth in 2023, 2024, and 2025 (Province of Ontario 2022). Ontario as a whole may see increases of 3.5% in 2023, 3.8% in 2024, and 4.1% in 2025 (Province of Ontario 2022). Consumer spending is projected to slow as high inflation and interest rates temper demand and nominal household consumption is projected to grow 11.5% in 2022 and slow to an average of 4.6% from 2023 to 2025 (Province of Ontario 2022).

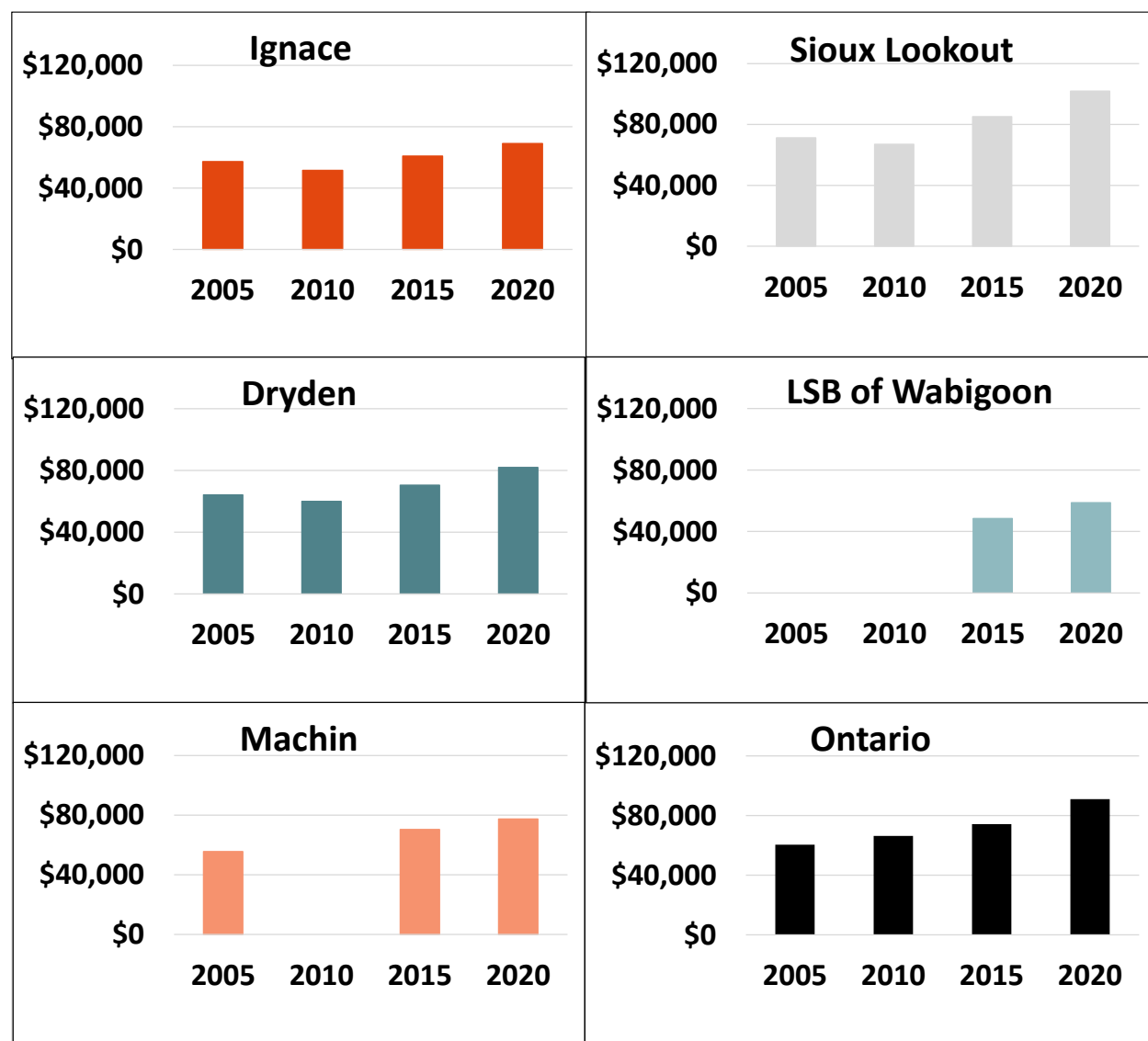
Figure 3.6-8 presents the median of household income for the Local Study Area communities and Ontario for 2005, 2010, 2015, and 2020.⁶⁸ The median household income is the 'middle' income, amongst the group surveyed, meaning that half of the households had a higher income and half had a lower income.

⁶⁶ An Indigenous household is either a non-family household in which at least 50% of household members self-identified as Indigenous or a family household that meets at least one of two criteria: (i) at least one married spouse, common-law partner, or lone parent self-identified as Indigenous; or (ii) at least 50% of household members self-identified as Indigenous (Statistics Canada 2023f).

⁶⁷ Data for the LSB of Wabigoon has been suppressed for confidentiality for 2020. Average Indigenous household income should be interpreted with caution due to random rounding.

⁶⁸ A median cannot be calculated for compiled Statistics Canada geographies, including for the Local Study Area and Regional Study Area.

Figure 3.6-8: Median Household Income for Local Study Area Communities and Ontario, 2005 to 2020^{1,2}



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. The Local Study Area and Regional Study Area median income could not be calculated.
2. Data may be suppressed for confidentiality, including Machin for 2010 and the LSB of Wabigoon for 2005 and 2010.

Figure 3.6-8 shows that, in 2020, Sioux Lookout (\$102,000) had the highest median household income, followed by Dryden (\$82,000), Machin (\$77,500), Ignace (\$69,000), and the LSB of Wabigoon (\$58,800). All Local Study Area communities experienced an increase to median household income from 2005 to 2020. Notable trends include (Statistics Canada 2007; 2022a):

- Sioux Lookout had the highest proportional increase of 43.1% from 2005 (\$71,300) to 2020 (\$102,000); and
- Ignace had the lowest proportional increase of 20.4% from 2005 (\$57,300) to 2020 (\$69,000).

Median Indigenous household income varied among Local Study Area communities in 2020 (Statistics Canada 2023f):⁶⁹

- Median Indigenous household income in Ignace (\$63,600) and Sioux Lookout (\$97,000) was lower than the total median household income (including both Indigenous and non-Indigenous households). Ignace had a median Indigenous household income of \$63,600 and a total average household income of \$81,000 and Sioux Lookout had an average Indigenous household income of \$113,200 and a total average household income of \$117,700;
- Dryden saw a median Indigenous household income (\$84,000) that was similar to the total median household income (\$82,000); and
- Machin saw a median Indigenous household income (\$103,000) that was higher than the total median household income (\$78,000).

Statistics Canada reports low-income status for private households (Statistics Canada 2022a).⁷⁰ A household is considered low income if its income is below 50% of the median after tax household income (Statistics Canada 2022a). As of 2020, approximately 10.4% of Local Study Area households, 15.0% of Regional Study Area households, and 10.1% of Ontario households were considered low income. Among age groups, those aged 0 to 17 are more likely to be in a low-income household compared to those aged 18 to 64 and those 65 and older.

- In the Local Study Area 14.4% of 0- to 17-year-olds were in a low-income household, 9.2% of 18- to 64-year-olds, and 11.0% of 65 years and olds.
- In the Regional Study Area 22.3% of 0- to 17-year-olds were in a low-income household, 13.4% of 18- to 64-year-olds, and 12.3% of 65 years and older.
- In Ontario 11.5% of 0- to 17-year-olds were in a low-income household, 9.1% of 18- to 64-year-olds, and 12.1% of 65 years and older.

Local Study Area communities saw similar proportions of the total population in a low-income household compared to the Local Study Area, including in Ignace (13.2%), Dryden (10.1%), Machin (10.4%), and Sioux Lookout (8.0%). The LSB of Wabigoon (21.2%) had a higher

⁶⁹ Data for the LSB of Wabigoon has been suppressed for confidentiality for 2020. Median Indigenous household income should be interpreted with caution due to random rounding.

⁷⁰ Statistics Canada reports on the low-income measure after tax (LIM-AT) as a low-income indicator. LIM-AT refers to a fixed percentage (50%) of median-adjusted after-tax income of private households (Statistics Canada 2022a). The household after-tax income is adjusted by an equivalence scale to take economies of scale into account. This adjustment for different household sizes reflects the fact that a household's needs increase, but at a decreasing rate as the number of members increases. When the unadjusted after-tax income of household pertaining to a person falls below the threshold applicable to the person based on household size, the person is considered to be in low income according to LIM-AT (Statistics Canada 2022a).

proportion of its total population in a low-income household. Notable differences among age groups include (Statistics Canada 2022a):

- Within Ignace 24.0% of 0- to 17-year-olds were in a low-income household, compared to 14.4% of 0- to 17-year-olds in the Local Study Area.
- The LSB of Wabigoon saw higher proportions of those in a low-income household across all age groups compared to the Local Study Area, including 28.0% of 0- to 17-year-olds, 19.5% of 18- to 64-year-olds, and 20.0% of 65 years and over.

Low socio-economic status is a measure of an individual's combined economic and social status. Higher socio-economic status tends to be positively associated with better health (Baker 2014). Socio-economic status encompasses not only income, but educational attainment, financial security, and subjective perceptions of social status and social class (Cutter 1995). Within the Local Study Area those who may potentially be affected by low socio-economic status include seniors, youth and children, lone-parents, and Indigenous peoples (GBA+ Workshop 2023). Gender differences may also occur among these populations. Employment, education, transportation to access education and employment opportunities, availability and access to childcare, family supports, social supports, mental health and addictions, ageism, and racism may have an impact on an individual or households' socio-economic status and income (GBA+ Workshop 2023).

Individuals in the Local Study Area with a low socio-economic status and a lower income spend a larger proportion of their income on shelter costs, food, and clothes compared to those with a higher income (GBA+ Workshop 2023). Further, those with a lower income may have reduced purchasing power when prices rise (from a growing economy and/or inflation) that can result in shelter costs becoming unaffordable. A reduced purchasing power for those with a lower income can also influence disposable income and lead to food insecurity and a lack of means to afford other essential goods. If a lower income household is required to move to find affordable housing, the household might be subject to transportation challenges and may have to spend more time or money in order to access certain services and supports (GBA+ Workshop 2023).

A lower socio-economic status and lower income may also result in a lack of financial means to (1) seek education and training to improve their financial situation, (2) engage in recreational activities and access amenities which could improve their overall well-being, and (3) adjust to rising prices and rental costs from an expanding economy that may affect individuals with fixed income (e.g., those receiving social assistance, seniors who are retired, others), which may lead to challenges with food security and purchasing other essential goods. For further information on low-income households, see **Appendix 3B Supplemental Data**. Further information on income inequality is provided in **Section 2.3.7**.

Table 3.6-2 provides the ratio of average to median household income for the Local Study Area communities in 2020. The comparison and ratio of average to median income can provide an indication of the measure of income inequality, as a higher ratio means a higher income disparity (WLI 2022). For instance, while the median remains the middle, or centre, value, an average that appears above (or below) the median suggests that the income distribution is skewed by the presence of a greater number of higher (or lower) values that draw the average away from the median.

Table 3.6-2: Ratio of Average to Median Household Income for the Local Study Area Communities and Ontario, 2020

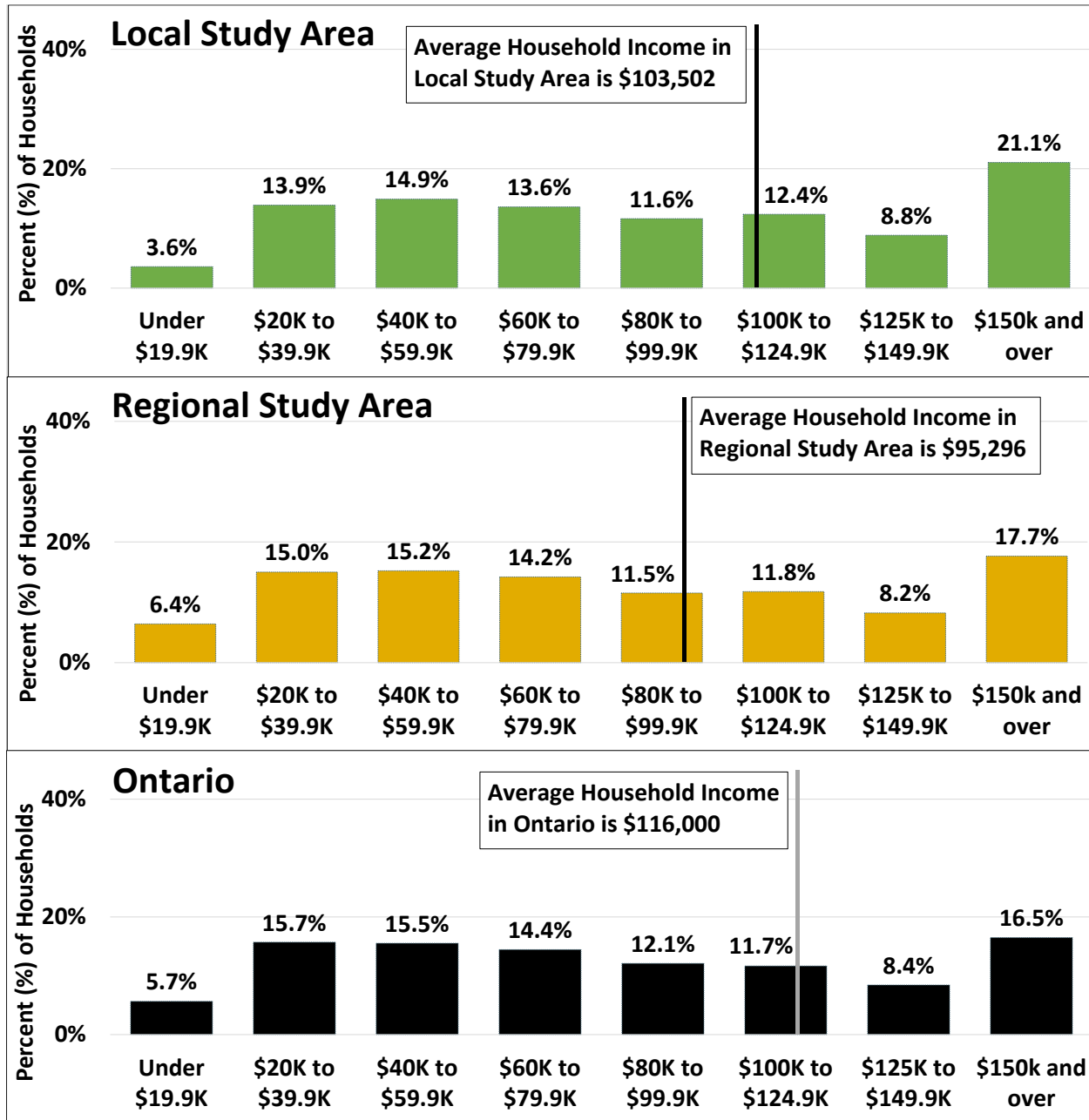
Location	Ratio of Average to Median Income
Ignace	1.33
Dryden	1.19
Machin	1.27
Sioux Lookout	1.15
LSB of Wabigoon	1.29
Ontario	1.27

Source: Statistics Canada 2022a.

Ratios of average to median household income values from 2020 (**Table 3.6-2**) indicated average household income levels were higher than median levels for all Local Study Area communities. This result is expected as income distributions are positively skewed, meaning the range of possible income levels above the median is greater than below. This is consistent with the common perspective that often a few people or households may make materially more income than the typical person or household. The higher the average to median income ratio, the more skewed or less symmetrical the income distribution. The ratio of average to median incomes for households ranged from 1.15 in Sioux Lookout to a high of 1.33 in Ignace.

Figure 3.6-9 presents the range (\$) of household income for the Local Study Area, Regional Study Area, and Ontario for 2020.

Figure 3.6-9: Household Income Ranges for the Local Study Area, Regional Study Area, and Ontario, 2020¹



Source: Statistics Canada 2022a. See **Appendix 3B Supplemental Data**.

Note:

1. 'k' represents \$000s.

Figure 3.6-9 shows that the Local Study Area, Regional Study Area, and Ontario had similar proportions of income range across households. The proportion of households in a lower income

range of \$39,999 and under is 17.5% in the Local Study Area, 21.4% in the Regional Study Area, and 21.4% in Ontario. The income range with the largest proportion of households is \$150,000 and over and includes 21.1% in the Local Study Area, 17.7% in the Regional Study Area, and 16.5% in Ontario. Similar trends were observed among the Local Study Area communities (**Appendix 3B Supplemental Data**).

3.6.2.3 Economic Family Income

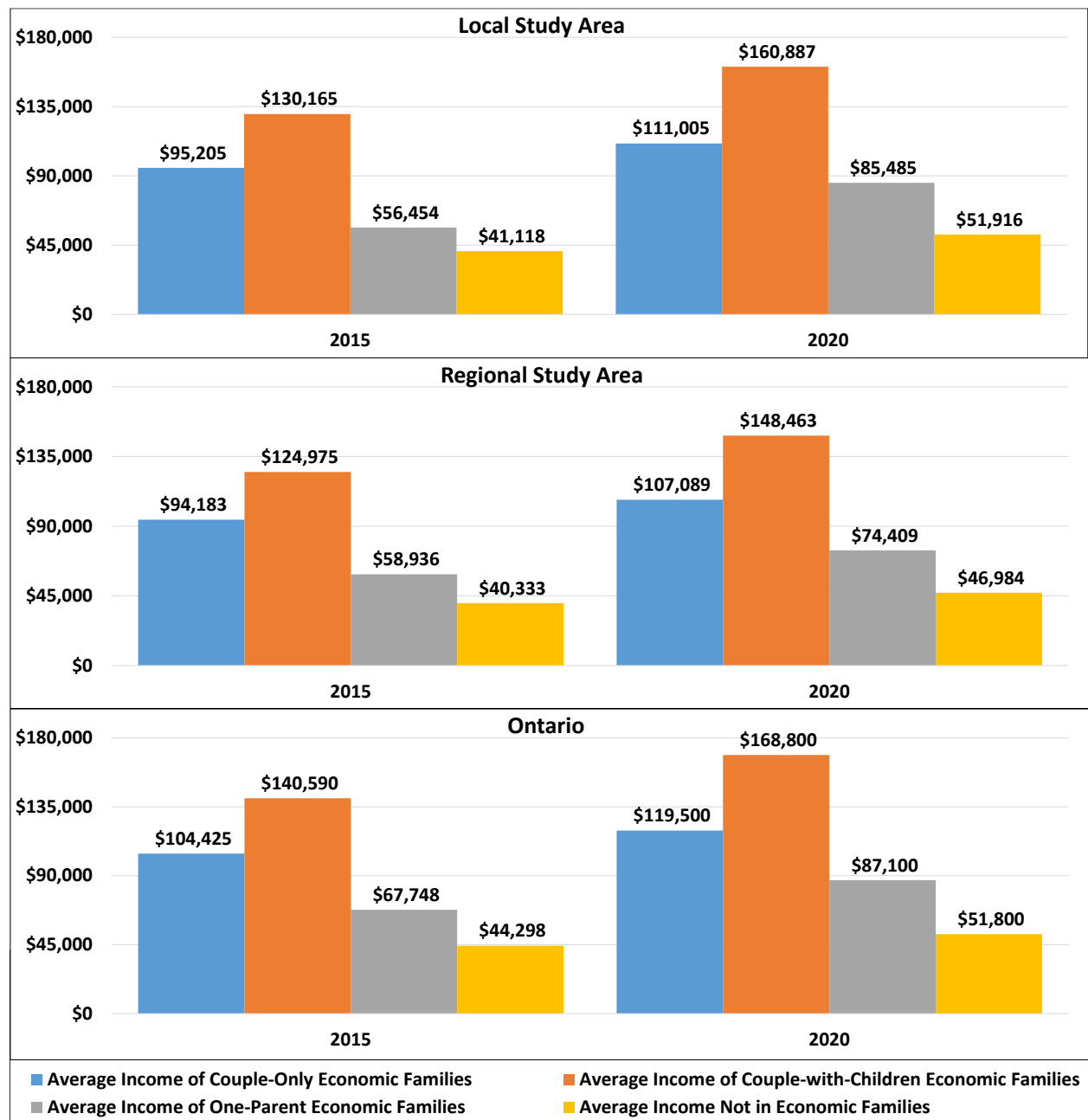
Economic family income is the combined income from all sources of all members of an economic family aged 15 years and older. Economic families include (Statistics Canada 2022a):

- Couple-only (no children) economic families;
- Couple-with-children economic families;
- One-parent economic families, and
- Persons not in economic family. Persons not in economic family refers to those who live with people none of whom are related by blood, marriage, common-law, or adoption or foster; persons living alone are included in this category.

Vulnerable populations in the Local study Area may include one-parent families and persons living alone. **Figure 3.6-10** provides the average economic family income for the Local Study Area, Regional Study Area, and Ontario for 2015 and 2020.⁷¹

⁷¹ Economic family income is not disaggregated by couple only (no children), couple-with-children, one-parent, or persons not in economic family for 2005 and is not reported for 2010.

Figure 3.6-10: Average Economic Family Income by Economic Family Unit for the Local Study Area, Regional Study Area, and Ontario, 2015 and 2020



Source: Statistics Canada 2017 and 2022a. See **Appendix 3B Supplemental Data**.

Figure 3.6-10 shows that for both 2015 and 2020 couples with children had the highest average income, followed by couple-only economic families, one-parent economic families, and

those who are not in an economic family (Statistics Canada 2017; 2022a). Similar trends were observed among the Local Study Area communities (**Appendix 3B Supplemental Data**).

- As of 2020, couple-with-children economic families in the Local Study Area had an income of \$160,900, which is 8.4% higher than the Regional Study Area (\$148,500) and 4.7% lower than Ontario as a whole (\$168,800). The Local Study Area saw the largest proportional increase in income for couple-with-children economic families from 2015 to 2020 (23.6%), followed by Ontario (20.1%) and the Regional Study Area (18.8%).
- As of 2020, couple-only economic families in the Local Study Area had an income of \$111,000, which is 3.6% higher than the Regional Study Area (\$107,100) and 7.1% lower than Ontario as a whole (\$119,500). The Local Study Area saw the largest proportional increase in income for couple-only economic families from 2015 to 2020 (16.6%), followed by Ontario (14.4%) and the Regional Study Area (13.7%).
- As of 2020, one-parent economic families in the Local Study Area had an income of \$85,500, which is 14.9% higher than the Regional Study Area (\$74,400) and 1.8% lower than Ontario as a whole (\$87,100). The Local Study Area saw the largest proportional increase in income for one-parent economic families from 2015 to 2020 (51.4%), followed by Ontario (28.6%) and the Regional Study Area (26.3%).
- As of 2020, those not in an economic family in the Local Study Area had an income of \$51,900, which is 10.4% higher than the Regional Study Area (\$47,000) and similar to Ontario as a whole (\$51,800). The Local Study Area saw the largest proportional increase in income for those not in an economic family from 2015 to 2020 (26.3%), followed by Ontario (16.9%) and the Regional Study Area (16.5%).

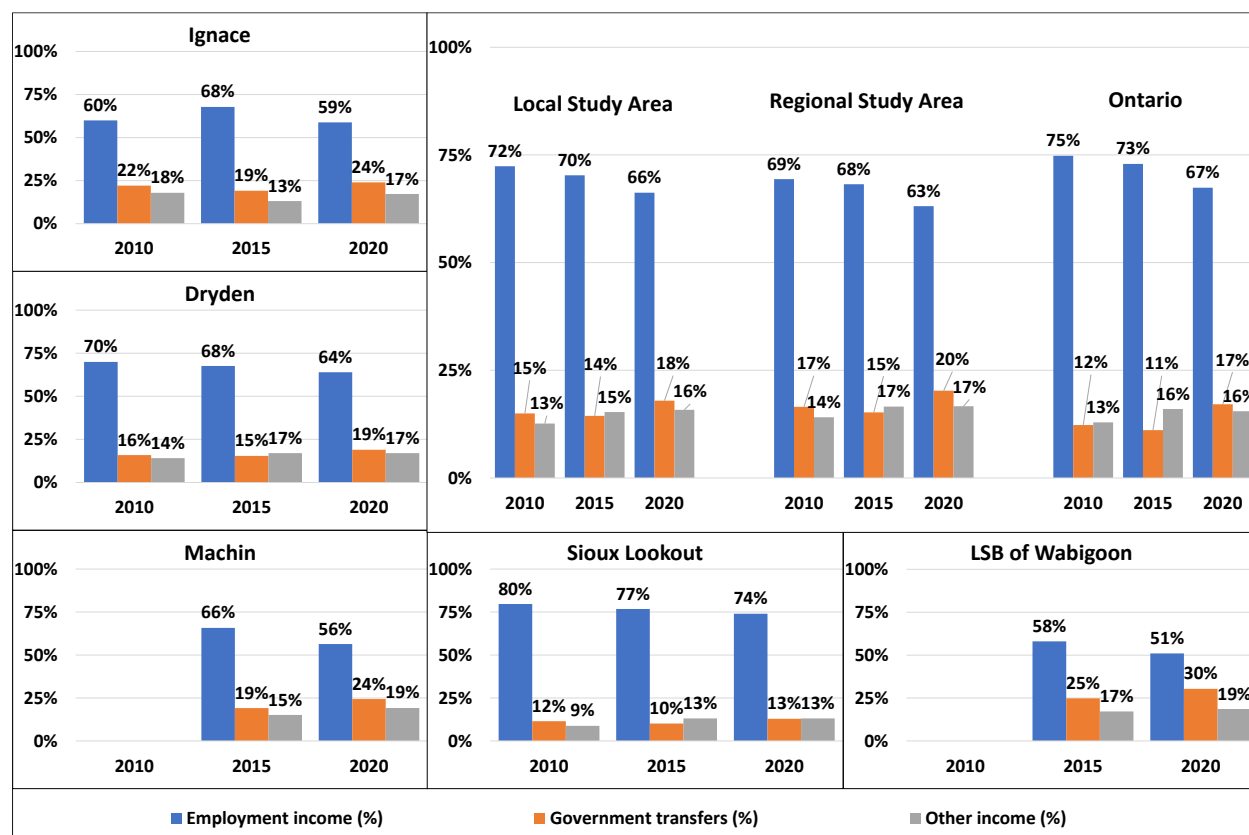
3.6.2.4 Income Sources

Sources of income are presented in three groups: employment income, government transfers, and other income (Statistics Canada 2022a).⁷² **Figure 3.6-11** presents the sources of income for 2010, 2015, and 2020 for the population aged 15 years and over in private households in the Local Study Area, Regional Study Area, and Ontario.⁷³

⁷² Other income includes net self-employment income from farm or non-farm unincorporated business and/or professional practice, investment income, private retirement income, and other income from market sources during the reference period (Statistics Canada 2022a).

⁷³ Income sources for 2005 are not comparable to 2010, 2015, and 2020.

Figure 3.6-11: Income Sources for the Local Study Area, Regional Study Area, and Ontario, 2010 to 2020¹



Source: Statistics Canada 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality, including Machin and the LSB of Wabigoon for 2010.

Figure 3.6-11 shows that the proportions of income for the Local Study Area, Regional Study Area, and Ontario are similar:

- Employment income is the largest income source across the Local Study Area (72% in 2010 to 66% in 2020), Regional Study Area (69% in 2010 to 63% in 2020), and Ontario (75% in 2010 to 67% in 2020).
- From 2010 to 2020, employment income decreased across the Local Study Area, Regional Study Area, and Ontario, while government transfers and other sources of income increased. In particular, government transfers were consistent from 2010 to 2015 and saw an increase from 2015 to 2020.

Similar trends were observed across the Local Study Area communities. Sioux Lookout had the highest proportion of income from employment income (80% in 2010 to 74% in 2020), while the LSB of Wabigoon had the lowest proportion of income sourced from employment income (58% in 2015 to 51% in 2020). Government transfers were largely consistent from 2010 to 2015 and

saw an increase in 2020. By 2020, government transfers were 24% of income in Ignace, 19% in Dryden, 24% in Machin, 13% in Sioux Lookout, and 30% in the LSB of Wabigoon.

The increase in government transfers in 2020 may be, in part, due to COVID-19 relief programs as well as increases to other government programs such as the Canada Child Benefit, Employment Insurance, Old Age Security, and the Canada Pension Plan (Statistics Canada 2023c). COVID-19 relief programs consist of the Canada Emergency Response Benefit, the Canada Recovery Benefit, and the Canada Emergency Student Benefit (Statistics Canada 2023c). In 2020, Statistics Canada (2023c) reported that, of the families that received COVID-19 relief support, the median amount in relief support received was \$8,000 (Statistics Canada 2023c). Local Study Area communities similarly experienced an increase to government transfers as a result of COVID-19 relief support in 2020, including that COVID-19 relief support ranged from 2% of income in the LSB of Wabigoon to 5% in Ignace (Statistics Canada 2022a).

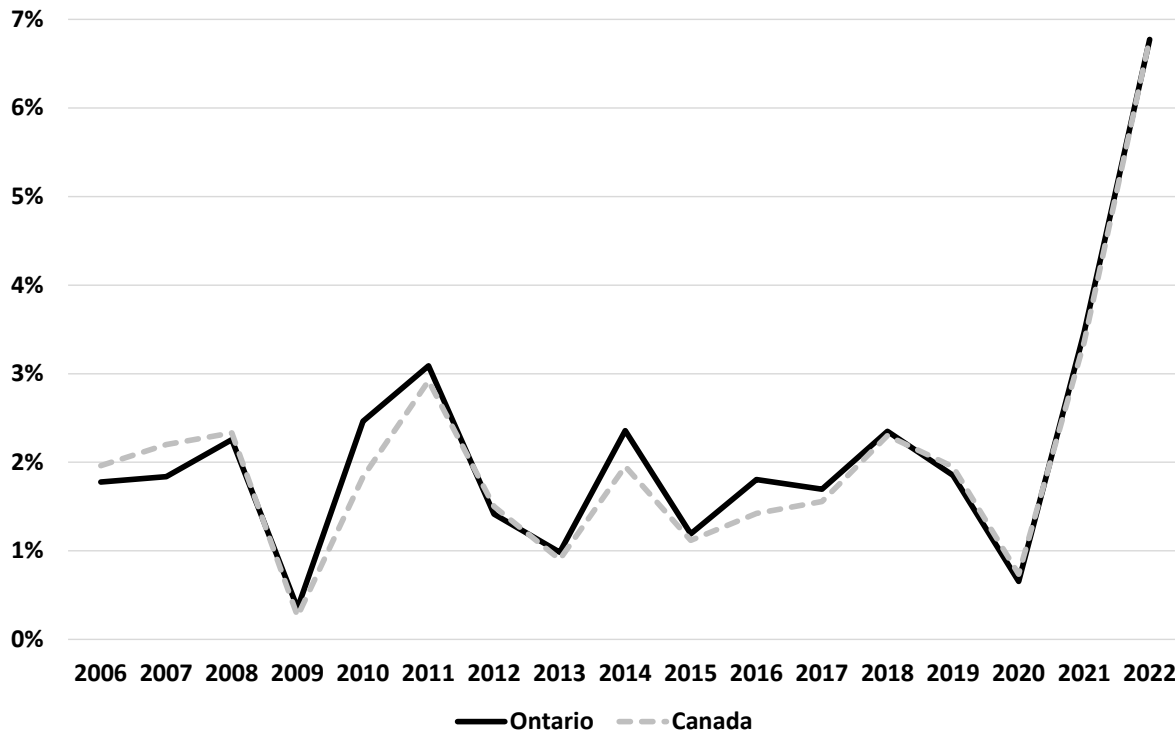
Similar trends across time were observed in males and females in the Local Study Area, Regional Study Area, and Ontario (see **Appendix 3B Supplemental Data**).

In 2020, similar proportions of income sources were observed for those who identify as Indigenous in the Local Study Area (see **Appendix 3B Supplemental Data**). In 2020, Statistics Canada reported that, in the Local Study Area, those who identify as Indigenous received 72% of income from employment income, 20% from government transfers, and 7% from other sources of income, while those who do not identify as Indigenous received 65% of income from employment income, 17% from government transfers, and 18% from other sources. Similar trends were observed in the Regional Study Area and Ontario.

3.6.3 Cost of Living

Cost of living refers to the cost to maintain a certain standard of living in a certain area and cover basic necessities (Statistics Canada 2023a). Cost of living is impacted by numerous factors and a quantitative indicator to help understand cost of living is the Consumer Price Index (CPI). The CPI measures price changes for the average Canadian consumer by comparing, through time, the cost of a fixed basket of goods and services (Statistics Canada 2023a). The CPI is widely used as an indicator of the change in the general level of consumer prices or the rate of inflation (Statistics Canada 2022a). Consumers can compare movements in the CPI to changes in their personal income to monitor and evaluate changes in their financial situation (Statistics Canada 2023a). The goods and services in the CPI basket are divided into eight major components of food; shelter; household operations, furnishings, and equipment; clothing and footwear; transportation; health and personal care; recreation, education and reading; and alcoholic beverages, tobacco products, and recreational cannabis (Statistics Canada 2023a). Statistics Canada publishes the CPI at the national level, for the ten provinces, and select major cities in Canada. Statistics Canada publishes the CPI for Ontario but does not publish the CPI for Northwestern Ontario or any of the individual communities in the Local Study Area. **Figure 3.6-12** summarizes the average annual change in the CPI for Ontario and Canada for 2006 to 2022.

Figure 3.6-12: Average Annual Change in the CPI for Ontario and Canada, 2006 to 2022



Source: Statistics Canada 2023a.

Figure 3.6-12 shows that the average annual change in the CPI in Ontario and Canada followed a similar trend from 2006 to 2022. The average annual change in the CPI in Ontario and Canada from 2006 to 2020 was 3% or less, however both Ontario and Canada saw a large increase in the CPI from 2020 to 2022. Over the previous five years, from 2018 to 2022, the change in Ontario's CPI on an annual average basis was small in 2018 (2.4%), 2019 (1.9%) and 2020 (0.7%), followed by a large increase in 2021 (3.5%) and 2022 (6.8%) (Statistics Canada 2023a). The average annual change from 2018 to 2022 in the CPI for Ontario is comparable to Canada as a whole, where the annual average change in the CPI was 2.3% in 2018, 1.9% in 2019, 0.7% in 2020, 3.4% in 2021, and 6.8% in 2022 (Statistics Canada 2023a). The change in the CPI in 2021 was largely attributed to the COVID-19 pandemic and associated challenges, including strained global supply chains, shipping bottlenecks, shortages of key goods, and higher prices for many internationally traded goods (Macklem 2022). Global inflationary pressures further stepped up in 2022. The change in the CPI in 2022 was a 40-year high (Statistics Canada 2023a). The Russian invasion of Ukraine in February 2022 drove up the price of commodities (particularly energy and agricultural goods) and created new disruptions to already strained global supply chains (Macklem 2022). Another driver of inflation in 2022 was the price of services (Statistics Canada 2023a). As economies began to fully re-open following the COVID-19 pandemic, pent up demand for services missed during the COVID-19 pandemic started driving up prices (for example, travel, recreation, restaurants, etc.). These global pressures and inflationary factors have impacted Canadians way of life, including in Ontario and for the

communities in the Local Study Area, and the cost-of-living topics described in this section need to consider these inflationary pressures.

As global economic growth moderates and demand for commodities and other goods ease following the COVID-19 pandemic, supply chain bottlenecks are expected to decrease (Province of Ontario 2022). The future trajectory of the CPI in Ontario is highly uncertain and dependent on the path of the economy and central bank actions (Province of Ontario 2022). The Province of Ontario, for planning purposes, is projecting the CPI in Ontario to be 3.4% in 2023 and 2.3% in 2024, before converging to the Bank of Canada's target rate of 2.0% in 2025 (Province of Ontario 2022).

Section 3.6.3 Cost of Living describes spending patterns, a food basket, gasoline prices, shelter costs, and utility costs.

3.6.3.1 Spending Patterns

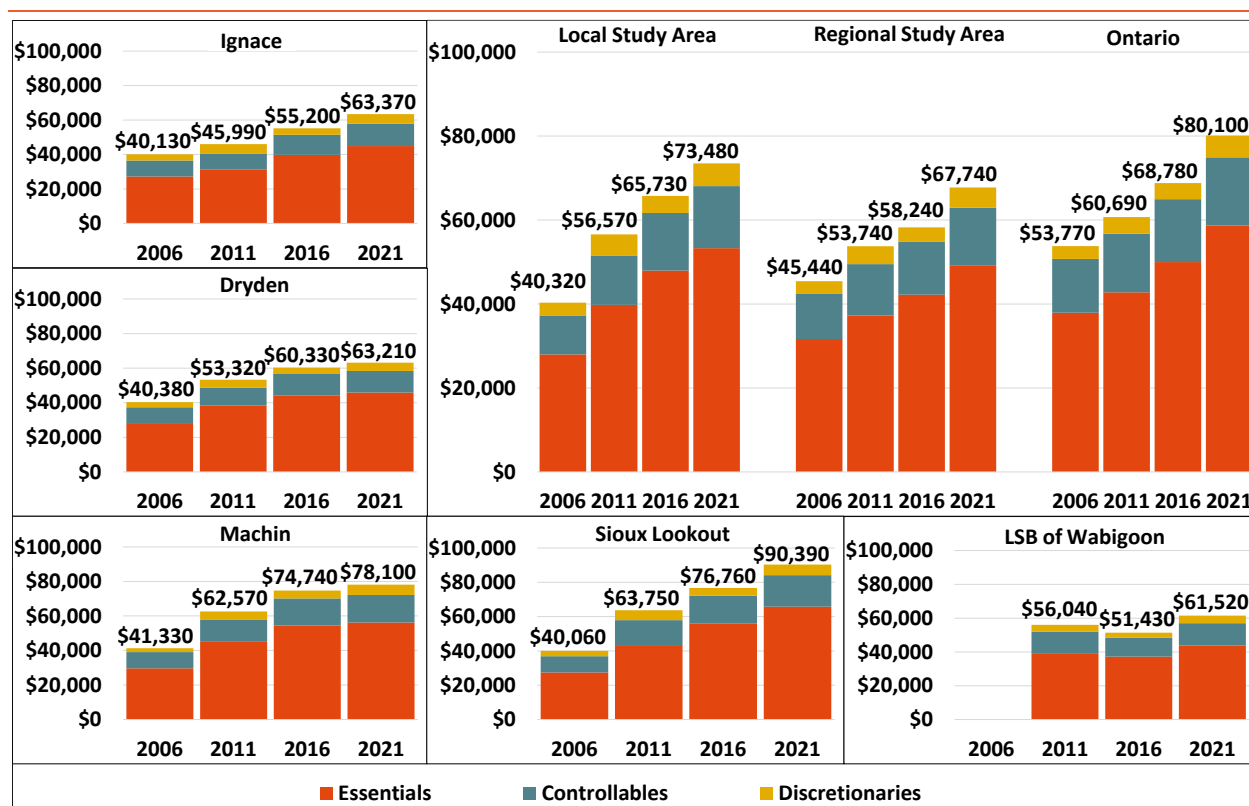
Figure 3.6-13 provides an assessment of average annual household spending patterns for the Local Study Area, Regional Study Area, and Ontario in 2006, 2011, 2016, and 2021.

Understanding household spending patterns is important because it shows what residents are spending their money on and the businesses that may benefit from that spending. Average annual household spending patterns include essential, controllable, and discretionary expenses (Manifold 2023c retrieved May 30, 2023):⁷⁴

- Essential expenses are required for basic needs and include food, principal shelter, home insurance, clothing, transportation, utilities, healthcare (including prescription drugs and health insurance premiums), and others.
- Controllable expenses are expenses that have an ability to be controlled or altered over the short term, are not necessarily a minimum requirement for basic needs, and include childcare, personal care, furnishings and equipment, telecom, pet expenses, education, reading materials, recreation, arts and antiques, and others.
- Discretionary expenses are non-essential expenses that are not mandatory for basic needs and include tobacco, alcohol, gardening supplies, games of chance (for example the lottery or gambling), miscellaneous expenses, and other expenses.

⁷⁴ Essential, controllable, and discretionary expenses do not include income taxes, RRSP contributions, pension contributions, contributions to charity, gifts, household cleaning supplies, home renovations, travel accommodations, and spending on other accommodations (for example utilities, mortgage, property taxes, and other costs for a vacation home) (Manifold 2023c retrieved May 30, 2023).

Figure 3.6-13: Average Annual Household Spending for the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021^{1,2}



Source: Manifold 2023c retrieved May 30, 2023, Statistics Canada 2007, 2012, 2017, and 2022a.

Household spending patterns were retrieved from Manifold who used their own models to create a database based on hundreds of inputs from the 2006, 2011, 2016, and 2021 Census to create the household spending pattern estimates. See **Appendix 3B Supplemental Data**.

Notes:

1. The Local Study Area includes Ignace, Dryden, Machin, Sioux Lookout, and the LSB of Wabigoon. The Local Study Area does not include the LSB of Melgund and Dinorwic. Data for the LSB of Wabigoon for 2006 has been suppressed for confidentiality and data quality.
2. The Regional Study Area includes the Kenora, Rainy River, and Thunder Bay District Census Divisions.

Figure 3.6-13 shows that, as of 2021, households in the Local Study Area spend on average \$73,500 per year, which is 9% higher than the Regional Study Area (\$67,700 per year). Essential expenses account for the majority of household spending at 73% of all spending in the Local Study Area (or \$53,300 per year), Regional Study Area (or \$49,100 per year), and Ontario (\$58,700) followed by controllable expenses (20% for the Local Study Area, Regional Study Area, and Ontario), and discretionary expenses (7% for the Local Study Area, Regional Study Area, and Ontario).

Household spending consistently increased from 2006 to 2021 for the Local Study Area, Regional Study Area, and Ontario.

- Household spending in the Local Study Area increased on average 4.1% annually from 2006 (\$40,300 per year) to 2021 (\$73,500 per year).
- Household spending in the Regional Study Area increased on average 2.7% annually from 2006 (\$45,500 per year) to 2021 (\$67,700 per year).
- Household spending in Ontario increased on average 2.7% annually from 2006 (\$53,800) to 2021 (\$80,100).

Observations among the Local Study Area communities include that the community with the highest average annual housing spending in 2021 was Sioux Lookout (\$90,400), followed by Machin (\$78,100), Ignace (\$63,400), Dryden (\$63,200), and the LSB of Wabigoon (\$61,500). The Local Study Area communities experienced an increase in average annual household spending from 2006 to 2021, trends include:

- From 2006 to 2021, average annual household spending among Local Study Area communities was the highest in Sioux Lookout. Household spending in Sioux Lookout increased on average 5.6% annually from 2006 (\$40,100) to 2021 (\$90,400).
- From 2006 to 2021, average annual household spending among Local Study Area communities was the lowest in Dryden. Household spending in Dryden increased on average 3.0% annually from 2006 (\$40,400) to 2021 (\$63,200).
- Household spending in the LSB of Wabigoon increased on average 0.9% annually from 2011 (\$56,000) to 2021 (\$61,500).

The change in the CPI in Ontario and Canada from 2006 to 2021 ranged from 0.3% to 3.5% annually (averaging 1.8% annually over this time frame) (**Section 3.6.3**). Since 2017 household spending across Canada has risen at a faster pace than inflation with the largest share of spending dedicated to shelter, transportation, and food (Statistics Canada 2021). Statistics Canada reports after tax income.⁷⁵ Household spending typically occurs after income has been taxed. As of 2020, the average after tax household income was \$87,900 in the Local Study Area, \$81,400 in the Regional Study Area, and \$95,300 in Ontario, providing an indication that average household after tax income is greater than average household spending.⁷⁶

Residents of the Local Study Area pair trips to Dryden and/or Thunder Bay to access services with shopping, including big box stores, that are not available in Ignace, Machin, Sioux Lookout, and the smaller communities in the Local Study Area (IAWG October 06, 2021). In particular, Local Study Area residents tend to go to Dryden to buy in bulk (e.g., toilet paper) as it is often cheaper to drive and buy it elsewhere (NWO Community and Baseline Studies Key Person Interview Program 2022). Residents of Ignace, Machin, and Sioux Lookout have commented that there is a lack of big box stores in the community and residents have to travel to Dryden to get access to bigger stores (NWO Community and Baseline Studies Key Person Interview Program 2022). Residents of Sioux Lookout and Ignace have noted that a lack of big box stores could prevent people from moving to the community (NWO Community and Baseline Studies Key Person Interview Program 2022). Ignace has experienced a loss in the availability of businesses

⁷⁵ **Section 3.6.2** describes total income (before tax) for the Local Study Area, Regional Study Area, and Ontario.

⁷⁶ Average after tax household income is determined based on 2020 incomes and average household spending is based on 2021 household spending activity. Comparing 2020 to 2021 should be used with caution.

and other services over the past two decades, which has resulted in a reliance on businesses and services in other locations, such as Dryden (IAWG October 06, 2021).

Residents of Machin, Wabigoon Village, Melgund, and Dinorwic indicated they mainly shop in Dryden, but also go to Winnipeg and Thunder Bay for larger shopping trips (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents of Ignace have commented that food costs at the local grocery store are more expensive than at bigger box stores in regional hubs or other larger centres (NWO Baseline Studies Key Person Interview Program 2022-2023; for further information see **Section 3.6.3.2**) Individuals who have to travel to Dryden to shop at bigger stores have commented that winter driving conditions can be terrible and dangerous, making it difficult, at times, to access the stores (NWO Baseline Studies Key Person Interview Program 2022-2023; Local Economy Workshop 2021). Residents in rural areas, including Wabigoon Village and Melgund, stated they are responsible for costs that people who are new to the area may not have accounted for, including costs for a water and wastewater system or having to buy and split wood for a wood burning stove (residents may heat homes through wood burning stove) and installation and maintenance costs for a water well, cistern, or septic system (there is no municipal water and wastewater service). Residents of Machin and Dinorwic commented that installing and maintaining a septic tank or field can be a large cost for homeowners in the community (NWO Baseline Studies Key Person Interview Program 2022-2023).

3.6.3.2 Food Basket

Food is an essential purchase for households. The CPI (**Section 3.6.3**) includes a basket of 8 major components, including food and non-alcoholic beverages. The CPI is published at the national level, provincial level, and for select major cities in Canada. The prices of food collected in the Local Study Area are to gain an understanding of food prices locally. The cost of food items is generally an indicator of cost of living and is closely scrutinized because of its strong correlation with social and economic effects (Statistics Canada 2021; 2023b). Health Canada and Statistics Canada collect a food basket of representative products to measure price changes in food and to monitor the cost and affordability of healthy eating (Health Canada n.d.; Statistics Canada 2021). A food basket may also be tracked to inform health and social policies and to educate on the relationship between poverty and food security (Health Canada n.d; AHS 2017).

Prices for a basket of food products were collected in January 2022, June 2022, and March 2023 in Ignace, Dryden, and Thunder Bay. The food prices were collected over three occurrences to understand seasonal variations of food and to understand the price of select products. Data in Thunder Bay was collected as a regional comparative. The data reflects the price of items in the food basket, but the food items were not purchased. Food prices were collected from the Ignace Shoprite Fine Foods (in-person), the Dryden Wal-Mart (online), and the Thunder Bay Wal-Mart (online).

The Statistics Canada CPI component food and non-alcoholic beverages consists of over 175 representative products that may change based on market availability (Statistics Canada 2023a). The food prices collected in the Local Study Area are based on the Statistics Canada representative products and include a list of 66 staple food items that were refined based on feedback from residents living in the Local Study Area (NWO Baseline Studies Key Person

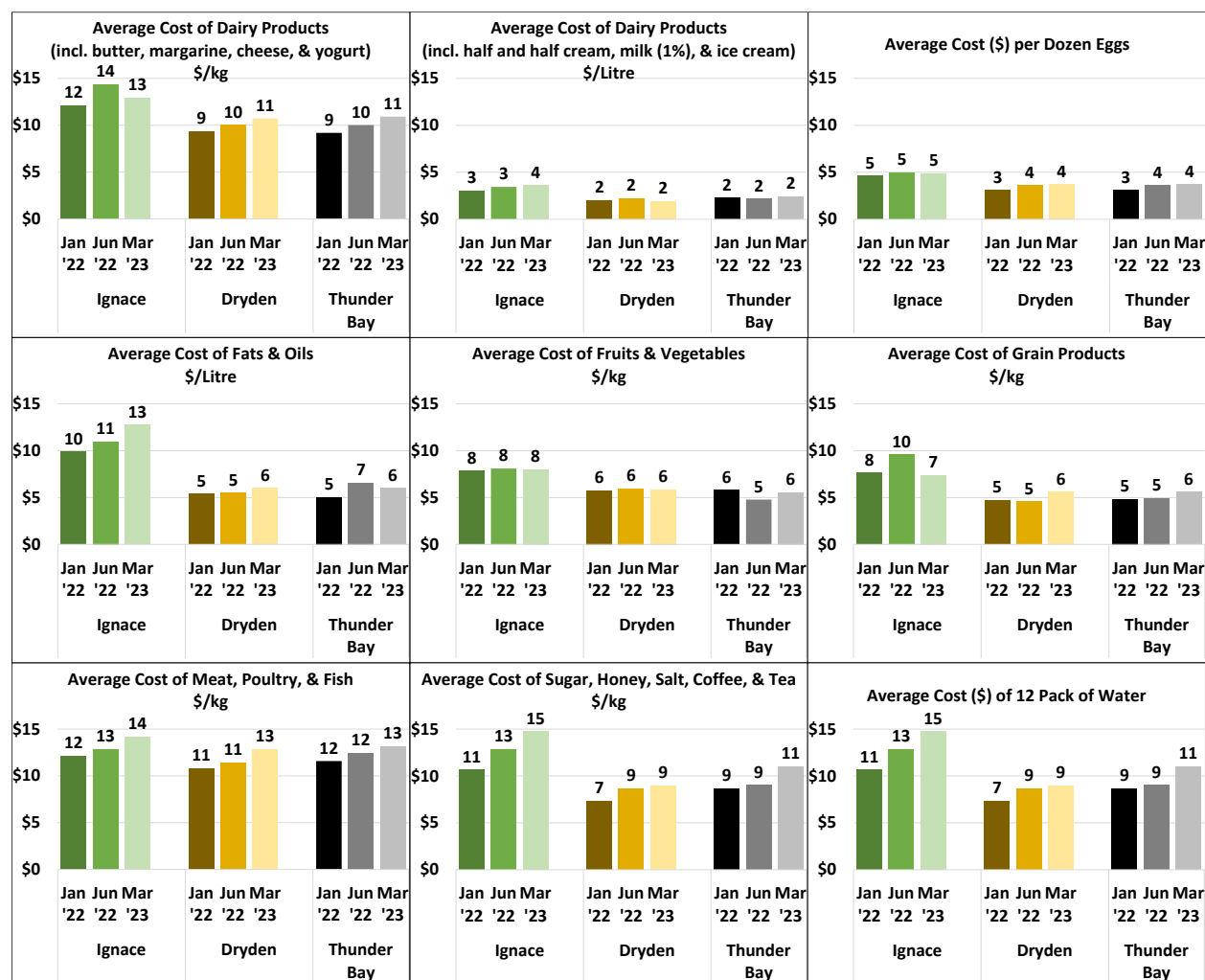
Interview Program 2022-2023). The food items were collected and grouped into the following categories:

- Baby food and infant formula;
- Dairy products;
- Eggs;
- Fats and oils;
- Fruits;
- Grain products
- Meat, poultry, and fish;
- Sugar, honey, and salt;
- Vegetables; and
- Water, coffee, and tea.

Unit prices (e.g., including \$/kilogram ["kg"] and \$/litre ["L"]) were collected and compared. The approach to the food basket survey is included in **Appendix 3A Detailed Methods** and provides details on consistency of products across multiple survey locations, approach on price points and purchasing amounts, consistency in unit sizes, and limitations.

Figure 3.6-14 provides the average food basket (based on a unit price) that was collected for Ignace, Dryden, and Thunder Bay in January 2022, June 2022, and March 2023. The data reflects the price of items in the food basket, but the food items were not purchased.

Figure 3.6-14: Average Cost (per Unit) of Food Products for Ignace, Dryden, and Thunder Bay, 2022 and 2023^{1,2,3,4}



Source: Collected by InterGroup Consultants Ltd. in 2022 and 2023. See **Appendix 3B Supplemental Data**.

Notes:

1. The nine food categories are comprised of 66 food items, organized based on food group. Dairy products are divided into products per kilogram (including butter, margarine, cheddar cheese, mozzarella cheese, processed cheese slices, and yogurt) and per litre (including half and half cream, 1% milk, and ice cream), based on the product. For further information on the list of food items that comprise the food categories see **Appendix 3B Supplemental Data**.
2. Food prices in Ignace were collected on January 20, 2022, June 24, 2022, and March 23, 2023, from the Ignace Shoprite Fine Foods. Food prices were collected in-person.
3. Food prices in Dryden were collected on January 21, 2022, June 23, 2022, and March 23, 2023, from the Dryden Wal-Mart. Food prices were collected online.
4. Food prices in Thunder Bay were collected on January 21, 2022, June 24, 2022, and March 23, 2023, from the Thunder Bay Wal-Mart. Food prices were collected online.

Figure 3.6-14 indicates Ignace has a higher unit price across all food basket categories when compared to Dryden and Thunder Bay. Dryden and Thunder Bay had a larger variety of products to choose from compared to Ignace. For example, across all dates collected Ignace was out of stock of baby food and instant formula, and in March 2023 Ignace was out of stock of bananas, blueberries, pears, and strawberries. Dryden and Thunder Bay had these products in stock. Dryden and Thunder Bay food basket unit prices are comparable, particularly across dairy, eggs, fats and oils, grain products, and meat, poultry, and fish. Notable trends across the food basket categories include:

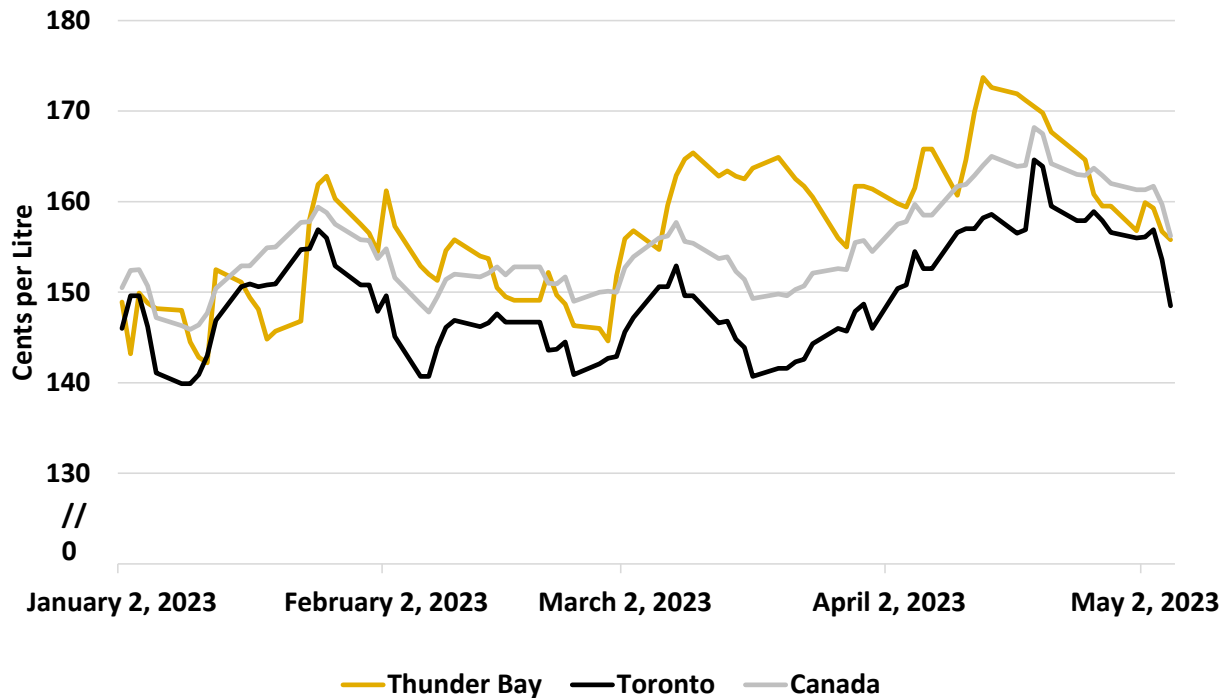
- The unit price (per kg) of grain products was approximately twice the amount in Ignace in June 2022 (\$9.6/kg), when compared to Dryden (\$4.6/kg) and Thunder Bay (\$4.9/kg). By March 2023 the price of grain products in Ignace decreased 23% (\$7.4/kg), while Dryden increased 22% (\$5.6/kg) and Thunder Bay increased 14% (\$5.6/kg).
- As of March 2023, the price of a dozen eggs in Ignace was 32% more (\$4.9/dozen eggs) compared to Dryden and Thunder Bay (\$3.7/dozen eggs).
- Fruits and vegetables saw minimal change from January 2022 to March 2023, including a change of 3% for Ignace (\$7.8/kg to \$8.0/kg), 2% for Dryden (\$5.7/kg to \$5.8/kg), and -3% for Thunder Bay (\$5.8/kg to \$5.6/kg).

The food basket unit prices collected in Ignace, Dryden, and Thunder Bay need to be considered in the context of the increase in food prices across Canada. Since late 2021, the price increases for food sold in grocery stores across Canada, measured on a year-over-year basis, have outpaced consumer inflation, growing faster than 10% in August, September, and October 2022 (Fradella 2022; Statistics Canada 2023a). Food prices have risen due to multiple factors that have put upward pressure on costs along the food supply chain. Since the onset of the COVID-19 pandemic, many factors have impacted prices at the grocery store, such as supply chain disruptions, labour shortages, changes in consumer purchasing patterns, poor weather in some agricultural growing regions, tariffs, higher input costs, and higher wages (Fradella 2022). Unlike past trends, many of these conditions and pressures have been occurring simultaneously or in a more pronounced manner, leading to broad-based increases in food prices (Fradella 2022; Statistics Canada 2023a).

3.6.3.3 Gasoline Prices

Natural Resources Canada tracks the daily average retail price for regular gasoline for major cities in Canada, including Thunder Bay. Natural Resources Canada and Statistics Canada do not track gasoline prices for the communities in the Local Study Area (NRCan 2023; Statistics Canada 2023b). **Figure 3.6-15** summarizes the daily average retail price of regular gasoline (cents/litre) for Thunder Bay, Toronto, and Ontario from January 2 to May 2, 2023.

Figure 3.6-15: Daily Average Retail Price of Regular Gasoline (cents/litre) for Thunder Bay, Toronto, and Ontario, January 2 to May 2, 2023¹



Source: NRCan 2023. See **Appendix 3B Supplemental Data**.

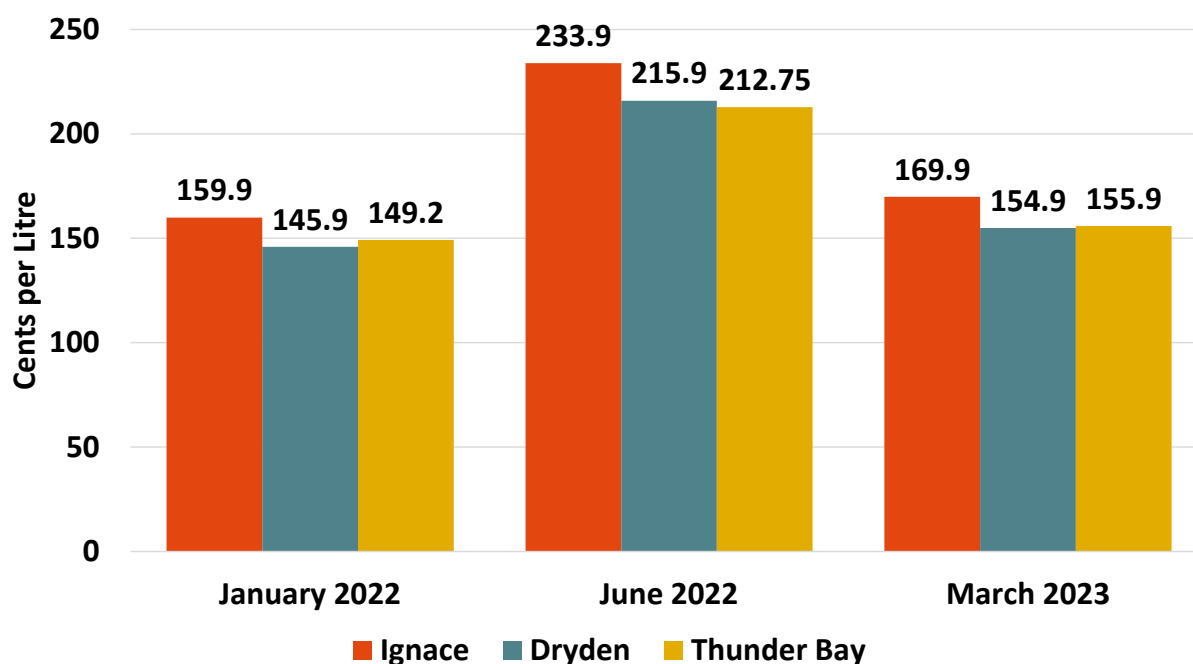
Note:

1. Prices include taxes.

Figure 3.6-15 indicates that, generally, Thunder Bay regular gasoline prices follow the trend of gasoline prices in Toronto and Canada. Further, gasoline prices in Thunder Bay are typically higher than gasoline prices in Toronto. From January 2, 2023, to May 2, 2023, the average price of gasoline in Thunder Bay was \$157.2 cents/litre, which was similar to Canada as a whole (155.1 cents/litre) and 5.3% higher than Toronto (149.3 cents/litre).

As Natural Resources Canada and Statistics Canada do not collect gasoline prices for the Local Study Area communities, primary data collection was completed. The gasoline prices were collected three times throughout 2022 and 2023 (January 20, 2022, June 20, 2022, and March 23, 2023) to understand the variation in gasoline prices in Ignace, Dryden, and Thunder Bay (as a regional reference). A minimum of two gas stations were tracked in each location. **Figure 3.6-16** provides the average gasoline prices (regular unleaded) for Ignace, Dryden, and Thunder Bay for January 20, 2022, June 20, 2022, and March 23, 2023.

Figure 3.6-16: Average Price of Regular Gasoline (cents/litre) for Ignace, Dryden, and Thunder Bay, January 2022, June 2022, and March 2023^{1,2,3}



Source: Collected by InterGroup Consultants Ltd. in 2022 and 2023. See **Appendix 3B Supplemental Data**.

Notes:

1. Ignace gasoline prices are the average of the gasoline prices collected at the Petro-Canada and Esso in Ignace.
2. Dryden gasoline prices are the average of the gasoline prices collected at the Petro-Canada and Husky in Dryden.
3. Thunder Bay gasoline prices are the average of the gasoline prices collected at a Petro-Canada and Esso in Thunder Bay.

Figure 3.6-16 summarizes that the gasoline prices in Ignace were higher than Dryden and Thunder Bay for all dates collected. Dryden and Thunder Bay gasoline prices were generally comparable. As of March 2023, the gasoline prices in Ignace (169.9 cents/litre) were 9.7% higher than Dryden (154.9 cents/litre) and 9.0% higher than Thunder Bay (155.9 cents/litre). Gasoline prices were also collected in Sioux Lookout and Machin during March 23, 2023.⁷⁷ The gasoline prices in Sioux Lookout (162.4 cents/litre) were lower than Ignace, but higher than Dryden and Thunder Bay. The gasoline prices in Machin (146.9 cents/litre) were the lowest among the communities collected.

⁷⁷ Machin gasoline prices were collected at PR Gas in Machin and Sioux Lookout gasoline prices were collected at the Esso and DJs Gas Bar in Sioux Lookout.

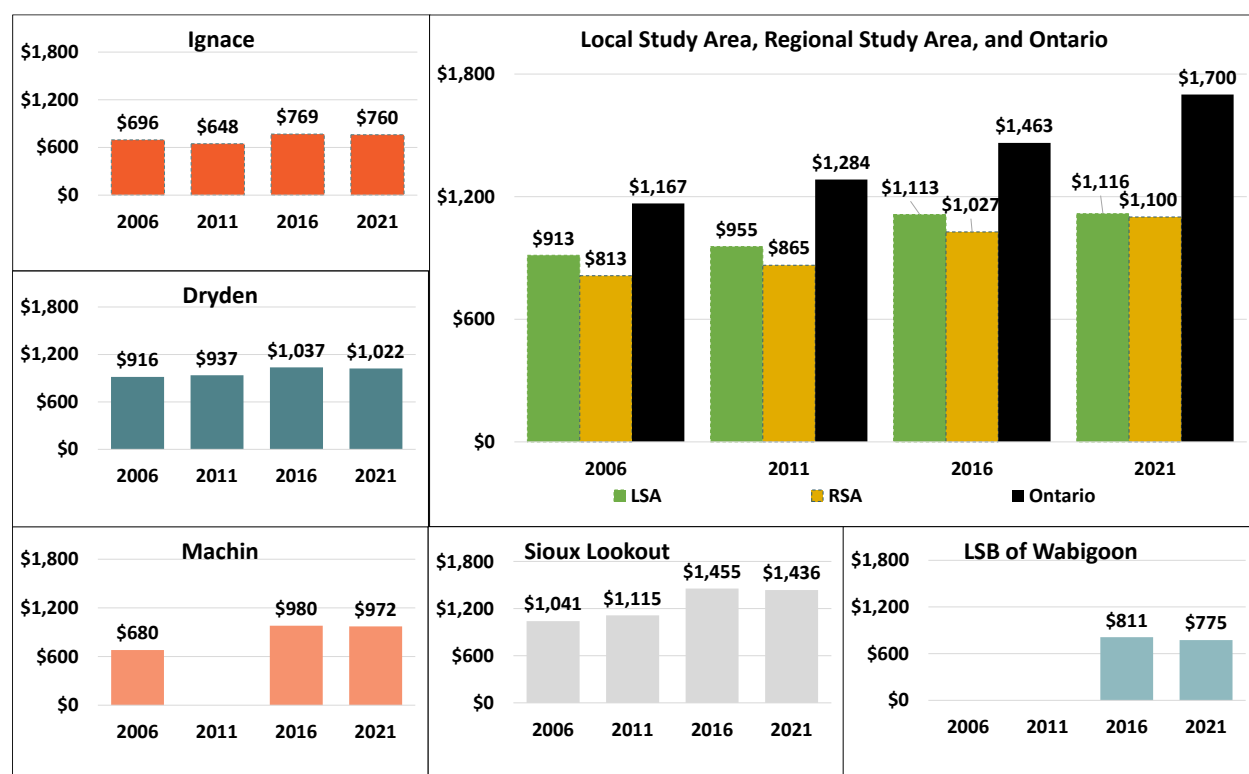
For Ignace, Dryden, and Thunder Bay, gasoline prices peaked in June 2022. Ignace, Dryden, and Thunder Bay all experienced a sharp increase in gasoline prices from January 20, 2022, to June 20, 2022 (from 42.6% to 48.0%) and a decline in gasoline prices from June 20, 2022, to March 23, 2023 (-26.7% to -28.3%). The primary driver of gasoline prices is the price of crude oil. High gasoline prices in the summer of 2022 were driven by a constrained crude oil supply after Russia was placed under sanctions for its invasion of Ukraine, as well as a general increase in demand during summer travel months along with the easing of COVID-19 pandemic restrictions (Al Mallees 2022).

3.6.3.4 Shelter Costs

3.6.3.4.1 Shelter Costs for Homeowners

Figure 3.6-17 provides the average monthly shelter costs for homeowners in the Local Study Area, Regional Study Area, and Ontario for 2006 to 2021. Shelter cost refers to the average monthly total of all shelter expenses paid for homeowners including mortgage payments, property taxes, condominium fees, electricity, heat, water, and other municipal services (Statistics Canada 2022a).

Figure 3.6-17: Average Monthly Shelter Costs for Homeowners, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality, including Machin (2011) and the LSB of Wabigoon (2006 and 2011).

Figure 3.6-17 shows that, as of 2021, the average monthly shelter costs for homeowners in the Local Study Area was \$1,120, which was similar to the Regional Study Area (\$1,100) and 34.1% lower than Ontario as a whole (\$1,700) (Statistics Canada 2022a). The higher shelter costs in Ontario as a whole are largely a result of the higher cost of living in large urban centres (Government of Ontario 2020b). The Local Study Area, the Regional Study Area, and Ontario all experienced increases to the average monthly shelter costs for homeowners from 2006 to 2016. Homeowner shelter costs for the Local Study Area and the Regional Study Area were relatively flat from 2016 to 2021, while costs continued to increase at the provincial level (Statistics Canada 2007; 2017; 2022a):

- The Local Study Area saw an increase of 23.1% from 2006 (\$910) to 2020 (\$1,120);
- The Regional Study Area saw an increase of 37.0% from 2006 (\$810) to 2021 (\$1,100); and
- Ontario saw an increase of 45.3% from 2006 (\$1,170) to 2021 (\$1,700).

Among the Local Study Area communities, Sioux Lookout had the highest average monthly shelter costs for homeowners in 2021 (\$1,440), followed by Dryden (\$1,020), Machin (\$970),

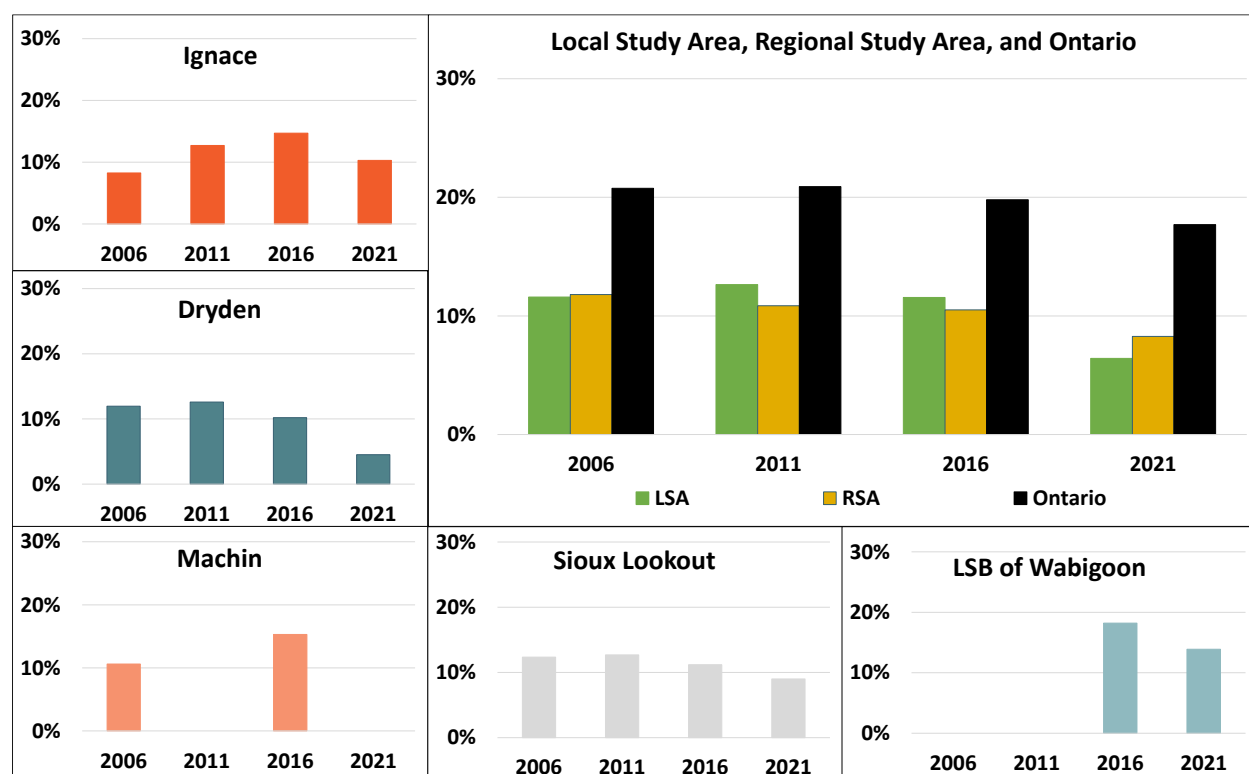
the LSB of Wabigoon (\$780), and Ignace (\$760). All Local Study Area communities experienced an increase in average monthly shelter costs from 2006 to 2021, with prices consistent or decreasing slightly from 2016 to 2021. Notable trends include (Statistics Canada 2007; 2017; 2022a):

- Machin had the highest proportional increase to average monthly shelter costs for homeowners from 2006 to 2021 (increase of 42.9%);
- Ignace had the lowest proportional increase to average monthly shelter costs for homeowners from 2006 to 2021 (increase of 9.2%); and
- The LSB of Wabigoon had a slight decrease in average monthly shelter costs for homeowners from 2016 to 2021 (decrease of 4.4%).

In comparison to average monthly shelter costs for tenant dwellings (**Figure 3.6-19**), tenants in the Local Study Area (\$980 in 2021), had lower average monthly shelter costs compared to the average monthly shelter costs for homeowners (\$1,120 in 2021).

Figure 3.6-18 provides the percent of homeowners spending 30% or more of income on their shelter costs for the Local Study Area, Regional Study Area, and Ontario for 2005 to 2020. The shelter-cost-to-income ratio refers to the proportion of average household income which is spent on shelter costs (Statistics Canada 2022a).

Figure 3.6-18: Percent of Homeowners Spending 30% or More of Income on Shelter Costs, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality or data quality, including Machin (2011) and the LSB of Wabigoon (2006 and 2011).

Statistics Canada, the Canada Mortgage and Housing Corporation, and the Province of Ontario all define affordable housing. Affordable housing in Ontario is defined as shelter that does not exceed 30% of household income (Government of Ontario 2020b). The data in **Figure 3.6-18** indicates that, as of 2021, 6.4% of the Local Study Area, 8.3% of the Regional Study Area, and 17.7% of Ontario homeowners spend 30% or more of income on shelter costs. The Local Study Area, Regional Study Area, and Ontario have all seen a decrease in the percentage of homeowners spending 30% or more of income on shelter costs from 2006 to 2021 (Statistics Canada 2007; 2022a):

- The Local Study Area had a decrease from 11.6% in 2006 to 6.4% in 2021;
- The Regional Study Area had a decrease from 11.8% in 2006 to 8.3% in 2021; and
- Ontario had a decrease from 20.8% in 2006 to 17.7% in 2021. The higher shelter-costs-to-household income ratios for Ontario as a whole are largely a result of the higher cost of living in large urban centres (Government of Ontario 2020b).

Among Local Study Area communities, the LSB of Wabigoon (13.9%) had the highest proportion of homeowners spending 30% or more of income on shelter costs in 2021, followed by Ignace (10.3%), Sioux Lookout (9.0%), and Dryden (4.5%).⁷⁸ Notable trends from 2006 to 2021 include (Statistics Canada 2007; 2022a):

- A decrease to the shelter-costs-to-household income ratios for homeowners from 2006 to 2021 was seen in Dryden, Sioux Lookout, and the LSB of Wabigoon from 2016 to 2021;
- Ignace saw a slight increase from 8.2% in 2006 to 10.3% in 2021 and Machin saw an increase from 10.6% in 2006 to 15.3% in 2016.

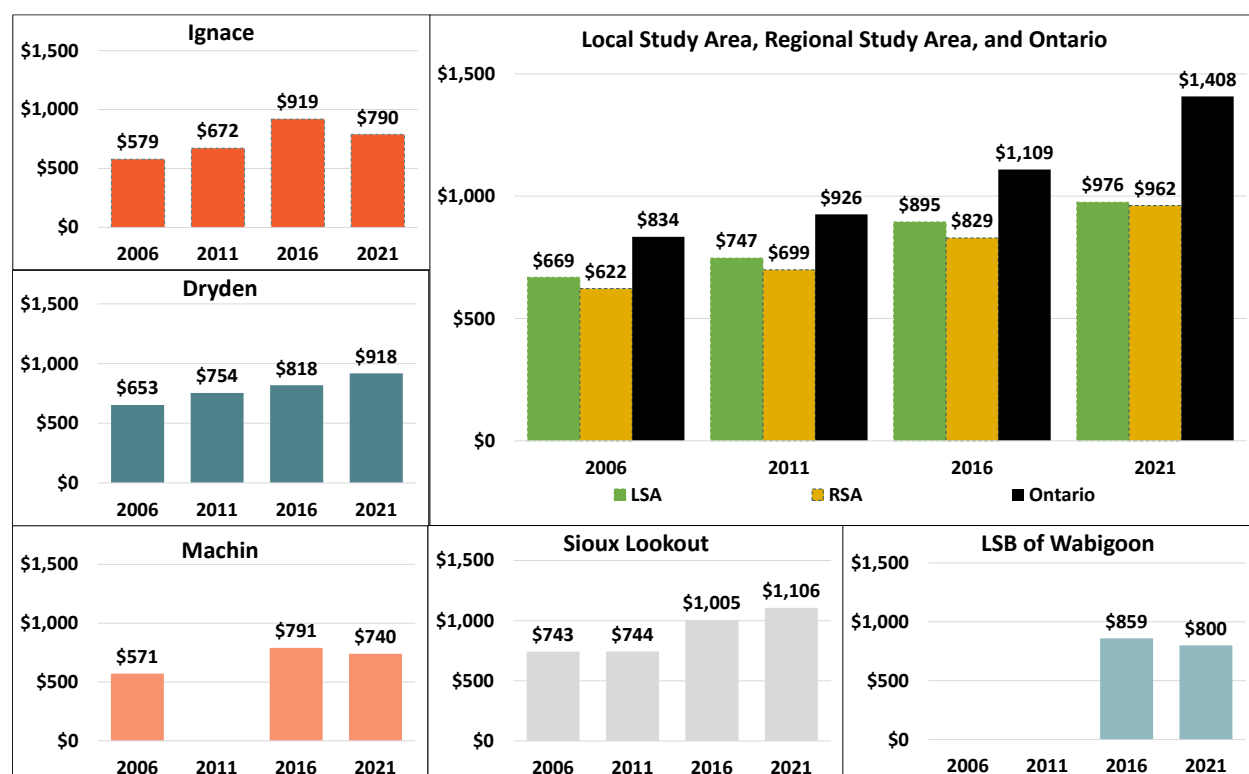
Overall, fewer homeowners in the Local Study Area spend 30% or more of their income on shelter costs compared to the Regional Study Area and Ontario as a whole in 2020. Households in the Local Study Area that do spend 30% or more of their income on housing may be due to an increase in the cost of living and lower household incomes (HSAL et al. 2022a; IAWG October 06, 2021; IAWG February 24, 2022). Interview participants noted smaller communities in the Local Study Area, such as Ignace and Machin, lack certain types of housing like condominiums and duplexes (NWO Baseline Studies Key Person Interview Program 2022-2023; HSAL et al. 2022a).

3.6.3.4.2 Shelter Costs for Tenant Households

Figure 3.6-19 provides the average monthly shelter costs for tenant households for the Local Study Area, Regional Study Area, and Ontario for 2006 to 2021. Shelter costs for tenant households include rent, electricity, heat, water, and other municipal services (Statistics Canada 2022a).

⁷⁸ Data for Machin in 2021 was suppressed for data quality.

Figure 3.6-19: Average Monthly Shelter Costs for Tenant Households, 2006 to 2021¹



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality, including Machin (2011) and the LSB of Wabigoon (2006 and 2011).

Figure 3.6-19 shows that as of 2021, the average monthly shelter costs for tenant households for the Local Study Area was \$980, which was similar to the Regional Study Area (\$960) and 30.5% lower than Ontario as a whole (\$1,410) (Statistics Canada 2022a). The higher shelter costs in Ontario as a whole are largely a result of the higher cost of living in large urban centres (Government of Ontario 2020b). The Local Study Area, the Regional Study Area, and Ontario all saw an increase to the average monthly shelter costs for tenant households from 2006 to 2021 (Statistics Canada 2007; 2022a):

- The Local Study Area saw an increase of 46.3% from 2006 (\$670) to 2020 (\$980);
- The Regional Study Area saw an increase of 54.8% from 2006 (\$620) to 2021 (\$960); and
- Ontario saw an increase of 69.9% from 2006 (\$830) to 2021 (\$1,410).

Among the Local Study Area communities, Sioux Lookout had the highest average monthly shelter costs for tenant households in 2021 (\$1,110), followed by Dryden (\$920), the LSB of Wabigoon (\$800), Ignace (\$790), and Machin (\$740). The Local Study Area communities

experienced an increase in average monthly shelter costs for tenant households from 2006 to 2021. From 2016 to 2021, Dryden and Sioux Lookout continued to increase, while Ignace, Machin, and the LSB of Wabigoon saw a decrease. Notable trends include (Statistics Canada 2007; 2022a):

- Sioux Lookout had the highest proportional increase to average monthly shelter costs for tenant households from 2006 to 2021 (increase of 48.9%); and
- Machin had the lowest proportional increase to average monthly shelter costs for tenant households from 2006 to 2021 (increase of 29.8%). Machin had a slight decrease in average monthly shelter costs from 2016 to 2021 (decrease of 6.4%). A decrease in average monthly shelter costs from 2016 to 2021 was also experienced in Ignace (14.0%) and the LSB of Wabigoon (6.9%).

The Kenora District Services Board conducted a market rent study in 2019, including information on Dryden, Sioux Lookout, and a Kenora rural average (Ignace, Ear Falls, Machin, Sioux Narrows-Nestor Falls, and Pickle Lake). Advertised monthly rent sourced through local ads or realtors was not consistent to be captured through primary data collection. **Table 3.6-3** describes the actual market rent in 2019 for Dryden, Sioux Lookout, and a Kenora rural average.

Table 3.6-3: Advertised Monthly Rent for Dryden, Sioux Lookout, and Kenora Rural Average, 2019

Type	2019 Average Market Rents (\$/Month)				
	Bachelor	1 Bedroom	2 Bedroom	3 Bedroom	4+ Bedroom
Dryden	\$537	\$716	\$941	\$1,107	\$1,192
Sioux Lookout	\$736	\$981	\$1,044	\$1,234	\$1,301
Kenora Rural Avg ¹	\$519	\$696	\$857	\$943	\$1,016

Source: Kenora District Services Board 2021.

Notes:

1. The Kenora rural average includes Ignace, Ear Falls, Machin, Sioux Narrows-Nestor Falls, and Pickle Lake.

Table 3.6-3 summarizes that Sioux Lookout has the highest average monthly rent, followed by Dryden, and the Kenora rural average. **Figure 3.6-19** similarly shows that Sioux Lookout has the highest monthly rent in the Local Study Area, followed by Dryden and the smaller communities in the Local Study Area (Ignace and Machin).

Residents of Ignace and Machin have mentioned that there is a lack of available rental units in the community, and the lack of supply may be a reason for the increase in rental costs in 2016 (NWO Baseline Studies Key Person Interview Program 2022-2023; IAWG February 24, 2022). As of 2020 the majority of occupied housing units in the Local Study Area are owner occupied (approximately 70%) with the remainder (approximately 30%) tenant occupied (HSAL et al. 2022b). The rental units are largely concentrated in Dryden and Sioux Lookout (approximately 92%), while Ignace accounts for a small proportion (approximately 4%) of rental units (HSAL et al. 2022b). The Kenora District Services Board 2023 Housing Strategy confirms there is a need and demand for affordable housing in Ignace, Dryden, Machin, and Sioux Lookout (KDSB 2023).

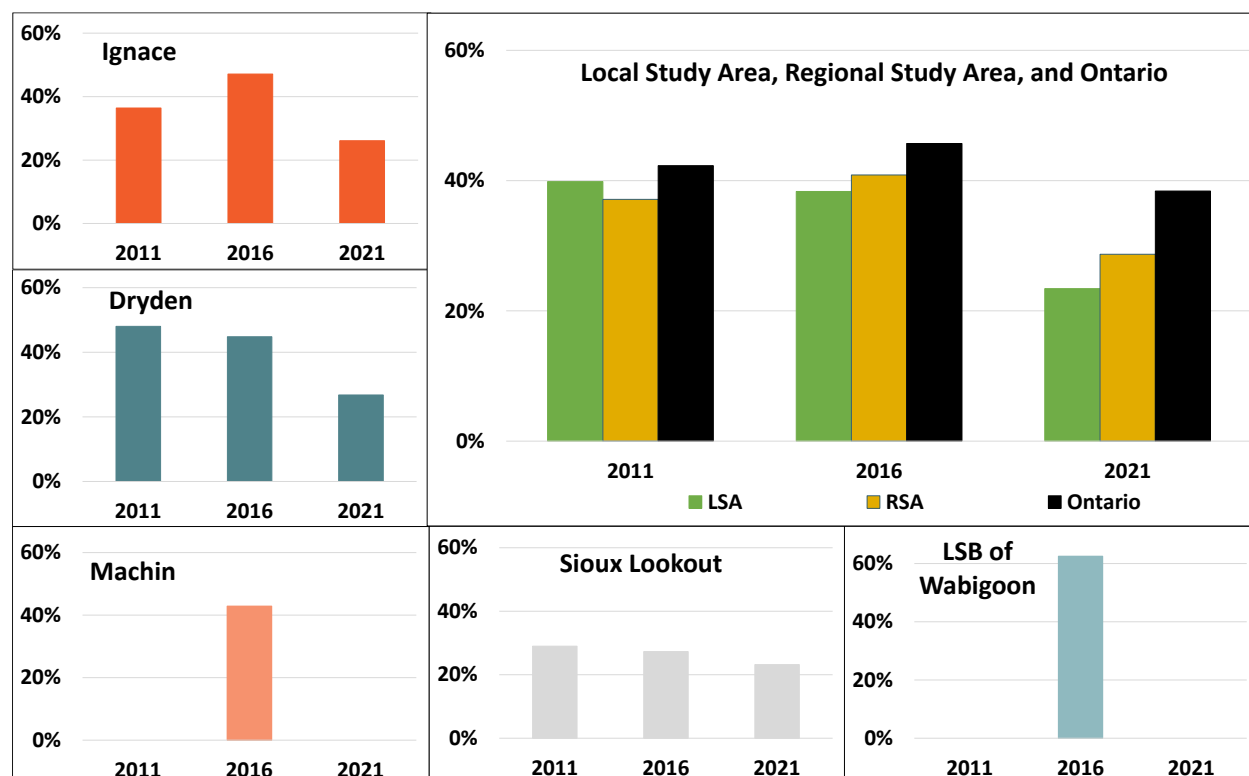
A resident of Melgund commented that there are no current rental properties available, while a resident of Wabigoon Village provided there is one fourplex apartment and a motel converted into rental units (NWO Baseline Studies Key Person Interview Program 2022-2023). A resident of Dinorwic commented that there are approximately 8 to 10 rental properties in the area, but, as of 2023, they have permanent tenants. A 3 bedroom, 1 bath house in Dinorwic recently rented for approximately \$1,250 plus utilities (NWO Baseline Studies Key Person Interview Program 2022-2023).

In comparison to average monthly shelter costs for homeowners, tenants in the Local Study Area (\$980 in 2021), had lower average monthly shelter costs compared to the average monthly shelter costs for homeowners (\$1,120) (**Figure 3.6-17**).

Figure 3.6-20 provides the percent of tenant households spending 30% or more of income on their shelter costs for the Local Study Area, Regional Study Area, and Ontario for 2010 to 2020.⁷⁹ The shelter-cost-to-income ratio refers to the proportion of average household income which is spent on shelter costs (Statistics Canada 2022a).

⁷⁹ Statistics Canada data for the 2005 Census is not comparable to 2010, 2015, and 2020 Census and is not provided.

Figure 3.6-20: Percent of Tenant Households Spending 30% or More of Income on Shelter Costs, 2011 to 2021¹



Source: Statistics Canada 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality or data quality, including Machin and the LSB of Wabigoon for 2011 and 2021.

Statistics Canada, the Canada Mortgage and Housing Corporation, and the Province of Ontario all define affordable housing. Affordable housing in Ontario is defined as shelter that does not exceed 30% of household income (Government of Ontario 2020b). **Figure 3.6-20** indicates that, as of 2021, 23.4% of the Local Study Area, 28.7% of the Regional Study Area, and 38.4% of Ontario tenant households spend 30% or more of income on shelter costs. The Local Study Area, Regional Study Area, and Ontario have seen a decrease in the percentage of tenant households spending 30% or more of income on shelter costs from 2010 to 2020. From 2010 to 2015, the Regional Study Area and Ontario both saw a slight increase from 2010 to 2015 where the Local Study Area continued to see a decrease (Statistics Canada 2012; 2022a):

- The Local Study Area had a decrease from 39.8% in 2010 to 23.4% in 2020;
- The Regional Study Area had a decrease from 37.1% in 2010 to 28.7% in 2020; and
- Ontario had a decrease from 42.3% in 2010 to 38.4% in 2020. The higher shelter-costs-to-household income ratios for Ontario as a whole are largely a result of the higher cost of living in large urban centres (Government of Ontario 2020b).

Among Local Study Area communities, in 2021, Ignace (26.1%), Dryden (26.8%), and Sioux Lookout (23.2%) had a similar proportion of tenant households that spend 30% or more of income of shelter costs.⁸⁰ A decrease to the tenant household shelter-costs-to-household income ratios from 2010 to 2020 was seen for Ignace, Dryden, and Sioux Lookout.

Overall, fewer tenant households in the Local Study Area spend 30% or more of their income on shelter costs compared to the Regional Study Area and Ontario as a whole in 2020. Households that do spend 30% or more of their income on housing may be due to an increase in the cost of living and lower household incomes, and a lack of affordable housing (HSAL et al. 2022a; IAWG October 06, 2021; IAWG February 24, 2022). Interview participants noted smaller communities in the Local Study Area, such as Ignace and Machin, lack certain types of housing like apartments and subsidized housing (NWO Baseline Studies Key Person Interview Program 2022-2023; HSAL et al. 2022a). For example, in Ignace the scarcity of vacant rental units has led to an increase in rental prices, exacerbating this issue (HSAL et al. 2022a).

Individuals in the Local Study Area may also experience homelessness or are precariously housed. An individual without a permanent address or residence, appropriate housing, or the immediate prospect, means, and ability to acquire it are considered homeless (KDSB 2021). An individual or family whose current housing situation does not meet public health and safety standards are considered to be precariously housed (Gaetz et al 2012). Within the Local Study Area those who may potentially be homeless or precariously housed include seniors, youth and children, and Indigenous peoples (GBA+ Workshop 2023). Gender differences may also occur among these populations. A workshop on vulnerable populations in the Local Study Area identified that, when it comes to a homeowner with a rental property, a renter may have difficulties in obtaining housing due to a criminal record, racism, drug and alcohol use, and stereotypes (GBA+ Workshop 2023). Inflation has also increased homelessness in the Local Study Area and families are finding that children may stay home longer (until the age of 20 to 25) because of cost of living (GBA+ Workshop 2023). Further information on housing is provided in **Section 2.4.7**.

⁸⁰ Data for Machin and the LSB of Wabigoon in 2021 was suppressed for data quality.

3.6.3.5 Utility Costs

Utility costs describe the average residential monthly electricity, natural gas, water and wastewater, cellphone, and internet bills.

3.6.3.5.1 Electricity

Electricity service providers in the Local Study Area and Thunder Bay, as a regional comparative, include:

- **Hydro One Networks:** the electricity provider for Ignace, Dryden, Machin, Wabigoon Village, Melgund, and Dinorwic (Township of Ignace 2018; City of Dryden 2017; NWO Baseline Studies Key Person Interview Program 2022-2023).
- **Sioux Lookout Hydro:** the electricity provider for Sioux Lookout (Sioux Lookout Hydro 2023).
- **Synergy North:** the electricity provider for Thunder Bay (Thunder Bay 2023).

Hydro One Networks residential customers include those in the urban high density zone,⁸¹ medium density zone,⁸² and low density zone⁸³ (Hydro One Networks 2023a). Rates are different for these residential electricity zones. Ignace, Dryden, Machin, and Wabigoon Village pay the medium density rate, while residents of Melgund (Dyment and Borups Corners) and Dinorwic pay the low density rate (Hydro One Networks 2023a; NWO Baseline Studies Key Person Interview Program 2022-2023). No communities in the Local Study Area are included under the urban high density rate. Hydro One Networks also includes residential seasonal service, which is defined as any residential service not meeting the residential year-round criteria, and it includes dwellings such as cottages, chalets, and camps (Hydro One Networks 2023a).

Sioux Lookout Hydro residential customers all pay the residential service rate (Sioux Lookout Hydro 2023). Synergy North residential customers in Thunder Bay pay the Synergy North, Thunder Bay Rate Zone (Thunder Bay 2023).

The Ontario Energy Board (2023b) provides an average monthly consumption when calculating bill comparisons for residential consumers in Ontario of 700 kWh, noting that individual usage may vary. These customers are assumed to have natural gas service for home heating and do not use electricity for home heating. For a customer who uses electricity for home heating, an additional 1,500 kWh/month of electricity is assumed for calculating residential monthly bills (total monthly consumption of 2,200 kWh) (OEB 2023b; Artuso 2016). **Section 3.6.3.5.2** describes that Ignace, Dryden, Machin, and Thunder Bay have natural gas service and 700 kWh/month is used to calculate an average residential electricity bill. Sioux Lookout, Wabigoon

⁸¹ Urban high density zone applies to residential customers in year-round residences in an urban high-density zone, which is an area that contains 3,000 or more customers, with at least 60 customers for every kilometre of power line used to supply energy in the zone.

⁸² Medium- density zone applies to residential customers in year-round residences in a medium-density zone, which is an area that contains 100 or more customers, with at least 15 customers for every kilometre of power line used to supply energy in the zone.

⁸³ Low density zone applies to residential customers in year-round residences in a low-density zone which is an area not covered by urban high or medium zones. Customers in this rate class receive rural or remote rate protection.

Village, Melgund, and Dinorwic do not have natural gas service and 2,200 kWh/month is used. The source of home heating in Sioux Lookout, Wabigoon Village, Melgund, and Dinorwic is primarily electricity (electric space heaters and furnaces), and residents may also use fuel oil, propane, and wood burning stoves to heat their homes (Sioux Lookout 2016; NWO Baseline Studies Key Person Interview Program 2022-2023). **Table 3.6-4** provides the average monthly electricity bill for a residential customer for the Local Study Area communities and Thunder Bay.

Table 3.6-4: Average Residential Monthly Electricity Bill After Taxes for the Local Study Area and Thunder Bay, 2023

Provider	Hydro One Medium Density				Hydro One Low Density		Sioux Lookout Hydro	Synergy North
Applicable community	Ignace	Dryden	Machin	Wabigoon Village	Melgund	Dinorwic	Sioux Lookout	Thunder Bay
Natural gas or electric heat ¹	NG	NG	NG	Electric	Electric	Electric	Electric	NG
Assumed monthly kWh	700 kWh	700 kWh	700 kWh	2,200 kWh	2,200 kWh	2,200 kWh	2,200 kWh	700 kWh
Total electricity Charge ^{2,3}	\$125.39	\$125.39	\$125.39	\$328.26	\$336.47	\$336.47	\$319.67	\$109.69
HST ⁴	\$16.30	\$16.30	\$16.30	\$42.67	\$43.74	\$43.74	\$41.56	\$14.26
Ontario Electricity Rebate ⁵	-\$14.67	-\$14.67	-\$14.67	-\$38.41	-\$39.37	-\$39.37	-\$37.40	-\$12.83
Total monthly bill	\$127.02	\$127.02	\$127.02	\$332.52	\$340.84	\$340.84	\$323.83	\$111.12

Source: OEB 2023c; Hydro One Networks 2023b; Sioux Lookout Hydro 2023; Thunder Bay 2023. See **Appendix 3A Detailed Methods**.

Notes:

1. NG refers to 'natural gas.'
2. Total electricity charge is inclusive of the electricity charge, delivery component, and regulatory component (OEB 2023b). The electricity component includes a time-of-use pricing option and a tiered pricing option. Hydro One Network Inc., Sioux Lookout Hydro, and Synergy North residential electricity customers have the choice to participate in either option. The total electricity charge uses the tiered pricing option.
3. Assumes a monthly electricity consumption of 700 kWh for customers with natural gas service for home heating. Assumes a monthly electricity consumption of 2,200 kWh/month for customers that do not have natural gas service and electricity is used to heat the home.
4. Harmonized sales tax is 13% of the total electricity charge.
5. All customers in Ontario are eligible for the Ontario Electricity Rebate (OEB 2023b). The Ontario Electricity Rebate provides an 11.7% reduction on the bill before Harmonized Sales Tax ("HST") is applied. HST is calculated prior to the rebate.

Table 3.6-4 summarizes that the average electricity bill varies depending on whether a household has natural gas service for home heating.

- For the communities with natural gas service, Ignace, Dryden, and Machin average monthly residential bill (\$127/month) is approximately 14% higher than Thunder Bay (\$111/month).

- For the communities that do not have natural gas service, electricity bills were similar. Residents of Melgund and Dinorwic had the highest monthly bill (\$341/month), which was 3% higher than Wabigoon Village (\$332/month) and 5% higher than Sioux Lookout (\$324/month).

It is noted that the estimated monthly bill is for informational purposes only, as electricity consumption patterns for families may change over the course of the year. **Appendix 3B Supplemental Data** provides additional information on bill comparisons and rates.

3.6.3.5.2 Natural Gas

Natural gas is a common energy source to heat homes in Canada. Of the total energy consumed by Canadian households in 2019, natural gas accounted for 53.4%, electricity for 43.9%, and heating oil for 2.7% (Statistics Canada 2022a).

In the Local Study Area, Ignace, Dryden, Machin, and Thunder Bay, as a regional comparative, have natural gas service for home heating. Service is provided by Union Gas (Enbridge) through the Union North West Rate Zone (OEB 2023a; NWO Baseline Studies Key Person Interview Program 2022-2023). The average family in Ontario consumes approximately 183.33 m³ of natural gas per month (2,200 m³ per year) (Canada Energy Regulator 2022). Union Gas assumes an annual residential natural gas consumption of 2,200 m³ per year when displaying estimated residential bills (Union Gas 2023).

- The average residential monthly natural gas bill for Ignace, Dryden, Machin, and Thunder Bay is \$103.19/month before taxes (Union Gas 2023).⁸⁴ Including harmonized sales tax ("HST") the average natural gas bill is \$116.61/month. Interviews with residents in the Local Study Area confirmed that natural gas bills are similar to the average residential monthly bill calculated (NWO Baseline Studies Key Person Interview Program 2022-2023).

It is noted that the estimated monthly bill is for informational purposes only, as gas consumption patterns for families change over the course of the year. For example, if a household's heat source is natural gas, the monthly natural gas bill will increase in the winter and change seasonally.

Sioux Lookout, Wabigoon Village, Melgund, and Dinorwic do not have natural gas service for home heating. The source of home heating in Sioux Lookout is primarily electricity (electric space heaters and furnaces), as well as fuel oil and propane (Sioux Lookout 2016; NWO Baseline Studies Key Person Interview Program 2022-2023). Residents of Sioux Lookout may also have a wood pellet stove as a secondary source of heat (Sioux Lookout 2016; NWO Baseline Studies Key Person Interview Program). Residents of Wabigoon Village, Melgund, and Dinorwic provided that homes are primarily heated with electricity and some homes may also be heated with propane or wood burning stove (NWO Baseline Studies Key Person Interview Program 2022-

⁸⁴ The Union Gas (Enbridge) rates, effective April 1, 2023, include a monthly customer charge, delivery charge, gas commodity charge, transportation charge, facility storage charge, and federal carbon charge. See **Appendix 3A Detailed Methods**.

2023). **Section 3.6.3.5.1** provides information on average monthly electricity bills for the Local Study Area communities that rely on electricity to heat homes.

Appendix 3B Supplemental Data provides additional information on the bill comparisons and rates.

3.6.3.5.3 Water and Wastewater

Municipal water and wastewater service is provided to residents of Ignace, Dryden, Sioux Lookout, and Thunder Bay (Township of Ignace 2022; City of Dryden 2021; Municipality of Sioux Lookout 2021; Thunder Bay 2023). Thunder Bay is included as a regional comparison. Residents of Machin have municipal water service and wastewater service is the responsibility of the homeowner (NWO Baseline Studies Key Person Interview Program 2022-2023). Residents of Machin typically have a septic tank and field for wastewater (NWO Baseline Studies Key Person Interview Program 2022-2023).

Water and wastewater service for residents of Wabigoon Village, Melgund, and Dinorwic are the responsibility of the homeowner (NWO Baseline Studies Key Person Interview Program 2022-2023). Service can come in the form of cisterns and water wells for water service and septic tank and field for wastewater service (NWO Baseline Studies Key Person Interview Program 2022-2023).

The average monthly household water use in Sioux Lookout is 14 m³ (Municipality of Sioux Lookout 2021). Sioux Lookout's 14 m³ average monthly household consumption is used as the basis for the average residential monthly water and wastewater consumption for bill comparisons for Ignace, Dryden, Sioux Lookout, and Thunder Bay. Dryden average residential monthly water and waster consumption is approximately 15 m³ and in line with the average consumption of Sioux Lookout (City of Dryden 2021). Residents of Machin are billed a flat water rate regardless of water usage (\$118.27/month) and monthly maintenance costs for a septic system are the responsibility of the homeowner (approximately \$25/month) (NWO Baseline Studies Key Person Interview Program 2022-2023). **Table 3.6-5** provides a breakdown of a monthly water and wastewater bill for the average metered residential customer using current rates.

Table 3.6-5: Ignace, Dryden, Sioux Lookout, and Thunder Bay Average Monthly Residential Water and Wastewater Bill After Taxes, Current Rates

	Ignace ¹	Dryden ¹	Machin ²	Sioux Lookout ¹	Thunder Bay ¹
Total monthly bill, including HST	\$146.62	\$75.22	\$161.90	\$137.09	\$113.08

Source: Township of Ignace 2022; City of Dryden 2021; Municipality of Sioux Lookout 2021; Thunder Bay 2022. See **Appendix 3A Detailed Methods**.

Notes:

1. Total monthly bill includes a monthly fixed charge and metered rate (\$/m³) based on water consumption. Monthly bill assumes average residential water consumption of 14 m³/month.
2. Residents of Machin are billed a flat water rate and do not have a metered rate. Wastewater service is the responsibility of the homeowner and maintenance costs typically include emptying/pumping the septic tank.

Table 3.6-5 summarizes that the average monthly household water and wastewater bill, including HST, is highest in Machin (\$161.90/month), followed by Ignace (\$147/month), Sioux Lookout (\$137/month), Thunder Bay (\$113/month), and Dryden (\$75/month). Dryden has the lowest average monthly household water and wastewater bill and is half of the average monthly household water and wastewater bill in Machin, Ignace, and Sioux Lookout. It is noted that the estimated monthly bill is for informational purposes only as water consumption patterns for families may change over the course of the year. **Appendix 3B Supplemental Data** provides additional information on the bill comparisons and rates.

Water and wastewater service for residents of Wabigoon Village, Melgund, and Dinorwic are the responsibility of the homeowner (NWO Baseline Studies Key Person Interview Program 2022-2023). Machin has municipal water service, and wastewater service is the responsibility of the homeowner (NWO Baseline Studies Key Person Interview Program 2022-2023). The installation and maintenance costs for water service and a septic system include:

- **Water service installation:** A resident of Melgund indicated that a well for water service can cost \$15,000 to \$20,000 to install (NWO Baseline Studies Key Person Interview Program 2022-2023; Summers Drilling 2023). The cost to purchase and install a new cistern is similar in price, approximately \$15,000 (Summers Drilling 2023). A water well or cistern can last approximately 20 years, or longer with regular maintenance before replacement is needed (Summers Drilling 2023).
- **Septic system installation:** The installation of a new septic system, including tank and drain field, ranges in price and most residential systems cost approximately \$10,000 to \$25,000 to install (Allto 2023; Canadian Septic 2017). A septic system can last approximately 20 years, or longer with regular maintenance (Allto 2023; Canadian Septic 2017).
- **Water service maintenance:** Maintenance costs for a water well and cistern include (Summers Drilling 2023):

- A water well requires a new water pump and pressure tank of approximately \$3,000 every 20 years⁸⁵ (or approximately \$13/month) and chlorination once every two years at approximately \$350 (or approximately \$15/month). Maintenance costs for a water well averaged are approximately \$30/month.
- A cistern requires a new water pump and pressure tank of approximately \$3,000 every 20 years (or \$13/month), a tank cleaning once every two years at approximately \$650 (or \$30/month), and water delivery at a cost of \$1,200/year to \$3,600/year for an average family of four (or \$100/month to \$300/month). Maintenance costs for a cistern averaged are approximately \$145/month to \$345/month.
- Overall, the averaged maintenance costs for a water well or cistern range from as low as \$30/month to as high as \$345/month.
- **Septic system maintenance:** Regular maintenance costs include septic tank pumping and costs depend on the size of the tank. The Ontario average cost for septic tank pumping is \$575 and a tank typically needs to be pumped every two to five years (Allto 2023; Canadian Septic 2017). This is similar to costs described by residents of Machin who pay \$300 annually (or \$25/month) to empty/pump their septic tank (NWO Baseline Studies Key Person Interview Program 2022-2023).

In summary, the monthly costs for a homeowner in Wabigoon Village, Melgund, and Dinorwic to maintain their water system and septic system vary and range from \$55/month to \$370/month. Monthly costs for Machin are described in **Table 3.6-5**. Maintenance costs are dependent on frequency of use, age of the infrastructure, and whether the homeowner can maintain aspects of the water and septic systems themselves or require services from a contractor (NWO Baseline Studies Key Person Interview Program 2022-2023). Cost to install a water or septic system depends on soil type, ground water level, number of bedrooms, the type of system, installer, proximity to supplies, and geography (Allto 2023; Canadian Septic 2017; Summers Drilling 2023).

3.6.3.5.4 Cellular Phone

Cellular phone service for all Local Study Area communities and Thunder Bay, as a regional comparison, is provided by TBayTel, Bell Canada, Telus, Rogers Virgin Mobile, Fido, and Koodoo (TBayTel 2023a; Bell Canada 2023a; Telus 2023; Rogers 2023; Virgin 2023; Fido 2023; and Koodoo 2023). The base 4G smartphone plans with data for each cellular provider, not including the price of a smartphone, promotions, credits, bundles, or applicable taxes, begin at:

- Telus: \$70/month, including 25 gigabytes ("GB") of data and unlimited call and text in Canada (Telus 2023);
- Bell Canada: \$65/month, including 15 GB of data and unlimited calling and text in Canada (Bell Canada 2023a);

⁸⁵ A water pump's life expectancy is dependent on frequency of use, whether the size and power of the pump is appropriate for the residence, the quality of the pump, maintenance, and other factors (NWO Baseline Studies Key Person Interview Program 2022-2023, Summers Drilling 2023).

- Fido: \$55/month, including 8 GB of data and unlimited calling and text in Canada (Fido 2023);
- Rogers: \$55/month, including 5 GB of data and unlimited calling and text in Canada (Rogers 2023);
- TBayTel: \$45/month, including 2 GB of data and unlimited calling and text in Canada (TBayTel 2023a);
- Virgin: \$37.50, including 2 GB of data and unlimited calling and text in Canada (Virgin 2023); and
- Koodoo: \$37.50, including 2 GB of data and unlimited calling and text in Canada (Koodoo 2023).

The monthly base price of cellular phone plans by provider varies depending on the amount of data included. A cellular phone providers monthly plans start at the base price, as described above, and increase in price to unlimited data plans. IAWG members provided that cellular phone service may not be as reliable in rural areas within the Local Study Area (IAWG December 2, 2021; IAWG May 05, 2022).

3.6.3.5.5 Internet

Internet providers in the Local Study Area and Thunder Bay, as a regional comparison, include Starlink, Xplornet, Bell Canada, Shaw, TBayTel, Celerity Telecom, and the Dryden Municipal Telephone Service (owned by Bell Canada) and differ for each community:

- Starlink provides service to all Local Study Area communities and Thunder Bay (Starlink 2023);
- Xplornet provides service to all Local Study Area communities and Thunder Bay (Xplornet 2023);
- Bell Canada provides service to Ignace, Dryden, Machin, Sioux Lookout, and Thunder Bay (Township of Ignace 2018; NWO Baseline Studies Key Person Interview Program 2022-2023; City of Dryden 2017; Municipality of Sioux Lookout 2021; Thunder Bay 2023);
- Shaw provides service to Dryden, Sioux Lookout, and Thunder Bay (City of Dryden 2017; Municipality of Sioux Lookout 2021; Thunder Bay 2023);
- TBayTel provides service to Dryden and Thunder Bay (City of Dryden 2017; Thunder Bay 2023);
- Celerity Telecom provides service to Dryden and Ignace (Celerity Telecom 2023);
- Dryden Municipal Telephone Service (owned by Bell Canada) provides service to Dryden (City of Dryden 2017).

The smaller communities in the Local Study Area (Ignace, Machin, Wabigoon Village, Melgund, and Dinorwic) do not have the selection of internet providers that the larger communities do (Dryden and Sioux Lookout). The base residential high-speed internet plans, not including installation fees, credits, promotions, add-ons, bundles, or applicable taxes, start at:

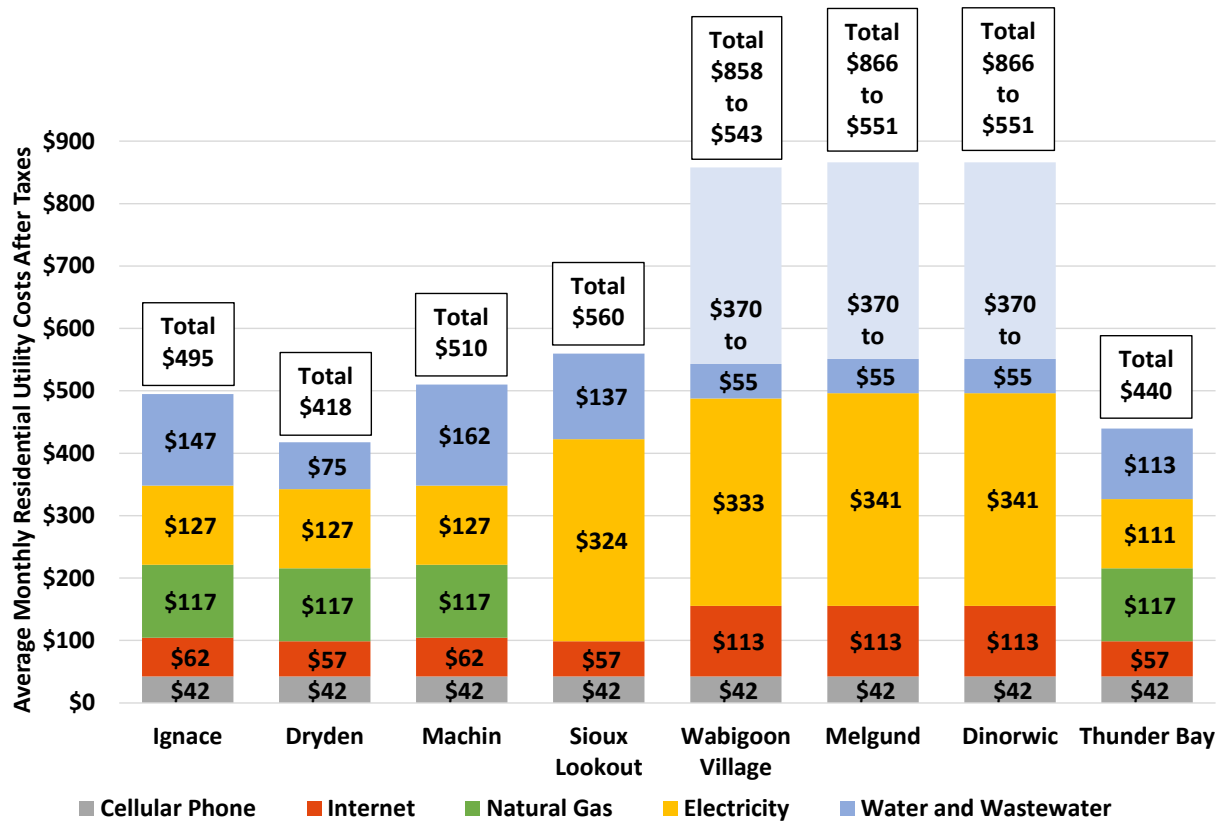
- Starlink: \$140/month, including 50 to 200 megabyte per second (“mbps”) download speed and 1 terabyte of monthly download data (Starlink 2023);
- Xplornet: \$99.99/month, including 25 mbps download speed and 250 GB of monthly download data (Xplornet 2023);
- Celerity Telecom: \$90/month, including 15 mbps download speed and unlimited data (Celerity Telecom 2023);
- Dryden Municipal Telephone Service (owned by Bell Canada): \$79.95/month, including 10 mbps download speed and unlimited monthly download data (DMTS 2023);
- TBayTel: \$69/month, including 50 mbps download speed and unlimited monthly download data (TBayTel 2023b);
- Bell Canada: \$55/month, including 10 mbps download speed and 100 GB of monthly download data (Bell Canada 2023b); and
- Shaw: \$50/month, including 10 mbps download speed and 150 GB of monthly download data (Shaw 2023).

The monthly base price of internet plans by provider varies depending on the amount of data included and the internet download speeds. An internet providers monthly plans start at the base price, as described above, and increase in price based on the offering (i.e., higher download speeds and data). IAWG members provided that internet service may be slower or less reliable in rural areas within the Local Study Area (IAWG December 2, 2021; IAWG May 05, 2022). The Kenora District Services Board offers a rebate program to permanent residents within the Kenora District who have purchased or pre-ordered a Starlink kit, including a rebate for households that amounts to 75% to 90% of the total Starlink kit cost (Lappage 2023). The deadline to apply for a Starlink rebate ends November 2023 or until project funding has been fully allocated (Lappage 2023). The Governments of Canada and Ontario are taking steps to bring high speed fibre optic internet throughout all of Northwestern Ontario, including rural communities. The joint federal-provincial investment of over \$148 million would bring high speed fibre optic internet throughout Northwestern Ontario by 2025 (Government of Ontario 2021).

3.6.3.5.6 Summary of Utility Costs

Figure 3.6-21 summarizes the average monthly residential utility costs including HST for the Local Study Area communities and Thunder Bay, as of 2023. Utility costs include electricity, natural gas, water and wastewater, cellphone, and internet.

Figure 3.6-21: Summary of Average Monthly Residential Utility Costs After Taxes for the Local Study Area Communities and Thunder Bay, 2023^{1,2,3,4,5,6}



Source: OEB 2023c; Hydro One Networks 2023b; Sioux Lookout Hydro 2023; Thunder Bay 2023; Union Gas 2023; Township of Ignace 2022; City of Dryden 2021; Municipality of Sioux Lookout 2021; Thunder Bay 2022; Virgin 2023; Koodoo 2023; Bell Canada 2023b; Shaw 2023; NWO Baseline Studies Key Person Interview Program 2022-2023.

Notes:

1. Total is inclusive of HST. Monthly electricity bill is inclusive of the Ontario Electricity Rebate, which provides an 11.7% reduction on the bill before HST is applied. HST is calculated prior to the rebate.
2. Electricity monthly bill assumes average monthly consumption for residential consumers with natural gas service for home heating in Ontario of 700 kWh. For a customer who uses electricity for home heating, an additional 1,500 kWh/month of electricity is assumed (total monthly consumption of 2,200 kWh). Ignace, Machin, Dryden, and Thunder Bay have natural gas service and 700 kWh/month is used to calculate an average residential electricity bill. Sioux Lookout, Wabigoon Village, Melgund, and Dinorwic do not have natural gas service and 2,200 kWh/month is used.
3. Natural gas monthly bill assumes an average family in Ontario consumes approximately 183.33m³ of natural gas per month. Applicable to communities with natural gas service, including Ignace, Machin Dryden, and Thunder Bay.
4. Water and wastewater monthly bill assume an average monthly consumption of 14m³ for Ignace, Dryden, Sioux Lookout, and Thunder Bay. Residents of Machin are billed a flat water rate regardless of water usage (\$118.27/month before taxes) and maintenance costs for a septic system are the

- responsibility of the homeowner (approximately \$25/month before taxes). For Wabigoon Village, Melgund, and Dinorwic maintenance costs for water and septic service are the responsibility of the homeowner and range from \$55/month to \$370/month.
5. Internet monthly bill includes the lowest priced plan offered for the community. Ignace and Machin lowest priced plan includes Bell Canada. Dryden, Sioux Lookout, and Thunder Bay lowest priced plan includes Shaw. Wabigoon Village, Melgund, and Dinorwic lowest price plan is Xplornet.
 6. Cellphone monthly bill includes the lowest priced plan offered in the Local Study Area, which is Virgin and Koodoo.

Figure 3.6-21 summarizes that residents of Wabigoon Village (\$543 to \$858/month), Melgund (\$551 to \$866/month), and Dinorwic (\$551 to \$866/month) typically have the highest average monthly utility costs followed by Sioux Lookout (\$560/month), Machin (\$510/month), Ignace (\$495/month), Thunder Bay (\$440/month), and Dryden (\$418/month).⁸⁶ Average monthly utility costs in rural communities may be higher as they do not have the selection, option of services, and access to services that larger communities have. For example, monthly internet bills are higher in Wabigoon Village, Melgund, and Dinorwic in comparison to Ignace, Dryden, Machin, and Sioux Lookout as they do not have the access to and selection of internet providers. IAWG members provided that internet service may be slower or less reliable in rural areas within the Local Study Area (IAWG December 2, 2021; IAWG May 05, 2022).

Ignace, Dryden, Machin, and Thunder Bay have natural gas service for home heating, while Sioux Lookout, Wabigoon Village, Melgund, and Dinorwic primarily rely on electricity, as well as fuel oil and propane, to heat homes. Electricity to heat homes is typically higher in cost compared to natural gas service and a reason Sioux Lookout, Wabigoon Village, Melgund, and Dinorwic have higher average monthly utility bills.

Municipal water and wastewater services tend to be lower than water and wastewater services that are the responsibility of the homeowner, and an additional factor in overall average monthly utility bills. Ignace, Dryden, Sioux Lookout, and Thunder Bay have municipal water and wastewater service. In Wabigoon Village, Melgund, and Dinorwic water and wastewater service is the responsibility of the homeowner. Machin has municipal water service, and wastewater service is the responsibility of the homeowner.

⁸⁶ Average monthly utility bill includes HST.

3.6.4 Property Values

Major employers in the Local Study Area noted in interviews that a lack of housing is a challenge for attracting workers in Northwestern Ontario (NWO Community and Baseline Studies Key Person Interview Program 2022). Homes are aging and, compared to housing across the province, a higher percentage of homes need repair (**Section 2.4.7**). Rental housing is limited, particularly in Ignace where most of the homes are single family homes (HSAL et al. 2022b). Together, Dryden and Sioux Lookout have the largest number and proportion of housing options that are not single detached homes (i.e., the most semis, duplexes, row, apartment, movable, and other dwellings).

Table 3.6-6 provides the property sales in the Local Study Area communities from 2017 to 2021 (HSAL et al. 2022b).

Table 3.6-6: Property Sales in the Local Study Area Communities, 2017 to 2021¹

	2017	2018	2019	2020	2021	Total over period	Annual Average over period
Ignace	10	19	10	18	40	97	19
Machin	14	13	7	17	23	74	15
Dryden	123	167	133	159	169	751	150
Sioux Lookout	120	129	93	121	137	600	120
Wabigoon Village	3	3	1	4	2	13	3
Total	270	331	244	319	371	1,535	307

Source: HSAL et al. 2022b. See **Appendix 3B Supplemental Data**.

Note:

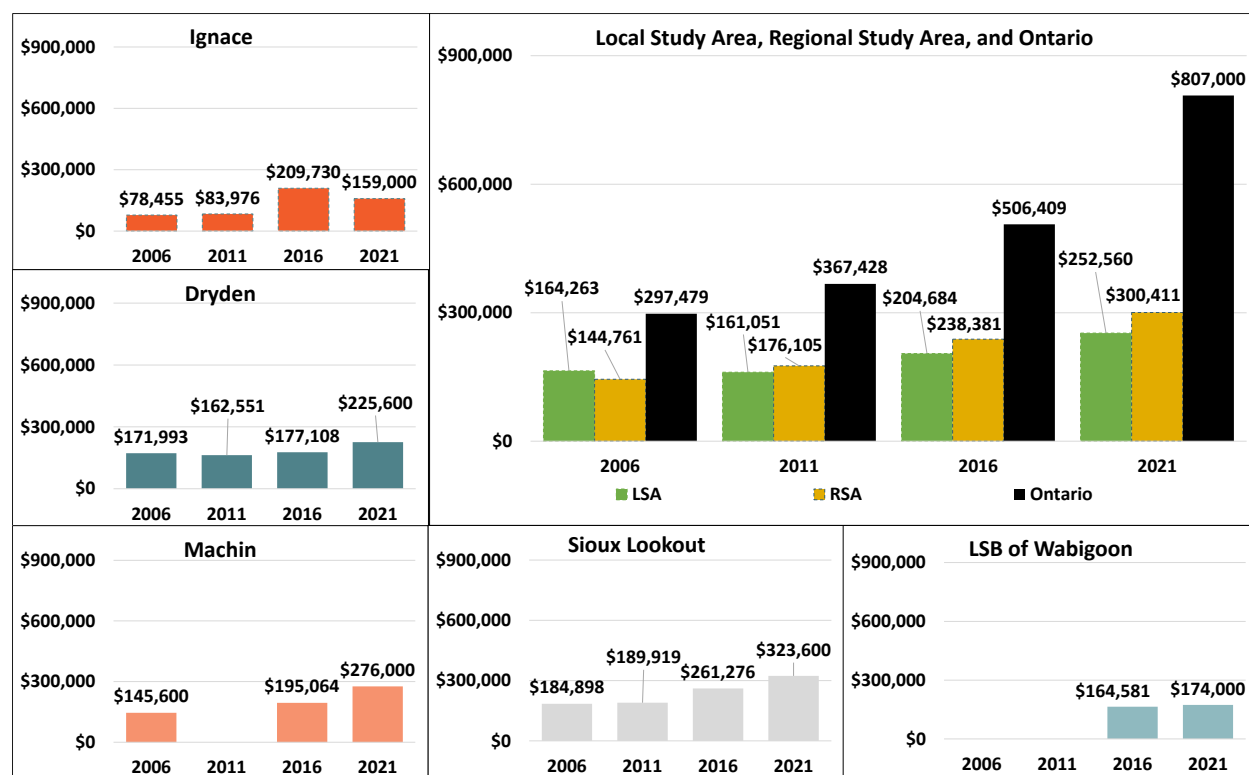
1. Sales under \$100,000 have been excluded from the analysis to ensure land transfers are not captured. This may impact four-season mobile home sales and other smaller property sales.

Table 3.6-6 provides that between 2017 and 2021, property sales in the Local Study Area communities amounted to approximately 1,535 units. Dryden (751 property sales or 49% of total) and Sioux Lookout (600 property sales or 39% of total) accounted for the majority of property sales in the Local Study Area

2021 was the year with the highest sales volume. This is consistent with trends in the housing market in Ontario during this time (HSAL et al. 2022b). Sales for existing homes in the Local Study Area are increasing over time, with some variation year over year. Indicators of a healthy housing market include new starter homes being available for younger people entering the market, short time periods between homes listed and homes sold, home prices increasing gradually, and housing being affordable for medium income families (HSAL et al. 2022b).

Figure 3.6-22 provides the average value⁸⁷ of dwelling for the Local Study Area, Regional Study Area, and Ontario for 2006 to 2021 (Statistics Canada 2007; 2012; 2017; 2022a).

Figure 3.6-22: Average Value of Dwelling for the Local Study Area, Regional Study Area, and Ontario, 2006 to 2021^{1,2}



Source: Statistics Canada 2007, 2012, 2017, and 2022a. See **Appendix 3B Supplemental Data**.

Notes:

1. Data for Local Study Area communities may be suppressed for confidentiality, including Machin (2011) and the LSB of Wabigoon (2006 and 2011).
2. Value refers to the dollar amount expected by the owner if the asset were to be sold and the value is estimated as a portion of the market value that applies to the dwelling (Statistics Canada 2022a). As a result, differences in Census years may occur.

Figure 3.6-22 summarizes that as of 2021, the average value of dwelling for the Local Study Area was \$252,600, which was 15.9% lower than the Regional Study Area (\$300,400) and 68.7% lower than Ontario as a whole (\$807,000) (Statistics Canada 2022a). The higher property values in Ontario as a whole are largely a result of the housing markets in large urban centres

⁸⁷ Value refers to the dollar amount expected by the owner if the asset were to be sold. In the context of dwelling, it refers to the value of the entire dwelling including the value of the land it is on and of any other structure such as a garage which is on the property. If the dwelling is located in a building which contains several dwellings or a combination of residential and business premises all of which the household owns the value is estimated as a portion of the market value that applies only to the dwelling in which the household resides (Statistics Canada 2022a).

(Government of Ontario 2020b). The Local Study Area, the Regional Study Area, and Ontario all saw an increase to the average value of dwelling from 2006 to 2021 (Statistics Canada 2007; 2022a):

- The Local Study Area saw an increase of 53.7% from 2006 (\$164,300) to 2020 (\$252,600);
- The Regional Study Area saw an increase of 107.5% from 2006 (\$144,800) to 2021 (\$300,400); and
- Ontario saw an increase of 171.3% from 2006 (\$297,500) to 2021 (\$807,000).

As of 2021, among the Local Study Area communities, Sioux Lookout (\$323,600) had the highest average value of dwelling, followed by Machin (\$276,000), Dryden (\$225,600), the LSB of Wabigoon (\$174,000), and Ignace (\$159,000). The Local Study Area communities generally saw a consistent increase in average value of dwelling from 2006 to 2021. Notable trends include (Statistics Canada 2007; 2022a);

- Ignace had the highest overall proportional increase to average value of dwelling from 2006 to 2021 (increase of 102.7%). Ignace experienced a decline from 2016 (\$209,700) to 2021 (\$159,000) of 24.2%; and
- Dryden had the lowest proportional increase to average value of dwelling from 2006 to 2021 (increase of 31.2%). Dryden experienced a slight decline from 2006 (\$172,000) to 2011 (\$162,600) of 5.5%.

Property sales data was collected from August 2022 to March 2023.⁸⁸ The property sales data collected includes information through Geowarehouse, a real-estate property information source, as sold through a realtor. The data does not capture private sales. Key person interviews have identified that available properties for sale in the Local Study Area may be identified through word of mouth, resulting in properties that do not go to market and are sold privately (NWO Baseline Studies Key Person Interview Program 2022-2023). From August 2022 to March 2023 there was a total of 186 residential properties sold, including 11 in Ignace, 95 in Dryden, 22 in Machin, 55 in Sioux Lookout, and 3 in Wabigoon. No properties were sold in Melgund (Dyment and Borups Corners) or Dinorwic from August 2022 to March 2023 (NWO Baseline Studies Key Person Interview Program 2022-2023). Due to the limited number of property sales, an analysis of smaller to larger residences was not completed to protect the confidentiality of the households. The data collected included that the average residential property sold was highest in Sioux Lookout (\$352,000), followed by Machin (\$312,000), Dryden (\$281,000), Wabigoon Village (\$242,000), and Ignace (\$212,000) (NWO Baseline Studies Key Person Interview Program 2022-2023; Geowarehouse 2023). In comparison to **Figure 3.6-22**, property values have continued to increase for all Local Study Area communities, from 2021 to August 2022/March 2023.

IAWG members have commented that people may opt to retire in Ignace as housing has generally been affordable. In recent years, residents have begun to experience an increase in the price of housing as the housing shortage is creating demand and an increase in price (IAWG

⁸⁸ Only sales \$100,000 and over are included in the analysis to ensure that land transfers are not captured. This may impact four season mobile home sales and other smaller property sales.

October 06, 2021; IAWG March 03, 2022; IAWG April 7, 2022). Residents of Ignace have also commented on the need for more housing to support different age groups, including seniors, which is presently lacking. There is a lack of a variety of housing options, including condominiums, semi-detached, duplexes, and options for retirement that would help people in staying in the community (HSAL et al. 2022a; IAWG October 06, 2021; IAWG February 24, 2022; GBA+ Workshop 2023). The Kenora District Services Board 2023 Housing Strategy confirms the need for a diversity of housing as the majority of housing is single detached in Ignace (91%), Dryden (77%), Machin (85%), and Sioux Lookout (71%) (KDSB 2023). Housing is generally more expensive in Sioux Lookout compared to other communities in the Local Study Area and within communities, such as Ignace and Machin, housing is typically more expensive on the lake than in the town (IAWG October 06, 2021; NWO Baseline Studies Key Person Interview Program 2022-2023). Key person interviews with a resident of Machin have provided that, similar to Ignace, there is a housing shortage. Typically, when a house in Machin goes up for sale it does not stay on the market for long (NWO Baseline Studies Key Person Interview Program 2022-2023). Local Study Area residents identified that there is a need for more housing in the area (GBA+ Workshop 2023). The Kenora District Services Board 2023 Housing Strategy confirms there is a need and a demand for affordable housing in Ignace, Dryden, Machin, and Sioux Lookout (KDSB 2023).

Ontario's housing market as a whole grew in 2021 and early 2022 due to an environment of low interest rates, higher overall incomes, limited resale listings, and shifting home preferences (Province of Ontario 2022). Home resale prices reached a peak in February 2022 as the housing market adjusted to higher interest rates (Province of Ontario 2022). Statistics Canada similarly found that an increase in mortgage rates put a downward pressure on house prices since the peak in early 2022 (Statistics Canada 2023d). Throughout the remainder of 2022 and 2023, housing market activity is expected to moderate as interest rate increases impact affordability and overall housing market activity returns to levels consistent with housing demand (Province of Ontario 2022). The strong momentum of 2021 and early 2022 is expected to support an average annual increase of 5.4% in Ontario average home resale prices throughout 2022 (Province of Ontario 2022). The moderation in the housing market is projected to continue in 2023 before rebounding in 2024 and 2025 (Province of Ontario 2022).

Appendix 3B Supplemental Data provides additional information on property values.

3.6.5 Summary of Income, Cost of Living, and Property Values

In general, incomes in the Local Study Area are similar to Ontario as a whole and higher in comparison to the Regional Study Area; shelter costs in the Local Study Area are similar to the Regional Study Area, and lower than Ontario as a whole; and property values are lower in the Local Study Area in comparison to the Regional Study Area and Ontario. Generally, incomes are higher and shelter costs and/or property values are lower in the Local Study Area in comparison to the Regional Study Area and Ontario and contribute to the ongoing sustainability and affordability of the Local Study Area. Further, throughout Ontario, household income growth in 2023, 2024, and 2025 is projected to remain relatively strong; the CPI is expected to be moderate throughout 2023, 2024, and 2025; and housing market activity is also expected to continue to moderate as interest rate increases impact affordability and the overall housing market returns to levels consistent with housing demand (Province of Ontario 2022).

In summary, findings for income, cost of living, and property values include:

Income

- Average personal income in 2020 for the Local Study Area (\$55,100) was higher compared to the Regional Study Area (\$51,100) and similar to Ontario (\$56,400). Personal income has consistently increased from 2005 to 2020 for the Local Study Area, Regional Study Area, and Ontario.
- Males, overall, have a higher average personal income than females across the Local Study Area, Regional Study Area, and Ontario.
- The Local Study Area, Regional Study Area, and Ontario had a similar trend across the distribution of average personal income by age in 2020. Income is lower at ages 15 to 24 and income increases, with typical career advancement and experience, through ages 35 to 64. From the 45 to 54 age range to the 65 and over age range income decreases and coincides with the typical start of retirement.
- People who identify as Indigenous have a lower average personal income than those who identify as non-Indigenous across the Local Study Area, Regional Study Area, and Ontario.
- Average household income in 2020 for the Local Study Area was \$103,500, which was higher than the Regional Study Area (\$95,300) and lower than Ontario as a whole (\$116,000). Household income has consistently increased from 2005 to 2020 for the Local Study Area, Regional Study Area, and Ontario.

Cost of living

- Ignace has a higher unit price across all food basket categories when compared to Dryden and Thunder Bay. Dryden and Thunder Bay have a larger variety of products to choose from compared to Ignace.
- Thunder Bay regular gasoline prices follow the trend of gasoline prices in Toronto and Canada as a whole. As of March 2023, gasoline prices in Ignace (169.9 cents/litre) were higher than Dryden (154.9 cents/litre) and Thunder Bay (155.9 cents/litre).

- Shelter costs are typically higher for homeowners compared to tenant households. The Local Study Area and Regional Study Area typically had similar shelter costs and were lower than Ontario as a whole.
 - The average monthly shelter costs for homeowners in 2021 for the Local Study Area was \$1,120, which was similar to the Regional Study Area (\$1,100) and lower than Ontario as a whole (\$1,700).
 - The average monthly shelter costs for tenant households in 2021 for the Local Study Area was \$980, which was similar to the Regional Study Area (\$960) and lower than Ontario as a whole (\$1,410).

Within the Local Study Area, average monthly utility costs⁸⁹ in rural communities may be higher as they do not have the selection and options that larger communities have. Larger communities, such as Dryden and Thunder Bay, tend to have lower average monthly utility costs. Average monthly utility costs also depend on whether a household heats their home with natural gas or electricity. Home heating is typically higher when sourced with electricity than natural gas. An additional factor in average monthly utility bills is whether water and wastewater service are provided by the municipality or the responsibility of the homeowner. Average monthly costs for water and wastewater service provided by the municipality are typically lower than when they are the responsibility of the homeowner. Average monthly utility costs were generally highest for residents of Wabigoon Village (\$543 to 858/month), Melgund (\$551 to 866/month), and Dinorwic (\$551 to 866/month) followed by Sioux Lookout (\$560/month), Machin (\$510/month), Ignace (\$495/month), Thunder Bay (\$440/month), and Dryden (\$418/month).

Property values

- The average value of dwelling was lower in the Local Study Area compared to the Regional Study Area and Ontario. As of 2021, the average value of dwelling for the Local Study Area was \$252,600, which was lower than the Regional Study Area (\$300,400) and Ontario (\$807,000). The average value of dwelling has increased from 2005 to 2020 for the Local Study Area, Regional Study Area, and Ontario.

⁸⁹ Utility costs include electricity and/or natural gas, water and wastewater, cellular phone, and internet.

3.7 ECONOMIC REFERENCES

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4.0 HEALTH

4.1 OVERVIEW AND APPROACH

An examination of existing and potential future health conditions in the Local Study Area and Regional Study Area is required to support the impact assessment for the Adaptive Phased Management Project ("the Project"). The Baseline Studies have been designed to satisfy regulatory requirements under the Impact Assessment Act and as described in the Tailored Impact Statement Guidelines template (IAAC 2020a), including Gender-based Analysis Plus ("GBA+"). The Baseline Studies are designed to provide sufficient detail to understand current and reasonably foreseeable potential future conditions that may be affected by the Project. Approaches to GBA+ and sustainability are discussed in **Section 1.0**. The Baseline Studies document the current state and available historical data for each health component and incorporate relevant community knowledge, information from the Ignace Area Working Group ("IAWG"), workshops, focus groups, key person interviews, surveys, and perspectives from diverse groups within the communities where available. Indigenous Knowledge as defined by the Impact Assessment Agency of Canada ("IAAC")⁹⁰ (2023) has not been included in this section as the Nuclear Waste Management Organization ("NWMO") is working with Indigenous communities as per their Indigenous Knowledge policy (**Section 1.5.6.4**), and information of this type will be collected in collaboration with Indigenous communities in other baseline studies at an appropriate time. In the instance of First Nations, no health-related data are reported at a community level and would not be reported without the explicit consent of the First Nation. Indigenous peoples are included in the data if they access services provided by provincial health agencies in the Local and Regional Study Areas.

Table 4.1-1 summarizes the components considered in the health pillar of the Baseline Studies and provides the rationale for including each component, based on the Tailored Impact Statement Guidelines template (IAAC 2020a) and the IAAC's guidance *Analyzing Health, Social, and Economic Effects Under the Impact Assessment Act* (2020b).

⁹⁰ The IAAC (2023) defines Indigenous Knowledge as "a holistic system embedded in the various cultures of different Indigenous peoples. For the purposes of (an) assessment processes under the IAA, generally, Indigenous Knowledge is understood as a body of knowledge built up by a group of Indigenous people through generations of living in close contact with the land. Indigenous Knowledge is cumulative and dynamic. It builds upon the historic experiences of a people and adapts to social, economic, environmental, spiritual, and political change."

Table 4.1-1: Components Considered for Health Conditions

Health Component	Rationale for Inclusion
Social Determinants of Health (Section 4.2)	The Tailored Impact Statement Guidelines template and the IAAC's guidance ¹ require the consideration of determinants of health, including social determinants of health, as set out by the Public Health Agency of Canada (2022e).
Health System (Section 4.3)	The Tailored Impact Statement Guidelines template and the IAAC's guidance ¹ require a description of health services and programs, including health care provider capacity.
Community Health Outcomes (Section 4.4)	The Tailored Impact Statement Guidelines template and the IAAC's guidance ¹ require health indicator information to help provide a community health profile.

Notes:

1. IAAC guidance includes *Analyzing Health, Social, and Economic Effects Under the Impact Assessment Act*.

4.1.1 Spatial and Temporal Boundaries

4.1.1.1 Spatial Boundaries

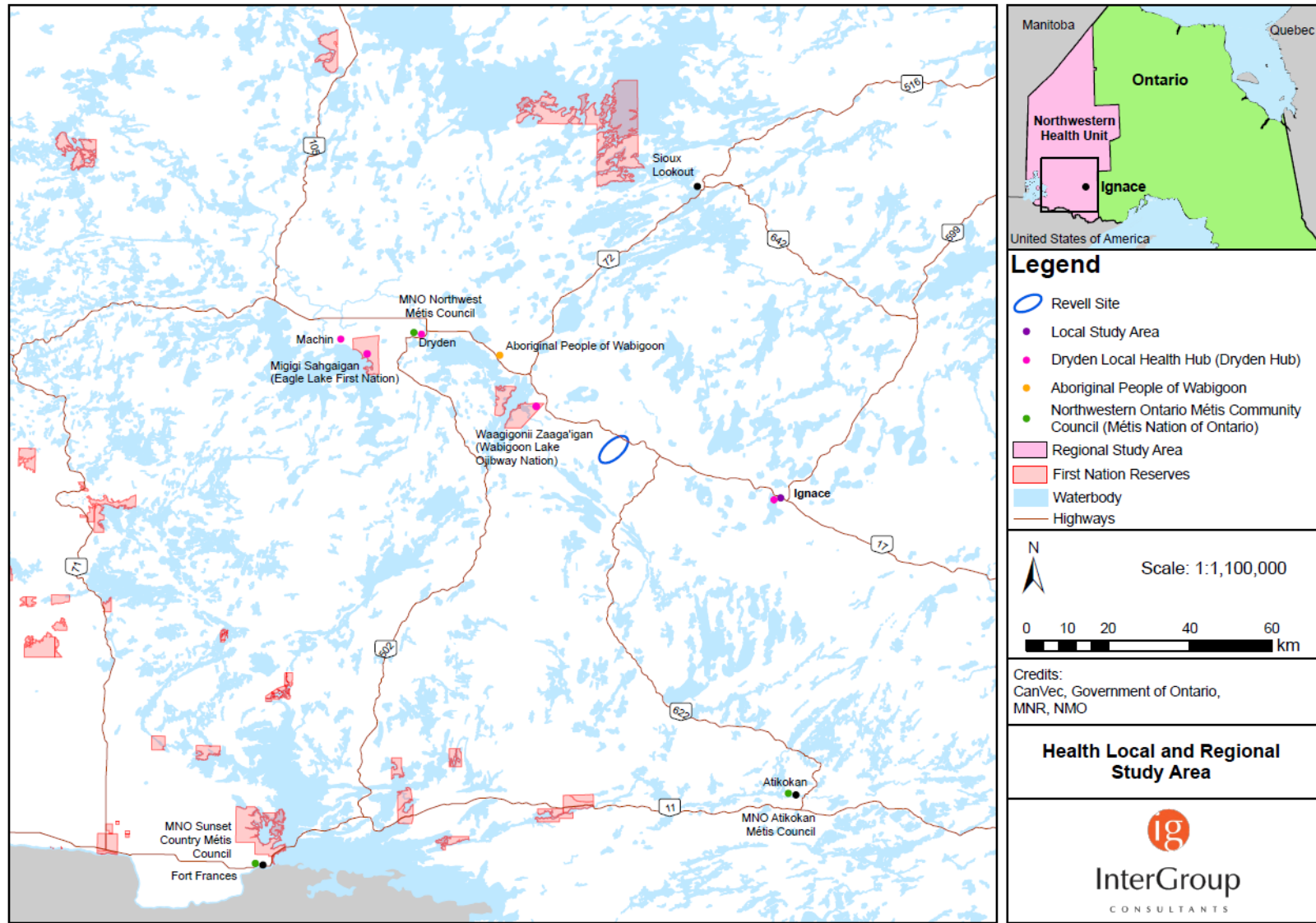
Spatial boundaries for health conditions were selected to reflect the geographic areas where health impacts from the Project are likely to be detectable and measurable. The health baseline includes a Local Study Area and a Regional Study Area.

Engagement with local experts at the Mary Berglund Community Health Centre Hub ("MBCHCH"), the Northwestern Health Unit ("NWHU"), and the Dryden Regional Health Centre ("Dryden RHC") helped provide guidance on appropriate spatial boundaries related to the availability of data and their appropriateness for public reporting (NWO Community Studies Key Person Interview Program 2022; NWO Community and Baseline Studies Key Person Interview Program 2022-2023). **Section 1.0** further describes the approach to selecting spatial boundaries.

Administrative boundaries were also important in determining the Local and Regional Study Areas. As described in **Section 1.5.2** administrative boundaries refer to the political, economic, or social boundaries – for example parameters for data sets that are collected based on census geography, local health integration networks, and service board areas.

Map 4.1-1 provides the Local Study Area and Regional Study Area for the health pillar.

Map 4.1-1: Health Local and Regional Study Area



4.1.1.1.1 Local Study Area

The Local Study Area refers to the communities/area most likely to experience future direct, indirect, and induced impacts of the Project, both positive and negative. Ignace, as the potential “host” community was considered central for the health components, meaning the Township of Ignace (“Ignace”) and the health services provided therein form the Local Study Area. For health services described in **Section 4.3** and health outcomes described in **Section 4.4**, data also include residents of other communities who access services at the MBCHCH in Ignace.

4.1.1.1.2 Regional Study Area

The Regional Study Area for the health components is the NWHU,⁹¹ an administrative boundary that includes 19 municipalities, 39 First Nations communities, and two unincorporated territories, Kenora Unorganized and Rainy River Unorganized; serving a population of approximately 82,000 people in Northwestern Ontario (see **Map 4.1-1**) (NWHU 2023a).

In addition to this, data are presented for the Dryden Local Health Hub (“Dryden Hub”) as a subset of the Regional Study Area proximal to the Project. The Dryden Hub is an administrative unit of the North West Local Health Integration Network (“LHIN”), and includes the Township of Ignace, City of Dryden, Municipality of Machin, Wabigoon Lake Ojibway Nation, and Eagle Lake First Nation. For the First Nations in the Dryden Hub, this refers only to when residents of those communities access services offered by the province, and not those services offered on-reserve.

In 2019, the Province of Ontario transitioned to Ontario Health, an agency created to oversee health care planning and delivery across the province. As a part of this transition, the previous LHINs were replaced with Ontario Health and its sub regions. The Dryden Hub will continue under the new system. For more information on this transition, see **Section 4.3.2**.

Data in the Dryden Hub and the NWHU are inclusive of municipalities, unincorporated areas, and Indigenous peoples and communities (**Table 4.1-2**). In accordance with the First Nations Principles of Ownership, Control, Access, and Possession no data disaggregation was completed related to Indigenous identity for any data not presented in the public domain (FNIGC n.d.).

⁹¹ The NWHU includes Ignace, Dryden, Machin, Wabigoon Lake 27, Kenora, Shoal Lake 39a, Fort Frances, Bearskin Lake, Sioux Lookout, Pickle Lake, Red Lake, Sabaskong Bay, Atikokan, North Spirit Lake, Pikangikum 14, Muskrat Dam Lake, Sandy Lake 88, Manitou Rapids 11, Rainy River District, Seine River 23a, Emo, Big Grassy River 35g, Weagamow Lake 87, Osnaburgh 63a, Lac Seul 28, Rainy Lake 17a, Ear Falls, The Dalles 38c, Alberton, Slate Falls, La Vallee, Neguaguon Lake 25d, Deer Lake, Shoal Lake 34b2, Couchiching 16a, Rainy Lake 26a, Wabaseemoong, Rat Portage 38a, Rainy River, Whitefish Bay 34a, Chapple, Rainy Lake 18c, Cat Lake 63c, Whitefish Bay 33a, English River 21, Northwest Angle 33b, Whitefish Bay 32a, Saug-A-Gaw-Sing 1, Sioux Narrows-Nestor, Ojibway Ntn Saugeen, Sachigo Lake 1, Shoal Lake 40, Osnaburgh 63b, Wabauskang 21, Kee-Way-Win, Big Island Mainland 93, Poplar Hill, Rainy Lake 17b, Morley, Long Sault 12, and Dawson.

Table 4.1-2: Comparison Populations for the Regional Study Area

Administrative Boundary	Communities Included in Administrative Boundary	Approximate 2021 Population
Dryden Hub	Township of Ignace, City of Dryden, Municipality of Machin, Wabigoon Lake Ojibway Nation, and Eagle Lake First Nation	10,224
NWHU	19 municipalities, 39 First Nations Communities	81,155

Source: IntelliHealth Ontario 2022d. Retrieved November 1, 2022. See **Appendix 4A Detailed Methods** for a listing of all communities and populations.

4.1.1.2 Temporal Boundaries

For health data, the extent to which past data can be presented was determined in part based on how data were aggregated by the relevant sources, and use of confidentiality practices employed to protect individual data from being released. Three future time frames were proposed for projection purposes: near-term (2024 to 2032), mid-term (2033 to 2042), and long-term (2043 and beyond) which align with Project phases (see **Section 1.0**).

Health data and descriptions go back far enough to understand past trends and are dependent on the availability of health data and information related to health care services in the Local Study Area and Regional Study Area. Where data are available, a minimum of 20 years of data are presented. Most health indicators, with the exception of crisis events (e.g., COVID-19 pandemic), do not change dramatically over short time periods, and many outcomes related to exposures or lifestyle can occur over decades. The trends described help to understand current and anticipated near-term health trends. With respect to mid to longer term time horizons, projection of health outcomes is often imprecise and challenged by several factors, such as the strength of the relationship between risk factors and outcomes and the scale with which the strength of these associations is measured (Galea & Keyes 2017). Further, projecting future health outcomes assumes plans and measures will then be put in place to be responsive to any emergent trends.

4.1.2 Data Collection

The characterization of the baseline environment relies on both primary and secondary data sources. Data collection included engagement with local experts at the MBCHCH, the NWHU, and the Dryden RHC (NWO Community Studies Key Person Interview Program 2022; NWO Community and Baseline Studies Key Person Interview Program 2022-2023). Engagement was used to:

1. Seek guidance on appropriate geographic boundaries related to data availability and consistency in local reporting;
2. Seek agreement that the spatial boundaries were appropriate for public reporting of data collected at these area levels;
3. Understand availability of non-published program and service data and requirements for access;

4. Identify key local experts to review and guide the development of the Community Health and Wellness Survey; and
5. Secure permission of the MBCHCH to provide sponsorship solely to EPI Research Inc. in transferring an existing IntelliHealth data repository access license under the supervision of the MBCHCH. Details of the licence can be found in **Appendix 4A Detailed Methods**.

4.1.2.1 Secondary Data Collection

Secondary data collection to support the health baseline included a review of published reports, a review of data reporting standards, and review and analysis of available data.

The majority of Local Study Area data were accessible through secured data sources, including:

- Dryden Regional Health Centre;
- IntelliHealth Ontario secure data portal for direct queries and data extraction;
- Mary Berglund Community Health Centre Hub reporting; and
- Northwestern Health Unit reporting.

Some Regional Study Area and provincial data were accessed through interactive data tables available on public websites, including:

- Cancer Care Ontario;
- Canadian Institute for Health Information;
- First Nations Information Governance Centre;
- Public Health Ontario;
- Public Health Agency of Canada; and
- Statistics Canada.

Appendix 4A Detailed Methods provides further details related to the specific data sets accessed directly and provided by collaborative partners.

Other publicly available secondary data sources included:

- Annual reports and strategic plans for MBCHCH, Dryden RHC, NWHU, Ontario Provincial Police, Kenora District Services Board, and Township of Ignace;
- Community reports, including Ignace Project Visioning and Ignace Community Safety and Well-Being Plan;
- Community websites and community services websites to review resources and infrastructure;
- Reports from the Canadian Institute for Health Information, Public Health Agency of Canada, Health Equity Ontario, World Health Organization, and National Collaborating Centre for Determinants of Health for health equity guidance; and

- World Health Organization, Canadian Institute for Health Information, Ontario Health Insurance Program, and Association of Public Health Epidemiologists of Ontario for health indicator definitions and coding compliance in data extraction.

4.1.2.1.1 Limitations of Secondary Data Collection

Secondary data collection used information from databases and publicly available sources to incorporate the best knowledge available at the time of writing. There are limitations to the data presented in the health components as described below.

Generalizability: Secondary data collection for small populations, such as the Local Study Area, provide limited information. Generally, the closest area of analysis available in public reports and data is the NWHU.

GBA+: As noted in **Section 4.2**, data on GBA+ is limited due, in part, to the way in which health data are collected, whereby sex, rather than gender, is used to distinguish health outcomes. Further, availability of data on the social determinants of health for the Local Study Area were limited, therefore data at the Regional Study Area, provincial, and/or national levels are presented to describe how the determinant can affect health outcomes.

Small population size: To protect confidentiality and the continuity of the confidence of rates presented, data suppression must occur when the number of events (e.g., deaths, visits, surgeries, births) is lower than five. This is also a requirement of compliance with the IntelliHealth Ontario licence. Where this occurs, a note is provided describing the data are suppressed. If there is a "0," there are no cases or events. The small population size also limits the possibility of disaggregating data (e.g., by gender, sex) for all indicators.

First Nations and Indigenous Identity: No health-related data are reported at a community level for First Nations. Health data at the First Nations community level is not available through Intellihealth Ontario and would not be reported without the explicit consent of the First Nation. Further, as noted in **Section 4.1.1.1.2**, no data disaggregation for Indigenous identity was completed for any data not presented in the public domain, as is in accordance with the First Nations Principles of Ownership, Control, Access, and Possession (FNIGC n.d.).

Timeliness: The timeliness and availability of secondary data related to health indicators varied. In some cases, only point-in-time data are available and in other cases there are limited trend data available. Often, published health data are at least two or more years behind the current date.

Changes in coding: Coding for services and diagnosis within the health system is governed by many bodies, all of which have their own coding system and schedules of updates. Updates or changes in coding can create challenges in consistency of data comparisons over time. Details are described where necessary in the health components and in **Appendix 4A Detailed Methods**. Due to the small population of Ignace, it is necessary to utilize as many years of data as possible to allow for disaggregation and presentation of data related to age groups, sex or gender, and specific illnesses or causes. For this reason, time periods from some indicators (e.g., deaths, mental health hospitalization) were used where coding changed within the time period. EPI Research Inc. created linkages which may not relate to other published data.

Changes in geographic groupings: In some cases, there are slight differences in the way data are collected which do not exactly align with the Local Study Area and Regional Study Area. This is described in further detail in **Appendix 4A Detailed Methods**.

Impact of COVID-19: the COVID-19 pandemic had particular impacts on certain health indicator data due to limitations in services. COVID-19 caused changes in service delivery that were not immediately recorded and changes in the health-seeking behaviour of community residents. Comments related to data quality and completeness between 2020 and 2021 will be made as required throughout the baseline.

Inconsistent or non-specific data: Submissions made by physicians to the Ontario Health Insurance Program ("OHIP") for payment do not require a diagnostic code. Due to this lack of diagnostic coding, the measure of physician visits is impacted by the lack of specificity related to a health condition or diagnosis to support understanding the reason for a physician visit. Physician visits may be disaggregated by type of physician, which can be used as a proxy indicator of need (e.g., psychiatrist, obstetrician, oncologist), but in many cases, the comparison of rates of physician visits are not specific to health conditions.

Another level of deficit relates to the actual location of a physician visit. Ignace residents often travel for physician visits and the proxy indicator available is only the billing address of the physician. This means that if a physician typically practices out of Toronto but is providing services in Dryden, their billing location will be Toronto, not Dryden, providing misinformation on where the physician visit was conducted. Therefore, physician visit by location data should be interpreted with caution, particularly related to more distant locations from the Local Study Area (e.g., Toronto).

It is noted that all physician services provided within Ignace occur at the MBCHCH. MBCHCH has relationships with locum physicians who provide services on rotational schedules but may practice full time elsewhere (see **Section 4.3** for further details). No physician who provided services at MBCHCH billed to OHIP and no physicians participated in shadow billing for the time periods examined. Shadow billing refers to claims submitted to the provincial government by physicians who are on alternate payment plans for the services they provide, such as salaried physicians who do not work through a fee-for-service model (University of Manitoba 2008). This means that there are limited details related to physician visits at the MBCHCH.

While disease incidence (i.e., new cases) and prevalence (i.e., existing cases) are important metrics of health status, these data typically come from public health lab reports, such as with COVID-19, or through specific surveillance, such as the Canadian Chronic Disease Surveillance System. For example, with physician visits, if there is a diagnosis of "diabetes", that does not tell us whether this is the first time (incidence) or an existing case (prevalence) but with a follow up visit for disease management. Often physician visit data are used as a "proxy" of existing cases of a disease, however, as discussed in methods, the OHIP physician billing data is severely limited with respect to diagnostic information so that this could not be used for chronic disease prevalence estimates but did provide further information related to cancer and mental health as that information did have more enhanced information.

It is important to note that **Section 4.4 Community Health Outcomes** is a picture of the health status of the Local Study Area but may not be exact and does not include some of the key metrics of well-being that must be collected at the community provider and partner level. The

Regional Study Area has been given the same data limitations as the Local Study Area so that differences in outcomes, particularly related to hospitalization, emergency department and mortality, should be considered valid. It is the physician visits, an important measure of community care that is not uniformly limited as many visits occurred at the MBCHCH with physicians, but the details are not available in a central database.

4.1.2.2 Primary Data Collection

Primary data are used to support the inclusion of community knowledge and local perspectives, confirm the reasonableness and relevance of secondary information, and qualitatively fill gaps in literature review, including information on GBA+ and sustainability considerations. Primary data collection was undertaken through 17 IAWG meetings (as of October 2023), workshops (including a Local Social Cultural and Health Workshop, a Community Health Workshop, a Healthy Community Workshop, and a GBA+ Workshop), focus groups, key person interviews, and a Community Health and Wellness Survey (2023).

Key person interviews took place with local health professionals to guide the understanding of an inventory of local health services, supplemental health services (e.g., access to foodbanks), and updates related to staffing complement in the Local Study Area (NWO Community Studies Key Person Interview Program 2022; NWO Community and Baseline Studies Key Person Interview Program 2022-2023).

A series of focus groups were completed to support characterization of the health baseline. A total of 9 focus groups were held between 2022 and 2023. A summary of these focus groups is provided in **Section 1.0, Table 1.5-3**.

Between March 17 and April 26, 2023, the Community Health and Wellness Survey was conducted for Ignace residents and those that work or access services in Ignace. The survey was based on the Canadian Community Health Survey, the First Nations Regional Health Survey, and local input from health providers and community experts (i.e., questions related to accessing local services). The survey was comprised of 45 questions and took approximately 13 to 15 minutes to complete. There were 104 participants in the survey. Details on implementing the survey, including outreach and incentives, are described in **Appendix 4A. Section 1.0** provides additional information on primary data collection in the Baseline Studies, including for the IAWG, workshops, focus groups, and key person interviews.

4.1.2.2.1 Limitations of Primary Data Collection

Limitations of primary data collection through IAWG meetings, workshops, focus groups, key person interviews, and the survey include that the information provided by participants reflects the lived experiences and perspectives of the participants, which may not reflect the perspectives of all residents in the Local Study Area and Regional Study Area. An informed consent process was used with all participants and the option to not respond to questions or redact sensitive information was offered.

In particular, limitations related to the survey include that the sample is not statistically significant. For a population the size of Ignace, the survey sample size would need to include 292 participants (approximately 24% of the population) to be statistically significant (i.e., to have a

confidence level of 95%)⁹². Further, a youth survey⁹³ was not administered, limiting survey results to residents 18 years and older. Due to these limitations, survey results represent a subset of the population and cannot be generalized to describe the population of the Township. For example, approximately 48.5% of survey respondents were over the age of 60 and approximately 65% of survey respondents were female, indicating a lack of diversity in the age and gender of survey participants.

⁹² Health measurements cannot be made with perfect certainty. Different things affect the accuracy of measurements and closeness to the true value. 95% confidence intervals (the likely range of the true value) have been calculated for many indicators in this report. When events are very rare and/or population numbers are very small to begin with, the confidence intervals can become wide illustrating caution is needed in data interpretation. If the confidence interval for Ignace does not overlap with the confidence interval for the comparison areas (Dryden Hub and NWHU), there is 95% confidence that the difference shown by the rates are "statistically significant" and likely not a result of chance.

⁹³ The youth survey was intended to be completed by individuals in grades 5 to 12.

4.2 SOCIAL DETERMINANTS OF HEALTH

4.2.1 Overview and Approach

Determinants of health describe the many conditions that interact to influence risks to health and well-being (National Collaborating Centre for Determinants of Health 2012). Most determinants are regarded as social determinants of health, meaning the social conditions that influence health, such as education and income, which are key in highlighting disparities in living conditions and health outcomes (see **Section 4.4 Community Health Outcomes**).

According to the World Health Organization (n.d.a), the social determinants of health are the non-medical factors that influence health outcomes. They include the conditions in which people are born, grow, work, live, and age. They are the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies, and political systems. Examples of social determinants of health include income, education, working conditions, food security, housing, early childhood development, and social inclusion.

Spatial boundaries for social determinants of health include a Local Study Area and Regional Study Area (**Section 4.1.1.1**). The Local Study Area is the Township of Ignace. The Regional Study Area is the catchment area of the NWHU, an administrative boundary that includes 19 municipalities; 39 First Nations communities; and two unincorporated territories, Kenora Unorganized and Rainy River Unorganized. The NWHU serves a population of approximately 82,000 people and has offices in 12 municipalities, including Ignace, Dryden, Sioux Lookout, Atikokan, Ear Falls, Emo, Fort Frances, Pickle Lake, Red Lake, Sioux Narrows-Nestor Falls, Kenora, and Rainy River (NWHU 2022a; NWHU 2023). In addition, data is presented for the Dryden Local Health Hub ("Dryden Hub") as a subset of the Regional Study Area proximal to the Project. The Dryden Hub was a model brought forward by the North West LHIN due to the unique (i.e., northern and rural) geography of the area in order to take advantage of proximity to health care providers. The Dryden Hub includes the Township of Ignace, City of Dryden, Municipality of Machin, Wabigoon Lake Ojibway Nation, and Eagle Lake First Nation. For the First Nations in the Regional Study Area, this refers only to when residents of those communities' access services offered by the province, and not those services offered on-reserve. In 2019, the Province of Ontario transitioned to Ontario Health, an agency created to oversee health care planning and delivery across the province. As a part of this transition, the previous LHINs were replaced with Ontario Health and its sub regions. The Dryden Hub will continue under the new system. For more information on this transition, see **Section 4.3.2**.

The temporal boundaries for descriptions of social determinants of health largely rely on the availability of information at the Local Study Area and Regional Study Area level and vary by determinant. Results from the Community Health and Wellness Survey (2023) and other surveys (e.g., Canadian Community Health Survey) used to describe determinants of health provide a snapshot in time and are most reflective of the near- to medium-term time horizons. With respect to longer term horizons, projection of health outcomes based on determinants of health is often imprecise and challenged by several factors, such as the strength of the relationship between risk factors and outcomes and the scale with which the strength of these associations is measured (Galea & Keyes 2017). Further, projecting future health outcomes assumes plans and

measures will then be put in place to be responsive to any emergent trends. For more information on temporal boundaries for the Health baseline, see **Section 4.1.1.2**.

For some social determinants of health, data were not available for the Local Study Area. Where data were not available for the Local Study Area, data at the Regional Study Area, provincial, and/or national levels are presented to describe how the determinant can affect health outcomes. Data available for the Local Study Area was largely collected through key person interviews, focus groups, and the 2023 Ignace Community Health and Wellness Survey (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023; Intergroup and EPI Research 2023). See **Appendix 4A Detailed Methods** and **Appendix 4B Supplemental Data** for a full review of the methods and results of the Community Health and Wellness Survey 2023. The survey had a limited participation rate of 104 participants, a sample that is not statistically representative of the community and therefore cannot be generalized for the entire Ignace population. Further, results from the survey do not necessarily reflect the social determinants of health or other health behaviours of the entire adult population of Ignace.

The survey was open between March 17th to April 26th, 2023, and was available both online, using the SurveyMonkey platform, and in paper format. Paper format surveys were available for pick up at the NWMO Learn More Centre in Ignace. Paper copies were also available at the Mary Berglund Community Health Centre Hub ("MBCHCH") and the Silver Tops seniors centre, between April 4th to 6th, 2023 for individuals participating in the community focus groups/workshops. Completed paper surveys could only be returned in sealed envelopes to the NWMO Learn More Centre in Ignace or to the consultant directly at a focus group or workshop to ensure confidentiality of participants. Survey participation was limited to those aged 18 and older who either reside, work, or receive services in Ignace. Fewer than five responses were received from non-residents of Ignace that accessed services at the MBCHCH. All paper copies of the survey data were entered by the authors of the report to ensure confidentiality of survey respondents. All data were stored in password protected data files with access to the raw data by the consultant only. All other data shared were amalgamated with the suppression of any questions or individual response options with less than five responses. The limited survey responses do not allow for a large amount of data disaggregation or cross-tabulation analysis. However, in each question, responses by age group and sex were reviewed for statistically significant differences. Where no differences are noted for a particular indicator, the results do not suggest trends by age group or sex that reach the level of statistical significance.

To avoid overlap or confusion between the sections that describe the socio-economic conditions in the study areas, this section describes the known relationships between indicators such as income, employment, and education, and health outcomes. Relevant results of the 2023 Ignace Community Health and Wellness survey data and themes from key person interviews will be presented where applicable but are not meant to contradict published data related to socio-economic conditions (such as Statistics Canada 2022 reporting of 2021 Census data).

Table 4.2-1 describes the determinants of health covered across the Northwest Baseline Studies, including topics covered in **Section 4.2**, and their linkages to health.

Table 4.2-3: Determinants of Health

Determinants of Health	Topics	Linkages to Health
Gender	Gender (Section 4.2.2.1)	A person's gender and its associated norms, roles, and inequities can affect their mental and physical well-being.
Culture	Community and Culture (Section 2.3) Culture (Section 4.2.2.2)	Maintaining culture and tradition plays a role in an individual's sense of identity and belonging. Cultural continuity contributes to good mental health and well-being.
Race and Racism	Race and Racism (Section 4.2.2.2)	Race and racism can affect a person's health in various ways. Systemic racism, for example, can cause reduced access to employment, housing, education, and healthcare for racialized people.
Income	Income (Section 3.6.2) Employment, Education, and Income (Section 4.2.3)	Low income is a risk factor for poor physical and mental health, and is associated with difficult living conditions, low socio-economic status, and social challenges.
Employment, Job Security, and Working Conditions	Employment (Section 3.2) Employment, Education, and Income (Section 4.2.3)	Individuals that are employed generally have higher levels of social inclusion as they feel they contribute to the well-being of the community around them, while job security further provides a sense of control and safety. Working conditions/type of employment can determine health risks for an individual.

Table 4.2--1 Continued: Determinants of Health

Determinants of Health	Topics	Linkages to Health
Education	Labour Force Skills and Training (Section 3.3) Employment, Education, and Income (Section 4.2.3)	Level of education achieved is a key component of socio-economic status and positively associated with health. Higher education levels increase ability to access and understand information and means to stay healthy.
Physical Environment	Second-Hand Smoke Exposure (Section 4.2.4.1) Climate Change (Section 4.2.4.2)	A person's physical and outdoor environment is a key determinant of health. The environment should be free of contaminants/things that negatively affect the physical health and well-being of individuals.
Social Environment	Community and Culture (Section 2.3) Cost of Living (Section 3.6.3) Affordability (Section 4.2.5.1) Housing (Section 4.2.5.2) Homelessness (Section 4.2.5.3) Community Safety (Section 4.2.5.4) Social Cohesion (Section 4.2.5.5)	The safety of an individual from personal and community violence can contribute to an individual's physical and mental health and sense of belonging.
Housing	Housing (Section 2.4.7) Shelter Costs (Section 3.6.3.4) Housing (Section 4.2.5.2)	Living in poor housing conditions, including issues such as mold, overcrowding, and lack of affordability, has been linked to a wide range of physical health issues, such as respiratory conditions and other infectious disease, as well as poor mental health.

Table 4.2-1 Continued: Determinants of Health

Determinants of Health	Topics	Linkages to Health
Health Behaviours	Healthy Weight (Section 4.2.6.1) Physical Activity (Section 4.2.6.2) Food Security (Section 4.2.6.3) Smoking (Section 4.2.6.4) Alcohol and Substance Use (Section 4.2.6.5)	Health behaviours, or health-related behaviours, are actions taken by individuals that affect health or mortality. Poor health behaviours can negatively affect an individual's well-being. These actions may be intentional or unintentional.
Food Security	Food Security (Section 2.3.6 and Section 4.2.6.3) Food Basket (Section 3.6.3.2) Youth Food Security and Diet (Section 4.2.7.3.5)	Food insecurity contributes to poor health outcomes as well as feelings of loss of control and psychological challenges. Individuals who are food secure with a healthy, diverse diet have improved physical and mental health.
Child Development	Low Birth Weight (Section 4.2.7.1) Breastfeeding (Section 4.2.7.2) Youth Education and Employment Goals (Section 4.2.7.3.1) Youth Social Supports and Coping Skills (Section 4.2.7.3.2) Youth Physical Activity (Section 4.2.7.3.3) Youth Perception of Weight (Section 4.2.7.3.4) Youth Food Security and Diet (Section 4.2.7.3.5) Youth Alcohol and Substance Use (Section 4.2.7.3.6) Youth Smoking and Vaping (Section 4.2.7.3.7)	Addressing factors that contribute to a healthy childhood, social inclusion, physical activity, and diet, has long-term impacts on an individual's well-being.

Table 4.2-1 Continued: Determinants of Health

Determinants of Health	Topics	Linkages to Health
Access to Health Care	Access to Health Services (Section 4.3.5.4 and Section 4.2.8)	Barriers to accessing quality and appropriate healthcare services in a timely manner can negatively impact physical and mental well-being. Access to adequate healthcare services is critical to positive physical and mental well-being.

Sources: Public Health Agency of Canada 2022f; Mikkonen & Raphael 2013; Cusick 2022; World Health Organization 2021; NSHA n.d.; Paradies et al. 2015.

4.2.2 Demographics as a Social Determinant of Health

This section describes the how social determinants including gender, culture, and race and racism affect health outcomes.

4.2.2.1 Gender

Gender⁹⁴ refers to the socially constructed roles, behaviours, expressions, and identities of individuals. It influences how people perceive themselves and each other, how they act and interact, and the distribution of power and resources in society. Gender identity is not confined to a binary (e.g., girl, woman, boy, man) classification nor is it static; it exists along a continuum and can change over time (Canadian Institutes of Health Research 2023). Gender norms influence a health system's practices and priorities. Many health issues are a function of gender-based social status or roles (Public Health Agency of Canada 2013).

Although many of the health statistics described in **Section 4.0**, particularly those that relate to health outcomes (**Section 4.3**) disaggregate data by sex assigned at birth (in part due to how health data are collected), gender is a social determinant of health. "Many health issues are a function of gender-based social status or roles" (Public Health Agency of Canada 2013). Health data by gender is a gap in Canada that fails to recognize gender-diverse peoples, particularly transgender and non-binary individuals. However, social and legislative recognition of gender is beginning to change across the country (Statistics Canada 2022g).

In Canada, research supports that there are clear differences in health outcomes related to gender including (Public Health Agency of Canada 2013):

⁹⁴ Gender and sex are different from one another. Sex, often categorized as male and female, refers to a set of biological attributes in humans and animals and is primarily associated with physiological features including chromosomes, gene expression, hormone levels and function, and reproductive/sexual anatomy (Canadian Institutes of Health Research 2023).

- Men are more likely to die prematurely than women, largely due to heart disease, fatal unintentional injuries, and cancer. This is the case in Ignace, as described in **Section 4.4.7.8**;
- Rates of potential years of life lost ("PYLL") before age 70 are almost twice as high for men than women and approximately three times as high among men aged 20 to 34. Rates of PYLL in Ignace are similarly high and are higher than those found in the Dryden Hub and the NWHU, as described in **Section 4.4.7.9**;
- While women live longer than men, they are more likely to suffer depression, stress overload (often due to efforts to balance work and family life), chronic conditions such as arthritis and allergies, and injuries and death resulting from family violence. Higher rates of self-harm in Ignace suggest this may also be the case in the Township as described in **Section 4.4.5.5.1** and **Section 4.4.6.6**; and
- Women experience significantly higher rates of self-reported work stress and self-reported life stress than men in all income quintiles.⁹⁵ In particular, women in the lowest income quintile experience the highest rates of life stress overall. Women also experience higher rates of anxiety disorders compared to men in all income quintiles, with a rate that it is nearly double that of men (Public Health Agency of Canada 2022c).

The impacts of gender and sex on health outcomes must be assessed within the context of other social determinants of health to be fully understood, such as the health outcomes of racialized women (see **Section 4.2.2.2**).

4.2.2.2 Culture, Race, and Racism⁹⁶

Some persons or groups may face additional health risks due to their socio-economic environment, which is largely determined by dominant cultural values that contribute to the perpetuation of conditions such as marginalization, stigmatization, loss or devaluation of language and culture, and lack of access to culturally appropriate health care (Public Health Agency of Canada 2013).

As of 2021, 18% of the Ignace population identify as Indigenous⁹⁷ (see **Section 2.2 Population and Demographics**). Indigenous peoples in Canada experience social, economic, and political disadvantages compared to non-Indigenous peoples in Canada. The impacts of colonization and forced assimilation have negatively affected key social determinants of health for Indigenous peoples, including access to culturally appropriate health care, cultural continuity, appropriate housing, and food security (see **Section 2.3.6**), causing Indigenous peoples to experience health inequities including higher rates of diabetes, hypertension, and mental health challenges

⁹⁵ An income quintile is a measure of socio-economic status that divides the population into 5 groups from lowest to highest income so that approximately 20% of the population is in each group (University of Manitoba 2013).

⁹⁶ Note that the use of the terms "First Nation", "Indigenous", and "Aboriginal" will reflect the terms used in each original data source.

⁹⁷ Indigenous identity refers to individuals who identify as a First Nation (North American Indian), Métis, Inuk (Inuit), and/or those who reported as a Treaty Indian or Registered Indian and/or have membership in a First Nation or Indian Band (Statistics Canada 2023f).

(Kim 2019). Primary data were not collected from First Nations communities in the Regional Study Area.

Colonization has had lasting impacts on the cultural identity of Indigenous peoples in Canada. Connection to one's culture and self-determination are important for improving Indigenous health and well-being outcomes (Verbunt et al. 2021). Present-day racism is intrinsically linked to colonialism (OHCHR n.d.). Systemic racism and unequal access to health care are among the long-lasting effects of colonialism (OHCHR n.d.). Possessing a strong cultural identity can protect against mental health challenges, a key health concern for residents of the Local Study Area and Regional Study Area (see **Section 4.3.5.5**) (Shepherd et al. 2018; NWO Community and Baseline Studies Key Person Interview Program 2022).

Populations who are racialized experience greater stressors, including inter-personal and systemic discrimination throughout their life, as compared to a "white" or non-racialized social group (Public Health Agency of Canada 2022f). Disparities in health outcomes exist between First Nations peoples compared to non-Indigenous peoples in Canada. According to the First Nations Information Governance Centre (2018b), the social determinants of health of First Nations peoples in Canada are further exacerbated by their exposure to the Indian Residential School system and other factors that reflect the unique history and experience of First Nations peoples and the legacy of colonialism. Factors such as the Indian Residential School system and institutionalized racism have meant that First Nations do not experience the same level of social determinants of health as do the general population.

Suicide rates have consistently been shown to be higher among First Nations, Inuit, and Métis in Canada than the rate among non-Indigenous peoples (see **Section 4.4.5 Mental Health** and **Section 4.4.6 Injury** for more information related to suicide and self-harm) (Kumar M.B. and Tjepkema M. 2019). Research of deaths due to suicide between 2011 and 2016 illustrates (Kumar M.B. and Tjepkema M. 2019):

- The suicide rate among First Nations people (24.3 deaths per 100,000 person-years at risk) was three times higher than the rate among non-Indigenous people (8.0 deaths per 100,000 person-years at risk);
- The rate among Métis (14.7⁹⁸ deaths per 100,000 person-years at risk) was approximately twice as high as the rate among non-Indigenous people;
- Suicide rates and disparities were highest in youth and young adults (15 to 24 years) among First Nations males and Inuit males and females.

Ignace, along with other communities in the NWHU have been experiencing an increase in ethnic diversity since 2011, as described in Section 2.2.4 Demographics. Key experiences of other⁹⁹ racialized populations from diverse cultural and racial backgrounds include (Public Health Agency of Canada 2022f):

⁹⁹ "Other" racialized populations exclude First Nations, Inuit, and Métis peoples (Public Health Agency of Canada 2022f).

- Food security is a concern in Northwestern Ontario (see Section 2.3.6) and can be experienced unequally amongst racialized peoples. Racialized Canadians are less likely than white Canadians to report that their health is either very good or excellent, with these differences being the largest for women;
- Black adults experience the highest rate of food insecurity across all racialized groups, with a rate 2.8 times higher than white adults;
- Racialized Canadians are disproportionately impacted by inequalities in safe and stable housing and neighbourhood safety concerns. In the Kenora District, inadequacy (21.4%) and unaffordability (17.7%) are primary housing issues (KDSB 2021); and
- Compared to white adults, there are large inequalities in racialized adults' contact with dental professionals and regular health care providers.

Culture and race play a large role in the provision of health care services among Indigenous and other racialized peoples in Canada. However, culturally appropriate health care services are a gap in the Local Study Area (see **Section 4.3.5 Health Care in the Local Study Area**) and are limited in the Regional Study Area (see **Section 4.3.4.1 Indigenous Health Care in the Regional Study Area**). Indigenous patients who receive culturally appropriate and culturally safe health care may be more receptive to treatments and to follow advice given by healthcare professionals, in turn improving health outcomes of Indigenous patients (NCCIH 2013).

4.2.3 Income, Employment, and Education

People of low socio-economic status often experience inequities in access to health care and poorer health outcomes (Canadian Institute for Health Information 2018). Measures of socio-economic inequity are typically linked to income quintiles, employment rates, and educational achievement (see **Section 3.2 Employment**, **Section 3.3 Labour Force Skills and Training**, and **Section 3.6.2 Income**).

4.2.3.1 Income

Income is one of the most influential social determinants of health and is closely linked to other factors such as education, occupation, and housing (see **Section 2.4.7** and **Section 4.2.5.2** for more on housing) (Canadian Institute of Health Information 2018). Health status improves at each step up the income and social hierarchy. High income is associated with better living conditions, such as the ability to acquire safe housing and healthy foods (Alberni Clayoquot Health Network n.d.). The healthiest populations are those in societies which are prosperous and have an equitable distribution of wealth (Public Health Agency of Canada 2013).

Some key linkages between income and health outcomes include (Canadian Institute for Health Information 2018):

- Those in the lowest income level are hospitalized for mental illness or alcohol-related reasons at a rate twice or more the rate of those in the highest income level;
- Hospitalizations for heart attacks occur at greater rates among the lowest income level compared to the highest income level; and

- Diabetes prevalence is highest at the lowest income level. Between 2003 and 2013, diabetes prevalence increased more in the lowest income level than in the highest income level.

Further, low-income individuals are known to face greater challenges with their mental health. Canadians in the lowest income quintile are least likely to report that their mental health care needs are being met, are the least likely to report satisfaction with their life in general, and are the most likely to report having an anxiety disorder (Public Health Agency of Canada 2022c). Low-income individuals and individuals living with mental health challenges are key vulnerable populations in the Local Study Area and Regional Study Area (see **Section 2.2.5** for more on vulnerable populations). Mental health is a health priority for the Local and Regional Study Areas, as there are concerns for the increased number of individuals experiencing challenges with mental health in both areas (NWO Baseline Studies Key Person Interview Program 2022-2023).

The rate of mental illness, such as depression, is higher among the poorest people in Ontario compared to the wealthiest (CMHA Ontario 2014). A household is considered low income if its income is below 50% of the median after tax household income (Statistics Canada 2022e). In 2020, approximately 13.2% of Ignace households, 19.7% of Kenora Census Division households, and 10.1% of Ontario households were considered low income. In the Kenora Census Division, 28.8% of 0- to 17-year-olds were in a low-income household, 17.4% of 18- to 64-year-olds, and 13.7% of 65 years and older. In comparison, in Ontario 11.5% of 0- to 17-year-olds were in a low-income household, 9.1% of 18- to 64-year-olds, and 12.1% of 65 years and older. See **Section 3.6.2** for more information on income.

Many health issues are a function of gender-based social status or roles, including income (Public Health Agency of Canada 2013). Gender income inequality, also referred to as the gender pay gap, is the difference in average earnings of people based on their gender (Canadian Women's Foundation 2022). The gender pay gap is exacerbated for those who face multiple barriers, such as racialized women and women living with disabilities, and thus has disproportionate effects (Canadian Women's Foundation 2022). In 2021, female employees in Canada earned 11.1% less per hour than male employees; women earned \$0.89 for every dollar men earned (Statistics Canada 2022h). In 2020, men in Ignace had an average personal income that was 35.9% higher than women, which was confirmed by observations from interviews (Statistics Canada 2022e; NWO Baseline Studies Key Person Interview Program 2022-2023).

4.2.3.2 Employment

Unemployment, underemployment, and stressful or unsafe work are associated with poorer health (Public Health Agency of Canada 2013). Unemployment can have negative health consequences including depression, anxiety, low self-esteem, demoralization, and stress-related illnesses (e.g., high blood pressure, stroke, heart disease). Further, employment experiences such as perceived job insecurity, downsizing or workplace closure, and underemployment also have implications for physical and mental health (U.S. Department of Health and Human Services 2023).

People who have more control over their work circumstances and fewer stress related demands of the job are healthier and often live longer than those in more stressful or risky work environments (Public Health Agency of Canada 2013). Thus, the influence of the status of employment on an individual's health outcomes is further determined by the type of work an

individual is involved in and whether it adds additional health risk factors, such as physical danger or high levels of stress. Jobs that are below one's skill level, unsafe, stressful, have unpredictable hours, or do not provide opportunity for growth are all associated with increased mental health risk and low morale.

As of 2021, the employment rate in Ignace was 44.6% while the unemployment rate was 13.0%. From 2016 to 2021, there was a slight decrease in the employment rate across the Kenora Census Division and Ontario (Statistics Canada 2017; 2022e). This is likely due to the COVID-19 pandemic and the resulting transition to working remotely and social distancing in workplaces (Statistics Canada 2023e; NWO Community and Baseline Studies Key Person Interview Program 2022). In particular, industries that could not make the transition to working remotely or had to reduce their workforce are likely the drivers to the lower employment rate in 2021 compared to 2016.

In 2021, the employment rate in Ignace was higher for men (48.5%) than women (40.8%), while the unemployment rate was also higher for Ignace men (13%) than women (11.1%) (Statistics Canada 2022e). See **Section 3.2** for information on employment. In 2021, the top three sectors of employment for women in the Ignace were accommodation and food services (24% women), health care and social assistance (16% women), and educational services (16% women). The top three sectors of employment for men in Ignace were agriculture, forestry, fishing, and hunting (20% men), construction (11% men), and transportation and warehousing (11% men) (Statistics Canada 2022e). See **Section 3.4.2 Industry** for more information on employment by industry.

Community Health and Wellness Survey Results

Just over half (55.0%) of the Community Health and Wellness Survey (2023) respondents indicated that they work full or part-time. The second-most reported answer was not being employed and not looking for work (34.0%), which corresponds with a larger proportion of older individuals completing the survey, who are more likely to be retired. This aligns with Census data, as 6.7% of the population aged 15+ was unemployed but part of the labour force (and therefore likely job searching) (Statistics Canada 2022e). The results of the survey also indicated that some older respondents, mostly older females, were looking for work, however, this may be attributed in part to the characteristics of those participating in the survey (see **Section 4.1.2.2.1** for limitations).

Ignace Community Health and Wellness Survey (2023) respondents and participants of the NWO Baseline Studies Key Person Interview Program 2022-2023 shared the following barriers to employment:

- Lack of childcare for parents wishing to work;
- Need for more variety in the types of jobs offered; and
- Lack of career jobs with advancement opportunities.

It was further noted by a participant that career jobs in the community are limited to certain sectors and there are limited options for those with skills or education in other areas. However, there is also an issue of some jobs being filled by those who live out of town due to lack of housing.

Table 4.2-2 shows that there were no significant differences in self-reported physical or mental health related to employment status of Ignace survey participants. Although almost one in three survey participants that work full time indicated that their physical health was “very good” or “excellent” compared to just under 15% of those who do not work and are not looking for work, this difference was not statistically significant. These results are not expected given the age distribution of survey respondents and that almost all respondents not looking for work are retired. Further, almost the same proportion of respondents working and respondents not working and not looking for work, reported “very good” or “excellent” mental health. Respondents reporting seasonal work and reporting that they are not working and looking for work were too small to disaggregate; these would be the more likely groups to illustrate a relationship between employment status and both physical and mental health.

Table 4.2-2: Relationship between Self-Reported Health and Employment Status, Ignace Survey Respondents, 2023^{1,2,3}

	Very good or excellent	Good	Not good or poor	Total
Physical health				
Yes, full or part time	31.5%	61.1%	7.4%	54.5%
Yes, seasonal work	s	s	s	6.1%
No, and I am NOT looking for work	14.7%	67.6%	17.6%	34.3%
No, but I AM looking for work	s	s	s	5.1%
Total				100%
Mental health				
Yes, full or part time	37.0%	51.9%	11.1%	54.5%
Yes, seasonal work	s	s	s	6.1%
No, and I am NOT looking for work	38.2%	55.9%	5.9%	34.3%
Total				94.9%

Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. “s” indicates data are suppressed due to cell sizes <5.
2. Totals may not sum to 100% due to suppression of results.
3. Data are presented in **Appendix 4B**.

4.2.3.3 Education

Education is closely tied to socio-economic status and effective education for children and adults are key contributors to health and prosperity. Education contributes to health and prosperity by

equipping people with knowledge and skills for problem solving and helps provide a sense of control and mastery over life circumstances. Education increases opportunities for job and income security, and job satisfaction. Education also improves people's ability to access and understand information to help keep them healthy (Public Health Agency of Canada 2013).

There are clear links between education and health, with higher levels of education associated with both a longer lifespan and more life years spent in good health (Statistics Canada 2020c). Canadians with low literacy skills are more likely to be unemployed and poor, suffer poorer health, and die earlier than Canadians with high levels of literacy. People with higher levels of education have better access to healthy physical environments, tend to smoke less, tend to be more physically active, have access to healthier foods, and are better able to prepare their children for school than people with low levels of education (Public Health Agency of Canada 2013).

As of 2021, the proportion of those who have no certificate, diploma, or degree in the Local Study Area is higher than the provincial average. In Ignace, 20.6% of men and 25.5% of women aged 15 years and older have no certificate, diploma, or degree. This is compared to 15.8% of men and 14.8% of women who have no certificate, diploma, or degree in Ontario as a whole (Statistics Canada 2022e).

Generally, a larger proportion of men in Ignace and Ontario have an apprenticeship or trades certificate or diploma compared to women but, a larger proportion of women have a university education at or above the bachelor level compared to men. In Ignace, 10.3% of men and 3.1% of women have an apprenticeship or trades certificate or diploma (Statistics Canada 2022e). In Ontario, 7.4% of men and 2.7% of women have an apprenticeship or trades certificate or diploma. In Ignace, 12.4% of men and 14.3% of women have a university certificate, diploma, or degree at the bachelor level or above. In Ontario, 28.4% of men and 31.4% of women have a university certificate, diploma, or degree at the bachelor level or above (Statistics Canada 2022e). See **Section 3.3 Labour Force Skills and Training** for information on educational attainment.

Community Health and Wellness Survey Results

68.3% of Ignace Community Health and Wellness Survey (2023) respondents had completed post-secondary education, while a further 26.7% had completed high school or equivalent. Just 5.0% of respondents had not completed high school. No respondents indicated that they were still in school. According to the 2021 Census (Statistics Canada 2022e), 39.5% of Ignace residents aged 15 and older had a post-secondary education, 37.9% had completed high school or equivalent, and 23.1% had no certificate, diploma, or degree. Differences in the survey results may be attributed to the small sample size (see **Section 4.2.1**).

Ignace Community Health and Wellness Survey (2023) respondents under 50 years of age tended to report higher education levels than those over age 50. Responses appear to be similar between males and females, although there are too few responses by category to display results by sex.

Ignace Community Health and Wellness Survey (2023) respondents who have completed post-secondary education were more likely to rate both their physical and mental health "very good" or "excellent" (29.4%) compared to those who have completed high school or equivalent

(14.8%) (**Table 4.2-3**). Although the relationship appears even stronger for mental health, with only 22.2% of survey respondents who completed high school or equivalent rating their mental health as “very good” or “excellent” compared to 44.1% of respondents who completed post-secondary education, due to small numbers none of the apparent differences reached the threshold of statistically significant. Those who completed less than high school (5 responses) are too small to report.

Table 4.2-3: Relationship Between Self-reported Health and Education, Ignace Survey Respondents 2023^{1,2}

	Very good or excellent	Good	Not good or poor	Total
Physical health				
Less than high school or equivalent	s	s	N/A	5.0%
Completed high school or equivalent (for example GED/Adult Education diploma)	14.8%	70.4%	14.8%	27.0%
Completed post-secondary (like college, university, trade)	29.4%	60.3%	10.3%	68.0%
Total				100%
Mental health				
Less than high school or equivalent	s	s	N/A	5.0%
Completed high school or equivalent (for example GED/Adult Education diploma)	22.2%	66.7%	11.1%	27.0%
Completed post-secondary (like college, university, trade)	44.1%	48.5%	7.4%	68.0%
Total				100%

Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. “s” indicates data are suppressed due to cell sizes <5.
2. Data are presented in **Appendix 4B**.

4.2.4 Physical Environment

The physical environment is an important determinant of health. In the built environment, factors related to housing (**Section 4.2.5.2**), indoor air quality, and the design of communities and transportation systems can significantly influence physical and psychological well-being. In the natural environment, certain levels of exposure to contaminants in air, water, food, and soil

can cause a variety of adverse health effects, including cancer, birth defects, respiratory illnesses, and gastrointestinal ailments (Public Health Agency of Canada 2013).

Linkages between the physical environment and health outcomes include (Public Health Agency of Canada 2013):

- Childhood asthma is highly sensitive to airborne contaminants. Rates of asthma have increased in Canada, with a current estimate of 13% of boys and 11% of girls aged 0 to 19 living with asthma. As presented in **Section 4.4.4.3.6**, the average inpatient age for asthma hospitalizations of Ignace residents was 18 and was similarly higher for males than females; and
- Children and outdoor workers may be especially vulnerable to the health effects of a reduced ozone layer due to climate change. Excessive exposure to UV-B radiation can cause sunburn, skin cancer, depression of the immune system, and an increased risk of developing cataracts.

4.2.4.1 Second-Hand Smoke Exposure

Second-hand smoke exposure is associated with lower-respiratory illnesses, asthma, middle ear disease, and lower levels of lung function in children. Second-hand smoke exposure most often occurs in the home (Public Health Ontario 2020). An estimated 18% of residents of the NWHU (living off-reserve) smoke daily or occasionally, a higher proportion than the provincial average. If they have children, those children would be exposed to second-hand smoke (Statistics Canada 2022b). Eight in ten Ignace Community Health and Wellness Survey (2023) respondents indicated they never smoke cigarettes, which could suggest lower rates of second-hand smoke exposure in Ignace.

4.2.4.2 Climate Change

Climate change impacts health on a variety of levels. Pathways through which climate change influences health include direct impacts, indirect impacts through ecological system impacts, and indirect impacts through changes to human social systems (Sanderson 2022).

Direct impacts of climate change on health include the ramifications of global warming on outdoor temperatures. The number of days above 30 degrees is expected to increase in Northwestern Ontario, increasing the risk of heat stroke and other heat-related health events, particularly for vulnerable populations such as seniors, children, and those with pre-existing health conditions.

Indirect impacts of climate change on health through ecological impacts can occur with warming temperatures. Warmer climates are more conducive to disease spread, such as infections from mosquitos and ticks and can lengthen the duration of allergy seasons. Warmer temperatures also increase the risk and severity of wildfires, which reduce air quality through smoke and ash particle production, and particularly impact those with underlying respiratory conditions. Wildfire spread can also cause the displacement of individuals from their homes and communities when evacuation measures are necessary. Indirect impacts of climate change can be felt more extensively by those who are unhoused or precariously housed, those who work outdoors, those who are otherwise vulnerable due to age or underlying disease, and those without the financial resources to help mitigate these impacts.

Impacts of climate change on health through changes to human social systems include impacts to transportation systems, food systems, and water systems. For example, warmer temperatures weaken the seasonal viability of ice roads for parts of Northwestern Ontario decreasing access to supplies and services for communities whose connection with services centers depends on ice roads. General change and volatility in weather and climate patterns disrupt protocols of human social systems and resource management, such as water supply and food production, which can lead to food insecurity. The rural and remote communities that make up Northwestern Ontario are sensitive to changes in weather and food systems (Human Rights Watch 2020). Community remoteness is positively correlated with the cost of a healthy diet, in part due to the high costs associated with the transportation of food to communities, with high costs of healthy foods being a major contributor to food insecurity in Northwestern Ontario (Northern Policy Institute 2018). In 2016, the Regional Study Area had the most expensive food basket in the province (see **Section 4.2.9** for more on food insecurity and its connections to health outcomes).

4.2.5 Social Environment

The array of values and norms of a society have various influences on the health and well-being of individuals. Social stability, recognition of diversity, safety, good working relationships, and cohesive communities provide a supportive society that reduces or avoids many potential risks to good health (Public Health Agency of Canada 2013). Social environment factors discussed in this section include the affordability of where one lives (i.e., cost of living), housing conditions and status of housing, community safety, and social cohesion.

4.2.5.1 Affordability

Affordability refers to cost of living and the ability of an individual or household to afford basic necessities (Statistics Canada 2023d). High cost of living and the inability of an individual or household to afford basic necessities can have negative effects on their health outcomes. Not only does a high cost of living effect one's ability to purchase healthy foods and obtain adequate housing, but it can also influence health behaviours, such as smoking and substance use, and mental health, such as causing psychosocial stress¹⁰⁰ (Broadbent et al. 2023).

Affordability is impacted by various factors. One way to measure affordability is the Consumer Price Index (CPI). The CPI measures changes in cost for the average Canadian consumer by comparing the cost of a fixed basket of goods and services over time (Statistics Canada 2023d). From 2006 to 2022, the average annual change in the CPI in Ontario and Canada followed a similar trend at an 3% or less (see **Section 3.6.3 Cost of Living**). A large increase in the CPI in Ontario and Canada was seen from 2020 to 2022. The change in CPI in 2022 was a 40-year high, which may be attributed to several world events, including the COVID-19 pandemic and the Russian invasion of Ukraine in February 2022, impacting the global supply chain (Macklem 2022; Statistics Canada 2023d).

In general, Ignace experiences higher food and gasoline costs compared to larger communities, but lower shelter costs. A food and gasoline cost comparison was conducted for the NWO Baseline Studies Key Person Interview Program 2022-2023 in Ignace, Dryden, and Thunder Bay

¹⁰⁰ Psychosocial stress refers to a perceived threat to one's social status, respect, or acceptance (Scott 2020).

in January 2022, June 2022, and March 2023 (see **Section 3.6.3**). Ignace had a higher unit price across all food basket categories (e.g., dairy products, fruits, vegetables) when compared to Dryden and Thunder Bay. Dryden and Thunder Bay had a larger variety of products to choose from compared to Ignace. For example, across all dates collected Ignace was out of stock of baby food and instant formula, and in March 2023 Ignace was out of stock of bananas, blueberries, pears, and strawberries, while Dryden and Thunder Bay had these products in stock (see **Section 3.6.3.2** for more information on food basket costs). Gasoline prices in Ignace were also higher than in Dryden and Thunder Bay during these collection periods. As of March 2023, the gasoline prices in Ignace (169.9 cents/litre) were 9.7% higher than Dryden (154.9 cents/litre) and 9.0% higher than Thunder Bay (155.9 cents/litre) (see **Section 3.6.3.3** for more on gasoline costs). As of 2021, the average monthly shelter cost in Ignace as \$760 compared to \$1,022 in Dryden and \$1,137 for the Kenora District (Statistics Canada 2022e) (see **Section 3.6.3.4** for more information on shelter costs).

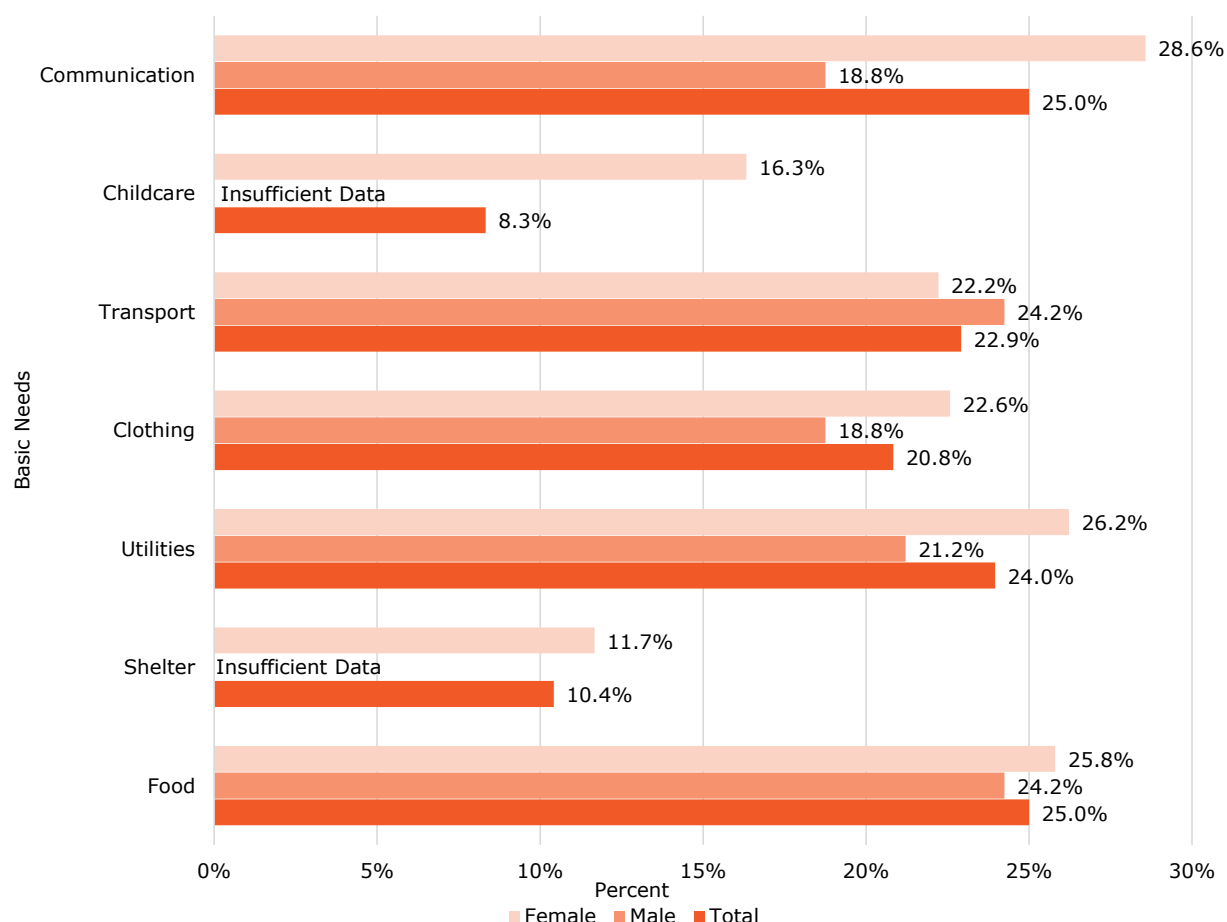
The inflation seen in Canada since 2020 has had large impacts on Canadians' way of life, particularly on low-income households (Statistics Canada 2023g). In April 2022, almost 3 in 4 Canadians reported that the rising cost of living was affecting their ability to meet day-to-day expenses, while 3 in 10 were very concerned about whether they could afford housing (Statistics Canada 2023g). Wages have not kept up with rising prices. Notable income inequality exists in Canada, where most wealth in the country is held by few households. At the end of 2022, the top 20% wealthiest households in Canada accounted for 67.9% of net worth, while the bottom 40% least wealthy households accounted for 2.6% of net worth (Statistics Canada 2023g). See **Section 2.3.7** for more on income inequality.

Community Health and Wellness Survey Results

One in five respondents to the Ignace Community Health and Wellness Survey (2023) reported having challenges paying for the things they need. The most common expenses reported by respondents included affordability of communication services (cell phone or internet) (25%), food (25%), and utilities (24%) (**Figure 4.2-1**). The percentage of respondents who had difficulty paying for these things "most months" was low.

While shelter and childcare were reported less frequently, it is notable that only female respondents reported having difficulty with these expenses. Female respondents reported more challenges paying for things than male respondents in every category except transportation. This may be attributed to the age distribution of female respondents and the greater proportion of female respondents who reported living in a household with children. Females in Ignace face challenges in earning equal pay (see **Section 4.2.3.1**) and older female survey respondents noted challenges in finding work (see **Section 4.2.3.2**).

Figure 4.2-1: Ignace Survey Respondents Reporting Challenges with Basic Living Expenses^{1,2,3}



Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 99, did not answer: 5.
2. Insufficient data to present Childcare and Shelter for male respondents.
3. Data are presented in **Appendix 4B**.

4.2.5.2 Housing

Housing is a basic need and an important determinant of health. Dwellings that need major repair may contribute to negative health outcomes due to mold, asbestos, and pests, and contribute to stress among dwelling residents (Hernandez & Suglia 2016). Housing standards used to understand whether a household is not meeting its core housing needs include the adequacy of housing (e.g., in need of major repairs), the affordability of housing (i.e., costing more than 30% of the household's total before-tax income), and the suitability of housing

relative to National Occupancy Standards (e.g., not enough bedrooms for number of household members) (CMHC 2022). Inadequacy (21.4%) and unaffordability (17.7%) are the primary issues with housing standards in the Kenora District. In comparison, Ontario has a lower proportion of households living in inadequate housing (6.1%) but a greater proportion of households living in unaffordable housing (27.7%) (KDSB 2023).

Adequate housing contributes to mental well-being by increasing feelings of safety, improving sleep, and reducing stress (Harris 2021). Vulnerable populations (see **Section 2.2.5**), such as low-income households, are particularly vulnerable to rising housing costs in Canada, with a 7.4% year over year increase as of April 2022, the largest increase in housing costs since 1983 (Statistics Canada 2022f). Younger individuals are also feeling the impacts of rising housing costs more compared to older individuals in Canada. Canadians aged 15 to 29 (53%) and 30 to 39 (39%) were more than twice as likely to report being very concerned about their ability to afford housing compared to those over 40 (20%). This may be attributed to older Canadians being more likely to have already purchased and paid off a home (Statistics Canada 2022f). See **Section 4.2.5.1** for more information on affordability.

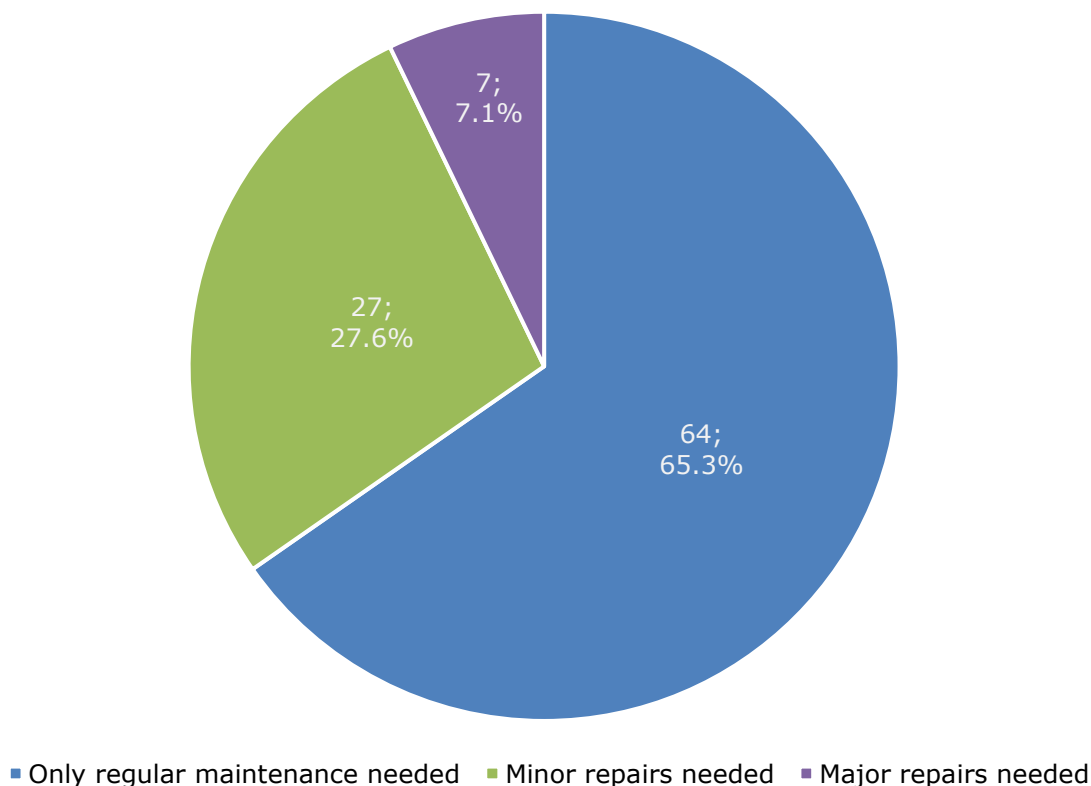
Residents of Northwestern Ontario are disproportionately affected by poor housing quality. The proportion of homes in Ignace requiring major repairs is lower than homes in the Kenora Census Division but higher than the Ontario average. In 2021, 75 dwellings (13.6% of the total dwellings) required major repairs (Statistics Canada 2022e) as compared to rates in Ontario (5.7%). Results from the NWO Community and Baseline Studies Key Person Interview Program 2022 noted that homes built previously in Ignace to serve employees of the Mattabi Mine (now closed) are now aging and requiring renovations. In particular, the lack of a local hardware store in Ignace is believed to contribute to people's ability to effectively maintain their homes in the community (Local Social Cultural and Health Workshop 2021). In the Kenora District Census Division, 9.6% and 17.3% of dwellings required major repairs, respectively (Statistics Canada 2022e). See **Section 2.4.7** for more information on housing.

Community Health and Wellness Survey Results

Most Ignace Community Health and Wellness Survey (2023) respondents (91.9%) reported that they live in a home that they own, while the remaining 8.1% reported that they rent their home. There were no marked differences between male and female respondents.

Most survey respondents (65.3%) reported only regular maintenance was needed on their home, 27.6% reported needing minor repairs, and 7.1% needing major repairs (**Figure 4.2-2**). There were no notable differences between responses by males and females. In comparison to housing suitability data for Ontario (Statistics Canada 2022d), a slightly higher proportion of Ignace respondents' homes reportedly need minor repairs (27.6% compared to 22.0%) but the proportion of homes needing major repairs was almost identical.

Figure 4.2-2: Home Repair Needs of Ignace Survey Respondents' Homes^{1,2}



Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 99, did not answer: 5.
2. Data are presented in **Appendix 4B**.

Participants of the GBA+ Workshop 2023 shared that community members who have a lower income may not be able to afford to maintain their households, and in some instances, this has resulted in unsafe living conditions (GBA+ Workshop 2023). It is difficult to source housing materials locally and affordably, as participants of the Social Cultural and Health Workshop 2021 noted the lack of a hardware store in the Ignace area often requires driving to Dryden even for minor materials such as paint.

Participants of the GBA+ Workshop 2023 identified that there is a need for more housing to support different age groups, including seniors, which is presently lacking, and there is a lack of a variety of housing options, including condominiums, semi-detached, duplexes, and options for retirement. Residents have identified that there is a need for more housing in the area (GBA+ Workshop 2023).

4.2.5.3 Homelessness

Homelessness is a major risk factor for negative health outcomes. Homeless populations are at greater risk of contracting communicable diseases, having nutritional deficiencies, sustaining injuries, and having mental health or substance use challenges (Public Health Ontario 2019c). Unhoused individuals face compromised physical safety, have few resources to attend to basic needs, and may face additional barriers to accessing services and support (Brown 2021).

The Kenora District Services Board 2021 Homelessness Enumeration report found a total of 221 individuals were unhoused across the Kenora District, including 4 individuals in Ignace, with most (76%) homeless individuals being between the ages of 25 to 55 (KDSB 2021). Respondents to the 2021 Homelessness Enumeration shared that low income, high rent, addiction, discrimination, and mental health issues were the top five challenges preventing them from attaining suitable housing (KDSB 2021). An earlier homeless enumeration report indicated almost 40% of respondents indicated that they are “rarely” or “never” able to access an emergency shelter during extreme weather; primary reasons included not knowing the location of a shelter or the shelter not having enough space (Northwestern Health Unit 2018). One in four respondents indicated that they had gone to a doctor or hospital due to being outside during extreme weather (Northwestern Health Unit 2019). See **Section 2.4.7.1** for further information on homelessness.

The lack of emergency shelters in the Local Study Area and Regional Study Area was identified as a key concern during the NWO Baseline Studies Key Person Interview Program 2022-2023. It was also noted that, due to Ignace’s location along Highway 17, people may end up in the community without a place to stay and unable to leave (due to lack of transportation and/or money).

4.2.5.4 Community Safety

Exposure to violence can have a substantial, ongoing impact on a person’s physical and mental health. Exposure to violence is linked to an increased risk of substance abuse, mental illness, and chronic diseases (Public Health Ontario 2019g). Violence within a community also degrades community belonging, interpersonal support, and trust.

NWO Baseline Studies Key Person Interview Program 2022-2023 participants reported a general feeling of safety and connection within the community. Further, when reflecting on the strengths of the community, over 4 in 10 (42.7%) respondents of the Community Health and Wellness Survey (2023) identified safety of the community as a key strength (see **Table 4.2-4**). Priority safety concerns in the Local Study Area included occasional mention of wildlife, traffic safety, and most notably, concerns related to limited emergency medical services due to staff shortages.

4.2.5.5 Social Cohesion

The presence of support from family, friends, and community is associated with better health. Those with good social supports have more resources to draw on, have lower stress levels, and are more resilient. Social isolation greatly increases a person’s risk of premature death, risk of dementia, heart disease, stroke, and mental illness (National Academies of Sciences, Engineering, and Medicine 2020).

Social isolation was one of the leading reasons for MBCHCH community health worker encounters over the 2019/2020 to 2021/2022 fiscal years, indicating that many Ignace residents experience loneliness and trouble connecting with a support network. This challenge may have been exacerbated by the COVID-19 pandemic (see **Section 4.3.6.2, Table 4.3-7**) (Briere et al. 2023; NWO Baseline Studies Key Person Interview Program 2022-2023).

Self-reports of residents of the NWHU (living off-reserve) show that a high percentage feel a strong sense of social belonging in their community. Canadian Community Health Survey ("CCHS") data suggests that nearly 80% of residents in the NWHU feel a somewhat strong or very strong sense of belonging in their community. In Ontario, this is closer to 70% (Statistics Canada 2022b).

Community Health and Wellness Survey Results

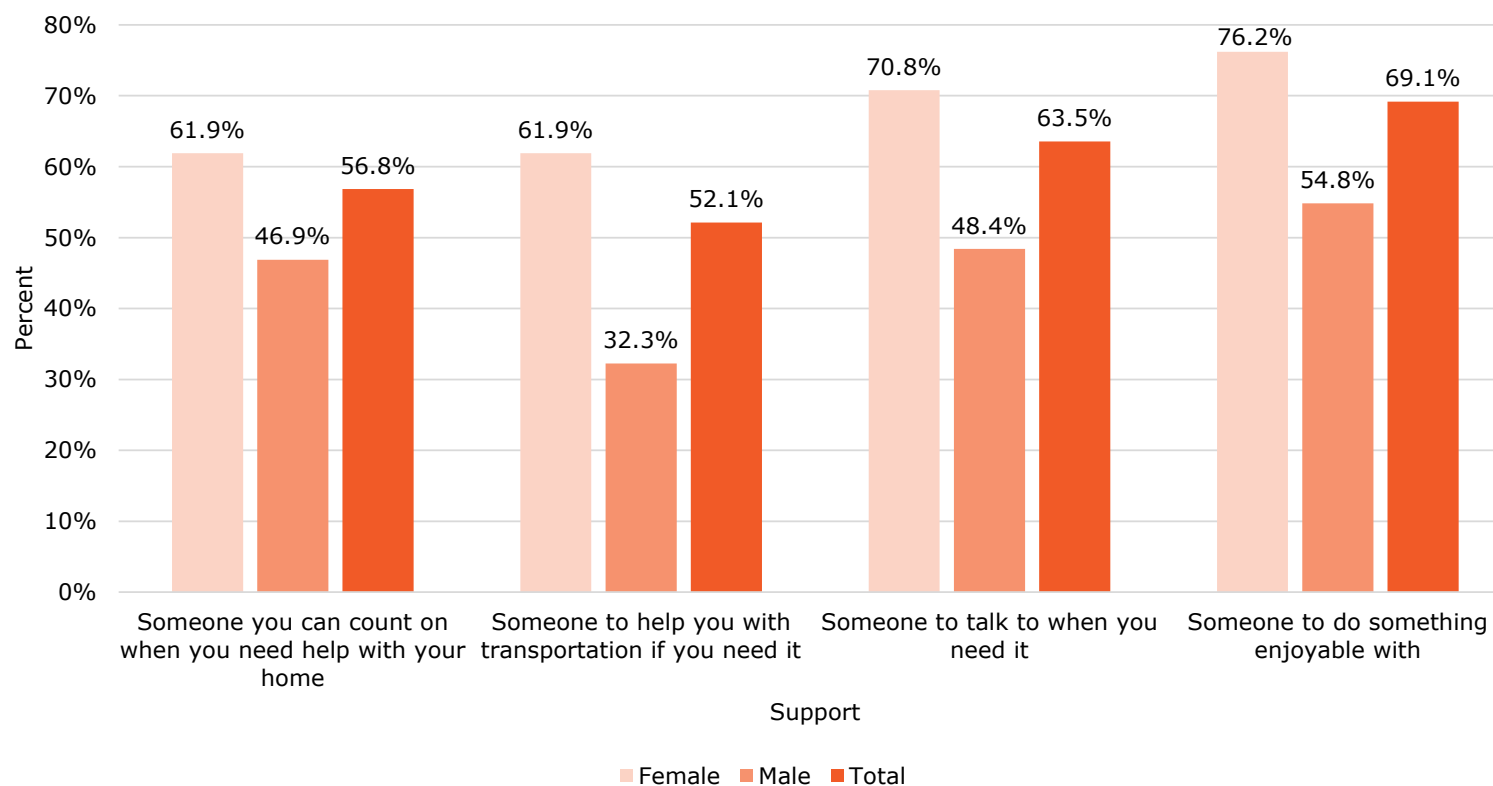
Community Health and Wellness Survey (2023) responses show that:

- 63.5% of respondents feel they have someone to talk to when they need it;
- Most respondents (69.1%) felt they had someone to do something enjoyable with at least sometimes, while 14.6% reported never or almost never having someone to do something enjoyable with; and
- 56.8% said they had someone to help with their home and 52.1% said they had someone to help with transportation.

Figure 4.2-3 shows community members' perceptions of social and community supports and presents the proportions of Community Health and Wellness Survey (2023) respondents reporting each support at least "sometimes". A smaller proportion of male respondents reported having supports; 76.2% of female and 54.8% of male respondents reported having someone to do something enjoyable with. Over 32% of male respondents said they had someone to help with transportation as compared to 61.9% of female respondents. This may reflect a difference in needs; it may be that males are less likely to need support with transportation. While numbers were too small to identify trends by age group, overall, older age groups appeared somewhat more likely to report not having the named supports, supporting concerns about seniors' wellbeing in the Local Study Area (NWO Baseline Studies Key Person Interview Program 2022-2023). However, during the Ignace Silver Tops Focus Group (2023), seniors highlighted their appreciation of the local seniors' centre and the opportunities for connection that it facilitates, although this view may not be shared by all seniors in the community.

Transportation challenges was a common theme among survey respondents and participants of the NWO Baseline Studies Key Person Interview Program (2022-2023). Participants also expressed a shift in social connection following the onset of the COVID-19 pandemic, noting lower in-person community engagement and more online interaction, which may contribute to these findings.

Figure 4.2-3: Social Supports Available (Sometimes or Often) for Ignace Survey Respondents by Sex^{1,2,3}



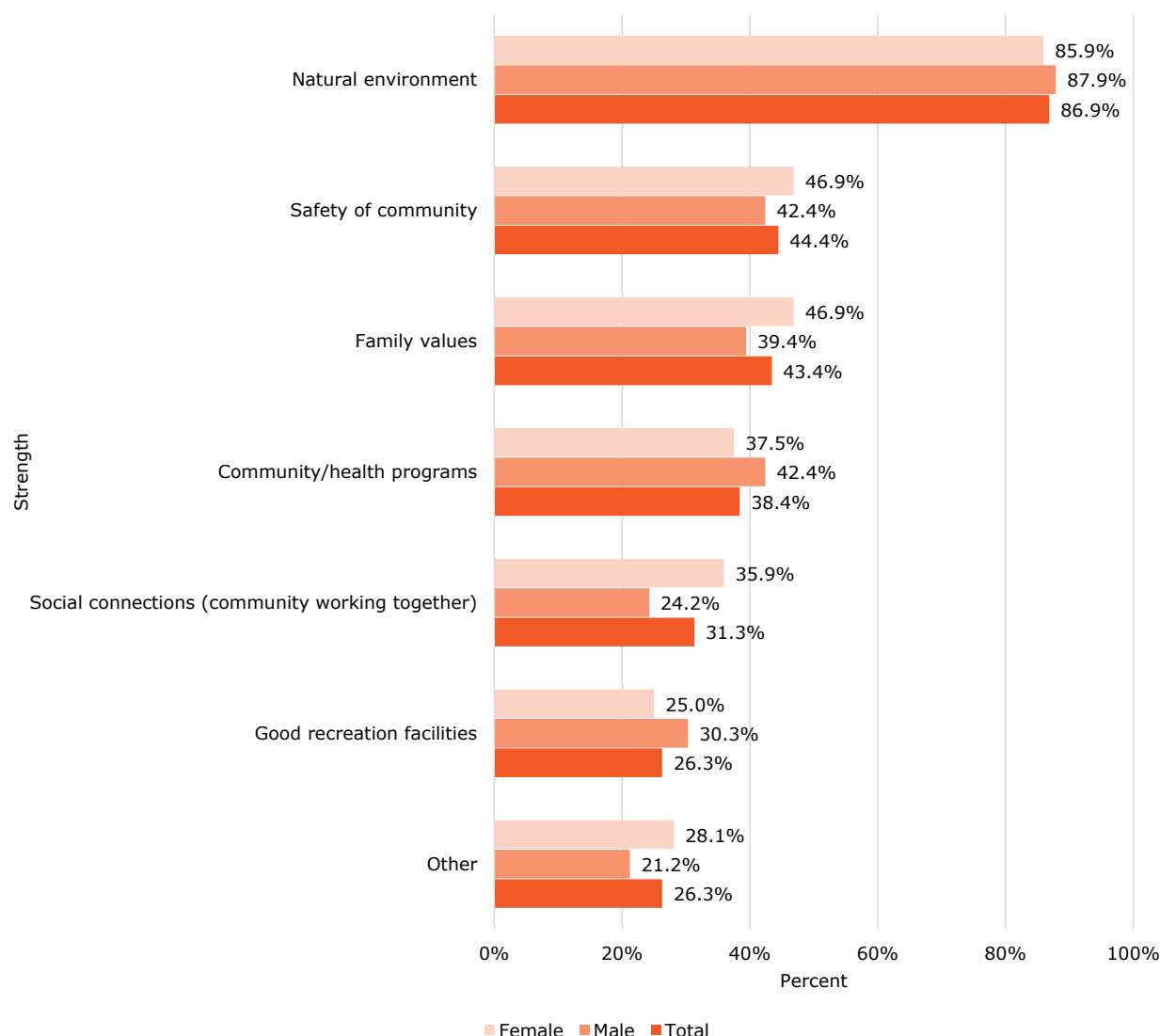
Source: InterGroup & EPI Research Inc. 2023. and Wellness Adult Survey, March/April 2023.

Notes:

1. Answered: 99 answered at least one question, did not answer: 5.
2. For each question, between 15.6% and 27.1% responded "don't know".
3. Data are presented in **Appendix 4B**.

Figure 4.2-4 displays community strengths most commonly identified by Community Health and Wellness Survey (2023) respondents. Respondents could select more than one response. The most reported strengths were the natural environment (86.9% of respondents), safety of community (44.4% of respondents), and family values (43.4% of respondents). There were no major differences between the responses by males and females. The survey results align with feedback from the Silver Tops Focus Group (2023), where residents shared their sense of pride in the natural environment, the feeling that neighbours are willing to lend a helping hand, and the sense of safety residents feel in the community, particularly feeling comfortable that neighbours will look out for their children when out in the community. Participants of the Silver Tops Focus Group (2023) noted that tension and division exist in the Township, with residents often feeling strongly opposed on important issues at the time of engagement, such as leadership challenges and turnover at the municipal level. See **Section 2.3.3.1 Community Character and Heritage** for more information on Ignace community cohesion and values.

Figure 4.2-4: Community Strengths Identified by Ignace Survey Respondents by Sex^{1,2,3}



Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 99, did not answer: 5.
2. "Other" includes education and training, strong economy and jobs, strong leadership, awareness of first nations, traditional ceremonial activities.
3. Data are presented in **Appendix 4B**.

4.2.6 Health Behaviours

Health behaviors refer to those actions by which individuals can help to prevent diseases and support good health. It is also important to note the influence of social, economic, and environmental factors on the decisions people make about their health. There is a growing recognition that personal life "choices" are greatly influenced by the socio-economic environments in which people live, learn, work, and play. These influences impact lifestyle choice through at least five areas: personal life skills, stress, culture, social relationships and belonging, and a sense of control (Public Health Agency of Canada 2013).

Table 4.2-4 presents key risk factors associated with chronic disease in the NWHU and Ontario for the 2015/2016 to 2019/2020 fiscal years. Generally, risk factor rates, including rates of obesity, smoking and heavy drinking, are higher among residents of the NWHU, although this is declining. Participation in physical activity and consumption of fruits and vegetables were similar among NWHU and Ontario residents. Just over one in four adults consume the recommended intake of fruits and vegetables daily; a major risk factor for obesity and poor health.

Table 4.2-4: Chronic Disease Self-Reported Risk Factors (CCHS), NWHU and Ontario, 2015/2016 to 2019/2020^{1,2,3,4}

Indicator (percent of respondents)	NWHU			Ontario		
	2015 / 2016	2017 / 2018	2019 / 2020	2015 / 2016	2017 / 2018	2019 / 2020
Adjusted self-reported body mass index (age 18+; overweight)	28.8% L	38.1%	31.8%	35.2%	37.0%	35.4%
Adjusted self-reported body mass index (age 18+; obese)	37.6% H	33.6% H	41.2% H**	26.2%	25.9%	28.1%
Current smoker (daily or occasional; age 12+)	23.9% H	19.0%	18% H	16.7%	15.3%	12.7%
Heavy drinking (age 12+)	25.5% H	24.6% H	20.2% H	18.2%	17.6%	15.6%
Physical activity (150 minutes per week; age 18+)	61.5%	52.8%	N/Ann	57.4%	54.9%	N/A
Fruit and vegetable consumption (5 times or more per day; age 12+)	27.0%	N/A	N/A	27.8%	N/A	N/A

Source: Statistics Canada 2022b.

Notes:

1. Off Reserve only.
2. H = Statistically higher than provincial rate. L = Statistically lower than provincial rate.
3. ** Signifies that only this indicator changed significantly from previous time period.
4. Data are presented in **Appendix 4B**.

4.2.6.1 Healthy Weight

Being within a healthy weight range is associated with reduced risk for a variety of chronic diseases. Between 2015/2016 and 2019/2020, at least one in three NWHU adults (living off-reserve) reported a body mass index in the obese range (see **Table 4.2-4**). NWHU obesity rates in 2015/2016 and 2019/2020 were statistically higher than the Ontario averages. This may be attributed, in part, to the remoteness of communities in the region and associated difficulties in obtaining healthy foods locally as noted in **Section 4.2.5.1**. This information is not available for Ignace residents.

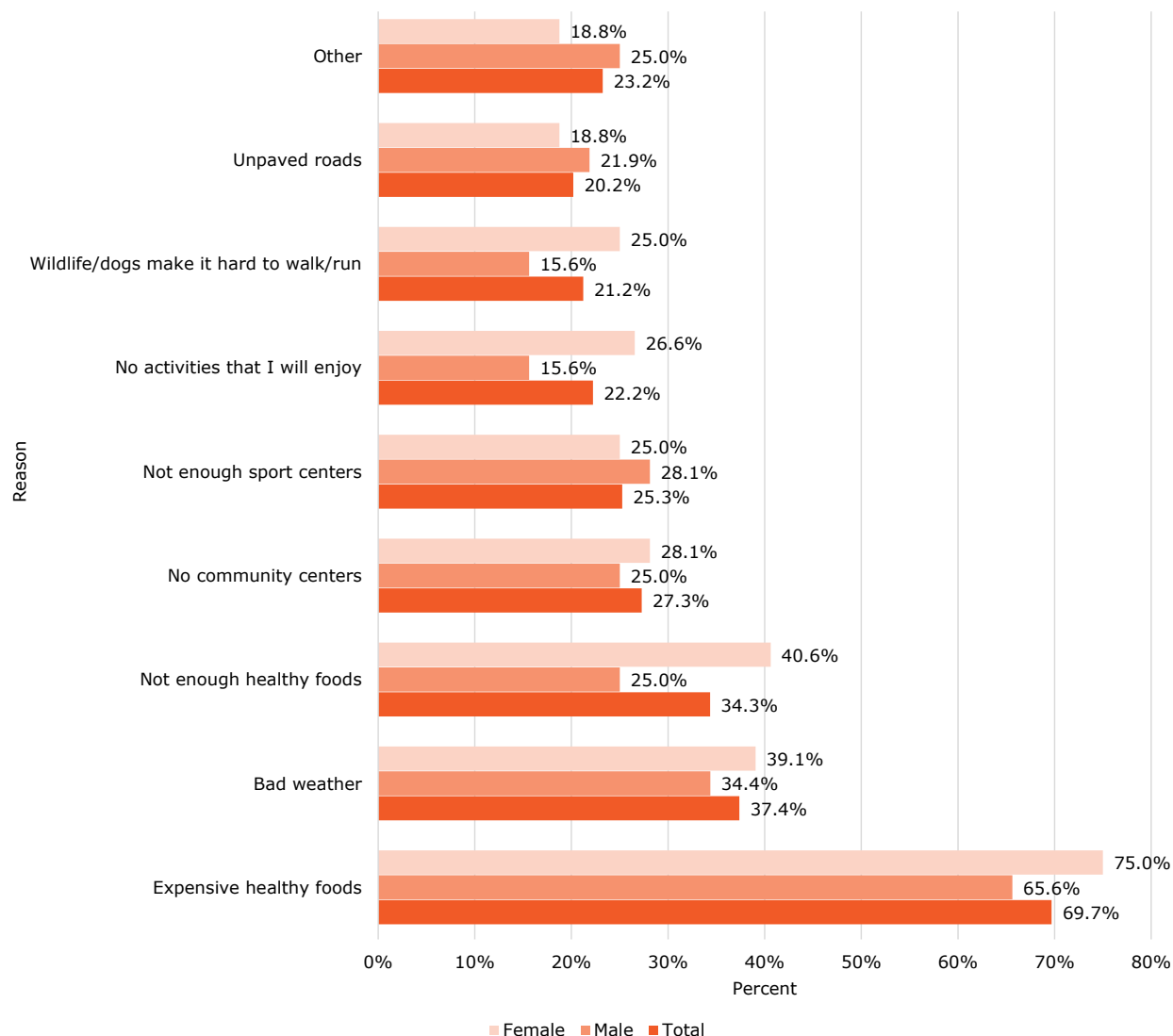
4.2.6.2 Physical Activity

Physical activity is important for overall health in people of all ages. It is particularly important due to its role in preventing chronic diseases including cancer, cardiovascular disease, and diabetes, which form a large proportion of the morbidity and mortality burden, particularly in Northwestern Ontario (see **Section 4.4.7 Mortality**) (CDC 2023a). In 2017/2018, approximately half of NWHU adults (living off-reserve) reported at least 150 minutes of physical activity per week, a similar proportion to Ontario (see Table 4.2-8). However, this highlights that nearly half the adult population is less active than they could be to best support their health.

Community Health and Wellness Survey Results

While Community Health and Wellness Survey (2023) respondents were not asked to identify their level of activity, they were asked to identify any barriers they experience regarding a healthy lifestyle, including physical activity (see **Figure 4.2-5**). Bad weather was identified by respondents (37.4%). While less reflected in survey responses, a recurring theme among NWO Baseline Studies Key Person Interview Program 2022-2023 participants was the need for more organized healthy activities in the community, especially for youth, and noted that the conditions of the recreational facilities could be improved. Some survey respondents were positive about opportunities for physical activities, noting the presence of a gym and paved roads for walking or running, although there were concerns around winter maintenance.

Figure 4.21.6-5: Factors Affecting Healthy Lifestyle in the Community, Ignace Survey Respondents 2023^{1,2,3}



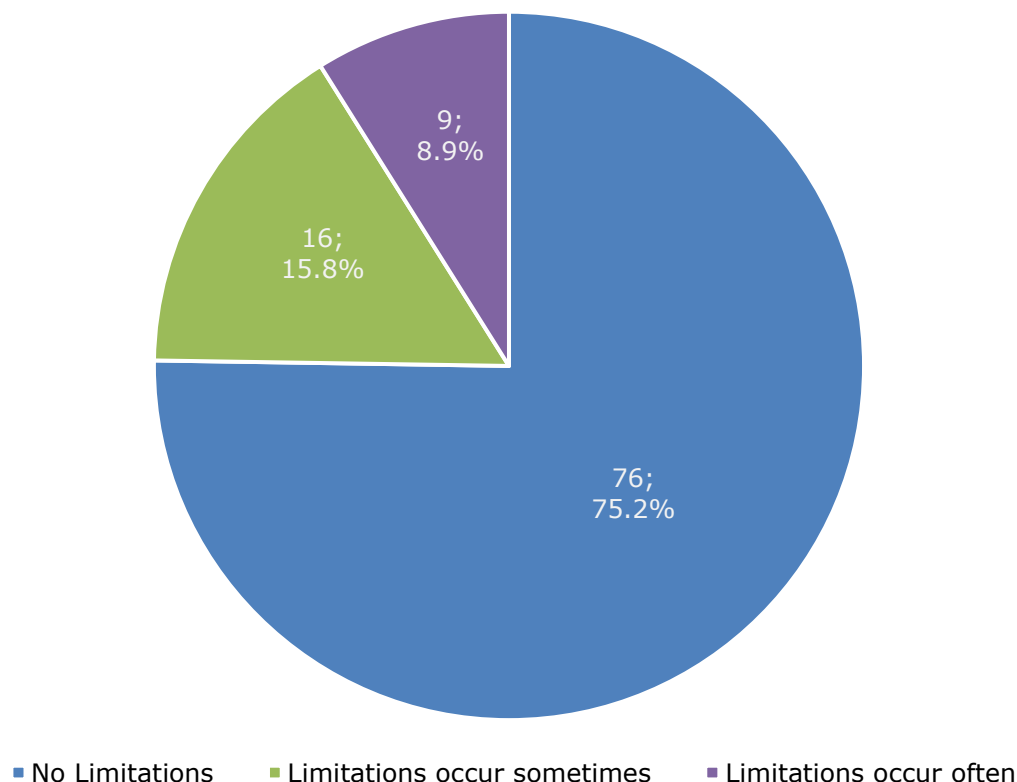
Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 99, did not answer: 5.
2. "Other" includes education and training, strong economy and jobs, strong leadership, awareness of first nations, traditional ceremonial activities.
3. Data are presented in **Appendix 4B**.

As shown in **Figure 4.2-6**, most survey respondents (75.2%) did not report being limited in work or daily activities due to physical or mental health conditions, while 15.8% reported sometimes being limited, and 8.9% reported being limited often. A higher proportion of males than females reported limitations. Most of those reporting limitations were in older age categories.

Figure 4.2-6: Limitation to Activities because of Physical or Mental Conditions, Ignace Survey Respondents 2023^{1,2}



Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 101, did not answer: 3.
2. Data are presented in **Appendix 4B**.

4.2.6.3 Food Security

Food insecurity is the inability to obtain a sufficient diet due to income-related food access (Public Health Ontario 2023s). Households with lower incomes are more likely to be food-insecure (Tarasuk 2022). People living in food insecure households are more likely than others to be diagnosed with chronic conditions and mental health disorders, as a healthy, varied diet is an important contributor to good health (Jessiman-Perreault and McIntyre 2017).

According to Tarasuk (2022), a survey conducted off-reserve in Canadian provinces showed that:

- 63% of households relying on social assistance were food insecure;
- 42% of households relying on COVID-19 benefits were food insecure; and
- 39% of households relying on Employment Insurance were food insecure.

Further, findings showed that household food insecurity is racialized, with 30.7% of Indigenous peoples living off-reserve (not including territories) in Canada reporting being food-insecure (Tarasuk 2022). First Nations and Métis peoples are more likely to access social assistance, have larger families, be below the low-income level, and have lower levels of education, contributing to a higher prevalence of food insecurity (NCCIH 2015).

Rural, northern areas have greater challenges with healthy eating, especially fruits and vegetables, as perishable foods are harder to transport, more expensive, and may be lacking in variety at smaller, local stores, which contributes to food insecurity (Health Quality Ontario 2017). According to Public Health Ontario, between 2018 and 2020, 20.1% of residents of the NWHU were food insecure (ranking 3rd highest among all health units in Ontario) compared to the provincial average of 16.7% (Public Health Ontario 2023t). In 2022, it was estimated that 67.2% of Ontario households relying on social assistance were food insecure, which is higher than the national average (63%) (NWHU 2022b). It is important to note that even those with full-time employment may struggle to feed their family due to high costs of living.

Although data are limited, in 2015/16 the CCHS (off-reserve only) did not identify a difference in fruit and vegetable intake among residents of the NWHU compared to Ontario. Both rates saw approximately one in four adults consuming 5 or more fruits or vegetables per day (see **Table 4.2-4**).

Community Health and Wellness Survey Results

According to Community Health and Wellness Survey (2023) results, the large expense of healthy food was a barrier to a healthy lifestyle noted most frequently in responses (67%). More than 1 in 4 respondents indicated that they had trouble paying for food at least “sometimes” in the previous year. Food access was a major concern shared during the NWO Baseline Studies Key Person Interview Program 2022-2023. Participants highlighted the high costs of local grocery store food and limits on selection and quality, particularly for healthy foods such as fresh produce. Participants noted that Ignace residents will often drive out of town for more grocery options and lower prices, requiring additional time and resources. This is a particular barrier for those who do not have the ability to travel out of town to access healthier and more affordable foods.

4.2.6.4 Smoking

Smoking is a leading cause of preventable and premature death in Ontario; it causes lung and other cancers, respiratory illness, and cardiovascular diseases (Public Health Ontario 2020). Smoking is not only harmful to the individual smoking, but second-hand smoke exposure is a particular concern for children (see **Section 4.2.4.1**).

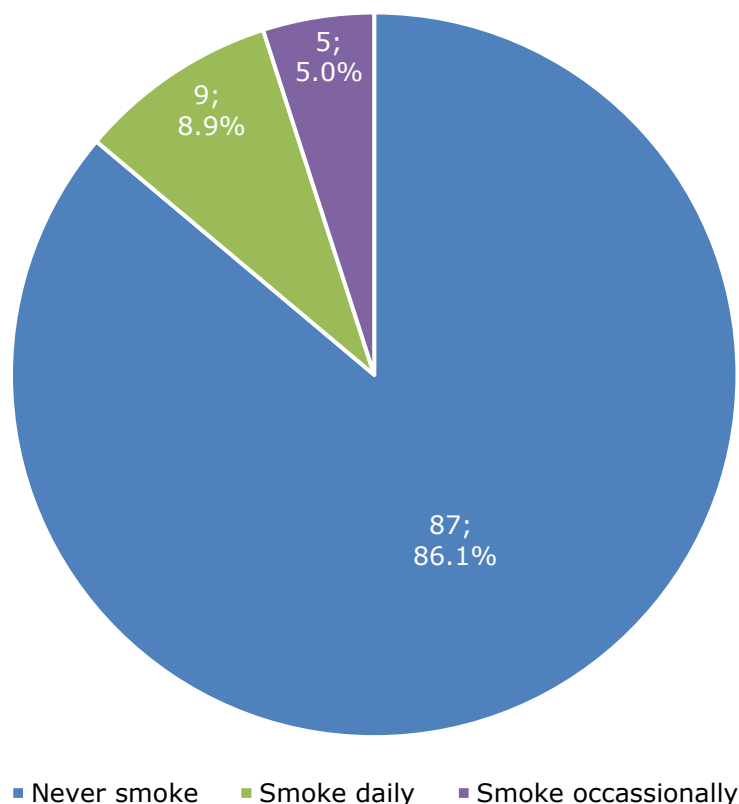
The 2019/2020 NWHU daily or occasional smoking rate(18%) is higher than the provincial rate of 12.7% (off-reserve only) (Statistics Canada 2022b). In all cases, the largest associations were between smoking and cancer and smoking and respiratory illness. From 2015 to 2017, smoking-related cancer and respiratory illness accounted for 45.5% and 62.9% of smoking-related deaths in the NWHU, respectively. During the same period, smoking-related cancer and respiratory illness accounted for 38.3% and 55.4% of smoking-related hospitalizations. It is estimated that on average, smoking accounts for 19% of deaths, 9% of hospitalizations, and 3.5% of

emergency department (“ED”) visits. See **Appendix 4B Supplemental Data** for more data related to smoking and death, hospitalization, and ED visits among the NWHU and Ontario.

Community Health and Wellness Survey Results

Figure 4.2-7 shows the distribution of smoking practices of Ignace Community Health and Wellness Survey (2023) respondents. Most respondents (86.1%) reported that they do not currently smoke. Of the 14 respondents who reported that they currently smoke, 9 said they do so daily and 5 said they do so occasionally. These results are similar to the 2020/2021 CCHS results which found that 12.7% of Ontario respondents smoke daily or occasionally, as did 18% of NWHU respondents (off-reserve only). Those who smoke were further asked about their perspectives on quitting smoking. Of the 12 currently smokers who provided an answer, seven reported ambivalence around quitting, responding that they were not sure whether or not they wish to quit. Four reported definitively wanting to quit, while one did not express a desire to quit.

Figure 4.2-7: Smoking among Ignace Survey Respondents^{1,2}



Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 101, did not answer: 3.
2. Data are presented in **Appendix 4B**.

4.2.6.5 Alcohol and Substance Use

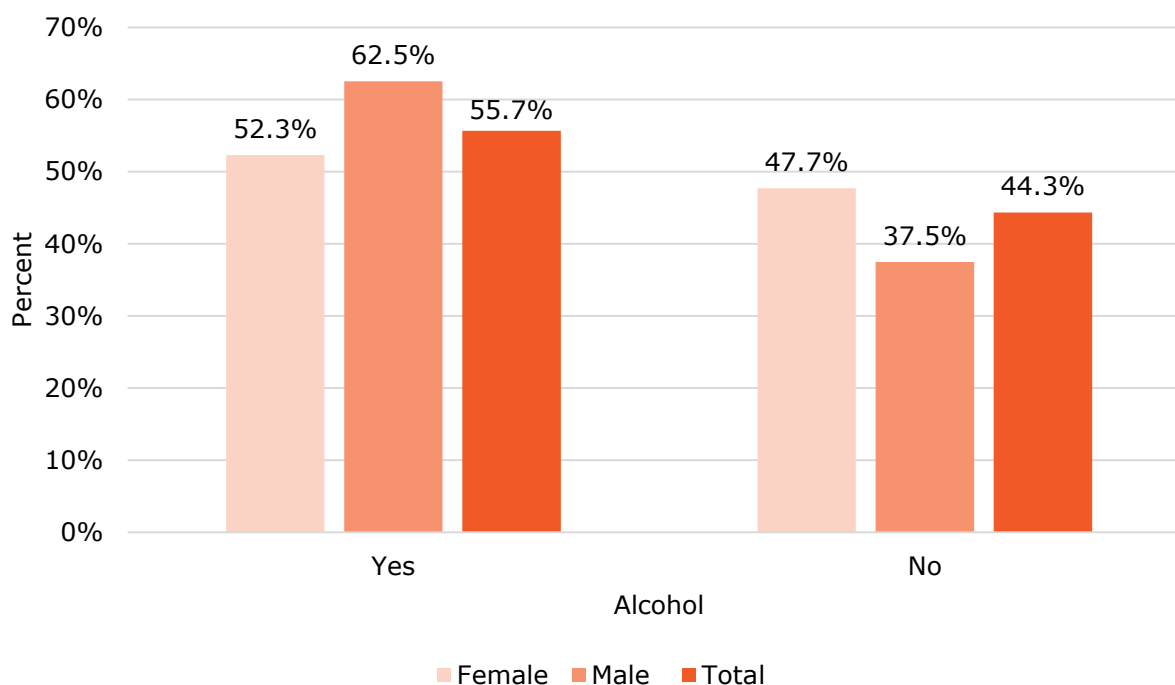
Substance use (i.e., the consumption of alcohol, cannabis, opioids, or other drugs) can cause harms such as substance use disorders, overdose, infectious diseases, and other complications.

2019/2020 CCHS data shows a higher prevalence of heavy drinking in the NWHU (20%) compared to Ontario (15.6%) (Statistics Canada 2022b). Overall, in the NWHU, alcohol is estimated to account for approximately 5% of deaths, 4% of hospitalizations, and 6% of ED visits. Among residents of the NWHU, alcohol accounts for approximately 14% of cancer deaths, over 60% of deaths due to digestive conditions, and one in five deaths due to unintentional injury. See **Appendix 4B Supplemental Data** for data related to alcohol and death, hospitalization, and ED visits among the NWHU and Ontario.

Community Health and Wellness Survey Results

Just over half (55.7%) of Community Health and Wellness Survey (2023) respondents reported that they drink alcohol (**Figure 4.2-8**). The difference in proportion between males and females who drink is not statistically significant.

Figure 4.2-8: Alcohol Usage of Ignace Survey Respondents by Sex^{1,2}



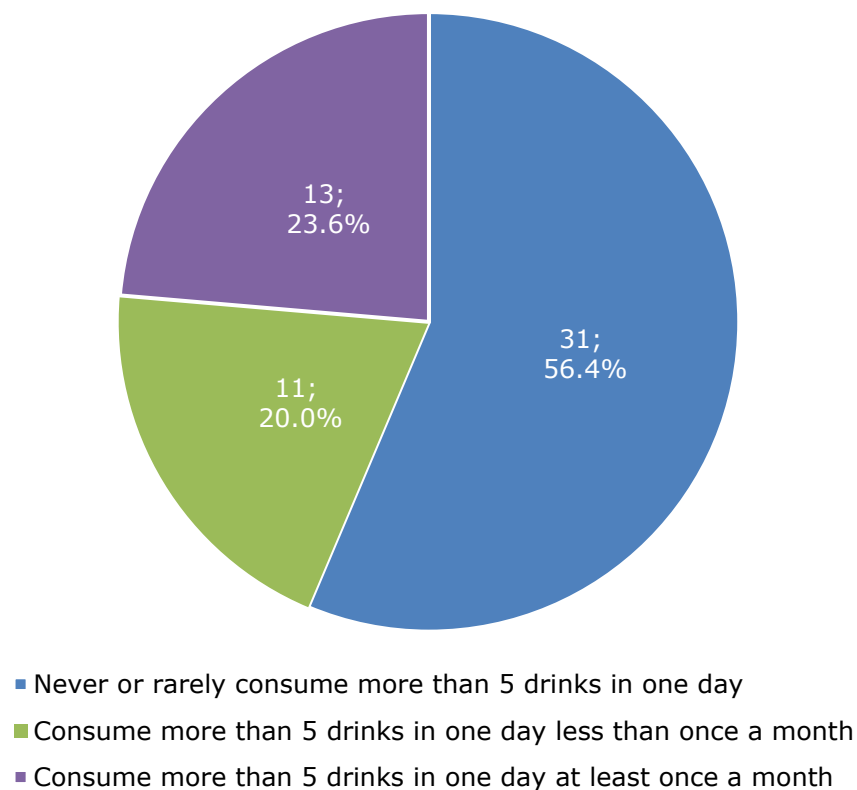
Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 97, did not answer: 7.
2. Data are presented in **Appendix 4B**.

Many of those who reported drinking alcohol reported usually drinking moderately, with over half (56.4%) of current drinkers saying they drink more than five drinks of alcohol in one day never or rarely (see **Figure 4.2-9**). Nearly one-quarter (23.6%) consume more than five alcoholic drinks a day at least once a month, while 20% reported that they do this less than once a month. There were no significant differences in the responses of males and females, as shown in **Figure 4.2-10**.

**Figure 4.2-9: Frequency of Five or More Alcohol Drinks in One Day
Ignace Survey Respondents^{1,2}**

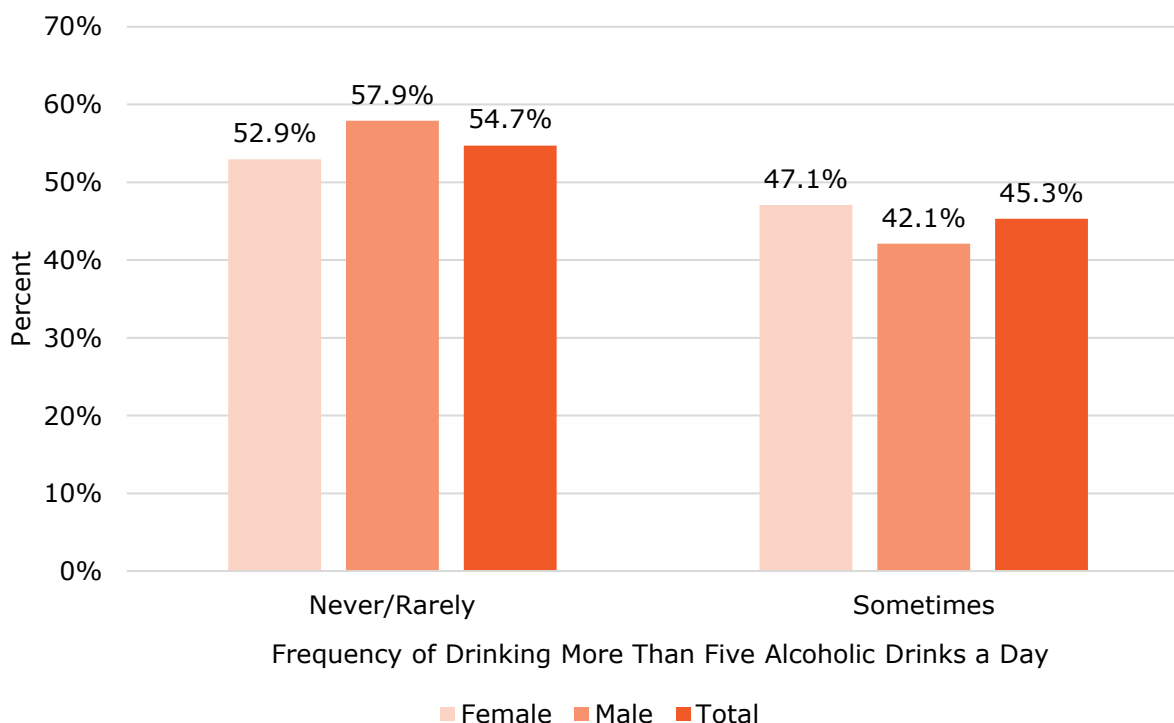


Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 56, did not answer: 0.
2. Data are presented in **Appendix 4B**.

Figure 4.2-10: Frequency of Drinking Five or More Alcohol Drinks a Day by Sex Ignace Survey Respondents^{1,2}



Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 54, did not answer: 0.
2. Data are presented in **Appendix 4B**.

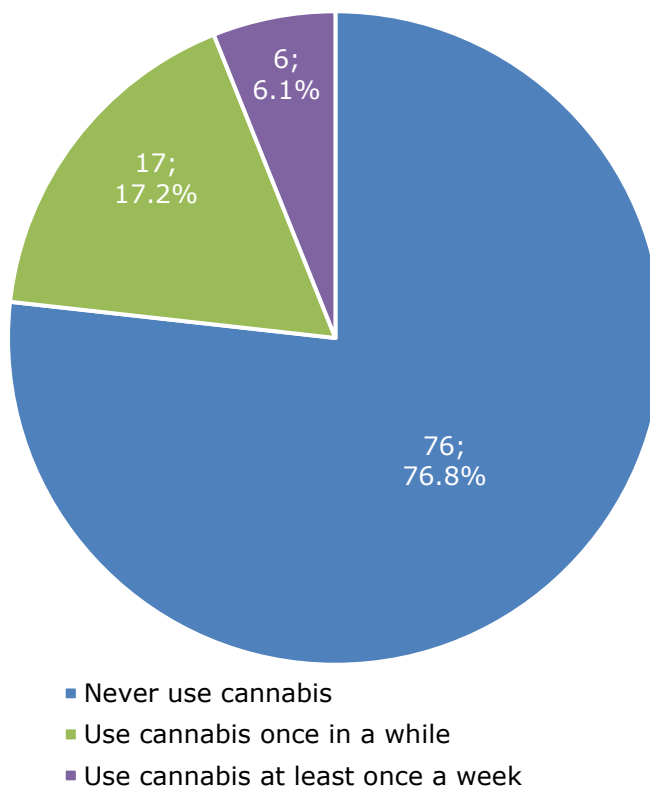
Community Health and Wellness Survey (2023) respondents were also asked if they had used cannabis, inhalants, or prescription drugs not prescribed to them within the past year. While most reported not using cannabis in the past year (76.8%), 17.2% reported using cannabis once in a while, and 6.1% reported using cannabis at least once a week (**Figure 4.2-11**) for a total of 23.2% of respondents who had used cannabis within the last year. A very small number of respondents reported using inhalants or prescription drugs not prescribed to them, with no respondents indicating they used them more than once a week. The Community Health and Wellness Survey (2023) results are similar to the 2021 CCHS results, which indicated that 23.0% of Ontario respondents had used cannabis within the previous year. A higher proportion of female respondents reported using cannabis, although the difference does not reach statistical significance.

Almost all respondents indicated that they had never needed or received substance use or addiction treatment. However, this appears to contrast general community perceptions about substance use. In Ontario, opioid-related emergency department visits have been on the rise

since 2013, with marked increases since 2016 (Public Health Ontario 2023n). Several survey respondents shared that drugs were one of their top three health or social concerns in the community. Further, NWO Baseline Studies Key Person Interview Program 2022-2023 participants noted increases in drug use and the lack of supports for addictions as an issue in the Local Study Area and Regional Study Area. Results from the GBA+ Workshop 2023 also pointed to the lack of housing and the shut down of major employers, such as the paper mill in Dryden, in Northwestern Ontario as a contributor to the increase in alcohol and drug use as well as the selling of drugs in the Regional Study Area (see **Section 4.2.5.2** for more information on housing in the study area). Concerns regarding youth accessing drugs were also noted.

These reflections suggest that survey respondents' self-reports did not fully capture the extent of drug use in the community, likely due to the voluntary nature of the survey and/or discomfort in disclosing details on personal drug use.

Figure 4.2-11: Cannabis Use of Ignace Survey Respondents^{1,2}



Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 99, did not answer: 5.
2. Data are presented in **Appendix 4B**.

4.2.7 Child Development

Healthy child development and childhood experiences provide a foundation for health in later life. This begins in fetal and infant development and continues throughout childhood. Determinants of health such as social supports, educational opportunities, recreational opportunities, mental health supports, and healthy behaviours are important for youth well-being and to provide the foundation for health throughout the lifespan. Youth who are supported socially, educationally, and have access to resources and information for healthy behaviours are better equipped to stay well, reduce their risk of chronic disease, and develop into healthy community members.

Healthy child development is assessed through metrics such as the Early Development Instrument (EDI), which is a kindergarten teacher-completed checklist that assesses five areas of early childhood development, including (Canadian Institute for Health Information 2021b):

- Physical health and well-being;
- Social competence;
- Emotional maturity;
- Language and cognitive development; and
- General knowledge and communication skills.

As of 2017-2018, more children in the NWHU (32.3%) were assessed as vulnerable in one or more of these areas compared to Ontario (25.8%) (Public Health Ontario 2023r). Vulnerability in early childhood development¹⁰¹ is 2.2 times higher in materially and socially deprived communities, 1.8 times higher in the lowest-income communities, and 2.0 times higher among Indigenous children than non-Indigenous children (Public Health Agency of Canada 2018b).

Public Health Ontario (2022a) identifies several risk factors for healthy child development, many of which are measured in infancy, including an infant having a single mother, having a family with concerns about money, having no primary care provider, and needing newcomer support. Other risk factors include having a parent with mental illness or disability. Similar risk factors impact infant mortality rates. Equity factors, including income and education, are highly correlated with rates of infant mortality. On average, rates decrease as income increases (except for within the highest two income groups) and rates decrease with every increment of education increase. Between 2013 and 2022, about 1 in 3 Ignace mothers reported having at least one mental health concern during pregnancy (see **Section 4.4.2.2.5**). This percentage is not notably different from the comparison area rates but is high and suggests ongoing need for mental health support among expectant mothers in Ignace. Healthy Babies Healthy Children ("HBHC") screening results from 2014 to 2021 show that just over 1 in 10 Ignace mothers (12.1%) are a single parent and 23% of Ignace mothers did not complete high school (see **Appendix 4B Supplemental Data**). This is not statistically different from the Regional Study Area. Between 2018 and 2021, 88.9% of Ignace women who gave birth were screened prenatally, much higher

¹⁰¹ This is measured based on a combination of factors including education, income, living alone, marital status, and single-parent status.

than the provincial target rate of 10% (ISCIS 2022). For more information on maternal and child health see **Section 4.4.2**.

As shown in **Table 4.2-5**, Canadians living in the most materially deprived areas have rates of infant mortality 1.6 times higher than the rates of those living in the least deprived areas¹⁰² (Public Health Agency of Canada 2018c). Areas where more Indigenous peoples live also have a higher infant mortality rate. Rates are around twice as high in areas with a high First Nations or Métis population (Public Health Agency of Canada 2018c). Additional information on infant health can be found in **Section 4.4.2 Maternal and Child Health**.

Table 4.2-5: Infant Mortality Rate by Income and Education in Canada¹

	Rate per 1,000 live births (birth weight 500+ g)	
	By Income	By Education
Lowest Quintile	4.7	4.5
2 nd Lowest Quintile	3.8	3.8
Middle Quintile	3.6	3.5
2 nd Highest Quintile	3.0	3.3
Highest Quintile	3.2	2.8

Source: Public Health Agency of Canada 2018c.

Notes:

1. Data are presented in **Appendix 4B**.

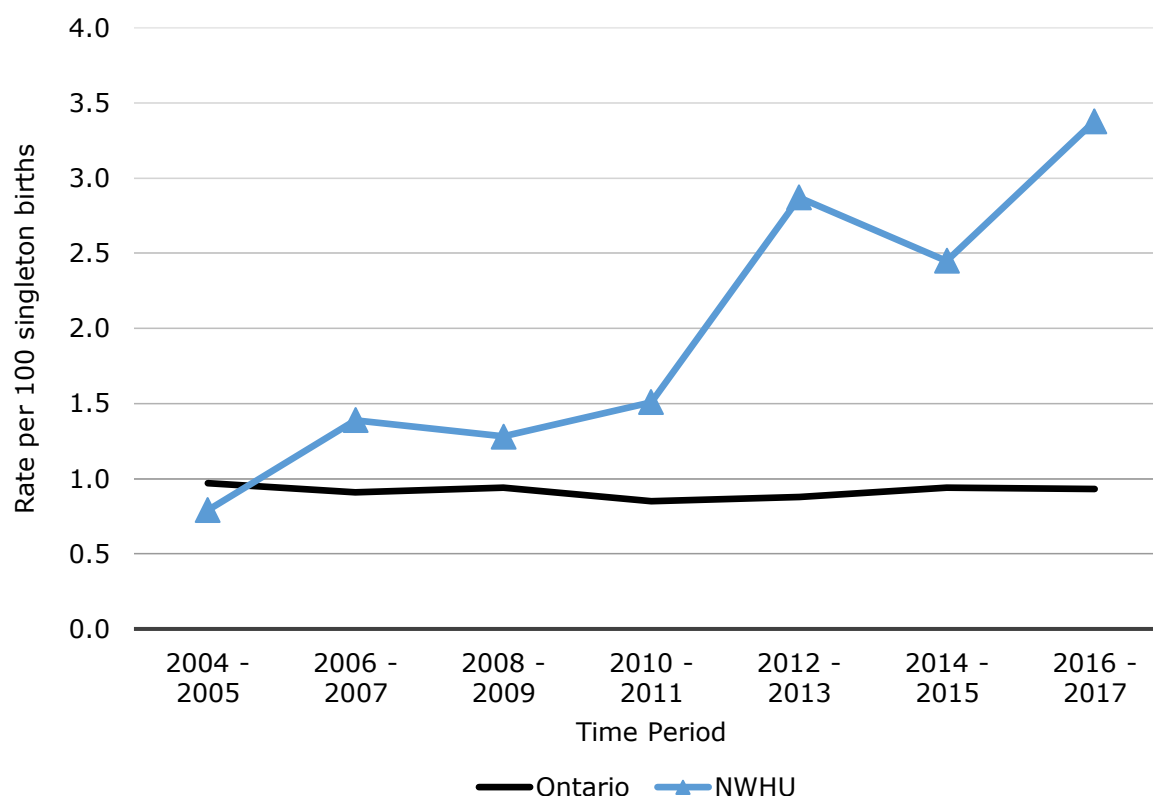
4.2.7.1 Low Birth Weight

Data from Public Health Ontario (2018b) show strong connections between level of marginalization and low birth weights in the NWHU area, specifically with the dependency measure of marginalization (area-level concentrations of people who do not have income from employment). The ratio of low birth weights in the highest marginalization quintile compared to the lowest marginalization quintile is well over one in the NWHU, and has been increasing, as shown in **Figure 4.2-12**. In 2016/2017, the rate of low birth weights among the most marginalized group was over three times the rate found in the lowest marginalization group.

Between 1996 and 2021, most infants born to Ignace residents (93.7%) were in the normal birth weight range. Low birth weight infants accounted for 2.9% of births during this period (see **Section 4.4.2.3.8**). This was lower than the proportion of low weight infants in the NWHU during this time (3.2%).

¹⁰² Material deprivation (among those aged 15 years and older) is defined by: high % of people with no high school diploma; low employment/population ratio; and low average income.

Figure 4.2-12: Low Weight Birth Rates, Rate Ratios Between Lowest and Highest Dependency Ratio Quintiles, NWHU and Ontario, 2004–2005 to 2016–2017^{1,2}



Source: Public Health Ontario 2018b. Extracted January 16, 2023.

Notes:

1. Local cut offs were used to determine quintiles, weighted specifically for each individual area of interest. Each quintile will contain 20% of all dissemination areas within a given area.
2. Data are presented in **Appendix 4B**.

4.2.7.2 Breastfeeding

Breastfeeding is associated with better infant health and lessens the financial burden of caring for a baby's needs (Public Health Agency of Canada 2020b).

The top three reasons that mothers in Canada cite for not breastfeeding are having a medical condition, bottle feeding is easier, and breastfeeding is unappealing (Health Canada 2010). A high proportion of Ignace mothers report breastfeeding either exclusively or in combination with other feeding methods. Between 2013 and 2022, 87.1% of Ignace mothers reported breastfeeding, compared to 80.3% of mothers in the NWHU (see **Section 4.4.2.2.6**). Some NWO Baseline Studies Key Person Interview Program 2022-2023 participants highlight that

sometimes the supports and resources available for breastfeeding are not sufficient or easy enough to access.

Bottle feeding is a less accessible option for mothers in the Local Study Area, as NWO Baseline Studies Key Person Interview Program 2022-2023 participants noted the high cost of baby food and unavailability of many baby food options.

4.2.7.3 Youth and the Social Determinants of Health

Social determinants of health such as social supports, educational opportunities, recreational opportunities, mental health supports, and healthy behaviours are important for youth well-being to provide the foundation of health throughout the lifespan.

Youth mental health crises and relationship to inequity are further highlighted by the high rates of self-harm among Indigenous youth (Health Quality Ontario 2017). Youth who are supported socially, educationally, and have access to resources and information for healthy behaviours are better equipped to stay well, reduce their risk of chronic disease, and develop into healthy community members.

While information directly from youth in Ignace is unavailable, other sources of information related to the Regional Study Area are presented. Information about youth in the NWHU includes participants from Ignace in the 2021-2022 COMPASS youth survey, which is conducted at participating schools for students in grades 9-12 (University of Waterloo 2022).

4.2.7.3.1 Youth Education and Employment Goals

Most youth in the NWHU area report that good grades and post-secondary education are important goals for them, according to the 2021-22 COMPASS survey (University of Waterloo 2022). However, more than half of youth reported worrying about falling behind due to COVID-19.

Many NWO Baseline Studies Key Person Interview Program 2022-2023 participants shared concerns about opportunities for youth. Comments included the limited opportunity for things to do outside of school for youth as they get older (there is more opportunity for younger children). The majority of NWO Baseline Studies Key Person Interview Program 2022-2023 participants mentioned the positive school environment and connection to the community.

Realities of a small population and school size mean that there are limitations in course options in high school, potentially limiting the possibilities for exploring further educational and career options. Other NWO Baseline Studies Key Person Interview Program 2022-2023 participants noted that once youth finish high school, they may not want to leave, but without further skills and education, may have trouble finding employment as there are limited "career path" opportunities in Ignace, including those related to apprenticeships and on-the-job mentoring. NWO Baseline Studies Key Person Interview Program 2022-2023 participants connected this to youth mental health and further supports needed for youth.

4.2.7.3.2 Youth Social Supports and Coping Skills

Among NWHU youth respondents to the 2021-22 COMPASS survey (University of Waterloo 2022), 63% reported supportive and rewarding social relationships. However, COVID-19

appeared to impact social supports for youth, with 51% reporting their loneliness increased because of COVID-19.

Youth also reported the following:

- While 21% reported bullying, a much greater percentage (61%) reported feeling unwelcome and uncomfortable at school. The most common reasons were because of an emotional challenge, their race, or their sexual orientation, suggesting that youth struggle with belonging or acceptance in school due to aspects of their identity.
- 59% of youth reported feeling engaged and interested in their daily activities, suggesting that the large proportion of youth who did not respond affirmatively may lack a connection to inspiring academic, social, or recreational opportunities in their daily life. These are risk factors to well-being as youth continue into adulthood.

During the Youth Focus Group 2023, Ignace youth shared that they like the small-town feeling of knowing their neighbours and felt their community provided a feeling of safety. Youth also shared that they felt there isn't as much opportunity for social activities in the community.

4.2.7.3.3 Youth Physical Activity

Sports and recreational physical activities can benefit youth through supporting self-esteem as youth challenge themselves to learn and improve new skills. Physical activity often declines throughout adolescence.

Encouragingly, in the NWHU, 71% of youth participating in the 2021-2022 COMPASS survey reported meeting the national guideline of 60 minutes of daily physical activity compared to the Ontario average of 42%. However, 34% reported that their physical activity had decreased because of the COVID-19 pandemic. Female youth were less active than male youth, with 68% reporting meeting the physical activity guideline compared to 75% of male youth (University of Waterloo 2022).

During the Youth Focus Group 2023, Ignace youth shared that they felt youth in the community are becoming less active, and part of this may be attributed to both a lack of activities and opportunities provided in the community as well as youth getting used to staying inside and being less active during the COVID-19 pandemic.

4.2.7.3.4 Youth Perception of Weight

Data from the 2021-22 COMPASS survey show that only half of youth in the NWHU would describe themselves as being about the right weight, despite approximately 7 in 10 being deemed a healthy weight. Furthermore, 41% report trying to lose weight, and nearly the same proportion (36%) reported restricting or altering their food intake on a weekly basis with the intent of changing their weight or appearance. This suggests that a high proportion of youth struggle with body image and positive food perspectives in the NWHU. This has important connections with mental health, nutritional status, and self-esteem.

4.2.7.3.5 Youth Food Security and Diet

In 2021, one in five children under age 18 lived in households considered food insecure in Ontario (see **Section 4.2.6.3** and **Section 2.3.6** for more information on food security) (Tarasuk 2022). Youth in the NWHU who reported eating breakfast every day declined somewhat between the 2012-2013 and 2021-2022 COMPASS surveys, from 38% to 31% (40% of boys and 23% of girls) (University of Waterloo 2022). These survey results also show that youth are typically not meeting the daily nutritional requirements, particularly for fruit and vegetables (35% and 40% of students report eating each at least once per day, respectively).

Food insecurity can impact youth mental health. Youth with marginal, moderate, and severe food insecurity were 1.5, 1.9, and 2.8 times more likely to report fair or poor mental health status, respectively. Further, youth with marginal, moderate, and severe food insecurity were associated with 1.6-, 2.0- and 2.9-times higher risk of mood disorders, respectively (Men et al. 2021).

4.2.7.3.6 Youth Alcohol and Substance Use

Participants of the NWO Baseline Studies Key Person Interview Program 2022-2023 expressed concerns about youth substance use, with some noting concerns related to ease of access for youth and lack of healthy alternatives.

The 2021-2022 COMPASS survey report shows a slight reduction in NWHU students binge drinking within the last month, from 2012-13 (34%) to 2021-22 (26%). However, the recent rate of 26% is much higher than the Ontario average of 14%. Further, 13% of youth reported riding in a vehicle with a driver who had been drinking, and 22% reported their drinking had increased because of COVID-19 (University of Waterloo 2022).

Cannabis use remained stable between 2012-2013 and 2021-2022 at approximately one in four students reporting use in the previous month (compared to the Ontario average of 12%). One in five who use cannabis (19%) report that use had increased due to COVID-19 (University of Waterloo 2022).

During the Youth Focus Group 2023, Ignace youth shared that the COVID-19 pandemic had an effect on substance use in the community, and that substance use was being seen at younger ages.

4.2.7.3.7 Youth Smoking and Vaping

Smoking and vaping are associated with negative health outcomes and are of particular concern for youth due to their addictive nature and impact on youths' developing brains (CDC 2023b). The 2021-2022 COMPASS survey suggests that a much higher proportion of NWHU youth are current smokers (17%) compared to the Ontario average (6%). The proportion is also higher for vaping; 31% of NWHU youth, with 34% of girls and 27% of boys vaping compared to the Ontario average of 19%. Further, between 2012-2013 and 2021-2022, the proportion of youth reporting vaping within the last 30 days increased (University of Waterloo 2022).

During the Youth Focus Group 2023, Ignace youth shared that vaping is becoming more popular at younger ages, with middle school aged children trying it.

4.2.8 Health Care

Access to health services is not uniform, and that a service that might be in a location that is accessible in terms of geography does not mean that the services are deemed appropriate, safe, or welcoming by all community members. To be equitable and effective in supporting health, health care services must be welcoming and culturally appropriate for all populations.

In Northwestern Ontario, access to health services can be more limited than typically experienced by residents of urban areas. Not all essential health services are available in small population centres. Primary care providers in rural communities often take on a greater variety of roles in the absence of local specialist care, but with the high acuity needs and greater chronic disease burden of the Northern Ontario population, there is less opportunity for prioritizing preventative care (Health Quality Ontario 2017). Residents often need to travel for more specialized care and may even need to move out of the community if they have complex conditions with ongoing care needs. Dryden and Thunder Bay were reported as the two most common communities Ignace residents travel to for health care, with 79.5% of Community Health and Wellness Survey (2023) respondents reporting having travelled to each. Between 2000 and 2020, nearly half (45.7%) of Ignace resident physician encounters were billed in Thunder Bay (see **Section 4.3.7.2**). Thunder Bay is followed by Dryden (21.8%), Toronto, Hamilton, and Burlington combined (9.3%), and Sioux Lookout (8.0%). See **Section 4.3.5.4** for more information on health care travel for residents of the Local Study Area.

Residents of Northwestern Ontario are less likely to report having a regular health care provider (e.g., family doctor, nurse practitioner) compared to residents of Ontario as a whole, and in 2015 only 23.8% reported being able to see their care provider on the same day when they are sick, compared to the Ontario rate of 43.6% (Health Quality Ontario 2016).

While local health services at the MBCHCH have high levels of engagement from the community (see **Section 4.3.6**) and provide a variety of services (see **Section 4.3.5.1**), the limitations in infrastructure available locally place further burden on Ignace residents in their healthcare access (see **Section 4.3.5.2**). A key theme among Community Health and Wellness Survey (2023) respondents was a need for more local medical services (see **Section 4.3.5.5** for more information on health system constraints in the Local Study Area).

Many medical services are unavailable in community for Ignace residents, including:

- Hospital care;
- Emergency department care;
- Long-term care;
- Intrapartum care (labour and delivery care);
- Optometry care;
- Limited access to dental care; and
- Challenges related to emergency medical services in 2023 due to shortages in staffing.

Half of the Ignace Community Health and Wellness Survey (2023) respondents indicated that they have a regular healthcare provider in the community. Approximately 25% of respondents indicated that they need a regular care provider but do not have one. Nearly 1 in 3 survey respondents who reported challenges accessing local health services identified lack of doctor availability to be an issue. Many survey respondents mentioned difficulties in continuity of care with their providers and wished for more consistent access to the same care provider. As of 2024, the MBCHCH has had the same locum physicians for the past three years (see **Section 4.3.5.4** for more information on barriers to health care services in the Local Study Area).

As displayed in **Table 4.2-6**, the proportion of Ignace survey respondents who said they had a regular health care provider in any location (63.3%) was much lower than the percentage of Ontario CCHS respondents reporting the same (89.7%). Survey respondents noted long waiting lists were one of the leading reasons for difficulty accessing healthcare (13.9%). Survey respondents access health care providers in multiple locations and wait times may vary.

Table 4.2-6: Summary Comparisons of 2023 Ignace Community Health and Wellness Survey Results to the Canadian Community Health Survey (2020/21) Results^{1,2}

Indicator	Response	Ignace 2023	CCHS Ontario 2020/21	CCHS Canada 2020/21
Has a regular healthcare provider	Yes	63.3%	89.7%	85.5%
Use of traditional medicine ²	Yes	28.4%	N/A	N/A
Difficulty accessing healthcare	Waiting list too long	13.9%	N/A	N/A

Source: InterGroup & EPI Research Inc. 2023; Statistics Canada 2022b.

Notes:

1. Data are presented in **Appendix 4B**.
2. Traditional medicine is the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness (World Health Organization n.d.b).

Respondents were also asked if they use traditional medicine. Most respondents (71.6%) reported that they do not use traditional medicine, while 28.4% of respondents (25 respondents) indicated that they do use traditional medicine (see **Appendix 4B Supplemental Data**). A significantly higher proportion of male respondents reported that they use traditional medicine.

Of the 25 respondents who use traditional medicine, 24 responded regarding barriers to using it. Respondents were able to choose more than one option. Most respondents (70.8%) reported

that they do not encounter any problems accessing traditional medicine. The most common barrier was lack of availability (6 respondents). A further 6 respondents reported other barriers including that it is too expensive, not available through healthcare, or that they were told not to by a health care provider (see **Appendix 4B Supplemental Data**). As there were few respondents to this question, responses cannot be disaggregated by sex.

A key theme among the NWO Baseline Studies Key Person Interview Program 2022-2023 participants and survey respondents is transportation challenges, both within Ignace (there is no public transportation and the location on the highway is somewhat inaccessible for those who are walking) and related to longer journeys needed to access care.

- Nearly all survey respondents indicated needing to travel to another community for healthcare (most frequently Dryden and Thunder Bay).
- Several survey respondents and NWO Baseline Studies Key Person Interview Program 2022-2023 participants noted concerns about highway safety while travelling to access medical services. They also described needing to take time off work and sometimes forgo pay in order to make the necessary trips.

4.2.9 Summary of Social Determinants of Health

Results from the NWO Community and Baseline Studies Key Person Interview Program 2022 provided insight that improvements in the health outcomes and well-being of individuals in the Local Study Area and Regional Study Area can be made by addressing the social determinants of health, including aiding people to acquire employment, adequate housing, and the ability to live independently.

Gender

Gender norms influence a health system's practices and priorities. Many health issues are a function of gender-based social status or roles (Public Health Agency of Canada 2013). In Canada, research supports that there are clear differences in health outcomes related to gender (Public Health Agency of Canada, 2013). Men are more likely to die prematurely than women, largely because of heart disease, fatal unintentional injuries, cancer, and suicide. While women live longer than men, they are more likely to suffer depression, stress overload (often due to efforts to balance work and family life), chronic conditions such as arthritis and allergies, and injuries and death resulting from family violence. The impacts of gender and sex on health outcomes must be assessed within the context of other social determinants of health to be fully understood.

Culture

Indigenous peoples in Canada experience social, economic, and political disadvantages more frequently, compared to non-Indigenous peoples in Canada. As of 2021, 18% of the Ignace population identify as Indigenous (Statistics Canada 2022e). The impacts of colonization and forced assimilation have negatively affected key social determinants of health for Indigenous peoples, including access to culturally appropriate health care, cultural continuity, and food security, causing Indigenous peoples to experience health inequities including higher rates of diabetes, hypertension, and mental health challenges (Kim 2019). For example, suicide rates have consistently been shown to be higher among First Nations, Inuit, and Métis in Canada than

the rate among non-Indigenous peoples (Kumar M.B. and Tjepkema M. 2019). Culture plays a large role in the provision of health care services among Indigenous peoples.

Race and Racism

Systemic racism and unequal access to health care are among the effects of colonialism (OHCHR n.d.). Populations who are racialized experience greater stressors, including inter-personal and systemic discrimination throughout their life course, as compared to a "white" or non-racialized social group (Public Health Agency of Canada 2022f). Disparities in health outcomes exist between First Nations peoples compared to non-Indigenous peoples in Canada. Compared to white adults, there are large inequalities in racialized adults' contact with dental professionals and regular health care providers (**Public Health Agency of Canada 2022f**). Racialized populations in Canada can experience higher rates of diseases like diabetes and obesity, and inequities in food security and community safety (Public Health Agency of Canada 2022f).

Employment, Education, and Income

Income is one of the most influential social determinants of health and is closely linked to many other factors such as education, employment, and housing (Canadian Institute of Health Information 2018). Health status improves at each step up the income and social hierarchy. Low-income individuals are known to face greater challenges with their mental health (Public Health Agency of Canada 2022c). In 2020, approximately 13.2% of Ignace households, 19.7% of Kenora Census Division households, and 10.1% of Ontario households were considered low income (Statistics Canada 2022e). Low-income individuals and individual living with mental health challenges are key vulnerable populations in the Local Study Area and Regional Study Area. Mental health is a health priority for the Local Study Area and Regional Study Area, as there are concerns that there is an increasing number of individuals experiencing challenges with Mental Health in both areas (NWO Baseline Studies Key Person Interview Program 2022-2023). When assessing the Public Health Ontario Core Equity Indicators of the NWHU compared to Ontario, in almost all cases, the rates in the NWHU are statistically different from Ontario (worse in every case except low birth weight rates).

Unemployment, underemployment, and stressful or unsafe work are associated with poorer health (Public Health Agency of Canada 2013). Unemployment can also have negative health consequences including depression, anxiety, low self-esteem, demoralization, and stress-related illnesses (e.g., high blood pressure, stroke, and heart disease). People who have more control over their work circumstances and fewer stress related demands of the job are healthier and often live longer than those in more stressful or risky work environments (Public Health Agency of Canada 2013). As of 2021, the employment rate in Ignace was 44.6%, a notable decline from 60.3% in 2006, while the unemployment rate was 13.0% (Statistics Canada 2022e). In 2021, the employment rate in Ignace was higher for men (48.5%) than women (40.8%), while the unemployment rate was also higher for Ignace men (13%) than women (11.1%). The proportion of female Community Health and Wellness Survey (2023) respondents who reported working full time, part time, or seasonally was higher (69.2%) than the proportion of male respondents reporting the same (42.4%). This could be attributable to the difference in age distribution between female and male respondents, as male respondents were more skewed towards older age categories than female respondents. The survey sample cannot be generalized for the entire Ignace population. Results from the NWO Baseline Studies Key Person Interview Program 2022-

2023 and Community Health and Wellness Survey (2023) shared that a key challenge in Ignace is that, although there are jobs, there are few career-type jobs that offer opportunities for personal and professional growth and associated incomes. Other factors including lack of childcare, housing, and funding for employment support services were also noted by participants.

Education is closely tied to socio-economic status and good quality education for children and adults are key contributors to health and prosperity (UNESCO 2023). According to the 2021 Census (Statistics Canada 2022e), 39.5% of Ignace residents aged 15 and older had a post-secondary education, 37.9% had completed high school or equivalent, and 23% had no certificate, diploma, or degree.

Physical Environment

In the built environment, factors related to housing, indoor air quality, and the design of communities and transportation systems can significantly influence physical and psychological well-being (Public Health Agency of Canada 2013). In the natural environment, certain levels of exposure to contaminants in air, water, food, and soil can cause a variety of adverse health effects, including cancer, birth defects, respiratory illnesses, and gastrointestinal ailments. An estimated 18% of residents of the NWHU (living off-reserve) smoke daily or occasionally, a higher proportion than the provincial average, suggesting that children may be exposed to second-hand smoke at greater rates (Statistics Canada 2022b). Just over 8 in 10 Ignace Community Health and Wellness Survey (2023) respondents indicated they never smoke cigarettes, which could suggest lower rates of second-hand smoke exposure in Ignace.

With warming temperatures, indirect impacts of climate change on health through ecological impacts can occur. Indirect impacts of climate change can be felt more extensively by those who are unhoused or precariously housed, those who work outdoors, those who are otherwise vulnerable due to age or underlying disease, and those without the financial resources to help mitigate these impacts. The rural and remote communities that make up Northwestern Ontario are sensitive to changes in weather and food systems (Human Rights Watch 2020).

Social Environment

Social stability, cost of living, housing, recognition of diversity, safety, good working relationships, and cohesive communities provide a supportive society that reduces or avoids many potential risks to good health (Public Health Agency of Canada 2013). A notable proportion of Ignace Community Health and Wellness Survey (2023) respondents reported having challenges paying for the things they need. The most common expenses reported by respondents included trouble affording communication services (cell phone or internet) (25%), food (25%), and utilities (24%).

Residents of Northwestern Ontario are disproportionately affected by poor housing quality. As of 2021, 13.0% of dwellings in the Kenora Census Division (which encompasses the NWHU) needed major repairs, in comparison to only 5.3% provincially (Statistics Canada 2022e). This inequity is further pronounced in Indigenous populations; an estimated 16.4% of Indigenous people living in Canada reside in a dwelling needing major repairs, and a similar percentage (17.1%) live in housing deemed overcrowded (Statistics Canada 2021). The 2018 Homelessness Enumeration Report identified 504 people experiencing homelessness in the Kenora and Rainy River Districts, including 5 in Ignace (Northwestern Health Unit 2019). Over one third of respondents indicated

that the primary reason for not accessing health and community services was not knowing what was available. It is noted that the lack of emergency shelters in the Local Study Area and Regional Study Area was identified as a key concern during the NWO Baseline Studies Key Person Interview Program 2022-2023. It was also noted that, due to Ignace's location along Highway 17, people may end up in the community without a place to stay and unable to leave (due to lack of transportation and/or money).

The presence of support from family, friends, and community is associated with better health. NWO Baseline Studies Key Person Interview Program 2022-2023 participants reported a general feeling of safety and connection within the community. However, social isolation was one of the leading reasons for MBCHCH community health worker encounters over the 2019/2020 to 2021/2022 fiscal years, indicating that many Ignace residents experience loneliness and trouble connecting with a support network. Transportation challenges was a common theme among survey respondents and participants of the NWO Baseline Studies Key Person Interview Program 2022-2023, with nearly 1 in 5 Ignace respondents said they never or almost never had someone to help with their home and a similar proportion said they never or almost never had someone to help with transportation. Participants also expressed a shift in social connection following the onset of the COVID-19 pandemic, noting lower in-person community engagement and more online interaction, which may contribute to these findings.

Health Behaviours

Health behaviors refer to those actions by which individuals can help to prevent diseases and support good health. Risky health factors including obesity, smoking, and heavy drinking, were generally higher among residents of the NWHU than Ontario residents for the 2015/2016 to 2019/2020 fiscal years (Statistics Canada 2022b). The smoking rate is not different between Ignace and CCHS survey data for Ontario and is slightly lower than the NWHU rate (InterGroup & EPI Research Inc. 2023; Statistics Canada 2022b).

People living in food-insecure households are more likely than others to be diagnosed with chronic conditions and mental health disorders, as a healthy, varied diet is an important contributor to good health (Jessiman-Perreault and McIntyre 2017). Rural and northern areas have greater challenges with healthy eating, especially fruits and vegetables, as perishable foods are harder to transport, more expensive, and may be lacking in variety at smaller, local stores, which contributes to food insecurity (Health Quality Ontario 2017). According to Public Health Ontario, between 2018 and 2020, 20.1% of residents of the NWHU were food insecure (ranking 3rd highest among all health units in Ontario) compared to the provincial average of 16.7% (Public Health Ontario 2023t). Further findings show that household food insecurity is racialized, with 30.7% of Indigenous Peoples living off-reserve (not including territories) in Canada reporting being food-insecure (Tarasuk 2022).

According to Community Health and Wellness Survey (2023) results, the large expense of healthy food was a barrier to a healthy lifestyle noted most frequently in responses (67%). More than 1 in 4 respondents indicated that they had trouble paying for food at least "sometimes" in the previous year. Food access was a major concern shared during the NWO Baseline Studies Key Person Interview Program 2022-2023.

Substance use (i.e., the consumption of alcohol, cannabis, opioids, or other drugs) can cause harms such as substance use disorders, overdose, infectious diseases, and other complications.

According to results from the Community Health and Wellness Survey (2023), 23.6% of current drinkers in Ignace drink more than five alcoholic drinks in a day, at least once a month, while 20% reported that they do this less than once a month. Rates of alcohol use are similar among Ignace residents and First Nations people living on-reserve, as are rates of heavy drinking between residents of Ignace and the Ontario CCHS survey (InterGroup & EPI Research Inc. 2023; FNIGC 2018b; Statistics Canada 2022b).

Almost all Community Health and Wellness Survey (2023) respondents indicated that they had never needed or received substance use or addiction treatment. However, this appears to contrast general community perceptions about substance use. Several survey respondents shared that drugs were one of their top three health or social concerns in the community. Further, NWO Baseline Studies Key Person Interview Program 2022-2023 participants noted increases in drug use and the lack of supports for it as an issue in the Local Study Area and Regional Study Area. Concerns regarding youth accessing drugs were also noted.

Child Development

Healthy child development and childhood experiences provide a foundation for health in later life. Youth who are supported socially, educationally, and have access to resources and information for healthy behaviours are better equipped to stay well, reduce their risk of chronic disease, and develop into healthy community members. As of 2017-2018, more children in the NWHU (32.3%) were assessed as vulnerable in one or more of these areas compared to Ontario (25.8%) (Public Health Ontario 2023r).

Breastfeeding is associated with better infant health and lessens the financial burden of caring for a baby's needs (Public Health Agency of Canada 2020b). A high proportion of Ignace mothers report breastfeeding either exclusively or in combination with other feeding methods, a higher proportion than found in NWHU or Ontario as a whole. However, some NWO Baseline Studies Key Person Interview Program 2022-2023 participants highlight that sometimes the supports and resources available for breastfeeding are not sufficient or easy enough to access.

Among NWHU youth respondents to the 2021-2022 COMPASS survey, 51% reporting their loneliness increased because of COVID-19. Further, 21% of youth reported bullying and 61% reported feeling unwelcome and uncomfortable at school. Data from the 2021-22 COMPASS survey show that only half of youth in the NWHU would describe themselves as being about the right weight, despite approximately 7 in 10 being deemed a healthy weight. This suggests that a high proportion of youth struggle with body image and positive food perspectives in the NWHU (University of Waterloo 2022).

Youth in the NWHU who reported eating breakfast every day declined somewhat between the 2012-2013 and 2021-2022 COMPASS surveys, from 38% to 31%. These survey results also show that youth are typically not meeting the daily nutritional requirements, particularly for fruit and vegetables (35% and 40% of students report eating each at least once per day, respectively) (University of Waterloo 2022).

Participants of the NWO Baseline Studies Key Person Interview Program 2022-2023 expressed concerns about youth substance use, with some noting concerns related to ease of access for youth and lack of healthy alternatives. The 2021-2022 COMPASS survey report shows a slight reduction in NWHU students binge drinking within the last month, from 2012-13 (34%) to 2021-

22 (26%). The recent rate of 26% is much higher than the Ontario average of 14%. The 2021-2022 COMPASS survey suggests that a much higher proportion of NWHU youth are current smokers (17%) compared to the Ontario average (6%) (University of Waterloo 2022).

Access to Health Services

In Northwestern Ontario, access to health services can be more limited than typically experienced by residents of urban areas. Residents often need to travel for more specialized care and may even need move out of the community if they have complex conditions with ongoing care needs. Residents of Northwestern Ontario are less likely to report having a regular health care provider (e.g., family doctor, nurse practitioner) compared to residents of Ontario as a whole, and only 23.8% reported being able to see their care provider on the same day when they are sick, compared to the Ontario rate of 43.6% (Health Quality Ontario 2016). The proportion of Ignace survey respondents who said they had a regular health care provider in any location (63.3%) was much lower than the percentage of Ontario CCHS respondents reporting the same (89.7%) which further affirms the need for better access to primary care for Ignace residents (InterGroup & EPI Research Inc. 2023; Statistics Canada 2022b).

4.3 HEALTH SYSTEM

4.3.1 Overview and Approach

Availability of health services is a social determinant of health (see **Section 4.2 Social Determinants of Health**). Level of access to appropriate and continuous health services affects the health status and outcomes of individuals. People who live in rural communities experience a disparity in access to services which can materially impact early detection of disease, support for disease management, and early access to treatment (Browne 2010).

Topics covered in **Section 4.3 Health System** include:

- The health care system in Canada and Ontario;
- Health services available in the Regional Study Area;
- Health services available in the Local Study Area;
- Indigenous health services available off-reserve;
- Utilization of services through the Mary Berglund Community Health Centre Hub ("MBCHCH");
- Utilization of services outside of residents of the Local Study in other locations;
- Utilization of Outpatient Services;
- Review of Emergency Medical Services ("EMS");
- Utilization of Emergency Departments ("EDs");
- Utilization of Inpatient Hospital Care; and
- Review of selected quality of care indicators.

Spatial boundaries for health system include a Local Study Area and Regional Study Area. The Local Study Area is the Township of Ignace. The health care journey of Ignace residents is the focus of this component. The Regional Study Area is the catchment area of the NWHU, an administrative boundary that includes 19 municipalities, 39 First Nations communities, and two unincorporated territories, Kenora Unorganized and Rainy River Unorganized. The NWHU serves a population of approximately 82,000 people and has offices in 12 municipalities, including Ignace, Dryden, Sioux Lookout, Atikokan, Ear Falls, Emo, Fort Frances, Pickle Lake, Red Lake, Sioux Narrows-Nestor Falls, Kenora, and Rainy River (NWHU 2022a; NWHU 2023). In addition, data are presented for the Dryden Local Health Hub ("Dryden Hub") as a subset of the Regional Study Area proximal to the Project. The Dryden Hub includes the Township of Ignace, City of Dryden, Municipality of Machin, Wabigoon Lake Ojibway Nation, and Eagle Lake First Nation. For the First Nations in the Dryden Hub, this refers only to when residents of those communities access services offered by the province, and not those services offered on-reserve. The Dryden Hub was a model brought forward by the North West LHIN due to the unique (i.e., northern and rural) geography of the area in order to take advantage of proximity to health care providers. In 2019, the Province of Ontario transitioned to Ontario Health, an agency created to oversee

health care planning and delivery across the province. As a part of this transition, the previous LHINs were replaced with Ontario Health and its sub regions. The Dryden Hub will continue under the new system. For more information on this transition, see **Section 4.3.2**.

Health service descriptions go back far enough to understand past trends and are dependent on the availability of health data and information related to health care services in the Local Study Area and Regional Study Area. Where data are available, a minimum of 20 years of data are presented. **Section 4.3 Health System** provides current and anticipated near-term health systems and trends. For more information on temporal boundaries, see **Section 4.1.1.2**.

Data collection for **Section 4.3 Health System** considered federal and provincial reports and data, including the IntelliHealth Ontario data repository (see **Appendix 4A Detailed Methods**), the Ignace and Area Health Services Study (InterGroup 2022), as well as publicly available reports and online sources. Primary data collected through the Community Health and Wellness Survey (InterGroup & EPI Research Inc. 2023), key person interviews, focus groups, and workshops was used to support and confirm information collected through secondary sources with community knowledge, including local perspectives, and fill gaps in information. Further details on data collection to support the baseline are provided in **Sections 4.1** and **Section 1.5.5**.

The way in which services are delivered can materially impact the availability and accuracy of data. For that reason, comparisons between study areas that have differing service delivery structures as well as differing compliance for recording of interactions with the health system must be considered with caution (see **Appendix 4A Detailed Methods** for more details on data limitations).

4.3.2 Delivery of Health Care in Canada and Ontario

Health care is delivered through primary services, secondary services, and supplementary services.

- Primary health care is the first point of contact in the health care system and includes health promotion, the prevention and treatment of injuries and diseases, basic emergency services, primary mental health care, referrals to other levels of care (e.g., specialists, hospitals), and more.
- Secondary health care is when a patient has been referred to a hospital or long-term care facility for health care services.
- Supplementary services are not generally covered under provincial coverage except for certain populations (e.g., seniors, low-income) and include prescription drugs (provided outside the hospital), dental care, vision care, medical equipment (e.g., wheelchairs), and the services of other health professionals (e.g., physiotherapists) (Government of Canada n.d.).

The delivery of health care services is complex and coordinated among a variety of parties at both the federal and provincial levels. In order to understand health care services in the Local Study Area and Regional Study Area, a brief description of the federal and provincial contexts is provided.

The federal government's role in health care includes setting and administering the *Canada Health Act*, financially support the provinces and territories, health research and regulation, and other functions, such as funding and/or delivering primary and supplementary health services (e.g., prescription drugs, dental services) to certain populations (e.g., First Nations, Inuit, Canadian Armed Forces) (Government of Canada n.d.). The *Canada Health Act* outlines criteria for health insurance plans that must be met by provinces and territories to receive full federal funding to support their health care systems.

Provinces and territories in Canada are responsible for administering and delivering most health care services. Provincial and territorial health care plans must adhere to the *Canada Health Act* (Government of Canada 1985).

The roles of provinces and territories in health care include:

- Administration of health insurance plans;
- Planning and funding of care in hospitals and other health facilities;
- Services provided by doctors and other health professionals;
- Planning and implementation of health promotion and public health initiatives; and
- Negotiation of fee schedules with health professionals. (Government of Canada n.d.)

Health care in Ontario is currently undergoing transition. In 2019, the Province of Ontario announced the creation of Ontario Health, an agency created to oversee health care planning and delivery across the province. As a part of this transition, the previous LHINs were replaced with Ontario Health and its sub regions. Ontario Health – North serves the northwest Ontario area. The North West LHIN, which previously served the Local Study Area and Regional Study Area, has been replaced by Ontario Health – North and four developing OHTs for Northwestern Ontario: All Nations Health Partners OHT serving Kenora and Sioux-Narrows-Nester-Falls; Noojmawing Sookatagaing OHT serving the City and District of Thunder Bay; Rainy River District OHT; and the Kiiwetinoong Healing Waters OHT serving Ignace, Dryden, Sioux Lookout, and Red Lake (Fleury 2022; Government of Ontario 2023a). The health hub model will continue with similar functions to the previous system, as will other higher-level services such as those coordinated by the Regional Specialized Services Network (e.g., cardiac care provided in hospital). The Dryden Health Hub will continue under the Kiiwetinoong Healing Waters OHT.

Knowing how physicians work and bill their time in Canada helps in understanding how a health system operates and recognize that many health services are provided by other health professionals. Physicians in private practice are often paid through a fee-for-service model, which is negotiated between the province or territory and the medical professions in their jurisdictions. Physicians in other practice settings, such as community health centres (“CHCs”) and clinics, are often paid through alternative methods, such as salaries or a mixture of fee-for-service and incentives for providing certain services. Nurses and other health professionals are often paid salaries that are negotiated between unions and employers (Government of Canada n.d.).

This is important to note because when physicians are not fee-for-service, it is more difficult to retrieve information related to the types of services and needs provided by that physician to members in a community.

The Canadian Institute for Health Information (CIHI) reports the 2021 national physician supply rate at 246 physicians per 100,000 population (Canadian Institute for Health Information 2021a). The distribution of physicians across the country is uneven, as 92% of Canadian physicians work in urban areas of Canada. About 7 out of 10 physicians are “fee-for-service” with the remainder in alternate payment practices (Canadian Institute for Health Information 2021a).

4.3.3 Delivery of Health Care Services to Indigenous Peoples

Health care for Indigenous peoples in Canada, which include First Nations, Inuit, and Métis, is covered through a patchwork of partnerships, policies, and legislation. Indigenous peoples are entitled to access insured provincial/territorial health care services as they are included in the allocations of federal funding. For Métis, off-reserve First Nations, and non-status First Nations, services and benefits are primarily provided through the province/territory. The Public Health Agency and Health Canada also fund programs for Indigenous peoples living in urban and northern areas (Government of Canada 2023b).

For First Nations and Inuit, Indigenous Services Canada (“ISC”) funds or directly provides services that supplement health care services provided by the province/territory (i.e., supplementary benefits). ISC’s Non-Insured Health Benefits Program provides eligible First Nations and Inuit coverage for non-insured health benefits, such as dental, vision, mental health counselling, and prescription drugs (Government of Canada 2023a). The First Nations and Inuit Health Branch (“FNIHB”) of ISC works with various partners to improve health outcomes on reserves. FNIHB works to fill gaps in the delivery of provincial health services by funding and/or providing basic primary health care services on reserve (Indigenous Services Canada 2018).

Health care systems on-reserve can make it difficult for First Nations to receive appropriate and timely care. Reserve communities often rely on a rotation of non-resident physicians, general lack of doctors, and long waiting lists (FNIGC 2018a). Federal funding for First Nations and Inuit health care services is subject to discretionary increases or decreases by the federal government, unlike the funding to provinces and territories that is protected by legislation (Government of Canada 2023b). In 2023, the federal government announced the Health Equity Fund, an investment of an additional \$2 billion to help increase Indigenous peoples’ access to quality and culturally appropriate health care over the next 10 years. The federal government intends to work with First Nations, Inuit, and Métis partners and provincial and territorial governments to implement the new fund to meet regional and community Indigenous health priorities (Prime Minister of Canada 2023).

4.3.3.1 Indigenous Health Care in Ontario

Ontario Health has an Indigenous Health Equity and Coordination unit to advance Indigenous health equity. The Indigenous Health Equity and Coordination unit is responsible for creating an approach to Indigenous partnerships, facilitating better coordinated Indigenous health services and initiatives across Ontario’s health regions, building capacity to address Indigenous health priorities, and supporting Indigenous-led initiatives. The unit’s First Nations, Inuit, Métis, and Urban Indigenous Health Framework aims to provide a foundation for this work with a focus on engagement (Ontario Health 2023). Ontario Health also helps connect Indigenous peoples to culturally sensitive doctors through the Ontario Telemedicine Network (OTN n.d.).

Other Indigenous health care service providers in Ontario include Aboriginal Health Access Centres (“AHACs”) and the Métis Nation of Ontario Healing and Wellness Branch. See **Section 4.3.4.1** for more information on these health services in the Regional Study Area.

4.3.4 Health Care in the Regional Study Area

The Regional Study Area is the NWHU catchment area. The NWHU is organized by eight service departments, including Chronic Disease Prevention, Family Health Programs, Speech, Hearing and Vision, Dental Health, Sexual Health and Harm Reduction Programs, Infectious Disease Programs, Environmental Health, and Foundations and Communications Services (NWHU 2023). Types of health services provided by the NWHU include (NWHU 2021; InterGroup Consultants 2022):

- Ontario Blind-Low Vision Program;
- Dental Health;
- Eating and Nutrition;
- Environmental Diseases and Infections;
- Harm Reduction;
- Mental Health;
- Parenting Support;
- Personal Safety and Injury Prevention;
- Physical Activity and Sedentary Behaviour;
- Pregnancy and Expecting Parents;
- Preschool Speech and Infant Hearing;
- Safe Drinking Water;
- Sexual Health;
- Substance Use Prevention;
- Tobacco and Vaping;
- Vaccines and Immunizations; and
- Women’s Health.

4.3.4.1 Indigenous Health Care in the Regional Study Area

Indigenous health care service providers in the Regional Study Area include Aboriginal Health Access Centres (“AHACs”) and the Métis Nation of Ontario Healing and Wellness Branch.

Ontario has AHACs, which are community-led, primary health care organizations providing Indigenous peoples with primary care, traditional healing, cultural programs, community

development initiatives, health promotion, and social services. There are currently 10 AHACs in Ontario serving both on- and off-reserve, urban, rural, and northern locations. There are no AHACs in the Local Study Area. The AHACs in the Regional Study Area are Waasegiizhig Nanaandawe’iyewigamig, located in Kenora, and Gizhewaadiziwin Health Access Centre, located in Fort Frances. The AHAC located in Kenora provides service in the area to the Dryden Native Friendship Centre (NWO Baseline Studies Key Person Interview Program 2022-2023). Another AHAC that may be used by residents of the Regional Study Area but is not located in the Regional Study Area is Anishnawbe Mushkiki, located in Thunder Bay (Alliance for Healthier Communities n.d.).

The Métis Nation of Ontario’s Healing and Wellness Branch provides programs, services, and activities to address the needs of Métis people in Ontario in a holistic way at the provincial, regional, and local levels. The Healing and Wellness Branch works with both Indigenous and non-Indigenous partners whose services address health challenges such as mental health and addictions, victim services, diabetes awareness, cancer care, and more (Métis Nation of Ontario n.d.).

Table 4.3-1 displays the Indigenous health services that may be accessed by residents of the Local and Regional Study Areas, including Paawidigong First Nations Forum, Wabigoon Lake Ojibway Nation Health Centre, Eagle Lake Health and Resource Centre, and the Sioux Lookout Meno Ya Win Health Centre (“Sioux Lookout MHC”). The Sioux Lookout MHC provides health services to all residents of Sioux Lookout, the surrounding areas, and to 33 First Nations communities in the region (Sioux Lookout Meno Ya Win Health Centre n.d.a). The Sioux Lookout MHC follows a holistic approach to health care, recognizing the relationships between the physical, mental, emotional, and spiritual aspects of an individual in healing and wellness. The Sioux Lookout MHC offers patients the option to integrate traditional and modern medicine practices in their care through, for example, the Traditional Healing, Medicines, Foods, and Supports Program.

Table 4.3-1: Indigenous Health Services Accessed by Residents of the Local Study Area and Regional Study Area

Paawidigong First Nations Forum Located in Dryden, serves Wabigoon Lake Ojibway Nation and other First Nations	Wabigoon Lake Ojibway Nation Health Centre	Eagle Lake Health and Resource Centre	Sioux Lookout Meno Ya Win Health Centre 60-bed hospital and 20-bed extended care
Community care nurse Diabetes nurse Counselling	Chiropody Nurse Practitioner Registered Nurse	Community Wellness Program Family Well Being Program Home Care Program Mental Health and Addiction Services National Native Alcohol and Drug Abuse Program Referral Clerk	Ambulance and emergency Assault care and treatment Diabetes care Cancer care Diagnostic imaging Dialysis and renal Heart and stroke Laboratory Mental health and addictions counselling Prenatal and maternity Rehabilitation Surgery Telemedicine Traditional program

Source: Paawidigong First Nations Forum n.d.a; Paawidigong First Nations Forum n.d.b; Northwest Healthline 2020; Northwest Healthline 2023a; Sioux Lookout Meno Ya Win Health Centre n.d.a; Sioux Lookout Meno Ya Win Health Centre n.d.b.

4.3.4.2 Hospitals in the Regional Study Area

There is no hospital located in the Local Study Area. The Dryden Regional Health Centre ("Dryden RHC") (see **Section 4.3.4.3**) is the closest hospital to the Local Study Area. Other hospitals located in the Regional Study Area include:

- **Lake of the Woods ("LOTW") District Hospital:** Located in Kenora, this facility provides services to Kenora and area residents including emergency and ambulatory care, chronic care, mental health, maternal and child health, and acute care services. LOTW District Hospital also provides dialysis, chemotherapy, diagnostic imaging, mammography, ultrasound, addiction counseling and detoxification, a sexual assault centre, physiotherapy and rehabilitation services, ambulance (land and dedicated air), palliative care and various education programs. In recognition of the First Nations communities it serves, the hospital is

committed to ensuring that traditional native healing and culture are part of native health care (Lake of the Woods District Hospital n.d.).

- **Sioux Lookout MHC:** This facility is a 60-bed hospital and 20-bed extended care facility. The Sioux Lookout MHC catchment area includes Sioux Lookout, Hudson, Pickle Lake, Savant Lake, and the First Nation communities in the area. See Section 4.3.3.1 for more information on Sioux Lookout MHC (Sioux Lookout Meno Ya Win Health Centre n.d.a).
- **Atikokan General Hospital:** This facility has 41 beds (15 hospital beds and 26 long term care beds), employs more than 100 staff, and provides a range of services to Atikokan and the surrounding area (NWO Community and Baseline Studies Key Person Interview Program 2022-2023). Acute, long-term, emergency, and outpatient services are complemented by community-based initiatives, including mental health and addictions counselling. Atikokan General Hospital serves approximately 6,000 outpatients annually (Atikokan General Hospital n.d.).
- **Red Lake Margaret Cochenour Memorial Hospital:** This facility employs 130 staff and serves the needs of the communities of Red Lake (Balmertown, Cochenour, McKenzie Island and Madsen/Starrat Olsen), Ear Falls and Wabauskang First Nation. Services provided to residents include telemedicine, chemotherapy, laboratory, diagnostic imaging, ultrasound, physiotherapy, occupational therapy, nutrition counselling, diabetes counselling, and mental health and addictions treatment (Red Lake Hospital n.d.).
- **La Verendrye General Hospital:** Located in Fort Frances, this facility has 55 beds in total, 30 acute care beds and 25 medical and surgical beds, and offers a range of services. This hospital is part of Riverside Health Care, an organization providing services in the Rainy River District with locations in three communities, including Fort Frances, Emo, and Rainy River. The hospital has registered practical nurses (RPNs) and registered nurses (RNs) as well as visiting specialists including orthopedic surgeons, oncologists, pediatricians, nephrologists, and geriatricians (Riverside Health Care n.d.).

Residents of the Local Study Area also utilize hospitals located outside of the Regional Study Area, in Thunder Bay (see **Section 4.3.5.4** for health care travel). These hospitals include:

- **Thunder Bay Regional Health Sciences Centre ("Thunder Bay RHSC"):** This facility is an acute care facility with 375 beds serving Thunder Bay and Northwestern Ontario. The organization is one of the largest employers in the area with nearly 2,800 staff, 500 volunteers, and 100 Patient Family Advisors. The TBRHSC provides a range of specialist services, is an academic health sciences centre, and is affiliated with Lakehead University and Confederation College (Thunder Bay Regional Health Sciences Centre n.d.); and
- **St. Joseph's Care Group (SJCG):** Located in Thunder Bay, this facility employs more than 2,400 staff and offers a range of programs and services in Addictions & Mental Health, Rehabilitative Care, and Seniors' Health across eight sites in the City of Thunder Bay (St. Joseph's Care Group n.d.).

4.3.4.3 Other Health Care Facilities in the Regional Study Area

Ontario Addiction and Treatment Centres offer services to help improve the lives of people living with substance use problems. These centres provide support to people with opioid dependence through methadone maintenance programming but do not provide any comprehensive addictions treatment (NWO Community and Baseline Studies Key Person Interview Program 2022-2023). Treatment centres in the Regional Study Area are located in Atikokan, Dryden, Fort Frances, Kenora, and Sioux Lookout (Northwest Healthline 2023b).

In the Regional Study Area there are several long-term care facilities including the William A. "Bill" George Extended Care Facility, located in Sioux Lookout, Princess Court, located in Dryden, Rainycrest, located in Fort Frances, EMO Health Centre, located in Emo, Pinecrest, located in Kenora, Wiigwas Eder and Senior Care, located in Kenora, Rainy River Health Centre, located in Rainy River, and Northwood Lodge, located in Red Lake (Government of Ontario 2023c). Atikokan General Hospital also offers long-term care. Information on the services available at the Atikokan General Hospital are described above in **Section 4.3.4.2**.

4.3.4.4 Health Care Services in the Dryden Hub

The Dryden Health Hub includes the Township of Ignace, City of Dryden, Municipality of Machin, Wabigoon Lake Ojibway Nation, and Eagle Lake First Nation, and is described to provide more local context on health care around the Local Study Area. Non-Indigenous health care facilities in the Dryden Hub include the Dryden RHC and Points North Family Health Team, located in Vermillion Bay (Municipality of Machin), and are described in **Table 4.3-2**. The Wabigoon Lake Ojibway Nation Health Centre and Eagle Lake Health and Resource Centre are Indigenous health services located in the Dryden Hub and are described in **Section 4.3.4.1**.

Table 4.3-2: Health Care Facilities in the Dryden Hub

Dryden Regional Health Centre 42-bed hospital ¹⁰³	Points North Family Health Team Located in Vermillion Bay
Family physicians Anesthetists Crisis response Diagnostic imaging Ear-nose-throat Emergency physicians General surgeons Gynecology Mental health and addictions ¹⁰⁴ Nurse practitioners Obstetrics Orthopedic surgery Pediatrics Plastic surgery Psychotherapy Registered Dietitians Registered Nurses and Registered Practical Nurses Rehabilitation Rheumatology Urology	Family physician Nurse Practitioner Phlebotomist Registered Nurse Disease management and prevention Health promotion Mental health counselling Nutritional counselling Diabetes program Heart health Family planning

Source: Dryden Regional Health Centre n.d.a; Dryden Regional Health Centre n.d.b; Dryden Regional Health Centre n.d.c; Northwest Healthline 2021; Points North Family Health Team n.d.a; Points North Family Health Team n.d.b; Northwest Healthline 2020; NWO Baseline Studies Key Person Interview Program 2022-2023.

Other health services available in Dryden include:¹⁰⁵

¹⁰³ The inpatient beds include 31 acute care beds (three critical care beds, two labour/delivery/recovery rooms, one pediatric room, 25 medical and surgical beds, and two palliative care rooms), 10 beds for continuing complex care, and one hospice care bed (Dryden Regional Health Centre n.d.a; NWO Baseline Studies Key Person Interview Program 2022-2023).

¹⁰⁴ Further information on mental health and addictions services available in the Regional Study Area can be found in **Section 2.4.9**.

¹⁰⁵ Ontario Addictions Treatment Centre n.d.; McLeod Chiropractic n.d.; Kinizsi Dental n.d.; King Street Family Dental n.d.; Viva Dental n.d.a; Viva Dental n.d.b; Dingwall Medical Clinic n.d.; Northwest Healthline 2022a; Northwest Healthline 2022b; Northwest Healthline 2022c; Enhance Wellness n.d.; Dryden Area Family Health Team n.d.; Lockyer Optometry n.d.; Lyle Osteopathy n.d.; NWO Baseline Studies Key Person Interview Program 2022-2023.

- Addictions treatment, Ontario addictions treatment centre;
- Breast screening bus;
- Chiropractic;
- Dental and dental surgery;
- Eye van;
- Hearing testing centre;
- Family medicine;
- Foot care;
- Massage therapy;
- Obstetrics;
- Occupational therapy;
- Optometry;
- Orthodontics; and
- Osteopathy.

The DRHC is integrated with primary care and operates the Dryden Area Family Health Team as a separately funded clinic, as well as operates the Dryden and Area Mental Health and Addictions program (NWO Baseline Studies Key Person Interview Program 2022-2023).

4.3.4.5 Health System Gaps and Barriers in the Regional Study Area

Results from the NWO Community and Baseline Studies Key Person Interview Program 2022 and GBA+ Workshop (2023) related to health service gaps and capacity challenges in Regional Study Area health services included:

- Mental health and addictions services are limited and in high demand in the Regional Study Area. At present, it is difficult to provide these services to individuals in need in a timely manner. More coordination between health services as well as support for psychiatry would benefit the study areas.
- In-patient addictions treatment is a serious gap requiring people to travel to access services and would be of immediate benefit to the Local Study Area and Regional Study Area.
- Transportation is a barrier to health services throughout the study areas. Often transportation services are provided informally by community members and health providers, such as case managers. An affordable public transit system would be beneficial to the study areas.
- Demand for emergency crisis-response increased. Current response services do not have the appropriate capacity to meet the demand.

These gaps and barriers can have disproportionate effect on vulnerable populations such as those individual experience low socio-economic status (see **Section 2.2.5 Vulnerable Populations**). Vulnerable populations can face disparities that limit their ability to access and navigate the health care system (GBA+ Workshop 2023), such as limited educational achievement or access to material resources, resulting in poorer health outcomes. Further, vulnerable populations can often rely more on services, making them more sensitive to changes in the health system (Johannes et al. 2019; GBA+ Workshop 2023).

4.3.5 Health Care in the Local Study Area

In Ignace, the main health care provider is the Mary Berglund Community Health Centre Hub (MBCHCH). Community Health Centres (CHCs) are non-profit organizations established and governed by a community-elected board that provides primary health care and health promotion programs (Government of Ontario 2023b). MBCHCH provides health care services both locally and regionally and is currently operating at capacity in a leased space built in 1981. In 2017, MBCHCH was accredited through the Canadian Centre for Accreditation. The process was re-initiated at the time of the COVID-19 pandemic and the survey was delayed. The process has been halted until times are more “normal” which had not occurred as of April 26, 2023. Accreditation is a process of monitoring health services to ensure standards of excellence and identify areas of improvement to deliver safe and quality health care (Accreditation Canada n.d.).

4.3.5.1 Mary Berglund Community Health Centre Hub Services

Services provided by MBCHCH are considered direct services, while services provided at MBCHCH by other providers are considered indirect services (see **Table 4.3-3**). Care may continue to evolve over time and in response to community needs.

Table 4.3-3: Services Offered at the Mary Berglund Community Health Centre Hub

Service Provided Directly by MBCHCH
Physician services, including five regular locum physicians, onsite or via telemedicine
Telemedicine with nurses, physicians, specialists, and psychiatrists
Cancer screening, including a Breast Screening Van
Foot care
Diabetes health
Well baby
Chronic disease management
Physiotherapy
Memory clinic
Health promotion, including group fitness, screening, and wellness clinics
Mental health
Laboratory for specimen collection
Eye van ¹⁰⁶
Senior services, including home visits, nutritional assessment, and Lifeline
Rehabilitation and therapy, through telemedicine and weekly on-site visits
In-home palliative care
Service Provided at MBCHCH by Other Providers
Mental health and addictions, provided by Dryden Regional Health Centre, including a clinical psychologist (on-site and telemedicine) and Community Mental Health and Aboriginal Support Worker
Ignace medical pharmacy, provided by Guardian
Public health services provided by Northwestern Health Unit, including one Registered Nurse and the following services: student nutrition program, parenting and new parents, needle distribution, and speech and hearing
Dental screening, provided by the Ontario Healthy Smiles Program

Same day appointments are available for in-person and virtual appointments. No in-person appointments with specialists (e.g., dermatology) are available at MBCHCH but are available via

¹⁰⁶ The mobile eye van provides eye examination services which are offered in the community on a yearly basis (MBCHCH n.d.b).

telemedicine. MBCHCH also provides health promotion services including various programming within schools and the senior centre, Silver Tops, as well as programming with the community food bank and community garden. For laboratory work that cannot be completed at MBCHCH, there is daily pick up by Kasper Transportation to take specimens to LifeLabs in Thunder Bay.

At MBCHCH, funding for services and programs either comes from the Ministry of Health, Ministry of Infrastructure, or through donations (MBCHCH n.d.a). Primary care services, for example, are funded by the Ministry of Health. Community programming such as the food bank and community garden are funded by donations. Funding received is currently based on client visits and the services provided and comes through the LHIN. Funding models under the Ontario Health Teams structure have not been established yet.

Other community health services provided in the Township of Ignace include:

- Emergency ambulance provided by Kenora District Services Board (see **Section 4.3.9.1**);
- Mental health services for children and youth under 16 years old, provided by FIREFLY Dryden (see **Section 2.4.9**);
- Home and community care services;
- The Screen for Life Coach (mobile cancer screening bus); and
- Speech and hearing for infants and children, North Words provided by the Northwestern Health Unit.

4.3.5.2 Mary Berglund Community Health Centre Hub Infrastructure

As of March 2022, the MBCHCH facility is a lease arrangement through Infrastructure Ontario. The rental rates are not sustainable and alternate locations have been explored in years prior to March 2022. Discussions have also occurred between MBCHCH and the Township of Ignace to explore opportunities to retrofit a building owned by the Township to accommodate the health centre (NWO Baseline Studies Key Person Interview Program 2022-2023). A concern expressed regarding MBCHCH infrastructure is that expansion plans are dependent on the health system transitions within the province (i.e., transition to Ontario Health) as well as a potential population increase in Ignace (see **Section 4.3.2** for more information on the health system transition) (MBCHCH Staff Focus Group 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

4.3.5.3 Mary Berglund Community Health Centre Hub Staffing

The MBCHCH is funded for 2.0 full time equivalent physicians which represents funding for a supply of approximately 168 physicians per 100,000 residents (with a low estimate catchment area of 2,000 people).

As with many non-urban areas, there is no full-time fee-for-service physician operating an office in Ignace. MBCHCH provides physician services through a rotational locum model with both in-person and virtual visits. Locum arrangements change depending on physician availability which can include four to six physicians, all of whom have different availability for in-person and virtual appointments. A rotational locum model can create challenges in continuity of care for

community members. Further, this model creates barriers to receiving non-urgent care in short time frames. As of 2024, MBCHCH has had the same locum physicians for the past three years.

To support primary care services, MBCHCH employs one part-time nurse practitioner ("NP"). The NP has authority to prescribe all controlled drugs and substances described in the Controlled Drug and Substances Act, with the exception of heroin, cannabis, opium, coca, and anabolic steroids (other than testosterone) (CASN n.d.).

As of March 2022, various health staff resources were available at the MBCHCH (see **Table 4.3-4**). Some staff located in the building are employees of the Northwestern Health Unit as well as Dryden Mental Health services which allows for enhanced wrap around care for patients.

Table 4.3-4: Mary Berglund Community Health Centre Hub, Direct Staffing Resources, March 2022

MBCHCH Direct Delivery Resources				
Physician	Nursing	Rehabilitation and Support	Health Promotion	Administration
Locums Vary from 4-6 with funding for 2.0 full time equivalent (FTE) positions.	2 full time ("FT") Registered Nurse 1 part time ("PT") Nurse Practitioner 1 FT Registered Practical Nurse	1 PT physiotherapist 1 FT social worker	1 FT health promoter	1 FT Executive Director 1 PT RN/telemedicine coordinator 1 medical records 1 receptionist 1 PT data management coordinator 1 PT office administrator

4.3.5.4 Access to Health Services for Residents of the Local Study Area

Ignace residents must travel to other communities to access some health care services. The need to use health care services outside of the Local Study Area is a combination of individual preferences for service providers and a lack of services in the community.

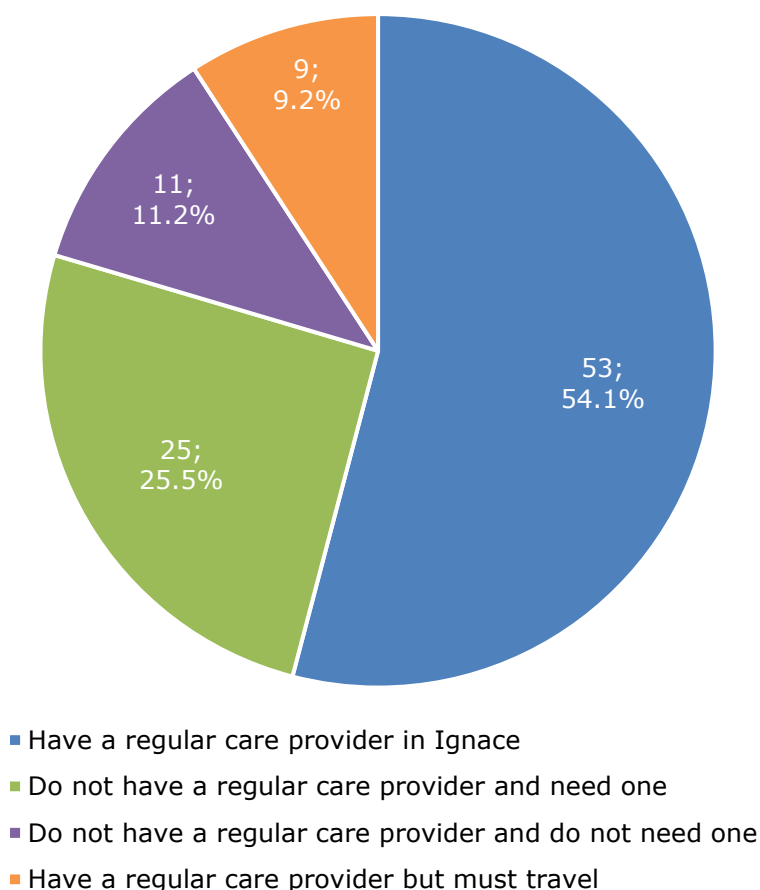
The Community Health and Wellness Survey (2023) found that, generally, participants had positive feelings and experiences related to the MBCHCH with the understanding that services in a small community are not comparable to a larger centre. However, participants raised concerns, including a lack of consistency in doctors, lack of availability of certain services, location of the MBCHCH (i.e., at the intersection of two highways at the edge of the Township), and hours of operation. At least one in three survey respondents noted physician availability as a challenge within the community.

Approximately one in five survey respondents noted a primary concern related to ambulance and emergency medical care availability in the Local Study Area. Due to the *Ambulance Act* (Government of Ontario 1990), those accessing ambulance services cannot be taken to the local clinic (e.g., MBCHCH) and instead must be transported to the nearest hospital (NWO Community and Baseline Studies Key Person Interview Program 2022). This causes many calls to be cancelled because patients refuse transport due to distance and concerns about how the patient would get home. Emergency medical services EMS staff may live in Dryden and during highway closures this can create challenges for staff travelling to Ignace.

4.3.5.4.1 Access to Primary Care

According to the Community Health and Wellness Survey (2023), 63% of Ignace respondents reported having a regular health care provider in any location, while over half of survey respondents (54.1%) reported having a regular health care provider in Ignace (**Figure 4.3-1**). This is lower than the proportion of Ontario CCHS respondents reporting having a regular health care provider in any location (89.7%). Over a quarter of Ignace respondents (25.5%) reported that they need a provider but do not have one. Other participants reported not needing a regular health care provider (11.2%) or having one that they see in another community (9.2%). Concerns heard from Ignace residents included the rotational physician model of care at the MBCHCH preventing individuals from being able to be treated by the same physician, causing a lack of continuity in care (InterGroup & EPI Research Inc. 2023; NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 4.3-1: Ignace Survey Respondents Access to a Regular Health Care Provider^{1,2}



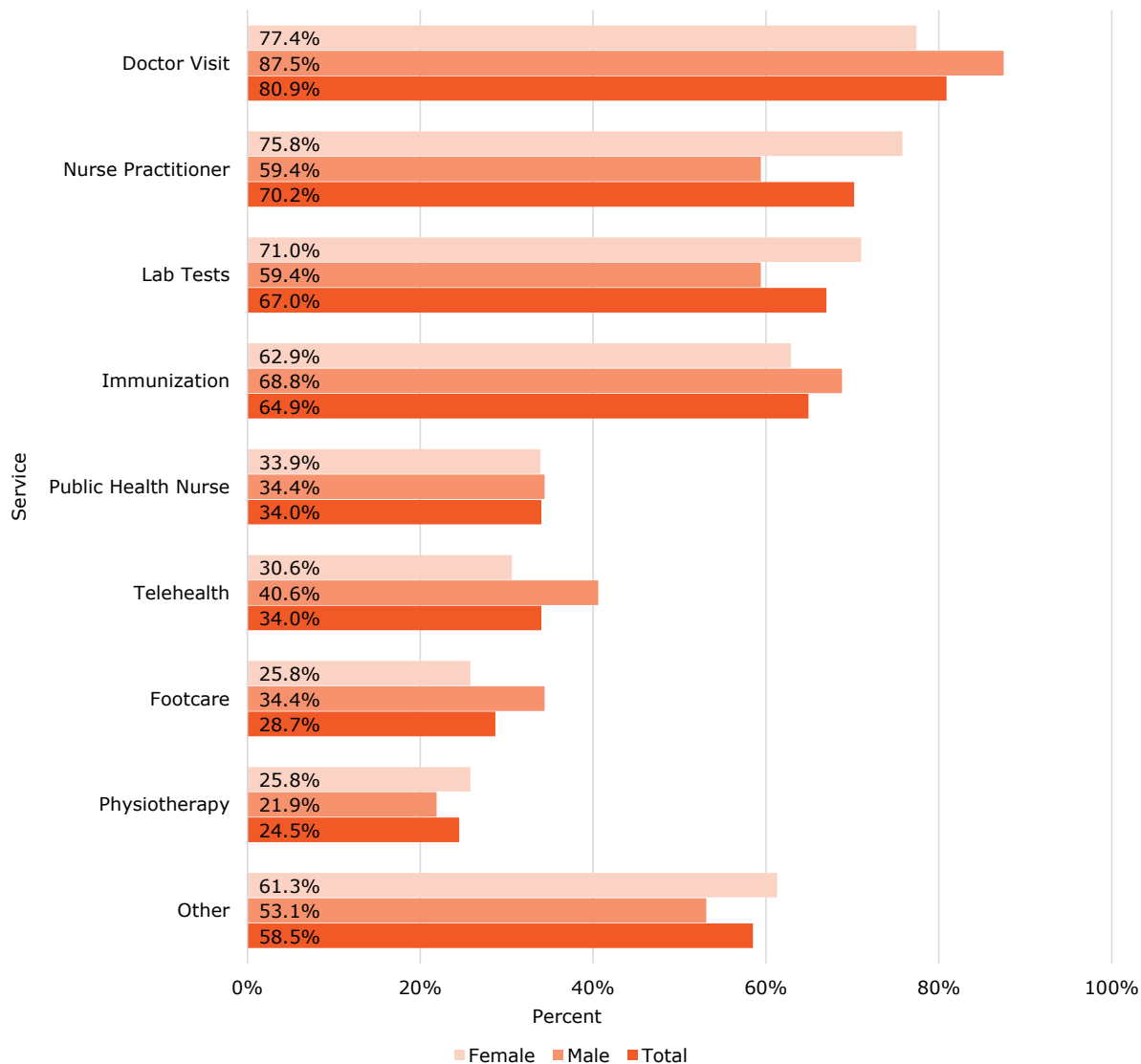
Source: InterGroup & EPI Research Inc. 2023.

Notes:

1. Answered: 98, did not answer: 6.
2. Data are presented in **Appendix 4B**.

Most Survey respondents (95.0%) reporting having used MBCHCH services in the past 5 years (see data in **Appendix 4B Supplemental Data**). As displayed in **Figure 4.3-2**, the most common services were doctor (80.9% of respondents) and nurse practitioner visits (70.2% of respondents). Other frequently reported reasons included lab work and immunizations. Fewer than five respondents reported not using services at MBCHCH within the last five years.

Figure 4.3-2: Ignace Survey Respondents Type of Services Received at Mary Berglund Community Health Centre Hub (MBCHCH) by Sex^{1,2,3}



Source: InterGroup & EPI Research Inc. 2023. EPI Research Inc. 2023.

Notes:

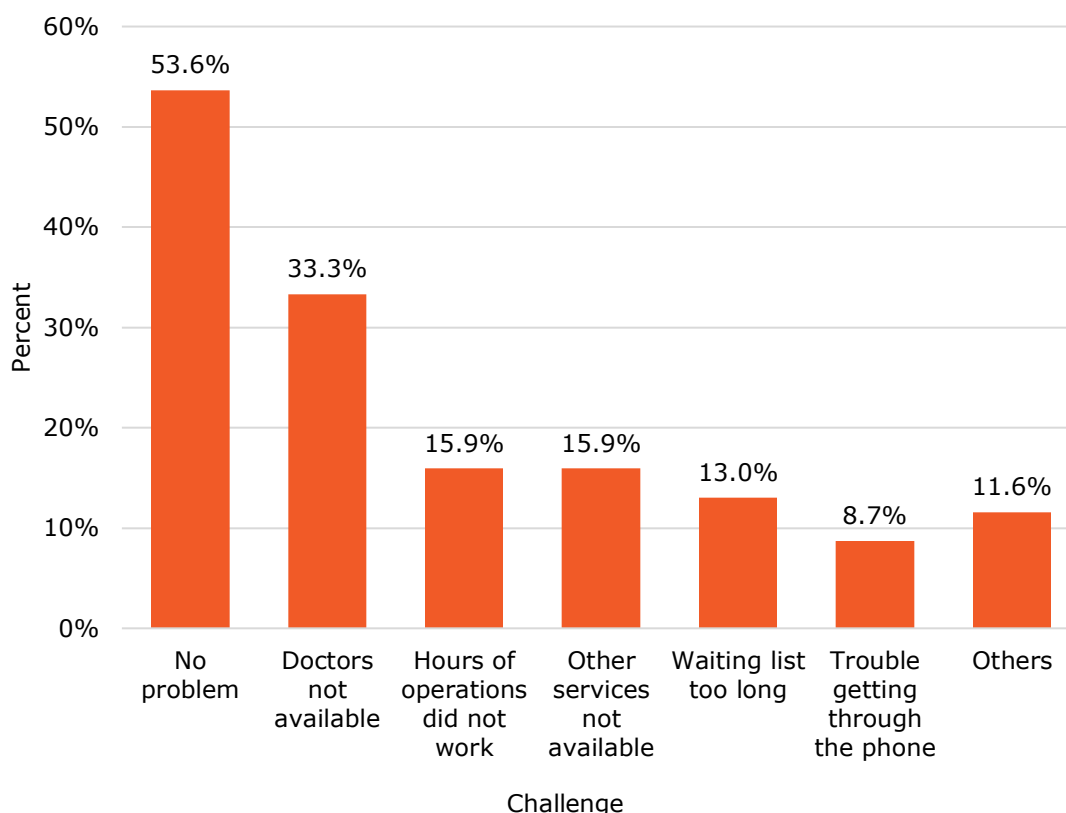
1. Answered: 94, did not answer: 10.
2. Other includes Mental Health Counselling, Health Promotion, Food bank/community garden, Prenatal/Postnatal, Chronic Diseases, and Addiction Support.
3. Data are presented in **Appendix 4B**.

As shown in **Figure 4.3-3**, many respondents (53.6%) said they had no problems accessing services. The most reported challenge in accessing health services in Ignace was doctor

availability (33.3%), followed by hours of operation (15.9%), and unavailability of services (15.9%). The limited hours of health care services at the MBCHCH were noted as a primary barrier to health services in key person interviews, as there are no formal after-hours services provided in the community. Outside the hours of 8:00 am to 4:00 pm, Monday to Friday, residents of the Local Study Area must travel to Dryden for health care services (NWO Community and Baseline Studies Key Person Interview Program 2022).

Other challenges in accessing the MBCHCH reported in the survey include long wait lists and trouble getting through on the phone. Some respondents echoed challenges heard through the Key Person Interview Program, including the unavailability of counselling, impact of COVID-19, and lack of transportation. Lack of knowledge on how to navigate the health care system is also a barrier for some Local Study Area residents, particularly when they must navigate complex health systems with little or no money (Township of Ignace 2021). Lack of some services in the Local Study Area causes residents of Ignace to move away. For example, Ignace has a high proportion of seniors who require senior services not currently available, such as long-term care, which can be a barrier to aging in place (NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 4.3-3: Ignace Survey Respondents Challenges Experienced Accessing MBCHCH During the Last Year^{1,2,3}



Source: InterGroup & EPI Research Inc. 2023. EPI Research Inc. 2023.

Notes:

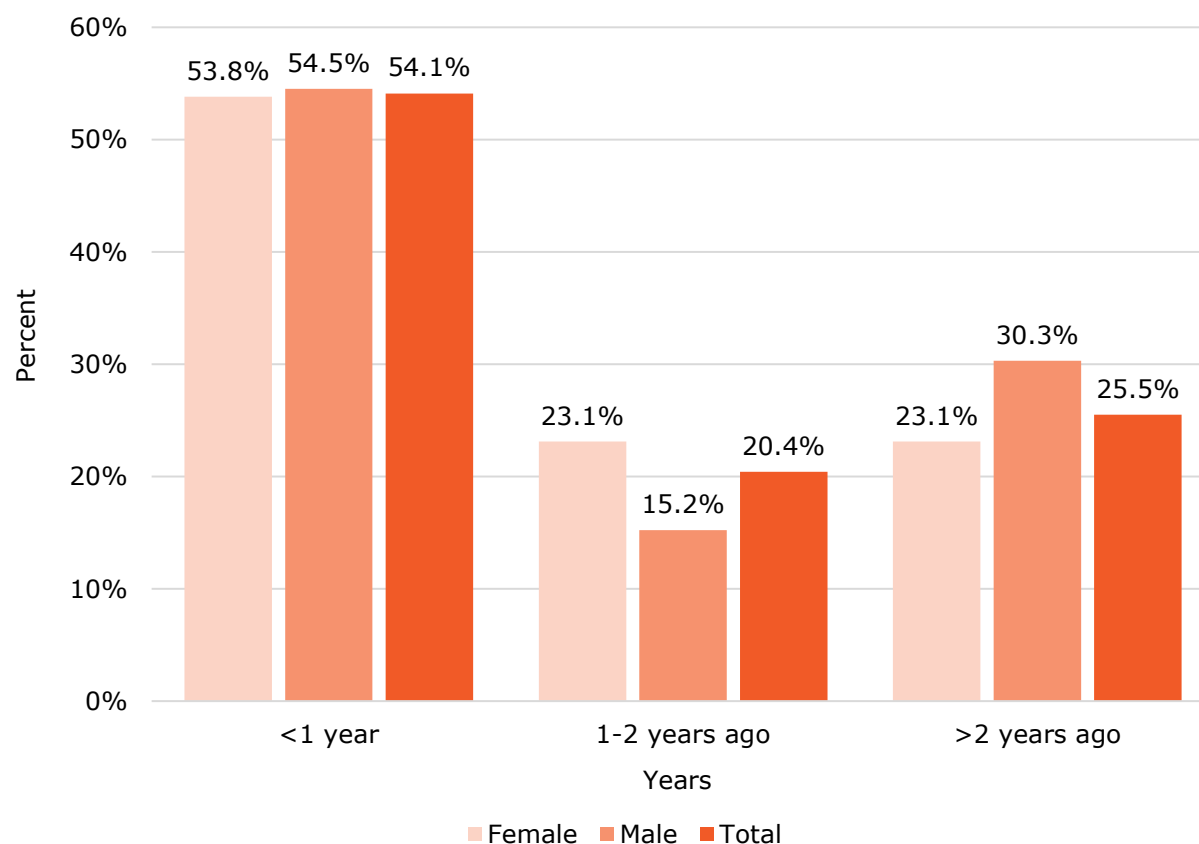
1. "Last Year" is the previous 12 months before March-April 2023.
2. Answered: 69, did not answer: 33.
3. Data are presented in **Appendix 4B**.

Due to its location off of Highways 17 and ON-599 and distance from the residential areas in town, it can be difficult for residents to access the MBCHCH. Lack of public transit in Ignace in addition to a lack of sidewalks surrounding MBCHCH, means residents of Ignace often rely on access to a vehicle to reach the health centre. MBCHCH has a van used for outreach services, however it is not insured to transport clients to and from the centre. There are some community volunteer drivers, but they are unattached to a service or organization.

4.3.5.4.2 Access to Dental Care

Just over half of survey respondents (54.1%) reported having had dental care in the past year (before April 2023) with similar proportions among male and female respondents (**Figure 4.3-4**). However, 25.5% reported that they last had dental care over two years ago, including 30.3% of male respondents.

Figure 4.3-4: Ignace Survey Respondents Most Recent Dental Care of Survey Respondents^{1,2}



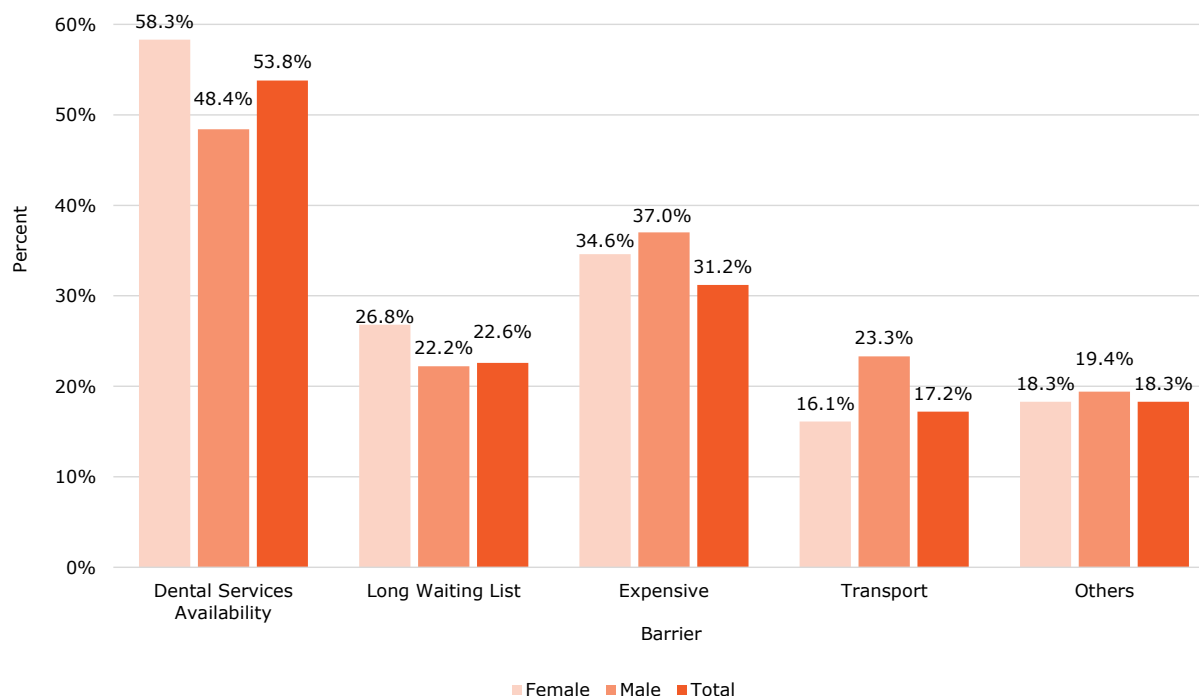
Source: InterGroup & EPI Research Inc. 2023. EPI Research Inc. 2023.

Notes:

1. Answered: 98, did not answer: 6.
2. Data are presented in **Appendix 4B**.

The most common barrier to dental care reported by both male and female respondents was lack of availability, followed by cost (**Figure 4.3-5**). Some survey respondents mentioned additional barriers to dental care access, the most common of which were the need to travel to other communities (sometimes forgoing work or traveling in poor weather conditions) and fear or dislike of the dentist.

Figure 4.3-5: Ignace Survey Respondents Barriers to Accessing Dental Care^{1,2}



Source: InterGroup & EPI Research Inc. 2023. EPI Research Inc. 2023.

Notes:

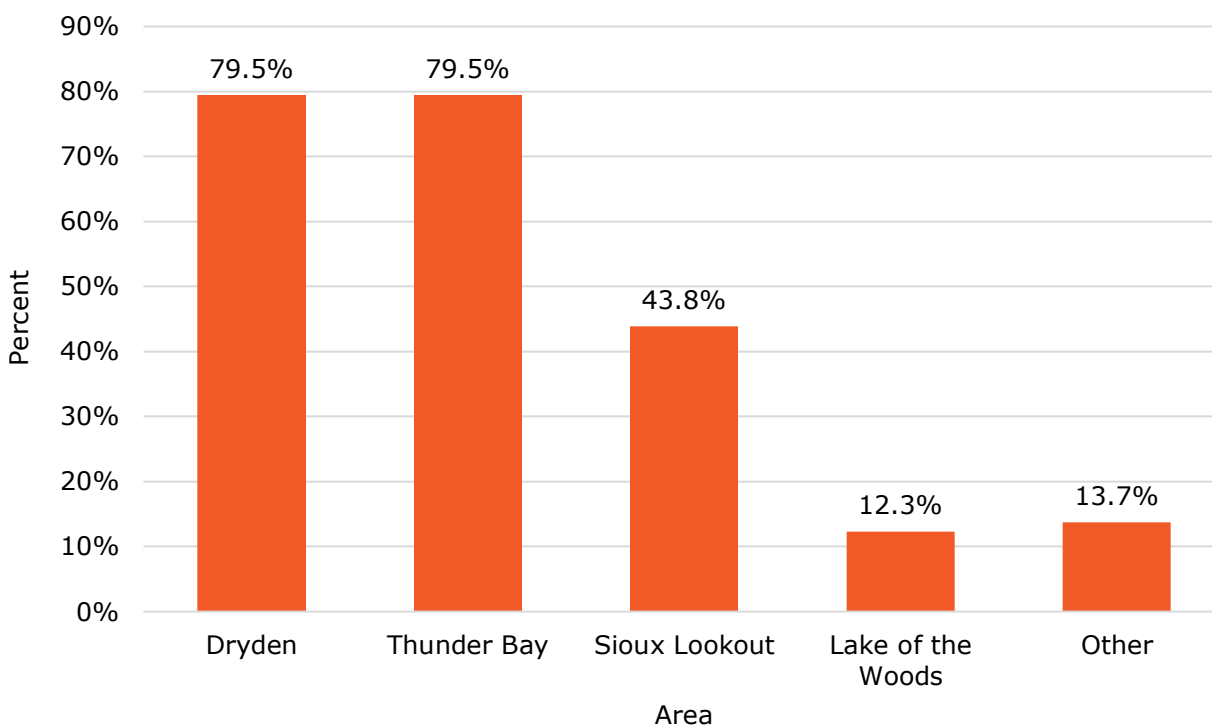
1. Answered: 93, did not answer: 11.
2. Data are presented in **Appendix 4B**.

4.3.5.4.3 Travel to Access Health Services

Most Community Health and Wellness Survey (2023) respondents reported they were required to travel to another community for health care. Only 6.8% of respondents reported either not traveling for health care or being from another community.

Figure 4.3-6 displays the communities that Ignace residents most often travelled to for health care. Dryden and Thunder Bay were the most common responses, with nearly 8 in 10 (79.5%) respondents having travelled to each. This aligns with results on locations of physician encounters by Ignace residents, as discussed in **Section 4.3.7.2**. Other common survey responses were Sioux Lookout (43.8%), Lake of the Woods (Kenora) (12.3%), and Winnipeg (8.2%). Results cannot be presented by sex due to small numbers. Residents of Ignace travel outside of the community for various health care reasons, some of which include the lack of a hospital in the Local Study Area (see **Section 4.3.4.2**) and lack of specialists (see **Section 4.3.7.2**).

Figure 4.3-6: Ignace Survey Respondents Travelling to Other Communities for Health Care Services^{1,2,3}



Source: InterGroup & EPI Research Inc. 2023. EPI Research Inc. 2023.

Notes:

1. Answered: 73, did not answer: 31.
2. Other includes Winnipeg, Toronto, London, and Vermillion Bay.
3. Data are presented in **Appendix 4B**.

Transportation is a barrier for Ignace residents accessing health services, both within the Township and outside of the community (NWO Community and Baseline Studies Key Person Interview Program 2022). Residents must further rely on use of a private vehicle if they need to leave Ignace to access health services not offered at the MBCHCH/in the community, as shown in **Figure 4.3-6**.

4.3.5.5 Health System Gaps in the Local Study Area

The health care services identified that require improvements or expansion in the Ignace area include (InterGroup 2022):

- Dental care;
- Dietician services;
- Discharge planning and referrals;
- Drug and alcohol treatment and counselling;
- Early childhood development supports;
- Equipment and aides for independent living;
- Mental health and therapy;
- In-home personal care;
- Preventive education;
- Occupational and speech therapy; and
- Patient care navigation.

Other services that are not meeting demands or do not exist in the Ignace area include (InterGroup 2022):

- Alzheimer's and dementia;
- Crisis response, on-call and after hours;
- In-home respite;
- Medical transportation within the community;
- Medical transportation outside the community;
- Psychiatric and behavioural support;
- Traditional health care/land-based healing and spiritual support not currently offered;
- Optometry – no full-time optometry services are available; and
- Outpatient rehabilitation – a physiotherapist from Thunder Bay provides service at MBCHCH 1.5 days per week but no in-home rehabilitation services are offered.

As of March 2022, MBCHCH leadership and staff identified three primary health service priority areas (see **Table 4.3-5**). These service priorities are not considered exhaustive but were the most common health service themes echoed throughout engagement with the community (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022).

Table 4.3-5: MBCHCH Key Health Service Priority Areas, March 2022

Priority Health Issue	Contributing Factors	Needs
Alcohol and Drug Use	<ul style="list-style-type: none"> Many community members do not have employment; Boredom and social isolation; Ease of obtaining narcotic prescriptions; and Use of substances seen as socially acceptable. 	<ul style="list-style-type: none"> Support groups (e.g., Alcoholics Anonymous); More stringent prescribing; and Things for people to do (e.g., more physical and social activities) to provide healthier alternatives.
Broader Access to Health care	<ul style="list-style-type: none"> Only funded for a weekday operation; and Lack of transportation within community and cost to travel to appointments or care outside of community. 	<ul style="list-style-type: none"> Funding; Larger population base to have a case to provide care beyond weekday hours; and Need for more care with a larger population.
Mental Health	<ul style="list-style-type: none"> Boredom and social isolation; World events (e.g., COVID-19 pandemic); Lack of inpatient beds, specialists, waitlists etc. in the region; and Stigma and lack of anonymity in seeking services (i.e., small community where everyone knows everyone so individuals are not always comfortable seeking help from the local health centre). 	<ul style="list-style-type: none"> Programming for youth; and Things for people to do (e.g., more physical and social activities).

4.3.6 MBCHCH Client Activity

MBCHCH provides care to Ignace residents and residents of other communities, including Dryden, Thunder Bay, Upsala, and Savant Lake. MBCHCH also serves a large seasonal population in the summer, with clients from other provinces and the United States. Each year, from April 1

to March 31, cumulative individual client encounters are tracked. This section describes client activity at MBCHCH, including client volumes, reasons for visits, overlapping clients, and the complexities of clients receiving care.

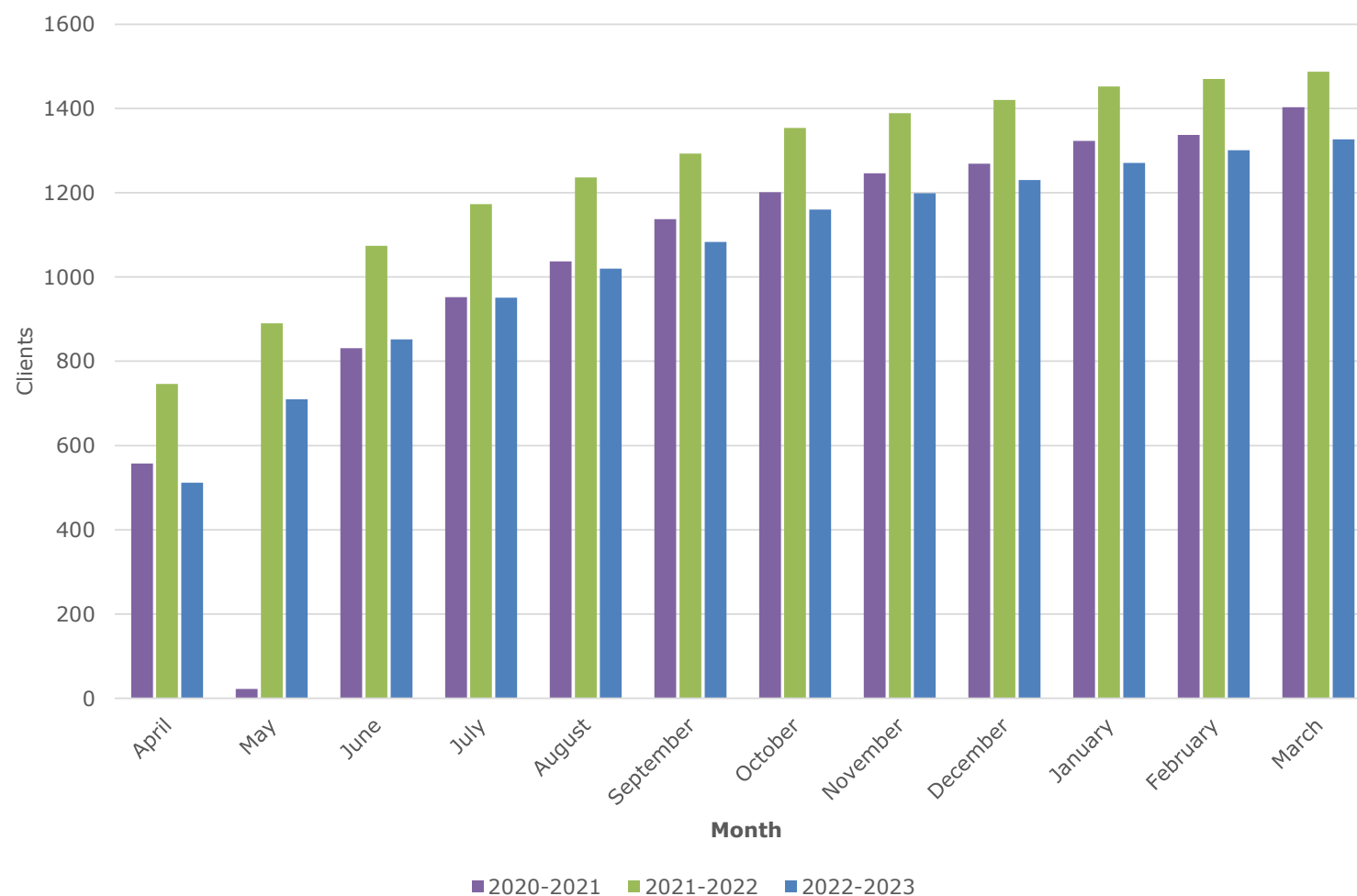
4.3.6.1 MBCHCH Client Volumes

Figure 4.3-7 illustrates MBCHCH active clients¹⁰⁷ by month from the 2020/2021 fiscal year to the 2022/2023 fiscal year. As of March 31, 2023, 1,327 individual clients had received a service directly through MBCHCH over the 2022/23 fiscal year. The 2022/2023 fiscal year saw a slight reduction in encounters, likely related to the large scale back in COVID-19 testing and vaccination as the number of COVID-19 cases decreased.

It is noted that the 2021 Census reports the population of Ignace to be 1,206 and the Ontario IntelliHealth Registry has 1,192 community members registered for services in 2021. However, the slight monthly over-count of active clients in **Figure 4.3-7** compared to population is not unexpected given that the MBCHCH provides services to out-of-community clients. Furthermore, there were many encounters for COVID-19 testing and vaccination at the MBCHCH, as well as counselling support related to fears and other impacts of COVID-19.

¹⁰⁷ Active client counts do not mean that each client was seen in-person for an appointment at the MBCHCH, as some encounters include phone calls.

Figure 4.3-7: MBCHCH Active Clients by Month, 2020/2021 to 2022/2023 Fiscal Years



Source: MBCHCH Internal Reports 2023.

Table 4.3-6 provides further details related to MBCHCH client encounters by fiscal year from 2019/2020 to 2021/2022. Encounters include phone calls and telemedicine appointments. It is noted that encounter volumes surged in the 2020/21 fiscal year for general clinic services, which illustrates the impact on resources because of the COVID-19 pandemic. With in-person services being restricted due to COVID-19, there was need for support of community members including information, testing, and support with vaccination when it became available early in 2021 that included all levels of staff.

Table 4.3-6: Number of MBCHCH Encounters by Service Provider, 2019/2020 to 2021/2022 Fiscal Years^{1,2,3}

Time Period	General Clinic			Specialty Services		Total Encounters
	Nurse	Nurse Practitioner	Physician	Counseling	Health Promotion	
2019/20	9,194	723	1,528	1,769	259	13,473
2020/21	17,039	825	1,924	1,214	244	21,246
2021/22	5,802	992	2,126	1,103	360	10,383

Source: OHRS 2022. Retrieved May 30, 2022.

Notes:

1. Date extracted: May 30, 2022.
2. MBCHCH encounters include phone calls.
3. Data are presented in **Appendix 4B**.

4.3.6.2 Leading Reasons for MBCHCH Encounters

Table 4.3-7 to **Table 4.3-11** illustrate client encounters with MBCHCH staff by profession between April 1, 2019, and March 31, 2022. These data are provided directly from the MBCHCH reporting system between the 2019/2020 and 2021/2022 fiscal years. It is important to note that there are challenges with documentation of client encounters. For many providers, there are many encounters coded as “other”. This creates an impression that the complexity of clients is lower than it is.

A number of the leading reasons for MBCHCH community health worker encounters over the 2019/2020 to 2021/2022 fiscal years displayed in **Table 4.3-7** relate to services which address the social determinants of health, such as food security and social isolation (see **Section 4.2 Social Determinants of Health** and **Section 2.3.6 Food Security**). The leading reasons for encounters with community health workers at the MBCHCH were visits for health advice (28.6%), social isolation (22.4%), and inadequate exercise (10.1%). **Table 4.3-7** further shows that, in general, community health workers provided general advice and support in navigating health services. It should be noted that services such as “assistance with forms” are key supports that illustrate optimal team-based care for clients. Many people who require supports in navigating the health and social support system, such as applying for community support programming and other services, can fall through the cracks if they do not have support in

navigating the continuum of health and social care. Lack of knowledge on how to navigate the health care system is a barrier for some Local Study Area residents, particularly when they must navigate these systems with little or no money (Township of Ignace 2021).

Table 4.3-7: Leading Reasons for MBCHCH Community Health Worker Encounters, 2019/2020 to 2021/2022 Fiscal Years^{1,2}

Issue Addressed	Number of Encounters	Percentage
Visit for Health Advice	800	28.6%
Social Isolation	628	22.4%
Inadequate Exercise	283	10.1%
Person Living Alone	256	9.1%
Visit for Smoking Cessation	175	6.2%
Visit for Advice on Weight Management	170	6.1%
Food Insecurity	164	5.9%
Visit for Falls Prevention Education	116	4.1%
Caregiver Stress	71	2.5%
Visit for Assistance with Forms	41	1.5%
Other	97	3.5%

Source: OHRS 2022. Retrieved May 30, 2022.

Notes:

1. Date extracted: May 30, 2022.
2. Data are presented in **Appendix 4B**.

Table 4.3-8 displays the leading reasons for nurse encounters at the MBCHCH for the 2019/2020 to 2021/2022 fiscal years, which help provide an understanding of what types of nursing services at the MBCHCH are priorities in the Local Study Area during a given period of time. The leading reasons for nurse encounters at the MBCHCH over the 2019/2020 to 2021/2022 fiscal years were visits for screening (26.4%), visits for health advice (10.2%), visits for preventative immunizations/medications (6.9%), and visits for blood tests (6.9%). The COVID-19 pandemic had a large impact on issues addressed at the MBCHCH. Some issues noted in **Table 4.3-8** can be misleading. For example, “visits for screening” could include any kind of screening, including testing for COVID-19; however, testing for COVID-19 could also be included under “COVID-19 infection” as there were 1,815 lab-confirmed cases of COVID-19 in Ignace.

Nursing services were heavily impacted by COVID-19, including increased needs for testing, immunization, and providing counselling and information related to COVID-19.

Table 4.3-8: Leading Reasons for MBCHCH Nurse Encounters, 2019/2020 to 2021/2022 Fiscal Years^{1,2}

Issue Addressed	Number of Encounters	Percentage
Visit for Screening	11,959	26.4%
Visit for Health Advice	4,632	10.2%
Visit for Preventive Immunizations / Medications	3,124	6.9%
Visit for Blood Test	3,099	6.9%
COVID-19 Infection	1,815	4.0%
Foot or Toe Symptom / Complaint	1,644	3.6%
Fear / Concern about COVID-19	1,300	2.9%
Diabetes Mellitus Type 2	657	1.5%
Visit for Prescription Renewal	642	1.4%
Visit for Urine Test	611	1.4%
Other	15,754	34.8%

Source: OHRS 2022. Retrieved May 30, 2022.

Notes:

1. Date extracted: May 30, 2022.
2. Data are presented in **Appendix 4B**.

Table 4.3-9 displays the leading reasons for physician encounters at the MBCHCH for the 2019/2020 to 2021/2022 fiscal years, which help provide an understanding of what types of physician services at the MBCHCH are priorities in the Local Study. **Table 4.3-9** shows that there is no information collected and provided to MBCHCH to illustrate the key health conditions of patients who are receiving care from a physician. Because these physicians also do not appear to shadow bill¹⁰⁸ to the Ontario Health Insurance Plan ("OHIP"), there is a substantial impact in understanding the types and levels of health needs in the community. It is noted that even with most physician visits including OHIP billing, there is a data deficit related to the actual health condition of the patient.

The most common issue known to be addressed by physicians through MBCHCH over the 2019/2020 to 2021/2022 fiscal years is prescription renewal (9.5%) and general assessments (7%). There are three common conditions for which services are identified. These are hypertension, diabetes, and back pain. Hypertension and diabetes are both chronic health conditions (see **Section 4.4.3 Chronic Disease**). The high number of encounters related to these health conditions may be attributed to the high population of seniors living in the Local

¹⁰⁸ Shadow billing refers to claims submitted to the provincial government by physicians who are on alternate payment plans for the services they provide, such as salaried physicians who do not work through a fee-for-service model (University of Manitoba 2008).

Study Area, as 50% of the Ignace population is 55 years or older (see **Section 2.2 Population and Demographics**).

Both nursing and physician encounters at the MBCHCH (**Table 4.3-8** and **Table 4.3-9**) specifically address support for residents living with diabetes type 2. Diabetes under nurse encounters would primarily be relative to diabetes counselling, supports, blood sugars, monitoring, and testing. Physician encounters for diabetes could include any combination of those services as well as diagnosis and prescriptions.

Table 4.3-9: Leading Reasons for MBCHCH Physician Encounters, 2019/2020 to 2021/2022 Fiscal Years^{1,2}

Issue Addressed	Number of Encounters	Percentage
Visit for Prescription Renewal	928	9.5%
Visit for General Assessment	680	7.0%
Visit for Therapeutic Counselling / Listening	642	6.6%
Visit for Health Advice	365	3.7%
Visit for New Medication Prescription	309	3.2%
Hypertension	267	2.7%
Request for Results of Test(s)	245	2.5%
Back Pain	125	1.3%
Visit for Assistance with Forms	110	1.1%
Diabetes Mellitus Type 2	108	1.1%
Other	5,992	61.3%

Source: OHRS 2022. Retrieved May 30, 2022.

Notes:

1. Date extracted: May 30, 2022.
2. Data are presented in **Appendix 4B**.

Table 4.3-10 displays the leading reasons for counsellor and therapist encounters through the MBCHCH for the 2019/2020 to 2021/2022 fiscal years. Social isolation was the leading reason (24.5%) for the number of encounters with counsellors and therapists at the MBCHCH. According to the Healthy Community Workshop 2023, social isolation can be a challenge in Ignace and the Regional Study Area due to the remoteness of communities in Northwestern Ontario. Further, according to the Silver Tops Focus Group 2023, it can be difficult for people in Ignace, particularly newcomers, to access social gatherings and meet new people due to a lack of community meeting places and activities (see **Section 2.3 Community and Culture** and **Section 2.4 Infrastructure and Services** for more on Ignace community culture and recreation).

Table 4.3-10: Leading Reasons for MBCHCH Counsellor and Therapist Encounters, 2019/2020 to 2021/2022 Fiscal Years^{1,2}

Issue Addressed	Number of Encounters	Percentage
Social Isolation	1,327	24.5%
Visit for Therapeutic Counselling / Listening	1,140	21.0%
Person Living Alone	685	12.6%
Anxiety	578	10.7%
Depression	436	8.0%
Visit for Assistance with Forms	323	6.0%
Visit for Health Advice	198	3.7%
Caregiver Stress	164	3.0%
PTSD	53	1.0%
Visit for Advice on Community Resources	50	0.9%
Other	464	8.6%

Source: OHRS 2022. Retrieved May 30, 2022.

Notes:

1. Date extracted: May 30, 2022.
2. Data are presented in **Appendix 4B**.

Table 4.3-11 displays the leading reasons for physiotherapy encounters through the MBCHCH for the 2019/2020 to 2021/2022 fiscal years. The leading reasons for physiotherapy encounters at the MBCHCH, in addition to “other” (57.1%), include shoulder pain (8.0%), low back pain (7.8%), and knee pain (7.3%).

Table 4.3-11: Leading Reasons for MBCHCH for Physiotherapy Encounters 2019/2020 to 2021/2022 Fiscal Years^{1,2}

Issue Addressed	Number of Encounters	Percentage
Shoulder Pain	81	8.0%
Low Back Pain (No Sciatica)	79	7.8%
Knee Pain	74	7.3%
Foot Pain	34	3.3%
Neck Pain (Musculoskeletal)	32	3.1%
Myo-Fascial Pain Syndrome	29	2.8%
Postsurgical / Postprocedural Disorder of the Musculoskeletal System	29	2.8%
Cervical Disc Disease with Radiculopathy	28	2.8%
Lumbar Disc Disease with Radiculopathy	26	2.6%
Shoulder Tendinitis	25	2.5%
Other	581	57.1%

Source: OHRS 2022. Retrieved May 30, 2022.

Notes:

1. Date extracted: May 30, 2022.
2. Data are presented in **Appendix 4B**.

4.3.6.3 Overlapping Clients

Table 4.3-12 presents the number of clients from MBCHCH who were included and excluded from the 2021 CHC Practice Profile analysis (Alliance for Healthier Communities & ICES 2021).

Ineligible clients include:

- Those <1 year of age at the index date (March 31, 2021);
- Those who were not alive at the index date (March 31, 2021); and
- Palliative care clients identified from hospital and physician billing claims (palliative clients seen only within a CHC setting during the study period are included).

Table 4.3-12: Community Health Centre Included/Excluded Clients^{1,2}

CHC	# Included Clients	Excluded Clients			
		# Clients not Linkable (A)	# Clients Ineligible (B)	Total Excluded Clients (A+B)	% Clients Excluded
MBCHCH	1,081	23	30	53	4.7%
Ontario CHC Total	258,205	30,146	11,178	41,324	13.8%

Source: Alliance for Healthier Communities & ICES 2021.

Notes:

1. Report provided by MBCHCH.
2. Data are presented in **Appendix 4B**.

Table 4.3-13 illustrates the proportion of MBCHCH clients that are either enrolled or have most of their care provided by a CHC compared to a non-CHC primary care model (e.g., Family Health Organization, Family Health Team, solo physician practice). In the 2020/2021 fiscal year, about 70% of MBCHCH clients received care only at MBCHCH. This is higher than the Ontario average of just under one half of clients, but not unusual for remote or more rural communities. There can be many reasons for client overlap, including the provision of shared or specialized care, or clients not de-enrolling from a previous provider.

Table 4.3-13: MBCHCH Rate of Overlapping Clients, 2020/2021 Fiscal Year^{1,2,3,4}

Community Health Centre	Clients Who Receive Care from own CHC Only	Clients Enrolled or Who Receive Majority of Care from Non-CHC Primary Care Model
Mary Berglund Community Health Center Hub (MBCHCH)	69.8%	30.0%
Ontario CHC Average	47.7%	52.3%

Source: Alliance for Healthier Communities & ICES 2021.

Notes:

1. Date extracted: March 14, 2022. Includes data to March 31, 2021.
2. As per source, interpret with caution. In certain instances, the numerator contains between 6-19 individuals and/or the denominator contains between 30-99 individuals.
3. Percentages may not add to 100% due to rounding.
4. Data are presented in **Appendix 4B**.

4.3.6.4 Client Complexity

4.3.6.4.1 Aggregated Diagnosis Groups

Individual diseases or conditions are placed¹⁰⁹ into Aggregated Diagnosis Groups (“ADGs”) based on five clinical dimensions: duration of the condition, severity of the condition, diagnostic certainty, cause of the condition, and expected need for specialty care (Austin et al. 2011). There are 32 ADGs. A simple measure of the burden of client illness is a count of the number of ADGs triggered for clients of a CHC. Clients who trigger more ADGs can be assumed to be more complex than clients who trigger fewer ADGs.

Table 4.3-14 shows the proportion of clients by the number of ADGs they trigger. Although the MBCHCH client profile is older than the Ontario CHC average, MBCHCH clients are most likely to trigger 1-5 ADG’s (47.1%) compared to the Ontario average (29.2%). This is related to the challenges with specificity of documentation at MBCHCH and a substantial number of encounters encoded as “other”.

Table 4.3-14: Percentage of Patients per Aggregate Diagnosis Groups (ADGs), MBCHCH and Ontario CHC Average, 2017–2021^{1,2}

CHC	Percentage of Patients by Number of ADGs Triggered		
	1 – 5	6 – 9	10+
MBCHCH	47.1%	41.4%	11.5%
Ontario CHC Average	29.2%	44.5%	26.2%

Source: Alliance for Healthier Communities & ICES 2021.

Notes:

1. Date extracted: March 4, 2022.
2. Data are presented in **Appendix 4B**.

4.3.6.4.2 Standardized Adjusted Clinical Groups Morbidity Index

The Standardized Adjusted Clinical Groups¹¹⁰ Morbidity Index (“SAMI”) measures the complexity of the client population served by a CHC. A SAMI score is a predictor of primary care utilization and is calculated over two time periods. The average standard for a person in Ontario is a SAMI of 1.0, meaning a CHC with a SAMI score of 1.50 is interpreted as an expected need for primary care that is 50% greater than that of the average Ontario population.

Table 4.3-15 shows that the MBCHCH SAMI score has been consistent from 2017 to 2021, with an approximately 30% greater need than the provincial standard. MBCHCH may have a lower score than the Ontario average because the Ignace population may have different clinical needs or insufficient data may have been collected.

¹⁰⁹ The assignment of diagnoses into ADGs uses the John Hopkins Adjusted Clinical Groups methodology.

¹¹⁰ Adjusted Clinical Groups (“ACGs”) are a method of categorizing the illnesses of a patient, where the ACG system assigns each International Classification of Disease codes to one of the 32 AGDs (Austin et al. 2011).

Table 4.3-15: Standardized Adjusted Clinical Group Morbidity Index (SAMI), MBCHCH and Ontario CHC Average, 2017-2021^{1,2}

CHC	SAMI				
	2017	2018	2019	2020	2021
MBCHCH	1.4	1.3	1.3	1.3	1.3
Ontario CHC Average	1.6	1.5	1.6	1.6	1.7

Source: Alliance for Healthier Communities & ICES 2021.

Notes:

1. Date extracted: March 4, 2022.
2. Data are presented in **Appendix 4B**.

4.3.6.4.3 Emergency Department and Specialist Visits by MBCHCH Clients

The rates of ED visits by level of urgency and specialist visits are presented in **Table 4.3-16** and **Table 4.3-17**. The ED visits presented are not at the MBCHCH, which does not have an ED, rather, they represent hospital EDs and specialist referrals that are linked back to the MBCHCH client population using patient OHIP numbers. See **Section 4.3.9** for information on Emergency Services.

MBCHCH clients have a higher rate of ED utilization (242.4 per 1,000) compared to the Ontario average (157.7 per 1,000). However, it should be noted that ED visits coded as less urgent may or may not reflect appropriate use of the ED depending on individual client circumstances and other health services accessible in the community at that time.

Table 4.3-16: Rate of Emergency Department Visits by Canadian Triage and Acuity Scale (CTAS) Score Group, 2020/2021^{1,2,3}

CHC	Urgency of Emergency Department Visits by CTAS Score Group (Rate per 1,000)	
	Urgent (CTAS 1,2,3)	Less Urgent (CTAS 4,5)
MBCHCH	D/C	242.4
Ontario CHC Average	472.3	157.7

Source: Alliance for Healthier Communities & ICES 2021.

Notes:

1. Date extracted: March 4, 2022.
2. D/C refers to Data Concealed. Used to prevent back calculation. When one cell count is too small, the remainder of cell data are suppressed.
3. Data are presented in **Appendix 4B**.

Table 4.3-17 shows that MBCHCH clients have a lower specialist visit rate (1,117.5 per 1,000) than the Ontario average (2,043.8 per 1,000) and appears to support the lower acuity scale scores of patients of the MBCHCH. Lower specialist visit rates for MBCHCH clients may be

attributed, in part, to the lack of specialists available in the Local Study Area (see **Section 4.3.5.4**).

Table 4.3-17: Rate of Specialist Visits by Canadian Triage and Acuity Scale (CTAS) Score Group, 2020/2021^{1,2}

CHC	Specialist Visits (Rate per 1,000)
MBCHCH	1,117.5
Ontario CHC Average	2,043.8

Source: Alliance for Healthier Communities & ICES 2021.

Notes:

1. Date extracted: March 4, 2022.
2. Data are presented in **Appendix 4B**.

4.3.7 Medical Services Utilization

The utilization of medical services is an important indicator of the level of access to health care available to residents. Access to health care is an important indicator of equity and supports good health status (see **Section 4.2 Social Determinants of Health**). Further, understanding the types of services utilized and the leading reasons for physician visits can contribute to a better understanding of community needs moving forward.

This section includes all fee-for-service claims submitted by providers, as well as shadow billed claims from some alternative payment programs, beginning with the 2000/2001 fiscal year. The majority of fee-for-service providers are physicians, but also includes the fee-for-service claims of other health care professionals (e.g. dentists).¹¹¹

Since medical service data sources only contain the activities of fee-for-service providers who chose to submit claims, physicians and other service provider at some CHCs, health service organizations, and academic institutions may be excluded, as these providers are salaried or paid through alternative payment programs.

4.3.7.1 Medical Services Billed to OHIP

Between 2002 and 2020, 157,090 claims were submitted by providers related to health services for residents of Ignace, including physicians¹¹² (142,261), practitioners¹¹³ (14,782), and dentists (47). The majority (90.6%) of provider encounters were by physicians, consisting primarily of general and family practice physicians (37.2%), with 16.8% by diagnostic radiology providers and 36.6% consisting of all other specialties. Many of these services involve the provider

¹¹¹ The Approved Claims file further includes the fee-for-service claims of other health care professionals in addition to physicians, such as dentists, physiotherapists, and nurse practitioners.

¹¹² Physician claims to OHIP include both fee-for-service and shadow billing claims (IntelliHealth Ontario 2022a). These claims are in addition to all services provided directly at the MBCHCH.

¹¹³ Practitioners include chiropractic care, optometry, and physiotherapy. After 2004, chiropractic care is no longer an insured service.

reviewing a patient's imaging and not directly interacting with the patient. Just under 1 in 10 encounters (9.4%) was with a non-physician practitioner (IntelliHealth Ontario 2022a).

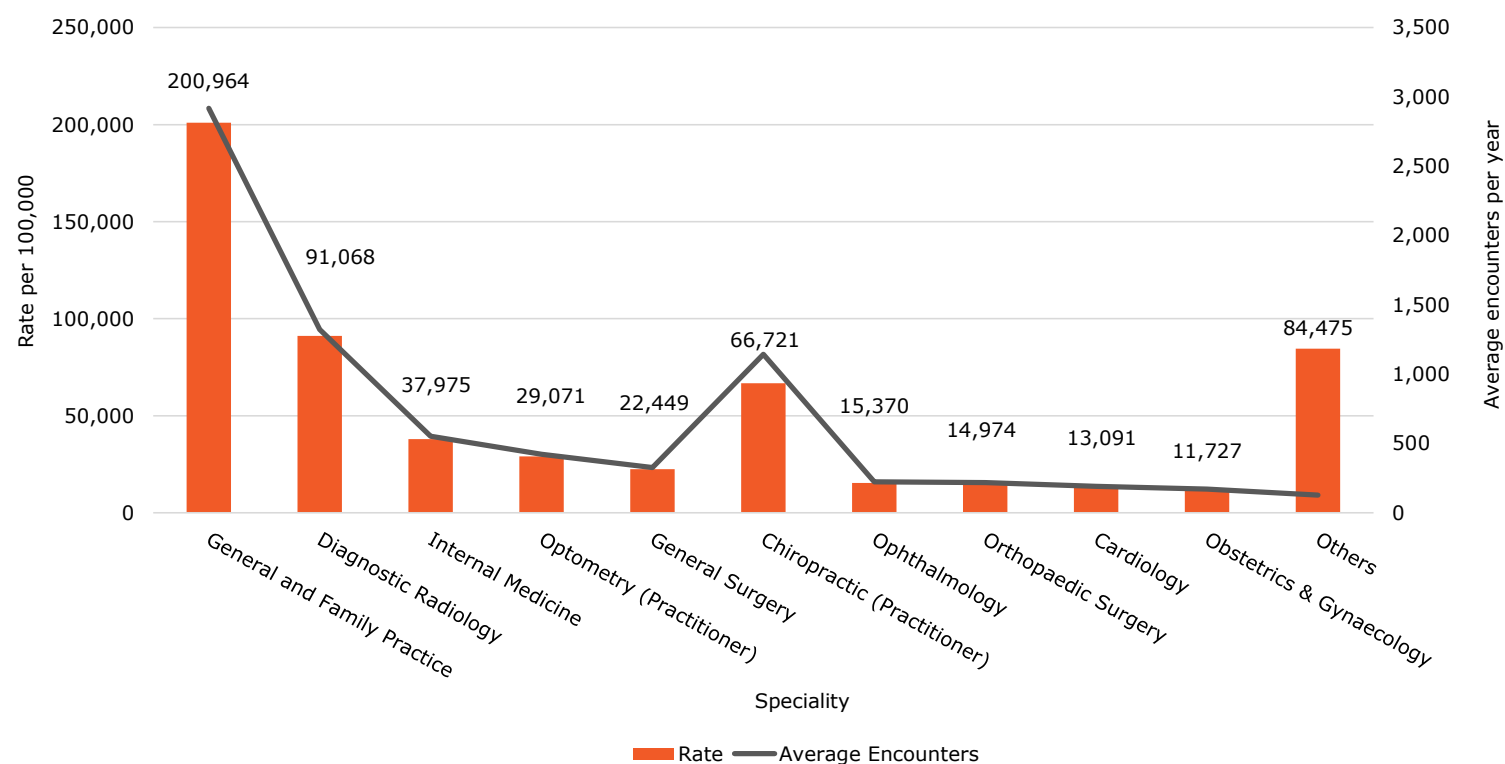
Shadow billing¹¹⁴ data are available as of 2008. From 2008 to 2020, there were 3,119 service encounters submitted to OHIP for Ignace residents, with 528 shadow billed. Only physicians shadow billed (e.g., no nurse practitioner encounters). Medical oncology, general and family practice, and internal medicine accounted for most of the shadow billing (for a list of all providers, see **Appendix 4A Supplemental Data**).

Shadow billing by general and family physicians from 2008 to 2020 indicates that physicians who provide services to Ignace residents (14.9%) are more likely to shadow bill than physicians providing services to the Dryden Hub (1.3%) and NWHU (2.6%) (IntelliHealth Ontario 2022a). However, this does not necessarily mean that the billing data for Ignace residents are comprehensive, as no shadow billing links back to the MBCHCH institution code.

Figure 4.3-8 shows the rates of provider encounters, on average, from 2000 to 2020. The highest rates of physician encounters occurred for general and family practice (200,964 per 100,000), diagnostic radiology (91,068 per 100,000), and chiropractic practitioner (66,721 per 100,000).

¹¹⁴ Shadow billing refers to claims submitted to the provincial government by physicians who are on alternate payment plans for the services they provide, such as salaried physicians who do not work through a fee-for-service model (University of Manitoba 2008).

Figure 4.3-8: Rate and Average Number of Encounters by Provider Specialty, Ignace Residents, 2000-2020^{1,2,3,4}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 1, 2022; updated December 4, 2022.
2. Data are presented in **Appendix 4B**.
3. Note includes both fee-for-service and shadow billing claims.
4. Note Chiropractic Care is no longer an insured service in the Ontario Health Insurance Plan after 2004. The rate per 100,000 population and average encounters per year are based on encounters from 2000-2004.

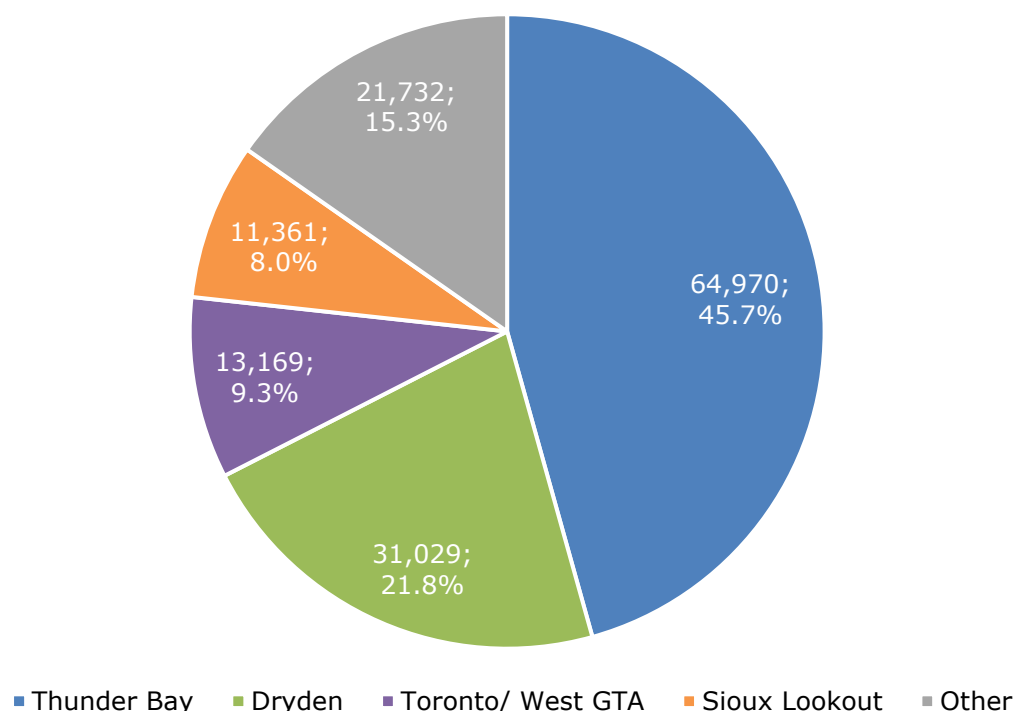
4.3.7.2 Physician Encounters

This section illustrates physician services utilization by Ignace residents and the Regional Study Area. Access to physician services is a key indicator of health status, including where services occurred and the number of encounters with physicians.

The details of this indicator may not be completely accurate, as the information related to “location of physician” is the billing address of the physician and not necessarily the location of the service provided. Further, not all recorded encounters occur in person. As of 2008, telemedicine visits are recorded with other locations of physician visits. It is noted that there is a known quality issue with these data and they must be interpreted with caution.

Between 2000 and 2020, 3,144 individual residents of Ignace were provided services by a physician in Ontario, for a total of 142,261 physician encounters. **Figure 4.3-9** displays the billing locations of all physician encounters of Ignace residents between 2000 and 2020. During this time, nearly half (45.7%) of Ignace resident physician encounters were billed in Thunder Bay. This is a nearly 10% increase in physician encounters billed in Thunder Bay from the 2000-2010 to 2011-2020 periods (see **Appendix 4B Supplemental Data**). Thunder Bay is followed by Dryden (21.8%), Toronto, Hamilton, and Burlington combined (9.3%), and Sioux Lookout (8.0%). This aligns with results from the Community Health and Wellness Survey (2023), which suggest most Ignace residents travel to either Thunder Bay or Dryden for health care services (see **Figure 4.3-6**). This indicates limited access to health care for Ignace residents in the Local Study Area (see **Section 4.3.5.4 Access to Health Services**).

Figure 4.3-9: All Physician Encounters of Ignace Residents by Provider Billing Location, 2000–2020^{1,2,3,4,5}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 1 2022; Updated December 12, 2022.
2. Provider Type = Physician.
3. "Other" includes any location that accounted for less than 2.5% of physician visits.
4. Toronto/ West Greater Toronto Area (GTA): includes Toronto, Burlington, and Hamilton.
5. Data are presented in **Appendix 4B**.

4.3.7.2.1 Telemedicine Encounters

Telemedicine¹¹⁵ is becoming an increasingly common health service, particularly following the COVID-19 pandemic, and is an alternative option to travel for residents of rural and remote communities. Between 2008 and 2021, 3,083 of the 87,892 (3.5%) physician encounters¹¹⁶ for Ignace residents occurred using telemedicine, with the most recent years seeing telemedicine at just under 5% of all recorded encounters for Ignace residents. As health care services in the

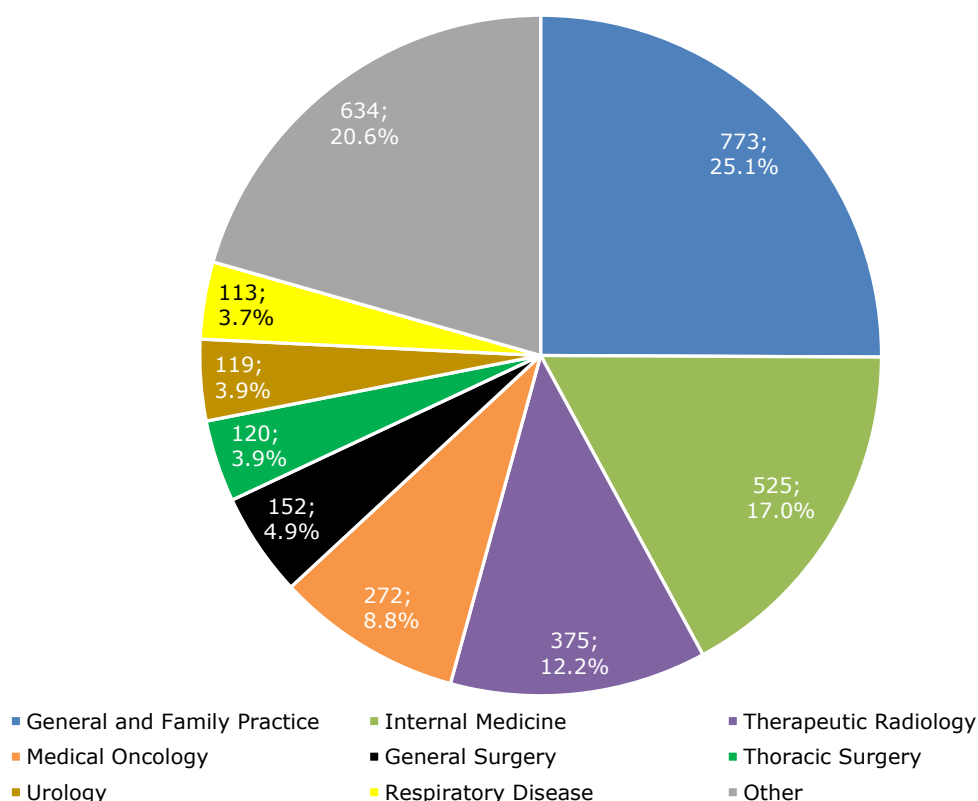
¹¹⁵ Telemedicine refers to medical appointments by phone or video call.

¹¹⁶ For interpretation of this data, it is important to note that for some specialities, such as therapeutic radiology, often the encounter recorded is typically the review and report of the radiology image and does not involve a direct interaction with the patient. For this reason, the term "encounters" as opposed to "visits" is used in this section.

Local Study Area are limited, telemedicine increases Ignace residents' access to primary care and reduces the need to travel outside the community for non-urgent care.

Figure 4.3-10 shows that general and family practitioners provided the highest proportion of telemedicine appointments to Ignace residents (25.1%), followed by internal medicine (17.0%), and therapeutic radiology (12.2%).

Figure 4.3-10: Physician Telemedicine Encounters by Physician Type, Ignace Residents, 2008-2020^{1,2,3,4}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

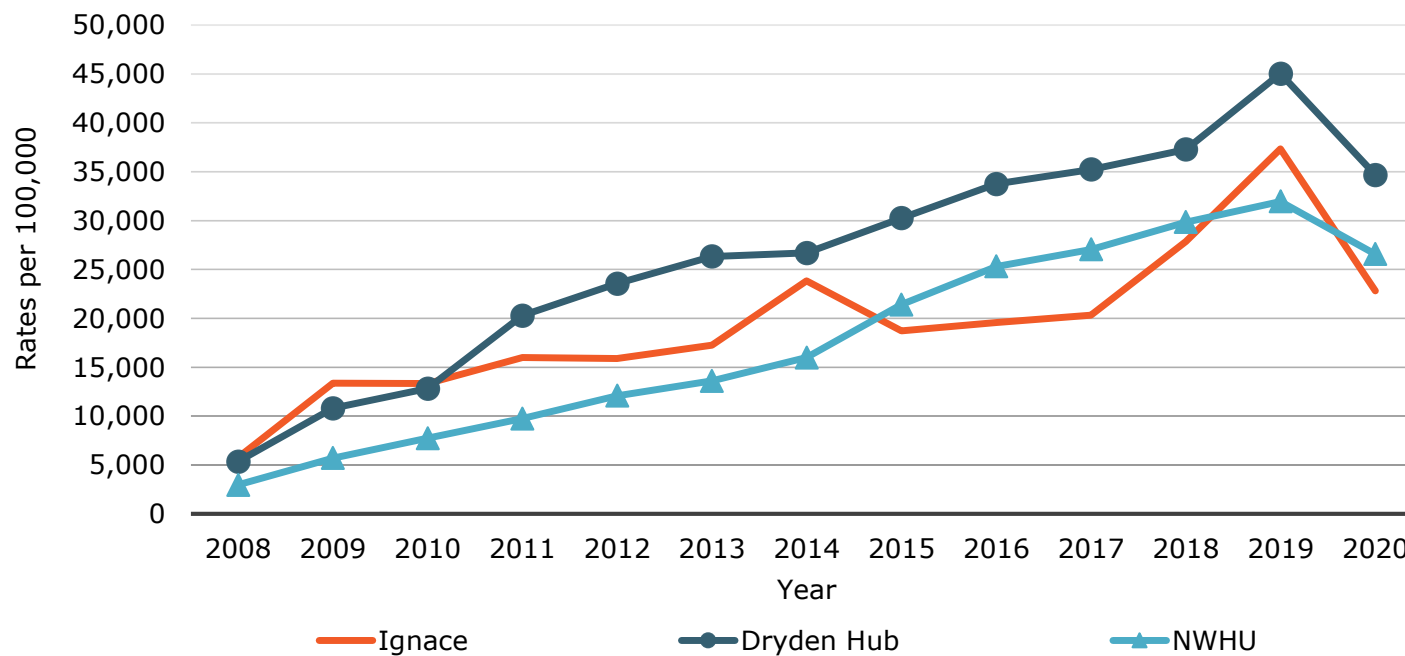
Notes:

1. Date extracted: March 1, 2022; Updated December 12, 2022.
2. Provider Type = Physician.
3. "Other" includes any physician type that accounted for less than 100 physician encounters.
4. Data are presented in **Appendix 4B**.

Figure 4.3-11 shows that between 2008 and 2020, Ignace, the Dryden Hub, and the NWHU experienced a notable increase in the use of telemedicine services, with rates more than quadrupling in all three areas. The decline in recorded telemedicine encounters in 2020 may be attributed to the onset of the COVID-19 pandemic, which signalled an interruption in access to health services such as specialist services and radiology imaging. Further, changes to telemedicine billing came into place in November 2019 and April 2020, whereby the premiums

on telemedicine billing were removed in order to support the introduction of direct-to-patient video visits (Government of Ontario 2019b). Direct-to-patient video visits allow patients to receive a video visit from their location of choice (e.g., at home) without the requirement to visit a patient host site unless clinically or technologically necessary in order to better accommodate patient needs (Government of Ontario 2019b). This resulted in an increase in the use of other technologies such as Zoom and FaceTime which lessened the need to use telemedicine (NWO Community and Baseline Studies Key Person Interview Program 2022-2023).

Figure 4.3-11: Physician Telemedicine Encounters by Area, 2008-2020^{1,2,3}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 1, 2022; Updated December 12, 2022.
2. Ignace physicians do not bill to OHIP.
3. Data are presented in **Appendix 4B**.

4.3.7.3 Delivery of Care by Physician Type

Knowing the billing locations of physician services is helpful for understanding where Ignace residents access certain types of health care and what services are gaps in the Local Study Area. Access to specialists is a challenge for Ignace residents, who must often travel to other locations (e.g., Kenora, Thunder Bay) for a range of services, such as senior services, mental health services, and addictions services (NWO Community and Baseline Studies Key Person Interview Program 2022). This section describes the billing locations of physician encounters with Ignace residents for the following providers: general and family practice, diagnostic radiology, internal medicine, paediatrics, obstetrics and gynaecology, and psychiatry.

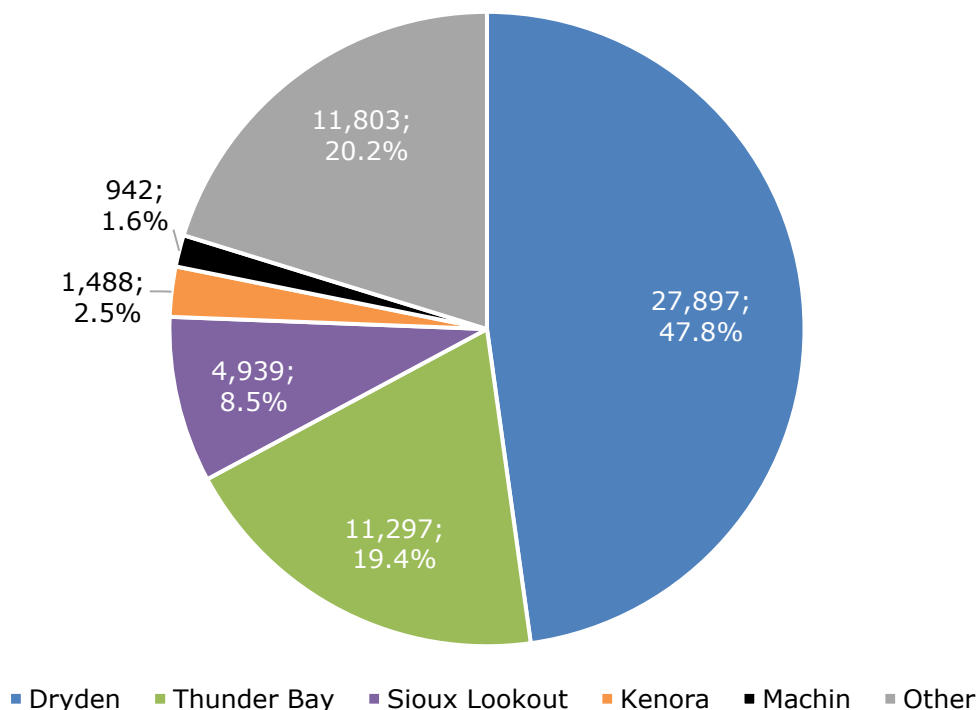
4.3.7.3.1 General and Family Practice

Between 2000 and 2020, there were a total of 58,366 general and family practice physician encounters with Ignace residents. Of these encounters, 32,997 (56.5%) were for female patients and 25,369 (43.5%) were for male patients (see **Appendix 4B Supplemental Data**). This amounted to an average of 2,779 encounters per year.

Figure 4.3-12 displays the billing locations for general and family physicians who provided services to Ignace residents during the study period. Nearly half of the general and family physician encounters (47.8%) were billed in Dryden. This was followed by Thunder Bay (19.4%) and Sioux Lookout (8.5%). A very small percentage of encounters had a billing location of Kenora or Machin. A remaining 20.2% were billed from other locations. This aligns with what is known about the need for Ignace residents to travel outside of the Local Study Area to receive certain health services and highlight gaps in services in the community (see **Section 4.3.5.4** and **Section 4.3.5.5**).

The highest proportion of encounters with general and family physicians were by patients aged 45-64 (29.2%) followed by patients aged 20-44 (25.1%), with the lowest proportion of encounters being patients aged 0-19 (10.7%) (see **Appendix 4B Supplemental Data**). These proportions are influenced by the distribution of ages in the population as they are counts of encounters, not rates (i.e., Ignace has a large senior population).

Figure 4.3-12: General and Family Physician Encounters by Billing Location, All Ignace Residents, 2000-2020^{1,2,3,4}



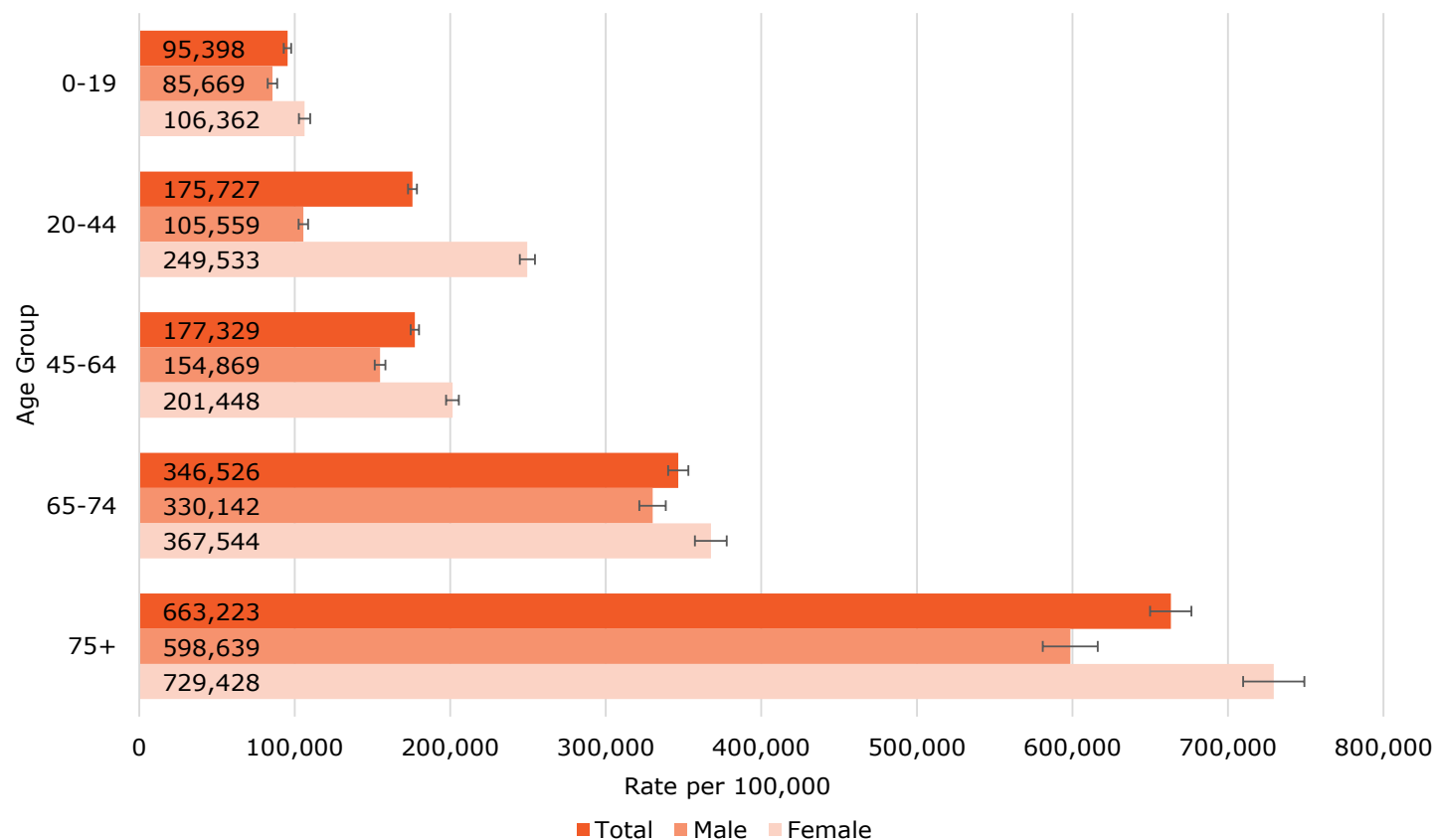
Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Service Provider Type = Physician; Fiscal Speciality = General Practitioner/Family Physician; OHIP DX Code = 1.
3. Excludes physician services at MBCHCH as there are no OHIP billings related to this centre.
4. Data are presented in **Appendix 4B**.

Figure 4.3-13 displays the rates of general and family physician encounters. The highest rates are among those aged 75+, with rates consistently decreasing with age.

Figure 4.3-13: General and Family Physician Encounters by Sex and Age Group, All Ignace Residents, 2000-2020^{1,2}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Data are presented in **Appendix 4B**.

4.3.7.3.2 Diagnostic Radiology

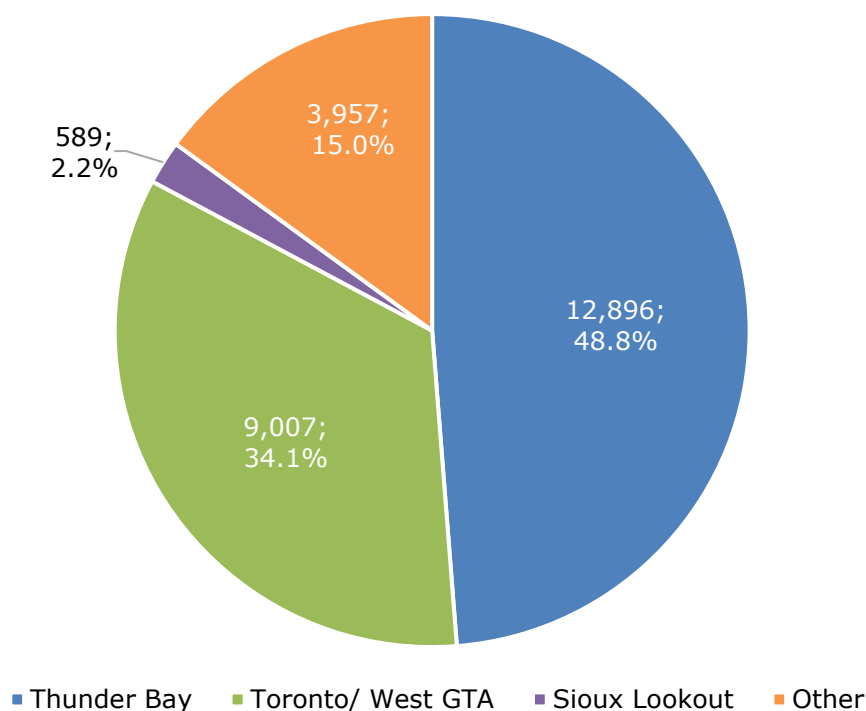
Diagnostic radiologists are medical specialists who focus on diagnosing and treating disease and injury through medical imaging. Medical imaging includes x-rays, CT scans, MRIs, PET scans, fusion imaging, and ultrasound.

Between 2000 and 2020, Ignace residents had 26,449 encounters with a diagnostic radiologist,¹¹⁷ with females accounting for 15,884 (60.1%) encounters and males accounting for 10,565 (39.9%) encounters. Overall, diagnostic radiology accounted for 16.8% of all provider services by Ignace residents (**see Section 4.3.7.1**).

Diagnostic radiologists bill from a variety of locations in Ontario, as shown in **Figure 4.3-14**. Approximately half (48.8%) of the encounters with diagnostic radiologists had a billing location of Thunder Bay, nearly doubling from 2000-2010 to 2010-2020. A high proportion (34.1%) of encounters were billed from southern Ontario locations consisting of Burlington, Hamilton, Toronto, Whitchurch-Stouffville, and Markham. From the 2000-2010 to 2010-2020, the proportion billing from Burlington decreased from approximately 30% to nearly 0%. A small percentage (2.2%) of the encounters had a billing location of Sioux Lookout, while the remaining 15.0% of encounters were unspecified other locations. These billing locations are due to hospitals in northwest Ontario employing radiologist groups located in urban centres to read their scans, and therefore reflects the billing location not necessarily where radiology services were provided. See **Appendix 4B Supplemental Data** for further information on diagnostic radiology, including service data by area and sex.

¹¹⁷ Encounters with diagnostic radiologists are often a provider assessing imaging results, rather than a direct encounter with a patient.

Figure 4.3-14: Diagnostic Radiologist Services by Billing Location, All Ignace Residents, 2000–2020^{1,2,3}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Toronto/ Greater Toronto Area (GTA): includes Burlington, Hamilton, Toronto, Markam and Whitchurch-Stouffville.
3. Data are presented in **Appendix 4B**.

4.3.7.3.3 Internal Medicine

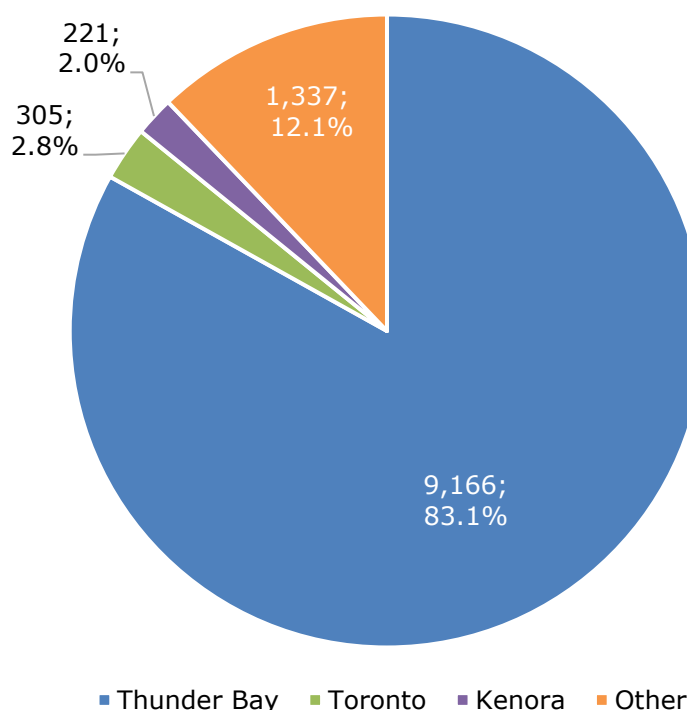
Internal medicine specialists (“internists”) help diagnose and manage diseases involving any organ system, such as diabetes and chronic obstructive pulmonary disease (“COPD”).

Between 2000 and 2020, Ignace patients had a total of 11,029 encounters with internists. Females accounted for 5,800 (52.6%) encounters and males accounted for 5,229 (47.4%). Overall, internists accounted for 7.0% of all physician encounters by Ignace residents (**see Section 4.3.7.1**).

Figure 4.3-15 displays billing locations for internists who had encounters with Ignace patients from 2000 to 2020. The majority (83.1%) of encounters had Thunder Bay as the billing location. This aligns with what is known about the need for Ignace residents to travel outside of the Local Study Area to receive certain health services (see **Section 4.3.5.4**). Small proportions (2.8%

and 2.0%) of internist encounters are billed from Toronto and Kenora, respectively, with the remaining 12.1% having a different, unspecified billing location.

Figure 4.3-15: Internal Medicine Specialist Encounters by Billing Location, All Ignace Residents, 2000-2020^{1,2}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

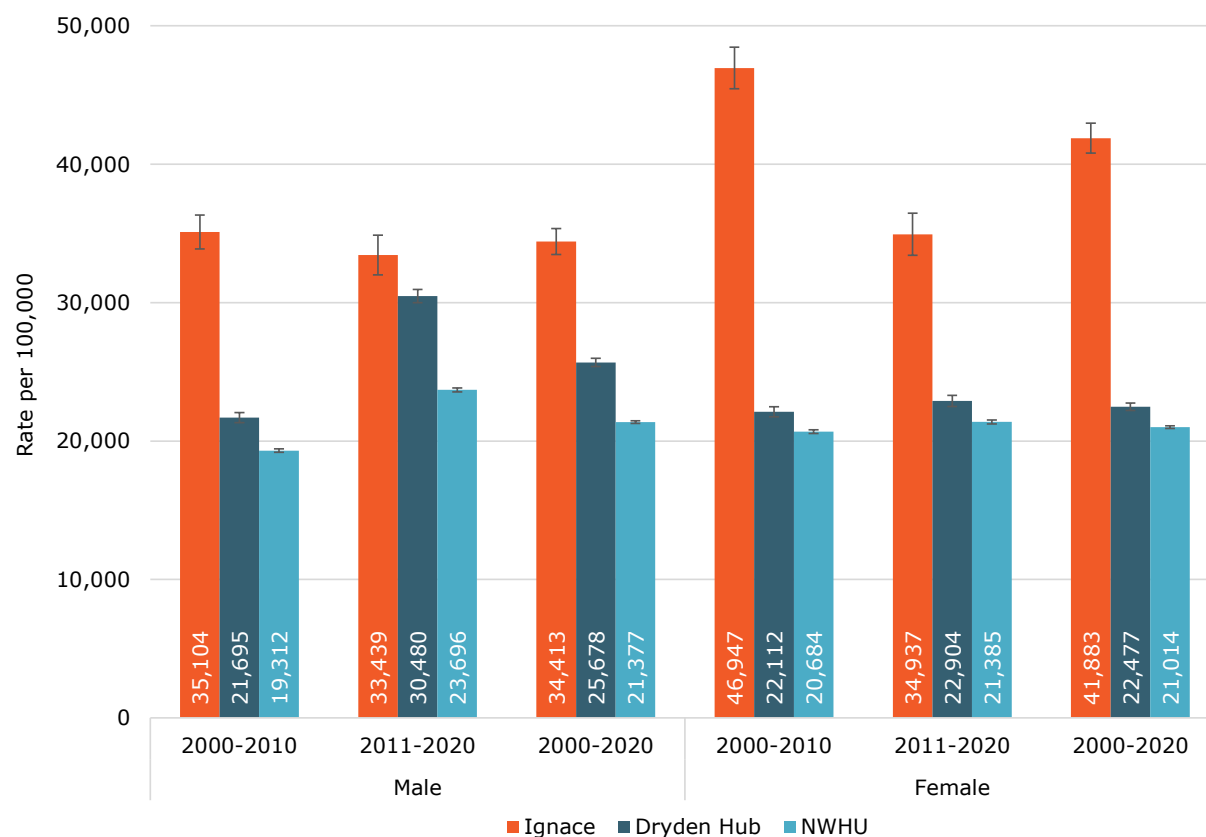
Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Data are presented in **Appendix 4B**.

Figure 4.3-16 displays internal medicine encounters by area and sex for the Local Study Area and Regional Study Area. Ignace patients had higher rates of internist encounters from 2000 to 2020 than the Dryden Hub and NWHU. The difference in rates amongst Ignace and the comparison study areas narrowed over the study period, with the rate among Ignace patients decreasing from 40,718 to 37,974 and the Dryden and NWHU rates increasing from 21,903 to 24,065 and from 19,992 to 21,296, respectively (IntelliHealth Ontario 2022c).

Notably, the rates of internal medicine encounters among females from Ignace were higher than the rates among males from Ignace throughout the study period, while this was not the case for the comparison areas. Among residents of the Dryden Hub, the rates were generally higher among males, while male and female rates were similar in the NWHU population. It is important to consider the small population of Ignace when interpreting these rates and the possibility of a few patients with high visit rates largely impacting the displayed rates.

Figure 4.3-16: Internal Medicine Encounters by Area and Sex, 2000-2020^{1,2,3}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

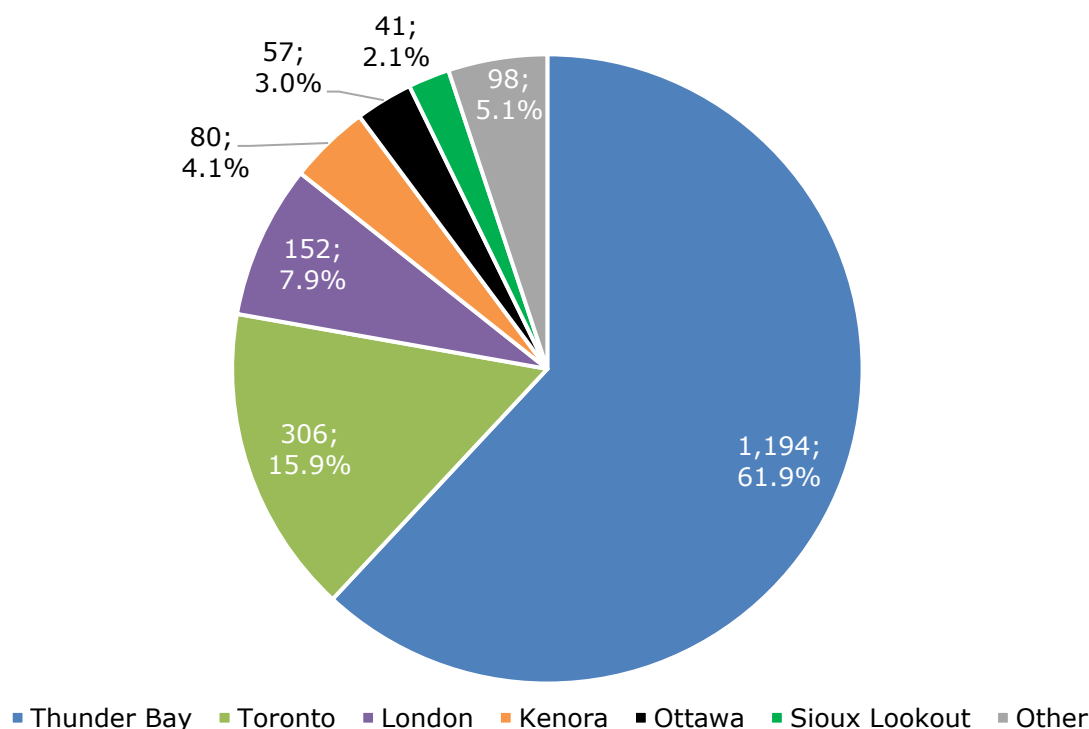
1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Confidence Intervals are very narrow and may not be visible.
3. Data are presented in **Appendix 4B**.

4.3.7.3.4 Paediatrics

Paediatricians are physicians who specialize in infant, child, and youth health. Between 2000 and 2020, Ignace residents had 1,928 encounters with paediatricians, of which 1,136 (58.9%) were by females and 792 (41.1%) were by males.

Figure 4.3-17 displays paediatrician encounters with Ignace residents by billing location. Of these encounters, 61.9% had a billing location of Thunder Bay. This aligns with what is known about the need for residents of Ignace, Dryden Hub, and NWHU to travel outside of the Local Study Area to receive certain health services (see **Section 4.3.5.4**). Following Thunder Bay, 15.9% were billed in Toronto, and 7.9% were billed in London, Ontario.

Figure 4.3-17: Paediatric Specialist Encounters by Billing Location, All Ignace Residents, 2000-2020^{1,2}



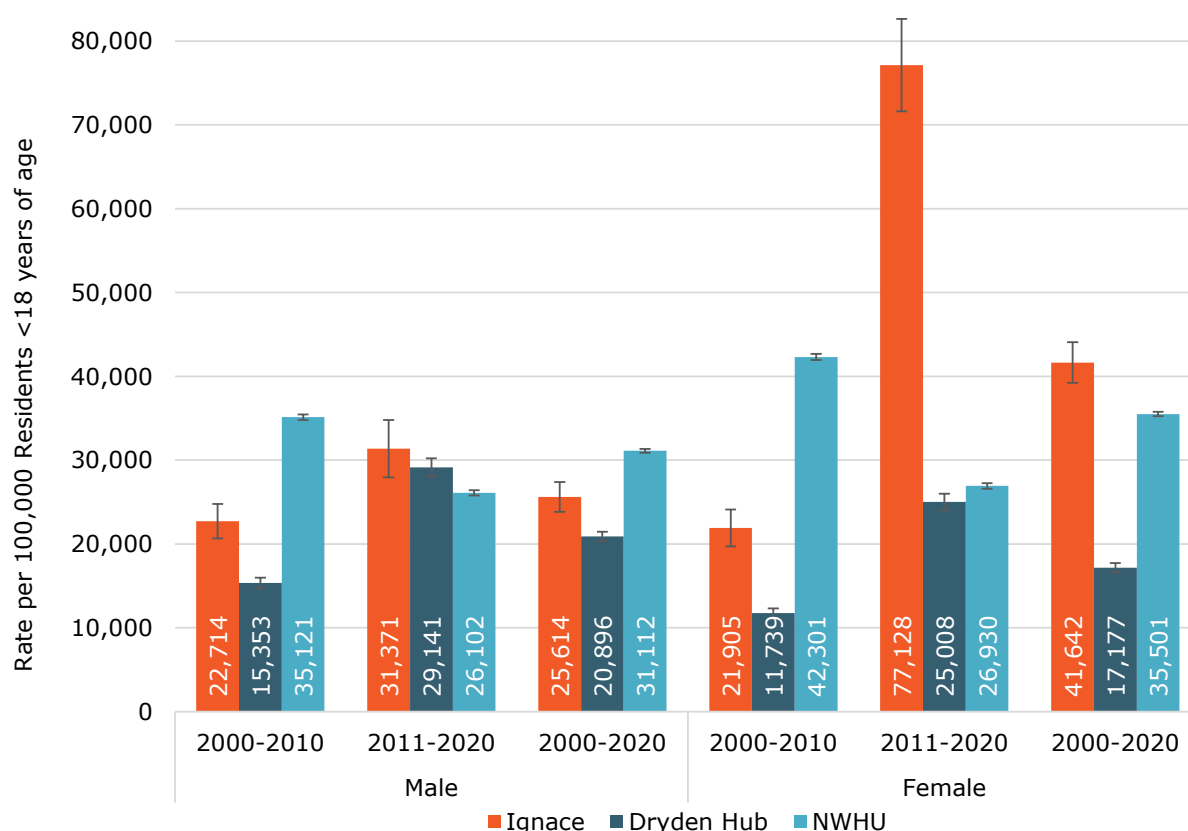
Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Data are presented in **Appendix 4B**.

Figure 4.3-18 displays the rates of paediatrician encounters by area and sex from 2000 to 2020. Over the study period, Ignace saw an increase in rates of paediatrician encounters. Overall, Ignace had a higher rate than the Dryden Hub, but remained lower than the rate for the NWHU. The increase in the paediatrician encounter rate among Ignace residents is largely attributable to an increase in the rate among females; the rate among males did not see a large increase. This should be interpreted in the context of Ignace's small population and the resulting possibility that a small number of complex-needs patients with high encounter rates impacted the data.

Figure 4.3-18: Paediatric Specialist Encounters by Area and Sex, 2000-2020^{1,2,3,4}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Confidence Intervals are very narrow and may not be visible.
3. Note includes residents under age 18 only.
4. Data are presented in **Appendix 4B**.

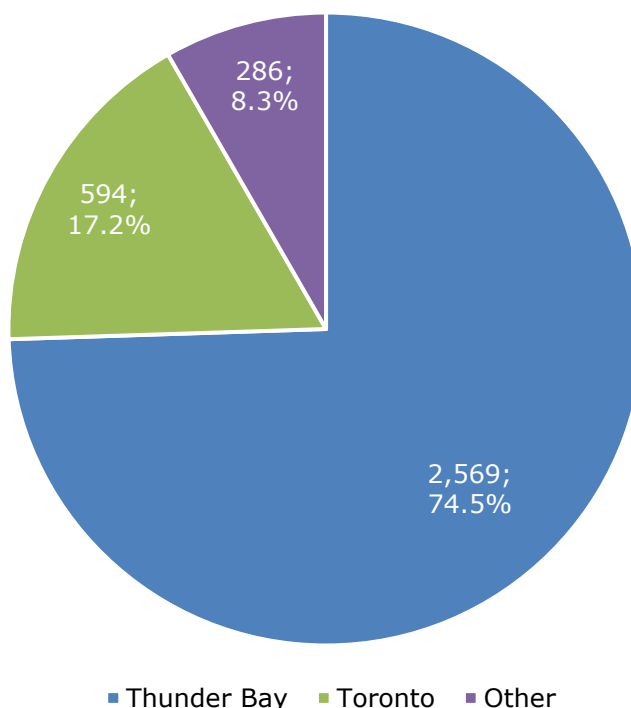
4.3.7.3.5 Obstetrics and Gynaecology

Obstetrics and gynaecology specialists are trained in the care of patients during pregnancy and birth. Between 2000 and 2020, there were 3,406 encounters with obstetrics and gynaecology specialists by Ignace females.

Figure 4.3-19 displays the billing location of obstetrics and gynaecology specialist encounters with Ignace residents from 2000 to 2020. Of these encounters, 74.5% had a billing location of Thunder Bay. This aligns with what is known about the need for Ignace residents to travel outside of the Local Study Area to receive certain health services (see **Section 4.3.5.4**).

Following Thunder Bay, 17.2% of encounters had a billing location of Toronto and 8.3% were from unspecified other locations.

Figure 4.3-19: Obstetrics and Gynaecology Specialist Encounters by Billing Location, All Ignace Residents, 2000–2020^{1,2}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

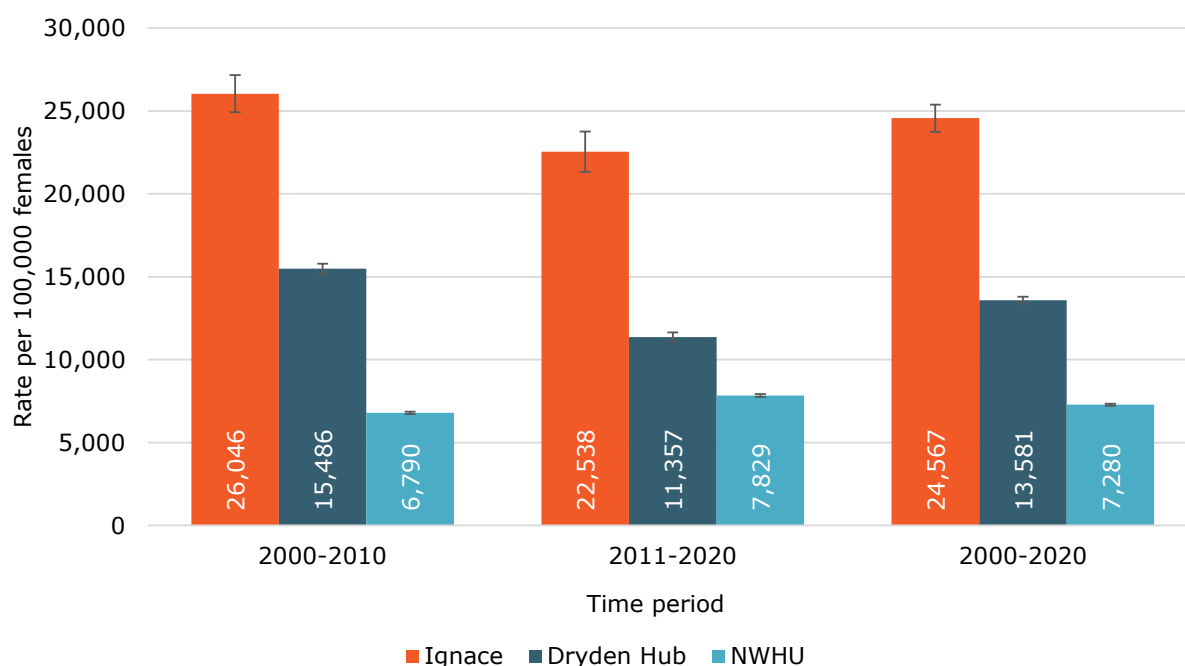
Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Data are presented in **Appendix 4B**.

Figure 4.3-20 displays obstetrics and gynaecology specialist encounters¹¹⁸ by area from 2000 to 2020 and are based on female populations only. Rates of obstetrics and gynaecology specialist encounters were higher in Ignace than the Dryden Hub and the NWHU throughout the study period. Both Ignace and the Dryden Hub saw a moderate decrease in rates over the study period, while the NWHU saw an increase in its rate.

¹¹⁸ Some obstetrics services are provided by general practitioners and are not included in this data.

Figure 4.3-20: Obstetrics and Gynaecology Encounters by Area, 2000-2020^{1,2}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Data are presented in **Appendix 4B**.

4.3.7.3.6 Psychiatry

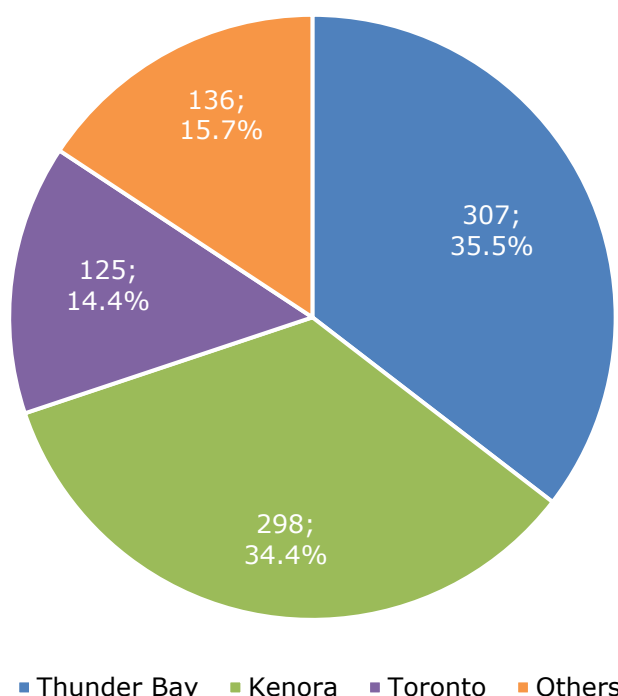
Psychiatrists are physicians specializing in the diagnosis and treatment of mental health. While many other non-physician providers specialize in supporting mental health (e.g., psychotherapists, social workers), these providers do not take on the role of prescribing medications as psychiatrists do.

Ignace residents had 866 encounters with a psychiatrist from 2000 to 2020, with females accounting for 436 (50.3%) encounters and males accounting for 430 (49.7%) encounters.

Figure 4.3-21 displays the billing locations of psychiatrist encounters with Ignace residents from 2000 to 2020. Of these encounters, 35.5% had a billing location of Thunder Bay. Following Thunder Bay, 34.4% of encounters were billed in Kenora, 14.4% were billed in Toronto, and the remaining 15.7% were billed in other, unspecified locations. In-patient psychiatry services are located in Thunder Bay and Kenora. Billing locations do not necessarily reflect where services are provided, as medical professionals who serve the Dryden Hub often bill from different locations. Further, billing locations may reflect telemedicine and other virtual services which are common in psychiatry.

This aligns with what is known about the need for Ignace residents to travel outside of the Local Study Area to receive certain health services (see **Section 4.3.5.4**).

Figure 4.3-21: Psychiatry Specialist Encounters by Billing Location, All Ignace Residents, 2000–2020^{1,2,3}



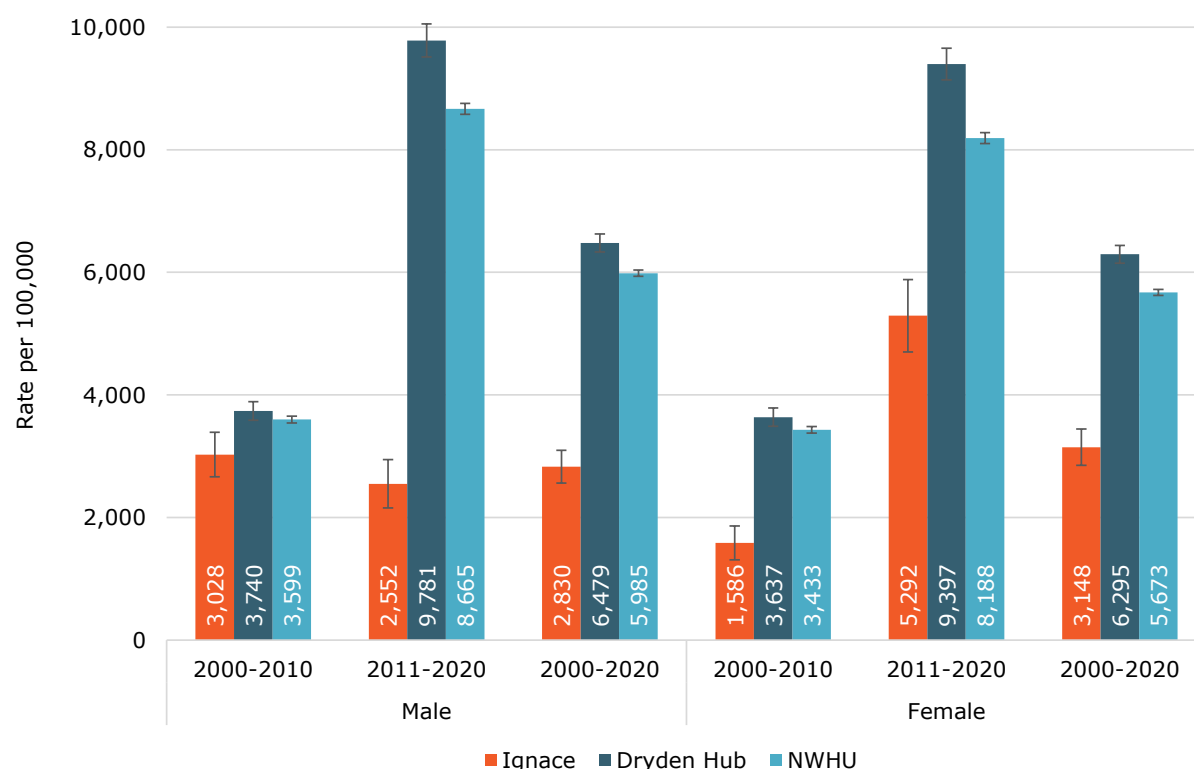
Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Urban Ont includes Burlington, Hamilton, and Toronto.
3. Data are presented in **Appendix 4B**.

Figure 4.3-22 displays psychiatrist encounters by area and sex from 2000 to 2020. Ignace residents had encounters with psychiatrists at a lower rate than the Dryden Hub and the NWHU. Furthermore, Ignace had a much smaller increase in rates compared to the Dryden Hub and the NWHU. From 2000-2010 to 2011-2020, rates of psychiatrist encounters nearly tripled in the Dryden Hub (from 3,688 to 9,585 per 100,000) and NWHU (from 3,516 to 8,428 per 100,000), but did not even double in Ignace (2,344 to 3,868 per 100,000). Among Ignace female residents, the encounter rate increased dramatically from 1,585.7 to 5,292.0 per 100,000 population. Among males from Ignace, there was a moderate decrease. In contrast, rates increased for both males and females in both the Dryden Hub and NWHU.

Figure 4.3-22: Psychiatry Specialist Encounters by Area and Sex, 2000-2020^{1,2,3}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Confidence Intervals are very narrow and may not be visible.
3. Data are presented in **Appendix 4B**.

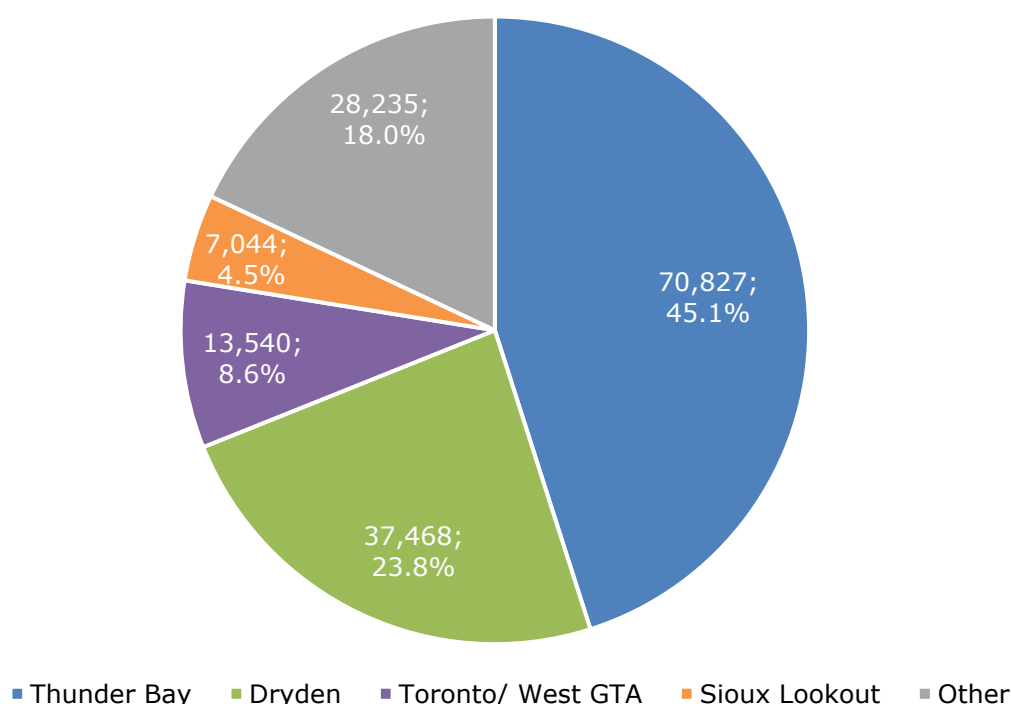
4.3.7.4 Optometry Services

Optometrists¹¹⁹ provide services related to eye health, including examinations, diagnoses, and treatment of diseases related to the eyes. Between 2000 and 2020, Ignace residents had 8,443 encounters with an optometrist, where females accounted for 4,394 (52.0%) encounters and males accounted for 4,049 (48.0%) encounters.

¹¹⁹ Note that optometrists are distinct from ophthalmologists who provide more advanced eye care, including surgery.

Figure 4.3-23 displays the billing locations of optometrist encounters with Ignace residents from 2000 to 2020. Of these encounters, 45.1% had a billing location of Thunder Bay, 23.8% had a billing location of Dryden, 8.6% had an urban Ontario billing location (Toronto, Burlington, or Hamilton), 4.5% had a billing location of Sioux Lookout, and 18.0% billed from other locations. This aligns with what is known about the need for Ignace residents to travel outside of the Local Study Area to receive certain health services (see **Section 4.3.5.4**).

Figure 4.3-23: Optometrist Encounters by Billing Location, All Ignace Residents, 2000–2020^{1,2,3}



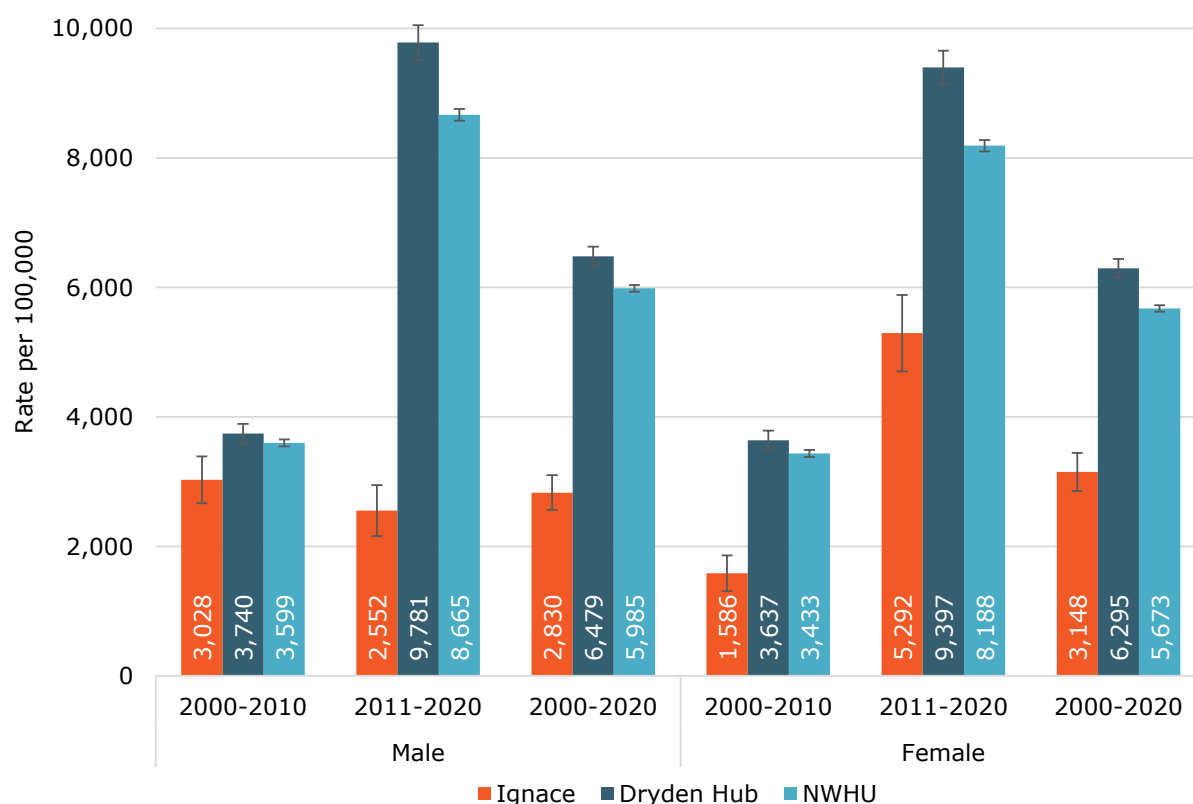
Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Toronto/ West Greater Toronto Area (GTA) includes Burlington, Hamilton and Toronto.
3. Data are presented in **Appendix 4B**.

Figure 4.3-24 displays optometrist encounters by area and sex from 2000 to 2020. Ignace residents accessed optometrist services at lower rates than both Dryden Hub and NWHU. This pattern was similar among males and females.

Figure 4.3-24: Optometry Encounters by Area and Sex, 2000-2020^{1,2,3}



Source: IntelliHealth Ontario 2022a. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Confidence Intervals are very narrow and may not be visible.
3. Data are presented in **Appendix 4B**.

4.3.7.5 Home Care Services

Home care services pertain to in-home health care services, such as nursing services, administration of medications, and personal care (e.g., help in bathing, dressing). Home care services in Ignace are offered through a contracted agency that does not provide summary data back to the MBCHCH. Thus, there is a lack of data related to the home care needs of Ignace residents and the degree to which resident needs are being addressed. The information in this

section is extracted from the IntelliHealth Ontario Home Care Package Registry.¹²⁰ However, it is known through both the NWO Community and Baseline Studies Key Person Interview Program 2022 and the NWO Baseline Studies Key Person Interview Program 2022-2023 that services for seniors, such as home care, are limited in the Local Study Area and the Dryden Hub, making it difficult for Ignace senior residents to age in place. Senior services are a key priority for Ignace residents due to the large senior population in the Township (see **Section 2.2 Population and Demographics**) (InterGroup 2022).

Home care is not limited to a particular age group (e.g., seniors), but is related to the needs of clients that fit within the scope of home care service provision. Older individuals tend to account for the highest proportion of clients (see **Figure 4.3-25**).

Table 4.3-18 displays a summary of home care clients and admissions from Ignace residents from 2006 to 2021. Over the study period, 464 individual Ignace residents were admitted for home care services and a total of 841 admissions occurred, amounting to an average of just under 2 admissions per client.

Table 4.3-18: Home Care Summary, Ignace Residents, 2006-2021^{1,2}

	Individual Clients	Admissions	Average Admissions per Client
Male	248	432	1.7
Female	216	409	1.9
Total	464	841	1.8

Source: IntelliHealth Ontario 2023i. Retrieved March 4, 2023.

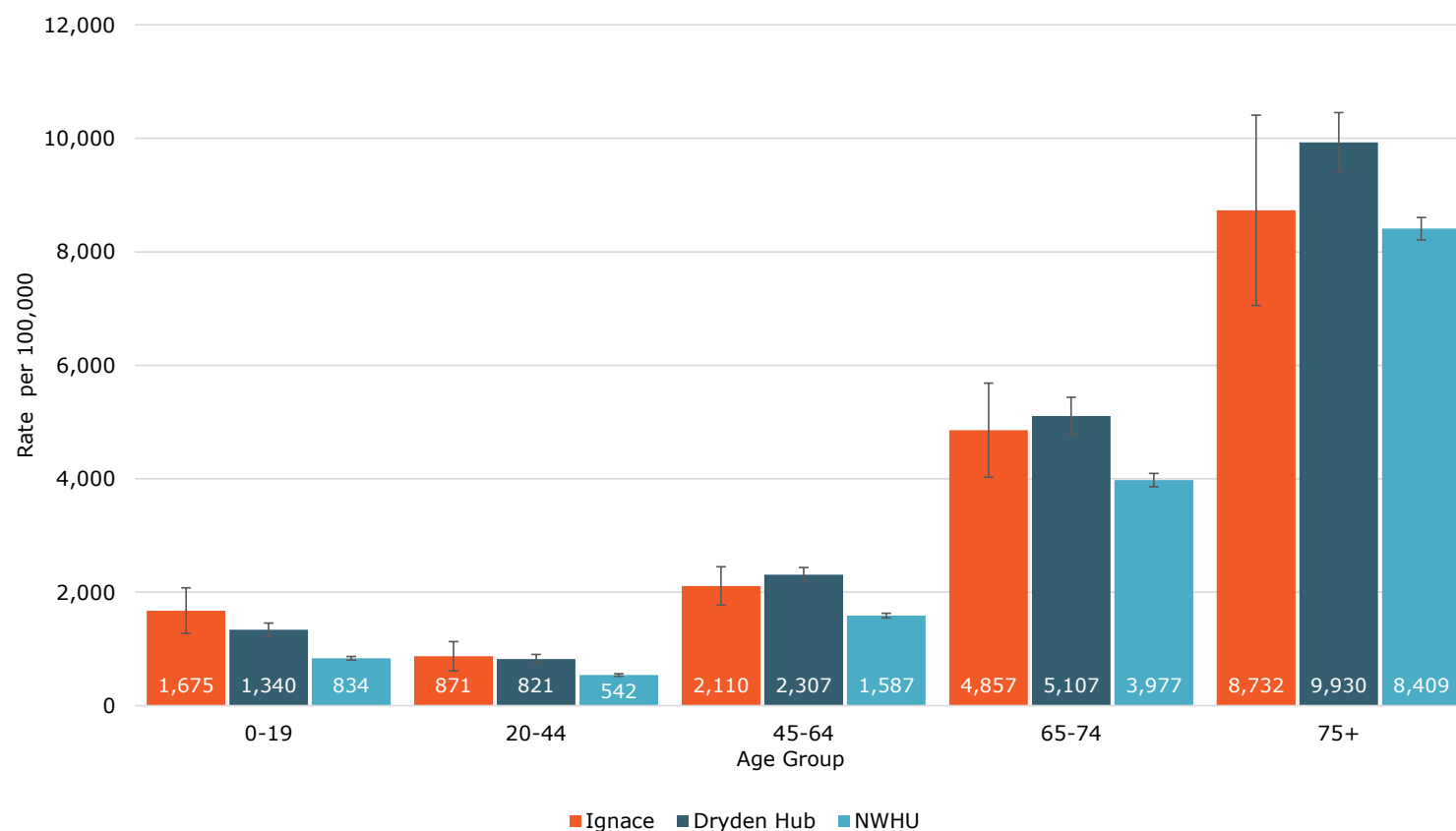
Notes:

1. Date extracted: March 4, 2023.
2. Data are presented in **Appendix 4B**.

Figure 4.3-25 displays home care admissions by age group and area from 2006 to 2021. Ignace home care admission rates are not notably different from rates in the Dryden Hub and the NWHU. However, it is important to note that the NWHU also includes First Nations communities delivering home care services under federal jurisdiction that would not be noted in this data source. True rates in the NWHU are therefore likely higher than illustrated.

¹²⁰ It is noted that the number of home care applicants was the same as the number of home care admissions; this means that either all applicants are admitted or the registry may only be used for clients who have been admitted to the program.

Figure 4.3-25: Home Care Admission by Age Group and Area, 2006-2021^{1,2}



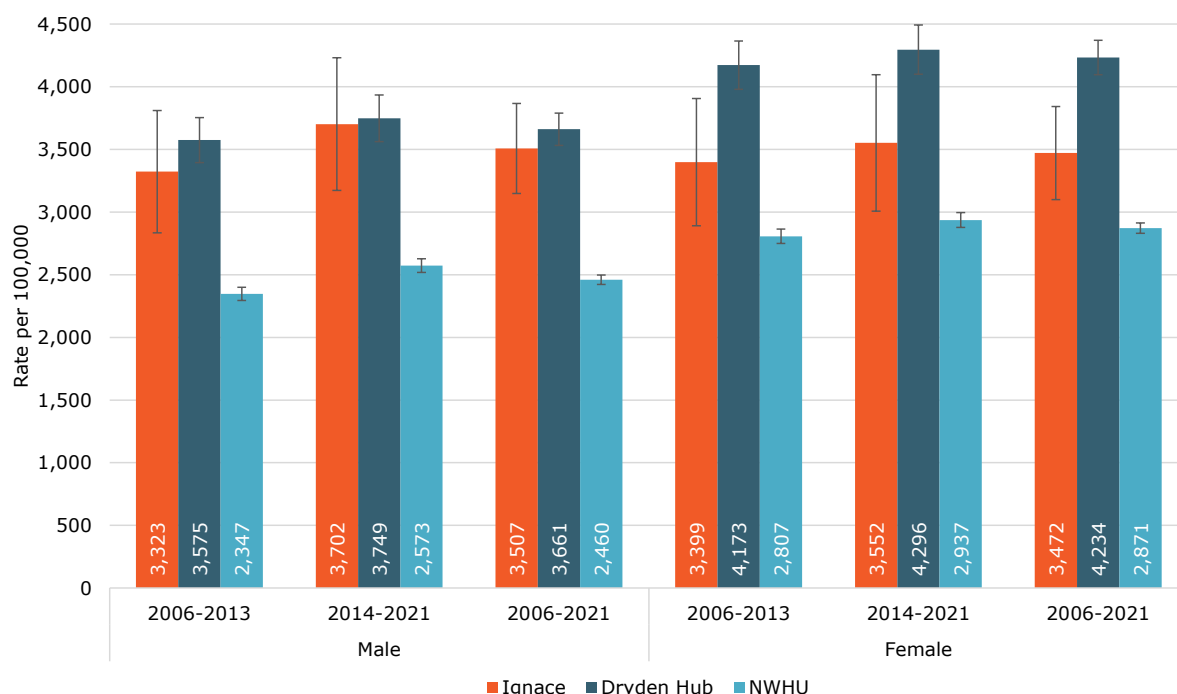
Source: IntelliHealth Ontario 2023i. Retrieved March 4, 2023.

Notes:

1. Date extracted: March 1, 2022; updated December 4, 2022.
2. Data are presented in **Appendix 4B**.

Figure 4.3-26 displays home care admission rates by area and sex from 2006 to 2021. Home care admission rates amongst Ignace females and males were not notably different from rates in the Dryden Hub and the NWHU.

Figure 4.3-26: Home Care Admission Rate by Area and Sex, 2006-2021^{1,2}



Source: IntelliHealth Ontario 2023i. Retrieved March 4, 2023.

Notes:

1. Date extracted: March 1, 2022; updated December 4, 2022.
2. Data are presented in **Appendix 4B**.

4.3.7.6 Long Term Care

There are no long-term care or other supportive care homes in Ignace. Services for seniors, such as long-term care, are limited in the Local Study Area and the Dryden Hub, making it difficult for Ignace senior residents to age in place (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). Senior services are a key priority for Ignace residents due to the large senior population in the Township (see **Section 2.2 Population and Demographics**) (InterGroup 2022).

Table 4.3-19 displays a summary of admissions to and length of stay in long term care by Ignace residents from 2006 to 2021. Over the study period, there were 52 admissions of Ignace residents to long-term care homes, of which 40 (76.9%) were female and 12 (23.1%) were male. Of the 52 long term care admissions, 37 (71.2%) were at the Dryden Long Term Care

Facility and 6 (11.5%) were at the Hogarth Riverview Manor (Thunder Bay), as displayed by **Figure 4.3-27**.

Table 4.3-19: Long Term Care Summary, Ignace Residents, 2006-2021^{1,2}

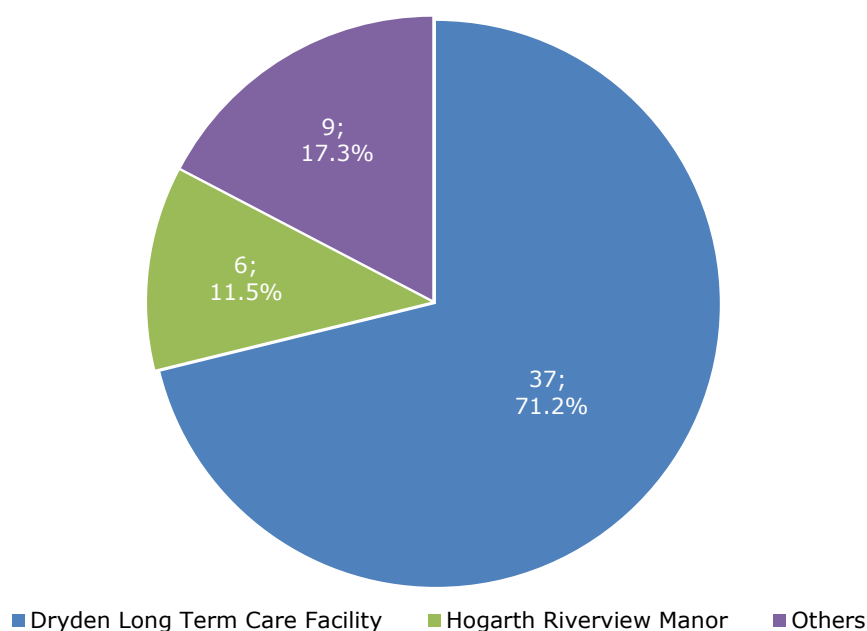
	# Admissions	Total Length of Stay (days)	Average length of stay (days)	Average Admission Age
Female	40	8,611	215.3	86.3
Male	12	3940	328.3	76.3
Total	52	12,551	241.4	84

Source: IntelliHealth Ontario 2022b. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 1, 2022; updated December 4, 2022.
2. Data are presented in **Appendix 4B**.

Figure 4.3-27: Long Term Care Admission by Location, Ignace Residents, 2006-2021^{1,2}



Source: IntelliHealth Ontario 2022b. Retrieved December 4, 2022.

Notes:

1. Date extracted: March 1, 2022; updated December 4, 2022.
2. Data are presented in **Appendix 4B**.

4.3.8 Outpatient Care

Outpatient care refers to a health care service (e.g., procedure, treatment) that does not require an overnight stay at a hospital or other medical facility. This section reviews outpatient care for Ignace residents, including day surgery and dialysis.

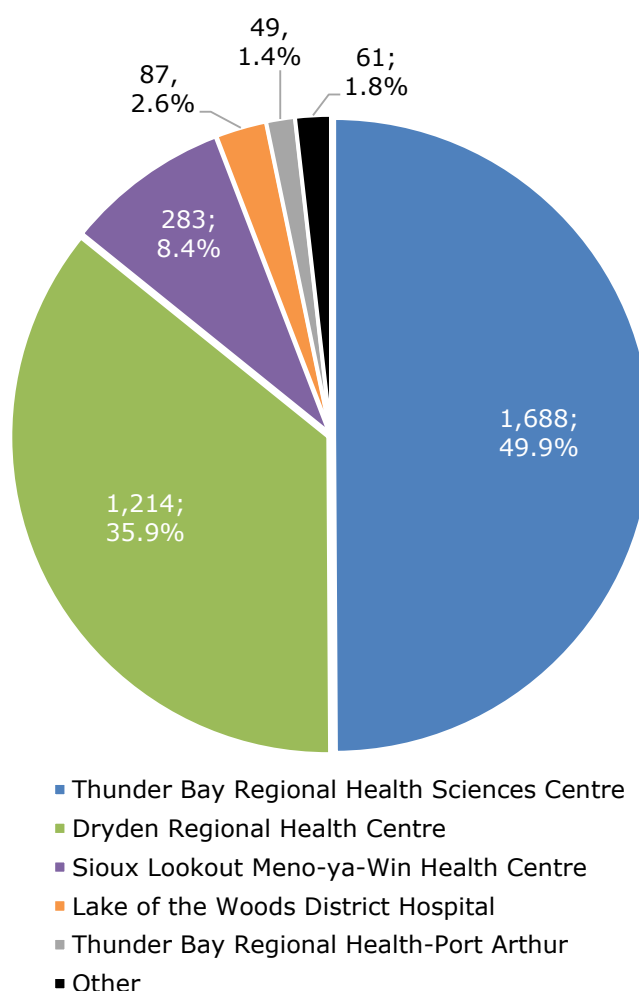
4.3.8.1 Day Surgery

Day surgeries¹²¹ are performed without the need for overnight hospital admission of the patient. From 2003 to 2021, 1,114 Ignace patients had a total of 3,382 day surgeries, an average of three surgeries per individual patient. The number of day surgeries amongst Ignace female residents and Ignace male residents were similar (594 and 550, respectively).

Figure 4.3-28 displays the location of day surgeries for Ignace residents from 2003 to 2021. The two leading locations for Ignace resident day surgeries were Thunder Bay and Dryden, with 50% of day surgeries occurring at the Thunder Bay RHSC and 36% occurring at the Dryden RHC. This aligns with what is known about the need for Ignace residents to travel outside of the Local Study Area to receive certain health services (see **Section 4.3.5.4**).

¹²¹ Day surgery is a category of health services usage separate from physician visits or hospitalizations.

Figure 4.3-28: Location of Day Surgeries, Ignace Residents, 2003-2021^{1,2}



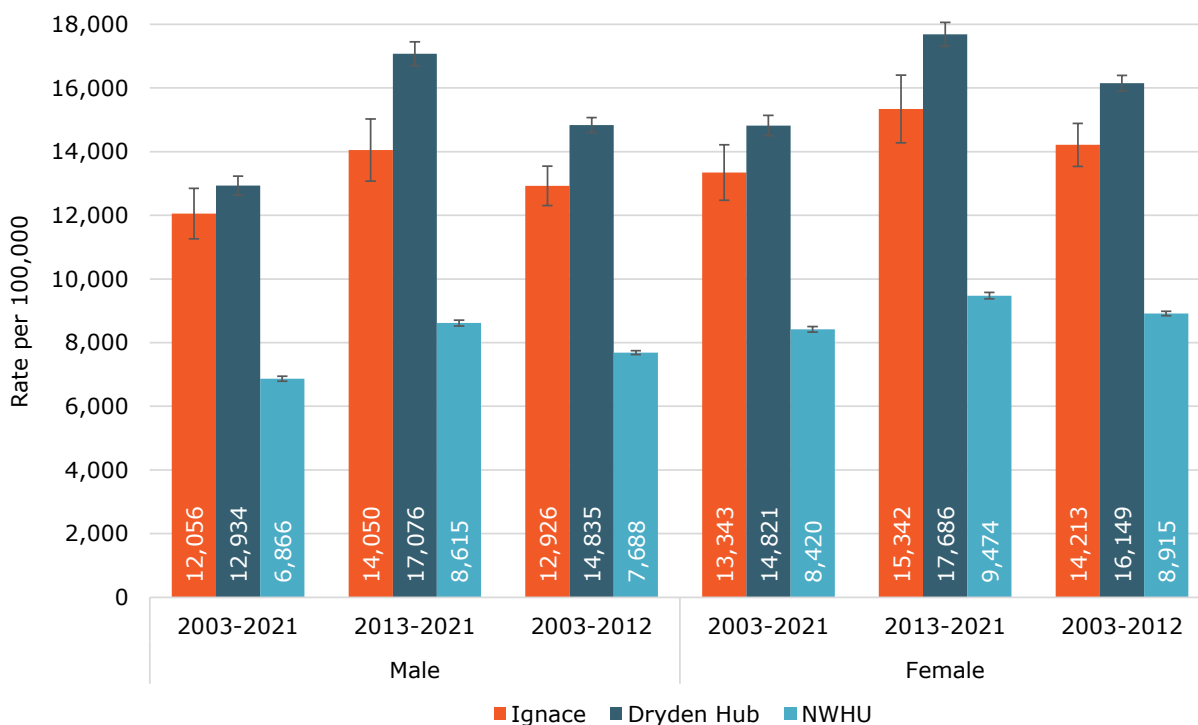
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. Date extracted: March 20, 2023.
2. Data are presented in **Appendix 4B**.

Figure 4.3-29 displays the rate (per 100,000) of day surgeries by area and sex from 2003 to 2021. Day surgery rates amongst Ignace females and males were not notably different from rates in the Dryden Hub. Ignace day surgery rates were higher than those in the NWHU for both females and males.

Figure 4.3-29: Day Surgery Rate by Area and Sex, 2003-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

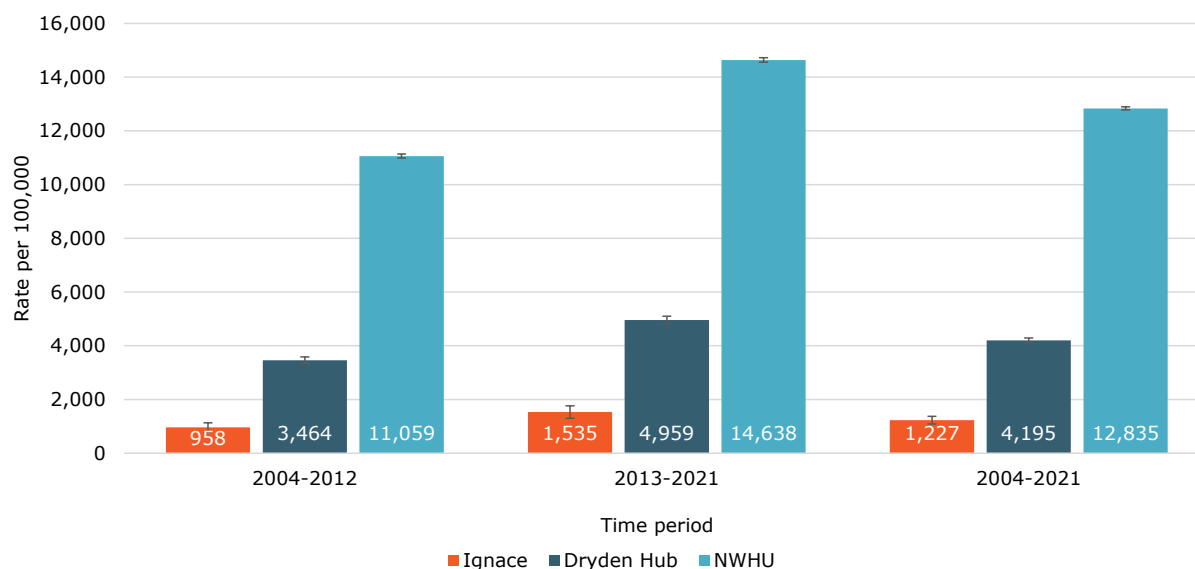
1. Date extracted: March 3, 2022; Updated December 15, 2022.
2. Confidence Intervals are very narrow and may not be visible.
3. Data are presented in **Appendix 4B**.

4.3.8.2 Dialysis

Dialysis is an essential component of renal care for those with kidney disease. Individuals requiring dialysis must undergo the process three times per week on an ongoing basis. Note that certain forms of dialysis can be completed at home without the need for a visit to a facility. Almost all dialysis visits by Ignace residents took place at the Thunder Bay RHSC. This aligns with what is known about the need for Ignace residents to travel outside of the Local Study Area to receive certain health services (see **Section 4.3.5.4**).

Figure 4.3-30 displays the rates of outpatient dialysis visits among Ignace residents and the Regional Study Area from 2004 to 2021. Rates among the Ignace population were lower than both the Dryden Hub and NWHU populations. Ignace (1,227.4 per 100,000) had approximately one-third the rate of the Dryden Hub (4,195.5 per 100,000) and one-tenth the rate of the NWHU (12,835 per 100,000). See **Appendix 4B Supplemental Data** for further data on dialysis, including rates by sex and age group.

Figure 4.3-30: Dialysis Outpatient Visit Rate, by Area, 2004-2021^{1,2}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. Date extracted: March 23, 2023
2. Data are presented in **Appendix 4B**.

4.3.9 Emergency Medical Services

4.3.9.1 KDSB Emergency Services

Northwest Emergency Medical Services (EMS) is under the Paramedic/Land Ambulance services division of the KDSB and provides emergency medical services to people and communities across Northwestern Ontario. In the Dryden Hub, Northwest EMS has ambulance bases in Ignace and Dryden (KDSB 2023). The KDSB is looking to build an ambulance base in Vermillion Bay in the Municipality of Machin (WSP 2022). In addition to providing EMS services 365 days of the year to Northwestern Ontario, KDSB staff have a peer support team partnership with Naotkamegwaning EMS to help improve emotional wellness in the workplace (KDSB 2023).

Northwest EMS staffing is based on call volumes. The capacity of each crew is approximately 2,500 calls each year (WSP 2022). See **Section 2.4.4.4.1** for more information on call volumes and response times. According to the NWO Baseline Studies Key Person Interview Program 2022-2023, attracting qualified paramedics to the study areas is challenging as there are limited EMS programs available within the study areas. The hospitals in Dryden and Sioux Lookout deliver EMS programming in partnership with Confederation College (NWO Community and Baseline Studies Key Person Interview Program 2022-2023).

4.3.9.1.1 Ignace Ambulance Base

The Ignace ambulance base is owned by the KDSB. The building has two bays, is approximately 2,850 ft², and is in good condition with no near-term plans to expand the base (Urban Systems 2021). The base has two ambulances, one frontline and one backup. Staffing consists of one crew that works 24/7 (on-duty during the day and on-call at night), paramedics, including three full-time, one part-time, and three casuals, and one paramedic coordinator (KDSB 2023). In one year, the Ignace ambulance base receives approximately 300 calls. The base has not seen a substantial change in calls over the past few years (WSP 2022). Challenges for the Ignace Ambulance Base include maintaining consistent staffing and subsequent burnout among the EMS staff as well as coordinating responses with the Dryden EMS teams (Ignace Health and Wellness Focus Group 2023; Ignace EarlyOn Child and Family Centre Staff and Parent Focus Group 2023).

4.3.9.1.2 Dryden Ambulance Base

The Dryden ambulance base is owned by the KDSB. The building has eight bays and is approximately 9,343 ft². The base has four ambulances (two frontline, two backup), one multi-casualty support vehicle, and two emergency response vehicles (KDSB 2023). Staffing consists of two crews daily and one crew at night, paramedics, including 11 full-time, three part-time, four casual, one superintendent of operations who oversees the central region operations for the Dryden, Ear Falls, and Red Lake bases, and one emergency response unit community paramedic (KDSB 2023). There are also community paramedicine staff that includes community paramedics (two full-time, one part-time), one community paramedicine administrative assistant, and one superintendent of community paramedicine. There is also administrative staff (KDSB 2023). Call volumes in Dryden have been increasing, in part due to increased mental health and substance use challenges in the community (WSP 2022).

4.3.9.2 Ornge

Ornge is an emergency patient transportation service in Ontario, providing EMS services by air and land. Their range of emergency services includes interfacility transport, scene response, repatriation of patients, and organ transplant transportation. Other services carried out by Ornge include non-urgent transport based on population geography and needs, support for health care in remote communities, and Provincial Transportation Authorization Centre authorization to support public health objectives. Ornge has eight airplanes, 12 helicopters, and 13 ambulances which operate out of 12 bases across Ontario serving over 13 million people and performing approximately 20,000 patient-related transports per year. Ornge does not have bases in the Local Study Area. The Ornge bases in the Regional Study Area include Kenora and Sioux Lookout. There is also a base in Thunder Bay which may serve residents of the Local Study Area and Regional Study Area (Ornge n.d.).

4.3.9.3 Emergency Departments

There are no EDs located in the Local Study Area. Ignace residents most often use the EDs of the Dryden RHC, Sioux Lookout MHC, Thunder Bay RHSC, and LOTW District Hospital (Kenora) (see **Section 4.3.9.4**). See **Section 4.3.4.2** for more information on hospitals in Northwestern Ontario.

4.3.9.4 Emergency Department Utilization

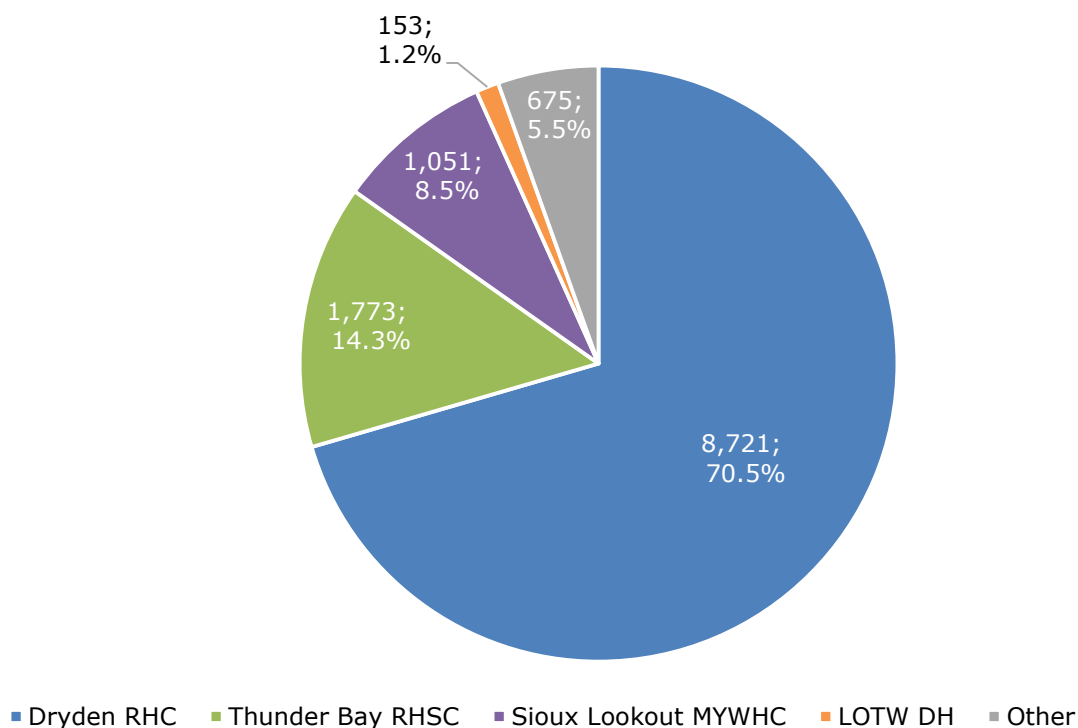
ED utilization describes all visits to EDs for residents of Ignace, Dryden Hub, and NWHU. See **Appendix 4B Supplemental Data** for additional data on ED utilization. Emergency department utilization data¹²² illustrate the need for emergency care and the reasons for ED visits. Understanding the rates of ED visits are important when evaluating level of access to emergency health care in the Local Study Area.

Between 2002 and 2021, 2,356 Ignace residents accounted for 12,373 visits to Ontario EDs, with a similar number of females (1,136) and males (1,220). Of the 12,373 visits, 1,679 (13.6%) resulted in a hospital admission. Ten ED visits involved the death of the patient (see **Appendix 4B Supplemental Data** for all disposition lists). Rates of ED visits tended to be higher among females (48,834 per 100,000) than males (44,102 per 100,000), a statistically significant difference. Those aged 45-64 accounted for the highest percentage of ED visits (34.1%), followed by those aged 20-44 (27.4%).

Figure 4.3-31 displays the location of EDs utilized by Ignace residents from 2002 to 2021. The majority (70.5%) of visits occurred at the Dryden RHC. Following Dryden, 14.3% were at the Thunder Bay RHSC and 8.5% were at the Sioux Lookout MHC, with the remainder being at the LOTW District Hospital in Kenora or another facility.

¹²² International Classification of Disease, Tenth Revision diagnosis codes related to patients' visits are provided in **Appendix 4A Detailed Methods** to outline leading reasons why Ignace residents visit the emergency department.

Figure 4.3-31: Emergency Department Location by Ignace Residents, 2002-2021^{1,2,3}



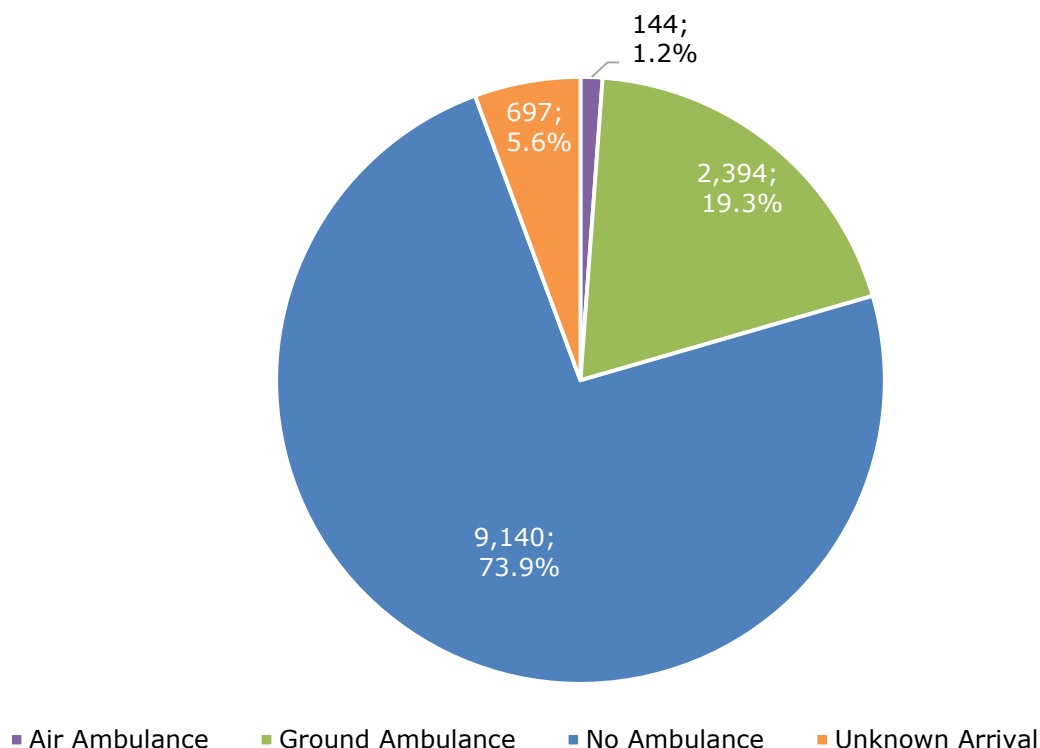
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. Date extracted: March 31, 2022.
2. ICD-10 all Dx; Ambulatory Care Type = EMG.
3. Data are presented in **Appendix 4B**.

Figure 4.3-32 displays ED visits by type of transport (e.g., ground, air) for Ignace residents from 2002 to 2021. Of the ED visits for Ignace residents over the study period, 73.9% did not require ambulance transportation, while 19.3% required ground ambulance transportation.

Figure 4.3-32: Emergency Department Visits by Transport Type, Ignace Residents, 2002-2021^{1,2,3}



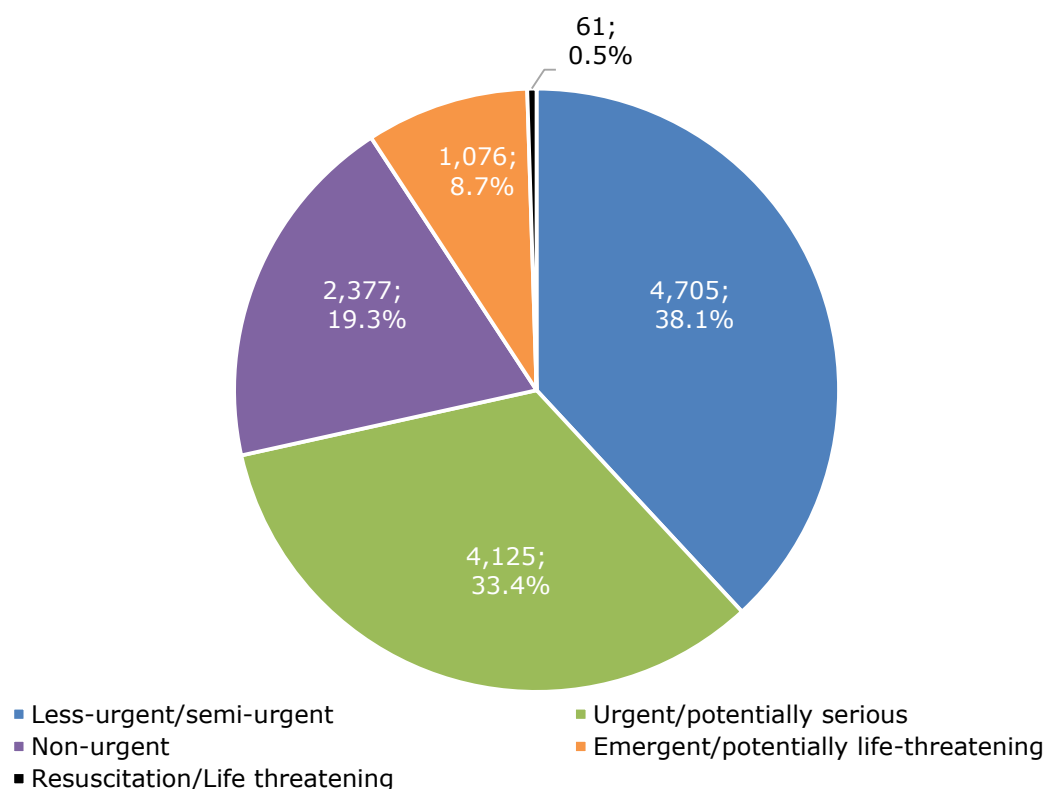
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. Date extracted: March 31, 2022.
2. ICD-10 all Dx; Ambulatory Care Type = EMG.
3. Data are presented in **Appendix 4B**.

Figures 4.3-33 displays ED visits by triage level for Ignace residents from 2002 to 2021. The largest proportion (38.1%) of ED visits by Ignace residents were less urgent/semi-urgent, followed by 33.4% being urgent/potentially serious. There were no notable differences in triage level by sex, but as the age of the patient increases, the proportion of less urgent triage levels decrease, and the proportion of more urgent triage levels increase. Injury and poisoning account for one in five ED visits by Ignace residents during the study period, with the ratio being higher among Ignace males (25% of visits) than females (17% of visits). See **Appendix 4B Supplemental Data** for data on ED visits by triage level and cause, including by age and sex.

Figure 4.3-33: Emergency Department Visits by Triage Level, Ignace Residents, 2002-2021^{1,2,3}



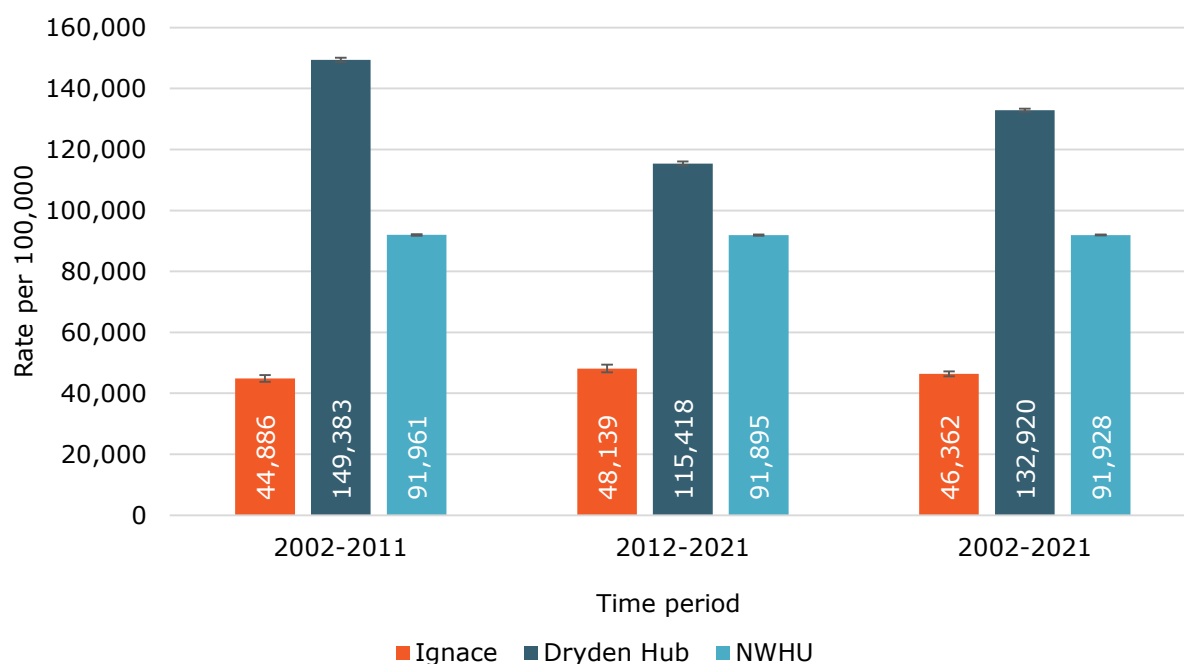
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. Date extracted: March 31, 2022.
2. ICD-10 all Dx; Ambulatory Care Type = EMG.
3. Data are presented in **Appendix 4B**.

Figure 4.3-34 displays the rate (per 100,000) of ED visits by area from 2002 to 2021. Ignace residents have much lower rates of ED utilization than the Dryden Hub and the NWHU throughout the study period. This must be interpreted in the context of access to care, as Ignace residents must travel out of town to access emergency care (see **Section 4.3.9.3**). Thus, if an individual does not have a vehicle or someone to assist them, they may forgo emergency care when it is needed.

Figure 4.3-34: Emergency Department Visits by Area, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. Date extracted: March 31, 2022.
2. ICD-10 all Dx; Ambulatory Care Type = EMG.
3. Data are presented in **Appendix 4B**.

4.3.9.4.1 Emergency Department “Frequent Users”

Those who frequently access care at an ED do not typically have equitable and sufficient access to non-emergency care. This lack of access to primary care and subsequent frequent use of EDs causes further challenges in a population, as patients may access emergency care for conditions that would otherwise be non-urgent and handled through regular primary care, and in the absence of ongoing preventative care, patients’ conditions may escalate to a more emergent level. Access to health care is a key social determinant of health and can greatly impact the health outcomes of a population (see **Section 4.2 Social Determinants of Health**).

Due to the inequity represented by frequent ED use¹²³ and the impact on health resource utilization, characteristics of frequent users are important to consider. A study based in Alberta and Ontario found that frequent users were more likely to be female in the lowest-income

¹²³ Frequent use of EDs is considered to be three or more visits to an ED per year.

quintile¹²⁴ and from more rural locations (Chen *et al.* 2021). An additional Ontario-based study found an association between low-income neighbourhood of residence and frequent visits, specifically for alcohol-related reasons, and found a 38% higher mortality rate for these patients (Hulme *et al.* 2020).

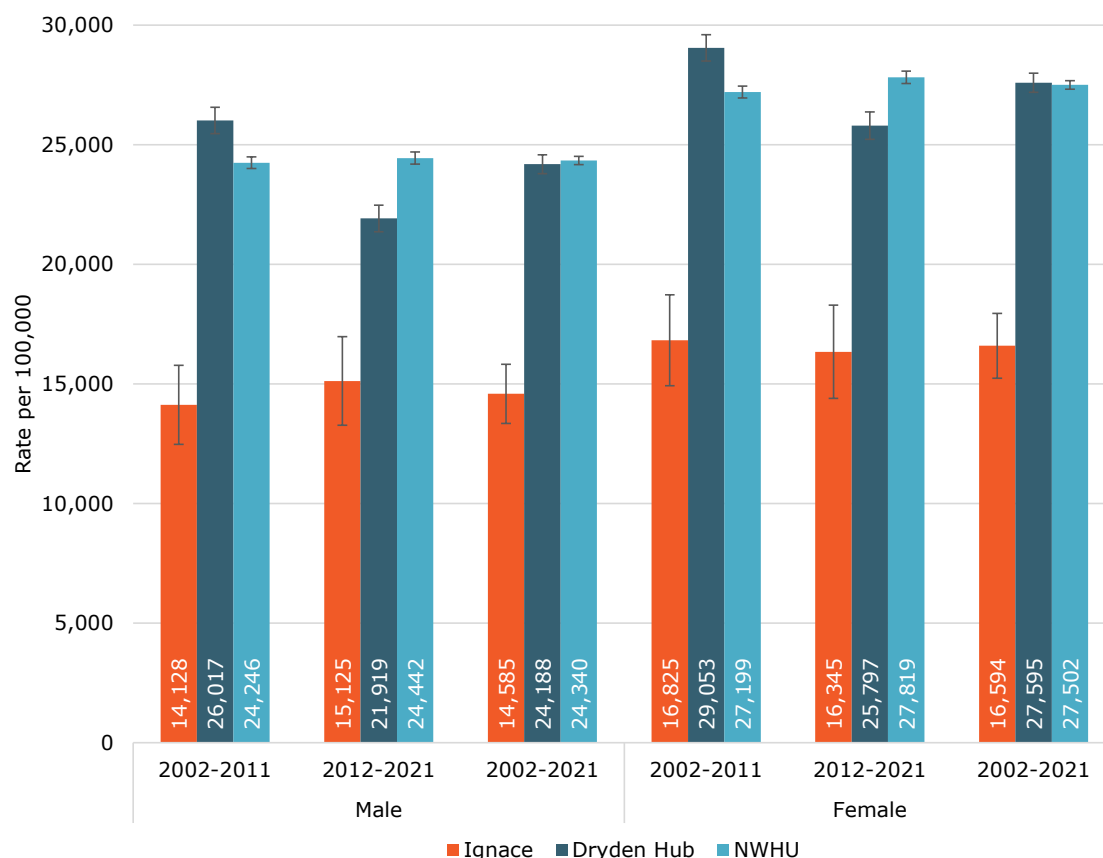
Some of the leading reasons that Ignace residents seek care at an ED three or more times per year include:

- Asthma;
- Alcohol use;
- Mental Health (other than alcohol use);
- Heart-related; and
- Headache and other circulatory reasons.

Figure 4.3-35 displays the rate (per 100,000) of ED frequent use from 2002 to 2021. The rates of frequent use were relatively consistent for all three study areas over the study period. Ignace had lower rates of frequent use than the comparison study areas. This may be due to Ignace residents having to travel to access an ED and does not necessarily indicate a lower ED need than the comparison study areas.

¹²⁴ An income quintile is a measure of socio-economic status that divides the population into 5 groups from lowest to highest income so that approximately 20% of the population is in each group (University of Manitoba 2013).

Figure 4.3-35: Emergency Department Users with 3+ Visits by Area and Sex, 2002-2021^{1,2}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. Date extracted: April 18, 2023.
2. Data are presented in **Appendix 4B**.

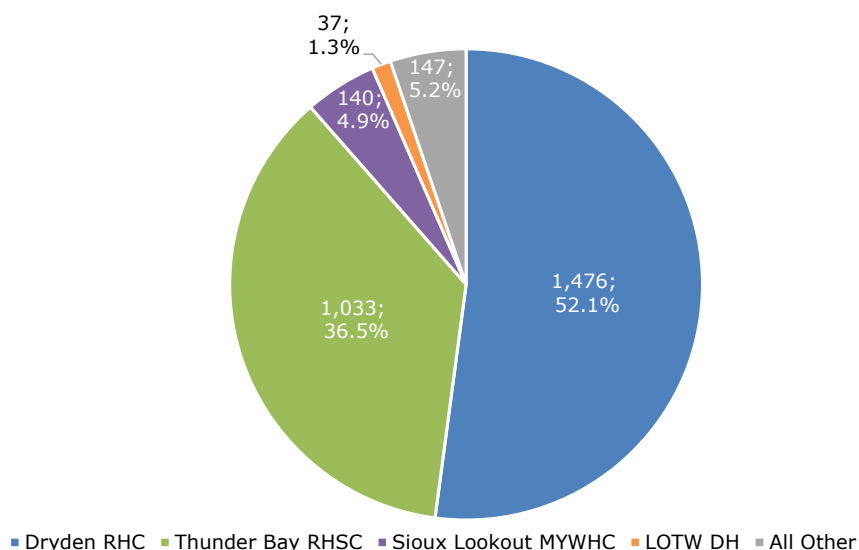
4.3.10 Inpatient Care

Acute inpatient care encompasses a range of clinical health care functions and treatments provided while a patient remains in-hospital overnight, including emergency medicine, trauma care, acute medicine, acute care surgery, critical care, acute mental health, acute rehabilitation, acute palliative care, and inpatient stabilization (Canadian Institute for Health Information 2016). Understanding rates of hospitalizations for Ignace residents in comparison to other areas provides perspective on the service demand and aids planning for future population needs. Hospitalization data also provide important information about the health status of residents.

4.3.10.1 Location of Inpatient Care

Figure 4.3-36 displays the location¹²⁵ of all hospitalizations (not individual patients) of Ignace residents from 2002 to 2021. Most hospitalizations occurred at the Dryden RHC (52.1%), with the second most common hospitalization location for Ignace resident inpatient care being the Thunder Bay RHSC (36.5%).

Figure 4.3-36: Location of Hospitalization, Ignace Residents (ages 1+), 2002-2021^{1,2}



Source: IntelliHealth Ontario 2022c. Retrieved December 10, 2022.

Notes:

1. Date extracted: March 31, 2022. Updated December 10, 2022.
2. Data are presented in **Appendix 4B**.

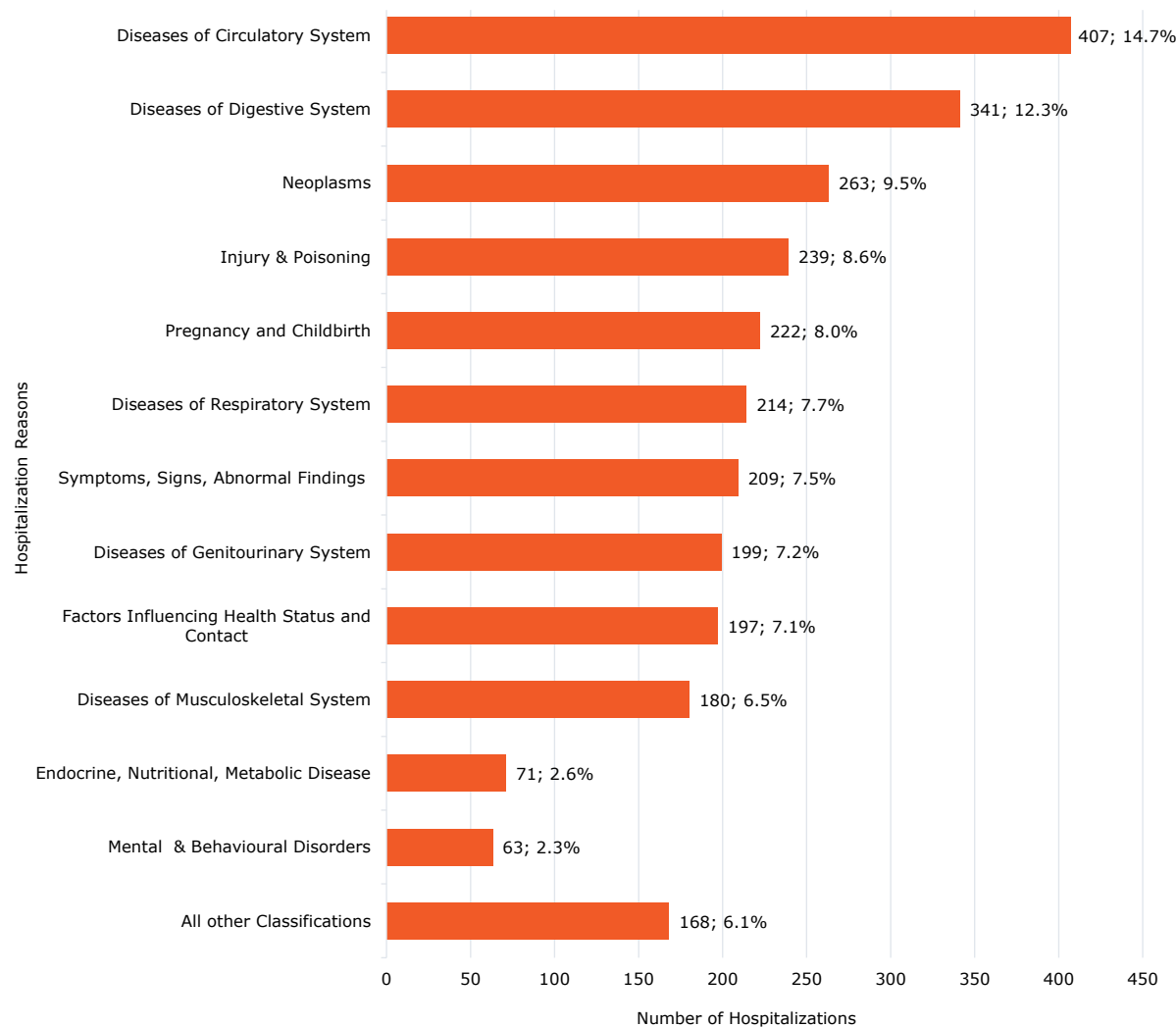
4.3.10.2 Reasons for Inpatient Care

Figure 4.3-37 displays the leading reasons for the hospitalizations of Ignace residents (ages 1+) from 2002 to 2021. The leading causes of inpatient care for Ignace residents over the study period related to the circulatory system (14.7%), the digestive system (12.3%), neoplasms¹²⁶ (9.5%), and injury and poisonings (8.6%). Circulatory system causes accounted for nearly 20% of hospital stays among males and just over 10% for females. The circulatory system was also responsible for the highest rate of hospitalization among males, while pregnancy and childbirth were responsible for the highest rate of hospitalizations among females. See **Appendix 4B Supplemental Data** for data on Ignace resident inpatient care causes.

¹²⁵ Only hospitalizations that occurred in Ontario are included.

¹²⁶ Neoplasms are the abnormal growth of tissue that can be cancerous (malignant) or noncancerous (benign).

Figure 4.3-37: Leading Reasons for Hospitalization, Ignace Residents Ages 1+, 2002-2021^{1,2}



Source: IntelliHealth Ontario 2022c. Retrieved December 10, 2022.

Notes:

1. Date extracted: March 31, 2022. Updated December 10, 2022.
2. Data are presented in **Appendix 4B**.

4.3.10.3 Hospitalization Comparisons by Area

Table 4.3-20 summarizes information related to hospitalizations in the Local Study Area and Regional Study Area from 2002 to 2021, including the average number of hospitalizations per patient and average length of stay per patient. Over the study period, both females and males were hospitalized an average of 2.7 times, which was similar to the Dryden Hub (3 for both females and males) and the NWHU (3 for both females and males). Ignace females spent an average of 6.8 days in the hospital compared to 8.6 days for males.

Table 4.3-20: Inpatient Details by Area, 2002-2021^{1,2,3,4}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	581 (55.0%)	1,541 (54.5%)	2.7	10,429 (48.5%)	6.8	14.1%	53.1
	Male	477 (45.1%)	1,289 (45.5%)	2.7	11,079 (51.5%)	8.6	24.4%	61.4
	Total	1,057	2,830	2.7	21,508	7.6	19.4%	56.9
Dryden Hub	Female	5,656 (57.6%)	16,096 (56.4%)	3.0	129,272 (53.4%)	8.0	20.4%	55.8
	Male	4,167 (42.4%)	12,456 (43.6%)	3.0	112,637 (46.6%)	9.0	19.9%	61.1
	Total	9,818	28,552	3.0	241,909	8.5	20.1%	58.1
NWHU	Female	31,662 (56.6%)	106,348 (58.2%)	3.0	714,929 (55.2%)	6.7	22.6%	50.4
	Male	24,081 (43.1%)	76,377 (41.8%)	3.0	579,907 (44.8%)	7.6	20.9%	56.5
	Total	55,936	182,725	3.0	1,294,836	7.1	21.9%	52.9

Source: IntelliHealth Ontario 2022c. Retrieved December 10, 2022.

Notes:

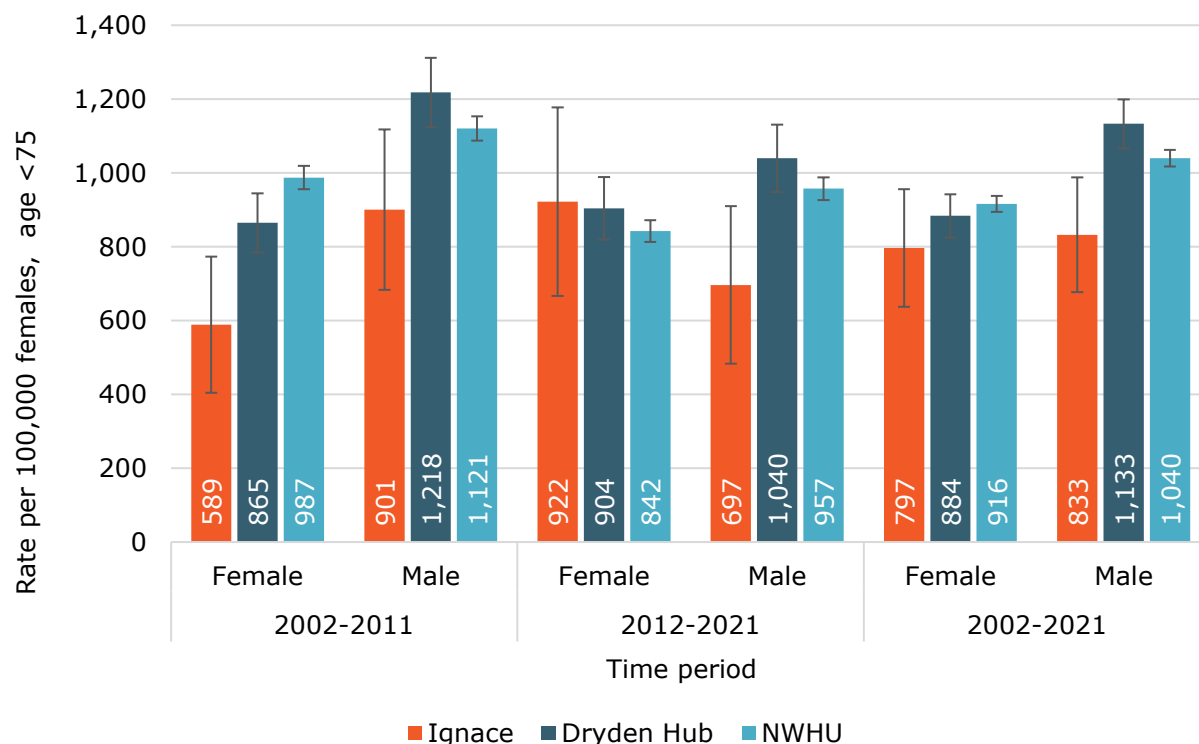
1. Includes ages and older only.
2. Date extracted: March 31, 2022; updated December 5, 2022.
3. Percents may not add up to 100% due to small discrepancies in unique patient data.
4. Data are presented in **Appendix 4B**.

4.3.10.4 Ambulatory Care Sensitive Conditions

Ambulatory care refers to patient care that takes place outside of hospital admission. Ambulatory Care Sensitive Conditions ("ACSCs") are a set of 28 medical conditions (e.g., diabetes) for which timely and effective outpatient care can prevent hospitalization for the condition (University of Manitoba 2007). Hospitalization for ACSCs in those under 75 years of age is considered a measure of access to appropriate primary health care and effectiveness of a health care system (Canadian Institute for Health Information 2022f). Low rates of hospitalizations for ACSCs suggest sufficient non-hospital care, while high rates of hospitalizations for ACSCs suggest a large occurrence of preventable hospitalizations.

Figure 4.3-38 displays the ACSC hospitalization rate by area and sex for 2002 to 2021. Rates of ACSC hospitalizations among Ignace residents were generally lower than the comparison areas. See **Appendix 4B Supplemental Data** for additional data on ACSC hospitalization rates.

Figure 4.3-38: Ambulatory Care Sensitive Conditions Hospitalization Rate by Area and Sex, 2002-2021^{1,2}



Source: IntelliHealth Ontario 2022c. Retrieved December 10, 2022.

Notes:

1. Date extracted: March 23, 2023.
2. Data are presented in **Appendix 4B**.

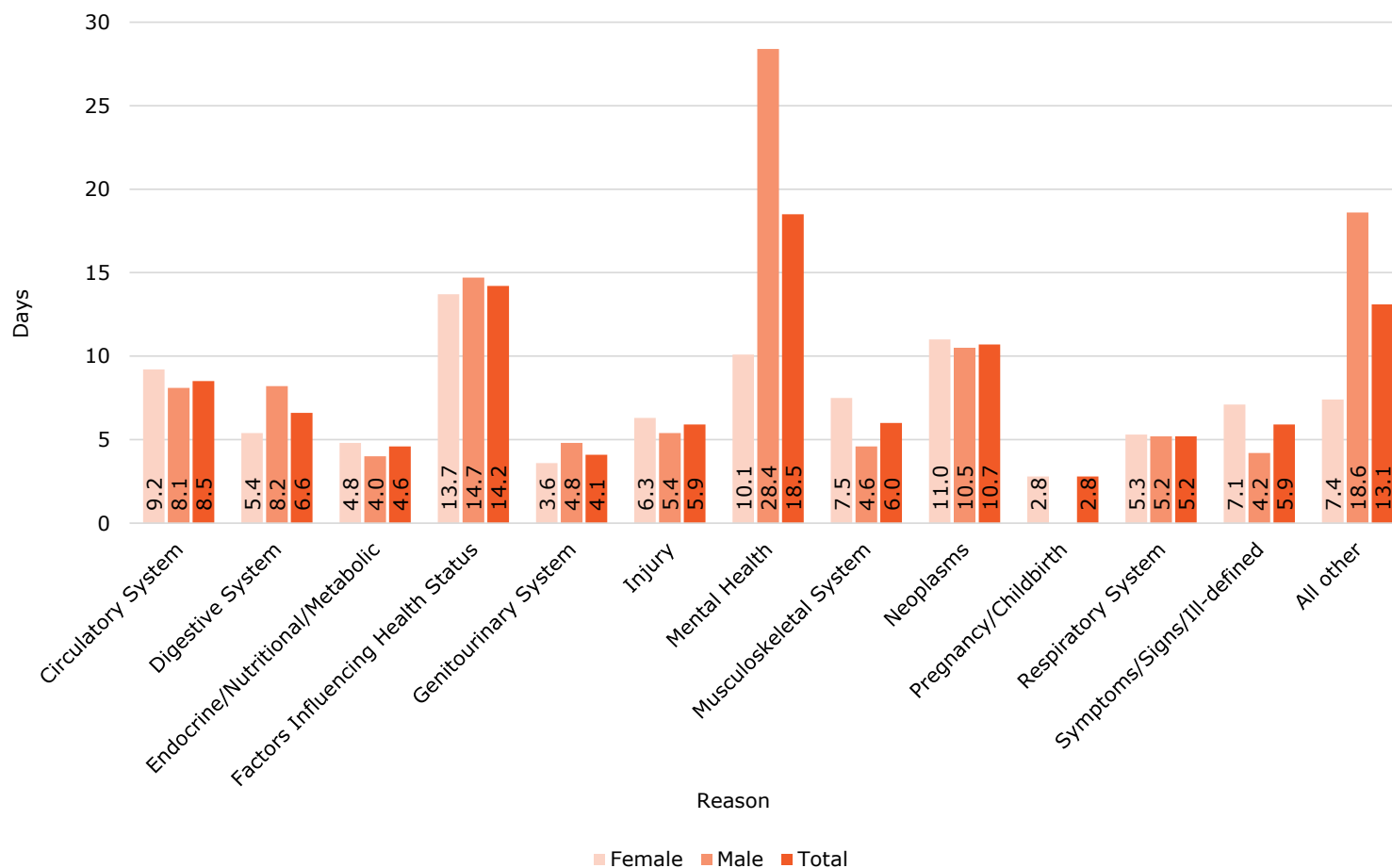
4.3.10.5 Hospital Length of Stay

Between 2002 and 2021, Ignace residents spent a total of 21,508 days in hospital (in Ontario only). Days are almost equally divided among females (10,429 days) and males (11,079 days). **Figure 4.3-39** displays the average length of stay at a hospital for Ignace residents by reason for the stay, from 2002 to 2021. The highest average length of stay was for mental health (18.5 days), which was higher for males than females (28.4 days compared to 10.1 days, respectively). Mental health is a concern in the Local Study Area and Regional Study Area, and it has been noted that mental health challenges appear to be increasing (NWO Community and Baseline Studies 2022-2023). Mental health services are limited in the Local Study Area and Regional Study Area (see **Section 2.4.9**). Individuals experiencing mental health challenges are considered a vulnerable population in the study areas (see **Section 2.2.5** for more information on vulnerable populations).

Factors influencing health status¹²⁷ was the next highest average length of stay at 14.2 days, with similar averages for males (14.7 days) and females (13.7 days). Neoplasms followed, with an average of 10.7 days, although the category of “all other” (those not specified in this figure) had an average length of stay of 13.1 days. See **Appendix 4B Supplemental Data** for further data related to hospital length of stay for Ignace residents.

¹²⁷ Factors influencing health status include medical factors such as resistance to antimicrobial drugs, genetic susceptibility to diseases, health hazards related to communicable diseases and family and personal history, blood type, and body mass index. Other factors include persons with health hazards related to socioeconomic and psychosocial circumstances and persons encountering services in circumstances related to reproduction (AAPC n.d.).

Figure 4.3-39: Average Length of Stay by Reason, Ignace Residents, 2002-2021^{1,2}



Source: IntelliHealth Ontario 2022c. Retrieved December 10, 2022.

Notes:

1. Date extracted: March 31, 2022. Updated December 10, 2022. Data are presented in **Appendix 4B**.

4.3.10.6 Effectiveness of Inpatient Care

Understanding effectiveness indicators, such as the rate of 30-Day medical readmission,¹²⁸ in a health system can help determine the effectiveness of and quality of care provided by that health system. For example, a high rate of hospital readmission can indicate adverse patient outcomes and negatively impact a patient's quality of life (Nijhawan et al. 2019).

Table 4.3-21 displays effectiveness indicators by year and rate (per 100). Ignace-level data are not available. NWHU-level data is compared to provincial data to provide an idea of the health system effectiveness in Northwestern Ontario. Data are presented for 2017 to 2021 where possible; for some years data were not available for certain indicators. During three out of the five years, rates of 30-day medical readmission were higher in the NWHU compared to Ontario. For several other indicators, the NWHU rate was higher for one of the years under study. However, these differences may or may not indicate a pattern due to the quantity of comparisons being made and differences not occurring for multiple years.

¹²⁸ Hospital readmissions indicators are the proportion of clients who were readmitted to a hospital for urgent and emergent care within 30 days or 1 year of discharge from hospital, respectively.

Table 4.3-21: Effectiveness Indicators by Year, NWHU and Ontario, Risk-Adjusted Rate per 100 Population (95% Confidence Interval)^{1,2}

Indicator	NWHU					Ontario				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
30-Day Acute Myocardial Infarction In-Hospital Mortality	N/A	7.6 (3.6-14.0)	13.6 (8.2-21.3)	11.0 (6.5-17.4)	6.0 (3.1-10.5)	N/A	6.3 (5.9 - 6.6)	6.1 (5.7 - 6.4)	6.2 (5.8-6.6)	6.3 (5.9-6.7)
30-Day Stroke In-Hospital Mortality	N/A	14 (7.6-23.4)	15.6 (8.0-27.2)	17.8 (9.5-30.4)	20.0 (11.2-33.1)	N/A	10.9 (10.4-11.4)	10.4 (9.9-10.9)	10.9 (10.4-11.5)	10.7 (10.0-11.2)
30-Day Acute Myocardial Infarction Readmission	6.8 (3.5-12.0)	16.9 (11.5-24.0)	11.1 (6.5-17.5)	10.9 (6.6-16.8)	13.2 (8.8-19.1)	9.4 (9.0-9.9)	10.5 (10.1-11.0)	9.9 (9.5-10.4)	8.9 (8.5-9.3)	9.6 (9.2-10.1)
30-Day Medical Readmission	16.2 (15.0-17.5)	17.2 (15.9-18.6)	15.6 (14.3-16.9)	14.9 (13.6-16.4)	17.3 (15.9-18.7)	13.9 (13.8-14.1)	14.4 (14.3-14.5)	14.6 (14.5-14.7)	14.5 (14.4-14.7)	14.0 (13.8-14.1)
30-Day Readmission for Mental Health and Substance Use	N/A	N/A	N/A	12.6 (9.7-16.1)	15.3 (12.6-18.4)	N/A	N/A	N/A	16.5 (16.2-16.8)	15.0 (14.7-15.3)
30-Day Obstetric Readmission (Female)	1.8 (1.1-2.8)	2.5 (1.7-3.6)	2.9 (2.0-4.2)	2.2 (1.4-3.3)	1.9 (1.2-2.9)	2.0 (1.9-2.0)	2.1 (2.0-2.1)	2.0 (1.9-2.1)	1.7 (1.7-1.8)	1.8 (1.7-1.9)
30-Day Surgical Readmission	7.1 (6.0 - 8.4)	7.6 (6.4 - 8.8)	7.4 (6.2 - 8.7)	8.8 (7.5 - 10.3)	8 (6.8 - 9.4)	7.0 (6.9 - 7.1)	6.8 (6.7 - 6.9)	6.9 (6.8 - 7.0)	7.3 (7.2-7.4)	7.3 (7.2-7.5)

Source: Canadian Institute for Health Information 2022g. Extracted April 17, 2022.

Notes:

1. "N/A" indicates data not available.
2. Data are presented in **Appendix 4B**.

4.3.11 Key Indicators for Quality Improvement and System-Level Planning

Five key indicators are reviewed in all CHC practice profiles for quality improvement, including primary care visit 7 days after hospital discharge, new opioid starts, hospital readmissions, ACSCs, and ED visits better managed elsewhere (Alliance for Healthier Communities 2021). See **Appendix 4B Supplemental Data** for data on these indicators.

Primary Care Visit 7 days after Hospital Discharge

The primary care visit 7 days after hospital discharge indicator is the proportion of discharges where the client was seen (in-person, virtually, or by phone) by a physician or nurse practitioner within 7 days of discharge from hospital for specific health issues. This illustrates continuity of care in the community and will help avoid a readmission to hospital. The proportion of primary care visits 7 days after discharge is suppressed for the MBCHCH due to the small number. This may simply be related to low numbers of hospitalizations but may also be materially impacted by the reporting specificity of physicians already discussed.

New Opioid Starts

The new opioid starts indicator is the proportion of clients that have been newly dispensed an opioid prescription¹²⁹ by any provider in the health care system (i.e., not just the local CHC). Approximately 1 in 20 (5.7%) clients of MBCHCH were newly prescribed opioids in the 2020/2021 fiscal year, which is similar to the Ontario average (4.5%).

Hospital Readmissions

The hospital readmissions indicator is the proportion of clients who were readmitted to a hospital for urgent and emergent care within 30 days or 1 year of discharge from hospital. Approximately one in ten (10.5%) MBCHCH clients who were admitted to hospital in this fiscal year were readmitted within 30 days and one in five (22.1%) was readmitted within one year. It is important to note that MBCHCH numbers are based on very small numbers and will be presented more fully in **Section 4.3.10 Inpatient Care**. However, these rates are not dissimilar to Ontario comparison rates (7.5% and 21.8%, respectively).

Ambulatory Care Sensitive Conditions (ACSC) Rate

The ACSC indicator is the rate of hospital admissions for one or more of the following conditions: asthma, chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF), and/or diabetes. Numbers are too low to report for MBCHCH clients for the one-year period. However, primary data analysis in **Section 4.3.10.1** provides further information on ACSC as a key indicator of care quality in the community.

¹²⁹ Dispensed opioid prescriptions do not necessarily reflect actual use of opioids.

Emergency Department Visits Better Managed Elsewhere

Conditions that could be “better managed elsewhere” include conjunctivitis, cystitis, otitis media, and upper respiratory infections for which services should be provided at a health centre through nursing and physician coverage. About one in 20 (5.4%) visits to the ED¹³⁰ by MBCHCH clients were classified as “better managed elsewhere” and can illustrate the need for better access to primary care services. This rate is slightly lower than the Ontario CHC average (6.2%), potentially supporting a high level of engagement and access to care for MBCHCH clients.

4.3.12 Summary of Health Systems

Access to Health Care in the Local Study Area

Ignace residents must travel to other communities, often Dryden, to access some health care services. The need to use health care services outside of the Local Study Area is due to both a lack of services and barriers to accessing health care within the community. Results from the Community Health and Wellness Survey (2023) found that, generally, participants had positive feelings and experiences related to the MBCHCH with the understanding that services in a small community cannot be comparable to a larger centre. However, concerns related to the MBCHCH included a lack of consistency in doctors, lack of availability of certain services, location of the MBCHCH (i.e., at the intersection of two highways at the edge of the Township), and hours of operation. The supply of physicians in Ignace is lower than the national average (168 per 100,000 vs. 246 per 100,000).

Over half of Community Health and Wellness Survey (2023) respondents (54.1%) reported having a regular health care provider in Ignace. However, over a quarter of respondents (25.5%) responded that they need a provider but do not have one. Other participants reported not needing a regular health care provider (11.2%) or having one that they see in another community (9.2%). The most reported challenges in accessing MBCHCH services was doctor availability (33.3%), followed by hours of operation (15.9%) and unavailability of services (15.9%). Others reported long wait lists, trouble getting through on the phone, unavailability of counselling, impact of COVID-19, or lack of transportation.

Barriers to primary health care services for residents of Ignace include transportation, long wait times to see specialists, the hours of services, and lack of knowledge on how to navigate the health care system (NWO Community and Baseline Studies Key Person Interview Program 2022). Further concerns from Ignace residents regarding their local primary health care services shared through the Community Health and Wellness Survey (2023) included the rotational physician model preventing individuals from being able to be treated by the same physician, causing a lack of continuity in care.

The health care services identified that require improvements or expansion in the Ignace area include dental care, dietician services, discharge planning and referrals, drug and alcohol treatment and counselling, early childhood development supports, equipment and aides for independent living, mental health and therapy, in-home personal care, preventive education,

¹³⁰ Visits to the emergency department do not include health centre visits. Rather, visits to the emergency department track health centre patients who were seen in a hospital emergency department.

occupational and speech therapy, and patient care navigation. Transportation is a barrier to accessing healthcare in the Ignace area, which is exacerbated by a lack of public transportation options (see **Section 4.3.5.5**) (EPI Research 2022).

MBCHCH Client Activity

MBCHCH provides care to Ignace residents and residents of other communities, including Dryden, Thunder Bay, Upsala, and Savant Lake. MBCHCH also serves a large seasonal population in the summer, with clients from other provinces and the United States. As of March 31, 2023, 1,327 individual clients had received a service directly through MBCHCH over the 2022/23 fiscal year. The leading reasons for encounters with community health workers at the MBCHCH over the 2019/2020 to 2021/2022 fiscal years were visits for health advice (28.6%), social isolation (22.4%), and inadequate exercise (10.1%). The leading reasons for nurse encounters at the MBCHCH over the 2019/2020 to 2021/2022 fiscal years were visits for screening (26.4%), visits for health advice (10.2%), and visits for preventative immunizations/medications (6.9%) and visits for blood tests (6.9%). The most common issue known to be addressed by physicians through the MBCHCH over the 2019/2020 to 2021/2022 fiscal years is prescription renewal (9.5%) and general assessments (7%).

Health Services Utilization

At least one in three Community Health and Wellness Survey (2023) respondents noted physician availability challenges within the Township. Further, residents requiring health services from a specialist often must travel outside of the community to Dryden and Thunder Bay to do so. Between 2000 and 2020, 3,144 individual residents of Ignace were provided services by a physician in Ontario, for a total of 142,261 physician encounters. From 2000 to 2020, nearly half (45.7%) of Ignace resident physician encounters were billed in Thunder Bay and 21.8% were billed in Dryden. From 2000 to 2020, 45.1% of optometrist encounters with Ignace residents were billed in Thunder Bay. Rates of utilization of specialist services by Ignace residents are higher or very similar to Dryden Hub rates.

Between 2008 and 2021, 3,083 of the 87,892 (3.5%) physician encounters for Ignace residents occurred using telemedicine, with the most recent years seeing telemedicine at just under 5% of all recorded encounters for Ignace residents. As health care services in the Local Study Area are limited, telemedicine increases Ignace residents' access to primary care and reduces the need to travel outside the community for non-urgent care.

Services for seniors, such as home care and long-term care, are lacking in the Local Study Area and Dryden Hub, making it difficult for Ignace senior residents to age in place. Senior services are a key priority for Ignace residents due to the large senior population in the Township (InterGroup 2022). From 2006 to 2021, 464 individual Ignace residents were admitted for home care services and 52 admissions of Ignace residents to long-term care homes occurred. Of the 52 long-term care admissions, 71.2% were at the Dryden Long Term Care Facility and 11.5% were at the Hogarth Riverview Manor (Thunder Bay).

Outpatient Care

The two leading locations for Ignace resident day surgeries were Thunder Bay and Dryden, with 50% of day surgeries occurring at the Thunder Bay RHSC and 36% occurring at the Dryden RHC

from 2003 to 2021. From 2004 to 2021, almost all dialysis visits by Ignace residents took place at the Thunder Bay RHSC.

Emergency Services

Approximately one in five Community Health and Wellness Survey (2023) respondents noted a primary concern related to ambulance and emergency medical care availability in the Local Study Area. Emergency services in the Local Study Area and Regional Study Area are provided by Northwest EMS, through the KDSB, and Ornge.

In the Dryden Hub, Northwest EMS has ambulance bases in Ignace and Dryden (KDSB 2023). The KDSB is looking to build an ambulance base in Vermillion Bay in the Municipality of Machin (WSP 2022). According to the NWO Baseline Studies Key Person Interview Program 2022-2023, attracting qualified paramedics to the study areas is challenging as there are no EMS programs available within the study areas. Challenges for the Ignace Ambulance Base include maintaining consistent staffing and subsequent burnout among the EMS staff as well as coordinating responses with the Dryden EMS teams (Ignace Health and Wellness Focus Group 2023; Ignace EarlyOn Child and Family Centre Staff and Parent Focus Group 2023). Call volumes in Dryden have been increasing, in part due to increased mental health and substance use challenges in the community (WSP 2022).

Ornge provides EMS services by air and land. Ornge does not have a base in the Local Study Area. In the Regional Study Area, Ornge bases are located in Kenora and Sioux Lookout (Ornge n.d.).

There are no EDs located in the Local Study Area. Ignace residents most often use the EDs of the Dryden RHC, Sioux Lookout MHC, Thunder Bay RHSC, and LOTW District Hospital (Kenora). From 2002 to 2021, the majority (70.5%) of ED visits by Ignace residents occurred at the Dryden RHC. Following Dryden, 14.3% were at the Thunder Bay RHSC and 8.5% were at the Sioux Lookout MHC. Injury and poisoning were the two most common reasons for ED visits by Ignace residents, with the ratio being higher among Ignace males (25% of visits) than females (17% of visits). Of the ED visits for Ignace residents, 73.9% did not require ambulance transportation, while 19.3% required ground ambulance transportation. Ignace residents have lower rates of ED utilization and frequent ED use than the Dryden Hub and the NWHU. This may be attributed, in part, to Ignace residents needing to travel out of the Township to access emergency care. Thus, if an individual does not have a vehicle or someone to assist them, they may forgo emergency care when it is needed.

Inpatient Care

The majority of hospitalizations of Ignace residents from 2002 to 2021 occurred at the Dryden RHC (52.1%) and Thunder Bay RHSC (36.5%). The leading causes of inpatient care for Ignace residents related to the circulatory system (14.7%), the digestive system (12.3%), neoplasms (9.5%), and injury (8.6%). Ignace females spend an average of 6.8 days in the hospital compared to 8.6 days for males. The highest average length of stay was for mental health (18.5 days), which was higher for males than females (28.4 days compared to 10.1 days, respectively). Mental health is a concern in the Local Study Area and Regional Study Area, and it has been noted that mental health challenges appear to be increasing (NWO Community and Baseline Studies 2022-2023).

4.4 COMMUNITY HEALTH OUTCOMES

4.4.1 Overview and Approach

This section is organized to present the pathway of community health outcomes in the Local and Regional Study Areas from birth to death, with discussions of key areas of interest. The following topics are covered:

- Maternal and child health, including pregnancy, maternal health conditions, birth and fertility rates, and infant health;
- Communicable disease;
- Chronic disease, including disease burden, cancer, diabetes, cardiovascular, respiratory, and other disease;
- Mental health, including youth mental health;
- Injury, including unintentional and intentional injury; and
- Mortality, including life expectancy, infant mortality, and premature mortality.

The Local Study Area is the Township of Ignace. The Regional Study Area is the Northwestern Health Unit ("NWHU"), an administrative boundary that includes 19 municipalities, 39 First Nations communities, and two unincorporated territories, Kenora Unorganized and Rainy River Unorganized. The NWHU serves a population of approximately 82,000 people and has offices in 12 municipalities, including Ignace, Dryden, Sioux Lookout, Atikokan, Ear Falls, Emo, Fort Frances, Pickle Lake, Red Lake, Sioux Narrows-Nestor Falls, Kenora, and Rainy River (NWHU 2022; NWHU 2023b). In addition, data is presented for the Dryden Local Health Hub ("Dryden Hub") as a subset of the Regional Study Area proximal to the Project. The Dryden Hub was a model brought forward by the North West LHIN due to the unique (i.e., northern and rural) geography of the area in order to take advantage of proximity to health care providers. The Dryden Hub includes the Township of Ignace, City of Dryden, Municipality of Machin, Wabigoon Lake Ojibway Nation, and Eagle Lake First Nation. Data in the Dryden Hub and the NWHU are inclusive of municipalities, unincorporated areas, and Indigenous peoples that access services offered by provincial providers (see **Section 4.1.1.1.2**). In accordance with the First Nations Principles of Ownership, Control, Access, and Possession no data disaggregation was completed related to Indigenous identity for any data not presented in the public domain (FNIGC n.d.). In 2019, the Province of Ontario transitioned to Ontario Health, an agency created to oversee health care planning and delivery across the province. As a part of this transition, the previous LHINs were replaced with Ontario Health and its sub regions. The Dryden Hub will continue under the new system. For more information on this transition, see **Section 4.3.2**.

The description of health outcomes goes back far enough to understand past trends and is dependent on the availability of health data in the Local Study Area and Regional Study Area. Where data are available, a minimum of 20 years of data are presented. For health data, the extent to which past data can be presented was determined in part based on how data was aggregated by the relevant sources, and use of confidentiality practices employed to protect individual data from being released (see **Appendix 4A**). Three future time frames were

proposed for projection purposes: near-term (2024 to 2032), mid-term (2033 to 2042), and long-term (2043 and beyond) which align with Project phases (see **Section 1.0**).

Most health indicators, with the exception of crisis events (e.g., COVID-19 pandemic), do not change dramatically over short time periods, and many outcomes related to exposures or lifestyle can occur over decades. The trends described help to understand current and anticipated near-term health trends. With respect to mid to longer term time horizons, projection of health outcomes is often imprecise and challenged by several factors, such as the strength of the relationship between risk factors and outcomes and the scale with which the strength of these associations are measured (Galea & Keyes 2017). Further, projecting future health outcomes assumes plans and measures will then be put in place to be responsive to any emergent trends.

Typically, comparisons are by 10-year time periods at a minimum. For small communities, multiple years of data need to be combined to be usable (with a minimum cell size of 5). **Table 4.4-1** presents the temporal boundaries for each indicator category available at the Local Study Area level. See **Appendix 4A Detailed Methods** for all specific amalgamated temporal groupings and further coding details and limitations for all indicators presented.

Table 4.4-1: Temporal Boundaries by Indicator Category for Local Study Area Specific Data

Indicator	Time Frame
Births and Birth Outcomes Data	1996-2021
Communicable Disease Data	2005-2021
Dialysis Data	2004-2021
Emergency Department Visit Data	2002-2021
Home Care Data	2006-2021
Hospitalization (Inpatient) Data	2002-2021
Immunization Data	2015-2022 Some limited to 2021-2022 only.
Inpatient Adult Mental Health Designated Beds Data	2006-2021
Long Term Care Data	2006-2021
Mary Berglund Community Health Centre Hub Data	2018-2021
Maternal Age Data	1996-2018
Maternal and Family Risk Factors Data	2014-2021
Mortality Data	1986-2018
Outpatient Day Surgery Data	2003-2021
Physician Utilization Data (not delivered at Mary Berglund Community Health Centre Hub)	2000-2020
Population Data to Calculate Rates	1986-2021 Modified as needed to match numerator time period/sex or gender/ages.
Pregnancy Data	2002-2021
Ignace Self-Reported Experiences (Including 2023 Ignace Community Health and Wellness Survey) Data	2023 point in time data collection

Notes: See **Appendix 4A Detailed Methods** for all Local Study Area data sources and documentation by section.

The description of health outcomes relied on working with key partners, such as the NWHU for confidential extraction and provision of indicators. Interpretation of these data were also assisted by key staff at the NWHU.

Most data, other than data provided through the NWHU, are obtained from the IntelliHealth Ontario data repository for medical services, inpatient discharges, mental health designated

beds, and vital statistics births and deaths packages. The Ignace Community Health and Wellness Survey (2023) is also referenced throughout **Section 4.4**, but data are limited in terms of responses (see **Appendix 4A Detailed Methods** for more detailed methods on the acquisition and interpretation of data). Where possible data are presented by key determinants such as age group and sex.

4.4.2 Maternal and Child Health

Maternal and child health are important priorities, as inequities can develop along the continuum from before birth, throughout pregnancy and in the early years of life that can affect health status into adulthood.

Many determinants related to the health outcomes for children are preventable but require resources and support. For example, women who do not seek prenatal care before the end of the first trimester are at higher risk for poor maternal and infant outcomes than are those who seek prenatal care early. However, receiving early prenatal care requires access to care, trust and comfort in the local care available, transportation, and knowledge of pregnancy. Other determinants affecting maternal and infant outcomes include diet, smoking, income, workplace, and stress.

Although Ignace shows some higher risk indicators such as young maternal age (which links to inequity such as opportunity for education and financial resources) (see **Section 4.4.2.3.5 Maternal Age**), most infants in Ignace are born in the healthy birth weight range (see **Section 4.4.2.3.8**) and there are almost no severe birth outcomes reported during the time period reviewed. These healthy infant outcomes despite risk, are likely related to excellent access to early and ongoing care with Mary Berglund Community Health Centre Hub ("MBCHCH") and Northwestern Public Health staff (also on site at the MBCHCH) (NWO Baseline Studies Key Person Interview Program 2022-2023). This includes care at the MBCHCH, telephone, virtual, and home visits to any community member in need of support services, such as in the prenatal and postnatal period. Participants in interviews note that it is rare to not see expectant mothers in the first trimester (NWO Baseline Studies Key Person Interview Program 2022-2023).

The maternal and child health indicators are based on Public Health Ontario's categorization of key indicators of maternal and child health (Public Health Ontario 2019a, 2019c, 2022a, 2022c). However, most of the indicators recommended by Public Health Ontario are not presented in this section due to rare and/or small numbers in the Local Study Area, or no Local Study Area data is available for the indicator. See **Appendix 4A Detailed Methods** for all Public Health Ontario indicators for maternal and child health.

Additional indicators are also added, including location of births for Ignace mothers to address issues related to access to services. Many indicators can link to more than one category. For example, maternal smoking during pregnancy is not only an indicator/risk factor for maternal health, but also a known risk factor for healthy infant and child development.

4.4.2.1 Healthy Child Development Risk Factors

The Healthy Babies Healthy Children (HBHC) screening program is used to identify “with-risk families”¹³¹ so that they receive supports and services as soon as possible (Ontario Ministry of Children and Youth Service 2018). HBHC screening is voluntary and can occur at three stages: prenatal, postnatal, and early childhood. Families achieving a score of 2 or more are considered “with risk” and are eligible for in-depth follow up to determine required services.

This indicator is important to illustrate connections to families in the prenatal and postnatal period and the rates of screening achieved compared to the prenatal target of 10% and the postnatal target of 80%. It also helps to highlight strengths and areas of need for families in the Local Study Area.

Between 2013 and 2021, there were 187 HBHC screens recorded with Ignace families (the interview is typically with the mother). Of the 187 screens completed, 62 (33.1%) occurred in the prenatal period (**Table 4.4-2**), 103 (55.1%) in the postnatal period, and 22 (11.8%) in early childhood. There was some variation year to year in numbers of screens completed, which is not unexpected with smaller numbers of births and a voluntary program (see **Appendix 4B Supplemental Data**).

As **Table 4.4-2** illustrates, although the provincial target for prenatal screening is 10% of births, in both time periods the screening rate for Ignace is much higher. Between 2013 and 2017, 63.8% of Ignace women who gave birth were screened prenatally and this increased to 88.9% between 2018 and 2021. The same trend was not observed in the Dryden Hub where across both time periods, less than 50% of women who gave birth were screened, and the proportion between 2013 and 2017 decreased compared to between 2018 and 2021 (see **Appendix 4B Supplemental Data**). One reason for the successful screening rate is that the Mary Berglund Community Health Centre Hub initiated the distribution of Baby Boxes¹³² in 2016 (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

¹³¹ A family is determined to be with risk, if the HBHC Screen (confirmed by an assessment and nursing judgment) identifies that there is a serious likelihood that a child may not reach his or her potential and the family may benefit from more intensive HBHC Program services (e.g., blended home visiting services, service coordination, etc.). Ontario Ministry of Children and Youth Services. 2018.

¹³² Baby boxes provide parents with a variety of childcare products that may not otherwise be readily available in smaller municipalities such as a mattress and other products from Canadian vendors. Included in the baby box program are essential newborn items, first year reference books, and a prenatal educational component (Khoo 2016).

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Prenatal HBHC Screens Completed, 2013-2021, by Area^{1,2}

Time Period	Ignace	Dryden Hub	NWHU
2013–2017	30	280	1,169
2018–2021	32	127	544
Total	62	407	1,713

Source: ISCIS 2022. Retrieved April 21, 2022.

Notes:

1. Data extraction and analysis by Northwestern Health Unit.
2. For Ignace residents there were 47 births from 2013-2017 and 36 from 2018-2021.
3. Data are presented in **Appendix 4B**.

The HBHC program target for postnatal screening is 80% of births. As **Table 4.4-3** shows, the number of postnatal screens for Ignace area families is higher than the number of births in each time period. Both the Dryden Hub and the NWHU met the 80% screening target from 2013-2021 but the NWHU achieved 78% of screens from 2018-2021 (down from 90% from 2013-2017) (see **Appendix 4B Supplemental Data**).

Table 1.6-3: Postnatal HBHC Screens Completed, 2013-2021, by Area^{1,2,3,4}

Time Period	Ignace	Dryden Hub	NWHU
2013–2017	55	619	4,075
2018–2021	48	456	2,707
Total	103	1,075	6,782

Source: ISCIS 2022. Retrieved April 21, 2022.

Notes:

1. Postpartum screens refer to any screen completed from the time of an infant's birth until that infant is 6 weeks of age.
2. For Ignace residents there were 47 births from 2013-2017 and 36 from 2018-2021.
3. Data extraction and analysis by Northwestern Health Unit.
4. Data are presented in **Appendix 4B**.

Focus group participants (Ignace EarlyOn Child and Family Centre Parent Focus Group 2023) expressed challenges in access to prenatal care in Ignace closer to their delivery date. Participants noted limitations to the types of prenatal care offered in Ignace during pregnancy and they are often required to go to Dryden or Thunder Bay for pre-natal care, in some instances multiple times per month.

4.2.2.1.1 Families with Risk

Between 2014 and 2021, a higher proportion of Ignace families screened in both the prenatal and postnatal periods were identified "with risk" in comparison to the Dryden Hub and NWHU

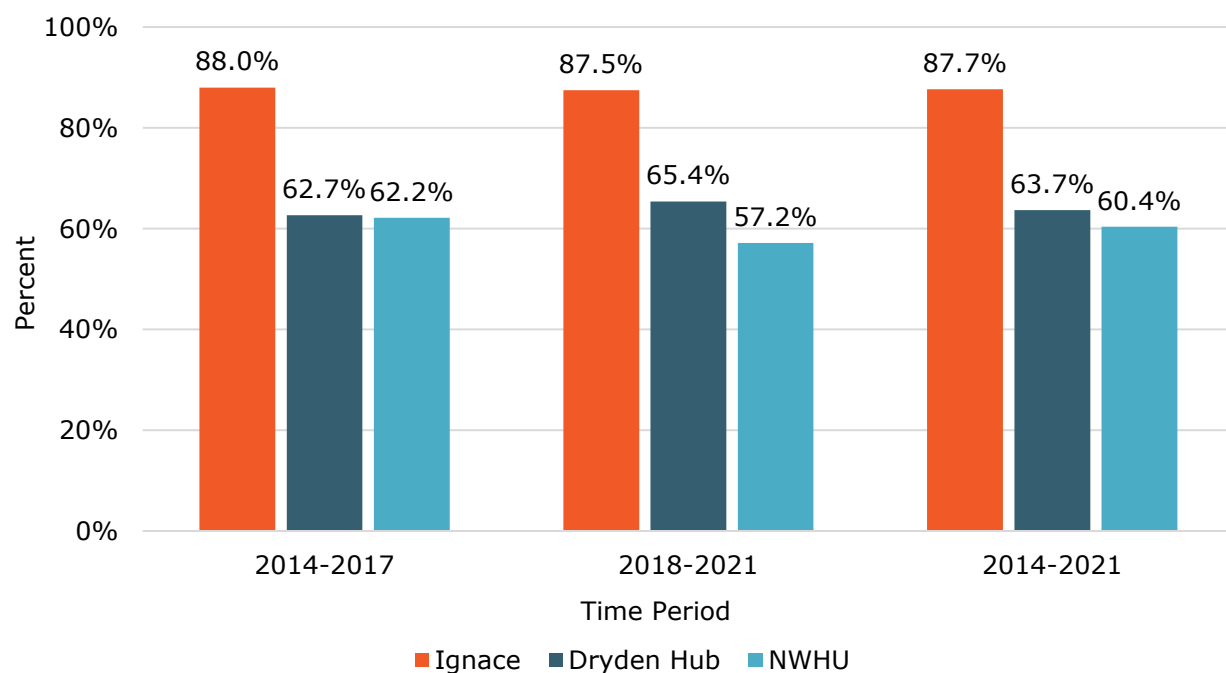
(**Figure 4.4-1; Figure 4.4-2**). “With risk” is applied when two or more questions are answered “yes” and is meant to signal that further follow up should occur with the family.

Twenty-seven of 36 screening questions apply to the prenatal period, therefore the differences in rates between the prenatal and postnatal periods should be interpreted with caution.

Total early childhood screening “with risk” proportions were not available for Ignace. While few early childhood screenings were completed, interview participants expressed challenges with child mental health and difficulties accessing organized ongoing support (NWO Baseline Studies Key Person Interview Program 2022-2023). Total early childhood screening “with risk” proportions were 85.8% for Dryden Hub and 68.8% for NWHU for 2015-2020 (see **Appendix 4B Supplemental Data**).

As shown in **Figure 4.4-1**, the proportion of prenatal screening “with risk” in Ignace from 2014 to 2021 was 87.7%. This was higher than both the Dryden Hub (63.7%) and the NWHU (60.4%).

Figure 1.6-2: Proportion Prenatal Screening “With Risk”, 2014–2017 and 2018-2021, by Area^{1,2,3,4}



Source: ISCIS 2022. Retrieved April 21, 2022.

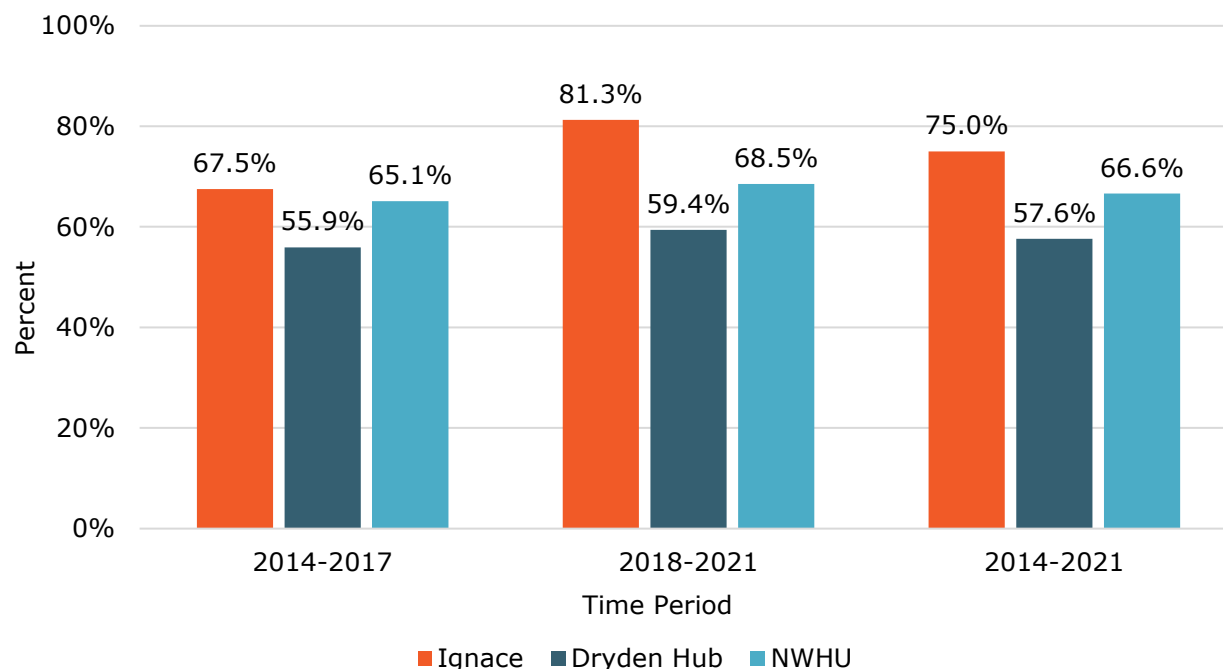
Notes:

1. At least 2 out of 27 screening questions = Yes.
2. Data extraction and analysis by Northwestern Health Unit.
3. For Ignace residents there were a total of 57 screens from 2014-2021, with 25 from 2014-2017 and 32 from 2018-2021. For people accessing services in the Dryden Hub there were a total of 344 screens from 2014-2021, with 217 from 2014-2017 and 127 from 2018-2021. For people accessing NWHU services there were a total of 1,499 screens from 2014-2021, with 955 from 2014-2017 and 544 from 2018-2021.

4. Data are presented in **Appendix 4B**.

As shown in **Figure 4.4-2**, the proportion of postnatal screening “with risk” in Ignace from 2014 to 2021 was 75%. This was higher than the Dryden Hub (57.6%) and the NWHU (66.6%).

Figure 1.6-3: Proportion Postnatal Screening “With Risk”, 2014-2017 and 2018-2021, by Area^{1,2,3,4,5}



Source: ISCIS 2022. Retrieved April 21, 2022.

Notes:

1. Infant up to 6 weeks of age.
2. At least 2 out of 36 screening questions = Yes.
3. Data extraction and analysis by Northwestern Health Unit.
4. For Ignace residents there were a total of 88 screens from 2014-2021, with 40 from 2014-2017 and 48 from 2018-2021. For people accessing services in the Dryden Hub there were a total of 957 screens from 2014-2021, with 501 from 2014-2017 and 456 from 2018-2021. For people accessing NWHU services there were a total of 6,006 screens from 2014-2021, with 3,299 from 2014-2017 and 2,707 from 2018-2021.
5. Data are presented in **Appendix 4B**.

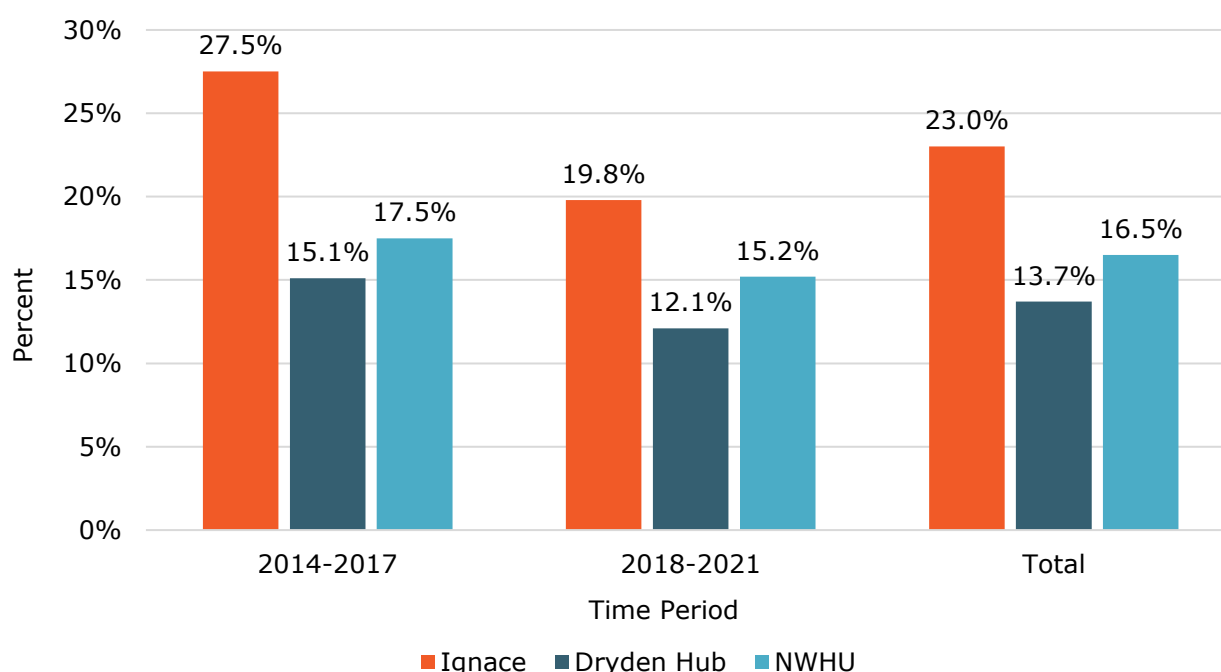
Note that “all stages of screen” indicates that all prenatal, postnatal, and early childhood families answered these questions (as it is noted that there are nine questions that do not apply to prenatal period). When interpreting the following data, keep in mind that they are representative only of those who participated in the voluntary screening.

Over 1 in 10 Ignace mothers screened were single parents and there was very little change between the two time periods. Although these rates are higher than the comparison areas, the rates in both time periods are not statistically different than Dryden Hub and NWHU (12.1%,

7.6%, and 8.6%, respectively). See **Appendix 4B Supplemental Data** for additional data on screening of single parents with risk.

The proportion of mothers who had not completed high school varied from between 1 in 5 to 1 in 4 between 2014 and 2021 (see **Figure 4.4-3**). When considering the 2014-2021 period, the Ignace population had a higher percentage than Dryden Hub of mothers who had not completed high school (see **Appendix 4B Supplemental Data** for additional data on screening of families with risk).

Figure 1.61.6-3: Mother Did Not Complete High School, by Area, 2014-2017 and 2018-2021^{1,2,3}



Source: ISCIS 2022. Retrieved April 21, 2022.

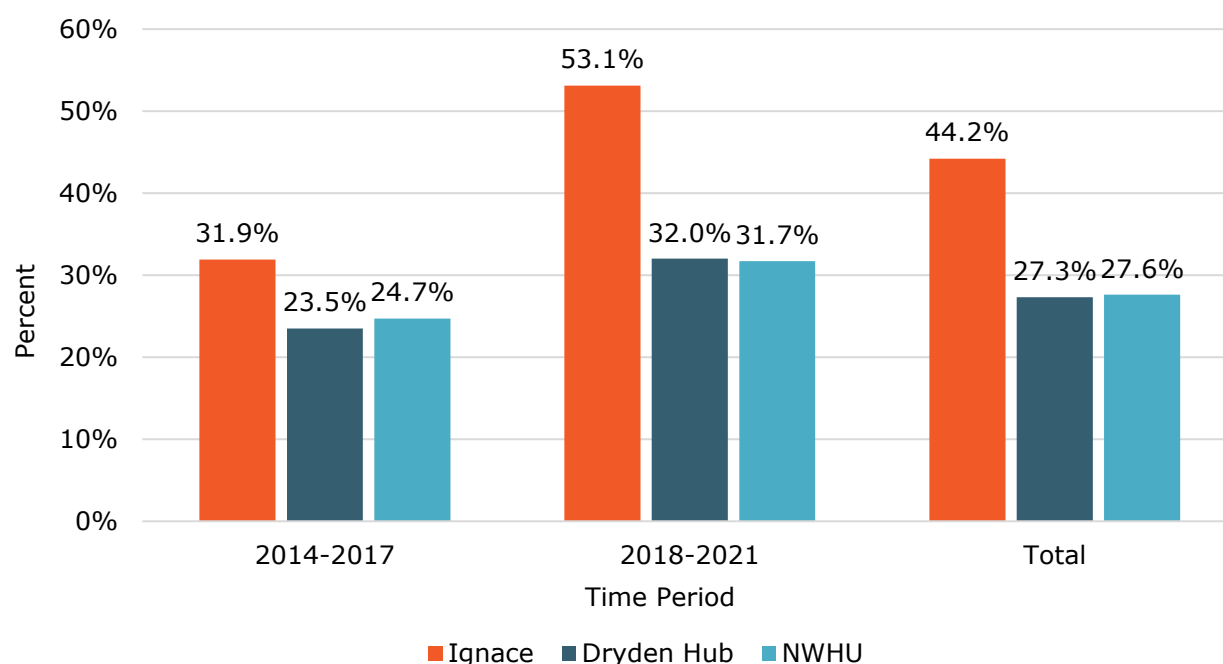
Notes:

1. Data extraction and analysis by Northwestern Health Unit.
2. There were 165 screens for Ignace residents. Of the 165 screens, 69 were from 2014-2017 and 96 were from 2018-2021. There were 1,301 screens for mothers who accessed services in the Dryden Hub (718 were from 2014-2017 and 583 were from 2018-2021). There were 7,505 screens for people accessing NWHU services (4,254 were from 2014-2017 and 3,251 were from 2018-2021).
3. Data are presented in **Appendix 4B**.

Ignace families reporting a history of depression/anxiety/mental health issues, among either the mother or partner, is assessed as part of the HBHC screening. This is important to consider as the issue may have occurred in the past and may not present a current risk to the family. As **Figure 4.4-4** shows, between 2018 and 2021, the reported rate for Ignace increased from 31.9% in 2014-2017 to 53.1%.

The rates among both Dryden Hub and NWHU screened families also increased from the 2014–2017 to 2018–2021 time period but to a lesser degree. Given the small numbers, the impact of the 2020 and 2021 reporting period during COVID-19 cannot be assessed; however, it is known that depression and anxiety increased related to the pandemic and these results may reflect this global health event (Panchal et al. 2020).

Figure 1.61.6-4: History of Depression/Anxiety/Mental Health Identified in Mother or Partner, by Area, 2014–2021^{1,2,3}



Source: ISCIS 2022. Retrieved April 21, 2022.

Notes:

1. Data extraction and analysis by Northwestern Health Unit.
2. Data are presented in **Appendix 4B**.
3. There were 165 screens for Ignace residents. Of the 165 screens, 69 were from 2014-2017 and 96 were from 2018-2021. There were 1,301 screens for mothers who accessed services in the Dryden Hub (718 were from 2014-2017 and 583 were from 2018-2021). There were 7,505 screens for people accessing NWHU services (4,254 were from 2014-2017 and 3,251 were from 2018-2021).

Almost no Ignace women screened indicated that they “did not have prenatal care in the first six months of pregnancy,” which demonstrates a strong connection between mothers and health care providers in the community (NWO Baseline Studies Key Person Interview Program 2022-2023).

4.4.2.2 Maternal Health

In this section, data are presented on risk factors recommended for assessment by Public Health Ontario. These indicators give insight into the health of the mother and the context into which

the baby will be born, but also can impact fetal health and development. Where available for Ignace, HBHC screening data are presented.

4.4.2.2.1 Health Conditions During Pregnancy

Figure 4.4-5 shows that about one in five Ignace mothers who participated in screening identified at least one health condition/medical complication during pregnancy. These conditions (that must be at risk to impact the health of the infant) include diabetes, eclampsia, congenital herpes, rubella, HIV, Hepatitis B, and abruption placenta. Although this appears to be higher than the comparison area rates, no difference between Ignace and either comparison area or time period are statistically significant.

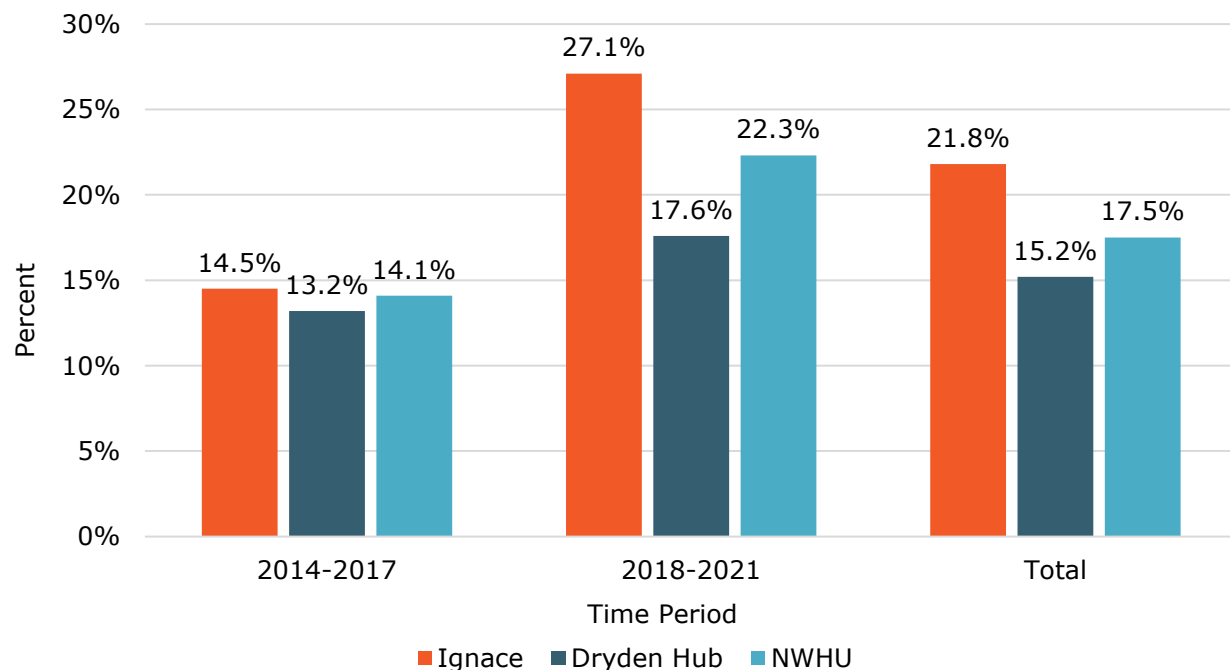
Between 2018 and 2021, just over one in four women screened (27.1%) identified a health condition compared to 14.5% between 2014 and 2017. With low screening numbers this does not necessarily indicate a trend.

At the NWHU level, the key themes identified in this time period are:

- Gestational diabetes and pre-existing maternal diabetes (Type 2);
- Hypertension/pregnancy-induced hypertension;
- Methadone; and
- Pre-eclampsia.

Folic acid is important (and taken typically in the form of a capsule or pill which can be purchased without prescription) because it can help prevent neural tube defects, including spina bifida. It is recommended that women who are planning to become pregnant start taking folic acid at that time or as soon as knowledge of pregnancy. 64.1% of Ignace mothers reported using folic acid during pregnancy, somewhat higher than Dryden Hub although lower than NWHU (see **Appendix 4B Supplemental Data**).

Figure 1.6-5: Health Conditions During Pregnancy, by Area, 2014–2017 and 2018–2021^{1,2,3}



Source: ISCIS 2022. Retrieved April 21, 2022.

Notes:

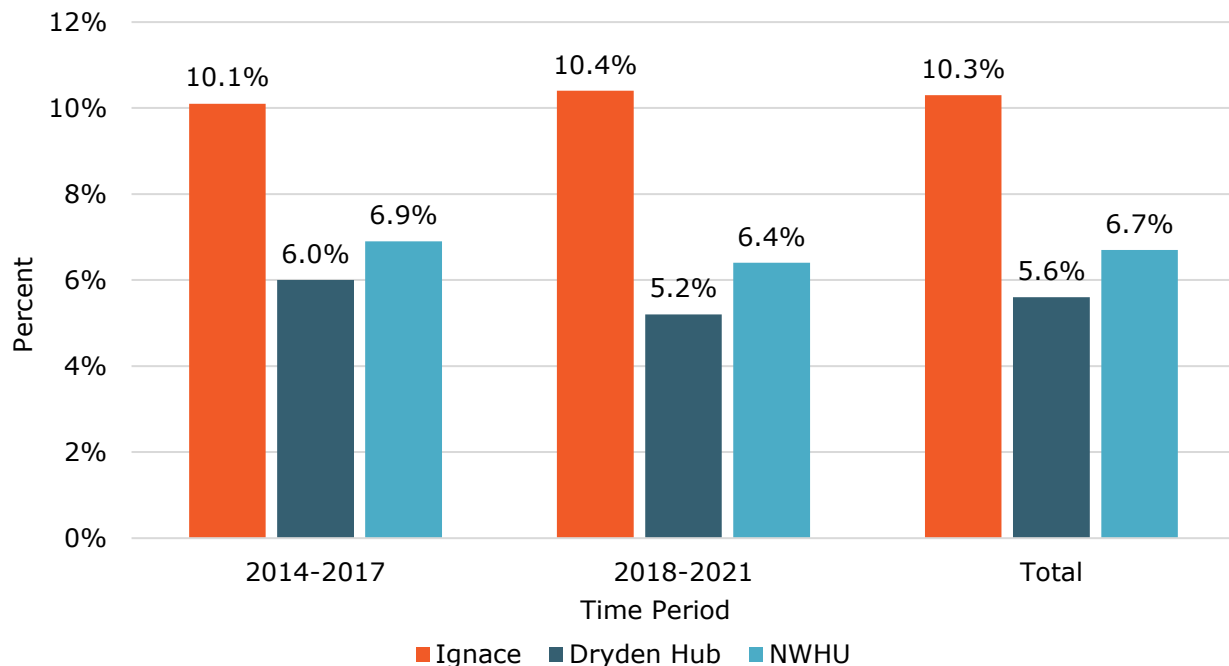
1. Data extraction and analysis by Northwestern Health Unit.
2. There were 165 screens for Ignace residents. Of the 165 screens, 69 were from 2014-2017 and 96 were from 2018-2021. There were 1,301 screens for mothers who accessed services in the Dryden Hub (718 were from 2014-2017 and 583 were from 2018-2021). There were 7,505 screens for people accessing NWHU services (4,254 were from 2014-2017 and 3,251 were from 2018-2021).
3. Data are presented in **Appendix 4B**.

4.4.2.2.2 Alcohol Use During Pregnancy

Fetal alcohol exposure may lead to Fetal Alcohol Spectrum Disorder, which can involve a range of birth defects and neurobehavioral disabilities (Public Health Ontario 2016a). About one in ten Ignace women screened reported drinking alcohol during pregnancy, with no change between the time periods (10.1% and 10.4%) (**Figure 4.4-6**).

The reported rate of alcohol use during pregnancy appears to be higher among Ignace residents than in the comparison areas (which are more similar to each other than to Ignace). It is important to note that amount of alcohol consumed and whether alcohol use stopped upon knowledge of pregnancy are also important factors in maternal and infant for which data are not available.

Figure 1.6-6: Alcohol Use During Pregnancy, by Area, 2014–2017 and 2018–2021^{1,2,3}



Source: ISCIS 2022. Retrieved April 21, 2022.

Notes:

1. Data extraction and analysis by Northwestern Health Unit.
2. There were 165 screens for Ignace residents. Of the 165 screens, 69 were from 2014-2017 and 96 were from 2018-2021. There were 1,301 screens for mothers who accessed services in the Dryden Hub (718 were from 2014-2017 and 583 were from 2018-2021). There were 7,505 screens for people accessing NWHU services (4,254 were from 2014-2017 and 3,251 were from 2018-2021).
3. Data are presented in **Appendix 4B**.

4.4.2.2.3 Drug Use During Pregnancy

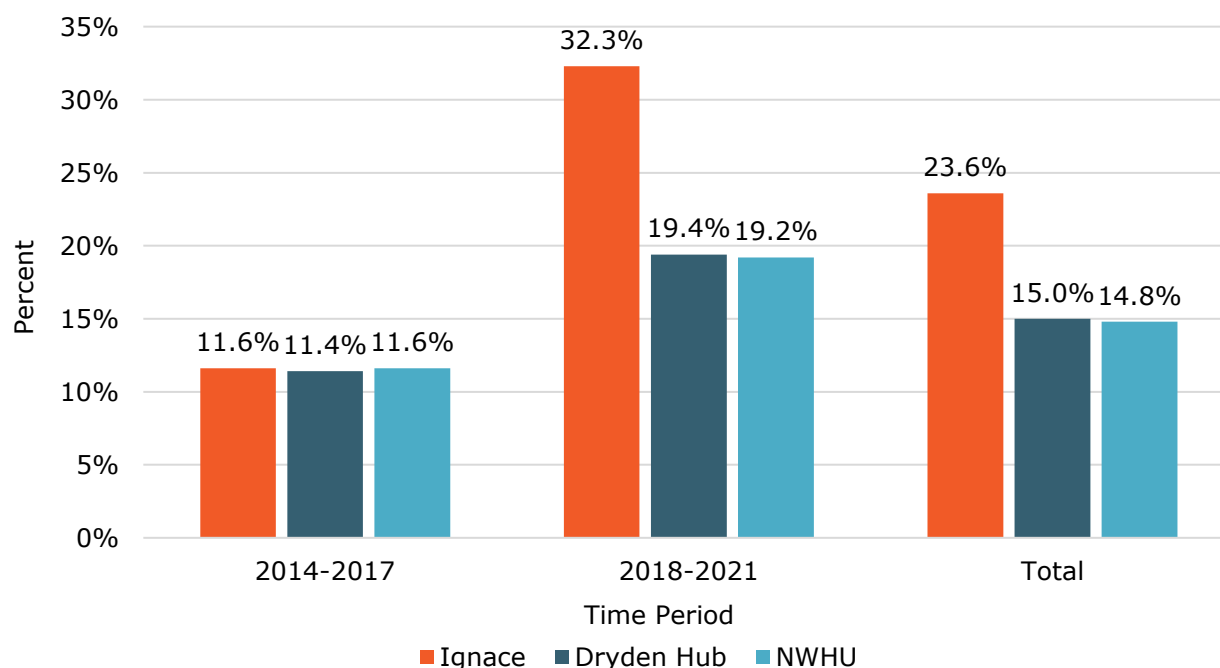
Drug use includes illegal drugs used during pregnancy and prescription drugs that can have an impact on activities of daily living¹³³ or are teratogenic (i.e. harmful to the fetus). Non-teratogenic prescription drugs and small amounts of over-the-counter drugs are excluded. The use of drugs during pregnancy can cause developmental problems and long-lasting issues with brain structure and function (Ross et al. 2015).

Between 2014 to 2017 and 2018 to 2021, reported drug use during pregnancy increased for all areas, as shown in **Figure 4.4-7**. Ignace respondents who reported drug use increased from 11.6% between 2014 to 2017 and 32.3% between 2018 and 2021. Although the rate of reported drug use was similar in all three areas between 2014 and 2017, Ignace had the largest in the

¹³³ Activities of daily living (ADL) can include challenges for basic tasks such as getting into/out of bed or chair, walking, using stairs, bathing, eating, and getting dressed (Statistics Canada 2023a).

second time period. However, it is cautioned that the number of women included from Ignace is a very small fraction of the Dryden Hub and NWHU so the increase may be an anomaly.

Figure 1.6-7: Drug Use During Pregnancy, by Area, 2014–2017 and 2018–2021^{1,2,3,4}



Source: ISCIS 2022. Retrieved April 21, 2022.

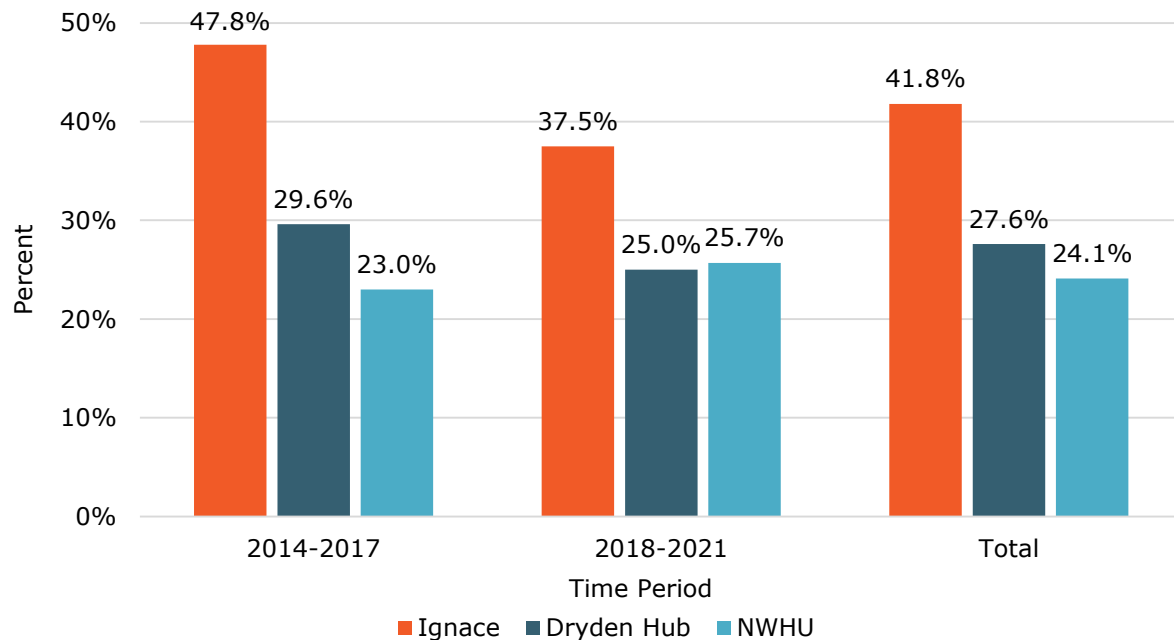
Notes:

1. May include prescription drugs.
2. Data extraction and analysis by Northwestern Health Unit.
3. There were 165 screens for Ignace residents. Of the 165 screens, 69 were from 2014-2017 and 96 were from 2018-2021. There were 1,301 screens for mothers who accessed services in the Dryden Hub (718 were from 2014-2017 and 583 were from 2018-2021). There were 7,505 screens for people accessing NWHU services (4,254 were from 2014-2017 and 3,251 were from 2018-2021).
4. Data are presented in **Appendix 4B**.

4.4.2.2.4 Smoking During Pregnancy

Smoking during pregnancy is a risk factor for complications in pregnancy and adverse fetal outcomes. Self-reported smoking during pregnancy decreased from almost half (47.8%) between 2014 and 2017 to just over one in three (37.5%) between 2018 and 2021 for Ignace mothers (**Figure 4.4-8**). These rates appear to be higher in comparison to both Dryden Hub and NWHU women and the observed decrease among Ignace residents may not be significant given the low screening numbers.

Figure 1.6-8: Smoking During Pregnancy, by Area, 2014–2017 and 2018–2021^{1,2,3}



Source: ISCIS 2022. Retrieved April 21, 2022.

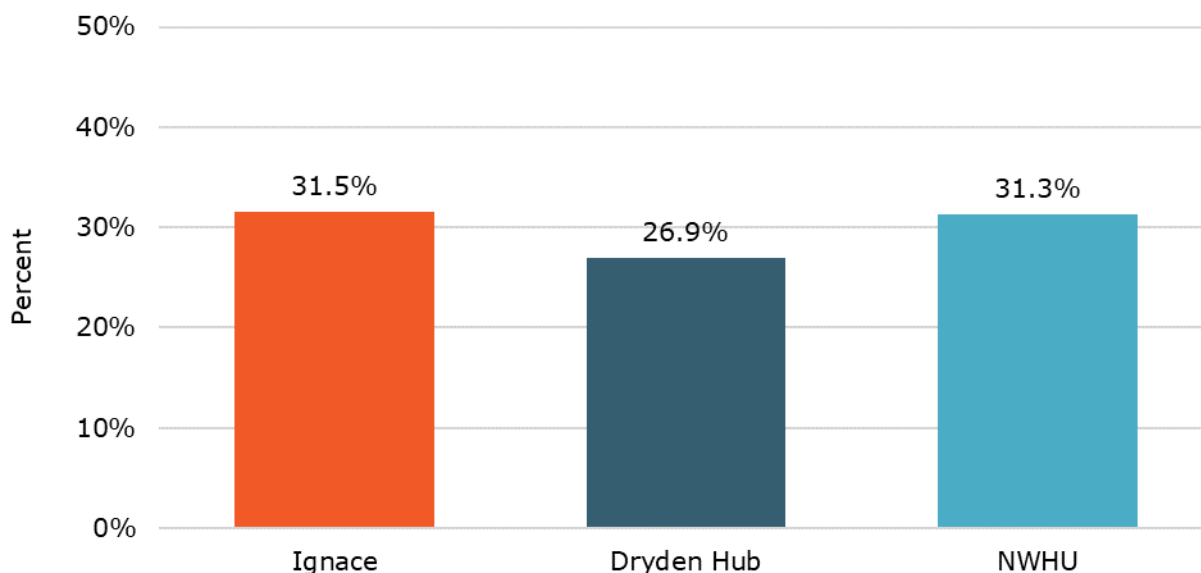
Notes:

1. Data extraction and analysis by Northwestern Health Unit.
2. There were 165 screens for Ignace residents. Of the 165 screens, 69 were from 2014-2017 and 96 were from 2018-2021. There were 1,301 screens for mothers who accessed services in the Dryden Hub (718 were from 2014-2017 and 583 were from 2018-2021). There were 7,505 screens for people accessing NWHU services (4,254 were from 2014-2017 and 3,251 were from 2018-2021).
3. Data are presented in **Appendix 4B**.

4.4.2.2.5 Mental Health Concerns During Pregnancy

Maternal mental health concerns, such as maternal depression, during and following pregnancy can impact the socio-emotional and cognitive development of children (Bernard-Bonnin et al. 2004). **Figure 4.4-9** presents the proportion of women who gave birth that reported any mental health concern during the current or a previous pregnancy (including anxiety, depression, history of postpartum depression, addiction, bipolar disorder, schizophrenia, other). In Ontario, 15.8% of mothers reported mental health concerns in 2015 (Public Health Ontario 2018b). This included 9.1% of mothers who faced anxiety during pregnancy and 7.7% experienced depression, with rates being even higher for mothers under 25 years old. Between 2013 and 2022, about 1 in 3 Ignace mothers reported having at least one mental health concern during pregnancy. This percentage is not remarkably different from the comparison area rates but is nonetheless high and suggests ongoing need for mental health support among Ignace expectant mothers.

Figure 1.6-9: Mental Health Concerns during Pregnancy (All Stages of Screen), by Area, 2013-2022^{1,2,3,4,5}



Source: BORN Ontario 2023. Retrieved February 7, 2023.

Notes:

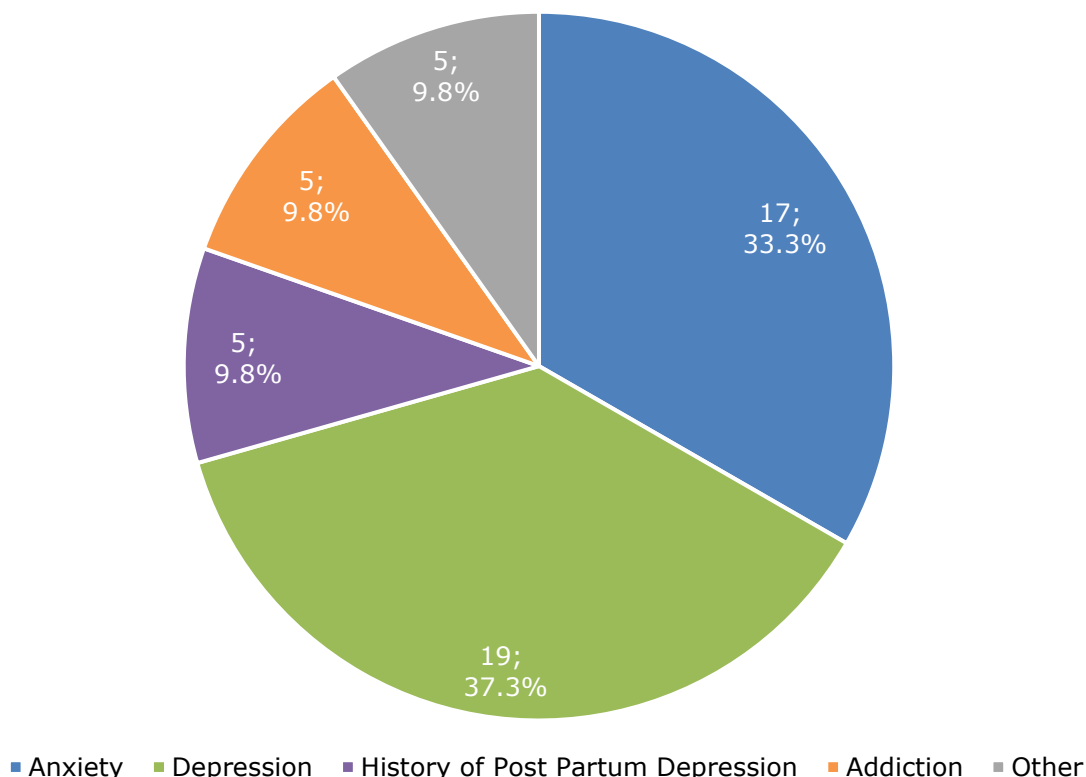
1. Data from Better Outcomes Registry & Network Ontario ("BORN Ontario") excludes mothers living in First Nations communities.
2. Data Extraction by Northwestern Public Health Unit.
3. Data Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Between 2013 and 2020, indicators of concern related to substance use during pregnancy, as well as mental health concerns, are statistically higher in NWHU than Ontario averages in each year and the trend is toward an increase in rates (see **Appendix 4A Detailed Methods**). This means, that although the rate among Ignace residents is not statistically different than the local comparisons areas, it does not mean that these rates are positive indicators of well-being among women during pregnancy.

Figure 4.4-10 presents further details related to the types of concerns specifically expressed. The most common type of concern is depression followed by anxiety. One in ten mothers indicated that they had experienced postpartum depression with a previous pregnancy.

Postpartum depression refers to significant and prolonged depression of a mother following the birth of the baby. Postpartum depression is associated with a lower likelihood of attending medical appointments for the baby, greater breastfeeding difficulties and challenges engaging in self-care (Dennis et al. 2018). Focus Group participants (Ignace EarlyOn Child and Family Centre Parent Focus Group 2023) shared that there is a need for postpartum depression support and that access to prenatal care closer to delivery date are also challenges in Ignace.

Figure 1.6-10: Types of Mental Health Concerns Experienced by Ignace Mothers, 2013-2022^{1,2,3,4}



Source: BORN Ontario 2023. Retrieved February 7, 2023.

Notes:

1. Data from BORN Ontario excludes mothers living in First Nations communities.
2. Data Extraction by Northwester Public Health Unit.
3. Data Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

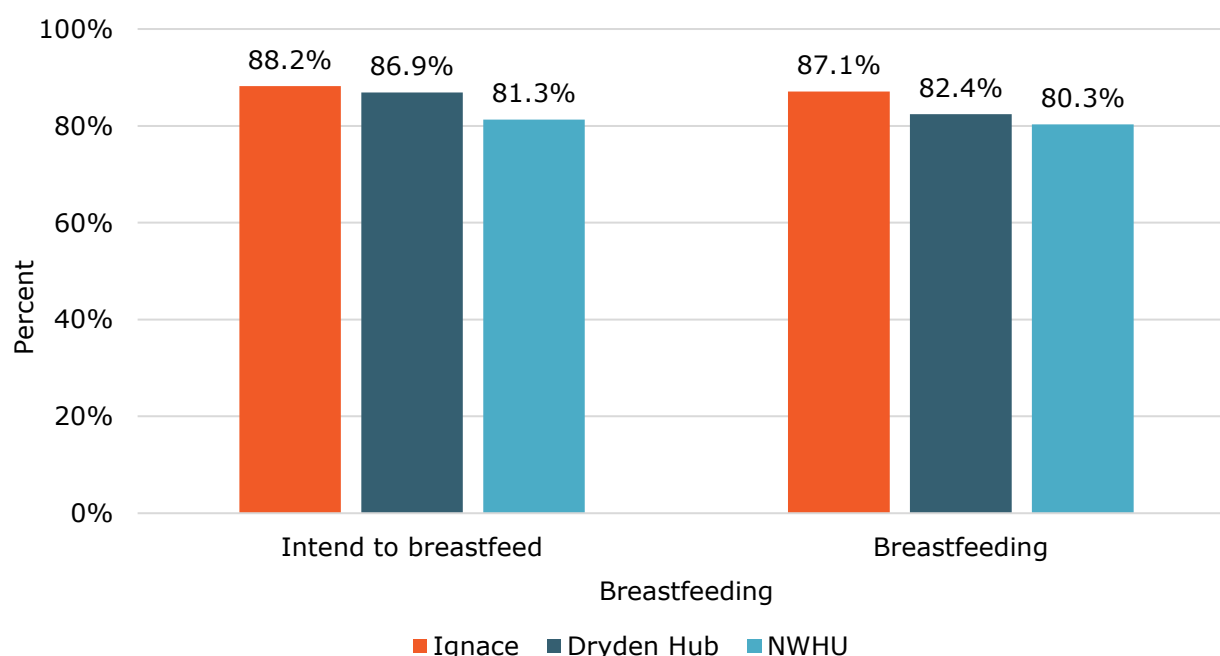
4.4.2.2.6 Maternal Feeding Intentions and Outcomes

High breastfeeding rates are desirable as breastfeeding is linked to better health of the baby and lessens the financial burden of providing for a new baby. It is especially important as Ignace mothers were concerned with the high costs or local unavailability of infant formulas.

Figure 4.4-11 show a higher rate of breastfeeding in the Ignace population compared to comparison areas. Almost 9 out of 10 expectant mothers indicated an intention to breastfeed and nearly all were breastfeeding at discharge. These high rates of both intention and follow-through are positive signs regarding the level of support and education for new mothers in the area. This typically indicates a high level of health care provider support at the community level (which may range from nurse, to feeding coaches, programs, support groups, or other). These results are particularly noted given the relatively high rate of younger mothers in the area who are typically

less likely to solely breastfeed. However, Focus Group participants (Ignace EarlyOn Child and Family Centre Parent Focus Group 2023) shared that there is no lactation support available in Ignace, with some residents driving to Sioux Lookout to receive this support.

Figure 1.6-11: Maternal Feeding Intention and Outcomes by Area, 2013-2022^{1,2,3,4}



Source: BORN Ontario 2023. Retrieved February 7, 2023.

Notes:

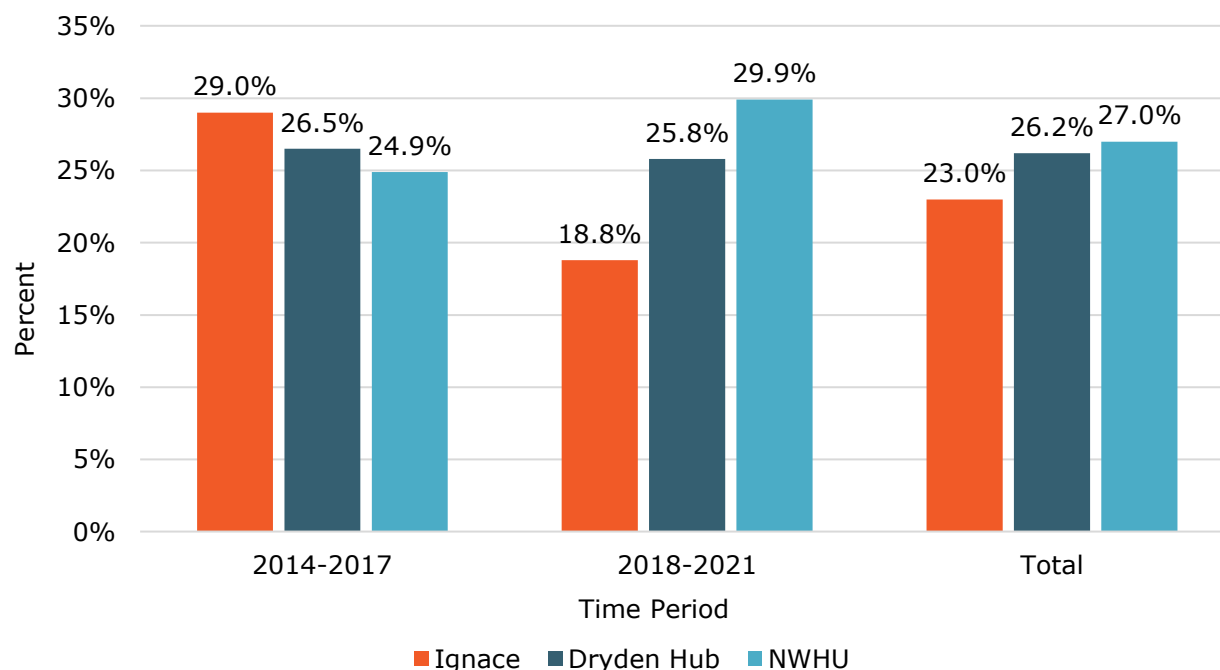
1. Data from BORN Ontario excludes mothers living in First Nations communities.
2. Includes those who report breastfeeding exclusively or in combination with other infant nutrition sources.
3. Data Extraction by Northwestern Health Unit; Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

4.4.2.2.7 Experience of Previous Pregnancy Loss

Miscarriage is the sudden loss of a pregnancy before the 20th week (Mayo Clinic 2023). While miscarriages don't necessarily have a clear cause, some risk factors include older maternal age, maternal health conditions, and substance use. An estimated 15% to 25% of pregnancies end in a miscarriage (Public Health Agency of Canada 2020a).

HBHC screening includes experiencing a pregnancy loss of any kind including loss of a twin, stillbirth, miscarriage, and abortion due to complications. **Figure 4.4-12** illustrates the reported experiences of previous pregnancy loss at any stage of pregnancy. These percentages are calculated relative only to those that have been pregnant before. Although the proportion of Ignace respondents who experienced a previous loss decreased from 29.0% (2014–2017) to 18.8% (2018–2021), this is based on a small number of respondents (see **Appendix 4B Supplemental Data**) and does not necessarily constitute a trend.

Figure 4.41.61.6-12: Experience of a Previous Loss, by Area, 2014–2017 and 2018–2021^{1,2,3,4}



Source: ISCIS 2022. Retrieved April 21, 2022.

Notes:

1. Only includes those who have had at least one previous pregnancy, interpret with caution due to small numbers for Ignace.
2. Data extraction and analysis by Northwestern Health Unit.
3. There were 165 screens for Ignace residents. Of the 165 screens, 69 were from 2014-2017 and 96 were from 2018-2021. There were 1,301 screens for mothers who accessed services in the Dryden Hub (718 were from 2014-2017 and 583 were from 2018-2021). There were 7,505 screens for people accessing NWHU services (4,254 were from 2014-2017 and 3,251 were from 2018-2021).
4. Data are presented in **Appendix 4B**.

4.4.2.3 Reproductive Health

This section presents information related to pregnancy, birth rates, location of births, fertility rates, maternal age, pregnancy outcomes, and birth weight.

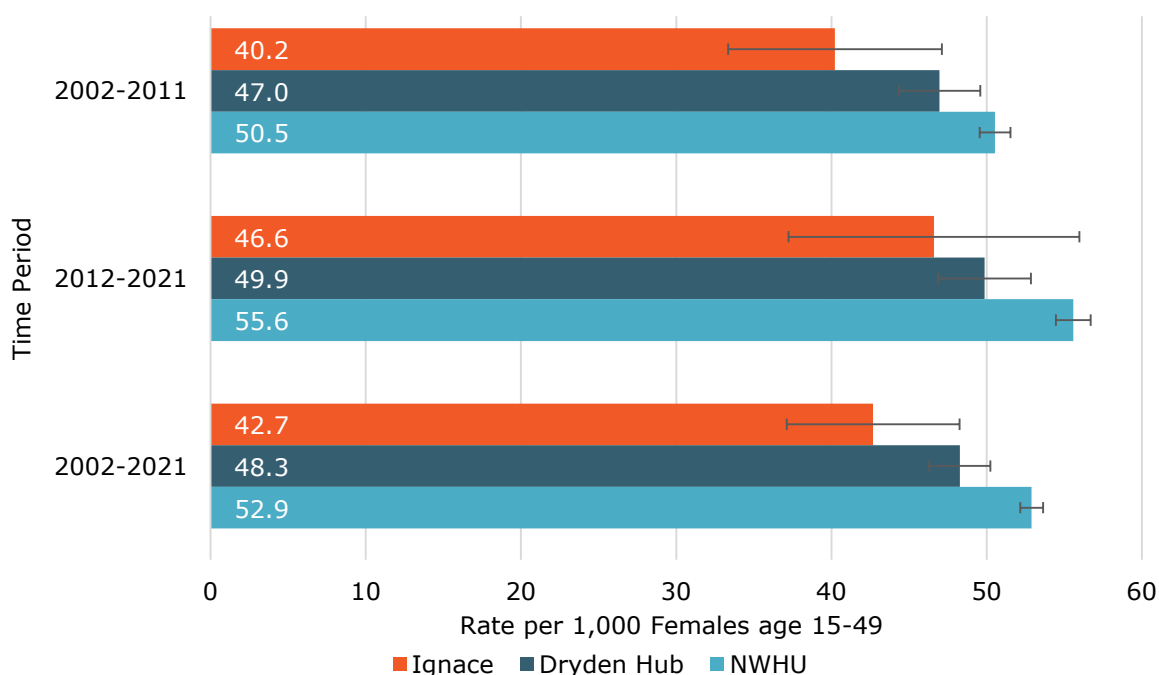
4.4.2.3.1 Pregnancy

Pregnancy rates indicate the potential for population growth (among other factors) and help indicate resource needs for mothers and infants. Pregnancy data for residents of Ignace, the Dryden Hub, and the NWHU consist of births data in addition to hospital data on therapeutic and spontaneous abortion (in compliance with Public Health Ontario 2022a methods but without private physician office data). As such, these rates are likely underestimates, especially given self-reported rates of previous pregnancy loss (many of which do not require hospital care). As

such, they cannot be directly compared to pregnancy rates from other data sources that may also include data from clinics and physicians.

Figure 4.4-13 suggests that Ignace pregnancy rates were lower than rates in the NWHU population. They were also lower than the Dryden Hub but not by a significant margin. In all three areas, pregnancy rates appeared to increase, but this was only significant for the NWHU.

Figure 4.41.6-13: Pregnancy Rates, by Area, 2002-2011, 2012-2021, 2002-2021^{1,2,3}



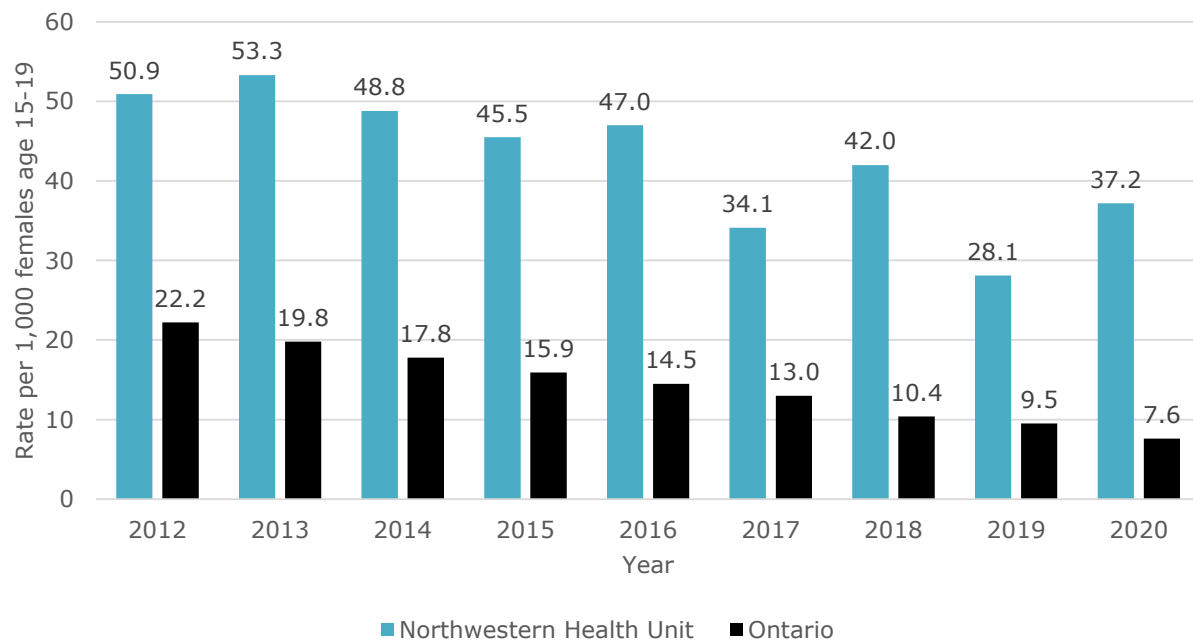
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data extracted using Most responsible diagnosis ("MRDx") ICD-10 codes O00-O08 for hospital therapeutic and spontaneous abortion in addition to all births.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Teen pregnancy and young parents are important health equity indicators. Data for this indicator cannot be presented for Ignace residents due to small numbers. In the RSA, between 2012 and 2020, the NWHU teen pregnancy rates ranged from 28.1 to 53.3 per 1,000 females (See **Appendix 4B Supplemental Data**). These rates are higher than Ontario, although they have declined over time (**Figure 4.4-14**).

Figure 4.41.6-14: Teen Pregnancy Rates, NWHU and Ontario, 2012-2020^{1,2,3,4,5}



Source: Public Health Ontario 2023a.

Notes:

1. Rates include births as well as spontaneous and therapeutic abortions recorded at hospitals, clinics, or private physician offices.
2. Teen pregnancy is defined as the number of pregnancies among those aged 15-19 per 1,000 females in this age group.
3. Data Extraction and Analysis by EPI Research Inc.
4. Teen pregnancy rates are significantly higher in the NWHU than Ontario for each time period.
5. Data are presented in **Appendix 4B**.

4.4.2.3.2 Live Birth Rate

In compliance with Public Health Ontario (2023a), birth rate measures the number of live births per 1,000 residents. This indicator includes only Ontario residents who give birth in a reporting Ontario hospital.

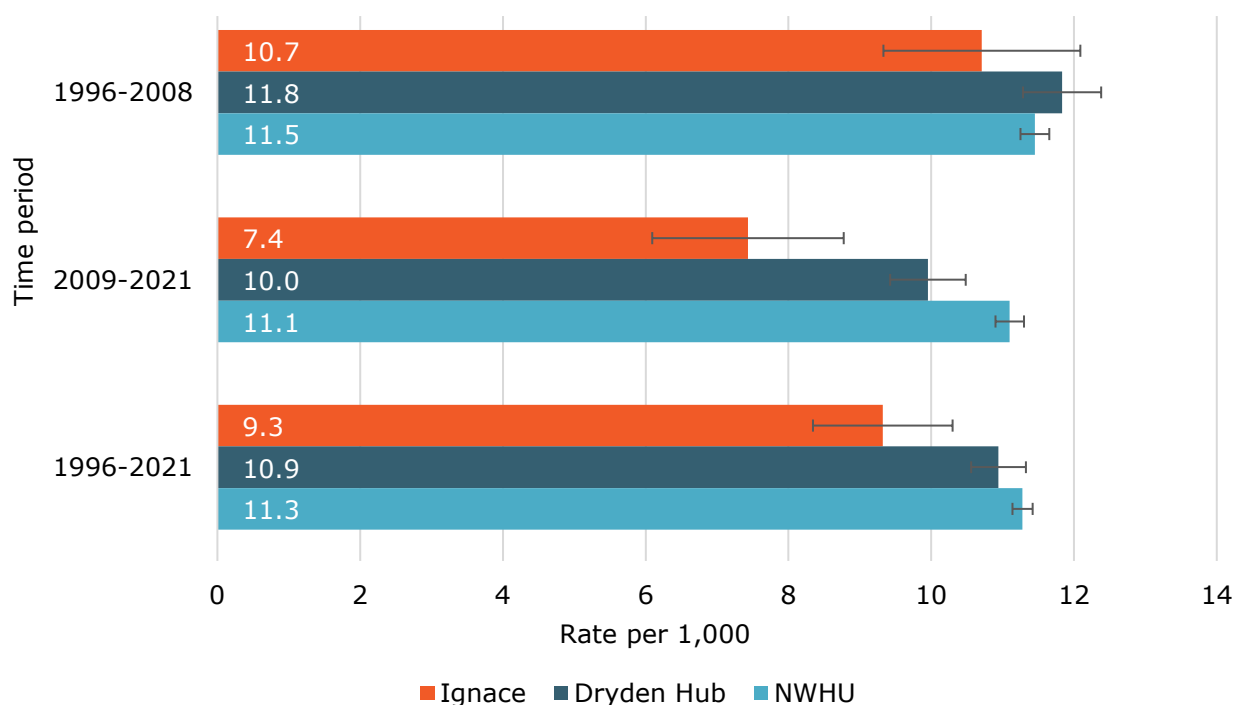
Birth rate is important for both understanding population growth and resource planning. Resource planning includes both assessment of resources to support pregnant women and young families, but also investment in resources to support a growing community overall. While it is not always the case, birth rate information can also provide important information about the age structure of an area as younger women tend to have more births than older women. A low birthrate might indicate an older population and reduction in birth rates may indicate a decline in population and/or a change in the population (for example, an aging population where younger people are not staying in the area).

Between 1996 and 2021, there were 349 infants (live) born to Ignace mothers. Numbers of births ranged from a low of 6 to a high of 32 births in one year during this period. On average,

there were 13 births per year to Ignace mothers. As **Figure 4.4-15** shows, the birth rate among Ignace residents declined over time. This may be related to changes in local population distribution with younger people less likely to reside in Ignace (see **Section 2.2 Population and Demographics**).

Between 1996 and 2008, there were 10.7 births per 1,000 Ignace residents, which was statistically similar to both Dryden Hub and NWHU. Between 2009 and 2021 however, the birth rate decreased to 7.4 per 1,000 Ignace residents which was statistically lower than both Dryden Hub and NWHU as well as a statistically significant decline in birth rate for Ignace.

Figure 1.6-15: Birth Rates by Area, 1996–2008 and 2009–2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Admit Entry Type = Newborn (born alive at reporting institution).
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.2.3.3 Birthplace of Ignace Infants

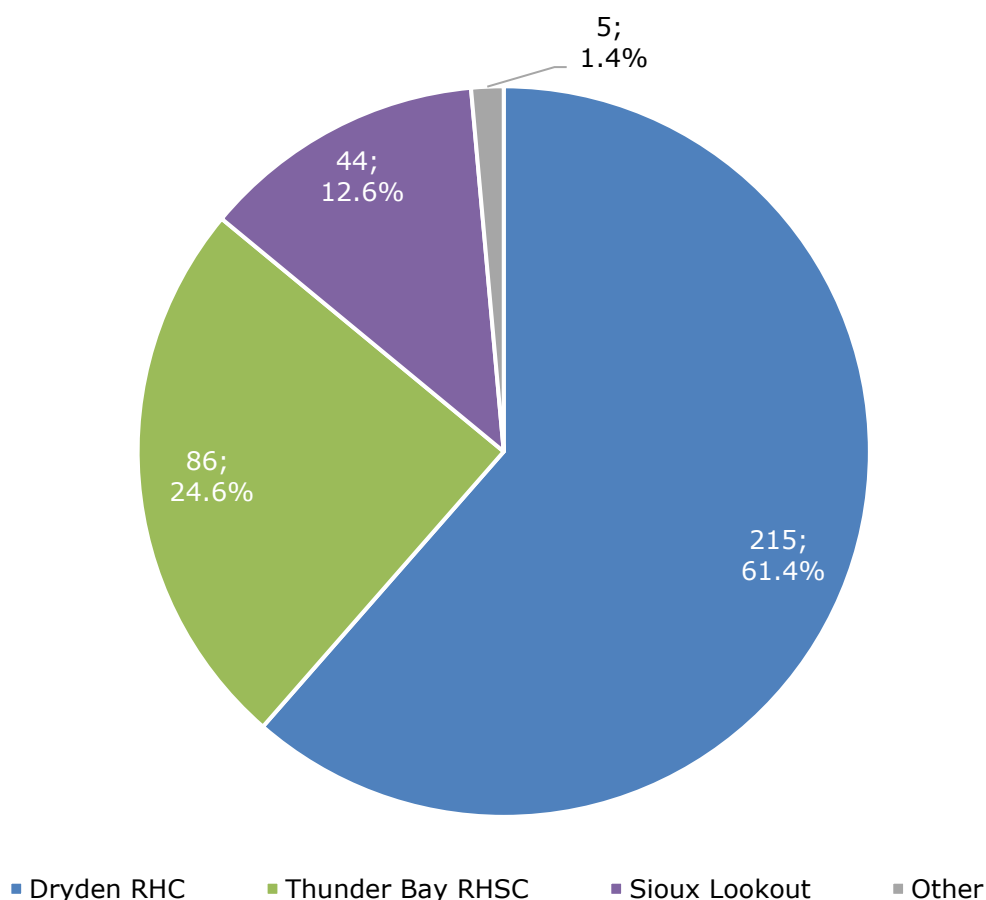
This indicator includes Ignace residents who gave birth in a reporting Ontario hospital between 1996 and 2021. Unlike birth and fertility rates, this indicator does not exclude stillbirths¹³⁴ as it is a measure of utilization of services. Note that this indicator counts numbers of newborns,

¹³⁴ Although the query does not exclude stillborn infants, a review of Ignace data documents only one stillbirth in the entire time period reviewed.

meaning that the numbers presented may be higher than the number of mothers as a mother may give birth to more than one infant.

Between 1996 and 2021, the majority of infant deliveries (61%) took place at the Dryden RHC, with the second most common location being the Thunder Bay Regional Health Sciences Centre ("Thunder Bay RHSC") (**Figure 4.4-16**). A smaller number of women gave birth in Sioux Lookout (most at the Sioux Lookout Meno Ya Win Health Centre).

Figure 1.6-16: Birth Location of Babies Born to Ignace Mothers, 1996–2021^{1,2,3,4,5,6}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

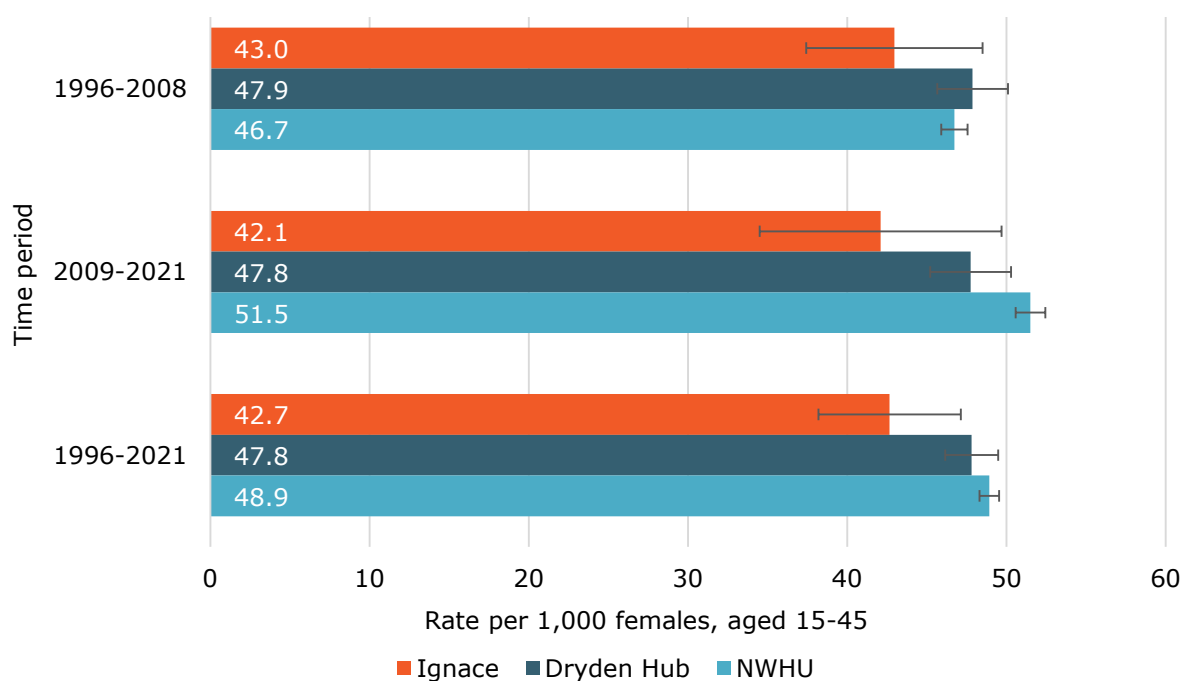
1. Data excludes births that occurred outside of a reporting hospital in Ontario.
2. Admit Entry Type = Newborn (born alive at reporting institution) and Stillborn infant (born at reporting institution).
3. "Other" includes: Ottawa HCS, Mount Sinai Hospital and London HSCUH.
4. Sioux Lookout includes: Sioux Lookout Zone Hospital, Sioux Lookout District Health Centre and Sioux Lookout Meno-Ya-Win Health Centre.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

4.4.2.3.4 Fertility Rate

The fertility rate of a population is calculated as the number of live births for a given period divided by the female population aged 15-49 in that time period (Public Health Ontario 2016b). Similar to birth rate, fertility rate is a measure of resource need for a population both in terms of maternal and child services and general population needs. Since fertility rate is specific to females of reproductive age, it is less indicative of changing population structures and more directly indicative of the childbearing patterns among females aged 15-49. Age-specific fertility rates, and if they change over time, indicate which age groups of women give birth at the highest rates and whether the age distribution of new mothers is changing.

In 2021, the fertility rate in Ontario was 39.6 per 1,000 women aged 15-49 and had slightly decreased from a rate of 42 in 2012¹³⁵ (Public Health Ontario 2023a). As shown in **Figure 4.4-17**, fertility rates among Ignace women were relatively stable between 1996 and 2021. Rates were modestly lower than the comparison areas, with the difference being statistically non-significant.

Figure 1.6-17: Fertility Rates by Area, 1996–2008 and 2009–2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Admit Entry Type = Newborn (born alive at reporting institution).
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

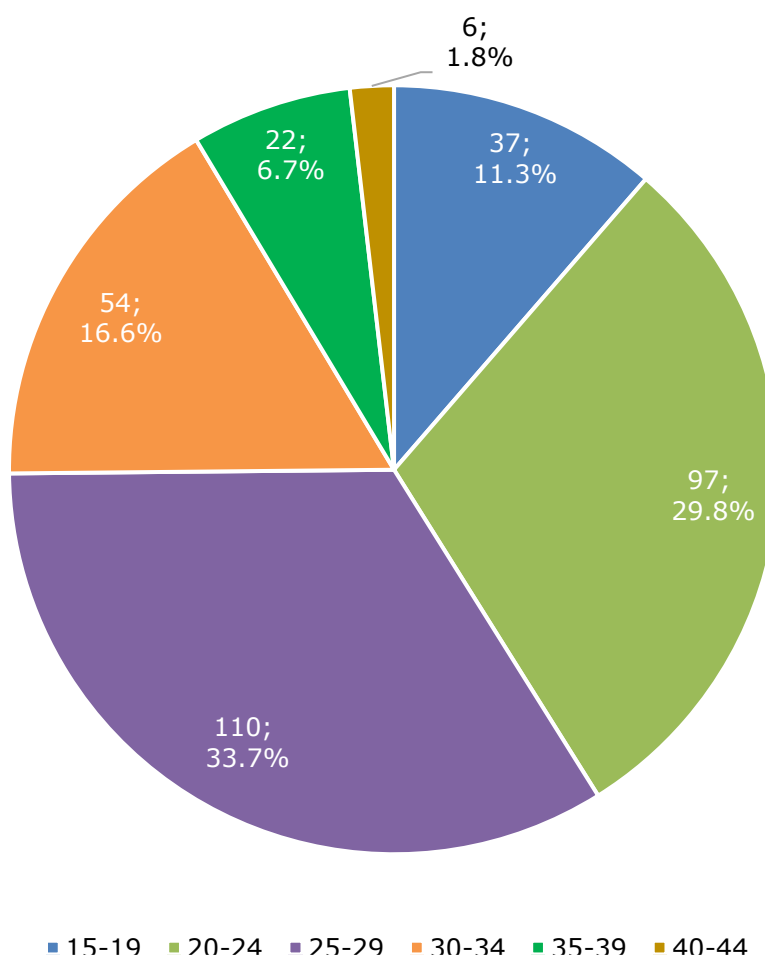
¹³⁵ The data are not included in any figures or table.

4.4.2.3.5 Maternal Age

Maternal age is an important indicator for understanding negative health outcomes associated with both adolescent (aged 10-19) and advanced age (over 35 years old) pregnancy. Adolescent mothers face higher risks of health challenges like eclampsia and systemic infections compared to non-adolescent mothers (World Health Organization 2023a). Advanced maternal age is associated with greater pregnancy complications and adverse birth outcomes, such as pre-term birth (**Section 4.4.2.3.7**) and low weight birth (**Section 4.4.2.3.8**) (Toronto Public Health 2017).

Between 1996 and 2018 specifically, there were 326 births to Ignace mothers. **Figure 4.4-18** shows that the most common age group of Ignace mothers between 1996 and 2018 was 25–29 (34%) while 41% were between 15 and 24. Summary statistics for maternal age show similar distributions of ages among the three study areas (**see Appendix 4B**). There has been very little change in average age of Ignace mothers between 1996 and 2018. Just over 3% of births were to mothers under age 18. This proportion is higher than Dryden Hub but lower than NWHU.

Figure 1.6-18: Ignace Births by Maternal Age Group, 1996–2018^{1,2,3,4}



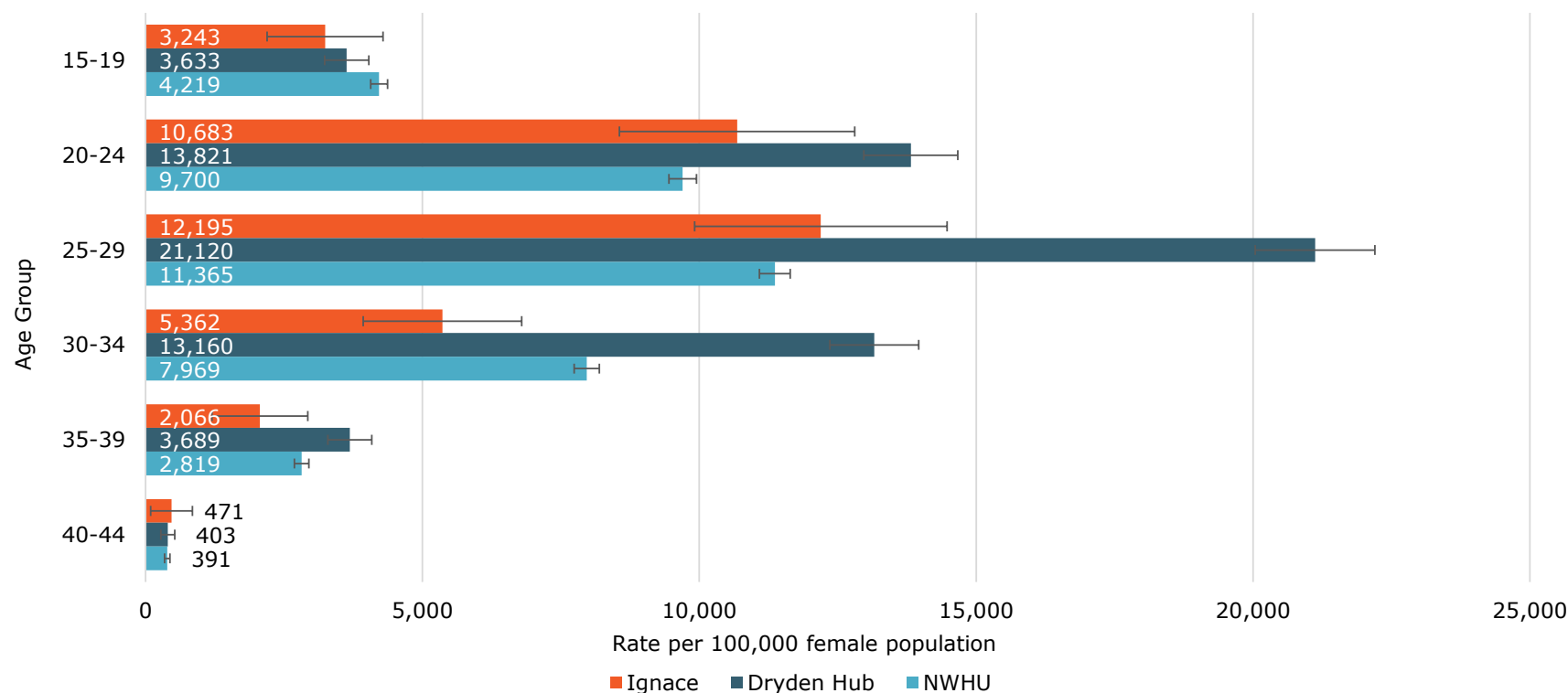
Source: IntelliHealth Ontario 2023b. Retrieved April 10, 2023.

Notes:

1. Omits 1 Ignace birth as age group = "unknown".
2. Includes liveborn infants only.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

The Ignace birth rate was lower than the comparison areas for all age groups between 20 and 39 years of age (**Figure 4.4-19**). Among mothers aged 40-44 and aged 15-19, the birth rates were comparable in the three areas (see **Appendix 4B Supplemental Data** for more data on maternal age).

Figure 1.6-19: Comparison of Birth Rates by Maternal Age Group and Area, 1996-2018^{1,2,3,4,5}



Source: IntelliHealth Ontario 2023b. Retrieved April 10, 2023.

Notes:

1. Although NWHU had births in 10-14-year age group, Ignace and Dryden do not have sufficient data counts to present, therefore so comparison limited to 15+.
2. Omits a total of 6 births from maternal age group = "unknown" for Ignace (<5 births) and Dryden Hub (<5 births), and 25 from maternal age group = "unknown" for NWHU.
3. Includes liveborn infants only.
4. Data Extraction and Analysis by EPI Research Inc.
5. Data are presented in **Appendix 4B**.

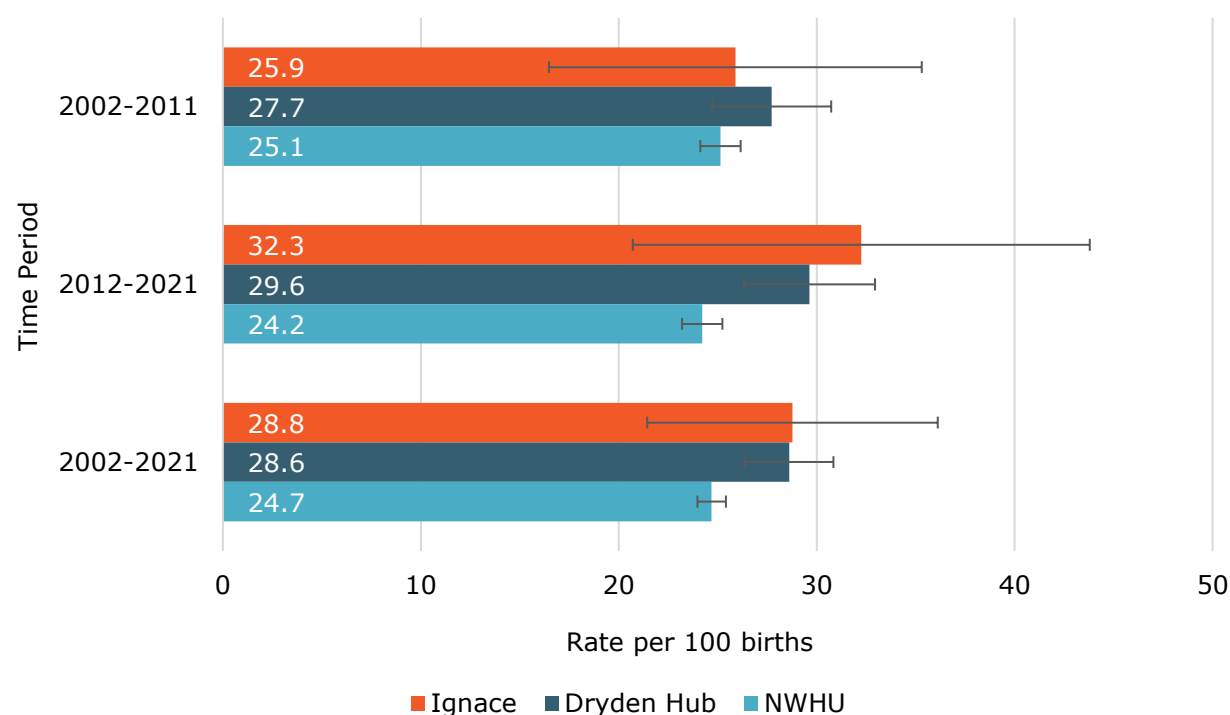
4.4.2.3.6 Caesarean Section Delivery

Caesarean section delivery is a surgical procedure to deliver a baby. It may be done for reasons related to the baby (poor positioning, abnormal heart rate) or related to the mother (slow/difficult delivery, lack of dilation, having had a previous caesarean section, or mother's preference). While caesarean sections are a common and safe procedure, and in many cases necessary, they do require a longer recovery time (including longer stays in hospital) and carry a greater risk of infection, and therefore a lower rate is preferable. Repeat caesarean section rates (percentages of births that occur by caesarean section when the mother has had a previous caesarean section delivery) are an important indicator of the effectiveness of care due to the increased likelihood of adverse maternal outcomes for subsequent pregnancies following a caesarean section delivery (Jamshed et al 2022). These rates were not available for Ignace or NWHU.

According to the Canadian Institute of Health Information (CIHI), between 2001/02 and 2021/21, the repeat caesarean section rates in Ontario ranged between 80% and 85% (Canadian Institute for Health Information 2022a) (see **Appendix 4B Supplemental Data**).

Figure 4.4-20 shows that, between 2002 and 2021, the overall rate of caesarean section deliveries in the Ignace population was 28.8 per 100 births. This was not significantly different to the rate found in the comparison areas.

Figure 1.6-20: Caesarean Section Delivery by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

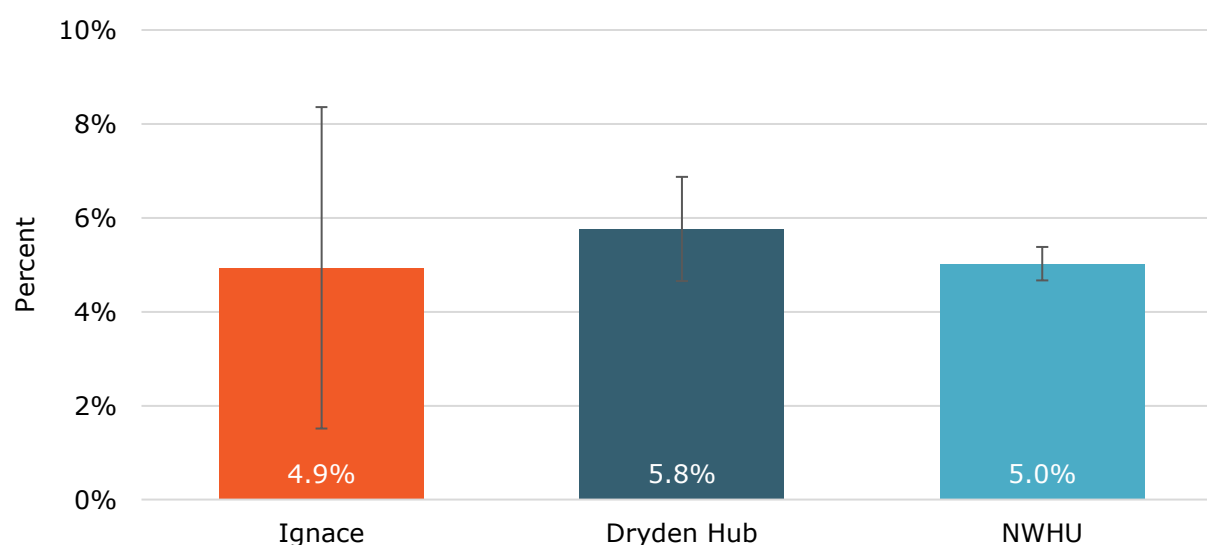
1. Admit Entry Type = Newborn (born alive at reporting institution).
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.2.3.7 Preterm Birth Rate

A preterm birth is a live birth with a gestational age (length of pregnancy) of less than 37 weeks (Public Health Ontario 2023a). The earlier a baby is born, the higher the risk to the baby. Risk factors associated with preterm births include multiple births (twins, triplets, or more), maternal health status (in particular diabetes and hypertension), neighbourhood income (there are greater preterm births among lower-income neighbourhood residents) and having had a previous preterm delivery (Canadian Institute for Health Information 2009).

Between 2006 and 2021, 4.9% of Ignace births were preterm. This was not significantly different than Dryden Hub or NWHU (**Figure 4.4-21**).

Figure 1.6-21: Preterm Birth Rate by Area, 2006-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Admit Entry Type = Newborn (born alive at reporting institution).
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.2.3.8 Infant Birth Weight

Low birth weight is an important indicator of infant health, development, and survival, as low birth weight infants are more likely to suffer from disability or disease, including visual problems, respiratory problems, learning disabilities, and cerebral palsy. This indicator measures the proportion and rate of live born infants at low (less than 2,500 grams), normal (2,500 – 4,999 grams) and high (4,500 grams and over) weight. During the 2020-2021 fiscal year, 6.6% of infants born in Canada were low birth weight (Public Health Ontario 2023a).

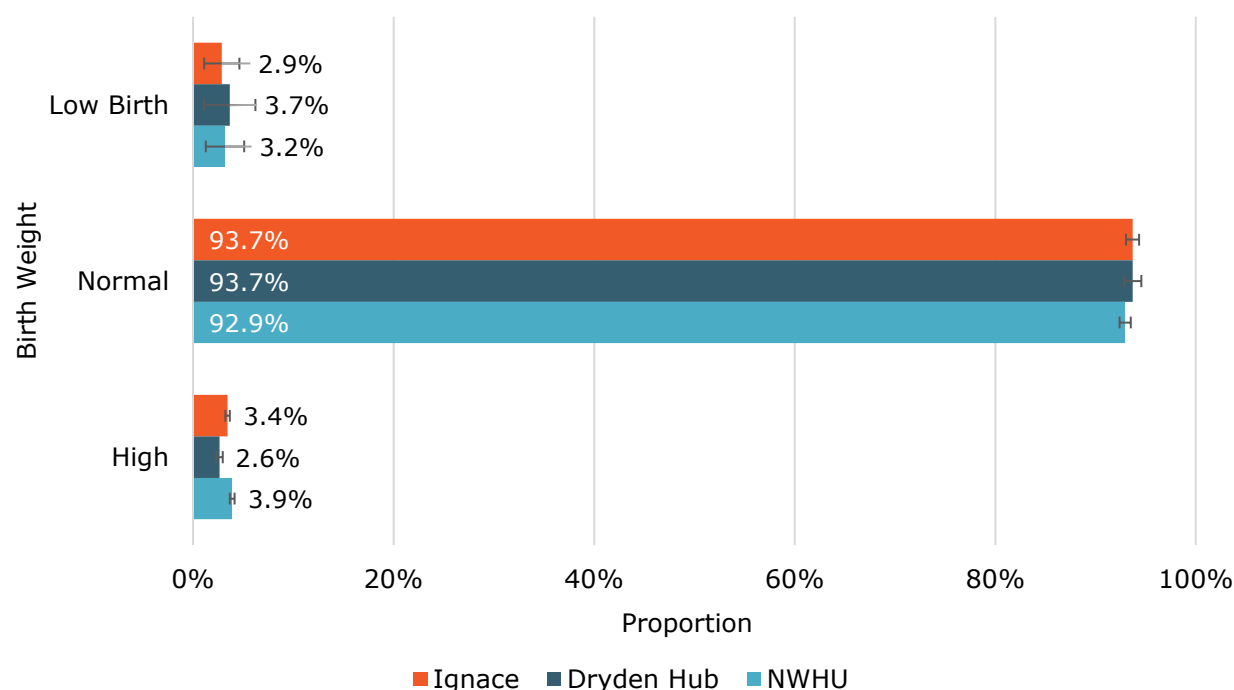
Factors contributing to low-birth-weight infants include smoking/second-hand smoke, alcohol, drug abuse, domestic violence, chronic health conditions (e.g., diabetes), health disparities (see **Section 4.2 Social Determinants of Health**), inadequate prenatal care, and more (March of Dimes, 2021). Low birth weight has consequences to the health of the infant, including fetal and neonatal mortality and morbidity, poor cognitive development, and an increased risk of obesity and chronic diseases (World Health Organization 2014).

High birth weight infants are more likely to develop Type 1 Diabetes and are at a greater risk of infant mortality than normal weight infants. It is also tied to much higher rates of gestational diabetes (Yang et al. 2018). Factors contributing to high birth weight infants include diabetes (in pregnant parent), genetic conditions, overweight or obese pregnant parent, excessive weight gain during pregnancy, and more. High birth weight has consequences including increased difficulty in delivery, prolonged labour, high risk of birth injuries, and an increased risk of chronic diseases in the infant (e.g., diabetes, asthma) (Public Health Organization 2015).

Between 1996 and 2021, most infants born to Ignace residents (327 or 93.7%) were in the normal birth weight range (**Figure 4.4-22**). Low and high birth weight infants accounted for 2.9% and 3.4% of births (10 and 12 infants respectively) in this 25-year period.

The proportion of low, normal, and high birth weight infants born among Ignace residents were similar to both Dryden Hub and NWHU. Among Ignace residents, there were no notable changes in the proportion of infants born at normal and high birth weights from 1996–2008 and 2009–2021 (see **Appendix 4B Supplemental Data**). Due to small numbers of births in either low and high birth weight groups, it was not possible to assess correlations between birth weights and maternal age group.

Figure 1.6-22: Births by Weight Category and Area, 1996–2021^{1,2,3,4}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Low Birthweight <2,500 grams, Normal birthweight 2,500-3,999 grams, High birthweight >3,900 grams.
2. Admit Entry Type = Newborn (born alive at reporting institution).
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

4.4.2.4 Child and Adolescent Immunization

Childhood immunization is a key indicator of child and adolescent health and access to health services. School age data are available for Ignace children and are presented.

Sufficient immunization coverage helps reduce vaccine-preventable communicable diseases. Monitoring coverage rates helps predict a population's susceptibility to vaccine-preventable disease and informs public health interventions regarding vaccine promotion. Childhood vaccinations are administered to prevent the following diseases: tetanus, diphtheria, pertussis, haemophilus influenza type b (Hib), polio, pneumococcal disease, meningococcal disease, measles, mumps, rubella, varicella, hepatitis b, and human papillomavirus (HPV).

Immunization schedules recommend vaccination at various points between age 2 months and 18 months, and at three points during school age. Criteria for up-to-date immunization can change over time and is based on provincial schedules (see **Appendix 4A Detailed Methods** for schedules). In this report, data are limited to school age children for the Local Study Area of Ignace

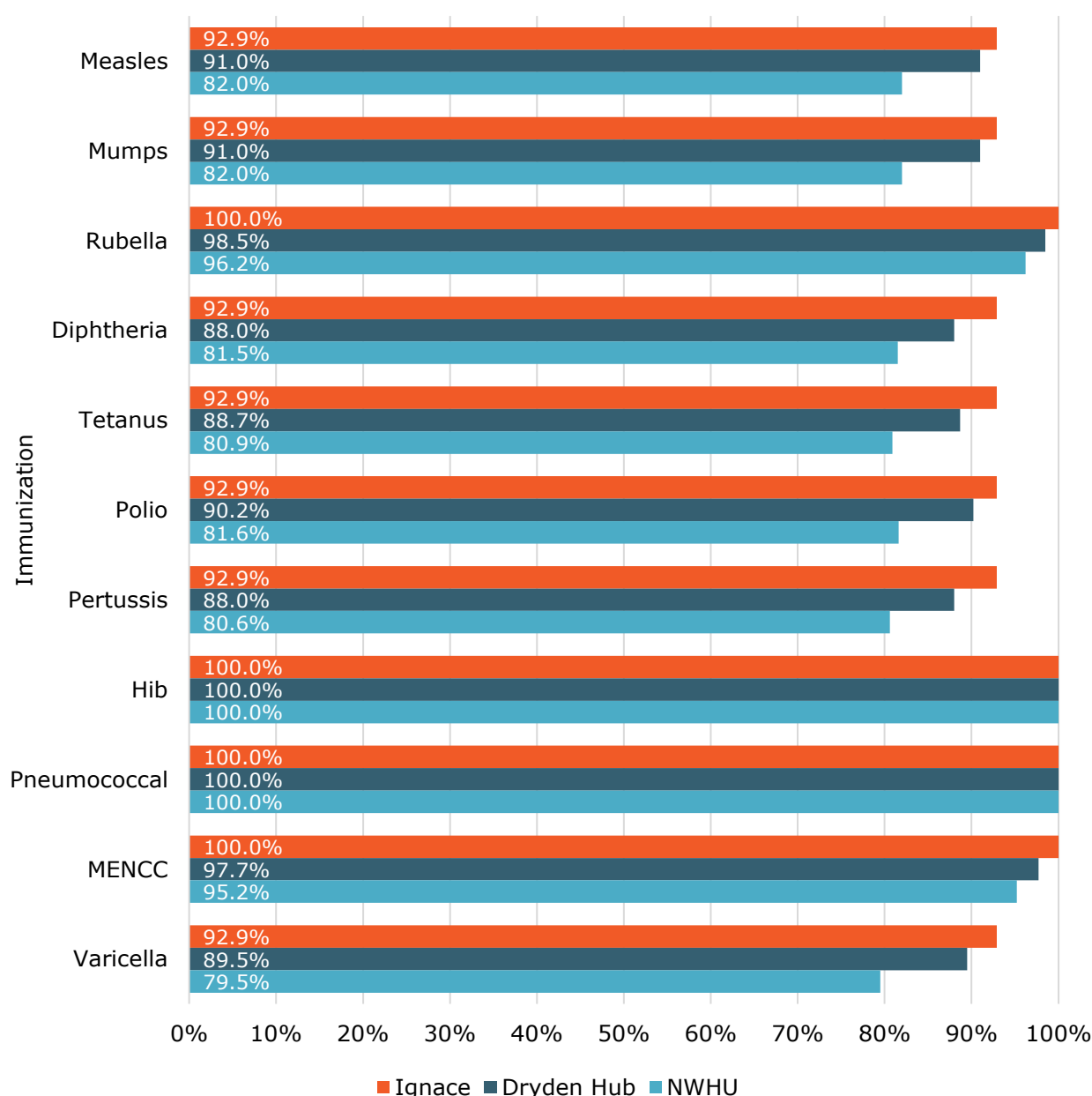
The COVID-19 pandemic had substantial impacts on school-based immunization programs. School closures and redeploying healthcare staff to help with outbreak responses contributed to reduced capacity for delivering immunizations (Public Health Ontario 2023b). Coverage rates remain lower than pre-pandemic years, but the gap is diminishing. Provincial catch-up program efforts were successful, with hepatitis B and human papillomavirus immunization coverage among 12-year-old children in the 2021-2022 school year being higher in comparison to both previous years (see **Appendix 4A Detailed Methods**).

4.4.2.4.1 Immunization for Seven-Year-Old School Age Children

The national coverage goal for immunizations in this age group is 95% (Government of Canada 2022a). Between 2013 and 2019, coverage in NWHU was generally similar to or higher than Ontario (although it did not necessarily meet the target), with the exception of lower coverage for varicella (chickenpox) among NWHU children compared to Ontario (see **Appendix 4B Supplemental Data**).

Immunization coverage rates among seven-year-old Ignace children were at least as high as Dryden Hub and NWHU (**Figure 1.6-3**). Ignace achieved a 100% coverage rate against rubella, haemophilus influenzae type b (Hib), pneumococcal and meningococcal c conjugate (MENCC), with the remaining immunizations each having a 92.9% coverage rate. Ignace (2022) immunization coverage rates were also higher for each immunization evaluated in comparison to provincial coverage rates from 2016/17 to 2018/19, excluding those which did not have comparison data (see **Appendix 4B Supplemental Data**).

Figure 1.6-23: Immunization Coverage Among 7-Year-Old Children by Area, December 2022^{1,2,3,4,5}



Source: Panorama 2022. Retrieved December 6, 2022.

Notes:

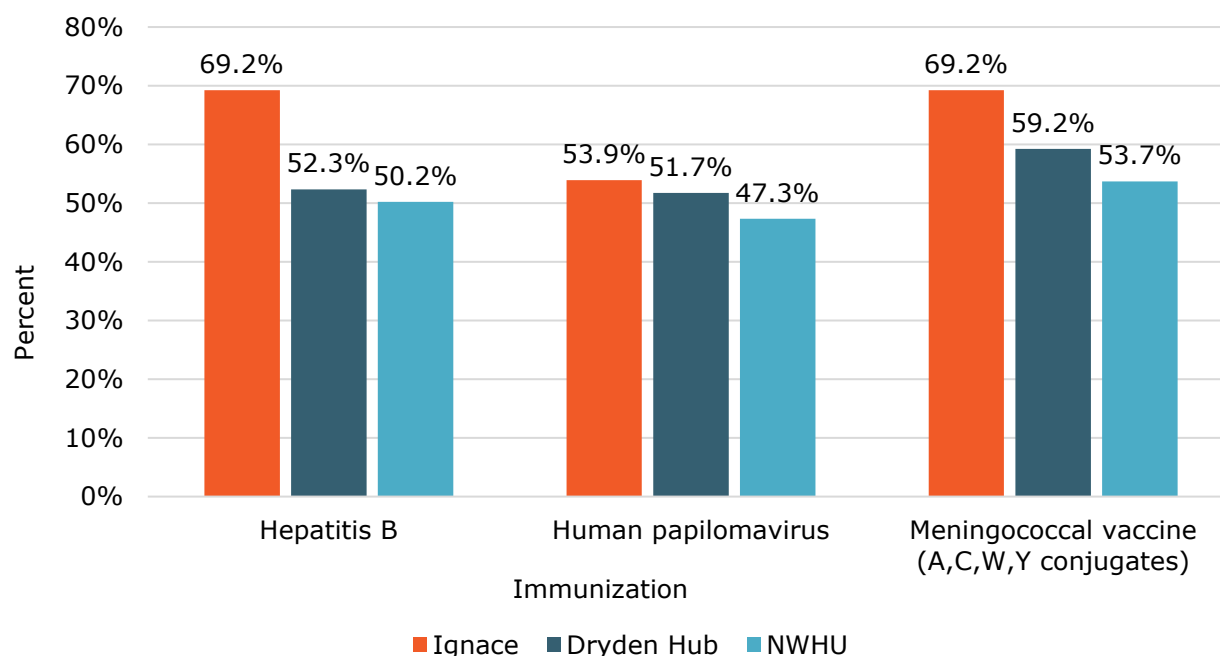
1. Count of Ignace children = 14.
2. MENCC = Meningococcal c conjugate, Hib = Haemophilus influenzae type b.
3. Data Table View is available in Appendix A-4.2 Supplemental Data.
4. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
5. Data are presented in **Appendix 4B**.

4.4.2.4.2 Immunization for Twelve-Year-Old School Age Children

No national coverage goals exist for this age group. Prior to 2020, NWHU children generally had lower immunization rates than Ontario children, but this pattern reversed in 2020 with NWHU children having higher immunization rates (see **Appendix 4B Supplemental Data**).

For twelve-year-old Ignace children, the coverage rate for hepatitis B, human papillomavirus, and meningococcal (A, C, W, and Y conjugates) were 69.2%, 53.9% and 69.2% respectively, which were higher in comparison to the coverage rates among twelve-year-old children from both Dryden Hub and NWHU (**Figure 4.4-24**). Ignace is not consistently higher or lower than provincial coverage rates; the comparison is variable by year (see **Appendix 4B Supplemental Data**).

Figure 1.6-24: Immunization Coverage Among 12-Year-Old Children by Area, December 2022^{1,2,3}



Source: Panorama 2022. Retrieved December 6, 2022.

Notes:

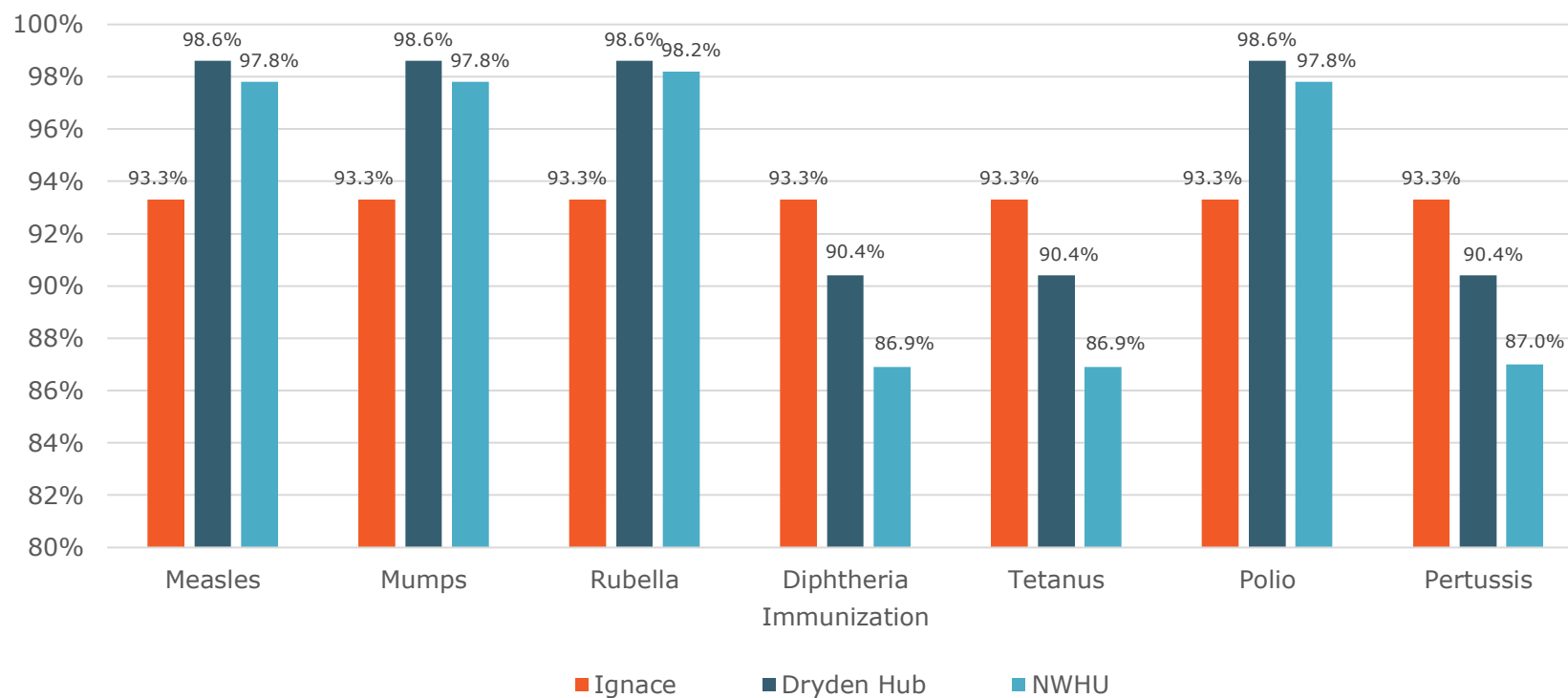
1. Count of Ignace children = 13.
2. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.2.4.3 Immunization for Seventeen-Year-Old School Age Children

The Canadian national goal for tetanus, diphtheria, and pertussis and MMR vaccines within this age group is 90% (Government of Canada 2022a). There are no national goals for varicella and Hib for this age group. Rates tended to be similar in NWHU and Ontario youth. The coverage rates for several vaccines declined between 2013 and 2018 (see **Appendix 4B Supplemental Data**).

The coverage rate among seventeen-year-old children from Ignace for measles, mumps, rubella, diphtheria, tetanus, polio, and pertussis were 93.3% each (**Figure 4.4-25**). Measles, mumps, rubella, and polio coverage rates were lower in comparison to both the Dryden Hub and NWHU, yet higher for diphtheria, tetanus, and pertussis. Similarly, coverage rates in 2018/19 for measles, mumps, rubella, and polio were lower among Ignace children (17-years-old) in comparison to provincial coverage rates, yet higher for the remaining immunizations (see **Appendix 4B Supplemental Data**).

Figure 1.6-25: Immunization Coverage by Area Among 17-Year-Old Children by Area, December 2022^{1,2,3}



Source: Panorama 2022. Retrieved December 6, 2022.

Notes:

1. Count of Ignace children = 15.
2. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.3 Communicable Disease

Communicable diseases are illnesses that can be spread to a person from another person, animal, food, or surface area. Reportable communicable diseases are those deemed important to the government due to their importance to public health. Required reporting allows authorities to monitor outbreaks and trends to better support public health interventions. Examples of current reportable diseases in Ontario include diphtheria, influenza, COVID-19, campylobacter, and salmonellosis.

Communicable Diseases and Immunizations presented in this section are all designated as “diseases of public health significance” under the *Ontario Health Promotion and Protection Act (Ontario Regulation 135/18) (Government of Ontario, 1990)*. These must be reported in a timely manner to allow for communicable disease control. Although there are many diseases that are reportable, only diseases with enough cases for Ignace residents are presented. It should be noted that although these data are reportable upon notification to the healthcare system, there can be cases where there is no confirmation of testing (such as influenza) results because people may have a mild illness and recover without interacting with the healthcare system. Therefore, reporting is likely under-representative of actual case rates in the population.

For many communicable diseases, case rates in Ignace are too low to allow for meaningful comparisons to the surrounding areas. Furthermore, with limited data, rates cannot be presented by age and/or sex. This is meaningful as particular diseases have different risk and impacts based on sex and age group. For example, influenza is most serious among the youngest and oldest residents so that an average does not explain fully where investment in prevention and support may be needed.

4.4.3.1 Communicable Disease Equity Risk Factors

Social determinants of health (**Section 4.2**), such as quality of housing, access to clean drinking water, and access to health care, can have large impacts on rates of communicable disease. Thus, inequities like overcrowded housing or lack of clean drinking water can contribute to disparate communicable disease rates among certain population groups. Such inequities can also influence the prognosis of a disease and the severity of its complications.

Campylobacter and salmonella are two reportable diseases for which data are presented. These diseases are contracted through contaminated food or water. Lack of clean drinking water is a risk factor for these infections. While these infections are often mild and resolve on their own, vulnerable populations such as young children and seniors are at elevated risk of hospitalization or death. Some studies show greater prevalence of campylobacter in rural areas, especially agricultural areas, and particularly among children aged 0-4 in rural areas (Green et al. 2006). As proper sanitation procedures (e.g., handwashing, food storage, and food preparation) are key prevention measures, those without access to functioning kitchens, temperature-controlled food storage, and hot running water face barriers to these practices.

COVID-19 data show that there has been a disproportionate impact on elderly persons, persons living with other chronic conditions, and those in lower socioeconomic groups with challenges associated with housing, types of employment, and access to resources. Public Health Ontario further identifies Indigeneity, homelessness, and incarceration as factors increasing risk and severity of COVID-19 infection (Public Health Ontario 2023d). Lack of access to health education

and trusted healthcare providers can cause vaccine hesitancy and contribute to COVID-19 inequity. Vaccine hesitancy reduces vaccine uptake and protection from severe outcomes.

Inequitable access to primary care may drive untreated Sexually Transmitted Infection ("STI") cases. In populations with inequitable access to information and education on STIs, fewer individuals may engage in safer sex practices, more may be unaware of the importance of screening or the potential complications, and more may fear being stigmatized for accessing STI testing or treatment. Chlamydia and gonorrhea are two reportable STIs for which data are presented. Access to screening is highly important for these infections. Without treatment, chlamydia and gonorrhea can lead to complications such as pelvic inflammatory disease (in females), inflammation and pain of the surrounding tissues in both males and females, and infertility (Moore et al. 2021).

4.4.3.2 Selected Reportable Infectious Diseases

The non-sexually transmitted infection reportable disease presented in this section are the following diseases because local data are available: campylobacter, hepatitis C, and salmonella.

Due to the importance of COVID-19 and influenza, data on case counts and rates are presented for Ontario as well as Canada where available to provide additional context. In further subsections, immunization coverage proportions for COVID-19 and influenza are also discussed at a national, provincial, and local context where data were available.

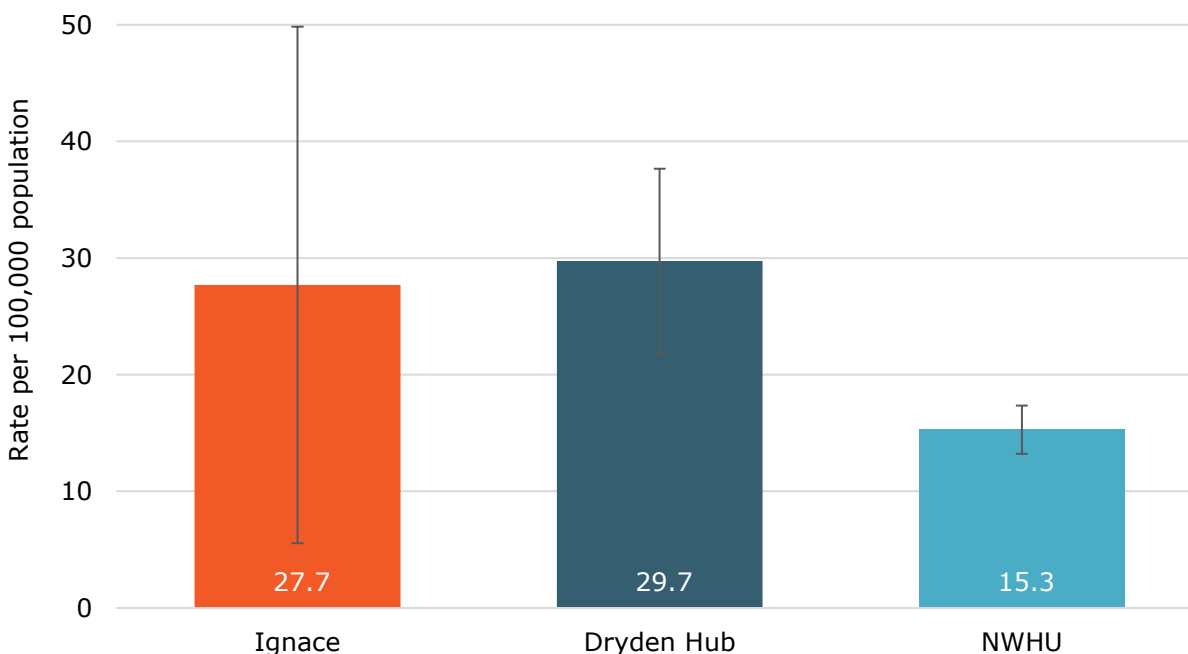
4.4.3.2.1 Campylobacter Enteritis

This indicator measures the rate of laboratory-confirmed Campylobacter Enteritis infections per 100,000 residents. Campylobacter is a foodborne or waterborne illness that can be prevented by using safe food-handling practices and a food thermometer to check that food is cooked to a safe internal temperature. It has also been found in untreated surface water (caused by fecal material in the environment) and manure.

Due to very small numbers of infections in the Local Study Area, only the entire time period of 2005 to 2021 is presented for Ignace with additional contextual data at the NWHU- and Ontario-level discussed.

Among Ignace residents, there were 6 cases of campylobacter reported between 2005 and 2021 (see **Appendix 4B Supplemental Data**), translating to a rate of 27.7 cases per 100,000 population (**Figure 4.4-26**). This rate is statistically similar to the rates among residents of the Dryden Hub and NWHU (29.7 and 15.3 cases per 100,000 population respectively).

Figure 1.6-26: Rate of Campylobacter Confirmed Cases by Area, 2005–2021^{1,2}



Source: iPHIS 2022. Retrieved May 30, 2022.

Notes:

1. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.3.2.2 Hepatitis C

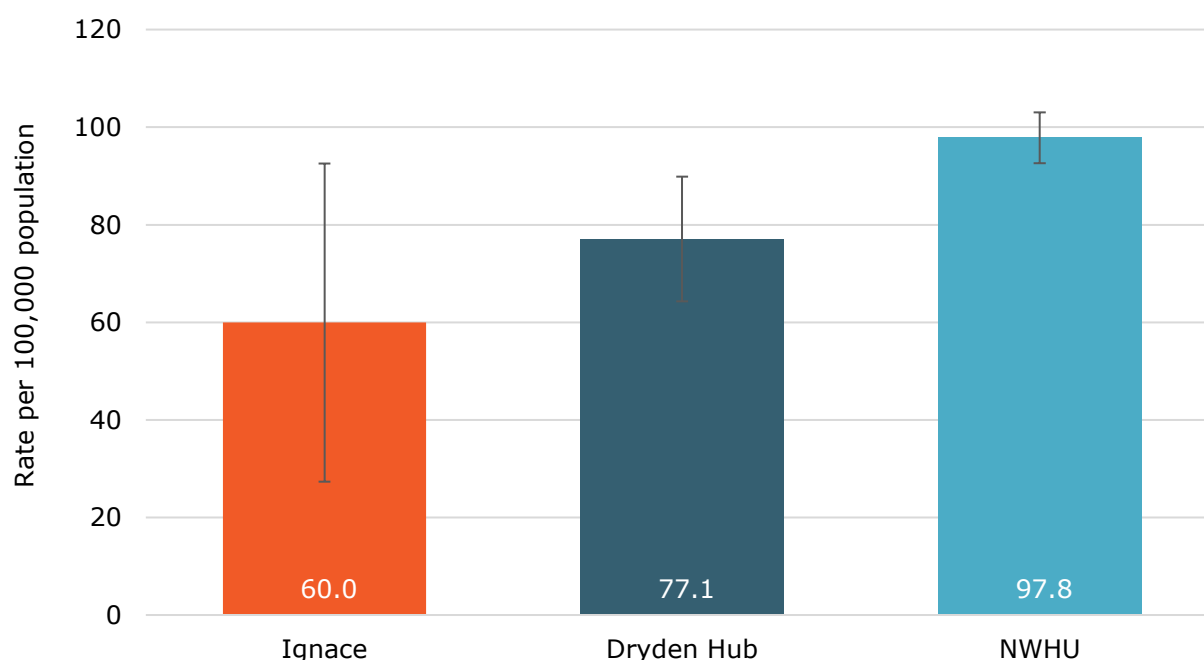
This indicator measures the number and rate of laboratory-confirmed hepatitis C infections. Due to very small numbers of infections in the Local Study Area, the time period of 2005 to 2021 is amalgamated. Additional contextual data at the NWHU and Ontario level is discussed to help frame the relationship between equity factors and communicable disease.

Hepatitis C is a viral disease transmitted through blood exposure, such as through needles from drug use or tattooing. Infections can sometimes cause serious outcomes including cirrhosis, liver cancer, and death (Centers for Disease Control and Prevention 2023c). It is estimated that over half of those with hepatitis C infection are current or former injection drug users (Government of Ontario 2009).

In Ontario, in 2021, the rate of hepatitis C infections was 20.4 per 100,000 population (see **Appendix 4A Supplemental Data**). The NWHU rate was more than six times this rate, at 137.2 per 100,000 population. Confirmed infection rates in 2020 and 2021 for both areas were lower than the 2019 rates, suggesting an impact from the COVID-19 pandemic. Notwithstanding, the case rates in NWHU have been much higher in recent years in comparison to 2012 and 2013.

Between 2005 and 2021 there were 13 infections among Ignace residents, translating to a rate of 60.0 infections per 100,000 population. This is not statistically different to the rate among residents of the Dryden Hub (77.1 per 100,000 population) but is significantly lower than the rate for NWHU (97.8 per 100,000 population) (**Figure 4.4-27**). See **Appendix 4B Supplemental Data** for more data on Hepatitis C.

Figure 1.6-27: Rate of Confirmed Hepatitis C Infections by Area, 2005-2021^{1,2}



Source: iPHIS 2022. Retrieved May 30, 2022.

Notes:

1. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.3.2.3 Salmonella

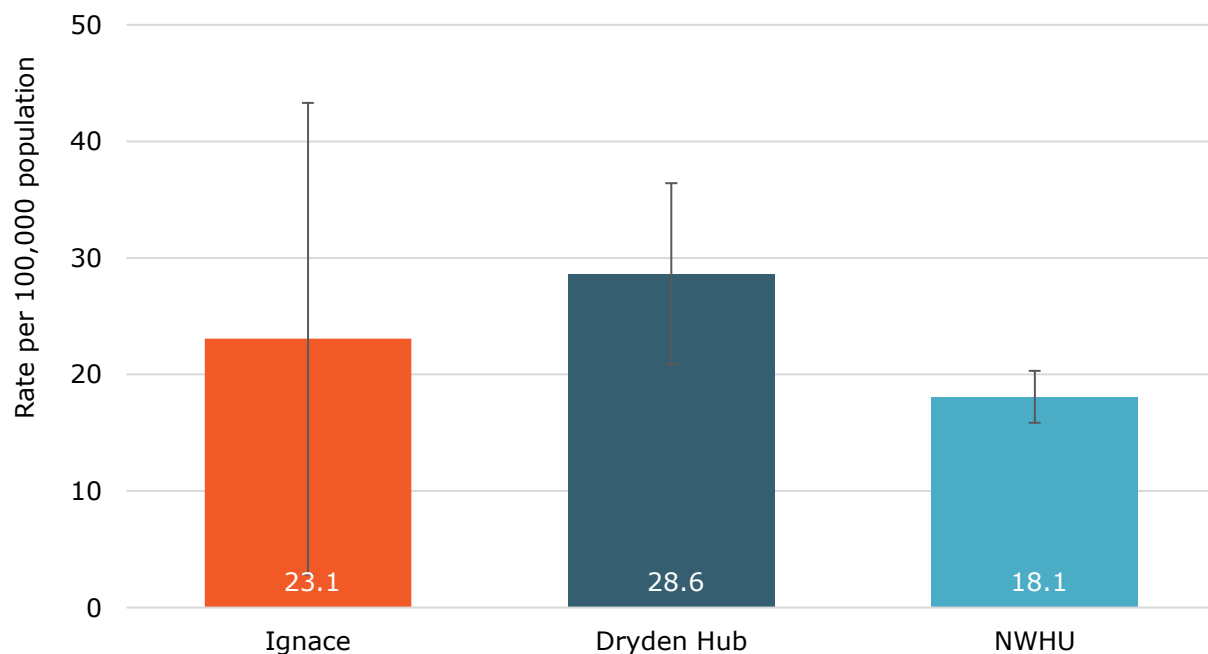
This indicator measures the count and rate of laboratory-confirmed infections with salmonella per 100,000 population. Due to very small numbers of infections in the Local Study Area, only the entire time period of 2005 to 2021 is presented. Additional contextual data at the NWHU and Ontario level are discussed to help frame the rate seen in the Ignace area.

Salmonella refers to a group of bacteria that is commonly found in animal intestines. The bacteria can be transmitted to people when they eat foods (commonly beef, poultry, milk, or eggs) contaminated with animal feces. While salmonella infections often resolve without requiring treatment, young children and elderly individuals can experience severe outcomes. During the 7-year period from 2015 to 2021, 48 Ontarians died from salmonella infection (Public Health Ontario 2023f).

For residents of the NWHU, the salmonella case rate per 100,000 population in 2021 was 9.8, and the Ontario rate was 8.0. Since 2018, case rates in both areas have been trending downward, suggesting better management in both the health unit and province wide. The average case rate between 2012 and 2021 in both areas were similar. These data are available in **Appendix 4B Supplemental Data**.

Between 2005 and 2021, there were five confirmed cases of salmonella among Ignace residents, 52 among residents of the Dryden Hub, and 251 among residents of the NWHU (see **Appendix 4B Supplemental Data**). The rate of confirmed cases per 100,000 population among Ignace residents was 23.1 per 100,000 residents, which was not significantly different to either Dryden Hub or NWHU (**Figure 4.4-28**).

Figure 1.6-28: Rate of Confirmed Salmonella Infections by Area, 2005-2021^{1,2}



Source: iPHIS 2022. Retrieved May 30, 2022.

Notes:

1. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.3.3 Selected Reportable Respiratory Infectious Disease

This section presents COVID-19 and influenza trends in Ontario and Canada. It attempts to summarize surveillance information to present high-level information on indicators of interest such as case rates, hospitalization rates, and mortality rates.

Due to a lack of data (including very small numbers of reported cases), this section does not present data pertaining to influenza and COVID-19 for residents of Ignace and the Dryden Hub. Where possible, NWHU data are presented to provide some local context information, but this does not necessarily indicate that this larger area is directly representative of Ignace.

It is important to note that case reporting and confirmation continues over time. This means that data extracted at one date, can be updated with deletions or changes to confirmed cases, hospitalizations, and deaths. The data are accurate on the date of extraction which is listed with each data table and graph.

4.4.3.3.1 COVID-19

COVID-19 is an infectious disease that is spread from one infected person to another through respiratory droplets and aerosols. Symptoms may include fever/chills, sore throat, cough, shortness of breath, fatigue, and headache. Although the illness can be mild, older adults and those with underlying health conditions such as heart disease or diabetes have increased risk of more severe illness. The first confirmed cases of COVID-19 in Canada were reported on February 1, 2020 (4 cases); three of the four first confirmed cases in Canada were in Ontario.¹³⁶ The first reported case in the NWHU area was on March 12, 2020.

To assist with COVID-19 data interpretation, it is important to note that the reporting standards in most jurisdictions changed as the Omicron variant of the COVID-19 virus began to surge and rapid testing became widely available in the beginning of 2022 with strict limitations of access to lab testing. This relates to numbers of cases only and not the number of hospitalizations and deaths. According to Public Health Ontario: *"Testing and case, contact, and outbreak management in Ontario was restricted to high-risk populations and settings in January 2022. As such, counts are an underestimate of the extent of COVID-19 activity in Ontario"* (Public Health Ontario 2023j). As such, reported cases since then may not be indicative of true rates as many positive rapid tests were not recorded in provincial numbers.

COVID-19 had a significant impact on the economic, social, and mental well-being of societies. As noted in **Section 4.4.5 Mental Health**, there have been notable increases in mental health challenges and associated risk factors for addiction. There has been a further substantial impact on other health conditions due to challenges in access to preventative, diagnostic, and supportive care during the pandemic. Ignace residents noted the impact of COVID-19 on their well-being in many key person interviews.

Local Study Area data on COVID-19 cases, hospitalizations, and mortalities are not available. Information on these indicators in the NWHU and Ontario are summarized for context of the Northwestern Ontario region. This data can be found in **Appendix 4B Supplemental Data**.

¹³⁶ Note that Public Health Ontario data has the first three Ontario cases on January 16, 2020.

In 2020 and 2021, the case rates among residents of the NWHU were lower in comparison to Ontario. However, in 2022, the NWHU case rate was 14,802.3, per 100,000 population, which was much higher than Ontario (5,218.5 per 100,000 population). The NWHU and Ontario cumulative rates for the entire time period of 2020-2022 were 17,255.8 and 10,896.5 per 100,000 population.

Although equity is a known risk factor for COVID-19, it is likely that the substantial difference in COVID-19 reported rates in the NWHU is primarily related to increased access to testing and reporting. That is, some communities, particularly First Nations communities continued with access to lab testing for COVID-19. That is there may not have been the same change to reporting standards beginning in 2022 in certain areas including NWHU communities.

In all three years the hospitalization rate among residents of the NWHU was lower than the Ontario rate, but by 2022, the gap had diminished, and the rates were not substantially different. Overall, between 2020 and 2022, the cumulative incidence hospitalization rate for residents of the NWHU remained lower than Ontario.

Deaths of residents of the NWHU due to COVID-19 were only reported in 2021 and 2022. Overall, the mortality rate among residents of the NWHU was 68.4 per 100,000 population, which was lower than the rate among all Ontario residents (103.6 per 100,000 population). The mortality rate for residents of the NWHU increased significantly from 9.8 deaths per 100,000 residents in 2021 to 58.6 per 100,000 residents in 2022, surpassing the mortality rate for Ontario, which did not change as drastically from 2021 to 2022. The cumulative incidence mortality rate for 2020 to 2022 remained lower for NWHU than for Ontario.

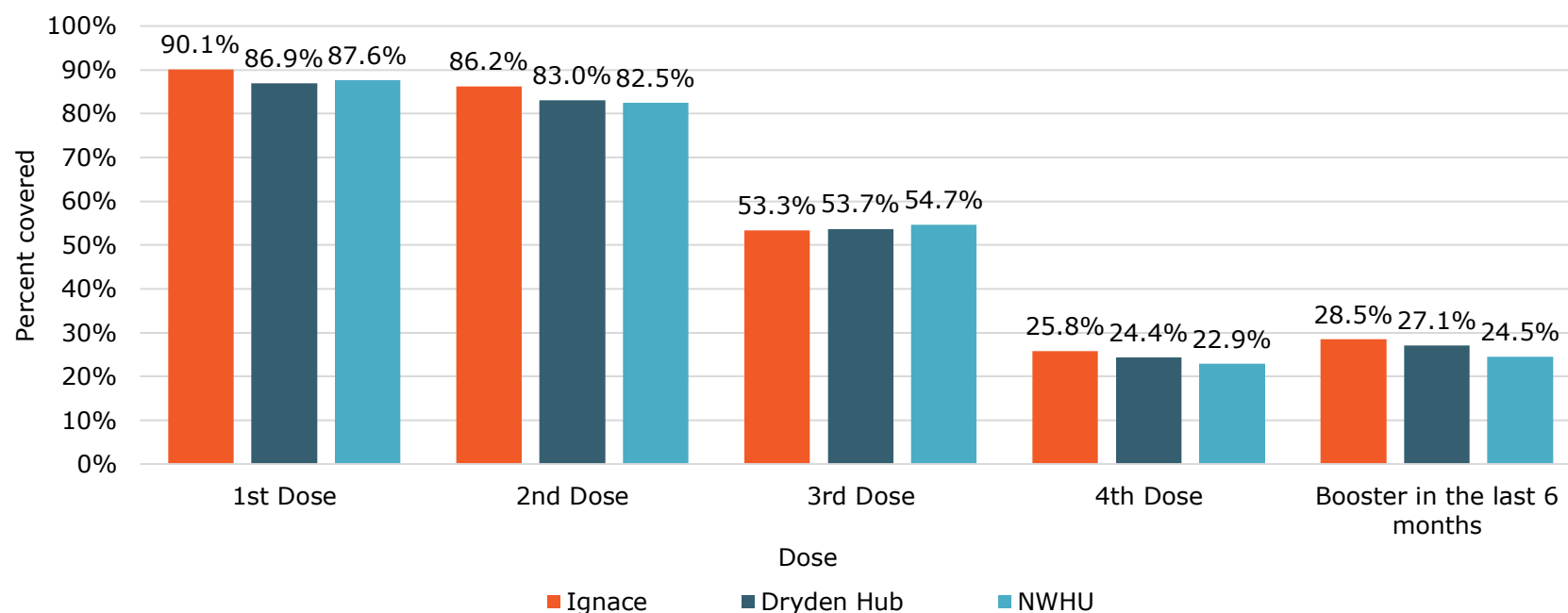
COVID-19 Vaccination

The first vaccinations to protect against COVID-19 were available in Canada in December 2020. Since then, over 96 million doses have been administered in Canada, and over 13 billion worldwide (Mathieu et al. 2020). It has been estimated that the COVID-19 vaccine prevented 58% of deaths that would have occurred if the vaccine was not administered between December 2020 and January 2021 (Steele et al. 2022). This section presents COVID-19 immunization coverage data for residents of Ignace, Dryden Hub, and NWHU. Coverage data for residents across Ontario and Canada is discussed to provide comparison with this area-specific data.

There are no notable differences in the percentages of NWHU, Ontario, and Canada residents who have received COVID-19 vaccination doses (see **Appendix 4B Supplemental Data**). For all areas, rates of first dose coverage are close to 90%, decreasing to around 83% for second dose and just over 50% for a third dose.

As **Figure 4.4-29** shows, 90% of Ignace residents received at least one dose of COVID-19 vaccine between January 2021 and November 2022. The coverage percentage declined as the number of shots administered increased, with 25.8% of Ignace residents having received 4 or more doses. Data for first, second, and third doses indicate that the Ignace vaccination coverage percentages are very similar to the Dryden Hub and NWHU comparison populations.

Figure 1.6-29: COVID-19 Immunization Coverage by Area, January 2021-November 2022^{1,2,3}



Source: IntelliHealth Ontario 2023c. Retrieved February 9, 2023.

Notes:

1. Area = Ignace identified by "client city = Ignace" and/or "client postal code = P0T 1T0" from Covax dataset. Communities that constitute "Dryden Health Hub" also identified by "client city" and/or "postal code" from Covax, and includes the following communities: Dryden, Wabigoon Lake 37, Machin, Oxdrift, Vermilion Bay, Eagle River, Eton-Rugby, Minnitaki, Wabigoon, Melgund, Eagle Lake 27, Ignace.
2. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.3.3.2 Influenza

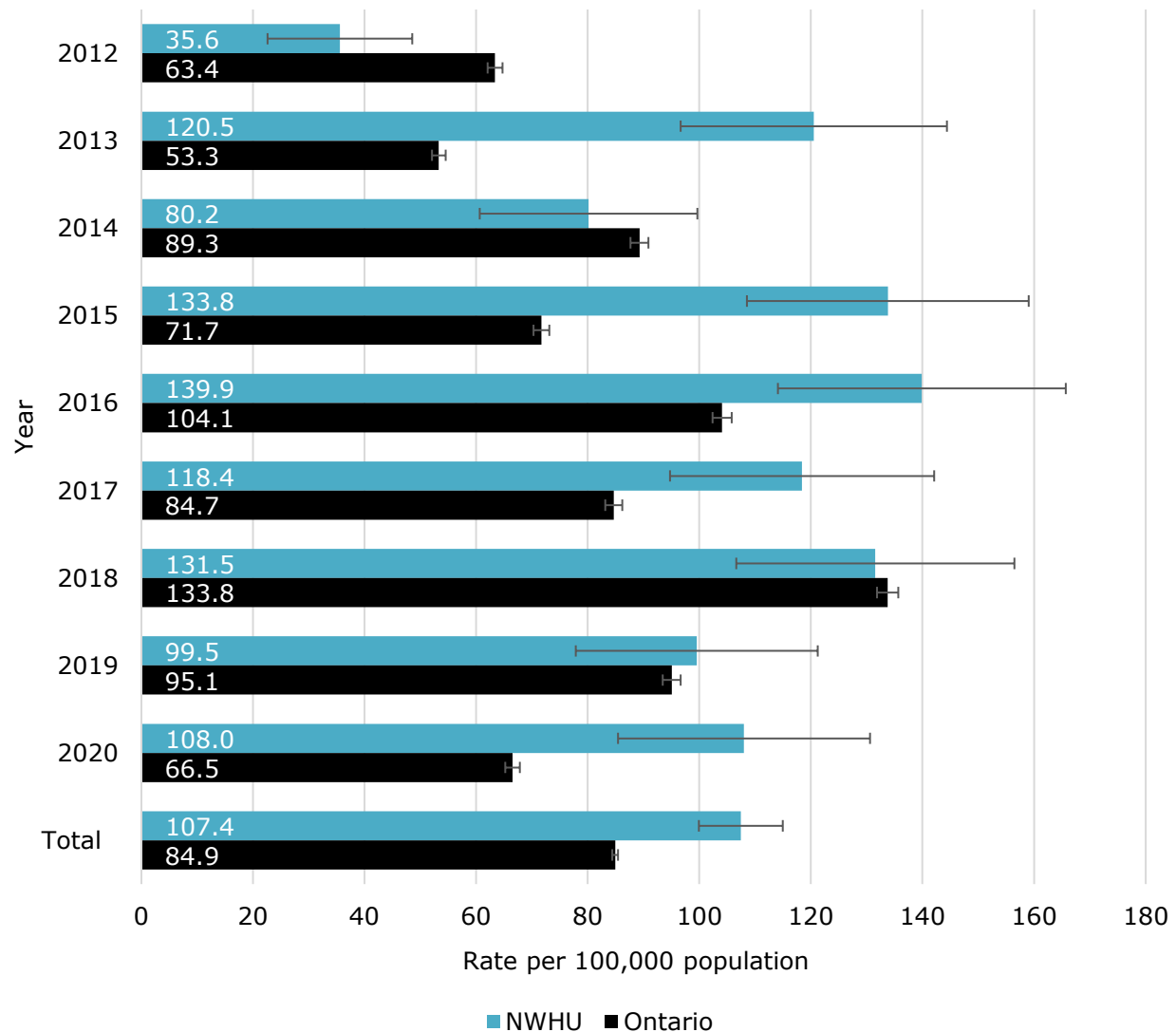
Influenza is a respiratory infection that causes symptoms such as fever, cough, headache, sore throat, and runny nose (World Health Organization 2023b). Illness severity ranges from mild to severe and can lead to death. Populations at higher risk for severe outcomes (hospitalization and/or death) include young children, pregnant women, elderly persons, and persons with immunocompromised conditions (World Health Organization 2023b).

There were fewer than five lab confirmed influenza cases recorded between 2005 and 2022 among Ignace residents. As such, influenza data are not presented for Ignace, but data from the NWHU provides contextual details about influenza circulation and highest risk groups.

Figure 4.4-30 shows the influenza case rates among NWHU and Ontario residents . In both areas, case rates vary from year to year. This is because each year there will be different strains of influenza that may circulate which impacts the effectiveness of the vaccine (goodness of match of vaccine to strains) as well as disease severity. In general, residents of the NWHU area do have higher rates of influenza than the averages in Ontario. This may be affected by health equity factors such as over-crowded housing in many areas, and other risk factors for infectious disease such as lower vaccination rates in more remote areas (National Collaborating Centre for Infectious Diseases 2021).

A key effect of the COVID-19 pandemic around the world was in 2021 where almost no influenza cases were reported, including among residents of the NWHU (NWHU 2023b).

Figure 1.6-30: Influenza Case Rate, NWHU and Ontario, 2012-2020^{1,2}



Source: Public Health Ontario. 2023g. Retrieved January 18, 2023.

Notes:

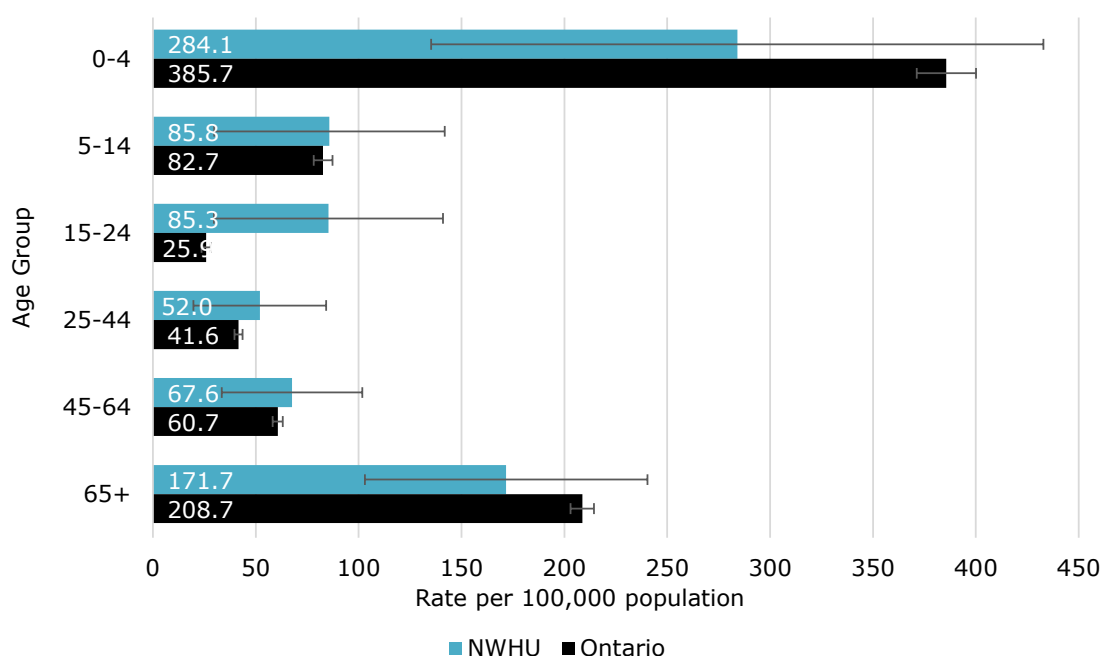
1. Data Extraction by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

Due to the importance of high-risk age groups, **Figure 4.4-31** shows influenza rates by age group for NWHU and Ontario. In both populations, recorded case rates are highest among those aged 0-4 years. The rate was higher Ontario-wide than in the NWHU population, but not significantly so, as shown by overlapping confidence intervals. Children under age 5 and elderly are at the highest risk for severe outcomes, including death. For this reason, it is important to

ensure that vaccination rates are high in these age groups which may have more challenges in access to primary care and hospital care in northern and more remote areas.

The reported rate among those aged 15-24 was significantly higher in the NWHU population compared to Ontario. Note that these rates include confirmed cases only. In healthy young adults, influenza infection often does not require medical attention. The disparity in reported rates between NWHU and Ontario may reflect higher rates of self-reporting in NWHU or more vulnerability to severe infection among NWHU youth/young adults, rather than higher rates of infection.

Figure 1.6-31: Influenza Case Rates by Age Group in NWHU and Ontario, 2019^{1,2,3}



Source: Public Health Ontario. 2023g. Retrieved January 18, 2023.

Notes:

1. Case rates by age group and sex available in **Appendix 4B Supplementary Data**.
2. Data Extraction by EPI Research Inc
3. Data are presented in **Appendix 4B**.

Influenza (Flu) Vaccination

MBCHCH data suggests that influenza vaccinations have decreased slightly from 2022 to 2024 among Ignace residents. Approximately 199 residents received an influenza vaccine in 2022, 195 in 2023, and 183 in 2024 (NWO Community and Baseline Studies Key Person Interview Program 2022-2023). Data for influenza vaccinations among residents of the Dryden Hub or NWHU were not available. This section further presents immunization coverage for influenza vaccinations among residents of Ontario and Canada (excluding the territories) age 12 and older between 2015 to 2020.

The five-year average coverage rate between 2015 and 2020 among all Ontario residents over 12 years old was 36.0%, which was slightly higher than the Canadian coverage percentage (excluding the territories) of 33.6%. The highest rate of coverage among both residents of Ontario and Canada was 2020, with coverage percentage of 42.2% and 39.0% respectively (see **Appendix 4B Supplemental Data**). This leaves a large proportion of the population vulnerable to infections and severe illness from influenza infections.

4.4.3.4 Sexually Transmitted Infections (STI)

In Canada, chlamydia and gonorrhea are the most commonly diagnosed STIs. Prior to the COVID-19 pandemic, STI rates in Canada were increasing (for example, chlamydia and syphilis rates increased by 33.1% and 39.1% respectively between 2010 and 2019). Given the potential long-term health impacts of STIs, it is important to continue to monitor STI rates to gauge how effective public health prevention messages are in reaching Canadians related to safe sexual practices (Public Health Agency of Canada 2022b). The effective prevention and management of STIs also involves eliminating barriers, such as stigma, to accessing testing and treatment.

Since the start of the COVID-19 pandemic in early 2020, Canada experienced challenges in delivering testing and treatment services, harm reduction services, as well as STI prevention (Public Health Agency of Canada 2022a). Restrictions to socialization and challenges with access to health services affect both transmissions (potentially in a positive way, shown by decreased rates) as well as testing (which is an unintentional negative impact and may indicate that true infection rates are underestimated to a greater degree than in other years).

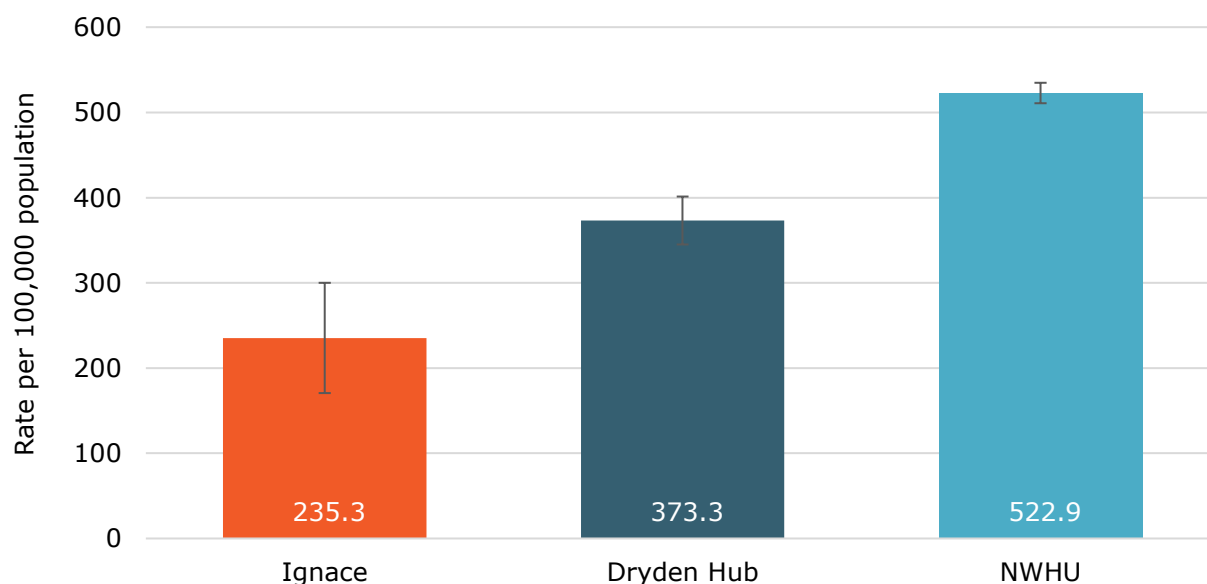
4.4.3.4.1 Chlamydia

This indicator measures the number of cases of the sexually transmitted infection (STI) chlamydia trachomatis per 100,000 population. Chlamydia is the most common sexually transmitted bacterial infection in Canada. Chlamydia can lead to Pelvic Inflammatory Disease (PID) in many women if left untreated, and in some cases, infertility. Public Health Ontario data (2021b) show that in 2021, there were 35,389 cases of chlamydia (238.7 cases per 100,000 population) in Ontario. In comparison, the infection rate among residents of the NWHU was much higher at 513.4 per 100,000 population.

The Integrated Public Health information System ("iPHIS") provides the number of confirmed chlamydia cases reported by comparison area between 2005 and 2021, as shown in **Figure 4.4-32**. There were 51 lab confirmed cases of chlamydia among Ignace residents reported in the 16-year period reviewed. This is an average of 3.2 cases per year. The rate of chlamydia cases among Ignace residents was 235.3 per 100,000 between 2005 and 2021, which was significantly lower than both Dryden Hub (373.3 per 100,000 population) and NWHU (522.9 per 100,000 population).

Rates are higher in the NWHU compared to Ontario for all age groups except 50+ (in which group rates are very small in both populations). Those aged 15-24 are most affected in NWHU. Ontario-wide, the rate is higher for those aged 20-24 compared to those aged 15-19, but rates in these two groups are similar in the NWHU. This suggests a greater need for education and resources on safer sex practices for NWHU youth. Rates in the NWHU population were generally declining over time, as shown in **Appendix 4B Supplemental Data**.

Figure 1.6-32: Rate of Confirmed Chlamydia Infections by Area, 2005–2021^{1,2}



Source: Integrated Public Health Information Service (iPHIS) 2022. Retrieved May 30, 2022.

Notes:

1. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.3.4.2 Gonorrhea

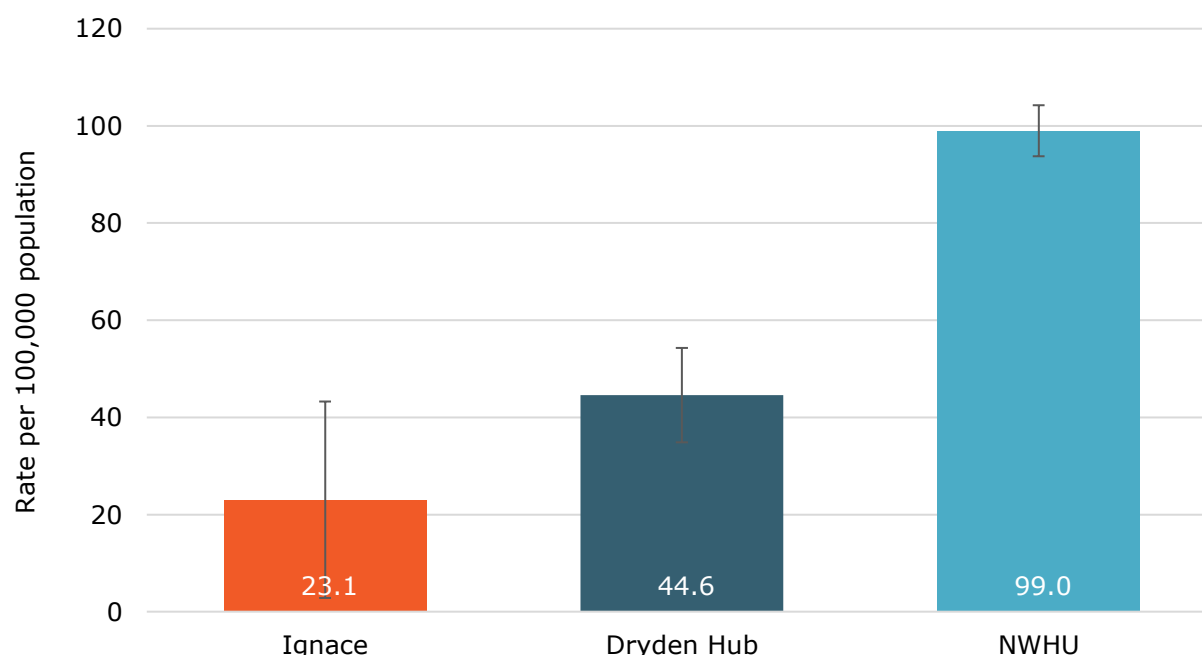
This indicator measures the number of cases of the sexually transmitted infection (STI) gonorrhea per 100,000 population. In 2019 the reported rate of gonorrhea in Canada was 94.3 cases per 100,000 population, an increase of 181.7% from 10 years prior (Public Health Agency of Canada 2022b). This may be due both to inconsistent use of safer sex methods and better use of screening methods. Gonorrhea is particularly prevalent in young people, especially young men under the age of twenty-four (Public Health Agency of Canada 2022a).

Residents of the NWHU had significantly higher rates of gonorrhea than Ontario in all age groups under 40 years. While this is not necessarily representative of Ignace, it gives a sense of the area-specific patterns and risk factors as Ignace data cannot be disaggregated by age. The age groups most affected are similar province-wide and in NWHU, namely younger adult age groups. Although Ontario did not see the same trend, there was a marked drop in overall rates from 2019 to 2021 among residents of the NWHU, presumably attributable to pandemic restrictions with respect to socialization and challenges with access to health services. However, there was a steep increase in rates of gonorrhea among residents of the NWHU prior to this (see **Appendix 4B Supplemental Data**).

There were only 5 confirmed cases of gonorrhea among Ignace residents (see **Appendix 4B Supplemental Data**). The rate of gonorrhea among Ignace residents between 2005 and 2021

was 23.1 per 100,000 population, which was lower, although not statistically lower, to the rate among residents of the Dryden Hub, but was significantly lower than the NWHU rate (99.0 per 100,000 population), as shown in **Figure 4.4-33**.

Figure 1.6-33: Rate of Confirmed Gonorrhea Infections by Area, 2005–2021^{1,2}



Source: iPHIS 2022. Retrieved May 30, 2022.

Notes:

1. Data extraction by Northwestern Health Unit; analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.4 Chronic Disease

Chronic diseases such as cancer, heart disease, diabetes, chronic lung disease, and arthritis not only impact life expectancy and premature death rates, but also affect the ability to live independently and free of illness and disability. It is estimated that 44% of adults aged over 20 in Canada have at least 1 of the 10 top chronic conditions diagnosed in Canada (Government of Canada 2019c).

The Canadian Chronic Disease Surveillance System estimates elevated mortality rate ratios across the lifespan for those with chronic diseases such as hypertension, ischemic heart disease, diabetes, asthma, and chronic obstructive pulmonary disease ("COPD"). This means for example that a young person aged 20-34 living with hypertension is 5.39 times more likely to die (of any cause) compared to someone in the same age group who does not have hypertension. The impact of ischemic heart disease at a young age is even more impactful – a person aged 20-34

with this condition is almost 13 times more likely to die from any condition compared to similar person without ischemic heart disease.

The specific chronic conditions of focus in this section are arthritis, cancer (malignant neoplasms only), cardiovascular diseases including ischemic heart disease, cerebrovascular disease (including stroke), diabetes, and respiratory disease including chronic lower respiratory disease, and COPD. These conditions were chosen in compliance with Public Health Ontario reporting because they align most closely with the mortality burden and need for care at all levels of the health system.

4.4.4.1 Chronic Disease Burden

The true burden of chronic disease is difficult to measure. It can include self-reported, physician visit and hospitalization data. Derived indicators (that link multiple levels of health services), such as those available from the Canadian Chronic Disease Surveillance System and through Public Health Ontario require access to highly secure data sets. Access to unique identifiers is required to link data and derive the chronic disease incidence (new cases) and prevalence (existing cases). Given that access is highly restricted to government organizations, these cannot be derived for Ignace; however, the MBCHCH does hold and track this information.

Where it is available to provide more accurate local context related to incidence and prevalence of chronic conditions and to further highlight age groups of risk, the closest area of geography will be NWHU. Data that could be extracted for chronic disease for Ignace residents, is limited to hospitalization. Although this does under-represent the true burden of chronic disease, it does highlight the area of most impact and as such, many reports of chronic disease are limited to hospitalization. This is a more accurate measure of the burden of chronic disease on the health care system and acute care if the condition is not prevented or managed at the primary care or community care level.

As noted, in order to understand the true burden of chronic disease, both hospitalization and physician visit data must be accessed and specific definitions are followed. The closest area indicators for selected chronic diseases are available for the NWHU through Public Health Ontario.

As per **Table 4.4-4**, prevalence estimates show a comparatively high burden of chronic disease in the NWHU population, notably females with diabetes or COPD compared to Ontario. Age-standardized rates are used to account for differences in the age structure of comparison populations (Statistics Canada 2023b).

Table 1.6-4: Age-Standardized Prevalence Rates per 100,000 Population by Chronic Disease and Sex, Ontario and NWHU, 2020^{1,2,3}

Chronic Disease	NWHU Age Standardized Rate	Ontario Age Standardized Rate	Significant compared to Ontario (Higher, Lower, Similar)	Rate Ranking out of all Health Units (maximum 34)
Asthma Prevalence - All	10,142.4	14,975.1	Lower	34th
Asthma Prevalence – Female	10,715.1	15,264.3	Lower	34th
Asthma Prevalence – Male	9,541.5	14,569.7	Lower	34th
COPD Prevalence - All	8,188.1	7,453.7	Higher	22nd
COPD Prevalence – Female	8,482.5	7,059.5	Higher	21st
COPD Prevalence – Male	7,922.9	7,919.3	Similar	27th
Diabetes Prevalence - All	13,282.7	12,273.2	Higher	4th
Diabetes Prevalence – Female	13,112.9	11,171.3	Higher	3rd
Diabetes Prevalence – Male	13,490.3	13,510.0	Similar	13th
Hypertension Prevalence – All	22,164.7	25,165.9	Lower	33rd
Hypertension Prevalence – Female	21,693.7	23,748.3	Lower	32nd
Hypertension Prevalence – Male	22,565.5	26,620.4	Lower	34th

Source: Public Health Ontario 2023m. Retrieved May 2, 2022.

Notes:

1. Age-standardized rates adjusted to the 2011 Canadian population.
2. COPD = Chronic Obstructive Pulmonary Disease.
3. Data are presented in **Appendix 4B**.

Table 4.4-5 which represents individuals living off-reserve only. In 2019/2020, the self-reported rate of arthritis among residents of the NWHU aged 15 and older was more than 50% higher

than the province-wide rate. Where there is overlap (COPD and diabetes), it is noted that there is agreement between self-reported illness and those derived from health care system data in that both cases rates are higher among residents of the NWHU.

Table 1.6-5: Self-Reported Chronic Disease (CCHS), NWHU and Ontario, 2015/16–2019/2020^{1,2,3,4,5}

Indicator (percent of respondents)	NWHU			Ontario		
	2015/ 2016	2017/ 2018	2019/ 2020	2015/ 2016	2017/ 2018	2019/ 2020
Arthritis (age 15+)	23.2%	29.4% H	30.6% H	21.4%	19.3%	19.1%
Asthma (age 12+)	9.4% E	9.8% E	12.5% E	8.6%	7.9%	8.0%
Chronic obstructive pulmonary disease (COPD; age 35+)	3.9% E	4.8% E	6.9% E H	4.1%	4.1%	3.8%
Diabetes (age 12+ type I, II and females 15+ gestational)	7.1% E	9.4%	10.3% H	7.4%	7.7%	8.0%
High blood pressure (age 12+)	20.6%	21.8% H	23.8% H	18.2%	17.9%	17.5%

Source: Statistics Canada 2022b. Retrieved February 2, 2023.

Notes:

1. Off Reserve only.
2. H = Statistically higher than provincial rate. L = Statistically lower than provincial rate.
3. E = Use with caution.
4. Unless otherwise specified, analysis includes those age 12+.
5. Data are presented in **Appendix 4B**.

In the Community Health and Wellness Survey (2023), nearly one third of respondents indicated having no illnesses or health conditions. Of those that reported at least one health condition, the most reported was high blood pressure (27.5% of respondents, including nearly half of male respondents). Most conditions were reported mostly by those in older age groups, apart from depression/anxiety. More than 1 in 5 respondents reported having depression or anxiety and this proportion was higher among females. More male respondents (32.4%) than female respondents (7.7%) reported chronic pain. The higher prevalence of some conditions among male respondents is likely attributable to their older age distribution among respondents (more than 65% of male respondents were aged 60 and older).

In comparison to the Canadian Community Health Survey ("CCHS") results for Ontario in 2021, a larger proportion of Ignace residents reported arthritis (26.5% compared to 18.7%) and high blood pressure (27.5% compared to 18.0%), which could largely be related to the older age distribution of Ignace survey respondents. Higher rates for Ignace residents compared to Ontario may also be due to the small sample size of the survey for Ignace residents. For all survey response with further details, see **Appendix 4B Supplemental Data**.

The burden of chronic disease on individuals and the hospital system is significant. 42.8% of all hospital admissions and 47.2% of days in hospital between 2002 and 2021 were related to the eight chronic conditions of specific focus in this section (see **Appendix 4B Supplemental Data**).

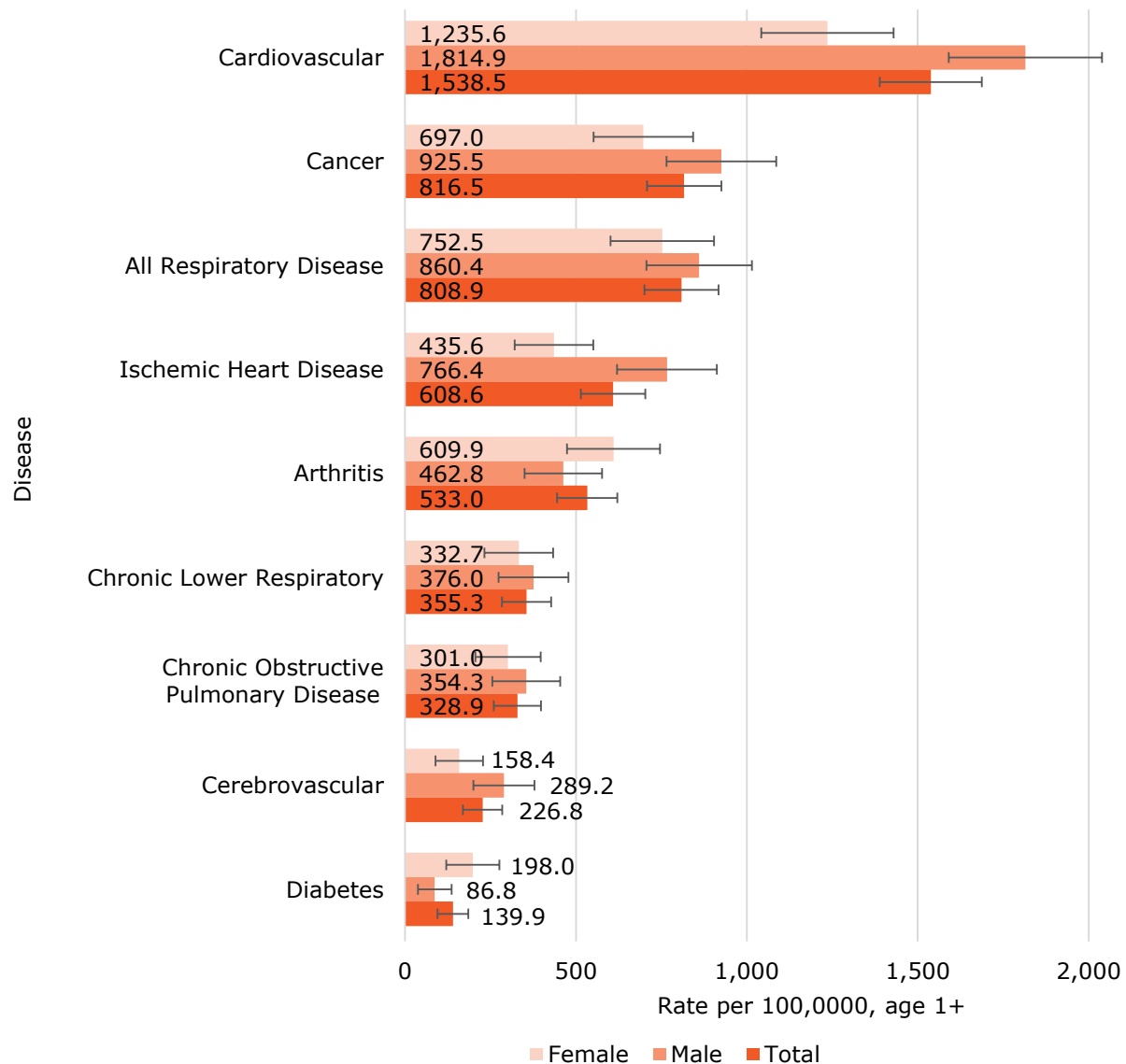
4.4.4.2 Chronic Disease Impact on Hospital Care Utilization

This section focuses on total hospital discharges, providing a picture of the impact of chronic disease in the area. These conditions will then be addressed separately with associated details.¹³⁷ See **Section 4.3.10 Inpatient Care** for further information related to hospitalizations in the study areas.

Among Ignace residents, hospitalization for all cardiovascular conditions was about 47% higher among men than women, as shown in **Figure 4.4-34**. This was mirrored in rates for ischemic heart disease. No other diseases showed significant differences by sex, but males generally had higher rates, except for arthritis and diabetes. Although diabetes represented the smallest proportion of hospitalizations among the chronic conditions reviewed and the low numbers make the difference not statistically significant, the rate of hospitalization among Ignace women was more than twice as high as it was for men. The average age at hospitalization was similar between men and women for all diseases (see **Appendix 4B Supplemental Data**).

¹³⁷ As a reminder, some hospital stays are categorized as “alternate level of care” (ALC). ALC is used to describe patients who occupy a hospital bed but do not require the intensity of services provided in the hospital care setting. Often there are specific chronic conditions accounting for more ALC than others, which highlights the needs for community-based care to allow the patient to be discharged from hospital.

Figure 1.6-34: Chronic Disease Hospitalization Comparison Rates by Sex, Ignace Residents, 2002-2021^{1,2,3}



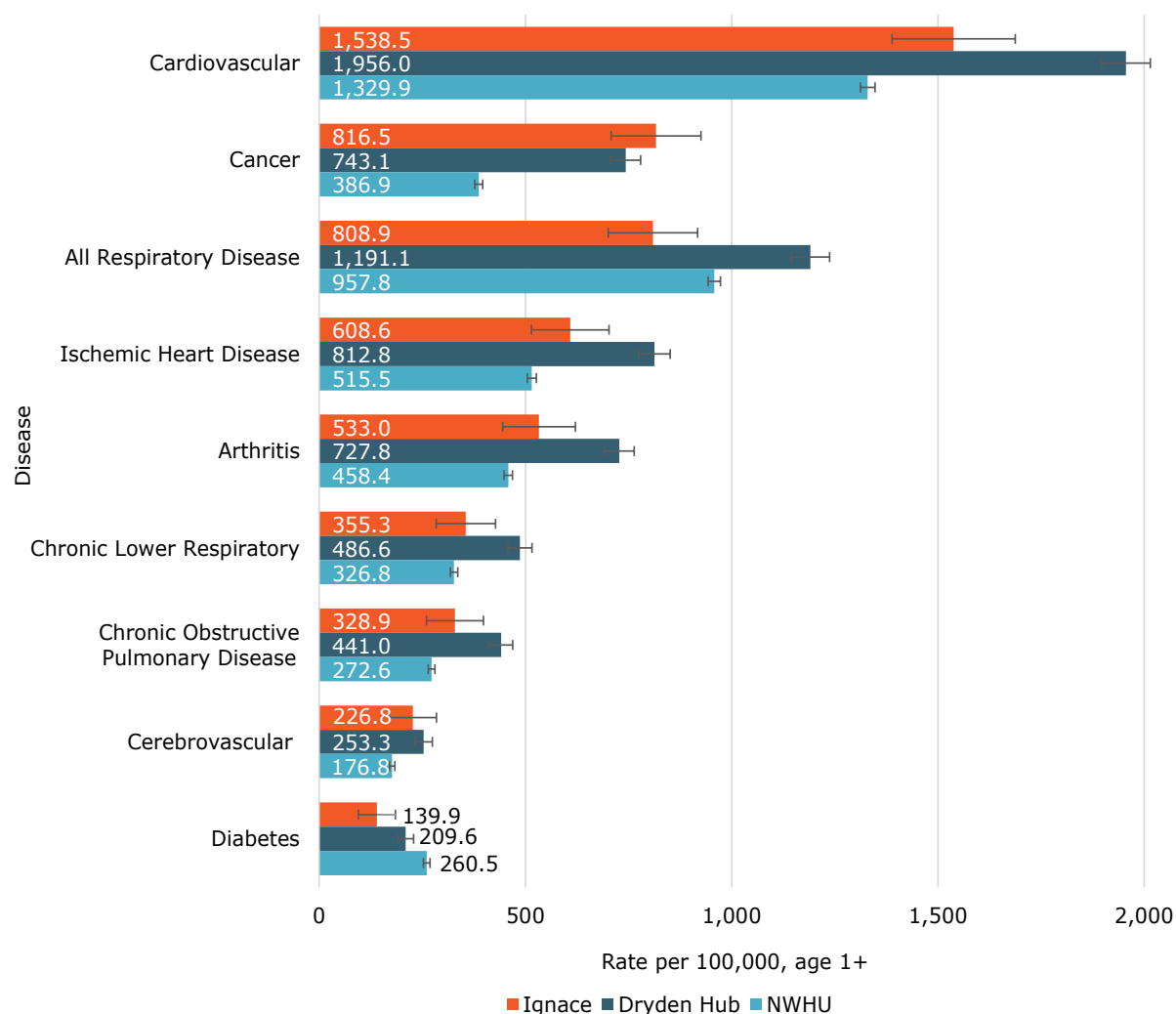
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Cancer includes malignant neoplasms only (C00-C97)
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Figure 4.4-35 shows that, overall, chronic disease hospitalization rates among Ignace residents were lower than Dryden Hub, and similar to NWHU, for most chronic diseases presented. An exception was cancer for which Ignace had higher rates than both populations (significantly higher than NWHU, but only slightly higher than Dryden Hub).

Figure 1.6-35: Chronic Disease Hospitalization Rates Summary by Area, 2002-2021^{1,2,3}



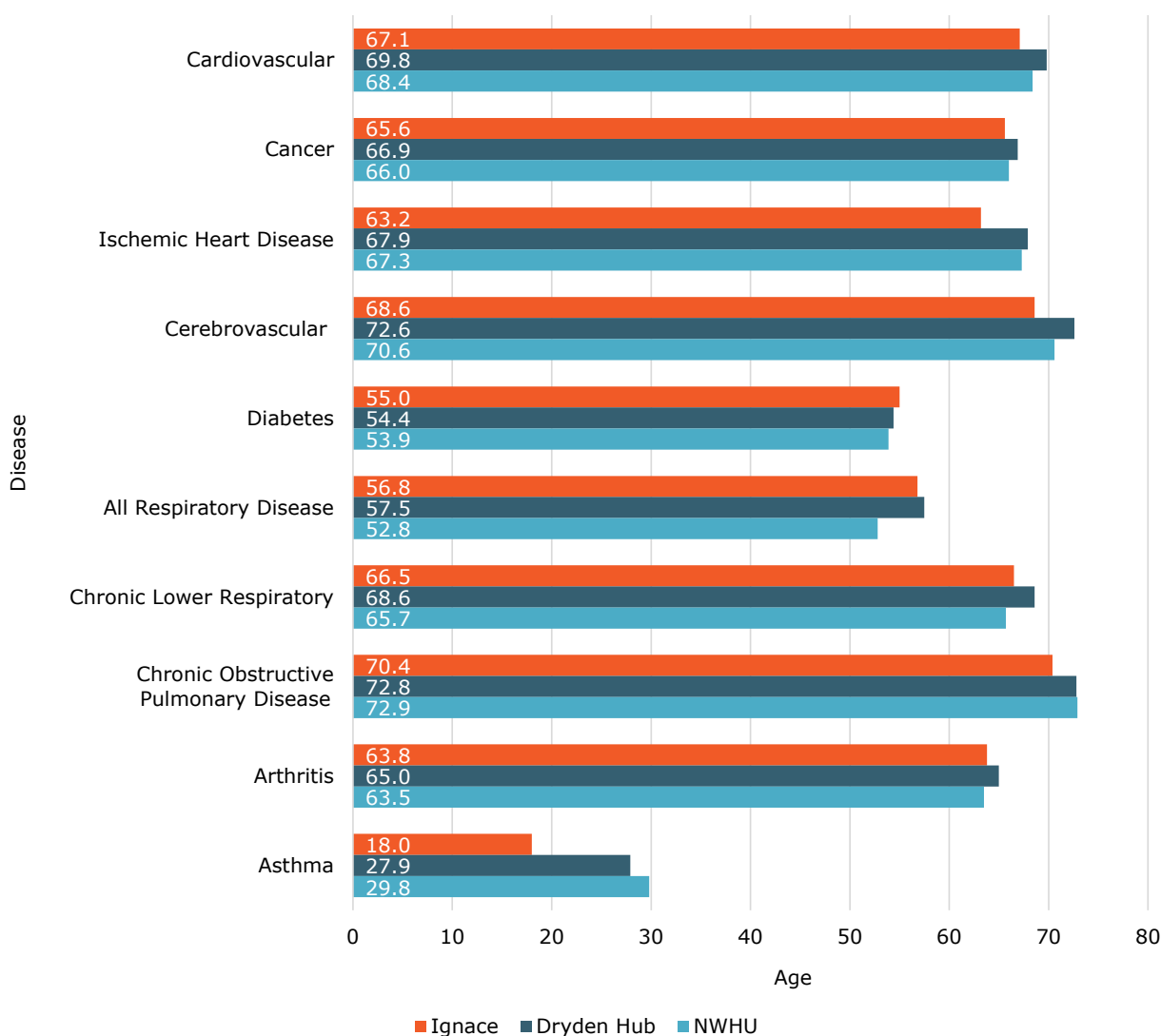
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Cancer includes malignant neoplasms only (C00-C97).
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Ignace had similar average age at admission to the comparison areas, except for asthma where Ignace patients were younger on average, as shown in **Figure 4.4-36**.

Figure 1.6-36: Average Age at Admission by Area and Disease, 2002-2021^{1,2}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

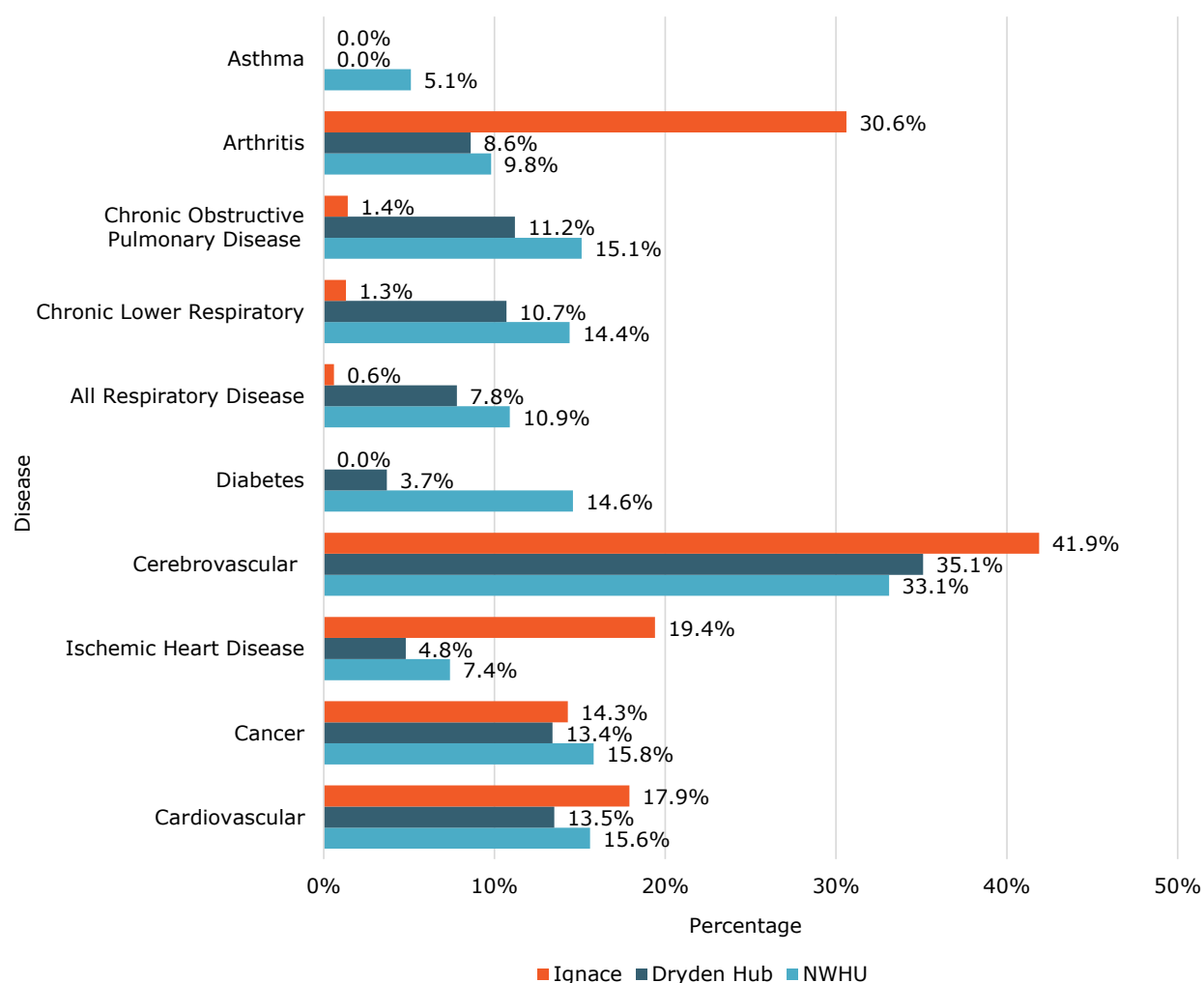
Notes:

1. Data Extraction and Analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

Ignace residents spent negligible time in an alternate level of care (ALC) while hospitalized for diabetes or a respiratory condition. In contrast, they spent nearly 1 in 5 days in an alternate level of care for cardiovascular disease and nearly 1 in 3 days for arthritis. This was as high as 2 in 5 days for cerebrovascular disease (see **Figure 4.4-37**). In the cases of ischemic heart disease and arthritis, these percentages were much higher than Dryden Hub or NWHU. This highlights

the difficulties in securing appropriate care placements and/or home supports for those from Ignace which are hospitalized because of these diseases.

Figure 1.6-37: Percentage of Inpatient Days Spent in Alternative Level of Care (ALOC) by Area and Disease, 2002-2021^{1,2}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data Extraction and Analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.4.3 Chronic Disease Burden for Selected Conditions

As discussed, for most chronic conditions extracted for Ignace residents, only hospitalization data are presented. The exception relates to cancer for which there is more consistent quantity and specific diagnostic information related to physician visits. Both physician visits and hospitalization are presented. In all other cases, information is limited to Ignace with some context information provided where available.

4.4.4.3.1 Cancer

Canadian Cancer Society statistics suggest that 43% of women and 45% of men in Canada will develop cancer in their lifetime (Canadian Cancer Society 2022), and the number of new cancer cases continues to grow (Government of Canada 2022b). The COVID-19 pandemic caused significant interruptions to cancer screening, diagnosis, referrals, and surgeries; the impacts of this continues to unfold. In all cases, discussion of cancers below refers to malignant neoplasms only.

In 2018, the prevalence of cancer was the third lowest among the 35 health units (Cancer Care Ontario 2021). The prevalence estimates for cancer show a higher rate of cancer in Ontario (4,647 cases per 100,000 population) compared to the NWHU (4,070 cases per 100,000 population) (Cancer Care Ontario 2021). Prevalence estimates also show females face a higher burden of cancer in both the NWHU (4,503 cases per 100,000 population) and Ontario (4,938 cases per 100,000 population) compared to males (3,647 cases per 100,000 population in the NWHU and 4,348 cases per 100,000 population in Ontario).

Cancer Physician Visits

As a chronic, progressive disease, those with cancer require complex combinations of physician care that are dependent on the stage of the disease, cancer type, and treatment plan. Those with cancer may require care from a combination of physician types. The following data illustrates key details on physician visits among those with cancer.

Between 2001 and 2020, Ignace residents visited a physician for cancer (malignant neoplasms only) a total of just over 7,200 times with an average of 12 visits per patient. Note that these numbers include both diagnostic and therapeutic radiology which does not necessarily indicate a direct patient encounter, but utilization of these services for review of imaging.

As displayed in **Table 4.4-6**, lung, female breast, and colon cancers were the top three cancer types for number of visits. However, myeloid leukemia and esophageal cancer had the greatest number of visits per patient, averaging 36.7 and 35.9 visits respectively. Other cancers (those not displayed as the leading types) still accounted for 22% of visits.

General/family practice physicians had the most visits by cancer patients of all physician specialties, accounting for 30% of visits, and the highest number of visits per patient at 13.8. Medical oncology and therapeutic radiology¹³⁸ followed as the most frequent specialties (14%) (see **Appendix 4B Supplementary Data**).

¹³⁸ Therapeutic radiology may represent review of images only, and not a direct encounter with the patient.

Table 1.6-6: Physician Visits for Cancer by Leading Types, Ignace Residents, 2001-2020^{1,2,3,4}

	Number Unique Patients	Number of Visits	Percent of Visits	Average visits by patient
Malignant Neoplasms – bronchus, lung	52	1,483	21%	28.5
Malignant Neoplasms – female breast	39	1,035	14%	26.5
Malignant Neoplasms – large intestine (colon), excluding rectum	40	831	12%	20.8
Malignant Neoplasms – rectosigmoid, rectum or anal canal	20	548	8%	27.4
Other skin malignancies	103	390	5%	3.8
Malignant Neoplasms – bladder	21	319	4%	15.2
Other malignant neoplasms	53	261	4%	4.9
Malignant Neoplasms – esophagus	7	251	3%	35.9
Myeloid Leukemia (including granulocytic and myelogenous leukemia)	6	220	3%	36.7
Other Malignant Neoplasms – of lymphoid and histiocytic tissue	12	165	2%	13.8
Malignant Neoplasms – lymphosarcoma, reticulum cell sarcoma	9	150	2%	16.7
Other cancers	237	1,561	22%	6.6
Total	599	7,214	100%	12.0

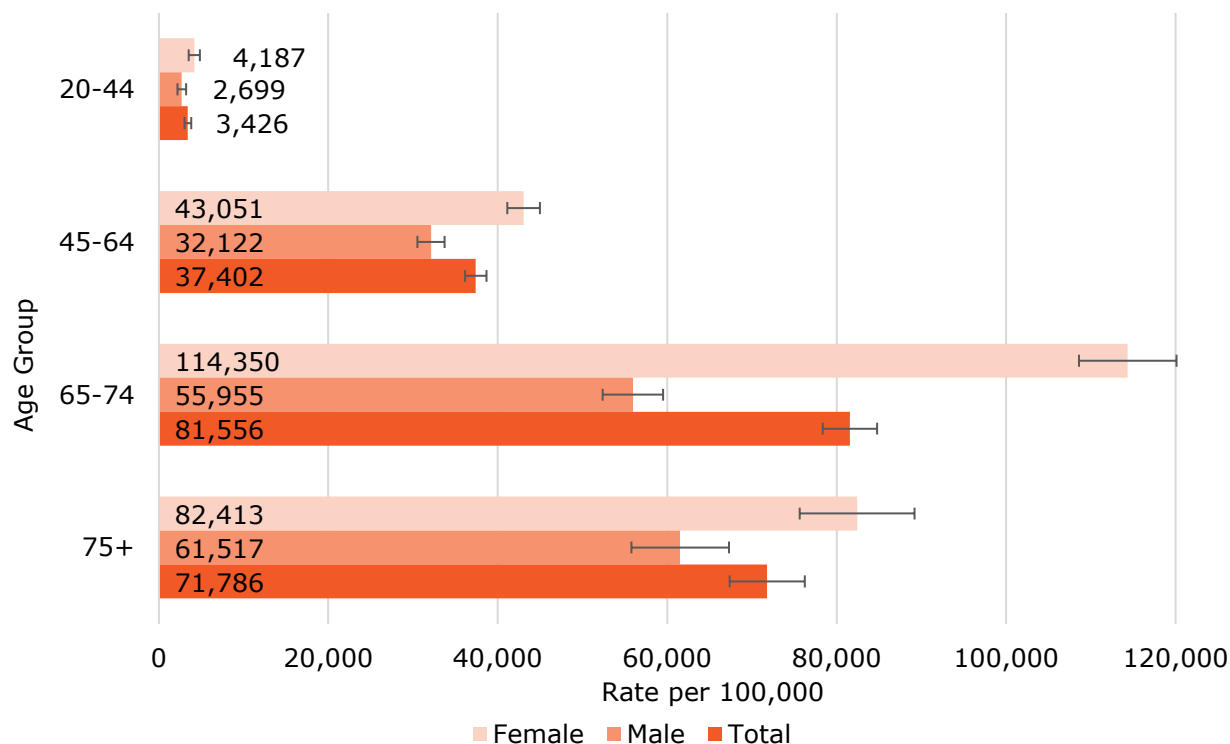
Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

1. Includes ages 1 and older.
2. Includes OHIP Dx Codes 140-208 only (malignant neoplasms).
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Ignace residents aged 45 to 64 accounted for the highest percentage of cancer patients (48%) followed by 65-74 (34%) and then 75+ (14%) (See **Appendix 4B Supplemental Data**). In all age groups, females had a significantly higher visit rate than males, and this difference was particularly pronounced in the 65-74 age range (see **Figure 4.4-38**).

Figure 1.6-38: Physician Visits for Cancer by Age Group and Sex, Ignace Residents, 2001-2020^{1,2,3}



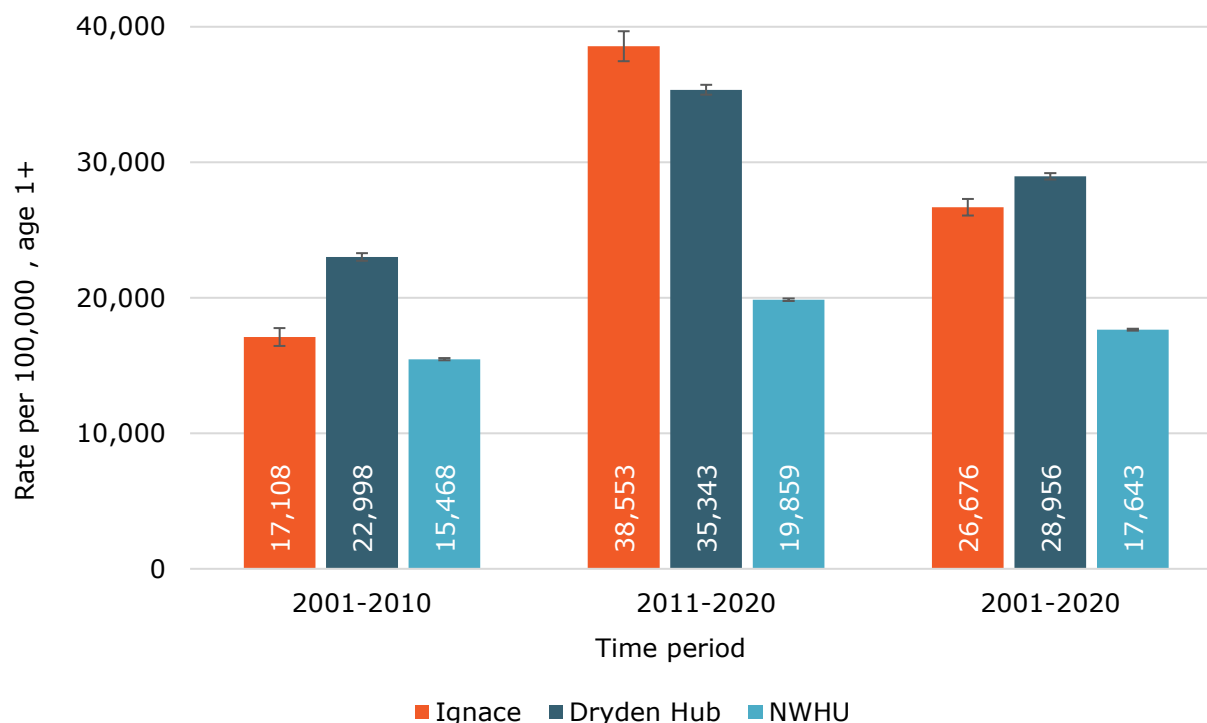
Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

1. Includes OHIP Dx Codes 140-208 only (malignant neoplasms).
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

As shown in **Figure 4.4-39**, Ignace residents had significantly higher visit rates compared to NWHU from 2001 to 2020. Comparison with Dryden Hub varied over time. During the first decade (i.e., 2001-2010), Ignace rates were lower, but were higher during the second decade both overall and among females specifically (see **Appendix 4B Supplemental Data**).

Figure 1.6-39: Physician Visits for Cancer by Area, 2001-2010, 2011-2020 and 2001-2020^{1,2,3,4}



Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

1. Includes ages 1 and older.
2. Includes OHIP Dx Codes 140-208 only (malignant neoplasms).
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Cancer Hospitalization

Hospitalizations for cancer show the incidence of cancer patients requiring more intensive care for their disease, due to, for example, the advanced stage of their condition or debilitating side effects from their treatment. Analysis for cancer hospitalization includes malignant neoplasms only (ICD-10 codes C00-C97). In Ontario the most common types of cancer include lung, breast, colorectal, and prostate cancer (Public Health Ontario 2019f).

There were 216 hospitalizations for cancer, comprised of 119 unique patients, among Ignace residents from 2002 to 2021. The average number of hospitalizations per patient was just under 2 (**Table 4.4-7**). While there were more male cancer patients hospitalized (70), than female (49) from Ignace, this was not reflected in the Dryden Hub or NWHU figures and the difference is minimal given the low counts. However, notably, in all three areas, the percentage of time spent in an alternate level of care was much higher for female patients (23.3% compared to 6.9% in males from Ignace, and percentages about double for female patients than male patients in the

comparison areas). The average lengths of stay were the same in all three areas, all between 11 and 13 days. Average inpatients ages were also consistent at mid-60s.

From 2002 to 2021, most Ignace residents were hospitalized for cancer at the Thunder Bay RHSC (137 hospitalizations for 86 individual patients), followed by the Dryden RHC (59 hospitalizations for 47 individual patients), the Toronto University Health Network (6 hospitalizations for 6 individual patients), Sioux Lookout Meno Ya Win Health Centre (7 hospitalizations for 7 individual patients), and other hospitals (7 hospitalizations for 5 individual patients) (see **Appendix 4B Supplemental Data**). Please see **Section 4.3.5.4** for more information on where Local Study Area residents must travel for certain health care services)

Lung, prostate, and colon cancers accounted for the highest percentage of cancer related hospitalizations as shown in **Figure 4.4-40**; however, 1 in 2 visits was for other cancers not individually accounted for in leading types.

There were no significantly different rates of cancer hospitalization between Ignace males and females, but males aged 75+ had somewhat higher rates than females of the same age group (see **Appendix 4B Supplemental Data**).

Figure 4.4-41 shows Ignace residents had significantly higher rates of hospitalization compared to NWHU but not significantly different from the Dryden Hub. This pattern was relatively consistent across sexes and time periods, but females from Ignace had similar rates to the NWHU during 2001-2010 (see **Appendix 4B Supplemental Data**).

Table 1.6-7: Cancer Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3,4}

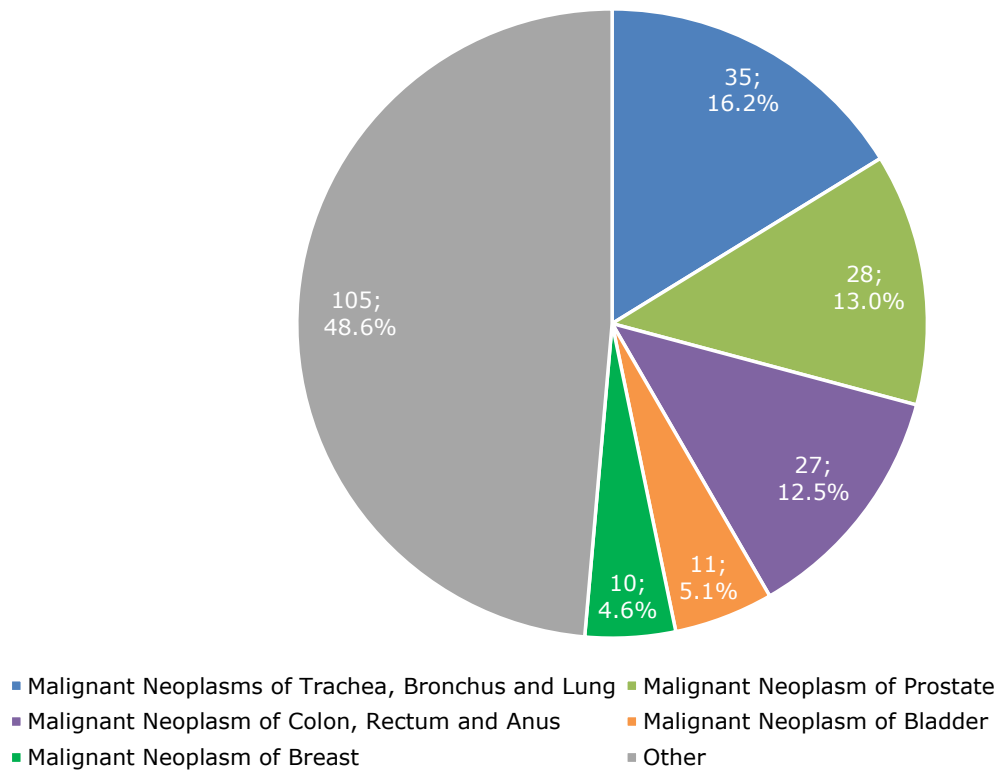
Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	49	88	1.8	1,174	13.3	23.3%	64.9
	Male	70	128	1.8	1,431	11.2	6.9%	66.1
	Total	119	216	1.8	2,605	12.1	14.3%	65.6
Dryden Hub	Female	471	761	2	9,369	12.3	18.8%	65.7
	Male	492	840	2	10,267	12.2	8.4%	68.0
	Total	962	1,601	2	19,636	12.3	13.4%	66.9
NWHU	Female	2,044	3,106	2	36,304	11.7	20.0%	65.1
	Male	2,024	3,161	2	36,149	11.4	11.5%	66.9
	Total	4,076	6,267	2	72,453	11.6	15.8%	66.0

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Includes Malignant Neoplasms only (ICD-10 C00-C97).
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Figure 1.6-40: Cancer Hospitalization by Leading Cause, Ignace Residents, 2002-2021^{1,2,3,4}

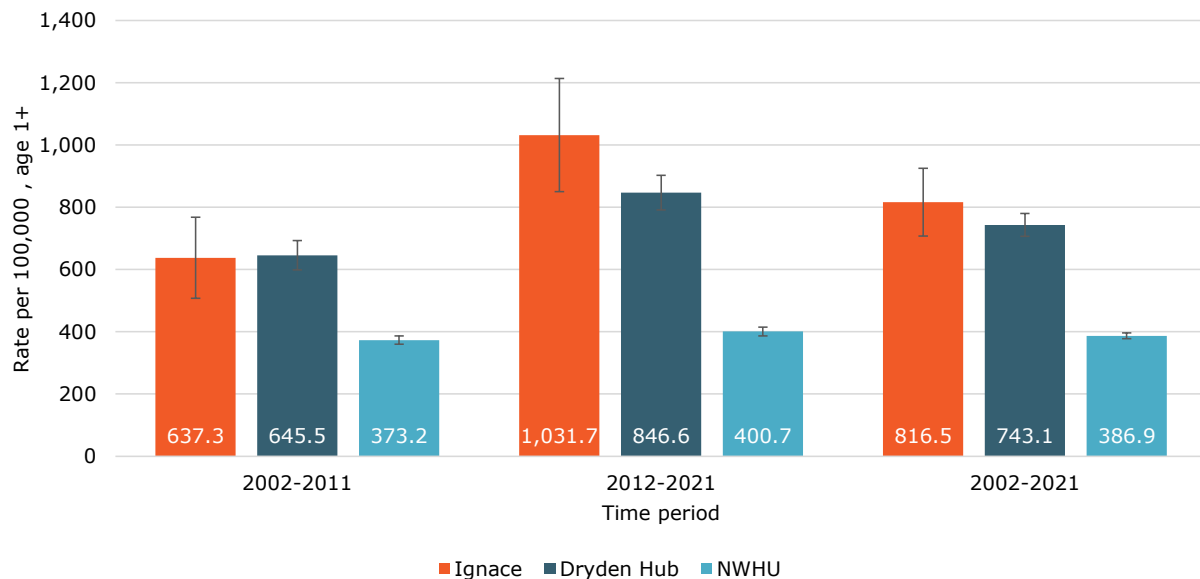


Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Includes Malignant Neoplasms only (ICD-10 C00-C97).
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Figure 1.6-41: Cancer Hospitalization Rate by Area, 2002-2021^{1,2,3,4}



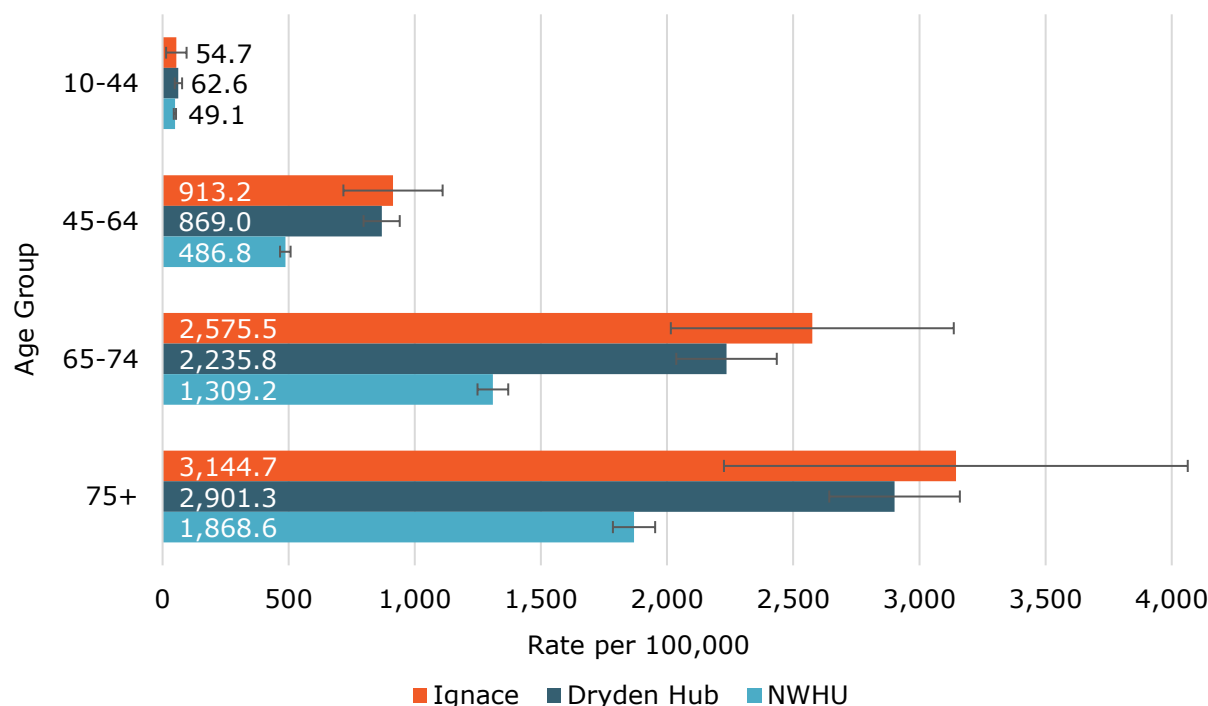
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Includes Malignant Neoplasms only (ICD-10 C00-C97).
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Across all age groups of 45 years and older, Ignace residents had greater rates of cancer hospitalization than NWHU and similar rates to Dryden Hub, suggesting that the differences are not due to different age distributions in the populations. Rates among those aged 10-44 are too small to detect differences (**Figure 4.4-42**).

Figure 1.6-42: Cancer Hospitalization Rate by Area and Age Group, 2002-2021^{1,2,3,4}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data insufficient to disaggregate under age 10.
2. Includes Malignant Neoplasms only (ICD-10 C00-C97).
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

4.4.4.3.2 Cardiovascular Disease

Cardiovascular diseases are the second leading cause of death among Canadians and caused by a combination of factors including poor diet, excessive alcohol consumption, and smoking (Government of Canada 2017). The umbrella term of cardiovascular disease encompasses ischemic heart disease, stroke,¹³⁹ and congenital heart disease, among others (Public Health Ontario 2023I). Death due to cardiovascular diseases account for about one in three residents of Ignace and have a substantial impact on premature mortality (see **Section 4.4.7**).

Ontario data illustrate trends in risk by age group and sex that is not available for Ignace, which only has data for hospitalizations. Hypertension incidence (new cases) is higher among men in all

¹³⁹ A stroke can be classified as a cardiovascular disease or a cerebrovascular disease. This is due to strokes that are usually caused by blood clots within the cardiovascular system which stop the blood flow of oxygen to the brain (John Hopkins University n.d.).

age groups in Ontario except for 80 and older. The prevalence of hypertension is also higher for men of all ages, except for 80+, where the prevalence is slightly higher among women. Those with ischemic heart disease are also disproportionately male. Incident ischemic heart disease is higher among men of all ages and the prevalence of ischemic heart disease is higher in men than in women at all age groups.

Cardiovascular disease includes a wide range of diseases involving the heart and blood vessels. Ischemic heart disease (e.g., narrowing of the arteries, angina), acute myocardial infarction (heart attack), congestive heart failure and stroke are examples of cardiovascular disease. Many of the modifiable risk factors for cardiovascular disease are common to type 2 diabetes and many cancers; they include obesity, physical inactivity, and stress.

As **Table 4.4-8** shows, between 2002 and 2021, 226 Ignace residents accounted for 407 hospitalizations for cardiovascular disease. Females accounted for just under 40% of patients and hospitalizations but were more likely to be in hospital longer, with an average length of stay at 9.2 days compared to 8.1 days for males. About 1 in 5 days spent in hospital for Ignace females were for Alternate Levels of Care which is higher than for males and for comparison areas.

Table 1.6-8: Cardiovascular Disease Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	90 (39.8%)	156 (38.3%)	1.7	1,436	9.2	20.8%	68.8
	Male	136 (60.2%)	251 (61.7%)	1.8	2,030	8.1	15.8%	66.1
	Total	226 (100%)	407 (100%)	1.8	3,466	8.5	17.9%	67.1
Dryden Hub	Female	950 (43.3%)	1,760 (41.8%)	1.9	15,179	8.6	14.6%	73.2
	Male	1,245 (56.7%)	2,449 (57.2%)	2.0	18,479	7.5	12.5%	67.4
	Total	2,193 (100%)	4,209 (100%)	1.9	33,658	8.0	13.5%	69.8
NWHU	Female	4,902 (44.2%)	9,481 (44.1%)	1.9	74,718	7.8	18.3%	70.7
	Male	6,183 (55.8%)	12,029 (55.9%)	1.9	81,056	6.7	13.2%	66.6
	Total	11,085 (100%)	21,538 (100%)	1.9	155,774	7.2	15.6%	68.4

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

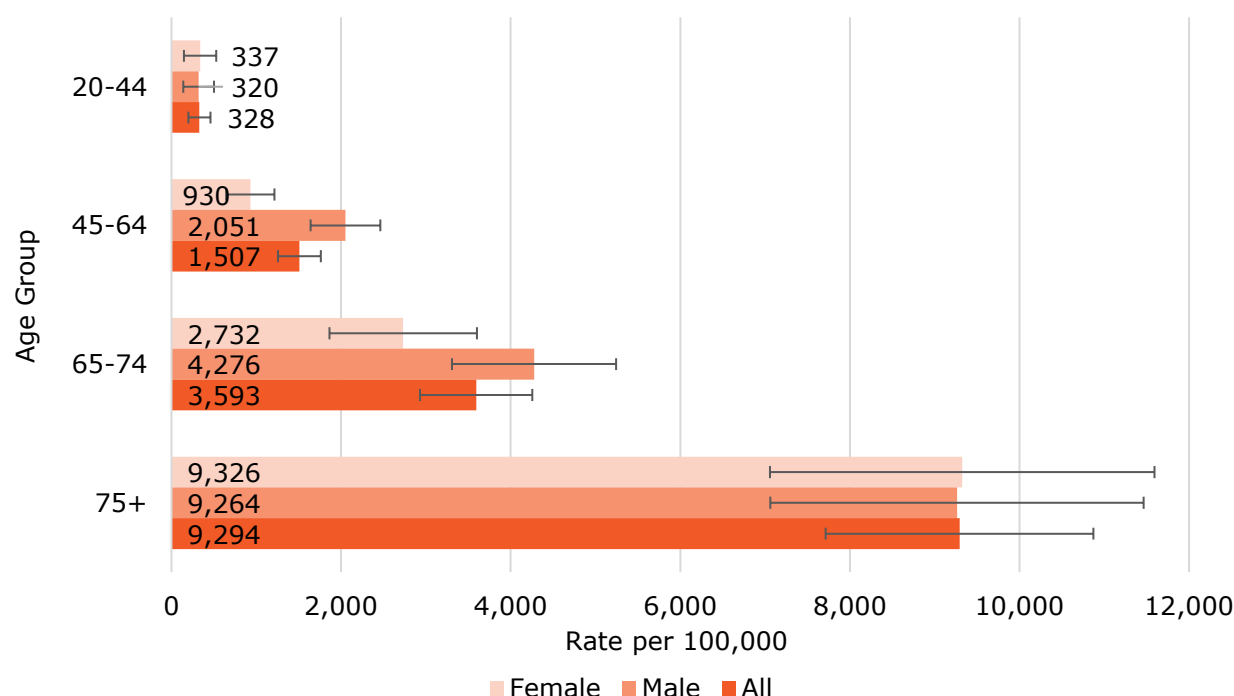
Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Ignace-specific rates were about equal for males and females aged 75+ and 20-44 age groups, but in younger age groups, males had higher rates (although not significantly higher), as shown in **Figure 4.4-43**.

Cardiovascular disease hospitalization rates remained relatively constant in Ignace, Dryden Hub, and NWHU between 2002 and 2021. Sex-specific rates of cardiovascular disease were somewhat lower in Ignace residents than residents of the Dryden Hub, although they were close to the sex-specific rates among residents of the NWHU. Similar patterns are seen in the age specific rates where Ignace rates were slightly lower than Dryden Hub and similar to NWHU (see **Appendix 4B Supplemental Data**).

Figure 1.6-43: Cardiovascular Disease Hospitalization Rates by Age Group and Sex, Ignace Residents, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data insufficient to disaggregate under age 20.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Ischemic Heart Disease

Ischemic heart disease is the most common type of cardiovascular disease in Canada and refers to the buildup of plaque in the heart's arteries. The mortality rate is 2.9 times higher among adults aged 20 and older with diagnosed ischemic heart disease compared to those without

(Government of Canada 2022c). Ischemic heart disease has many modifiable risk factors common to other chronic diseases, including poor diet, physical inactivity, smoking, and excessive alcohol consumption (Public Health Ontario 2023m).

From 2002 to 2021, there was no discernible trend in ischemic heart disease hospitalization among residents of Ignace, the Dryden Hub, or the NWHU. Ignace residents had 161 hospitalizations (106 unique patients). As seen in **Table 4.4-9**, Ignace females comprised only around 1 in 3 of inpatients and hospitalizations for ischemic heart disease but had longer average lengths of stay at 10.2 (compared to 6.3 for Ignace males). Furthermore, female inpatients in Ignace spent 40.5% of inpatient days in alternate levels of care, much higher than the proportion for males or overall, in Dryden Hub and the NWHU.

Table 1.6-9: Ischemic Heart Disease Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	34 (32.1%)	55 (34.2%)	1.6	561	10.2	40.5%	62.7
	Male	72 (67.9%)	106 (65.8%)	1.5	663	6.3	1.5%	63.5
	Total	106	161	1.5	1,224	7.6	19.4%	63.2
Dryden Hub	Female	409 (36.9%)	613 (35%)	1.5	3,730	6.1	7.2%	71.7
	Male	700 (63.2%)	1,136 (65%)	1.6	6,178	5.4	3.3%	65.9
	Total	1,107	1,749	1.6	9,908	5.7	4.8%	67.9
NWHU	Female	1,962 (38.5%)	3,182 (38.2%)	1.6	18,144	5.7	12.3%	70.2
	Male	3,131 (61.4%)	5,156 (61.8%)	1.6	25,428	4.9	3.9%	65.4
	Total	5,098	8,338	1.6	43,572	5.2	7.4%	67.3

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

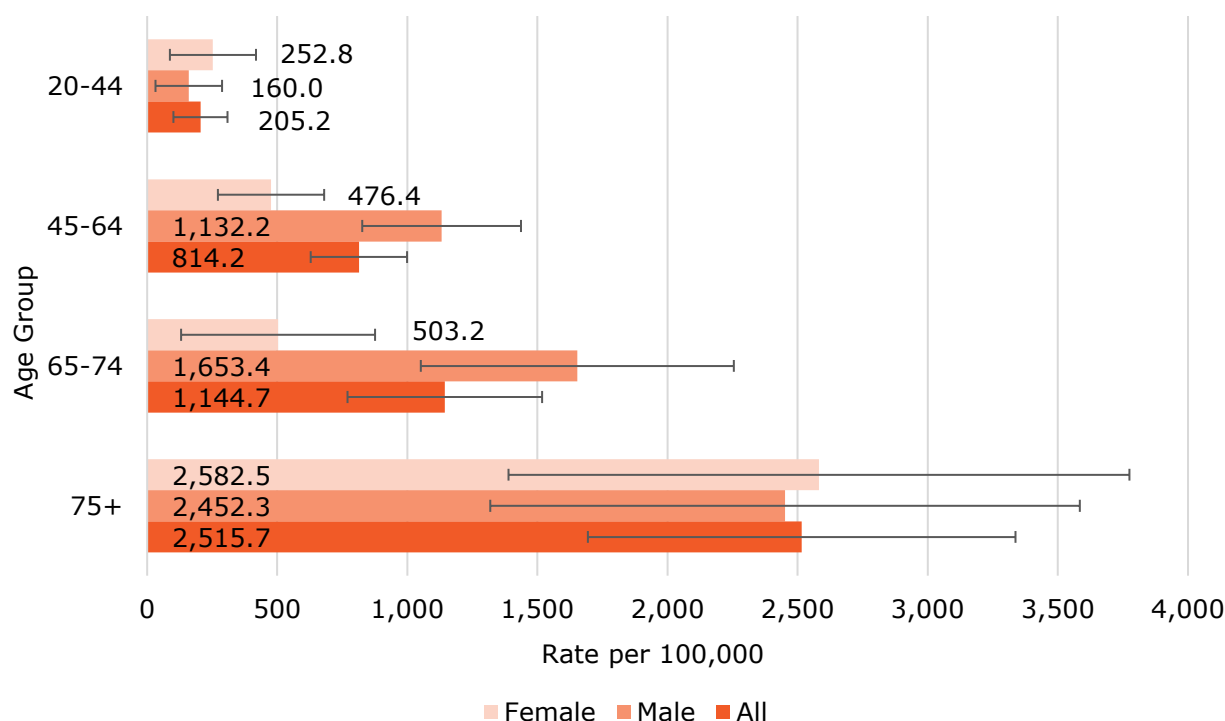
Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Among Ignace residents only, the rate of hospitalization for ischemic heart disease in males is 2-3 times the rate in females for ages 45-74, but the rates are similar among those 75+, as shown in **Figure 4.4-44**.

Overall rates in Ignace are similar to NWHU rates and somewhat lower than Dryden Hub rates. During the later period of the study, rates were more markedly low among Ignace males compared to the other populations. Rates displayed by age group suggest high rates of ischemic heart disease hospitalization in the 20-44 years in Ignace relative to the comparison areas. However, for those 65+ years, Ignace residents had a significantly lower rate than Dryden Hub and a somewhat lower rate than NWHU. Rates amongst females and males were not dissimilar to the comparison study areas (**see Appendix 4B Supplemental Data**).

Figure 1.6-44: Ischemic Heart Disease Hospitalization Rates by Age Group and Sex, Ignace Residents, 2002-2021^{1,2,3,4}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Crude rates per 100,000 residents.
2. Data insufficient to disaggregate under age 20.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

4.4.4.3.3 Cerebrovascular Disease

Cerebrovascular disease is a group of conditions affecting blood vessels and blood supply to the brain. The most notable presentation of cerebrovascular disease is stroke,¹⁴⁰ which is the third leading cause of death in Canada (Statistics Canada 2022c). The occurrence of stroke is higher among men than women throughout age groups; however, the longer life expectancy for women means that more women than men have a stroke each year in Canada (Government of Canada 2019d). Strokes can also lead to long-term disability.

Table 4.4-10 summarizes the cerebrovascular disease hospitalization data by sex and area for Ignace, Dryden Hub, and NWHU. There were 46 Ignace residents hospitalized for cerebrovascular disease from 2002 to 2021 and a total of 60 hospitalizations. Ignace residents had a higher number of male inpatients and hospitalizations than females, as did Dryden Hub and NWHU.

It is noted that among Ignace males, almost one half of inpatient days were spent in alternate levels of care, higher than among females, and higher than rates observed in the comparison areas. The overall hospitalization rates in Ignace residents were not significantly different than the comparison areas, as shown in **Table 4.4-10**.

¹⁴⁰ A stroke can be classified as a cardiovascular disease or a cerebrovascular disease. This is due to strokes that are usually caused by blood clots within the cardiovascular system which stop the blood flow of oxygen to the brain (John Hopkins University n.d.).

Table 1.6-10: Cerebrovascular Disease Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	18 (39.1%)	20 (33.3%)	1.1	181	9.1	22.1%	69.3
	Male	28 (60.9%)	40 (66.7%)	1.4	644	16.1	47.5%	68.3
	Total	46	60	1.3	825	13.8	41.9%	68.6
Dryden Hub	Female	191 (47.2%)	247 (45.3%)	1.3	3,808	15.4	34.4%	75.3
	Male	214 (52.8%)	298 (54.7%)	1.4	3,541	11.9	36.0%	70.4
	Total	405	545	1.3	7,349	13.5	35.1%	72.6
NWHU	Female	1,006 (46.2%)	1,295 (45.3%)	1.3	16,474	12.7	35.8%	72.1
	Male	1,167 (53.6%)	1,565 (54.7%)	1.3	15,855	10.1	30.4%	69.4
	Total	2,176	2,860	1.3	32,329	11.3	33.1%	70.6

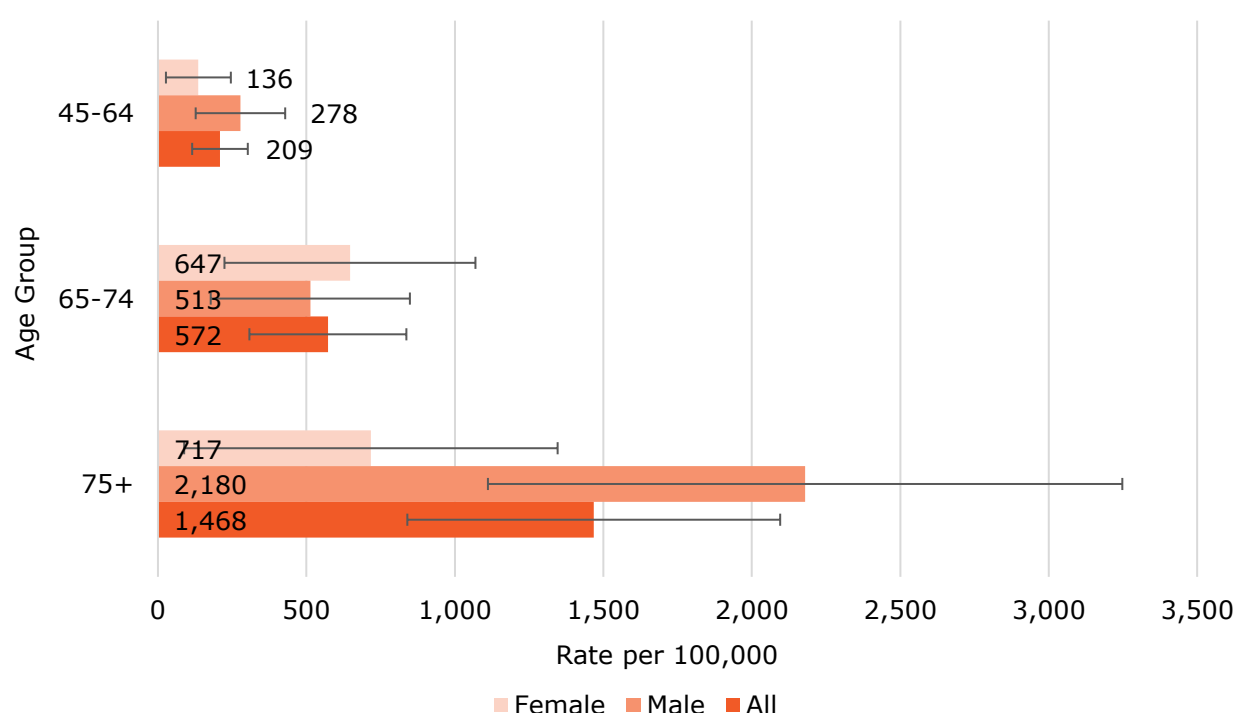
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Figure 4.4-45 shows that the hospitalization rate for Ignace male residents age 75+ was over double the rate in females. However, with low case numbers, the significance of this difference cannot be determined. In all other age groups, there were no notable differences by sex. The rate of hospitalization for males showed a sharp increase with ageing, while this was not observed in females (see **Appendix 4B Supplemental Data**). **Figure 4.4-46** suggests that rates among females from Ignace are lower than the comparison populations, while rates in males from Ignace tend to be higher than comparison areas.

Figure 1.6-45: Cerebrovascular Disease Hospitalization Rates by Age Group and Sex, Ignace Residents, 2002-2021^{1,2,3,4}

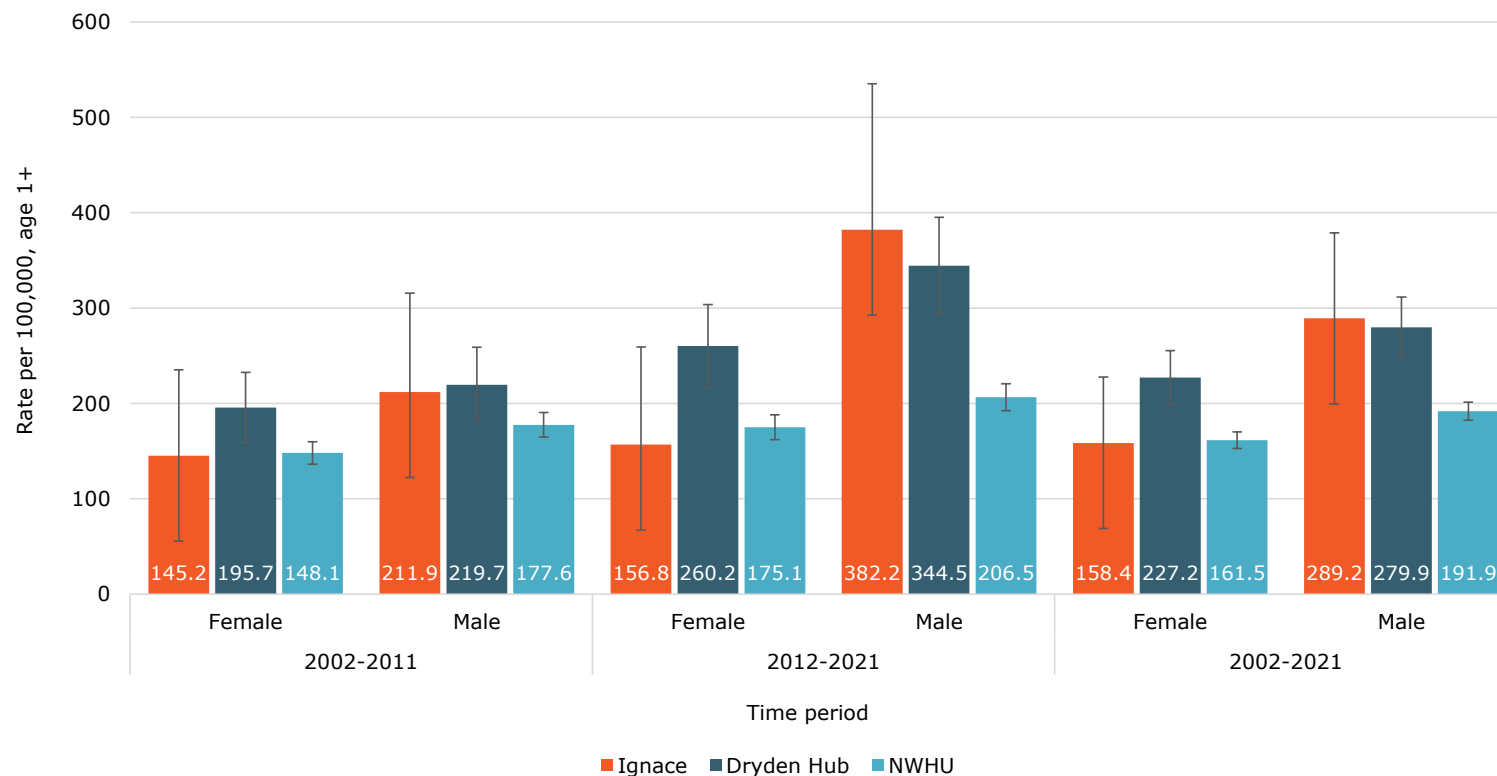


Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data insufficient to disaggregate under age 45.
2. Crude rates per 100,000 residents.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Figure 1.6-46: Cerebrovascular Disease Hospitalization Rate by Area and Sex, 2002-2011, 2012-2021, and 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes age 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.4.3.4 Diabetes

More than 200,000 Canadians are diagnosed with diabetes every year. While it does not often lead directly to death, diabetes has a significant health and economic burden on Canada in efforts to manage the disease and its symptoms. In Canada, the age-adjusted prevalence of diabetes is increasing at an average rate of 3.3% per year. Prevalence of diabetes has been found to be higher among racialized and marginalized communities (Public Health Agency of Canada 2022d). Those with diabetes require ongoing primary care and in some cases emergency care. In Ontario, the crude incidence rate for diabetes increases with age until ages 65-74 and beyond that, starts to decrease (Public Health Ontario 2023m). Among all people over the age of 20, incidence among males is significantly higher than in females. In 2020, the highest crude incidence rate is observed for people aged 65-74, at 1,568.7 per 100,000 population (Public Health Ontario 2023m).

Table 4.4-11 summarizes data on diabetes hospitalizations. There were 9 female and 8 male inpatients from Ignace and 37 total hospitalizations, during the period under study. Average length of stay for Ignace residents was only 4 days, compared to around 10 days for the comparison areas. There was no use of alternate level of care for Ignace residents compared to moderate use in the comparison areas. There were 2.8 hospitalizations on average for female patients from Ignace and only 1.5 on average for male patients. This pattern is not seen in Dryden Hub or NWHU data. The findings in Ignace are reflective of a diabetes program, with the support of a certified diabetes educator, at MBCHCH (NWO Community and Baseline Studies Key Person Interview Program 2022-2023).

Table 1.6-11: Diabetes Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	9 (52.9%)	25 (67.6%)	2.8	101	4.0	0.0%	55.2
	Male	8 (47.1%)	12 (32.4%)	1.5	48	4.0	0.0%	54.6
	Total	17	37	2.2	149	4.0	0.0%	55.0
Dryden Hub	Female	103 (41.4%)	191 (42.4%)	1.9	2,184	11.4	5.1%	56.3
	Male	147 (59%)	260 (57.6%)	1.8	2,441	9.4	2.5%	53.0
	Total	249	451	1.8	4,625	10.3	3.7%	54.4
NWHU	Female	890 (44.9%)	1,835 (43.5%)	2.1	19,319	10.5	12.3%	53.9
	Male	1,086 (54.8%)	2,379 (56.5%)	2.2	27,096	11.4	16.3%	53.9
	Total	1,980	4,214	2.1	46,415	11.0	14.6%	53.9

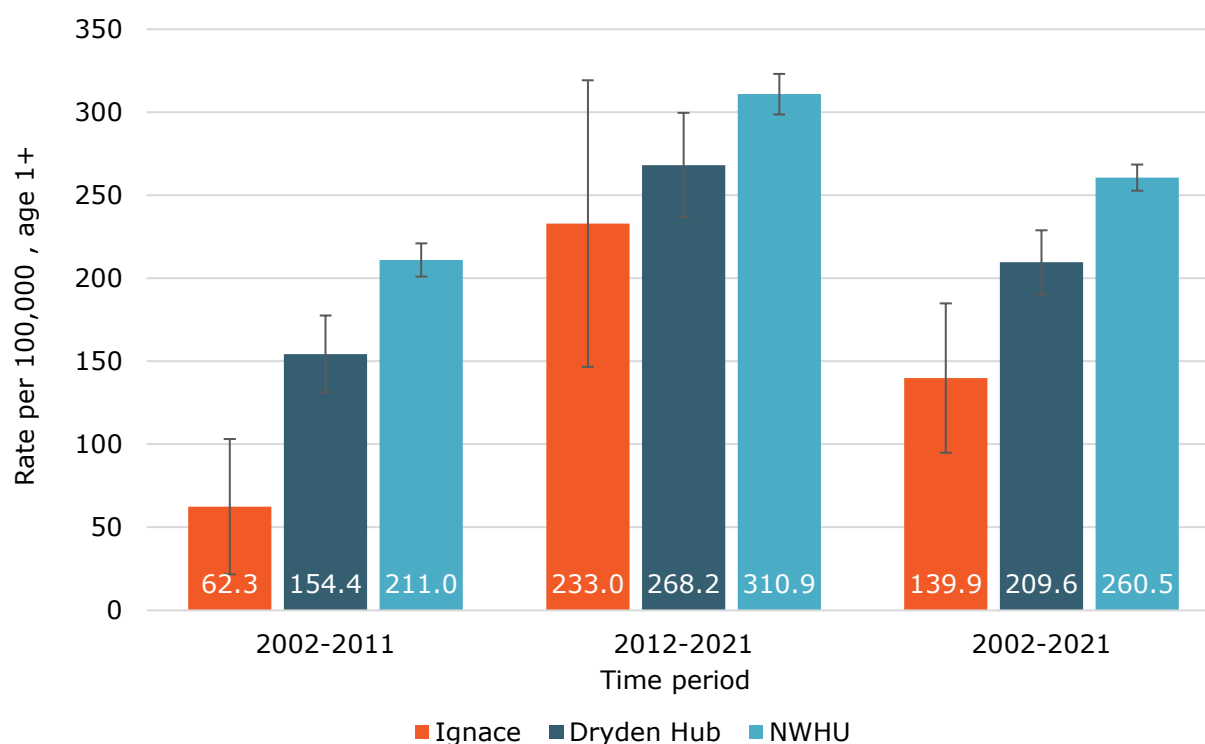
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

As displayed in **Figure 4.4-47**, Ignace residents generally had lower diabetes hospitalization rates (139.9 per 100,000) than the Dryden Hub (209.6 per 100,000) and the NWHU (260.5 per 100,000), although this was variable between 2002 to 2021 due to low case numbers. When comparing only male inpatients, Ignace residents showed lower rates (86.8 per 100,000) than the comparison areas, but among females (198 per 100,000), the rates were more similar and even higher during certain time periods under study (see **Appendix 4B Supplemental Data**).

Figure 1.6-47: Diabetes Hospitalization Rate by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.4.3.5 Respiratory Disease

Respiratory diseases include both short term acute illnesses such as influenza and colds as well as longer term chronic lung disease (COPD and asthma). Over 3 million Canadians live with a serious respiratory disease, and that number is only increasing with an aging population. Smoking is the largest risk factor and easily the most preventable (Government of Canada 2012). Pollution and second-hand smoke are also major risk factors, as is air quality in the workplace and at home (Government of Canada 2012). Canadian Chronic Disease Surveillance System provides data on the incidence and prevalence of asthma and chronic obstructive pulmonary disease (COPD).

Asthma is a chronic health disorder affecting a substantial number of kids and adults worldwide. Asthma is one of several chronic respiratory diseases where new cases continue to increase in Canada. Common risk factors include a family history of asthma, exposure to high antigen levels, and exposure to smoke or chemicals in the workplace. Asthma requires ongoing health care interventions in order to manage the symptoms (World Health Organization 2023c).

COPD is another common respiratory disease. Smoking and exposure to second-hand smoke is one of the most important risk factors for COPD, as is air quality (Government of Canada 2019b). COPD causes shortness of breath and coughing. During the period from 2000-2012, the age-standardized prevalence of COPD increased in Canada (Public Health Agency of Canada 2018a).

As shown in **Table 4.4-12**, there were 214 hospitalizations of Ignace residents for respiratory disease between 2002 and 2021, comprised of 149 unique patients. There was negligible alternate level of care use for Ignace patients, in contrast with nearly 1 in 10 days among Dryden Hub and NWHU patients. The average length of stay was just over 5 days for Ignace residents and 6-7 days for Dryden Hub and NWHU patients.

Table 1.6-12: All Respiratory Disease Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	64 (43%)	95 (44.4%)	1.5	503	5.3	0.0%	55.9
	Male	85 (57%)	119 (55.6%)	1.4	615	5.2	1.1%	57.5
	Total	149	214	1.4	1,118	5.2	0.6%	56.8
Dryden Hub	Female	779 (48.9%)	1,275 (49.7%)	1.6	8,914	7.0	9.5%	57.4
	Male	816 (51.2%)	1,288 (50.3%)	1.6	8,564	6.6	6.1%	57.5
	Total	1,594	2,563	1.6	17,478	6.8	7.8%	57.5
NWHU	Female	4,572 (50%)	7,828 (50.5%)	1.7	49,330	6.3	11.8%	53.6
	Male	4,581 (50%)	7,664 (49.5%)	1.7	46,185	6.0	9.9%	51.9
	Total	9,153	15,492	1.7	95,515	6.2	10.9%	52.8

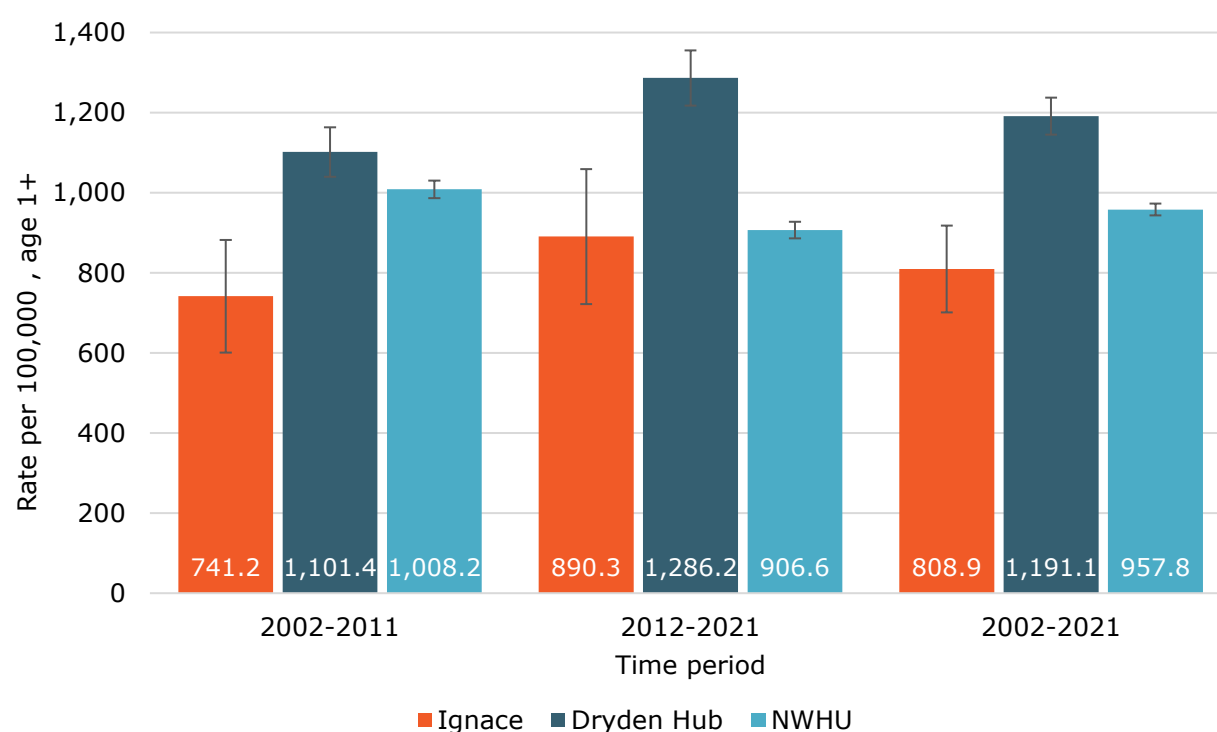
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Rates from 2002-2021 were similar among females (752.5 per 100,000) and males (860.4 per 100,000) (see **Appendix 4B Supplemental Data**) and were somewhat lower than rates in the comparison areas (see **Figure 4.4-48** for total rates), more notably lower than Dryden Hub (1,172.8 per 100,000 females and 1,209.7 per 100,000 males). None of the areas showed substantial changes in rates over the time studied (see **Appendix 4B Supplemental Data**). In 2021, the rate of hospitalization for respiratory disease was significantly higher at 508.5 persons per 100,000 population in the NWHU compared to 394.7 in Ontario (Public Health Ontario 2023m).

Figure 1.6-48: All Residents Respiratory Disease Hospitalization Rate by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Lower Respiratory Disease

Chronic lower respiratory diseases include chronic obstructive pulmonary disease (COPD) and asthma. These are differentiated from all respiratory disease due to their chronic nature, in contrast with short-term respiratory conditions (including influenza and colds). The following section displays data on all chronic lower respiratory disease; COPD and asthma are then further analyzed separately.

Table 4.4-13 summarizes key information on chronic lower respiratory disease hospitalizations among Ignace residents and comparison populations. There were 32 male (59.3%) and 22 female (40.7%) Ignace residents hospitalized from 2002 to 2021 and a total of 94 hospitalizations. There was negligible use of alternate level of care, whereas there was some use among the comparison populations (10.7% of total days for hospitalized residents of the Dryden Hub and 14.4% of days for residents of the NWHU). Average length of stay was 5.7 days for Ignace patients which was slightly lower than comparison areas. Average inpatient ages were relatively consistent across the three areas at mid-60s.

Table 1.6-13: Chronic Lower Respiratory Disease Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	22 (40.7%)	42 (44.7%)	1.9	266	6.3	0.0%	63.0
	Male	32 (59.3%)	52 (55.3%)	1.6	267	5.1	2.6%	69.3
	Total	54	94	1.7	533	5.7	1.3%	66.5
Dryden Hub	Female	247 (47.3%)	520 (49.7%)	2.1	4,704	9.0	17.5%	69.2
	Male	276 (52.9%)	527 (50.3%)	1.9	3,866	7.3	2.4%	68.0
	Total	522	1,047	2.0	8,570	8.2	10.7%	68.6
NWHU	Female	1,287 (51.9%)	2,764 (52.3%)	2.1	19,890	7.2	15.0%	66.3
	Male	1,196 (48.2%)	2,522 (47.7%)	2.1	17,050	6.8	13.6%	65.0
	Total	2,481	5,286	2.1	36,940	7.0	14.4%	65.7

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

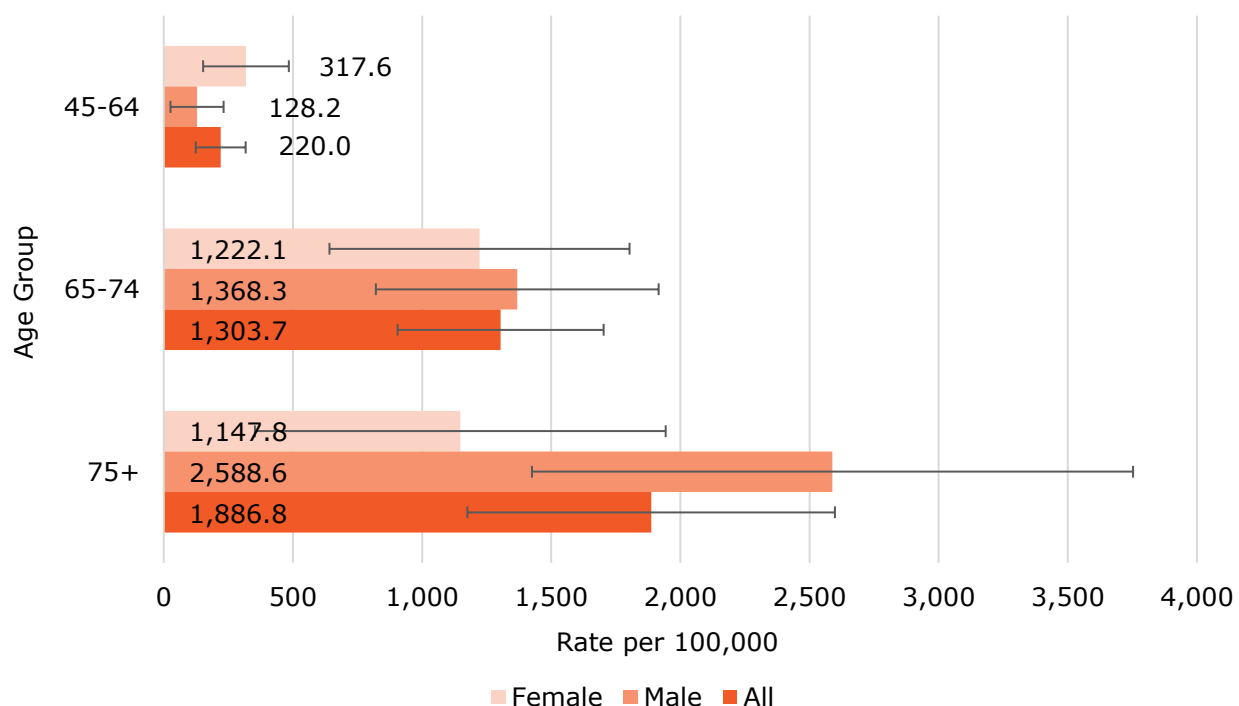
Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Rates among Ignace residents were similar to rates among the NWHU population, but somewhat lower than the Dryden Hub population. As expected, rates increase with age in all three populations, and there were no significant age-specific differences in rates between the three areas. When looking solely at Ignace residents (see **Figure 4.4-49**), males aged 75 and over had over twice the rate of hospitalization as females of the same age category, but confidence intervals have a large overlap. Rates amongst Ignace females and males were not dissimilar to the comparison study areas (see **Appendix 4B**).

In 2021, the rate of hospitalization for lower respiratory disease for the 45-64 age group was significantly higher at 99.5 persons per 100,000 population in Ontario compared to 60.7 in the NWHU. The rate of hospitalization for lower respiratory disease was slightly higher in the NWHU compared to Ontario for the 65-74 and 75+ age groups but the difference was not significant (Public Health Ontario 2023p).

Figure 1.61.6-49: Chronic Lower Respiratory Disease Hospitalization Rate by Age Group and Sex, Ignace Residents, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data insufficient to disaggregate under age 45.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Chronic Obstructive Pulmonary Disease

COPD is a progressive respiratory disease characterized by lung damage and airway blockage causing breathlessness, coughing, mucus, and chest congestion. It is the fourth leading cause of death in Canada and often causes secondary effects such as weight loss and malnutrition (Health Quality Ontario 2012).

As shown in **Table 4.4-14**, 20 female patients and 30 male patients from Ignace were hospitalized for COPD from 2002 to 2021. Average length of stay for Ignace residents (5.9 days) was somewhat lower than the comparison areas (8.6 days for the Dryden Hub and 7.8 days for the NWHU). Ignace residents spent negligible time in an alternate level of care for COPD while over 10% of time was spent in alternate level of care for residents of the Dryden Hub and NWHU. Average age was similar among all three populations.

Table 1.61.6-14: Chronic Obstructive Pulmonary Disease (COPD) Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	20 (40%)	38 (43.7%)	1.9	258	6.8	0.0%	67.1
	Male	30 (60%)	49 (56.3%)	1.6	256	5.2	2.7%	72.9
	Total	50	87	1.7	514	5.9	1.4%	70.4
Dryden Hub	Female	227 (48.5%)	477 (50.3%)	2.1	4,474	9.4	18.4%	72.3
	Male	241 (51.5%)	472 (49.7%)	2.0	3,727	7.9	2.5%	73.3
	Total	468	949	2.0	8,201	8.6	11.2%	72.8
NWHU	Female	1,028 (52.1%)	2,301 (52.2%)	2.2	18,410	8.0	16.2%	72.5
	Male	947 (47.9%)	2,108 (47.8%)	2.2	15,795	7.5	13.9%	73.3
	Total	1,975	4,409	2.2	34,205	7.8	15.1%	72.9

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

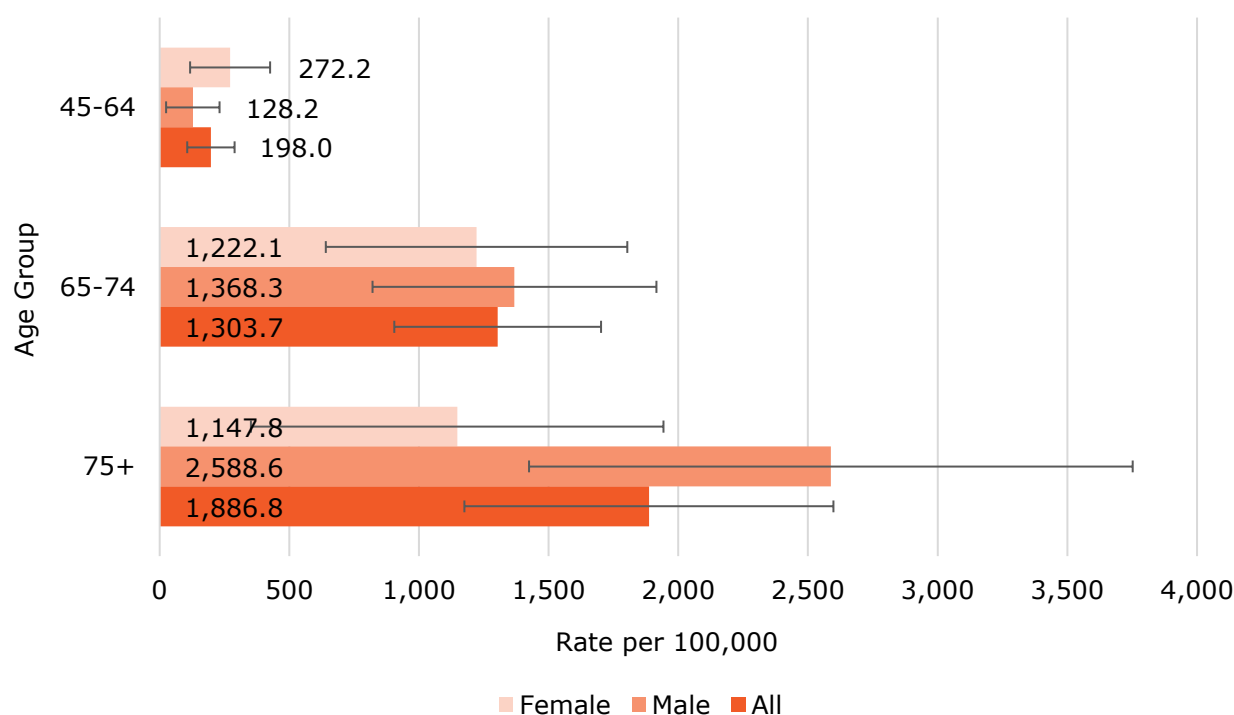
Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Figure 4.4-50 shows that the rate among Ignace males aged 75+ is higher than for females of the same age category, but this difference is not present in younger age groups. Ignace had lower rates than Dryden Hub and similar rates to NWHU. This pattern is slightly different when broken down by sex or age. For males, Ignace had higher rates than NWHU but still slightly lower rates than Dryden Hub, whereas for females the rate comparison between NWHU and Ignace is variable. Rates amongst Ignace females and males were not dissimilar to the comparison study areas (see **Appendix 4B Supplemental Data**).

In 2021, the rate of hospitalization for COPD for the 45-64 age group was significantly higher at 88.8 persons per 100,000 population in Ontario compared to 56.0 in the NWHU. The rate of hospitalization for COPD was slightly higher in the NWHU compared to Ontario for the 65-74 and 75+ age groups but the difference was not significant (Public Health Ontario 2023p).

Figure 1.6-50: Chronic Obstructive Pulmonary Disease (COPD) Hospitalization Rate by Age Group and Sex, Ignace Residents 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data insufficient to disaggregate under age 45.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Asthma

Asthma is a chronic health disorder affecting a substantial number of children and adults worldwide. Asthma is one of several chronic respiratory diseases where new cases continue to increase in Canada. The proportion of people with asthma in Canada has increased slightly from 9.4% in 2015/16 to 12.5% in 2019/20 but has remained around 8% in Ontario over the same timeframe (Statistics Canada 2022b; **Appendix 4B Supplemental Data**). Symptoms include coughing, shortness of breath, chest tightness and wheezing. Asthma symptoms and attacks (episodes of more severe shortness of breath) usually occur after exercise or exposure to allergens, viral respiratory infections, irritant fumes, or gases. Common risk factors include a family history of asthma, exposure to high antigen levels and exposure to smoke or chemicals in the workplace. Asthma requires ongoing health care interventions to manage the symptoms.

Table 4.4-15 summarizes key data for asthma hospitalizations. There were only 5 patients from Ignace hospitalized, and hence the sex breakdown is not presented. There were 7 total hospitalizations. Average length of stay for asthma was short (2.7 days among Ignace residents) which was similar to the comparison areas. There was no or negligible use of alternate level of care in any of the three areas under study, except among males from NWHU. The average inpatient age is much younger than for most other chronic diseases, particularly among Ignace residents where the average age was 18. The average ages for Dryden Hub and NWHU were mid-20s. In all three areas, the average age was higher for males than for females.

Table 1.6-15: Asthma Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Total	5	7	1.4	19	2.7	0.0%	18.0
Dryden Hub	Female	25 (41%)	43 (43.9%)	1.7	230	5.3	0.0%	34.4
	Male	37 (60.7%)	55 (56.1%)	1.5	139	2.5	0.0%	22.9
	Total	61	98	1.6	369	3.8	0.0%	27.9
NWHU	Female	312 (53.2%)	463 (52.8%)	1.5	1,480	3.2	0.5%	35.8
	Male	275 (46.8%)	414 (47.2%)	1.5	1,255	3.0	10.4%	23.1
	Total	587	877	1.5	2,735	3.1	5.1%	29.8

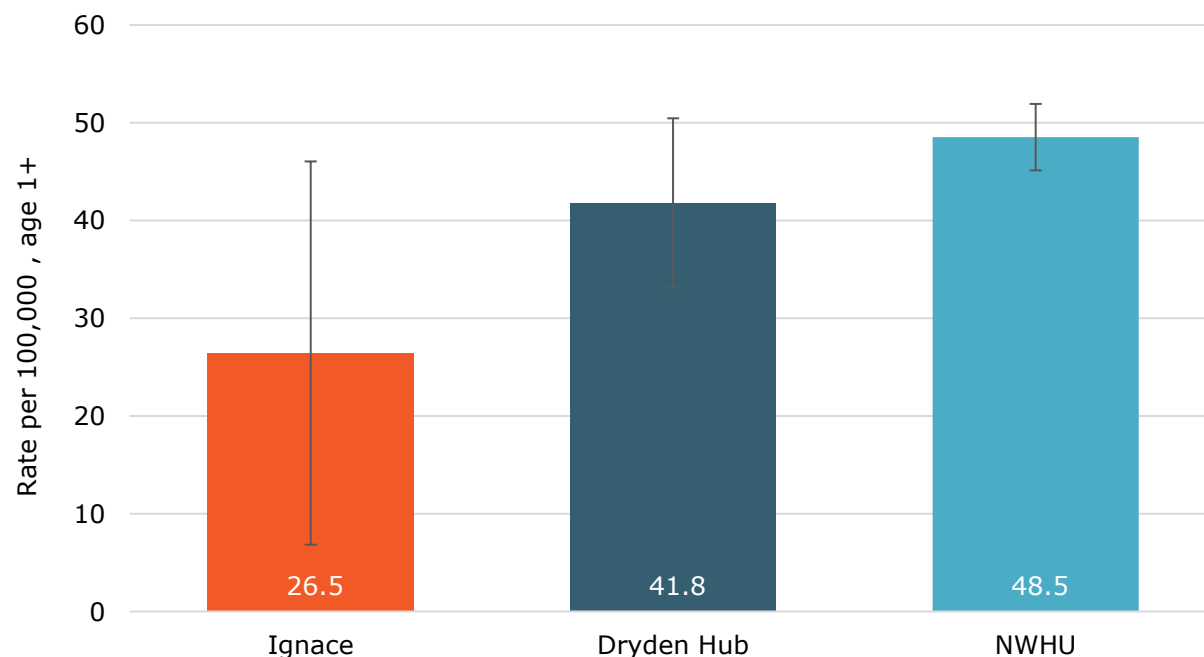
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Figure 4.4-51 shows that while the Ignace hospitalization rate was lower than the rates from the comparison areas. Due to the low case counts statistical significance was not determined. In 2021, the crude rate of hospitalization for asthma was slightly lower at 14.7 persons per 100,000 population in the NWHU compared to 18.8 in Ontario but the difference was not significant (Public Health Ontario 2023p).

Figure 1.6-51: Asthma Hospitalization Rate by Area, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.4.3.6 Arthritis

According to the Public Health Agency of Canada, 16% of Canadians over the age of fifteen are living with arthritis, the majority of whom are women. Physical inactivity and obesity can play a large role in the onset and severity of arthritis (Government of Canada 2019a).

Arthritis also causes substantial healthcare burden and disability; those with arthritis are twice as likely to be out of the workforce and five times as likely to have mobility problems (Arthritis Society Canada 2023).

As seen in **Table 4.4-16**, there were 141 hospitalizations of Ignace residents for arthritis from 2002 to 2021. The unique patients were comprised of 51 females and 53 males. While the average age was very similar to the comparison areas, the Ignace patients had slightly longer lengths of stay (5.8 days on average, compared to 4.5 and 4.8 in Dryden Hub and NWHU patients, respectively).

Table 1.6-16: Arthritis Hospitalization Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	51 (49%)	77 (54.6%)	1.5	608	7.9	40.6%	62.1
	Male	53 (51%)	64 (45.4%)	1.2	215	3.4	2.3%	65.9
	Total	104	141	1.4	823	5.8	30.6%	63.8
Dryden Hub	Female	619 (52.9%)	847 (54.1%)	1.4	4,223	5.0	12.0%	65.1
	Male	552 (47.2%)	719 (45.9%)	1.3	2,817	3.9	3.6%	64.9
	Total	1,170	1,566	1.3	7,040	4.5	8.6%	65.0
NWHU	Female	2,835 (53.1%)	4,009 (54.1%)	1.4	20,080	5.0	11.4%	64.1
	Male	2,498 (46.8%)	3,405 (45.9%)	1.4	15,411	4.5	7.7%	62.7
	Total	5,343	7,414	1.4	35,491	4.8	9.8%	63.5

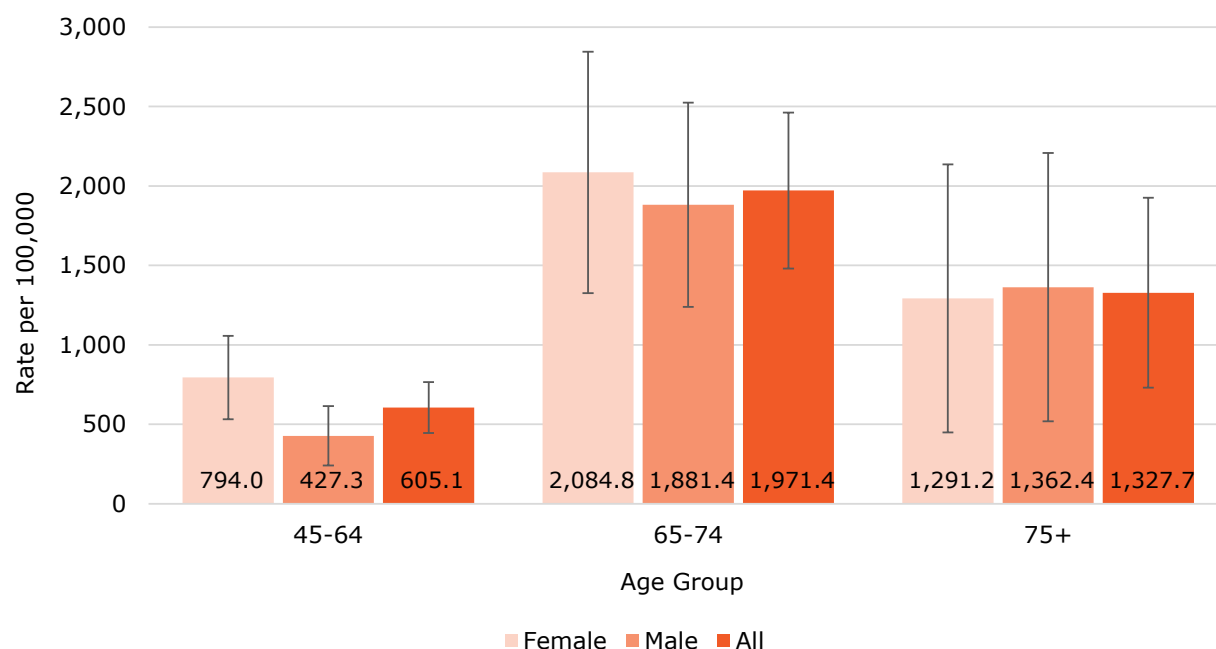
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Figure 4.4-52 shows that the rates of Ignace hospitalizations of those 65 and over were similar among males and females. However, the rate was higher among females aged 45-64 compared to males of the same age group.

Figure 1.6-52: Arthritis Hospitalization Rates by Age Group and Sex, Ignace Residents, 2002-2021^{1,2,3}



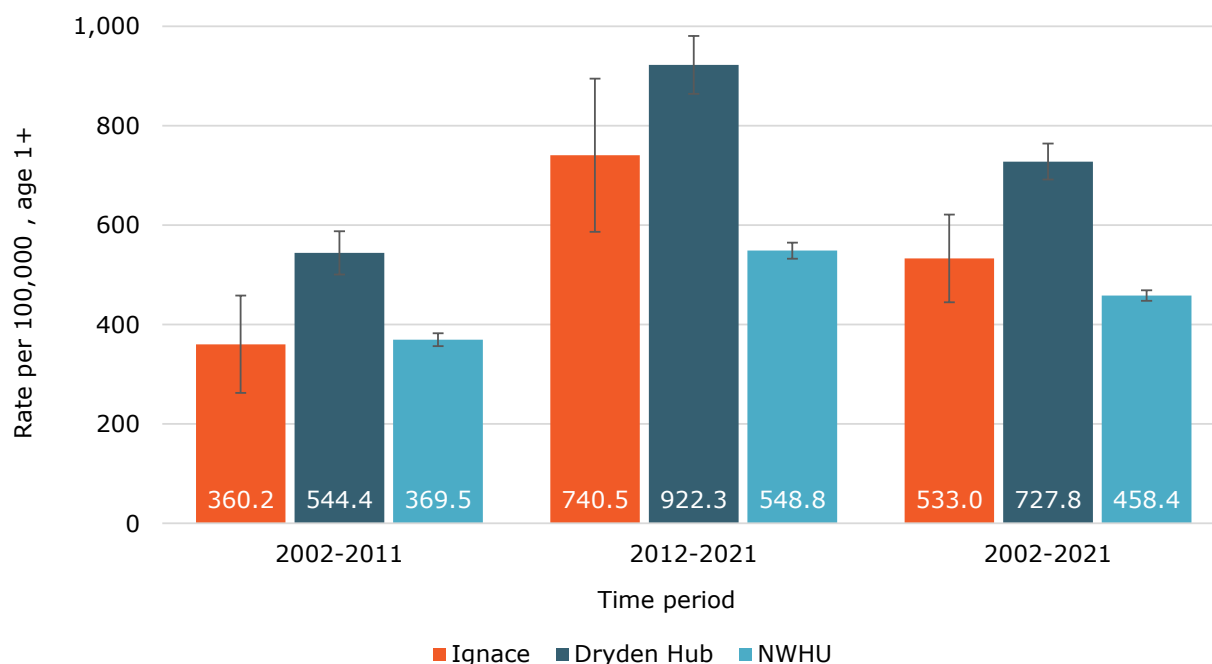
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data insufficient to disaggregate under age 45.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Figure 4.4-53 shows Ignace arthritis hospitalizations rates as compared to the Dryden Hub and the NWHU. Arthritis hospitalizations for Ignace residents from 2002 to 2021 were lower than those in the Dryden Hub and similar to those in the NWHU.

Figure 1.6-53: Arthritis Hospitalization Rate by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3}



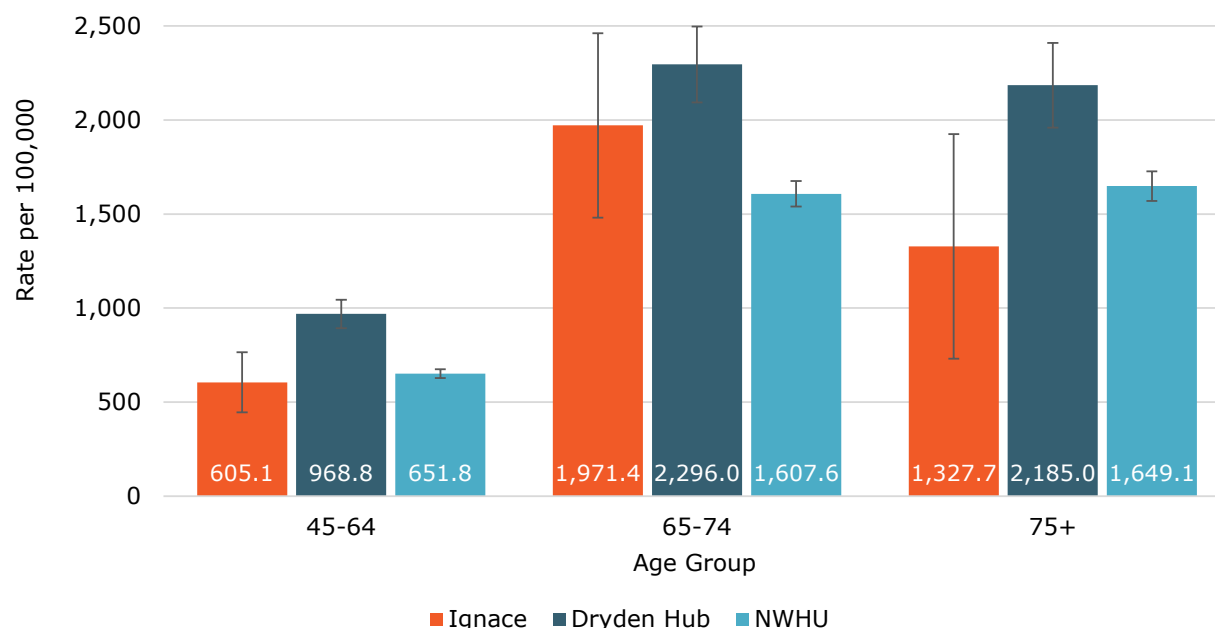
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Includes ages 1 and older.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

For males and females over the 2002-2021 study period, rates were generally lower than the Dryden Hub and higher than the NWHU. As shown in **Figure 4.4-54**, age-specific rates have a similar pattern across the study areas (see **Appendix 4B Supplemental Data**).

Figure 1.6-54: Arthritis Hospitalization Rates by Age Group and Area, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. Data insufficient to disaggregate under age 45.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.5 Mental Health

Individuals with poor mental health often have multifaceted healthcare and community care needs. Access to primary care, counselling, support from community, and medication may be required for improved mental health. In their absence, more acute mental health crises arise and perpetuate a need for emergency care or hospitalization.

Mental health concerns affect a large percentage of Canadians and have broad health, social, and economic effects on individuals and communities. The current estimated burden of mental illness is high with an estimated 12-month prevalence of any mental illness between 25% and 30% (Mental Health Commission of Canada 2013). Mental illness affects individuals across the lifespan, but frequently onsets in young adulthood, in contrast with many other health conditions that onset later in life. Mental health conditions commonly co-occur with chronic physical diseases or exacerbate their presentation. For example, diabetes rates are elevated among people with mental illness. People reporting symptoms of depression also report chronic physical

conditions at three times the rate of those who do not experience depression (Canadian Mental Health Association Ontario 2008).

4.4.5.1 Mental Health Risk Factors

Social determinants of health (**Section 4.2**), such as food security (**Section 4.2.6.3**), housing (**Section 4.2.5.2**), education and employment (**Section 4.2.3**), and personal and community safety (**Section 4.2.5.4**), can contribute to poor mental health (Mental Health Commission of Canada 2013; Canadian Mental Health Association Ontario 2009). Higher rates of poor mental health are reported among adults with severe functional impairments, adults permanently unable to work, and First Nations people (Public Health Agency of Canada 2018b).

Public Health Ontario identifies mental health-related emergency department visits as an equity indicator. Those in the lowest quintile of the Ontario Marginalization Index tend to have the highest rates of mental health-related emergency department visits (Public Health Ontario 2019c).

The results of Canadian Community Health Surveys ("CCHS") allow for comparisons between residents of the NWHU and provincial averages with respect to self-reported prevalence of mental health-related risk factors and outcomes (off-reserve residents only). **Table 4.4-17** shows a significantly higher self-reported prevalence of heavy drinking among residents of the NWHU compared to Ontario.

Table 1.6-17: Self-Reported Risk Factors (CCHS), Ontario and NWHU, 2015/16 – 2019/2020^{1,2,3}

Indicator (percent of respondents)	NWHU			Ontario		
	2015 / 2016	2017 / 2018	2019 / 2020	2015 / 2016	2017 / 2018	2019 / 2020
Perceived life stress, most days quite a bit or extremely stressful	21.7%	20.2%	18.2%	22.0%	21.6%	20.9%
Heavy drinking	25.5% H	24.6% H	20.2% H	18.2%	17.6%	15.6%

Source: Statistics Canada. 2022b. Retrieved February 1, 2023.

Notes:

1. H = Statistically higher than provincial rate. L = Statistically lower than provincial rate.
2. Unless otherwise specified, analysis includes those age 12+ only; Off-reserve only.
3. Data are presented in **Appendix 4B**.

Results of the self-reported CCHS shown in **Table 4.4-18** suggest no significant difference for residents of the NWHU communities compared to Ontario. Although the differences may not be statistically significant, it is noteworthy that more than one in ten survey respondents indicated experiencing a mental health condition and only two thirds would rate their mental health as "very good" or "excellent". Rural and northern areas in Ontario face additional challenges in addressing mental health. Stigma in smaller areas may be more impactful, and hesitance in accessing supports may be greater when individuals are more concerned about privacy.

Table 1.6-18: Self-Reported Mental Health (CCHS), Ontario and NWHU, 2015/16 – 2019/2020^{1,2,3}

Indicator	NWHU			Ontario		
	2015 / 2016	2017 / 2018	2019 / 2020	2015 / 2016	2017 / 2018	2019 / 2020
Perceived mental health (very good or excellent)	69.4%	67.3%	64.7%	71.1%	69.1%	64.7%
Perceived mental health (fair or poor)	6.6% (E)	7.3% (E)	8.3% (E)	6.9%	7.9%	9.8%
Mood disorder (age 12+)	7.4% (E)	10.6% (E)	11.9%	8.7%	9.2%	9.5%

Source: Statistics Canada. 2022b. Retrieved February 1, 2023.

Notes:

1. (E) = Use with caution.
2. Unless otherwise specified, analysis includes those age 12+ only; Off Reserve only.
3. Data are presented in **Appendix 4B**.

4.4.5.2 Community Reported Mental Health Needs

Both the Community Health and Wellness Survey (2023), and the KPI participants from the community highlighted the importance of unmet mental health needs and the need for ongoing services to support well-being of community members. One in three Ignace survey participants rated their mental health as “very good” or “excellent.”

A large number (approximately 40%) of survey respondents reported that one of their primary concerns related to alcohol use, drug use, addiction, mental health, or support services related to these. This is a much larger proportion than the proportion of survey respondents that reported concerning substance use or mental health concerns about themselves.

Self-reported ratings of mental health in the NWHU in 2017-2018 showed that 7.3% of residents in the NWHU perceived their mental health as fair or poor, while 20.2% perceived life stress as being quite a bit or extremely stressful most days. Further, 10.6% of residents of the NWHU reported having been diagnosed by a health professional as having a mood disorder such as depression, bipolar, or mania (Statistics Canada 2022b). These results were similar to provincial results.

4.4.5.3 Physician Services

Between 2002 and 2021, there were 6,393 physician visits by 805 Ignace community members (ages 10 and older) with a main diagnosis (OHIP Dx code) related to mental health (see **Appendix 4A Detailed Methods** for information related to grouping of the OHIP Dx codes to diagnosis descriptions). Note that throughout the analysis, these numbers may vary slightly depending on occasional multiple coding of visits and instances where one individual may have different diagnosis during the time period examined and may change age groups during the time period examined.

Table 4.4-19 shows that while females account for just over one half of the 805 Ignace residents seen by a physician for mental health needs, they account for just under one half of the visits. On average in the 20-year period, men had 8.7 physician visits compared to 7.3 for women for mental health needs.

Table 1.6-19: Individual Patients and Total Physician Visits for Mental Health, Ignace Residents age 10+, 2002-2021^{1,2,3,4,5}

	Female	Male	Total
Patients	437 (54.3%)	368 (45.8%)	805
Physician Visits	3,185 (49.8%)	3,208 (50.2%)	6,393
Average # Visits	7.3	8.7	7.9

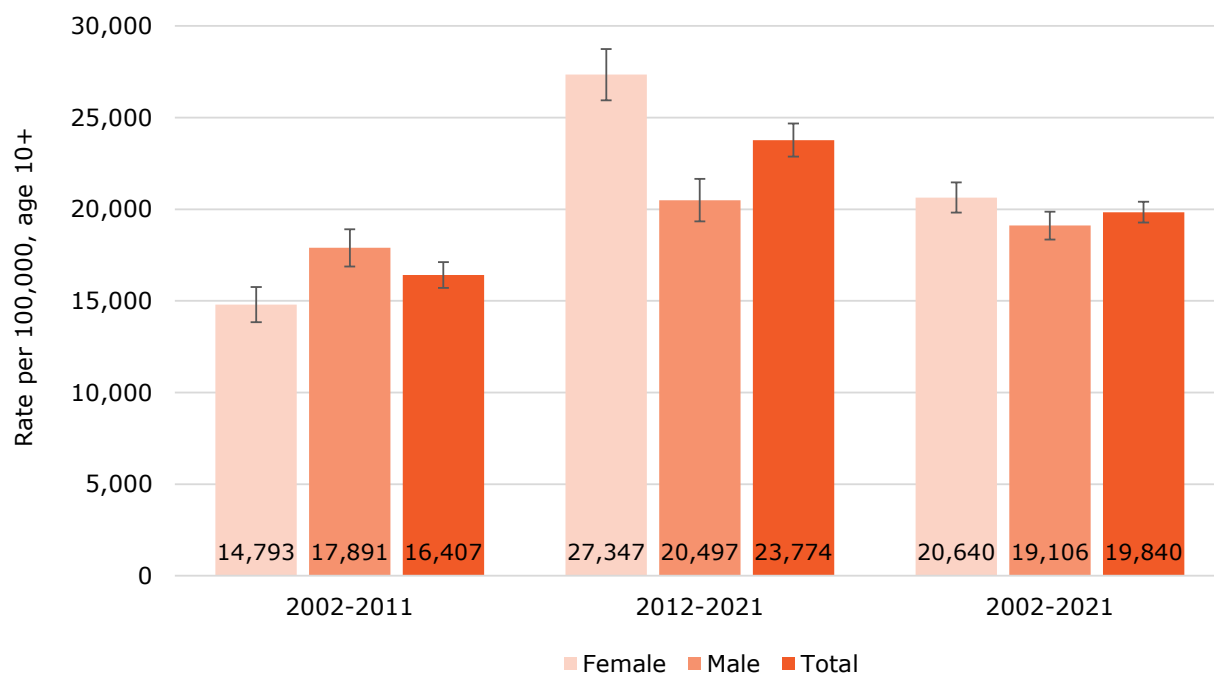
Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

- 1. Provider Type = physician.
- 2. Ages 10 and older.
- 3. Limited to OHIP Dx code grouping codes – 290 to 314.
- 4. Data Extraction and Analysis by EPI Research Inc.
- 5. Data are presented in Appendix 4B.

Figure 4.4-55 shows physician visits rates for Ignace residents ages 10 and older by sex between 2002 and 2021. Although **Table 4.4-19** does not show large differences overall, there are some differences when reviewing the two different time periods. Mental health visits to physicians are similar among females and males between 2002 and 2021. However, in the second period of 2012 to 2021, rates increased significantly overall, and for both females and males. In addition, the visit rates among Ignace females are almost twice as high in the second time period than the first and significantly higher than the male rate.

Figure 1.6-55: Ignace Family Physician Mental Health Visit Rate Comparison by Sex, 2002-2011, 2012-2021 and 2002-2021^{1,2,3,4,5}



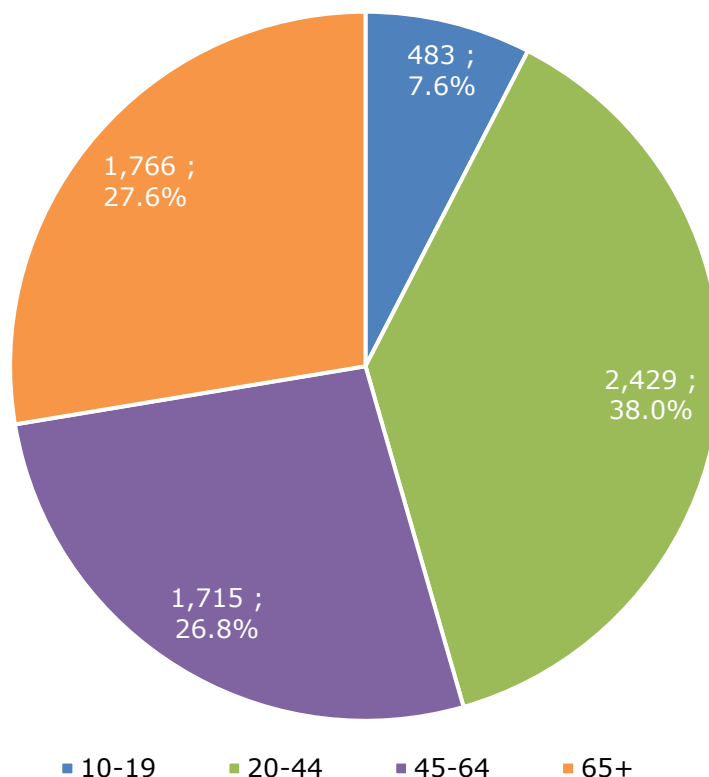
Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

1. Provider Type = physician.
2. Ages 10 and older.
3. Limited to OHIP Dx code grouping codes – 290 to 314.
4. Data Extraction and Analysis by EPI Research Inc.
5. Data are presented in **Appendix 4B**.

Figure 4.4-56 shows that for Ignace residents, the most common age group seeking mental health services from physicians is between ages 20 and 44, accounting for nearly 40% of all physician visits related to mental health. Those aged 45 to 65 and over 65 each account for just over 1 in 4 visits.

Figure 1.6-56: Physician Visits for Mental Health by Age Group, Ignace Residents age 10+, 2002-2021^{1,2,3,4,5}



Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

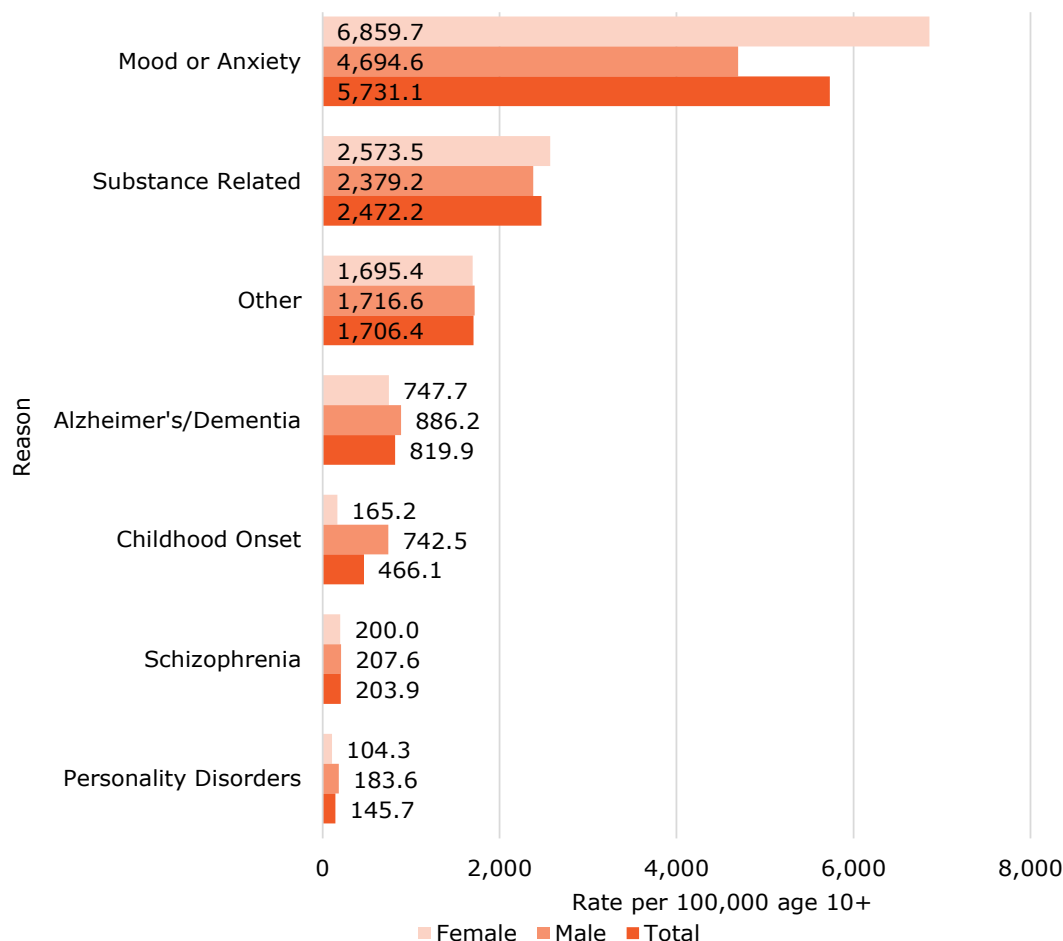
1. Provider Type = physician.
2. Ages 10 and older.
3. Limited to OHIP Dx code grouping codes – 290 to 314.
4. Data Extraction and Analysis by EPI Research Inc.
5. Data are presented in **Appendix 4B**.

Of the 6,716 physician visits between 2002 and 2021, more than two-thirds were related to substance use (33.7%) and mood or anxiety disorders (33.5%). Other frequently mentioned underlying conditions driving physician visits were Alzheimer's/dementia (16.5%) and unspecified other reasons (10.3%) (see **Appendix 4B Supplemental Data**).

While mood or anxiety were the top reasons for physician mental health visits among both males (4,694.6 per 100,000) and females (6,859.7 per 100,000), females had a significantly higher rate of visits for these reasons, as shown in **Figure 4.4-57** Figure 1.6-.

Among Ignace residents, most physician visits with a primary diagnosis code related to mental health were for general and family practice physicians (74.5%), followed by psychiatry (12.4%) (which combined account for about 88% of mental health related visits). Internal medicine specialists accounted for about 4% of physician visits and respiratory specialists account for 3.5% of physician visits with a primary diagnosis related to mental health. Internal medicine specialists work with patients with complex illnesses (often chronic conditions and multiple diseases) and support the relationship between mental health needs and complex and chronic physical illness (see **Appendix 4B Supplemental Data**). It should be noted that paediatric visits are limited to residents aged 10 and older and thus likely under-represents the true extent of services needed for mental health.

Figure 1.6-57: Ignace Residents Physician Visit Rate for Mental Health Reason by Sex, 2002-2021^{1,2,3,4,5,6}



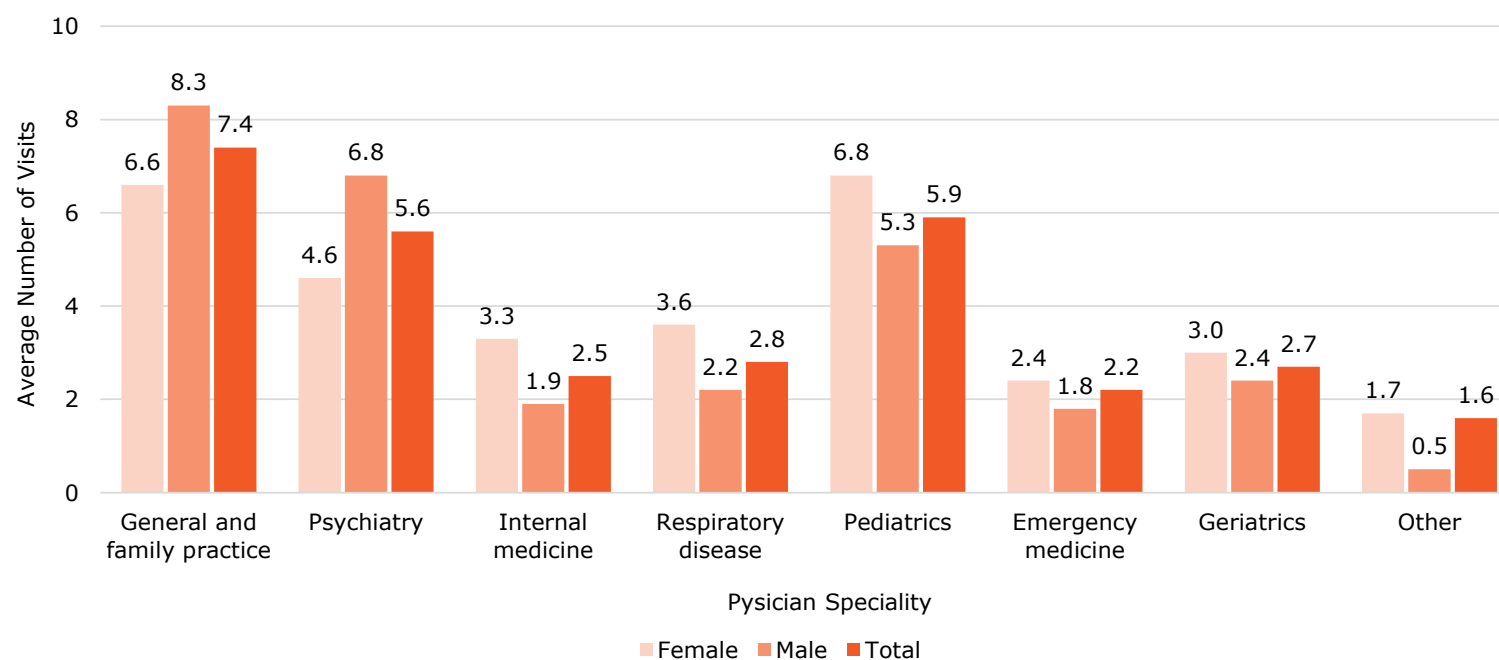
Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

1. Service Provider = physician.
2. Ages 10 and older.
3. Limited to main Dx and OHIP Dx code grouping codes – 290 to 314.
4. Linked Groupings between OHIP Dx Code and ICD-10 Coding created by EPI Research Inc. based on review of criteria but may be imperfect.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

Figure 4.4-58 shows that general/family practice physicians had the highest average number of visits per patient for mental health at 7.4, followed by pediatrics at 5.9 and psychiatry (5.6). Other specialties had a lower average number of visits. Care providers such as internal medicine specialists and geriatric specialists are often parts of a team of service providers so these lower on average number of visits do comply with the notion of team support in patient care.

Figure 1.6-58: Average Number of Physician Visits by Speciality, Ignace Residents age 10+ Related to a Mental Health Diagnosis, 2002-2021^{1,2,3,4,5,6}



Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

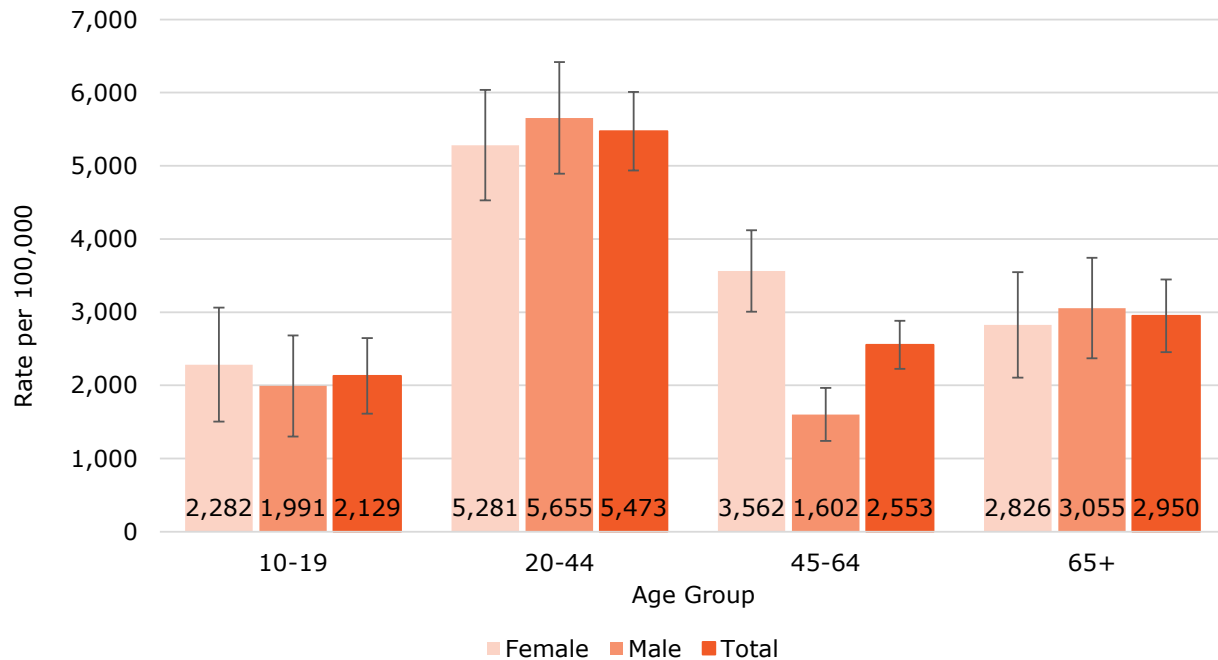
1. Service Provider = physician.
2. Ages 10 and older.
3. Limited to main Dx and OHIP Dx code grouping codes – 290 to 314.
4. "Other" includes all other physician specialities with 20 visits or less
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

4.4.5.4 Psychiatry Visits

Between 2002 and 2021, there were 832 visits to a psychiatrist by Ignace residents. Females (437 visits by 81 individual patients) accounted for more patients and visits than males (395 visits by 65 individual patients), but males who did see a psychiatrist had a higher number of visits on average each. Just under half (48.1%) of psychiatry visits were by those aged 20-44. The next most represented age group was 45-64, comprising just over 1 in 4 visits (27.9%). (see **Appendix 4B Supplemental Data**).

Figure 4.4-59 shows that rates are similar among males and females for all age groups except for 45-64. In this age group, females (3,561.7 per 100,000) have significantly higher rates of psychiatry visits compared to males (1,602.2 per 100,000). Rates of psychiatry visits are highest among those aged 20-44. Those aged 65+ had an average of 7.9 visits (slightly higher for males than females) while those aged 20-44 needed fewer visits with an average of 5.8. The lowest average for visits was among those aged 10-19 with an average of 2.5 visits (the same for males and females) (see **Appendix 4B Supplemental Data**).

Figure 1.6-59: Psychiatry Visit Rates by Age Group and Sex, Ignace Residents, 2002-2021^{1,2,3,4}



Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

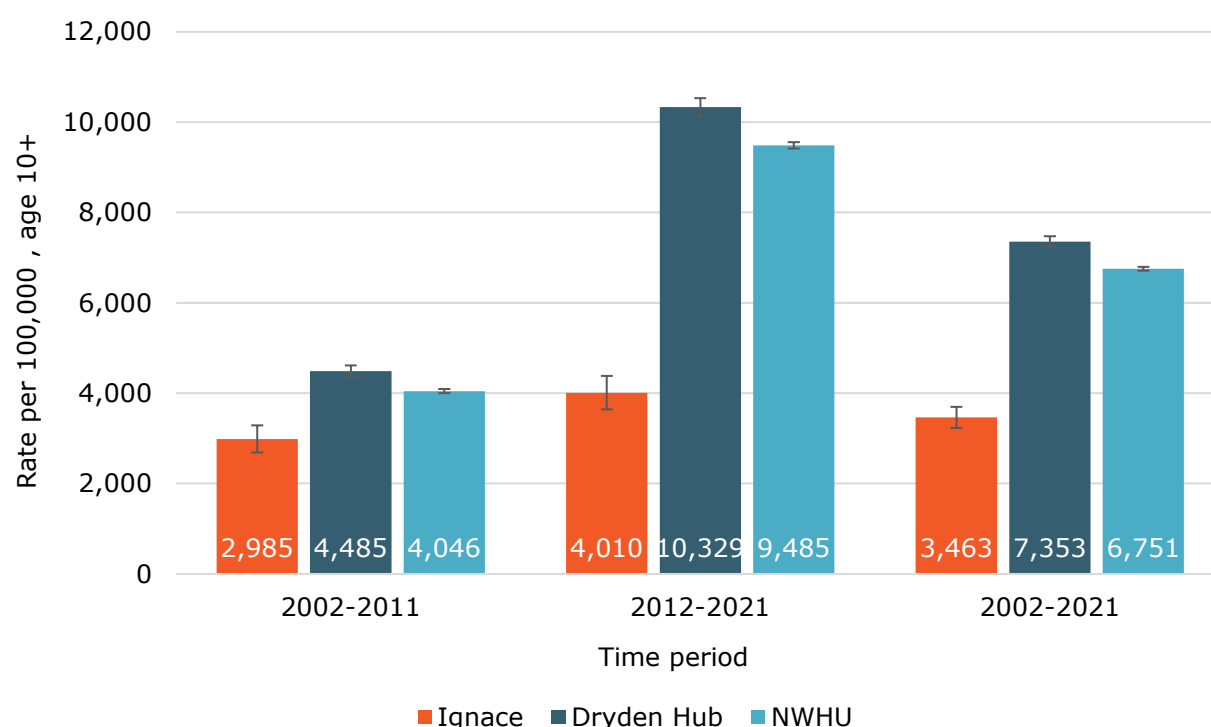
1. Service Provider = physician; provider fiscal speciality = Psychiatry.
2. Ages 10 and older.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Ignace does not have psychiatry services based in the township but there are some tele-psychiatry appointments. The remainder of appointments occur in other communities. Although Mary Berglund Community Health Centre Hub does have two institution codes, a review of psychiatry billing does not show any billing related to delivery of services directly at the Mary Berglund Community Health Centre Hub in Ignace. The majority were from Thunder Bay (35%) and Kenora (34%), with 3% from other Northern Ontario locations. One in five were from Toronto and 7% were from other locations in Ontario suggesting notable use of psychiatry services based far from Ignace¹⁴¹. A small number of Toronto psychiatry billings relate to Thunder Bay and Lake of the Woods Hospitals, but the majority relate to Hospital for Sick Children in Toronto, and the Centre for Addiction and Mental Health (Toronto) (see **Appendix 4B Supplemental Data**).

¹⁴¹ Ignace is about a 2.5 hour drive to Kenora (242 km) and Thunder Bay (246 km).

Overall, Ignace residents had a lower psychiatry visit rate than Dryden Hub or NWHU, a difference that was more pronounced between 2012 and 2021, as shown in **Figure 4.4-60**. This pattern holds when looking at males or females from 2002-2021. However, during 2002-2011 the rate for Ignace males was similar to rates among Dryden Hub and NWHU males (see **Appendix 4B Supplemental Data**).

Figure 1.6-60: Psychiatry Visit Rate Comparison by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023d. Retrieved March 10, 2023.

Notes:

1. Service Provider = physician; provider fiscal speciality = Psychiatry.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

The average number of visits was lower among Ignace residents compared to residents of the Dryden Hub and NWHU. The average number of visits was also slightly lower among females (5.4) compared to males (6.1).

In comparison to the use of psychiatry services among residents of the Dryden Hub and NWHU aged 20-44, the rates among Ignace residents in this age group are low. Rates in Ignace residents are appreciably lower than the comparison areas for all age groups except 65+, where the rates were slightly higher. This pattern is especially pronounced among males. The pattern for females is different, with rates remaining lower but only moderately so for the 45-64 age group (see **Appendix 4B Supplemental Data**).

4.4.5.5 Emergency Department Visits for Mental Health Conditions

Emergency department use for mental health conditions often signifies a lack of access to preventative mental health care and support. Repeat visits by the same person are common. Based on 2017 data, nearly 1 in 10 Canadians who visit an emergency department for mental health reasons had four or more visits in a year, and two-thirds of those frequent visitors ended up as hospital inpatients in a year (Canadian Institute for Health Information 2023b).

In Ontario, mental health or addiction-related emergency department visits have increased dramatically during the last few decades, with rates rising by 89.1% between 2006 and 2017. The greatest increases were observed for those aged 14-21 and for anxiety and mood-related disorders (Chiu et al. 2020). Please see **Appendix 4A Detailed Methods** for details on coding for data extraction.

Table 4.4-20 presents a comparison of acute care utilization related to mental health emergency department visits and inpatient care among Ignace residents. For both Ignace females and males, the most common reasons for mental health-related emergency department visits are anxiety/stress disorders and substance-related disorders, accounting for more than half of all visits. These patterns align with the most frequent reasons for physician visits as well. In the case of mental health related hospitalizations, mood disorders are the leading reason accounting for just over 1 in 4 hospitalizations, followed by schizophrenia at just under 1 in 4. Substance related disorders, while accounting for a high rate of mental health related emergency and physician visits, is the second lowest grouping accounting for mental health related acute care hospitalization. However, it is important to note that these data do not include other types of in-residence types of supports that are not in acute care hospitals.

Table 1.6-20: Comparison of Mental Health Emergency Department Visits and Mental Health Hospitalization by Category and Sex, Ignace Residents 2002-2021^{1,2,3,4,5,6}

Category	Female	Male	Total
Mental Health Emergency Department Visits (all Dx block)			
Anxiety and Stress Disorders	81 (37.3%)	68 (24.0%)	149 (35.6%)
Substance Related Disorders	73 (33.5%)	71 (35.5%)	144 (34.4%)
Mood Disorders	35 (16.1%)	27 (13.5%)	62 (14.8%)
Schizophrenia	21 (9.6%)	17 (8.5%)	38 (9.1%)
Alzheimer's / Dementia	Suppressed	Suppressed	16 (3.8%)
Total Mental Health Emergency Department Visits (excluding F70-F89)	218	200	418
Mental Health Hospitalization			
Anxiety and Stress Disorders	21 (25.3%)	9 (12.9%)	30 (19.6%)
Mood Disorders	19 (22.9%)	21 (30.0%)	40 (26.1%)
Substance Related Disorders	14 (16.9%)	11 (15.7%)	25 (16.3%)
Schizophrenia	20 (24.1%)	16 (27.9%)	36 (23.5%)
Alzheimer's / Dementia	Suppressed	Suppressed	11 (7.2%)
Total Mental Health Hospitalizations	83	70	153

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023; IntelliHealth Ontario 2023e. Retrieved April 18, 2023; IntelliHealth Ontario 2023f. Retrieved February 26, 2023.

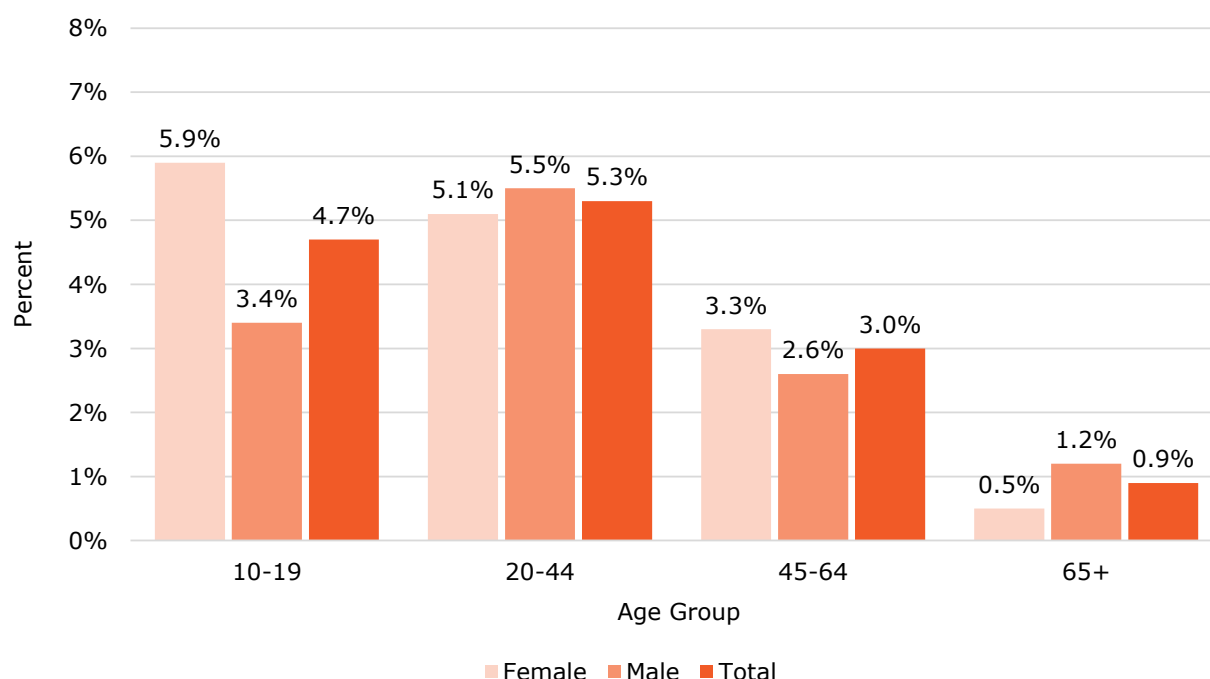
Notes:

1. All ages 10 and older only.
2. Emergency Department ICD-10 Chapter 5 (MPDx): All Dx Block Exclude F70-F89; AM Case Type = Emergency.
3. OMHRS – includes “full admission” and “short stays”.
4. Inpatient Discharges Package - ICD-10 Chapter 5 (MRDx): MRDx Block Exclude F70-F89.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

Younger age groups comprise a high percentage of the visits. Approximately 1 in 7 (13.7%) visits were by youth aged 10-19 and nearly 1 in 2 visits was by an adult aged 20 to 44 (48.2%) (see **Appendix 4B Supplemental Data**).

Figure 4.4-61 shows the percentage of all emergency department visits that are related to mental health needs, disaggregated by age group and sex. Among visits by those aged 10 to 19, females (5.9%) account for almost twice as many as males (3.4%).

Figure 1.6-61: Percentage of All Emergency Department Visits for Mental Health, Ignace Residents by Age Group and Sex, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block Exclude F70-F89; AM Case Type = Emergency as a ratio of all ACT-Emergency Ambulatory Care Visits.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Table 4.4-21 presents mental health emergency department visits by age and triage level from 2002 to 2021 for Ignace residents. There were 395 visits with triage information in total during the study period. 45.6% of all mental health emergency department visits were assessed as urgent/potentially serious, 12.4% were assessed as emergent/potentially life-threatening, and 33.9% were assessed as less urgent or semi-urgent. There were no strong patterns between triage level and age group, but there were fewer visits assessed as less urgent in those aged 10-19 and more assessed as urgent or potentially serious compared to other age groups.

Table 1.6-21: Mental Health Emergency Department Visits by Age Group and Triage Level, 2002-2021^{1,2,3,4}

Age Group	Emergent/ potentially life - threatening	Urgent/ potentially serious	Less urgent/ semi-urgent	Non- urgent	Total
10-19	8 (14.3%)	32 (57.1%)	11 (19.6%)	5 (8.9%)	56 (14.4%)
20-44	22 (11.6%)	82 (43.4%)	71 (37.6%)	14 (7.4%)	189 (47.8%)
45-64	13 (11.7%)	49 (44.1%)	39 (35.1%)	10 (9.0%)	111 (28.1%)
65+	6 (15.4%)	17 (43.6%)	13 (33.3%)	3 (7.7%)	39 (9.9%)
Total	49 (12.4%)	180 (45.6%)	134 (33.9%)	32 (8.1%)	395 (100.0%)

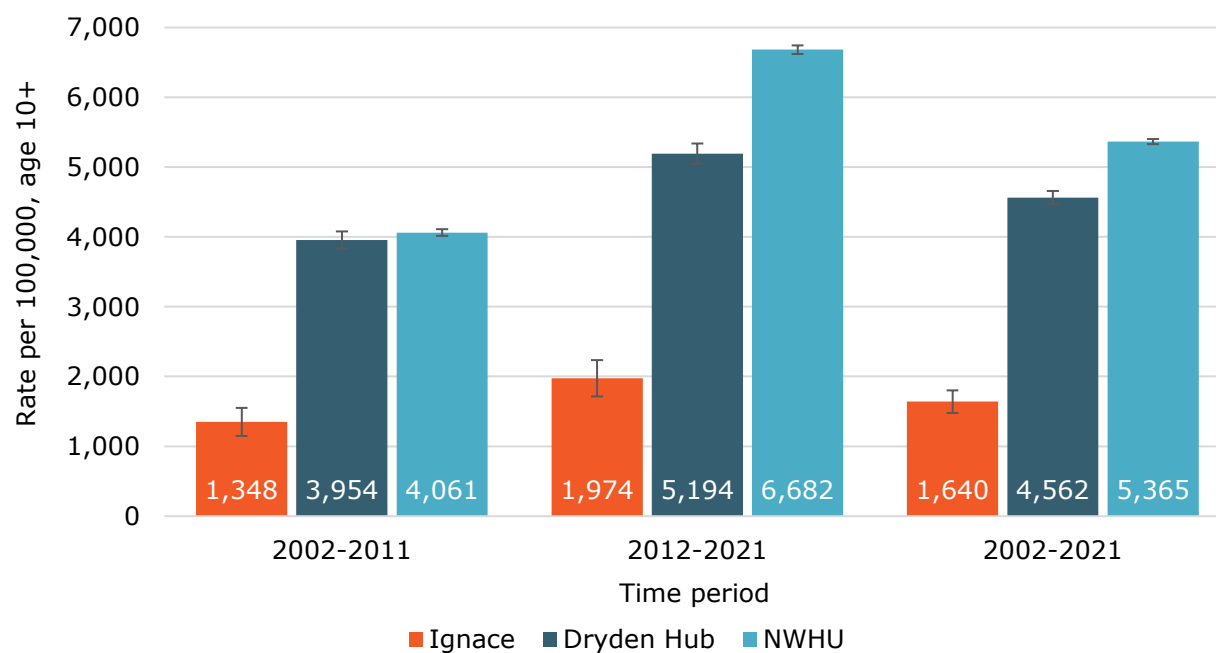
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block Exclude F70-F89; AM Case Type = Emergency.
2. Level 1 – Resuscitation suppressed due to small cell size.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Figure 4.4-62 shows the mental health emergency department visit rates between 2002 and 2021 for residents of Ignace, Dryden Hub, and NWHU. Rates are significantly lower among Ignace residents across all time periods, including when assessing rates among males and females separately. Of note is the fact that Ignace does not have an emergency department and therefore Ignace residents must travel for emergency care. Rates from Dryden Hub and NWHU appear similar across the time period, both increasing. Ignace does not show an obvious increase in rates; however, the smaller population of Ignace makes it more challenging to assess trends over time, and a slight increase in trend can be observed. Rates are similar among males and females and among comparison study areas (see **Appendix 4B Supplemental Data**).

Figure 1.6-62: Mental Health Emergency Department Visit Comparison by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block Exclude F70-F89; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Inequities can affect mental health related emergency department visits. A way to consider these inequities is through rate ratios for emergency department visits (see **Appendix 4B Supplemental Data**). The rate ratio compares less advantaged groups to more advantaged groups through three measurements, including dependency, material deprivation, and residential instability.

The rate ratios in the NWHU were generally closer to one, suggesting a weaker association between quintile of marginalization and mental health-related emergency department visits. Using dependency as an indicator, after 2006-2007 those in the lowest quintile (i.e., less advantaged) in the NWHU accessed the emergency department for mental illness less than those in the highest quintile (i.e., most advantaged). This may be driven by factors limiting access; in rural areas within the NWHU, many residents are far from emergency departments or lack transportation, especially those with higher levels of dependency (see **Section 4.3.5.4 Access to Health Services**).

Rate ratios based on material deprivation varied in the NWHU during the years presented. Rates varied from 0.96 in 2006-2007 (suggesting slightly less mental health related emergency

department use among those in the lowest quintile compared to the highest) to 2.69 in 2010-2011 (suggest 2.69 times the use of the emergency department for mental health of those in the lowest quintile compared to the highest).

The largest rate ratios come from using residential instability, where the NWHU ratios were between 1.30 and 3.68. In 2016-2017, for the first time, the rate ratio in NWHU was significantly higher than the rate for Ontario, indicating a stronger association between residential instability and mental health related emergency department use.

In Ontario, opioid-related emergency department visits have been on the rise since 2013, with marked increases since 2016 (Public Health Ontario 2023n). Moreover, opioid overdoses have been shown to disproportionately affect those experiencing homelessness or housing instability (Pérez-Figueroa et al. 2022). Although unsubstantiated, this could be driving the drastic differences in rates among residents of the NWHU as this category of emergency department visits includes substance-related disorders.

4.4.5.5.1 Reasons for Mental Health Emergency Department Visits

The most common disorders or concerns for which Ignace residents accessed mental health emergency care were anxiety disorders (35.6% of visits) and substance-related reasons (34.4% of visits) (see **Appendix 4B Supplemental Data**). Other prominent reasons included mood/affective disorder (14.8% of visits) and schizophrenia, delusional, and psychotic disorders (9.1% of visits).

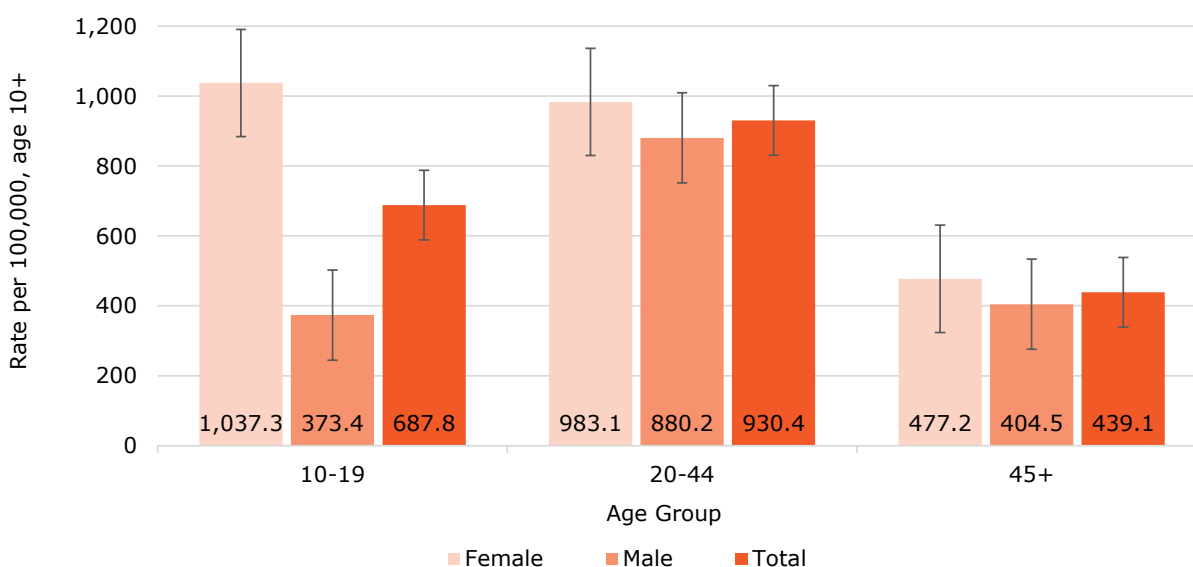
For nearly all categories of mental health condition, rates of emergency department visit were higher among females (except for dementia and those aged 65+) (see **Appendix 4B Supplemental Data**). However, the numbers are small and overlapping confidence intervals suggest these differences may not be meaningful.

“Organic” disorders is an indicator that includes all mental disorders having a basis in cerebral disease or brain injury, including Alzheimer’s and dementia. The primary focus is dementia, where brain functions are progressively impaired, particularly memory, thinking, and comprehension, without impaired consciousness. Alzheimer’s disease is the primary cause of dementia syndromes. Data were too small to present for Ignace residents.

Emergency Department Visits for Anxiety and Stress Disorders

Anxiety and stress disorders include all types of anxiety disorders, panic disorders, post-traumatic stress disorders, and obsessive-compulsive disorders, among other conditions. Between 2002 and 2021, there were 149 emergency department visits for anxiety and stress disorders by Ignace residents. Of these, 54% were female and 46% were male. While rates were similar among males and females in ages 20 and older, a notable difference is evident in emergency department use for anxiety among male and female youth (**Figure 4.4-63**). Rates were 2 to 3 times as high among females aged 10-19 compared to males of the same age group.

Figure 1.6-63: Anxiety and Stress Disorders Emergency Department Visit Rates by Sex and Age Group, Ignace Residents, 2002-2021^{1,2,3}



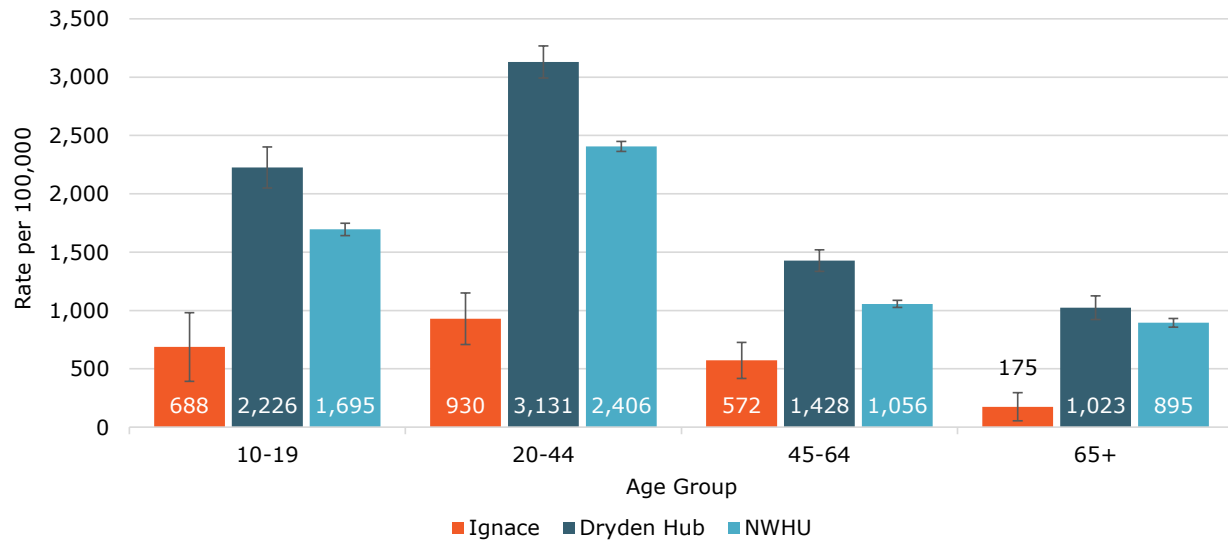
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block = F40-F48; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

The rates are much lower among Ignace residents compared to Dryden Hub and NWHU. This is true when assessing the data by males and females separately and by age group (see **Appendix 4B Supplemental data**). Rates are much lower among Ignace residents for all age groups, as shown in **Figure 4.4-64**. It should be noted that Ignace residents must travel for emergency care (as they must for hospitalization). With this barrier to access, emergency department use may be lessened and not be a true representation of need.

Figure 1.6-64: Anxiety and Stress Disorders Emergency Department Visit Rate by Area and Age Group, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

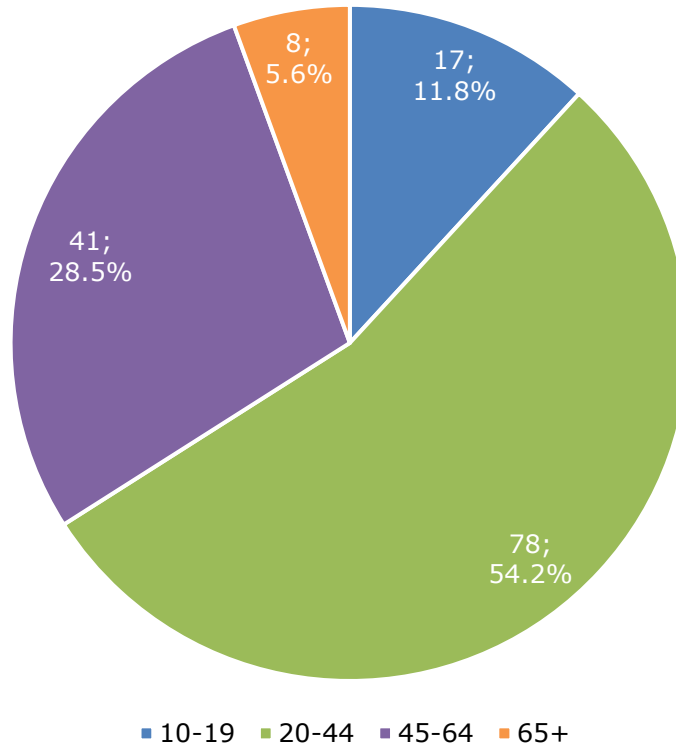
1. ICD-10 Chapter 5 (MPDx): All Dx Block = F40-F48; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Emergency Department Visits for Substance Use Disorders

This indicator includes visits attributable to the use of one or more psychoactive substances, including medically prescribed substances. These visits vary widely in their clinical presentation and severity.

Between 2002 and 2021, there were 144 emergency department visits for substance use disorders among Ignace residents. Of these, 51% were female and 49% were male. 54.2% of visits were by those aged 20-44 as shown in **Figure 4.4**-Figure 1.6-65. The next most represented age group was 45-64, comprising of 28.5% of visits. Seventeen cases (11.8%) were among children/youth aged 10-19. In all age groups, rates among males and females were very similar (see **Appendix 4B Supplemental Data**).

Figure 1.6-65: Emergency Department Visits for Substance Use Disorders by Age Group, Ignace Residents, 2002-2021^{1,2,3,4}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block = F10-F19; AM Case Type = Emergency.
2. The groupings 10-19, 20-44, 45-64, and 65+ refer to years of age.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

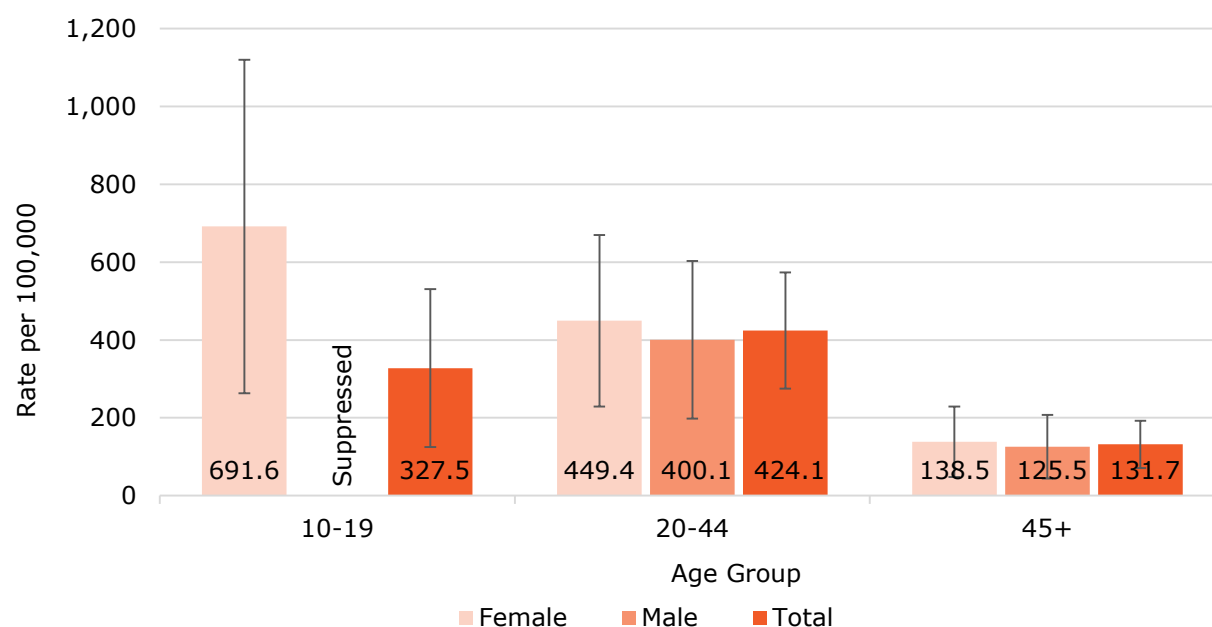
Emergency Department Visits for Mood Disorders

Mood disorders are a broad category of conditions that involve a range of states from depression to elation. Associated conditions, among others, include depressive disorders, bipolar disorders, and manic episodes. These may co-occur with anxiety and/or psychosis (Cleveland Clinic 2022).

Between 2002 and 2021, there were 62 emergency department visits for mood disorders by Ignace residents. Of these, 56% were female and 44% were male. Half of these visits were by those aged 20-44 and over 1 in 5 was by a child or youth aged 10-19 (21%) (see **Appendix 4B Supplemental Data**).

Notably, most emergency department visits for mood disorders among children/youth aged 10-19 were among females, as shown in **Figure 4.4-66**. The highest rate among all age/sex categories was seen in females aged 10-19. This further highlights the burden of acute mental health distress among female youth.

Figure 1.6-66: Emergency Department Visits for Mood Disorders by Sex and Age Group, Ignace Residents, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

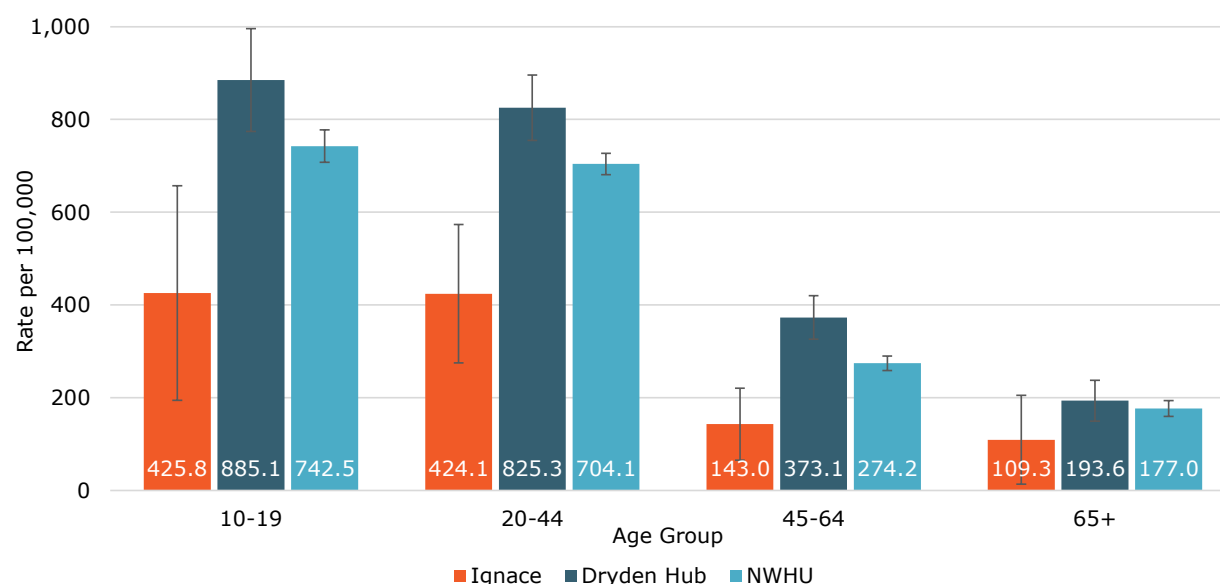
Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block = F30-F39; AM Case Type = Emergency.
2. Data Extracted and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

The emergency department visit rate for mood disorders among Ignace residents was lower in all time periods, when compared to Dryden Hub and NWHU (see **Appendix 4B Supplemental Data**). This holds among males, females, and all age groups.

Rates among younger people from Ignace (aged 10-19 and 20-44) show a more notable difference from Dryden Hub and NWHU than older age groups. While those 65+ from Ignace still show lower rates than the comparison areas, the difference is minor (**Figure 4.4-67**).

Figure 1.61.6-67: Mood Disorders Emergency Department Visit Rate by Area and Age Group, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

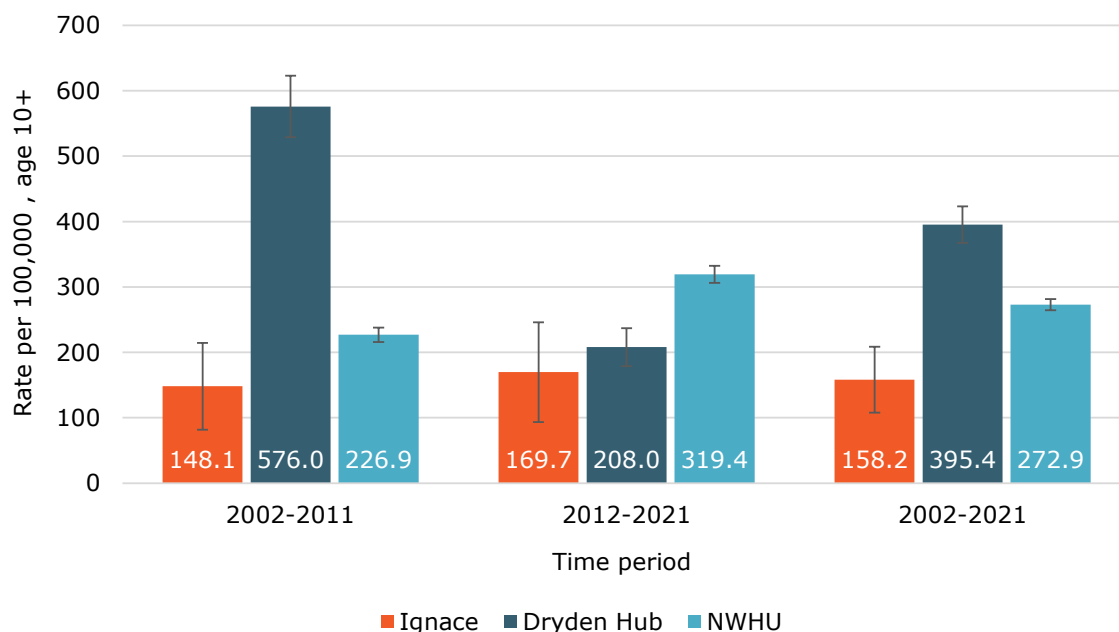
Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block = F30-F39; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Emergency Department Visits for Schizophrenia

Schizophrenic disorders are characterized in general by distortions of thinking and perception, where individuals may experience delusions, hallucinations, or other distorted experiences. Between 2002 and 2021, there were 38 emergency department visits for schizophrenia by Ignace residents. Of these, 55% were female and 45% were male. 15 of the 38 visits were by females aged 20-44 and 21 of the 38 visits were by males or females aged 20-44. With low case numbers, comparisons across time are more difficult (**Figure 4.4-68**).

Figure 1.6-68: Schizophrenia Emergency Department Visit Rate by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3}



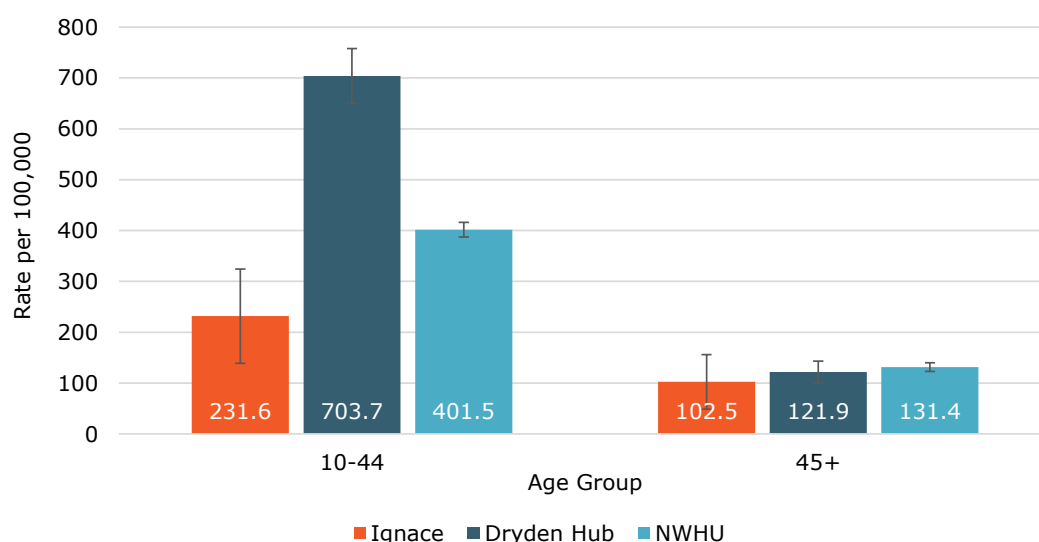
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block = F20-F29; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Notably, rates among Ignace residents appear significantly lower than the other areas specifically in the 10-44 age range while they are similar among those aged 45+ (**Figure 1.6-69**). Further disaggregation of ages is not feasible due to the low case numbers.

Figure 1.6-69: Schizophrenia Emergency Department Visit Rate by Age Group and Area, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 5 (MPDx): All Dx Block = F20-F29; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.5.6 Hospitalizations for Mental Health

Mental health conditions are a large contributor to hospital stays in Canada, with substance use being the 5th leading cause and mood disorders the 9th leading cause in 2021-2022 (Canadian Institute for Health Information 2023a).

Mental health contributes significantly to the burden of inpatients in ALC (alternate level of care). Patients in ALC indicates that alternate options for care, potentially outside of the hospital setting, would be appropriate. This is a key indicator for assessing hospital resource burden. In September 2015, 10% of designated mental health beds in Ontario were occupied by ALC patients. Of patients waiting in ALC for 30+ days, 16% are in a mental health bed (Little & Hirdes 2015).

Due to the impact and importance of understanding mental health risk factors, acute care needs and enhanced reporting indicators, many hospitals have designated adult mental health beds where mental health-specific care is provided. However, there is complexity as patients may also be treated in the same hospital for mental health needs in a non-designated mental health bed (note that in spite of formal classification, these beds may be occupied by those under 18). Figures include data from the Inpatient Discharges Package and the Ontario Mental Health Reporting System (OMHRS) (see **Appendix 4A Detailed Methods**).

Table 4.4-22 illustrates the hospital location and bed type for Ignace residents admitted to hospital for mental health reasons. While Thunder Bay Regional Health Sciences Centre and Lake

of the Woods District Hospital hosted patients in both bed types, Dryden Regional Health Centre only hosted patients in non-mental health designated beds.

The highest number of mental health related hospital admissions occurred at Lake of the Woods District Hospital (39.2%), followed by Thunder Bay Regional Health Sciences Centre (34.6%), with these facilities hosting patients both in designated mental health beds and non-designated beds. Dryden Regional Health Centre had 30 additional patients, all of which were in a non-designated bed. The remaining 10 patients (6.5%) were at other hospitals.

Table 1.6-22: Mental Health Hospitalizations by Bed Type & Facility, Ignace Only, 2002-2021^{1,2,3,4,5,6}

Facility	Non-Designated Mental Health Bed Hospitalizations	Designated Mental Health Bed Hospitalizations	Total Facility Admissions for Mental Health
Thunder Bay Regional Health Sciences Centre (TB-RHSC)	18 (29.0%)	35 (38.5%)	53 (34.6%)
Lake of the Woods District Hospital (LOTW-DH)	11 (17.7%)	49 (53.8%)	60 (39.2%)
Dryden Regional Health Centre (Dryden RHC)	30 (48.4%)	0 (0.0%)	30 (19.6%)
Other	3 (4.8%)	7 (7.7%)	10 (6.5%)
Total	62 (100.0%)	91 (100.0%)	153

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023; IntelliHealth Ontario 2023g. Retrieved February 27, 2023.

Notes:

1. Ages 10 and older only.
2. "Other" includes Homewood Health Centre Inc., St. Joseph's Care Group – Lakehead Site, and Timmins & District General Hospital.
3. OMHRS (designated mental health beds) – includes "full admission" and "short stays".
4. For Inpatient Discharges Package (non-designated mental health beds) - ICD-10 Chapter 5 (MRDx): MRDx Block Exclude F70-F89.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

Table 4.4-23 shows that there was a total of 92 hospitalizations of Ignace residents in designated mental health beds from 2006 to 2021, and **Table 4.4-22** shows that there was a total of 62 patients in non-designated beds from 2002 to 2021. Patients admitted to a designated mental health bed were more likely to be re-admitted (1.7 hospitalizations per patients on average compared to 1.2 in a shorter time period). The average days per stay in both facilities are lengthy but are impacted by specific admission types, which are presented in detail by cause. When a patient is admitted to a designated mental health bed, most of the stay is typically for acute care, while patients in non-designated mental health beds can spend a substantial portion of that stay as an alternate level of care (see **Appendix 4B Supplemental Data**). This means that the patient no longer requires acute care clinical services but is waiting for placement to an appropriate facility or return to home with appropriate support.

Table 1.6-23: Summary Information – Admissions to Ontario Hospital Inpatient Mental Health Designated Beds, by Sex and Area 2006-2021^{1,2,3,4,5,6}

Area	Sex	Number of Inpatients	Number of Admissions	Average Hospitalizations per Patient	Total Mental Health Bed Length of Stay ("LOS")	Average Mental Health Bed Days per Stay	Percentage of Inpatient Mental Health Bed Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	27 (50.0%)	49 (53.3%)	1.8	1,047	21.4	0.0%	39.4
	Male	27 (50.0%)	43 (46.7%)	1.6	959	22.3	3.1%	47.3
	Total	54	92	1.7	2,006	21.8	2.6%	43.1
Dryden Hub	Female	163 (48.1%)	267 (48.2%)	1.6	4,941	18.5	1.3%	36.7
	Male	176 (51.9%)	287 (51.8%)	1.6	9,009	31.4	26.0%	37.2
	Total	339	554	1.6	13,950	25.2	19.8%	37.0
NWHU	Female	1,290 (47.6%)	2,372 (47.8%)	1.8	45,635	19.2	2.6%	34.7
	Male	1,422 (52.5%)	2,588 (52.2%)	1.8	73,422	28.4	6.6%	32.9
	Total	2,709	4,960	1.8	119,057	24.0	5.1%	33.8

Source: IntelliHealth Ontario 2023g. Retrieved February 27, 2023.

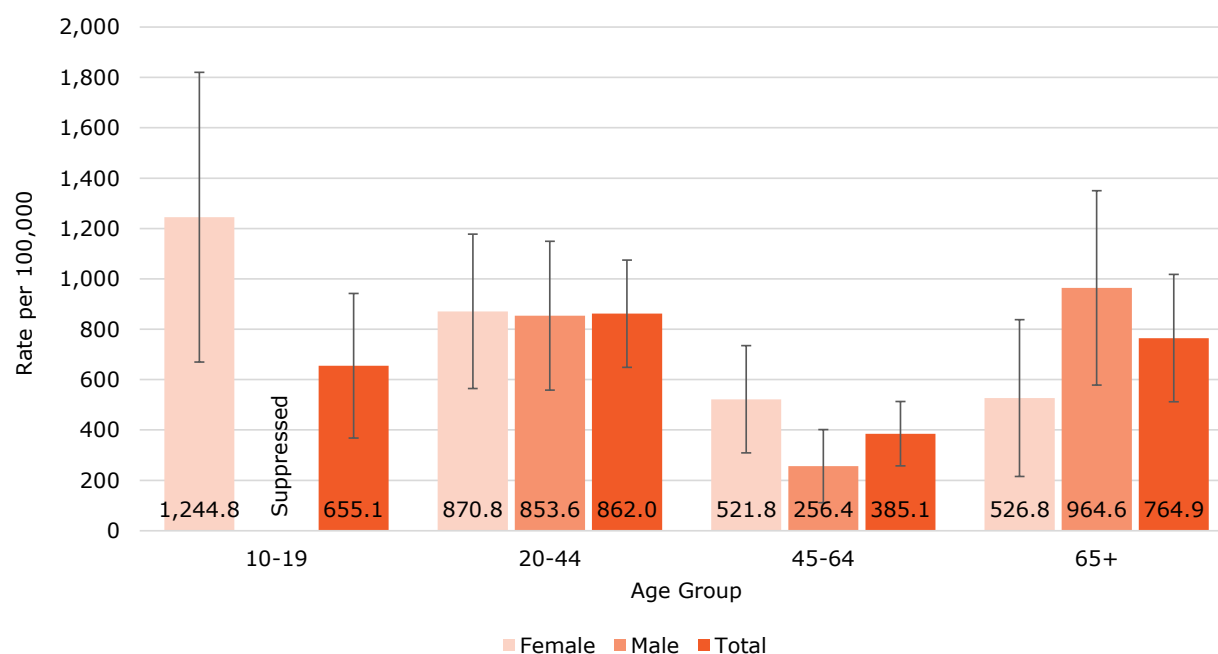
Notes:

1. Age 10 and older only.
2. Percentage ALC calculated as (total MH LOS-Acute LOS)/total MH LOS.
3. OMHRS – includes "full admission" and "short stays".
4. Although designated "adult mental health bed"; this may be occupied by a person who is younger than 18.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

The average length of stay was variable with hospitalization location, ranging from 15.1 days at Thunder Bay Regional Health Sciences Centre to 53.3 days for Lake of the Woods District Hospital. The average length of stay at the Dryden RHC was 23.7 days. The highest percentage of hospitalizations (40%) were Ignace residents aged 20-44; the lowest was for residents aged 10-19 (13%) (see **Appendix 4B Supplemental Data**).

As shown in **Figure 4.4-70**, the highest age and sex specific rate of hospitalization was observed among females aged 10-19. The lowest age and sex-specific rate was observed among males aged 25-44. The 10-19-year-old age group was the only age group for which a significant difference by sex can be observed (the numbers among males are too small to be presented) but this is based on very small numbers (reflected in the wide confidence intervals).

Figure 1.6-70: All Mental Health Hospitalization by Sex and Age Group, Ignace Residents, 2002-2021^{1,2,3,4,5,6}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023; IntelliHealth Ontario 2023g. Retrieved February 27, 2023.

Notes:

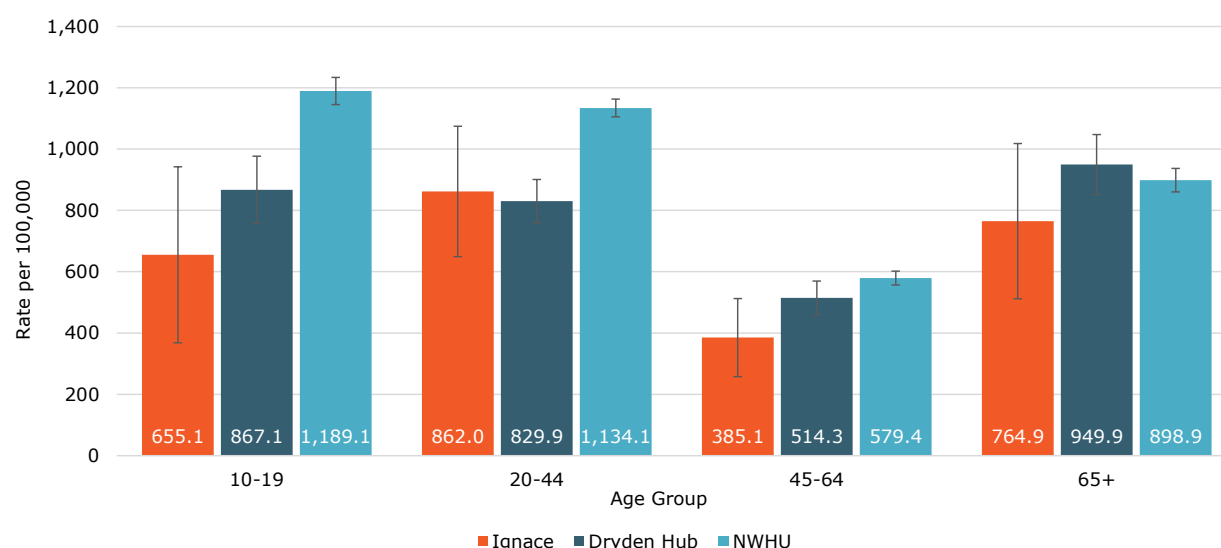
1. Ages 10 and older only.
2. OMHRS – includes “full admission” and “short stays”.
3. Inpatient Discharges Package - ICD-10 Chapter 5 (MRDx): MRDx Block Exclude F70-F89.
4. Male age 10-19 suppressed due to <5.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

The hospitalization rate of Ignace residents appears slightly lower than rates of residents of the Dryden Hub and NWHU. This varied by sex and time period (see **Appendix 4B Supplemental**

Data). However, Ignace resident rates were not significantly higher than Dryden Hub or NWHU but remained lower or similar.

Figure 4.4-71 shows that the difference in rates was not consistent across age groups. Rates were lower among Ignace residents under age 65 but those over 65 from Ignace were hospitalized at rates similar to those from Dryden Hub or NWHU. 63 (41%) of the hospitalized Ignace residents were 20-44 years of age, followed by 36 (23%) aged 65+, 35 (23%) aged 45-64, and 20 (13%) aged 10-19. Rates of hospitalization were estimated to be about 10 times higher in females aged 10-19 compared to males aged 10-19. Sex comparisons varied by age group, but no other age group showed a significant difference when comparing sex.

Figure 1.6-71: All Mental Health Hospitalization Rate Comparison by Age Group and Area, 2002-2021^{1,2,3,4,5}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023; IntelliHealth Ontario 2023g. Retrieved February 27, 2023.

Notes:

1. Ages 10 and older only.
2. OMHRS – includes “full admission” and “short stays”.
3. Inpatient Discharges Package - ICD-10 Chapter 5 (MRDx): MRDx Block Exclude F70-F89.
4. Data Extraction and Analysis by EPI Research Inc.
5. Data are presented in **Appendix 4B**.

4.4.5.6.1 Reasons for Mental Health Hospitalizations

Causes of mental health hospitalization are varied and consist of several distinct categories, including substance use, anxiety disorders, mood/affective disorders, schizophrenia, delusional & psychotic disorders, and Alzheimer’s/dementia. These conditions can frequently co-occur.

Importantly, Alzheimer’s/dementia is very different from the other mental health conditions considered in this data. It usually onsets late in life and is not curable, but instead must be managed through increasing levels of support for the affected individual. It is a progressive disease that becomes more severe over time, unlike mood disorders and anxiety which can be

prevented or cured over time, and often begin earlier in adulthood. Dementia refers generally to a loss of memory, language abilities, problem solving, and thinking abilities. Alzheimer's disease is the most common underlying cause of dementia. Many older adults hospitalized due to dementia require long-term care.

Schizophrenia, delusional, and psychotic disorders are also somewhat distinct from the remaining mental illness categories. While they are frequently diagnosed in early adulthood, they are not generally curable. Symptoms can include delusions, hallucinations, and disorganized behaviour (Kvarnstrom 2018). With support, individuals can manage and minimize their symptoms, improving quality of life. Schizophrenia is not as common as other conditions such as anxiety and mood disorders, affecting less than 1 in 100 people (Center for Addiction and Mental Health 2017). However, the complexity of the condition and the heavy stigma it carries means that it has significant impacts on individuals and health care systems.

The leading causes of mental health hospitalization among Ignace residents are mood/affective disorders (41 hospitalizations, 26%), followed by schizophrenia (38 hospitalizations, 25%), anxiety and stress (30 hospitalizations, 20%), substance related (25 hospitalizations, 16%), Alzheimer's/dementia (11 hospitalizations, 7%), and other (11 hospitalizations, 7%). Hospitalization for mood disorders occurred at similar rates in males and females from Ignace. Schizophrenia and anxiety/stress occurred at higher rates among females (see **Appendix 4B Supplemental Data**).

Figure 4.4-72 compares mental health hospitalization by reason for Ignace residents to residents of the Dryden Hub and NWHU. Rates of hospitalization for mood disorders is not significantly different among the three groups. Rates of hospitalization for substance use, schizophrenia, and for Alzheimer's/dementia are significantly lower among Ignace residents compared to the other two study areas. Anxiety hospitalizations occurred at somewhat lower rates in Ignace residents compared to NWHU, but at rates similar to Dryden Hub.

The distribution of underlying conditions driving mental health hospitalizations for Ignace residents is slightly different than the conditions driving emergency department visits. Anxiety/stress disorders accounted for a large portion of both mental health emergency department visits (35.6%) and hospitalizations (19.6%). Mood/affective disorders accounted for 26.1% of hospitalizations and 14.8% of emergency department visits for mental health (see **Appendix 4B Supplemental Data**).

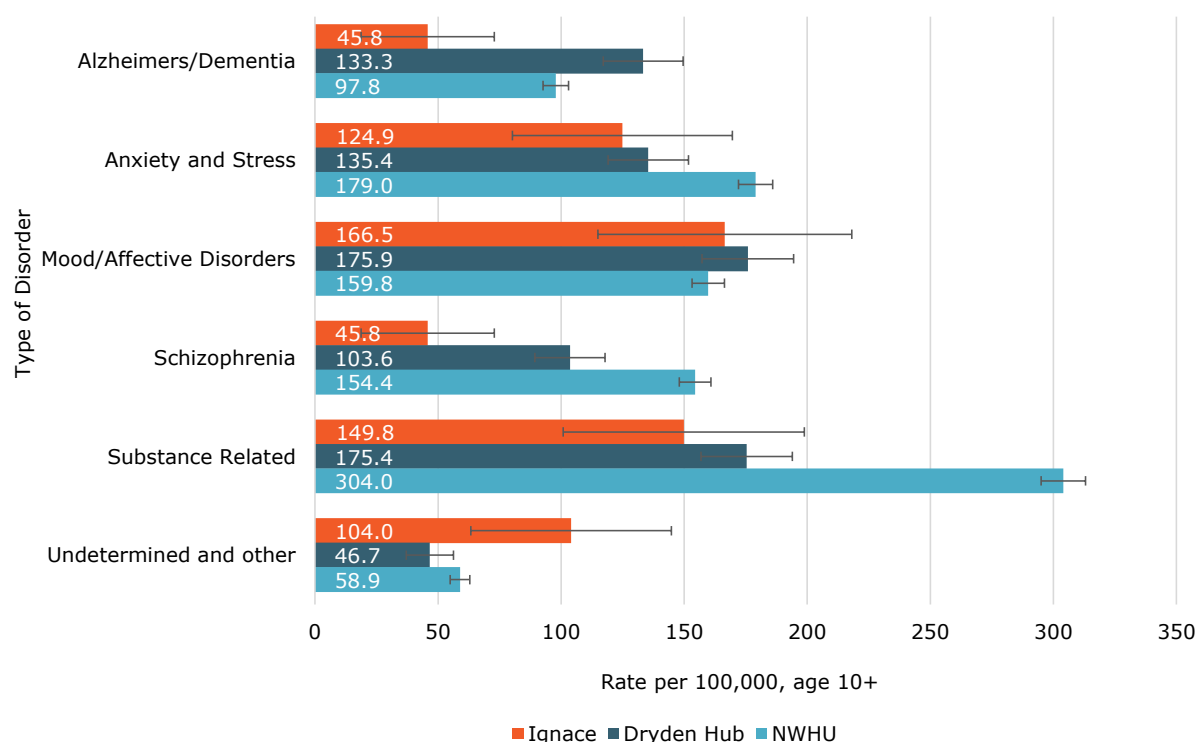
Substance use accounted for 34.4% of emergency department visits for mental health reasons, making it the second-leading cause for emergency department visits, but accounted for 16.3% of hospitalizations for Ignace residents (see Appendix 4B Supplemental Data).

Ignace residents aged 10-44 accounted for 60% of substance-related hospitalizations from 2002 to 2021. In Ignace, the Dryden Hub, and NWHU, hospitalization rates for substance related disorders are lower in residents aged 45 and older compared to ages 10-44. (see **Appendix 4B Supplemental Data**).

Mental health and addictions/substance use is of particular concern in the Local Study Area and Regional Study Area and was identified as a priority service area during the NWO Community and Baseline Studies Key Person Interview Program 2022 and NWO Baseline Studies Key Person Interview Program 2022-2023 (see **Section 4.3.5.5**). Further, knowledge holders expressed

concerns regarding increased rates of substance use (drugs and alcohol) in relation to the Project. Increases in substance availability and use associated with the presence of a transient workforce, particularly during the construction phase, can affect any local resident but may further disproportionately affect individuals belonging to marginalized groups (e.g., Indigenous people, gender diverse people, and women) (see **Section 2.2** for more on vulnerable populations).

Figure 1.61.6-72: All Mental Health Hospitalization by Reason, and Area, 2002-2021^{1,2,3,4,5}



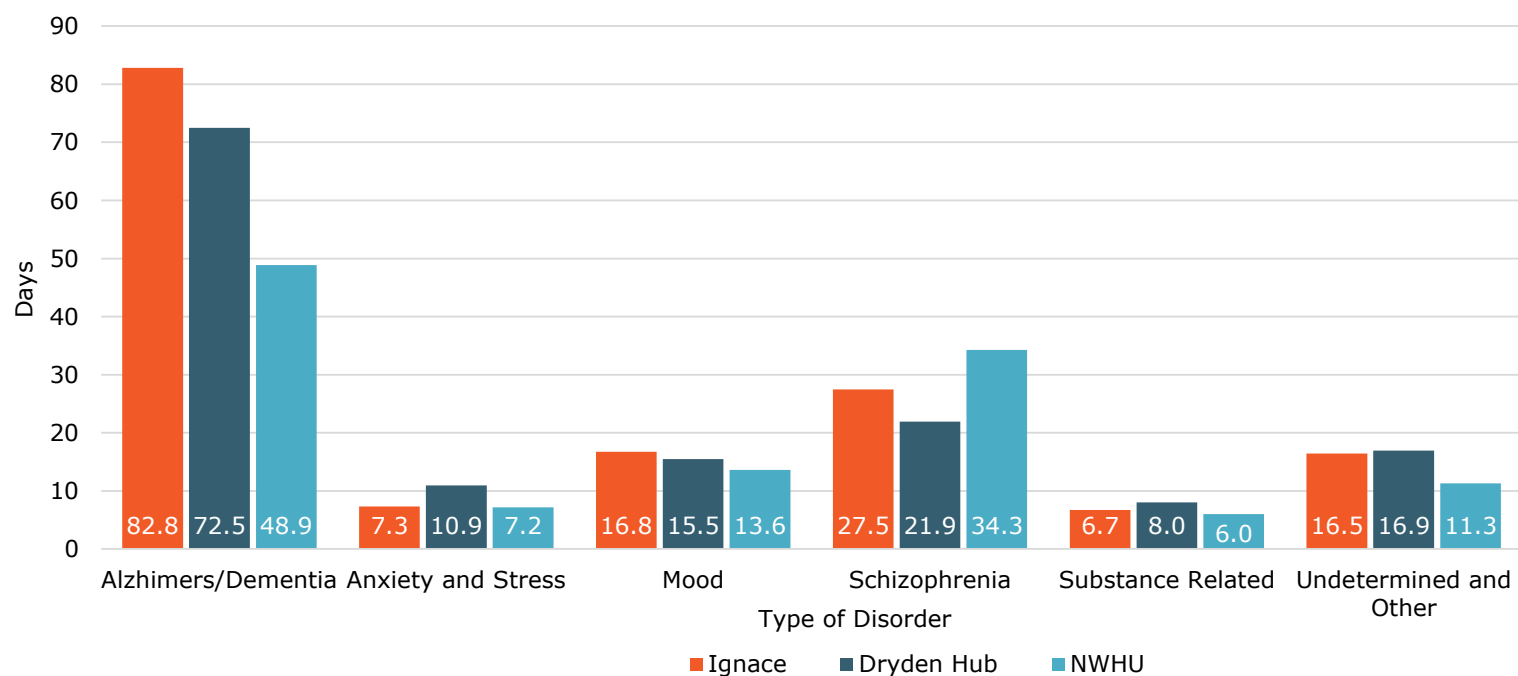
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023; IntelliHealth Ontario 2023f. Retrieved February 26, 2023.

Notes:

1. Ages 10 and older only.
2. OMHRS – includes “full admission” and “short stays” with “reason” linked to ICD-10 grouping.
3. Inpatient Discharges Package – ICD-10 Chapter 5 (MRDx): MRDx Block Exclude F70-F89.
4. Data Extraction and Analysis by EPI Research Inc.
5. Data are presented in **Appendix 4B**.

The age distribution for mental health emergency visits and hospitalizations is largely similar except for age 65+. Individuals aged 65+ are more strongly represented in hospitalizations (23% of mental health hospitalizations of Ignace residents) compared to emergency department visits (9.9%). This could be driven by hospitalizations for Alzheimer’s/dementia, which also had the longest average length of stay in all areas (**Figure 4.4-73**). For more data on the reasons for mental health hospitalizations see **Appendix 4B Supplemental Data**.

Figure 1.6-73: Average Length of Stay by Mental Health Condition and Area, 2002-2021^{1,2,3,4,5}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023; IntelliHealth Ontario 2023f. Retrieved February 26, 2023.

Notes:

1. Ages 10 and older only.
2. OMHRS – includes “full admission” and “short stays” with “reason” linked to ICD-10 grouping.
3. Inpatient Discharges Package - ICD-10 Chapter 5 (MRDx): MRDx Block Exclude F70-F89.
4. Data Extraction and Analysis by EPI Research Inc.
5. Data are presented in **Appendix 4B**.

4.4.5.7 Youth Mental Health

Mental health issues form a large portion of the morbidity burden among children and youth. One in four hospitalizations of children and youth aged 5 to 24 were for mental health reasons in 2020 (Canadian Institute for Health Information 2022d). Suicide/self-harm accounted for the most injury deaths, hospitalizations, and disabilities among youth (aged 15-19) in Canada in 2018 (Canadian Institute for Health Information 2022b). Further, youth mental health concerns were amplified by the COVID-19 pandemic. In 2020, there was a 20% decrease in youth reporting excellent or good mental health in Canada (Canadian Institute for Health Information 2022d). As of 2020, about 28,000 children and youth were on waiting lists for mental health treatment in Ontario, more than double the number in 2017 (Center for Addiction and Mental Health 2022). Other risk factors, such as substance use, were also impacted during the COVID-19 pandemic; youth reporting alcohol use prior to the pandemic reported higher frequencies of consumption after the onset of the pandemic (Public Health Ontario 2021c).

Surveys of Ontario high school students in 2020 found that 55% of respondents reported loneliness and 38% reported anxiety (Public Health Ontario 2021c). Youth are heavily impacted by isolation, decreased social supports, and fears about health or the future.

4.4.5.7.1 Youth Emergency Department Visits for Self-Harm

Self-harm is an indicator of struggles with mental health. Repeat emergency department visits for self-harm are associated with greater levels of marginalization (Public Health Ontario 2019a and 2022d). Data are not available related to self-harm and emergency department visits for self-harm for Ignace youth. However, Public Health Ontario does publish data for the NWHU youth aged 15-29. While the youth age range of 15-29 extends beyond childhood and adolescence, this remains an important consideration for youth wellbeing and health equity in the broader Ignace area.

As **Table 4.4-24** illustrates, youth emergency department visits for self-harm occurred at significantly higher rates among NWHU youth compared to Ontario. Between 2004-05 and 2016-17, the rate per 100,000 youth aged 15-29 was frequently greater than triple the Ontario rate each year. It is noted that in the case of NWHU, there are not always statistically significant differences in emergency department visit rates related to the five levels of Material Deprivation¹⁴². Despite youth emergency department visits for self-harm in the NWHU frequently being triple the Ontario rate, this cannot easily be attributed to deprivation or inequality. This is a reminder that the NWHU area faces risk that are not easily related to deprivation or inequality indexes that are more applicable to larger urban population.

Where available, further data and discussion related to youth mental health outcomes are presented in **Section 4.4.5 Mental Health** and **4.4.6 Injuries** which does discuss emergency department visits for self-harm.

¹⁴² Material deprivation (among those aged 15 years and older) is defined by: high % of people with no high school diploma; low employment/population ratio; and low average income.

Table 1.61.6-24: Intentional Self-Harm Youth Emergency Department Visit Rates and Inequality, NWHU and Ontario, by Year^{1,2,3}

Year	NWHU	Ontario	Rate Significant Compared to Ontario
2004-05	716.9	272.0	Higher
2006-07	828.9	247.1	Higher
2008-09	803.7	221.0	Higher
2010-11	657.8	208.2	Higher
2012-13	996.2	247.2	Higher
2014-15	1,344.4	285.0	Higher
2016-17	1,203.1	341.9	Higher

Source: Public Health Ontario 2019a.

Notes:

1. Rates per 100,000 youth aged 15-29.
2. NWHU- use local cut off values options.
3. Data are presented in **Appendix 4B**.

4.4.6 Injury

Injuries, including accidents, poisonings, and intentional self-harm, are frequent causes of, hospitalization and disability in Canada. Some injury indicators can be linked to socio-economic inequalities. Public Health Ontario (2021d) identifies intentional self-harm injury hospitalization, emergency department visits for assault, youth emergency department visits for self-harm, and suicide as such indicators.

The burden of injury is increasing; the overall death rate due to injury increased from 43.3 per 100,000 population in 2010 to 47.15 per 100,000 population in 2018. Falls are the overall leading cause of injury-related death, hospitalization, and disability. Poisonings were the second leading cause of injury death, followed by motor vehicle crashes (Canadian Institute for Health Information 2022b).

This section presents information related to self-reported injuries and disabilities, unintentional injuries, and intentional injuries. Reviewing more specific causes of injury is important to evaluate where there may be further needs. Overall, lower hospitalization rates may be an indicator of how effective a region is in injury prevention efforts. Injury-related mortality is addressed in **Section 4.4.7.7**.

4.4.6.1 Self-Reported Injuries and Disabilities

Disability from injury impacts a large portion of the working population. It is estimated that at any given time 8% to 12% of the workforce in Canada is off work due to injury, causing huge

costs to individuals and employers (Canadian Society of Professionals in Disability Management 2023).

Most Ignace Community Health and Wellness Survey (2023) respondents (75.2%) did not report being limited in work or daily activities due to physical or mental health conditions, while 15.8% reported sometimes being limited, and 8.9% reported being limited often. Most of those reporting limitations were in older age categories. Just over 1 in 5 survey respondents reported that they care for a family member with an illness or disability.

4.4.6.2 All Injury Emergency Department Visits

The NWHU shows some of the highest age-standardized rates of emergency department visits for injury among all health units in Ontario. This is particularly true for intentional injury where the NWHU has the highest rates. The age-standardized intentional injury rates among residents of the NWHU are more than 6 times the Ontario rate.

Approximately one in five emergency department visits by Ignace residents is related to injury (see **Section 4.3.9.4** for more information on emergency department visits). This has remained stable from 2002 and 2021 (see **Appendix 4B Supplemental Data**). Local Study Area data suggest lower rates of emergency department visits for injury among Ignace residents compared to rates in the entire NWHU population. Key risk factors related to rural location and health services provision (e.g., distances to travel and limited hours of operation) remain relevant in the Ignace area. A study on rural to urban injury rates found that people with injuries from rural areas were more likely to visit the emergency department for multiple injuries, have a higher rate of transportation related injuries, and more severe injuries with a higher likelihood of being admitted to a hospital (Bang et al. 2019).

Between 2002 and 2021, Ignace residents made 2,450 visits to an Emergency Department for injuries. Females accounted for 968 of these visits (39.5%) and males are much higher at 1,482 (60.5%). In comparison to injury hospitalizations (45% female and 55% male), males are slightly over-represented in injury emergency department visits. **Table 4.4-25** shows the comparison of emergency department visits to hospital admissions. Most notable is the high number of emergency department visits in comparison to hospitalizations for injury, suggesting that most injuries seen at the emergency department can be treated without inpatient care.

Further noted is the difference in females use of services by injury category. Although the numbers are very small, it is noted that while fewer than 10% of emergency department visits for injury relate to intentional injuries which includes assault and self-harm. This category accounts for almost one in five injury hospitalizations.

Table 4.4-25: Comparison of Injury Emergency Department Visits and Injury Hospitalization by Category and Sex, Ignace Residents, 2002-2021¹

Injury Category	Female	Male	Total
<i>Injury Emergency Department Visits</i>			
Intentional	72 (7.4%)	78 (5.6%)	150 (6%)
Unintentional	896 (92.6%)	1,404 (93.4%)	2,300 (94%)
Total Injury Emergency Department Visits	968 (39.5%)	1,482 (60.5%)	2,450
<i>Injury Hospitalization</i>			
Intentional	18 (17.6%)	13 (10.4%)	31 (13.7%)
Unintentional	84 (82.4%)	112 (89.6%)	196 (86.3%)
Total Injury Hospitalization	102 (44.9%)	125 (55.1%)	227

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023; IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. Data are presented in **Appendix 4B**.

Table 4.4-26 shows injury-related emergency department visits by age for the NWHU compared to Ontario in 2021. The rates per 100,000 population of injury-related emergency department visits are significantly higher for each age group in the NWHU compared to Ontario, notably, the 20-44 and 45-64 age groups.

Table 4.4-26: Injury Emergency Department Visits Comparison Rates for NWHU and Ontario, 2021¹

Age Group	NWHU	Ontario	Significant compared to Ontario (Higher, Lower, Similar)
00-19	15,802	10,087	Higher
20-44	20,291	8,412	Higher
45-64	12,848	7,104	Higher
65-74	10,261	6,889	Higher
75+	14,792	11,960	Higher

Source: Public Health Ontario 2022e.

Notes:

1. Data are presented in **Appendix 4B**.

Table 4.4-27 shows the age and emergency department acuity level for Ignace residents seeking emergency department care for injury. Fewer than 1% of visits were due to life threatening injuries, while almost one in three were at level 3 which is "Urgent/Potentially Serious". Although youth aged 0-19 account for a high percentage of injury related emergency department visits, they are the least likely to be at a Triage level of 1 or 2 (most serious). The most common acuity level among all residents is level 4 "less-urgent", accounting for 45% of injury related emergency department visits.

Table 4.4-27: Injury Emergency Department Visits by Age Group and Triage Level, 2002-2021^{1,2,3,4}

Age Group	(1) Resuscitation/Life Threatening	(2) Emergent/Potentially Life-Threatening	(3) Urgent/Potentially Serious	(4) Less Urgent/Semi- Urgent	(5) Non-Urgent	Ignace Total
00-19	2 (0.3%)	27 (4.0%)	187 (27.8%)	319 (47.4%)	138 (20.5%)	673 (100%)
20-44	4 (0.5%)	49 (5.9%)	237 (28.7%)	358 (43.4%)	177 (21.5%)	825 (100%)
45-64	4 (0.6%)	45 (7.1%)	188 (29.5%)	295 (46.2%)	106 (16.6%)	638 (100%)
65-74	2 (1.0%)	13 (6.3%)	72 (35.0%)	89 (43.2%)	30 (14.6%)	206 (100%)
75+	(0%)	12 (11.2%)	54 (50.5%)	31 (29.0%)	10 (9.3%)	107 (100%)
Ignace	12 (0.5%)	146 (6.0%)	738 (30.1%)	1,092 (44.6%)	461 (18.8%)	2,449 (100%)

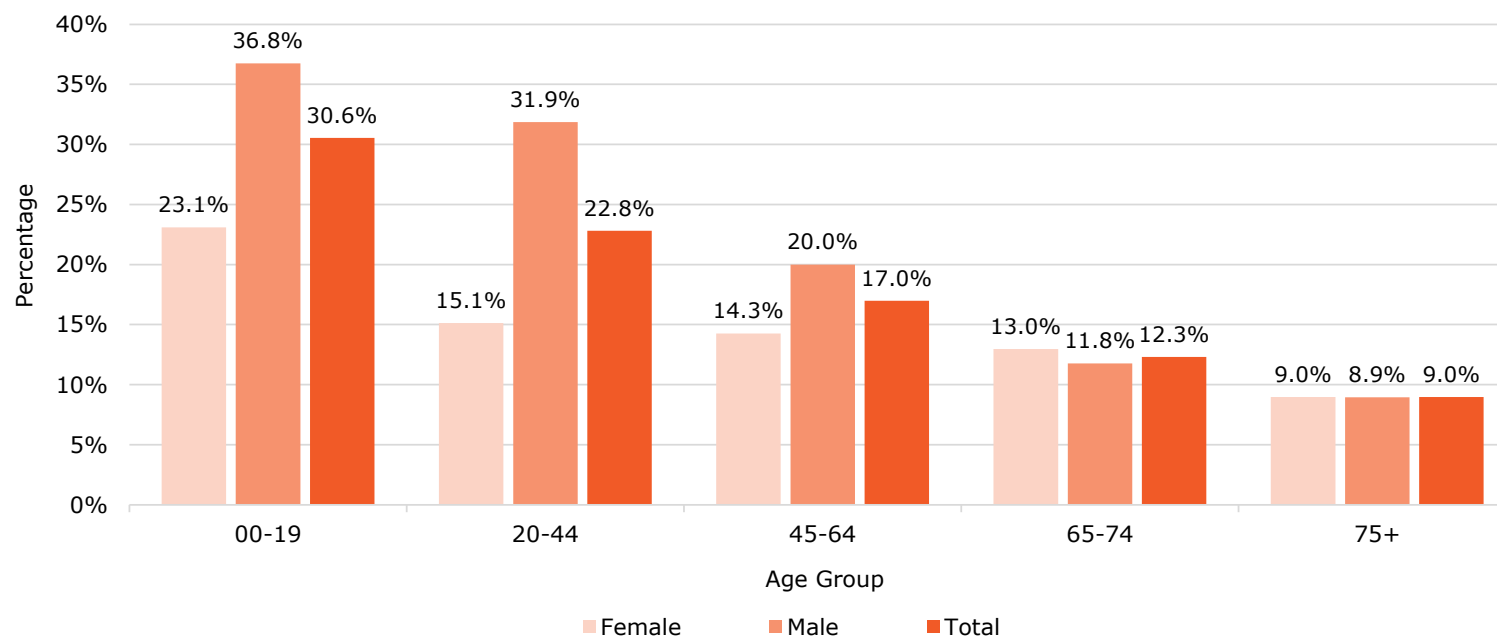
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 20; all Dx; AM Case Type = Emergency.
2. 1 "unknown" age group not shown.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Figure 4-4.74 shows that residents younger than 45 account for about one half of all injury emergency department visits (youth aged 19 and under with 31% and adults aged 20-44 with 23%). Among Ignace males between ages 0 and 19, more than one in three emergency department visits are related to injury, with the second highest rate occurring in males aged 20-44 where about 32% of all emergency department visits are for treatment for injury. While Ignace residents aged 65 and older account for about one half of injury hospitalizations, only about one in ten emergency visits is related to injury among residents aged 75 and older and about 12% for those aged 65 to 74.

Figure 4.4-74: Percentage of All Emergency Department Visits for Injury by Age, Group and Sex, Ignace Residents, 2002-2021^{1,2,3}



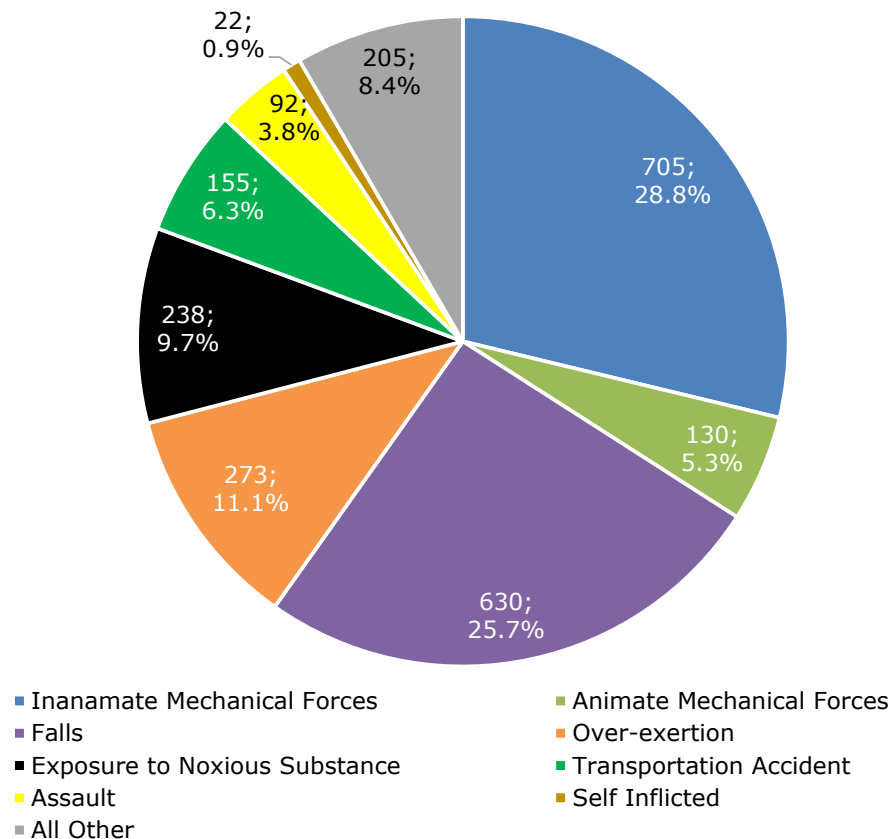
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 20; all Dx; AM Case Type = Emergency as a ratio of all ACT-Emergency Ambulatory Care Visits.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Figure 4.4-75 shows the leading reasons for emergency department visits for injury. While falls is the leading reason for hospitalization, exposure to “inanimate forces” is the leading reasons for emergency department injury visits. This includes multiple sources including being hit by a ball or bat but can also include firearms. “Animate forces” involve primarily animal bites. Falls are the second leading cause of emergency department visits (630 or about one in four visits). Overexertion and exposure to noxious substances each account for about one in ten emergency visits for injury. Injuries related to transportation account for just over 6% of visits for injuries. These injuries can occur on land or water and include the driver, passengers as well as pedestrians, bicycles, and farming equipment.

Figure 4.4-75: Injury Emergency Department Visits by Leading Reasons, Ignace Residents, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

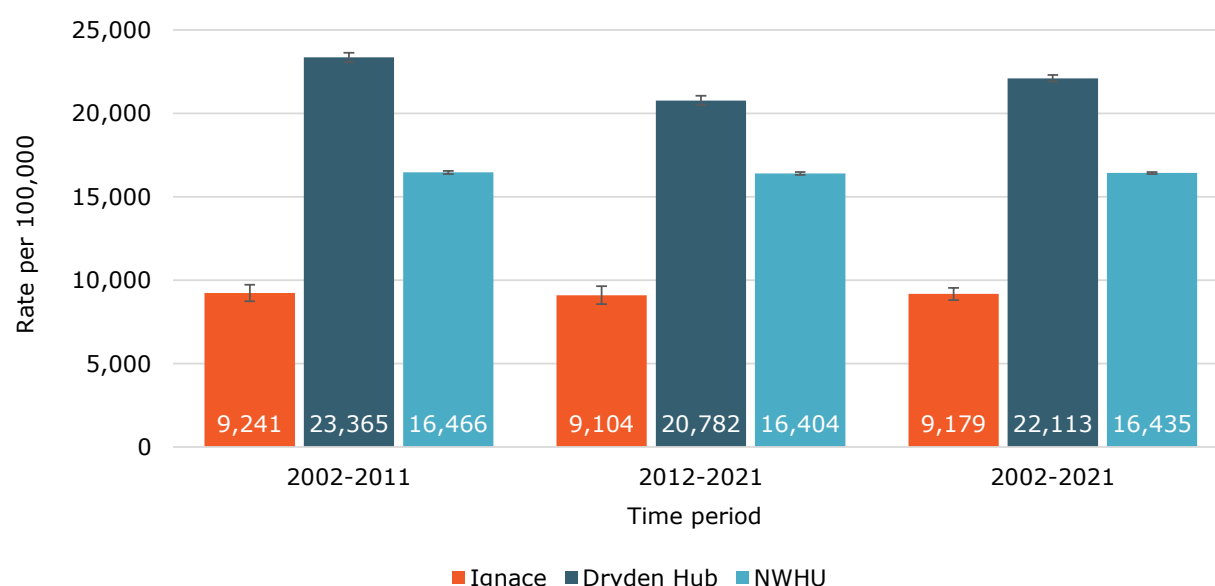
Notes:

1. ICD-10 Chapter 20; all Dx; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Overall, the time trend shows a very stable use of emergency departments for injury by Ignace residents at a rate consistently lower than the Dryden Hub and NWHU. Residents of the Dryden

Hub have the highest rate of emergency department utilization for all injury, as shown in **Figure 4.4.-76**. This is a slightly different trend than with hospitalization where the total injury hospitalization rate was slightly lower than NWHU, but unintentional injury hospitalization rates are slightly higher. The high rate of emergency department visits for injury for the Dryden Hub is notable given the NWHU has a significantly higher rate than Ontario (see **Table 4.4-26**).

Figure 4.4-76: All Injury Emergency Department Visit Comparison Rate by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3,4}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

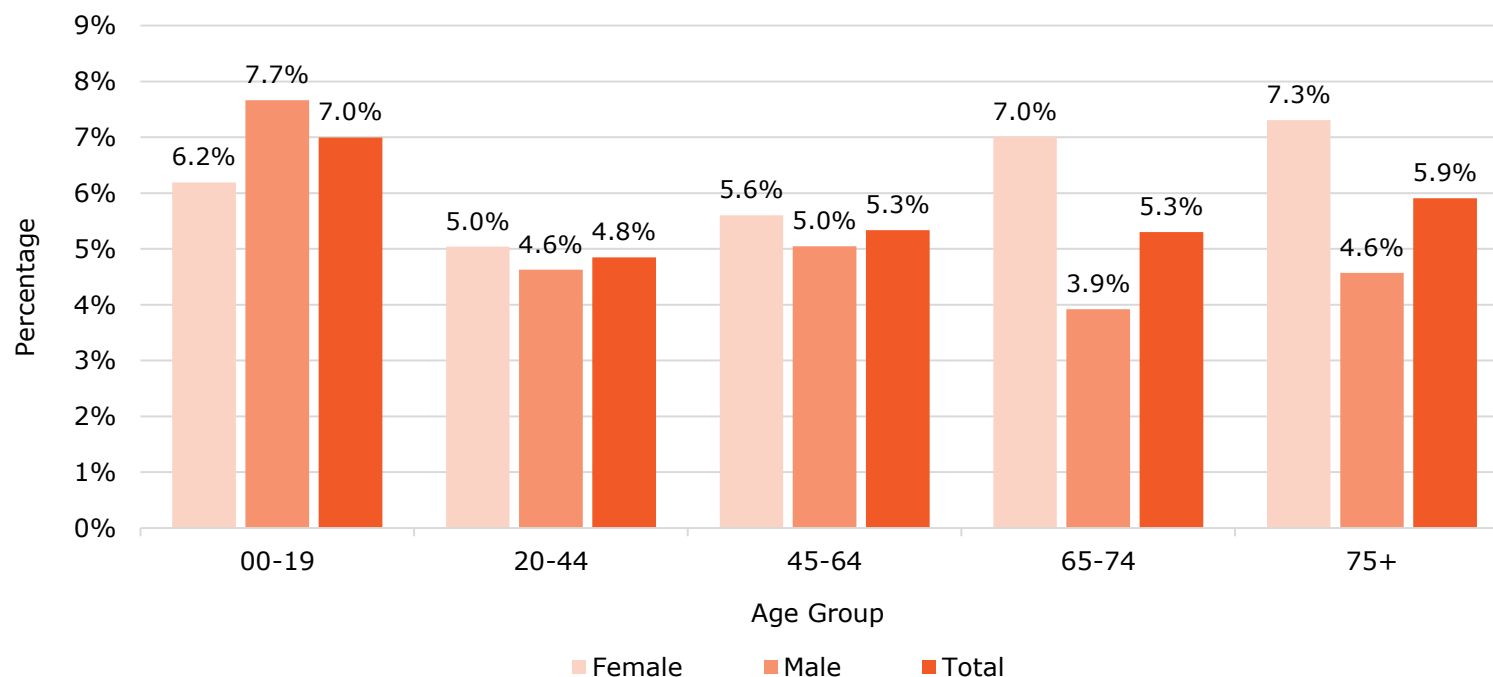
1. 2021 E.D. Visit data for Ignace was too small to be presented for the single year.
2. ICD-10 Chapter 20; all Dx; AM Case Type = Emergency.
3. Data Extraction and Analysis by EPI Research Inc
4. Data are presented in **Appendix 4B**.

4.4.6.2.1 Emergency Department Visits for Falls

Between 2002 and 2019 there were 625 emergency department visits for falls among Ignace residents. Females accounted for 330 (52.8%) visits and males 295 visits (47.2%). In 2020 and 2021, there was a dramatic decline in emergency department visits for falls among all area residents. The numbers for Ignace are too small to be reported.

The 45-64 years age group comprises the largest percentage in terms of visits (28.8%) and is followed closely by 20-44 (25.9%) and 0-19 (23.5%) age groups. Falls account for 7% of all emergency department visits in those aged 0-19 and between 4.8% and 5.9% of all visits for older age groups (see **Appendix 4B Supplemental Data**). Notably in all age groups except 0-19, falls account for a higher percentage of total emergency visits among females compared to males, as shown in **Figure 4.4-77**. This difference is especially notable for those aged 75+ (falls account for 7.3% of all visits for females and 4.6% for males).

Figure 4.4-77: Percentage of All Emergency Department Visits for Falls by Age Group and Sex, Ignace Residents, 2002-2019^{1,2,3}



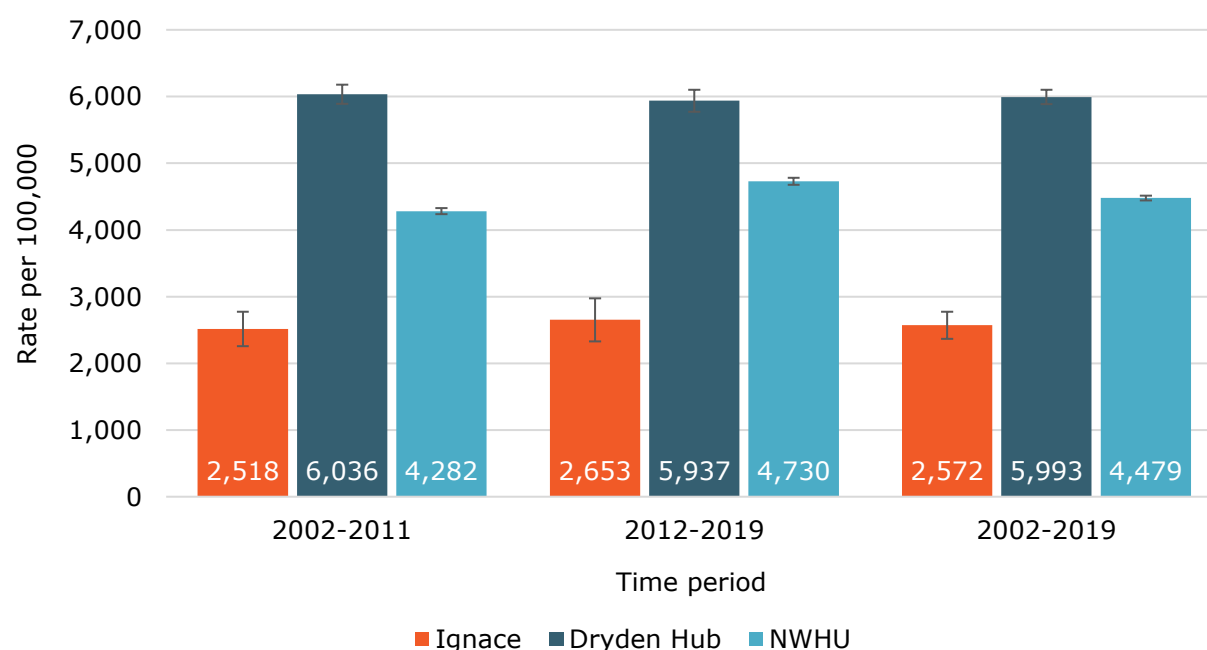
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 20; Dx = W00-W19; AM Case Type = Emergency as a ratio of all Emergency Ambulatory Care Visits.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

As shown in **Figure 4.4-78**, Ignace residents had a significantly lower rate of emergency department visits for falls compared to residents of the Dryden Hub and NWHU. Ignace rates remain significantly lower when separated by sex and by age. All age groups in Ignace had significantly lower rates of emergency department visits for falls compared to the comparison areas (see **Appendix 4B**).

Figure 4.4-78: Falls Emergency Department Visit Rate by Area, 2002-2011, 2012-2019 and 2002-2019^{1,2,3,4}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

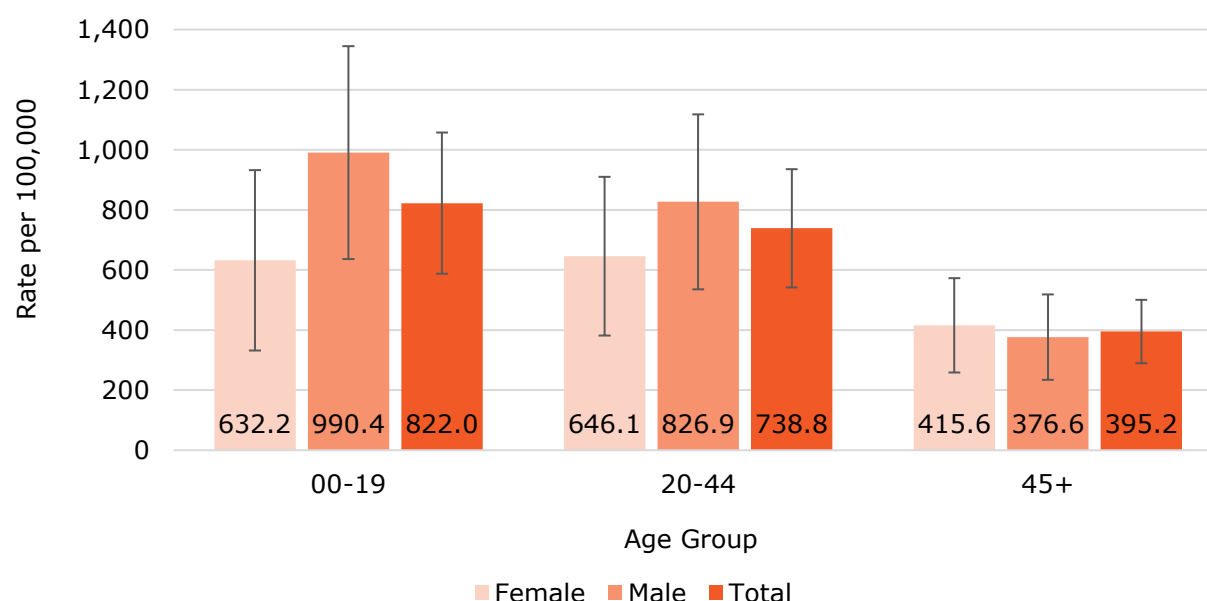
1. There were too few emergency department ("ED") visits for falls for Ignace residents to present by single year in 2020 and 2021.
2. ICD-10 Chapter 20; Dx = W00-W19; AM Case Type = Emergency.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

4.4.6.2.2 Emergency Department Visits for Transport Injuries

Between 2002 and 2021, there were 155 emergency department visits for transport injuries. Transport injuries include everyone injured in a transport incident not just the driver; it may also involve a pedestrian, cyclist, or passenger. Males accounted for 88 (56.8%) of these visits and females 67 (43.2%) (**Figure 4.4-79**). As with hospitalizations, Ignace residents aged 20-44 account for the highest percentage of visits for transport injuries (34.8%). This is followed equally by residents under the age of 20 and between ages 45 and 64 (30.3%). There is no statistically significant difference in rates by age group or sex among Ignace residents (see **Appendix 4B Supplemental Data**).

The most common transport injuries include cyclist injuries (43 with 34 of these among males) and “other land transport accidents” (65 with 51 of these among males). These incidents are quite wide ranging and include rider of an animal, rail car as well as “special vehicles primarily used on industrial premises.” There were six injuries related to motorcycles (all male) and seven related to water transport (the majority are male).

Figure 4.4-79: Emergency Department Visits for Transport Injuries by Age Group and Sex, Ignace Residents, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

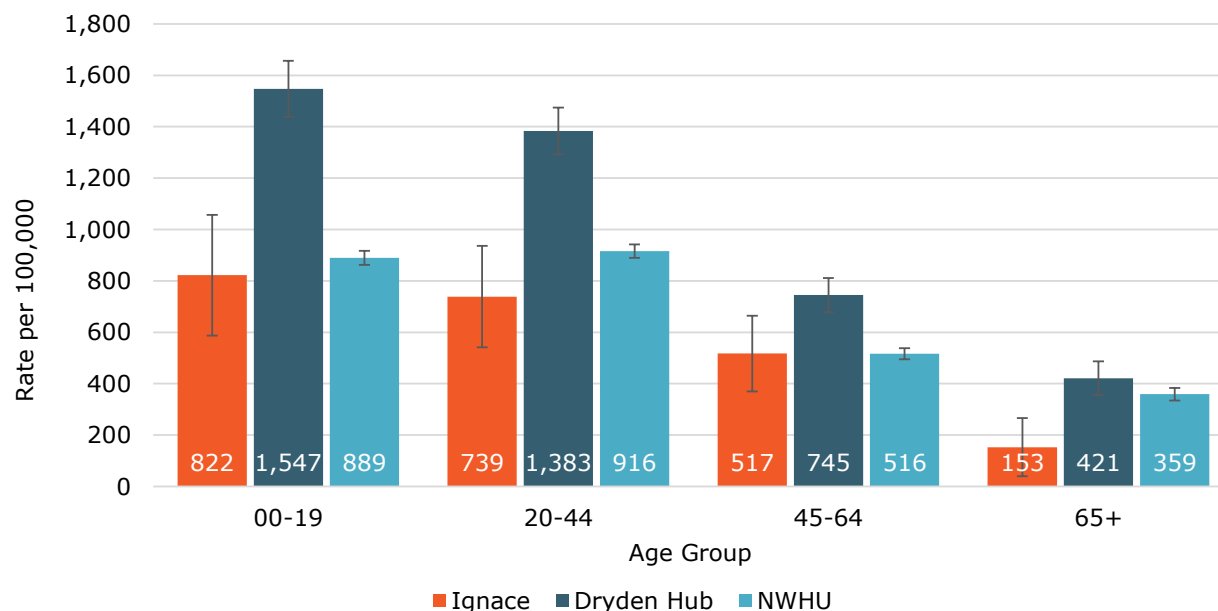
Notes:

1. ICD-10 Chapter 20; Dx = V00-V99; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

In all cases, rates among Ignace residents are statistically lower than residents of the Dryden Hub, but similar to residents of the NWHU. All areas show the rates decreasing with age. While Ignace did not have significantly different rates than the NWHU for most age groups, the rate for Ignace residents aged 65+ was significantly lower (see **Figure 4.4-80**).

Traffic accident rates for Highway 17 decreased between 2017 and 2021. Most accidents were caused by collisions with animals, poor lighting, and weather (WSP 2022). Participants of the NWO Baseline Studies Key Person Interview Program 2022-2023 in particular expressed concern for highway safety around the Local Study Area and in the Regional Study Area, particularly in the winter months. For more information on transportation, see **Section 2.4.2**.

Figure 4.4-80: Transport Injuries Emergency Department Visit Rate by Area and Age Group, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 20; Dx = V00-V99; AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.6.3 Emergency Department Visits for Intentional Injuries

Between 2002 and 2021, there were 150 emergency department visits for intentional injuries (both assault and intentional self-harm) among Ignace residents.¹⁴³ Of the 150 emergency department visits, 72 (48%) were female and 78 (52%) were male. 61% of these emergency department visits were for assault.

Self-harm emergency department visits were primarily composed of females (62.5%) while most emergency visits for assault were for males (83.3%), as shown in **Table 4.4-28**. It notable that approximately 1 in 4 emergency department visits for intentional injuries were by children or youth (aged 10-19). This is a key health equity indicator.

¹⁴³ All data in this section are limited to those aged 10 and older. A review of Ignace data shows that there is not data for any residents younger than age 10 for either assault or self-harm.

Table 4.4-28: Intentional Injury Emergency Department Visits by Category and Sex, Ignace Residents, 2002-2021^{1,2,3}

	Female	Male	Total
Intentional Self-Harm	45 (62.5%)	13 (16.7%)	58 (38.7%)
Assault	27 (37.5%)	65 (83.3%)	92 (61.3%)
Total Intentional Injury	72	78	150

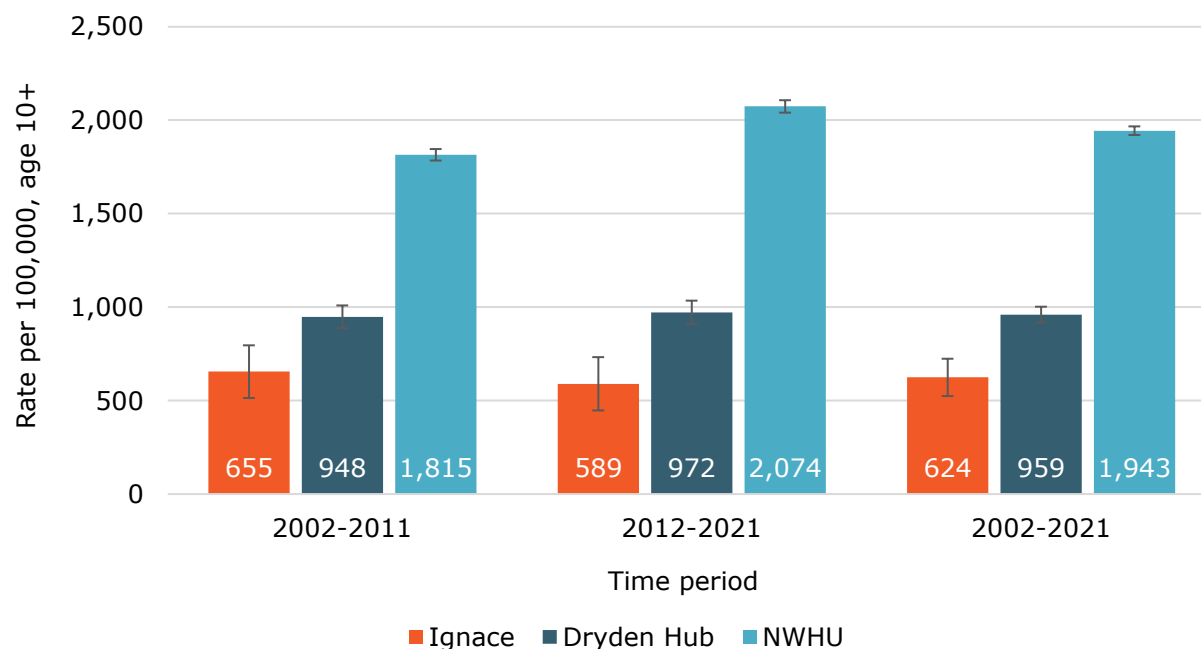
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 20; Dx X60-X84, Y870 (limited to age 10+ only); AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Rates of intentional injury emergency department visits are significantly lower among Ignace residents than residents of the Dryden Hub and even lower than rates among residents of the NWHU. Between 2002 to 2021, the rate for Ignace was less than a third of the rate for NWHU (**Figure 4.4-81**). Similar trends are seen when examining males and females separately. This is also true in most age groups; however, residents of Ignace and the Dryden Hub aged 45+ had similar rates. In all three areas, rates decreased with age (see **Appendix 4B Supplemental Data**). In 2021, the rate of emergency department visits for intentional injury was significantly higher in the NWHU at 2,098 persons per 100,000 population compared to 323 in Ontario (Public Health Unit 2022e).

Figure 4.4-81: Intentional Injury Emergency Department Visit Rates by Area, 2002-2011, 2012-2021 and 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

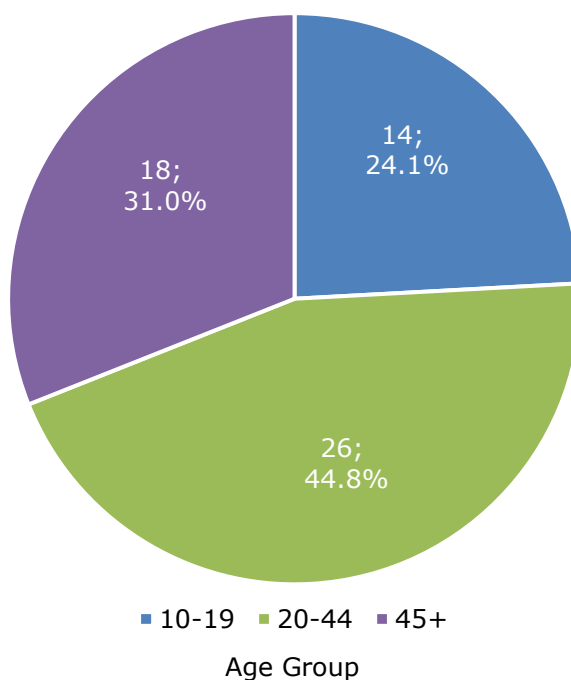
Notes:

1. ICD-10 Chapter 20; Dx X60-X84, Y870 (limited to age 10+ only); AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Between 2002 and 2021, there were 58 emergency department visits related to intentional self-harm among Ignace residents. Of these, the majority (77.6%) were female.

Figure 4.4-82 illustrates that the highest age group impacted is Ignace residents aged 20-44 followed by age 45 and older and youth aged 10 to 19 at 24%. It is important to note that the youth age group (10-19 years) is a much smaller population than the comparison age groups (about 13% of the population), and thus population-based rates are the most important to review for context of impact. Youth aged 10 to 19 account for only about 13% of the Ignace population, the proportional impact is almost double in self-harm emergency visits (at 24%).

Figure 4.4-82: Intentional Self-Harm Emergency Department Visits by Age Group, Ignace Residents, 2002-2021^{1,2,3}



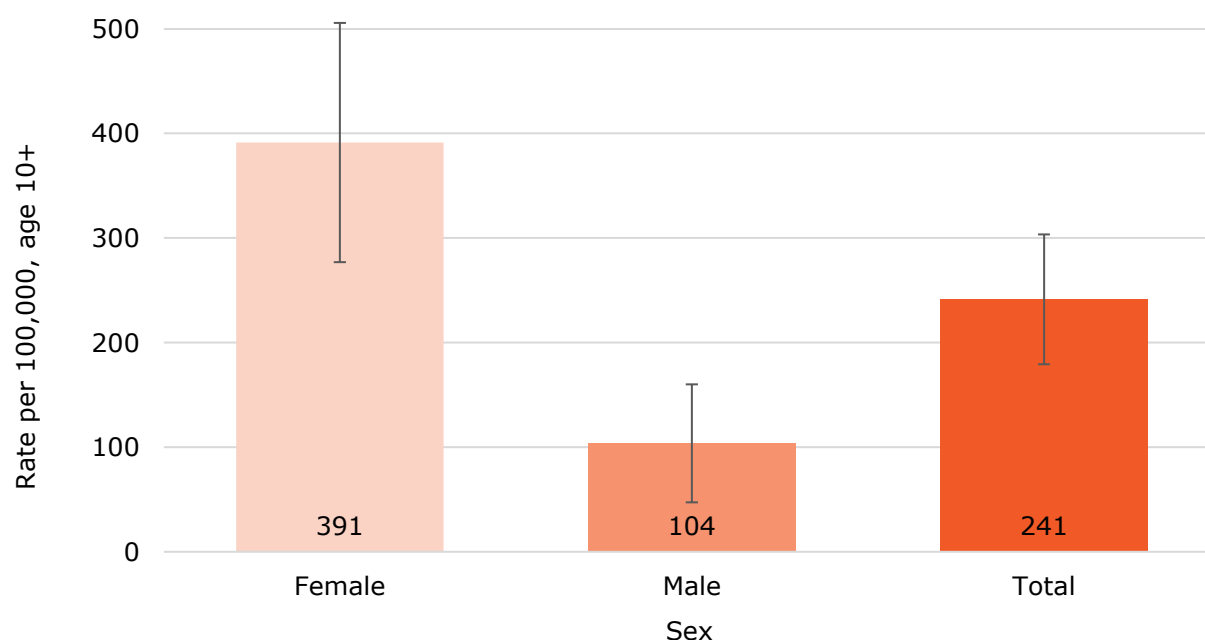
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 20; Dx X60-X84, Y870 (limited to age 10+ only); AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Figure 4.4-83 illustrates that the emergency department visit rate for intentional self-harm is much higher among Ignace females than males at almost triple the rate. This is consistent with results of self-harm hospitalizations, as described in **Section 4.4.6.6**. It is the 20- to 44-year-old age group of Ignace residents who experience rates that are statistically higher than both comparison areas.

Figure 4.4-83: Intentional Self-Harm Emergency Department Visits by Sex, Ignace Residents aged 10 and older, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

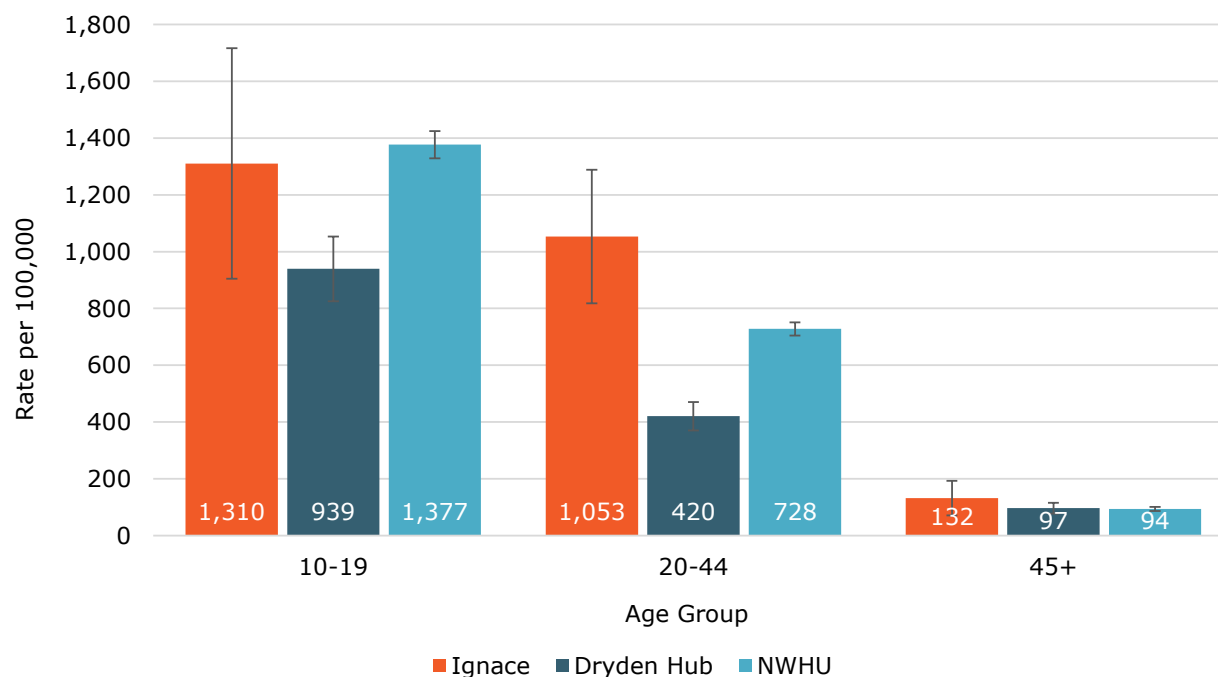
Notes:

1. ICD-10 Chapter 20; Dx X60-X84, Y870 (limited to age 10+ only); AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Overall, there has been very little change in rates among Ignace residents between 2002 and 2021. These rates are consistently similar to the Dryden Hub but much lower than residents of the NWHU. Emergency department visit rates increased slightly for Ignace females from 2002-2011 to 2012-2021, but these increases are not statistically significant and remain similar to Dryden Hub rates. Among males, emergency department visits related to self-harm have declined slightly for Ignace males between the time periods reviewed, but this is not a statistically significant change.

When disaggregating rates by age group, as shown in **Figure 4.4-84**, it is notable that the rate for Ignace residents aged 20-44 is significantly higher than the corresponding rate for Dryden Hub. Just over one half of emergency department visits for assault are among Ignace residents aged 20 to 44.

Figure 4.4-84: Intentional Self-Harm Emergency Department Visit Rates by Area and Age Group, 2002-2021^{1,2,3}



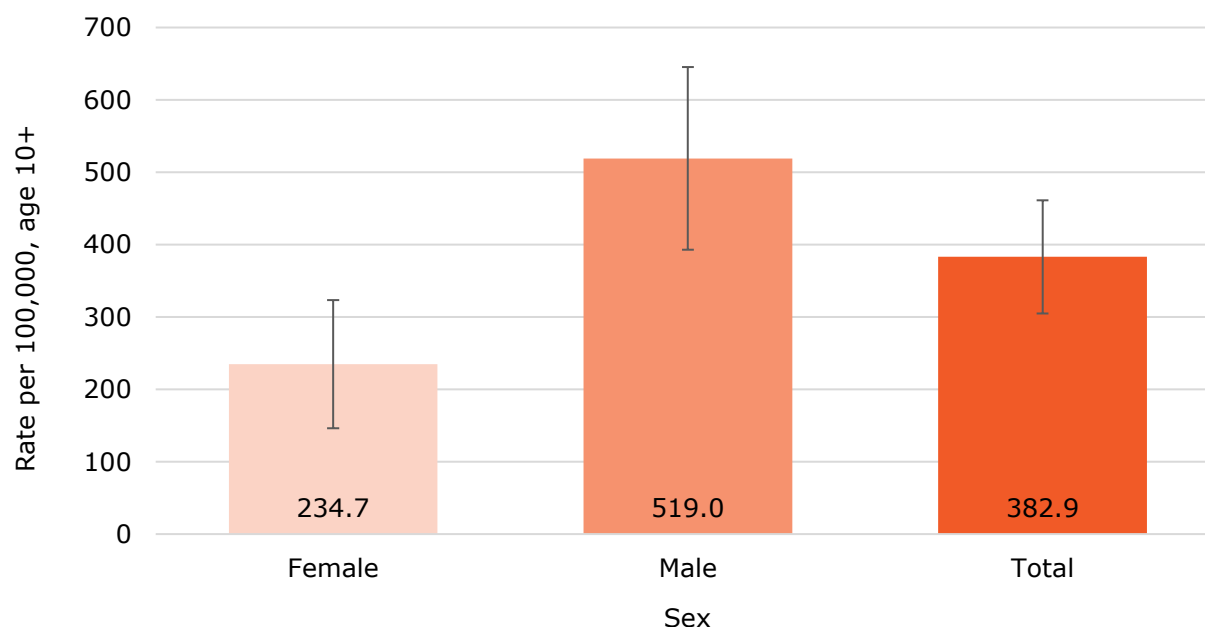
Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 20; Dx X60-X84, Y870 (limited to age 10+ only); AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Between 2002 and 2021, there were 92 emergency department visits related to assault. More than two-thirds (65 or 71%) were among Ignace males and the remaining (27) are among Ignace females. As **Figure 4.4-85** shows, this difference in rates by sex is statistically significant.

Figure 4.4-85: Assault Emergency Department Visits by Sex, Ignace Residents aged 10 and older, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023e. Retrieved April 18, 2023.

Notes:

1. ICD-10 Chapter 20; Dx X85-Y09, Y871 (limited to age 10+ only); AM Case Type = Emergency.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

In every case, the rate among Ignace residents is much lower than comparison areas and there has been very little change for Ignace over time. It is especially different to NWHU rates; the rate for the entire 2002 to 2021 study period for Ignace residents is less than one quarter the corresponding rate for NWHU (see **Appendix 4B Supplemental Data**). This is also true when looking at rates specifically among males or females. In all three areas, rates decrease significantly after age 45. The rates in those aged 45+ in all three areas are similarly low.

4.4.6.4 All Injury Hospitalization

Rates of injury hospitalization show the scope of serious injury incidence and help assess the extent to which injuries are contributing to hospital resources, both in terms of visits and lengths of stay. Assessment of injury category (e.g., intentional versus unintentional) helps identify priorities for injury prevention, as does assessment by age group.

Between 2002 and 2021, 158 Ignace residents were hospitalized for injury (**Table 4.4-29**). Of these, 67 (42.4%) were female and 91 (57.6%) were male (see **Appendix 4B Supplemental Data**).

Table 4.4-29: All Injury Hospitalization Summary Table, by Area and Sex, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	67 (42.4%)	92 (44.2%)	1.4	1,056	11.5	28.5%	55.8
	Male	91 (57.6%)	116 (55.8%)	1.3	1,235	10.6	37.0%	52.2
	Total	158	208	1.3	2,291	11.0	33.1%	53.9
Dryden Hub	Female	865 (53.1%)	1,335 (55.6%)	1.5	19,096	14.3	26.7%	63.0
	Male	764 (46.9%)	1,065 (44.4%)	1.4	12,359	11.6	31.9%	52.7
	Total	1,628	2,400	1.5	31,455	13.1	28.7%	58.4
NWHU	Female	6,127 (51.3%)	9,680 (52.7%)	1.6	105,414	10.9	34.6%	52.4
	Male	5,806 (48.6%)	8,677 (47.3%)	1.5	74,593	8.6	27.9%	46.0
	Total	11,951	18,357	1.5	180,007	9.8	31.9%	49.4

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; Excluding Y35-Y36 and Y40-Y84; "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

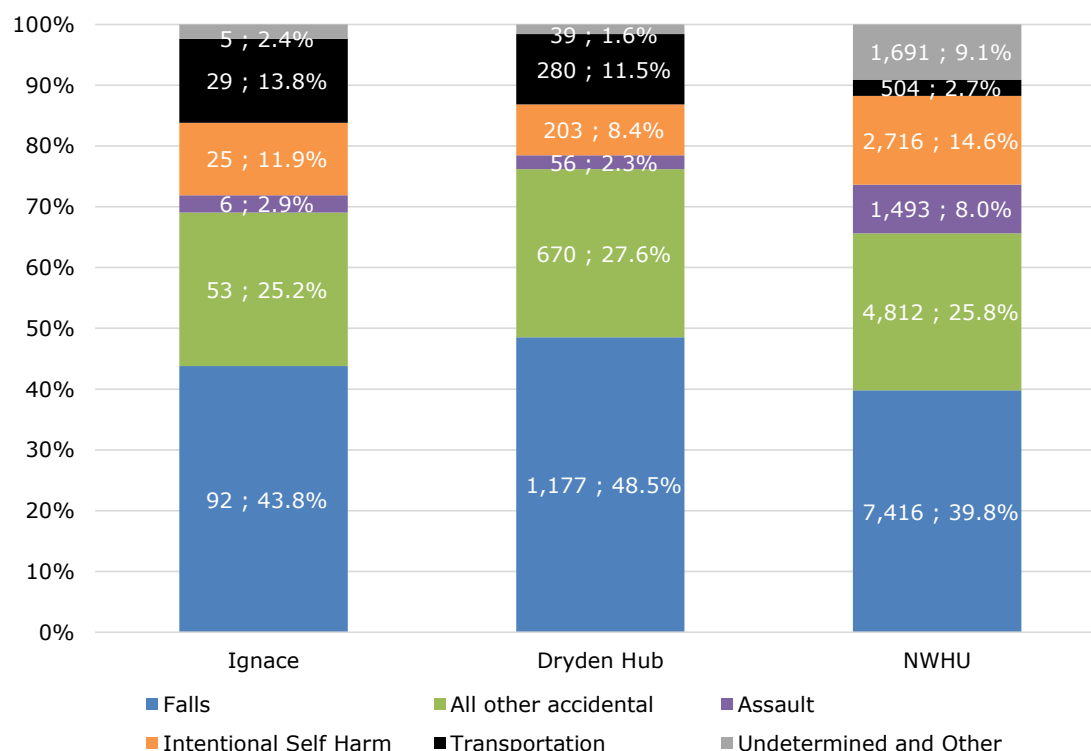
The leading causes of hospitalization due to injury among Ignace residents were falls (44%), transportation-related causes (14%), and intentional self-harm (12%), as displayed in **Figure 4.4-86**. A similar trend was observed for the Dryden Hub, but for the NWHU, assault was the third leading cause for injury (13%) behind falls (66.1%) and intentional self-harm (24%). Despite the older population distribution in Ignace compared to the Dryden Hub or NWHU, the rate of injury hospitalization for falls was lower among Ignace residents. For all other injury categories, rates of hospitalization were similar or lower among Ignace residents compared to residents of the Dryden Hub and NWHU. Rates of hospitalization due to assault were significantly lower among Ignace residents compared to the NWHU.

There is little difference in injury hospitalization rates by sex for Ignace residents. The only large difference (but not statistically significant as shown by overlapping confidence intervals) is in the 20–44-year-old age group where the hospitalization rate among Ignace men is 826.9 per 100,000 men, which is almost double the rate for Ignace females of 421.3 per 100,000 (see **Appendix 4B Supplemental Data**).

Hospitalization rates are not changing appreciably over time among the Ignace population. Ignace injury hospitalization rates have been lower than the comparison areas across the 2002 to 2021 study period, especially in females. While Ignace residents aged 65 and over experienced injury hospitalization at significantly lower rates than the comparison areas, Ignace had similar rates to Dryden Hub in younger age groups (see **Appendix 4B Supplemental Data**).

Ignace residents generally had lower lengths of hospital stay than the Dryden Hub and were similar to NWHU. The exception is that length of stay for falls was higher. This may be attributed to the older population in Ignace, as fall injuries become more debilitating as one becomes more elderly. Falls had the highest average age at hospitalization (63.5 years) among Ignace residents. Seniors frequently require long-term care after fall injuries. Transportation injury inpatients had the lowest average age (41.9 years) with a large average age gap between males (46 years) and females (34.3 years) (see **Appendix 4B Supplemental Data**).

Figure 4.4-86: All Injury Hospitalization by Type and by Area, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; Excluding Y35-Y36 and Y40-Y84; "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.6.5 Unintentional Injury Hospitalization

Unintentional injuries comprise most of the injury burden in Canada. Primary causes include falls, motor vehicle crashes, and poisonings (including drug overdoses). Although unintentional injuries are commonly considered accidents, a variety of modifiable behavioural, psychosocial, socio-economic, and environmental factors influence unintentional injury risk. Unintentional injury rates are important to monitor over time to determine the need for prevention and intervention measures to reduce the injury burden.

Between 2002 and 2021, unintentional injuries accounted for 178 of the 208 (85.6%) injury hospitalizations among Ignace residents. Ignace residents hospitalized due to unintentional injury were disproportionately male (57.9%). This is in contrast to the Dryden Hub, where there were higher rates of female injuries, as shown in **Table 4.4-30**. The proportion of inpatient days spent in an alternate level of care for Ignace residents was high (34.8%), but this was similar to the NWHU.

Table 4.4-30: Unintentional Injury Hospitalization Summary Table, by Area and Sex, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	53 (39%)	75 (42.1%)	1.4	986	13.1	30.5%	59.8
	Male	83 (61%)	103 (57.9%)	1.2	1,191	11.6	38.4%	53.9
	Total	136	178	1.3	2,177	12.2	34.8%	56.4
Dryden Hub	Female	760 (51.9%)	1,175 (54.8%)	1.5	18,520	15.8	27.5%	67.7
	Male	705 (48.2%)	971 (45.2%)	1.4	11,954	12.3	32.9%	54.4
	Total	1464	2146	1.5	30,474	14.2	29.7%	61.6
NWHU	Female	4,831 (49.9%)	7,391 (51.8%)	1.5	93,808	12.7	36.2%	61.7
	Male	4,842 (50%)	6,878 (48.2%)	1.4	66,468	9.7	30.2%	50.3
	Total	9,685	14,269	1.5	160,276	11.2	33.8%	56.2

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

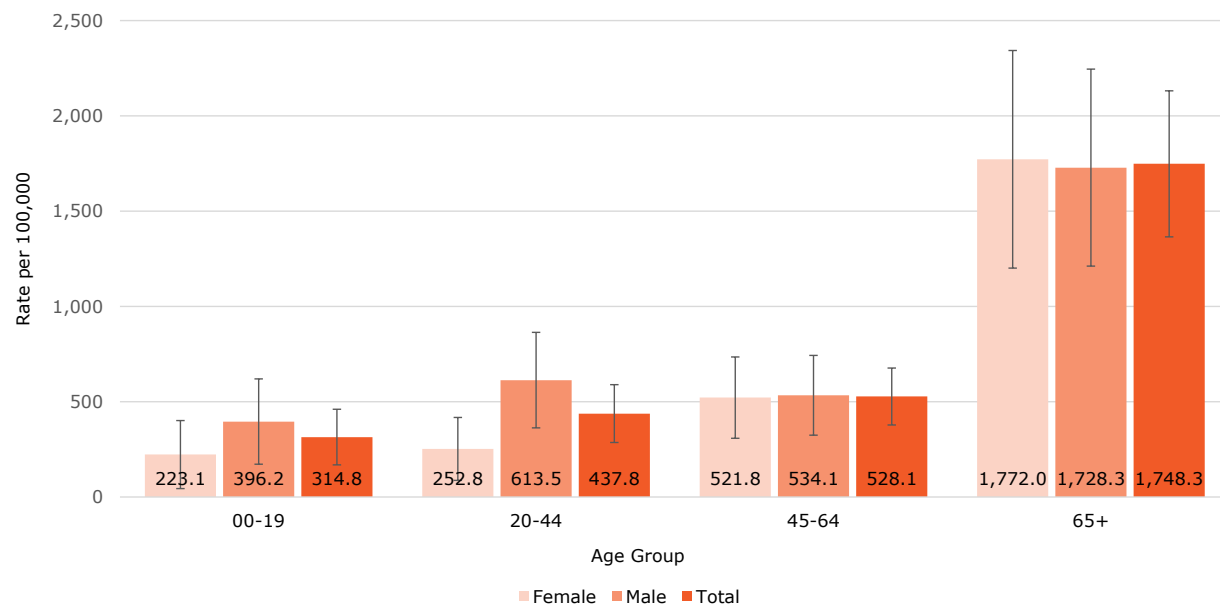
Notes:

1. ICD-10 Chapter 20; Excluding Y35-Y36, Y40-Y84, X60-X84 and X85-Y09; "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

As shown in **Figure 4.4.-87**, unintentional injury hospitalization rates among Ignace males and females are not significantly different, although there is variation by age group.

Unintentional injury hospitalizations more commonly occurred among older Ignace residents. 45% of unintentional injury hospitalizations of Ignace residents were among residents aged 65 or older, which may further explain the long lengths of hospital stay as seniors are more vulnerable to complications and slower recovery. Unintentional injury hospitalization rates were somewhat lower among Ignace residents compared to residents of the Dryden Hub and NWHU (see **Appendix 4B Supplemental Data** for more data on unintentional injury).

Figure 4.4-87: Unintentional Injury Hospitalization by Sex and Age Group, Ignace Residents, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; Excluding Y35-Y36, Y40-Y84, X60-X84 and X85-Y09; "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.6.5.1 Injuries from Falls

Falls are the leading cause of injury among older adults in Canada and cause 85% of seniors' injury-related hospitalizations. Furthermore, over one-third of seniors admitted to a hospital for a fall are later admitted to a long-term care (Public Health Agency of Canada 2014). Falls cause significant mortality and loss of mobility, particularly among older adults, but falls cause hospitalizations and disability across the lifespan. Falls accounted for 92 of the 196 (46.9%) unintentional injury hospitalizations among Ignace residents from 2002 to 2021.

As shown in **Table 4.4-31**, the average length of stay was higher for falls (16.6 days) when compared to all unintentional injuries (12.2 days). Hospitalizations due to falls also had a high percentage of inpatient days spent in alternate level of care (ALC) compared to all unintentional injuries. That is, 45.6% of inpatient days due to falls among Ignace residents were spent in ALC compared to only 28.1% and 32.5% among residents of the Dryden Hub and NWHU, respectively. This suggests potentially greater difficulties in securing appropriate outpatient rehabilitation, home care and/or long-term care for Ignace residents requiring ongoing care due to fall injuries.

Table 4.4-31: Falls Hospitalization Summary Table, by Area and Sex, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	31 (46.3%)	48 (52.2%)	1.5	768	16.0	38.8%	65.3
	Male	36 (53.7%)	44 (47.8%)	1.2	755	17.2	52.5%	61.6
	Total	67	92	1.4	1,523	16.6	45.6%	63.5
Dryden Hub	Female	496 (62%)	756 (64.2%)	1.5	11,914	15.8	29.8%	71.9
	Male	305 (38.1%)	421 (35.8%)	1.4	4,736	11.2	23.8%	62.0
	Total	800	1,177	1.5	16,650	14.1	28.1%	68.3
NWHU	Female	2,954 (58.1%)	4,472 (60.3%)	1.5	57,835	12.9	34.8%	68.7
	Male	2,122 (41.7%)	2,945 (39.7%)	1.4	29,186	9.9	27.9%	58.7
	Total	5,083	7,417	1.5	87,021	11.7	32.5%	64.8

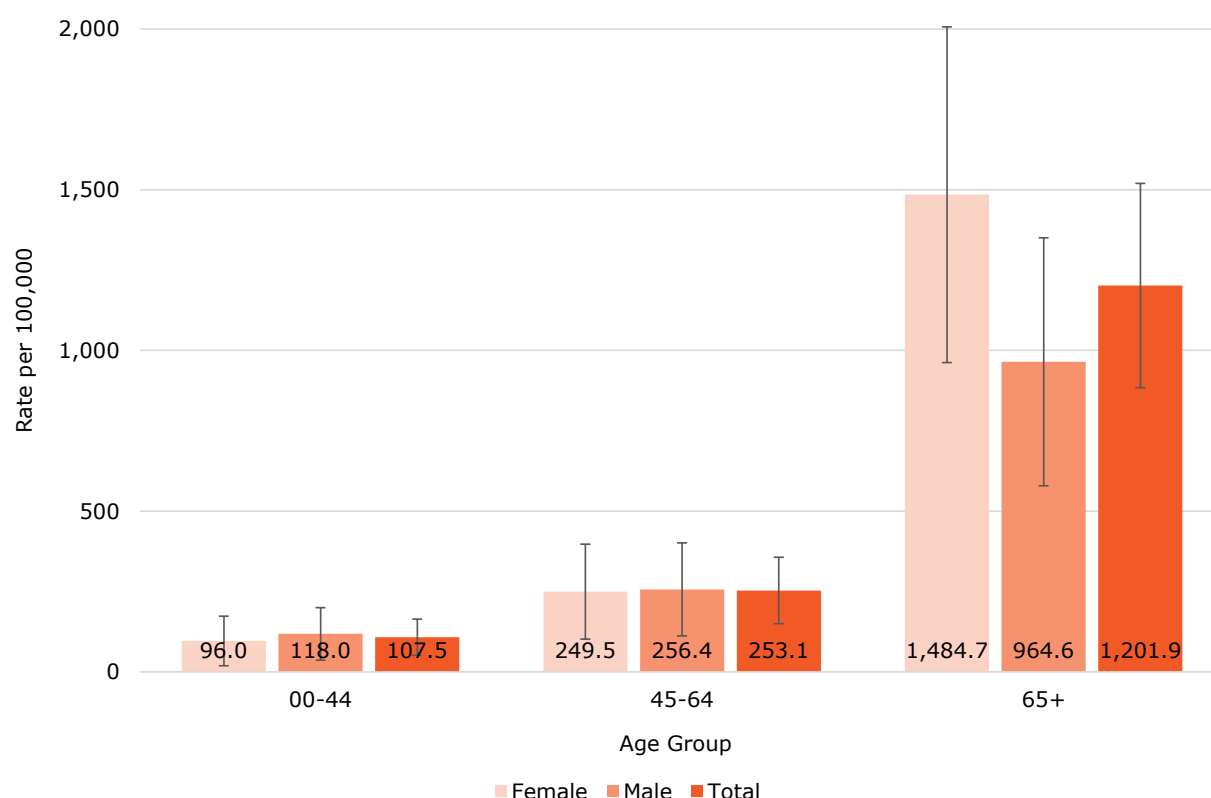
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; W00-W19 only; "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Older adults account for a high percentage of Ignace resident hospitalizations due to falls, where 60% were aged 65+. The rate of hospitalization among Ignace females aged 65+ was 1.5 times the rate seen in males, as shown in **Figure 4.4-88**. However, this difference is not statistically significant. In other age groups, rates in males and females were similar. Rates among Ignace residents were generally lower than the rates in the comparison areas. When comparing rates by age, the Ignace rate was significantly lower than the Dryden Hub and NWHU in those aged 65+, but there were no significant differences in younger age groups (see **Appendix 4B Supplemental Data**).

Figure 4.4-88: Fall Hospitalization Rates by Sex and Age Group, Ignace Residents, 2002-2021^{1,2,3}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; W00-W19 only; "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.6.5.2 Injuries from Transport Incidents

Transport-related injuries are comprised not only of motor vehicle crashes, but also of other road users (e.g., pedestrians, cyclists) being struck by vehicles or non-road travel transport (e.g., boating incidents). They are the second-leading cause of injury hospitalizations in Canada (Parachute 2022). Some key risk groups for road injuries are young or novice drivers, medically at-risk drivers, and vulnerable road users (e.g., pedestrians, cyclists, and motorcyclists) (Canadian Council of Motor Transportation Administrators 2016).

There were 29 hospitalizations due to transportation injuries among Ignace residents from 2002 to 2021. 24 individuals were hospitalized, suggesting that most were hospitalized only once. As shown in **Table 4.4-32**, inpatients from Ignace hospitalized due to transport incidents were disproportionately male (62.5%), a pattern that is similar for Dryden Hub and NWHU. Alternate levels of care were used much less among Ignace residents (5.6%) for transport injuries compared to the Dryden Hub and NWHU.

Table 4.4-32: All Transport Injuries Summary by Sex and Area, 2002-2021^{1,2,3}

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	9 (37.5%)	10 (34.5%)	1.1	120	12.0	2.5%	34.3
	Male	15 (62.5%)	19 (65.5%)	1.3	132	6.9	8.3%	46.0
	Total	24	29	1.2	252	8.7	5.6%	41.9
Dryden Hub	Female	79 (35%)	97 (34.6%)	1.2	968	10.0	9.6%	43.3
	Male	147 (65%)	183 (65.4%)	1.2	2,510	13.7	46.3%	38.9
	Total	226	280	1.2	3,478	12.4	36.1%	40.4
NWHU	Female	503 (36%)	594 (35.1%)	1.2	4,832	8.1	19.1%	41.6
	Male	892 (63.9%)	1,097 (64.9%)	1.2	8,723	8.0	28.9%	38.9
	Total	1,397	1,691	1.2	13,555	8.0	25.5%	39.7

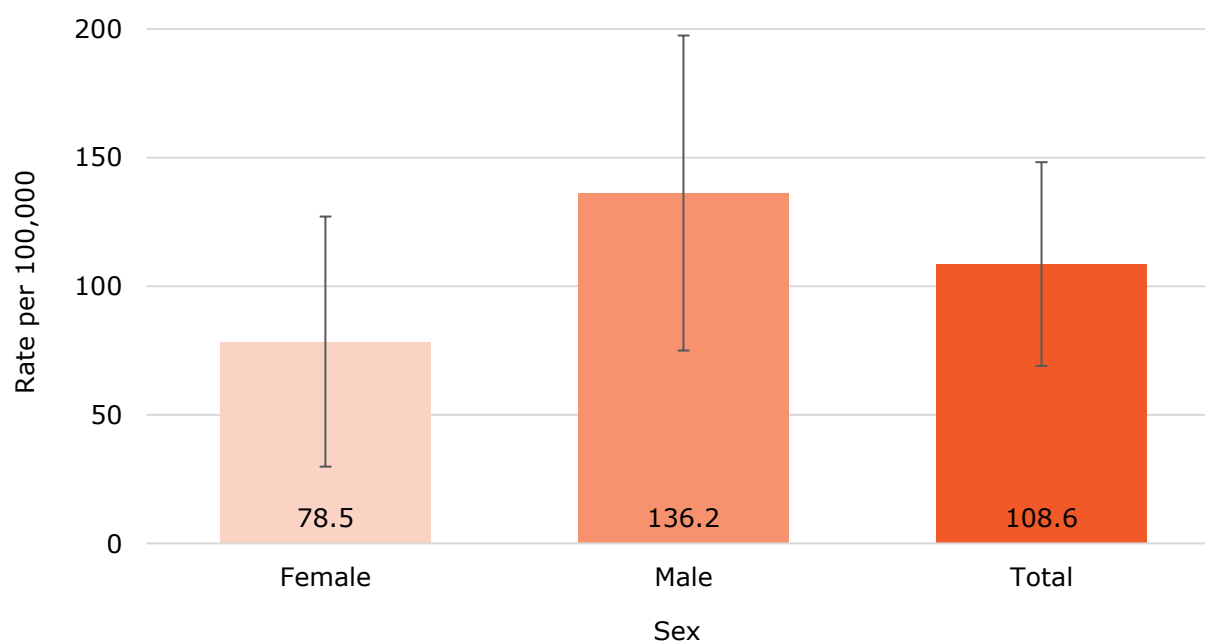
Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; V00-V99 only; "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

Due to very small numbers, data could not be disaggregated by both sex and age group. However, those aged 20-44 account for the highest percentage of hospitalizations (38%). Overall rates were not statistically significant amongst the Ignace, the Dryden Hub, and the NWHU. Sex- and age-specific rates were likewise not different among the three areas (see **Appendix 4B Supplemental Data**). As shown in **Figure 4.4-89**, Ignace females (78 per 100,000) had lower rates of transport injury hospitalizations compared to Ignace males (136 per 100,000).

Figure 4.4-89: Transport Injury Hospitalization Rates by Sex, Ignace Residents, 2002-2021^{1,2,3,4}



Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; V00-V99 only; "All Dx" filter.
2. Note numbers are too small to disaggregate by both sex and age group.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

4.4.6.6 Intentional Injury Hospitalization

Intentional injuries include intentional self-harm and assault (i.e., harm inflicted by others).

Hospitalization rates for self-harm are highest among females in Ontario, with the highest rates seen in young women (although completed suicides occur more commonly among men). Self-harm hospitalization rates have been shown to increase as neighbourhood income decreases making it an important equity indicator (Canadian Institute for Health Information 2020a).

While not all hospitalizations for self-harm can be attributed to a suicide attempt, it indicates a need for mental health support and burden of intentional self-harm injury regardless. Severe assault injuries are more commonly experienced by men, with violence towards males seen at higher rates in rural areas in Canada (Sutton 2023).

A total of 24 Ignace residents accounted for 31 hospitalizations for intentional injuries between 2002 and 2021. As shown in **Table 4.4-33**, 62.5% of intentional injury inpatients among Ignace residents were female. **Table 4.4-33** indicates that the average age of hospitalization for Ignace females related to intentional injury is 42 years old (all of which are intentional self-harm).

Among Ignace males, there were 13 hospitalizations for intentional injury; six were due to assault (all in the ages 20 to 44) and the remaining 7 are due to intentional self-harm injury. The intentional injury hospitalization rate for males from Ignace was significantly lower than the NWHU, but similar to the Dryden Hub. Data were too small for Ignace to disaggregate by time period for males or to further identify whether the intentional injury was related to self-harm as opposed to the combined total of assault and self-harm related causes.

Table 4.4-33: Intentional Injury Hospitalization Summary by Area and Sex, 2002-2021

Area	Sex	Number of Inpatients	Number of Hospitalizations	Average Hospitalizations per Patient	Total Days in Hospital	Average Days per Stay	Percentage of Inpatient Days that are in Alternate Level of Care	Inpatient Average Age
Ignace	Female	15 (62.5%)	18 (58.1%)	1.2	70	3.9	0.0%	42.0
	Male	9 (37.5%)	13 (41.9%)	1.4	44	3.4	0.0%	39.8
	Total	24	31	1.3	114	3.7	0.0%	41.1
Dryden Hub	Female	125 (62.2%)	162 (63%)	1.3	576	3.6	0.0%	34.2
	Male	77 (38.3%)	95 (37%)	1.2	405	4.3	1.0%	36.9
	Total	201	257	1.3	981	3.8	0.4%	35.2
NWHU	Female	1,658 (55.6%)	2,335 (55.8%)	1.4	11,606	5.0	21.7%	27.7
	Male	1,324 (44.4%)	1,850 (44.2%)	1.4	8,125	4.4	9.4%	31.5
	Total	2,984	4,185	1.4	19,731	4.7	16.7%	29.3

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; X60-Y09, Y870, Y871; "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

All hospitalizations for intentional injury among Ignace females were for intentional self-harm (i.e., none were for assaults), as shown in **Table 4.4-33** and **Table 4.4-34**, where the number of intentional injury hospitalizations and number of self-harm hospitalizations for females are both 18. **Table 4.2-34** shows that more than one in four females experiencing intentional self-harm hospitalizations are aged 10-19 and almost two thirds of hospitalizations are among women under the age of 45.

Table 4.4-34: Ignace Females Intentional Self-Harm Hospitalization by Age Group, 2002-2021^{1,2,3}

Age Group	Number of hospitalizations	Percentage of Injury Hospitalizations
10-19	5	27.8%
20-44	6	33.3%
45-64	7	38.9%
65+	0	0.0%
Total	18	

Source: IntelliHealth Ontario 2023a. Retrieved April 19, 2023.

Notes:

1. ICD-10 Chapter 20; X60-X84, Y870 (limited to age 10+ only); "All Dx" filter.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.7 Mortality

Identifying primary causes of deaths in a population, especially premature deaths, contributes to identifying health inequities and developing policies and interventions to reduce avoidable mortality. This section presents information related to life expectancy, infant mortality, total mortality, age at death, leading causes of mortality, premature mortality, and potential years of life lost.

Note that unless otherwise specified, deaths of Ontario residents that occurred outside of the province are not recorded in this set of data. As such, population mortality rates may be underestimated.

To reduce redundancy in comments, please note that in any case disaggregation is not presented, it is because the number of events must equal at least five in order to be reported. If the data become too small as disaggregation levels become more specific (by cause, time, age, or sex), it cannot be reported. Because Ignace is the Local Study Area, if disaggregation is not possible for Ignace, indicators are not disaggregated for Dryden Hub or NWHU. That is, the larger comparison areas level of detail presented follows the level of disaggregation possible for Ignace.

4.4.7.1 Life Expectancy at Birth

Life expectancy at birth relates to the number of years a person would be expected to live, starting at birth, if the age- and sex-specific mortality rates were held constant over their life span (Canadian Institute for Health Information 2020b). A higher life expectancy is an indicator of better overall health in a population. Life expectancy at birth is influenced by mortality throughout the lifespan, including infant and child mortality and mortality in later years. As such, it is broadly indicative of health outcomes throughout life. Life expectancy in Canada increased by 43% (or 24.6 years) from 57.1 years in 1921 to 81.7 years in 2011. The increase in life expectancy was primarily due to reduced infant mortality from 1921 to 1951 and from decreases in the number of deaths from circulatory diseases since 1951 (Decady and Greenberg 2015). Changes in life expectancy can take a long time to be realized as evidenced by the introduction of childhood immunization against infectious diseases, such as for polio and measles (Public Health Agency of Canada 2008). Life expectancy in Canada has not changed much over the last decade, but has decreased annually since 2019 from 82.1 years to 81.3 years in 2022, in part due to the COVID-19 pandemic (Dion 2021; Statistics Canada 2023c).

Inequities in life expectancy are observed among Indigenous people. While this cannot be represented at the level of the Local Study Area, national estimates suggest that life expectancies are between 5 and 10 years shorter for Indigenous peoples in Canada compared to the non-Indigenous population (Statistics Canada 2020b).

There are no data available for Ignace specifically, as such, the closest geography (NWHU) with contextual reference to Ontario is provided.

Life expectancy at birth is lower in the NWHU catchment area compared to Ontario.

As shown in **Table 4.4-35**, NWHU life expectancy is consistently and significantly lower than Ontario. The three-year average from 2015-2017 was 76.6 years for NWHU compared to 82.6 for Ontario.

Table 4.4-35: Life Expectancy at Birth, Three-Year Average, 2011-2013 to 2015-2017^{1,2}

Year	NWHU	Ontario	Significant Compared to Ontario
2011-2013	77.0	82.3	Lower
2012-2014	76.7	82.4	Lower
2013-2015	76.7	82.5	Lower
2014-2016	76.7	82.6	Lower
2015-2017	76.6	82.6	Lower

Source: Statistics Canada. 2019b. Retrieved April 26, 2023.

Notes:

1. Data Extraction and Analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.7.2 Infant Mortality

This indicator includes the number of live births where the age of death was coded as 0 (less than 365 days old). Many infant deaths are preventable. Some key risk factors related to infant mortality include social determinants such as low maternal education, inadequate housing, lack of access to health care, food insecurity, poverty, and unemployment (see **Section 4.2 Social Determinants of Health**). Some leading causes for infant deaths include immaturity (not fully grown), structural or functional birth defects, severe lack of oxygen, infection, and sudden infant death syndrome (Public Health Agency of Canada 2018c).

Between 1986 and 2018, there were 5 deaths among Ignace municipality infants, 23 among Dryden Hub infants and 230 in the Northwest Health Unit (NWHU). **Table 4.4-36** and **Figure 4.4-90** present the average annual infant mortality rates per 1,000 births by area. The rate per 1,000 births among Ignace residents was 8.3, which was statistically similar to those among residents of the Dryden Hub and NWHU. Rates are based on very small absolute numbers and are unreliable which is why, for example, Ignace infant mortality rates have very wide confidence intervals.

Table 4.4-36: Comparison of Infant Mortality Rates by Area, 1986-2018^{1,2,3,4}

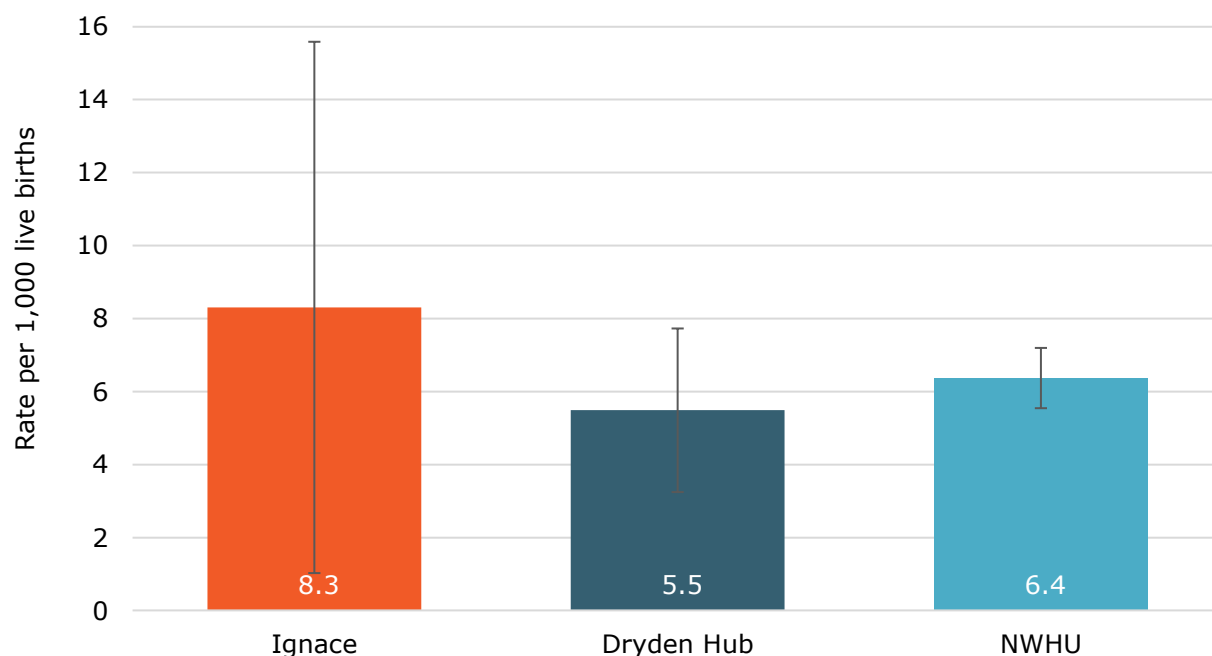
Deaths	Ignace	Dryden Hub	NWHU
Total number	5	23	230
Rate per 1,000 live births	8.3	5.5	6.4

Source: IntelliHealth Ontario 2023b. Retrieved April 10, 2023.

Notes:

1. Numerator - Age of death < 1 year old; all causes, 1986-2018.
2. Denominator - Live births only, 1986-2018.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

Figure 4.4-90: Comparison of Infant Mortality Rates by Area, 1986-2018^{1,2,3,4}



Source: IntelliHealth Ontario 2023b. Retrieved April 10, 2023.

Notes:

1. Numerator - Age of death < 1 year old; all causes, 1986-2018.
2. Denominator - Includes Live births only, 1986-2018.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

4.4.7.3 Total Mortality

Mortality rates are calculated as the total number of deaths that occurred in Ontario (all ages and all causes) per 100,000 Ontario residents. Given the small number of deaths, most of the analysis required aggregation of multiple years of data, to ensure confidentiality and statistical stability in accordance with standard epidemiological practice.

It is helpful to review the mortality rates as it provides a baseline from which to measure changes over time, particularly for certain diseases and conditions. Life expectancy does not typically change much over the short term, but some mortality rates can be considerably reduced through sustained prevention and awareness campaigns (Danaei et al. 2010). Other mortality rates, such as those for cancer and cardiac conditions, can take longer to change because the risk factors are the result of daily habits, which can take a long time to change.

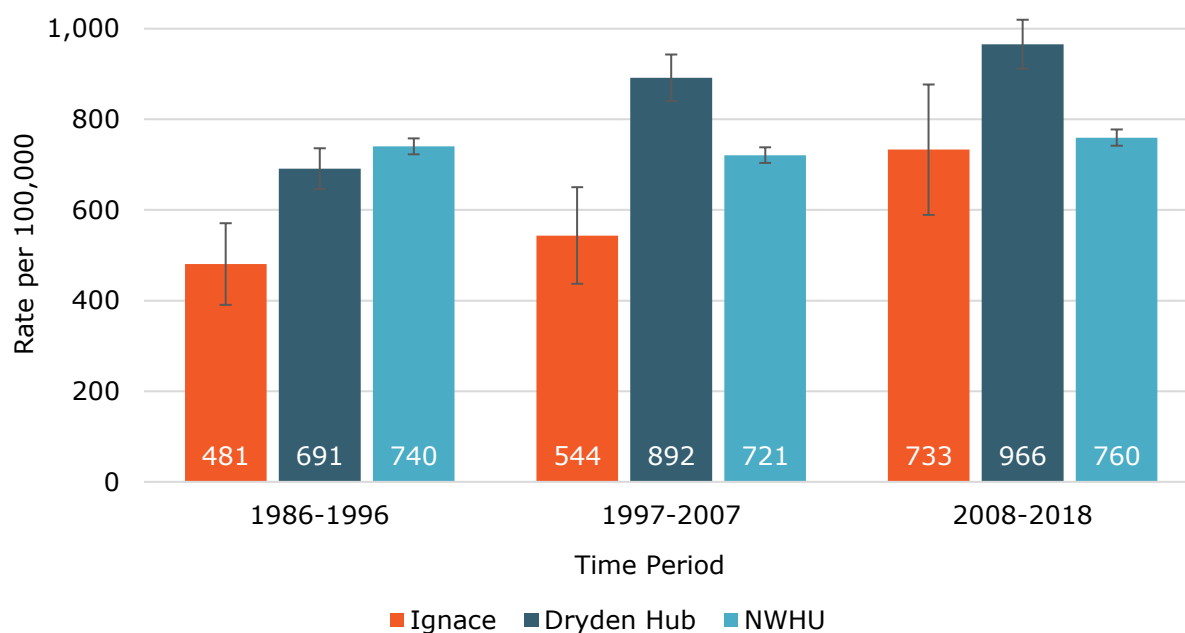
Between 1986 and 2018, there were 322 deaths among Ignace residents, of these 111 (34.5%) were females and 211 were males (65.5%). The highest number of deaths (103) occurred

among residents aged 45-64, accounting for approximately one in three deaths. This is likely due to this group representing the highest proportion of residents by age group (See **Section 2.2.4.1** for more information on the age structure). Nevertheless, this does suggest a substantial number of premature deaths (deaths occurring before age 75) among Ignace residents. The second most represented age group was residents aged 75 and older (95 deaths) (see **Appendix 4B Supplemental Data**).

4.4.7.4 Mortality Changes over Time

In all time periods reviewed (1986–1996, 1997–2007, 2008–2018), all-cause mortality rates among Ignace residents were lower than those among residents of the Dryden Hub and NWHU (**Figure 4.4-91**). Although mortality rates appear to increase in each 11-year time period for Ignace residents, only the increase in the third time period (2008–2018) is statistically significant. This is the case for the Dryden Hub but there was a slight decrease in the NWHU. In interpreting mortality data, it is noted that the population has continued to decline, and most markedly so in the third time period with a similar number of deaths occurring. This may be because the population decline has been among younger people who have moved to look for work and an older population remained in Ignace.

Figure 4.4-91: Mortality Rates (All Causes) by Area, 1986-1996, 1997-2007, 2008-2018^{1,2}



Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Data Extraction and Analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.7.5 Mortality by Sex

Total mortality counts for males and females from Ignace, the Dryden Hub, and the NWHU are presented in **Table 4.4-37**. More deaths occurred among males compared to females in all three areas, but this was most pronounced in Ignace where 65.5% of deaths occurred among males (in comparison to 53.5% and 53.9% for Dryden Hub and NWHU respectively).

Table 4.4-37: Total and Percentage of Deaths by Sex and Area, 1986-2018^{1,2,3,4}

Sex	Ignace	Dryden Hub	NWHU
Female	111 (34.5%)	1,527 (46.5%)	10,029 (46.1%)
Male	211 (65.5%)	1,755 (53.5%)	11,749 (53.9%)
Total	322	3,282	21,778

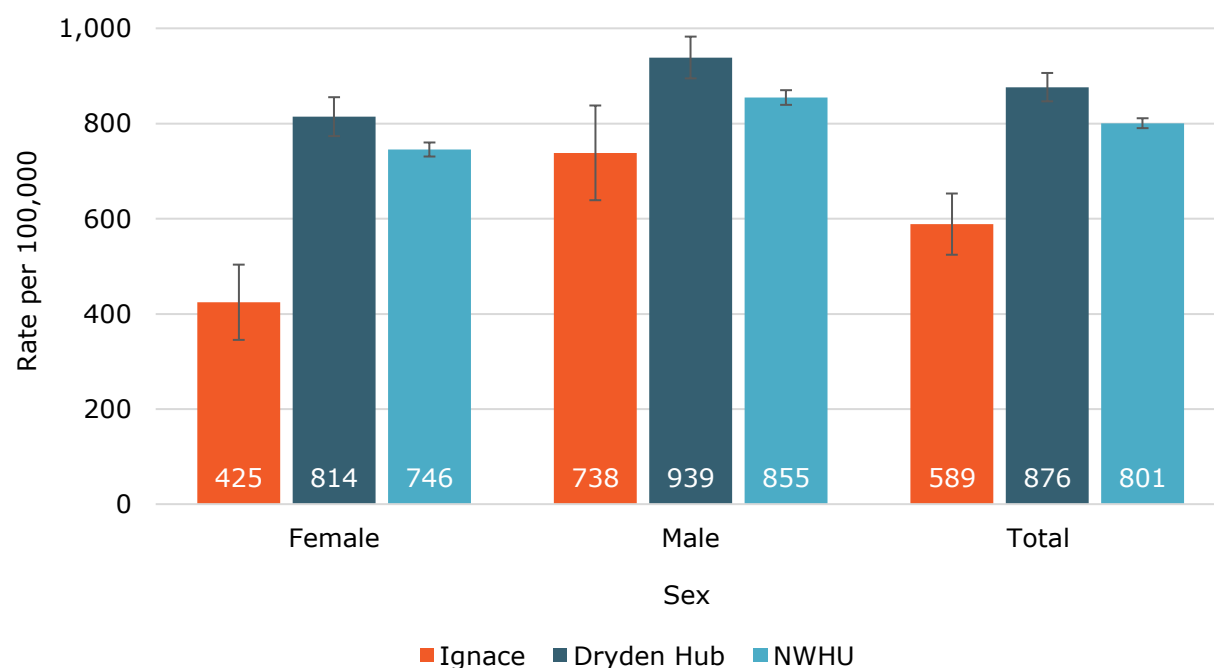
Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Columns add to 100% to illustrate differences in mortality burden by sex within each comparison area.
2. Columns add to 100% to illustrate differences in mortality burden by sex within each comparison area.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

As **Figure 4.4-92** shows, mortality rates among Ignace male residents were higher than mortality rates for female residents. Between 1986 and 2018, the mortality rates for Ignace female and male residents were 424.7 and 738.4 per 100,000 population. Both are significantly lower than Dryden Hub and NWHU comparison areas. The female and male mortality rate increased over time for Ignace (see **Appendix 4B Supplemental Data**). Similar patterns occurred among residents of the Dryden Hub and NWHU.

Figure 4.4-92: Mortality Rates (All Causes) by Sex and Area, 1986-2018^{1,2}



Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

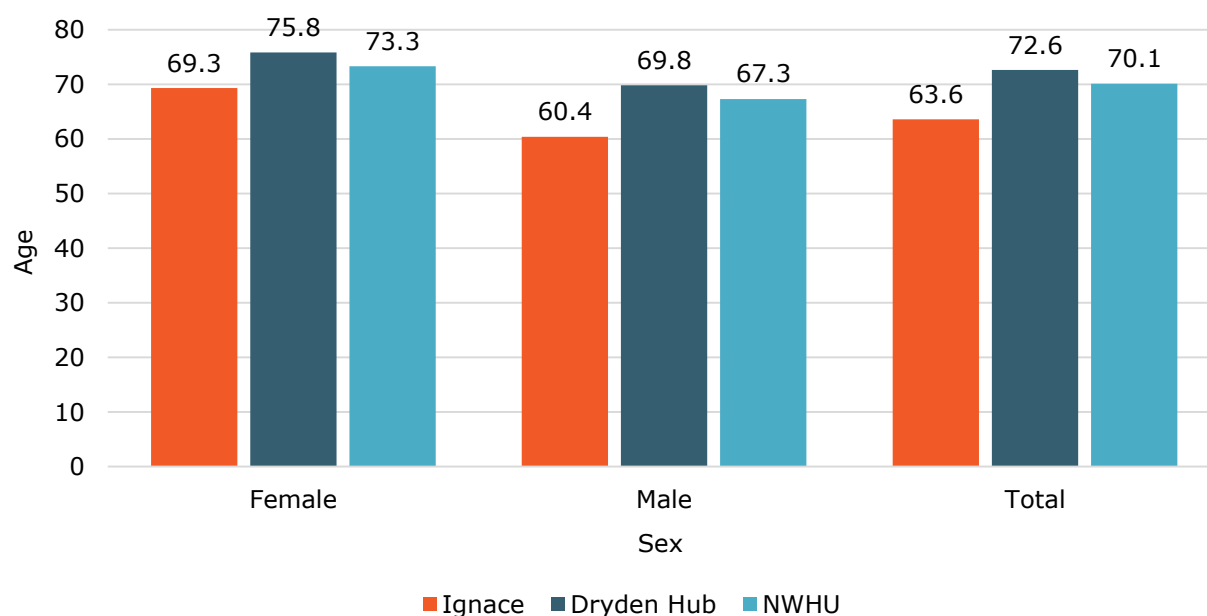
1. Data Extraction and Analysis by EPI Research Inc.
2. Data are presented in **Appendix 4B**.

4.4.7.6 Age at Death

Between 1986 and 2018, the average age of death (all causes) among Ignace residents was 63.6 years. The average age of death was much younger among males (60.4 years), compared to females (69.3 years). **Figure 4.4-93** shows average ages of death with comparison areas. Ignace had somewhat lower averages than the comparison areas, both overall and by sex.

Mortality rates by age group were reviewed. As expected, mortality rates increase with age, with residents aged 75+ having the highest rate per 100,000 population (5,509.1). However, the only statistically significant difference is that Ignace residents age 75 and older have a lower mortality rate than the comparison areas. This may be due to the lack of services for seniors in Ignace and subsequent challenges of aging in place, causing Ignace seniors to move out of the community as they age in the 75 years and older range (NWO Community and Baseline Studies Key Person Interview Program 2022).

Figure 4.4-93: Average Age at Death by Sex and Area, 1986-2018^{1,2}



Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

4.4.7.7 Leading Causes of Mortality

This indicator measures the number and rates of deaths represented by the main underlying cause of death. Although more than one health condition may be present at death, the standard is to report by the underlying cause. Associated detail is often also available but only one underlying cause can be reported. Underlying cause of death is defined as “the disease or injury that initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury” (World Health Organization 2022).

Due to small numbers, limited disaggregation of deaths detail beyond age group and sex is possible as a combination variable (that is, presentation of leading causes of death disaggregated by age group and sex is not possible). As with the standards throughout this chapter, no instances with cell sizes less than 5 are reported.

Between 1986 and 2018 the most common cause of mortality among Ignace residents was neoplasms (cancer), accounting for just over 1 in 3 (34%) deaths, followed by diseases of the circulatory system. These two causes of death account for almost two thirds of deaths among Ignace residents (see **Appendix 4B Supplemental Data**).

Table 4.4-38 provides further context about impact of causes of death. The average age of death due to cancer and diseases of the circulatory system were similar at 66.6 and 68.5 years, while injury accounted for approximately 1 in 8 deaths but with a much lower average age (42.0).

Table 4.4-38: Ignace All Resident Mortality by Disease Classification, 1986-2018^{1,2,3,4,5}

Disease Classification	Total Number	Percentage of Deaths	Mortality rate per 100,000	Average Age at Death
Neoplasms (Malignant Cancer Only)	105	33.7%	191.9	66.6
Diseases of Circulatory System	90	28.8%	164.5	68.5
External Causes (Injury)	38	12.2%	69.5	42.0
Diseases of Respiratory System	20	6.4%	36.6	69.3
Diseases of Digestive System	15	4.8%	27.4	67.9
Symptoms, Signs, Abnormal Findings	13	4.2%	23.8	64.2
Endocrine, Nutritional, Metabolic Disease	11	3.5%	20.1	72.1
Other	8	2.6%	14.6	57.9
Mental Health Disorders	6	1.9%	11.0	81.3
Diseases of Nervous System	6	1.9%	11.0	62.0
All Deaths	312	100.0%	570.2	70.1

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Most Responsible Diagnosis Code (MRDx) represents Underlying Cause of Death.
2. Neoplasms include malignant cancers only (ICD-10 Codes C00-C97).
3. See **Appendix 4A** Detailed Methods for Coding Details.
4. Data Extraction and Analysis by EPI Research Inc.
5. Data are presented in **Appendix 4B**.

At a more granular level, the most common cause of death among all Ignace residents was ischaemic heart disease (41 deaths between 1986 and 2018), followed by lung cancer and “other cancers”. The two leading causes of death accounted for one in four deaths of all Ignace residents between 1986 and 2018 (see **Appendix 4B Supplemental Data**). Lung cancer is considered an example of “avoidable mortality” which can also lead to premature deaths.

4.4.7.7.1 Female Leading Causes of Death

Between 1986 and 2018, the most common broad classification reason for deaths among female Ignace residents was cancer (**Table 4.4-39**) accounting for 38.8% of all deaths. Diseases of the circulatory system was the second leading cause (29 deaths). The average age of death due to cancer was 69.6, which was just over 3 years younger than the average age of death due to diseases of the circulatory system (73.1 years). Specifically, ischaemic heart disease followed by lung cancer were the most common causes of death among female residents, accounting for just over one in four deaths when combined (see **Appendix 4B Supplemental Data**).

Table 4.4-39: Ignace Female Resident Mortality by Disease Classification, 1986-2018^{1,2,3,4,5,6}

Disease Classification	Total Number	Percentage	Mortality rate per 100,000	Average Age at Death
Neoplasms (Malignant Cancer Only)	43	38.8%	164.5	69.6
Diseases of Circulatory System	29	26.9%	110.9	73.1
Diseases of Digestive System	8	7.4%	30.6	69.8
Symptoms, Signs, Abnormal Findings	7	6.5%	26.8	72.7
External Causes (Injury)	6	5.6%	23.0	69.3
Other	15	14.8%	57.4	70.5
All	108	100.0%	413.2	69.5

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Most Responsible Diagnosis Code (MRDx) represents Underlying Cause of Death.
2. See **Appendix 4A** Detailed Methods for Coding Details.
3. Neoplasms include malignant cancers only (ICD-10 Codes C00-C97).
4. Missing cause of death for 3 females.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

4.4.7.7.2 Male Leading Causes of Death

Similar to females, the leading broad classifications of death among male Ignace residents were cancer and diseases of the circulatory system (**Table 4.4-40**). However, mortality rates are much higher and combined account for over 60% of all male deaths. The rate of death due to cancer was 217.0 per 100,000 male population, which was similar to the second leading death classification (diseases of the circulatory system 213.5 deaths per 100,000). Specifically, ischaemic heart disease (a type of Circulatory System Disease), lung cancer, and “other cancers”

were the three more specific causes of death. They accounted for 64 of the 204 deaths (almost one in three deaths) (see **Appendix 4B Supplemental Data**).

Table 4.4-40: Ignace Male Resident Mortality by Disease Classification, 1986-2018^{1,2,3,4,5,6}

Disease Classification	Total Number	Percentage	Mortality rate per 100,000	Average Age at Death
Neoplasms (Malignant Cancer Only)	62	30.4%	217.0	64.6
Disease of Circulatory System	61	29.9%	213.5	66.3
External Causes (Injury)	32	15.7%	112.0	36.9
Disease of Respiratory System	16	7.8%	56.0	69.2
Disease of Digestive System	7	3.4%	24.5	65.9
Endocrine, Nutritional, Metabolic Disease	7	3.4%	24.5	72.3
Symptoms, Signs, Abnormal Findings	6	2.9%	21.0	54.3
Diseases of Nervous System	5	2.5%	17.5	58.4
Other	8	4.0%	39.5	76.4
All	204	100.0%	725.4	62.7

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Most Responsible Diagnosis Code (MRDx) represents Underlying Cause of Death.
2. See **Appendix 4A** Detailed Methods for Coding Details.
3. Neoplasms include malignant cancers only (ICD-10 Codes C00-C97).
4. Missing cause of death for 7 Ignace male residents.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

4.4.7.8 Premature Mortality

Preventing avoidable and premature deaths, along with improving quality of life, are cornerstones of public health. Premature mortality measures the annual number of deaths occurring before the age of 75 per 100,000 residents. Premature Mortality Rate ("PMR") is considered by many health researchers to be the single best indicator of a population's health status. Higher PMRs indicate poorer overall health and greater need for health services. Northwestern Ontario has a much higher PMR compared to the province (2014-2016 NWHU had

an average PMR of 447 per 100,000 population compared to 281 per 100,000 population for Ontario).

Potentially avoidable mortality is defined as deaths occurring before the age of 75 from a condition that is preventable or treatable with proper access to healthcare (including preventative care) (Public Health Ontario 2019d). Some examples of preventable causes of death include vaccine-preventable diseases, some types of cancer, some chronic circulatory and respiratory diseases, many external causes of mortality (injuries, alcohol, and drug-related causes), and treatable infections (Public Health Ontario 2019d).

Between 1986 and 2018, there were 227 deaths before the age of 75 among Ignace residents, accounting for 72.7% of deaths in this time period. Of these, 68 (30.0%) were females and 159 (70.0%) were males (see **Table 4.4-41**).

The top broad cause of premature death was cancer (80 premature deaths) with an average age at death of 61.9 (average among only those who died prematurely). Leading causes of premature death were largely the same as overall mortality. Of the 80 premature deaths due to cancer, 28 were lung cancer (12.9% of premature deaths), 9 were colorectal cancer (4.2%), 7 were lymph and blood cancer (3.2%), and the remaining 34 cases were unclassified (see **Appendix 4B Supplemental Data**).

Table 4.4-41: Number of Premature Deaths by Sex and Area, 1986-2018^{1,2,3,4}

Sex	Ignace	Dryden Hub	NWHU
Female	68 (30.0%)	586 (38.7%)	4,116 (38.6%)
Male	159 (70.0%)	927 (61.3%)	6,546 (61.4%)
Total	227	1,513	10,662

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Includes all causes of mortality.
2. Premature Deaths include all deaths before the age of 75 years.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

The NWHU area has a significantly higher rate of potentially avoidable mortality compared to Ontario (Public Health Ontario 2019d). For example, in 2015, the NWHU potentially avoidable mortality rate was 310.5 per 100,000 residents compared to the Ontario rate of 187.6 per 100,000 (**Appendix 4B Supplemental Data**). Furthermore, both in northern Ontario and in Ontario as a whole, preventable mortality occurs more among marginalized individuals based on material deprivation and dependency (lack of income from employment). Therefore, the rate of potentially avoidable mortality is key equity indicator for a population.

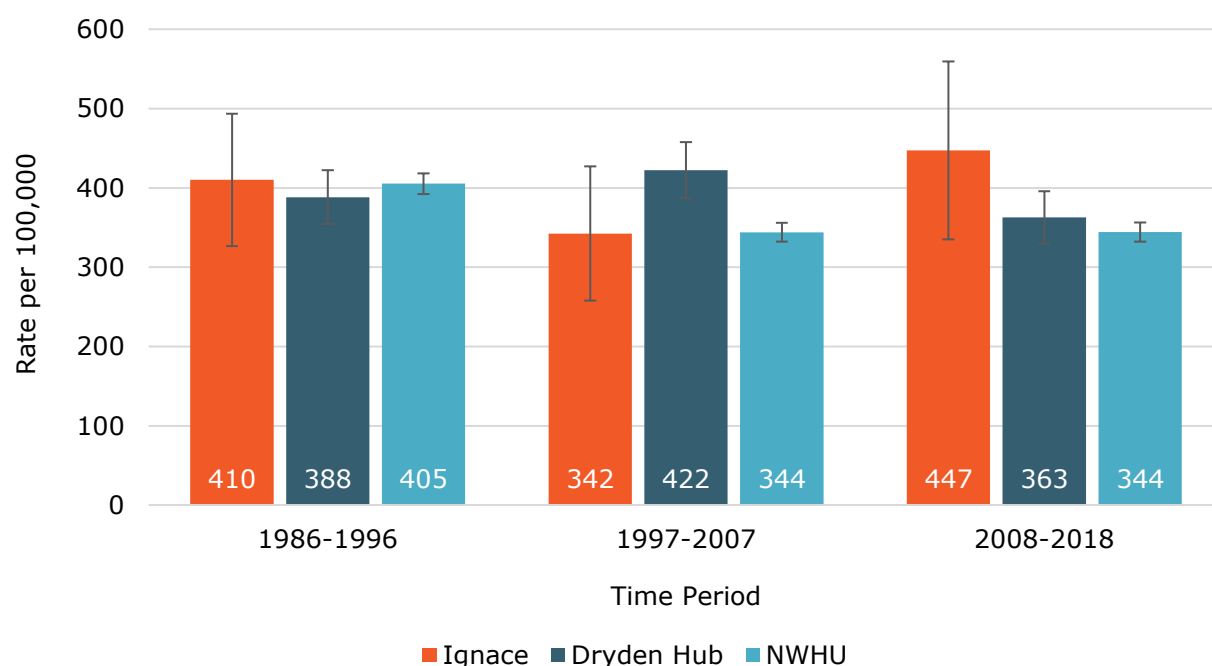
Female premature mortality rate increased somewhat over time, while this was not the case for the male premature mortality rate, or the rates among the Dryden Hub or the NWHU. However, these differences do not appear statistically significant and should be interpreted with caution. As

confidence intervals are wide due to low incidence counts, the differences between areas are largely not significant (see Appendix 4B **Supplemental Data**).

Figure 4.4-4 shows premature mortality rates by area and time period. The premature mortality rate among Ignace residents did not change significantly during the time period, which is also reflected in the comparison areas. Between 2008 and 2018, the premature mortality rate is significantly higher among Ignace residents compared to Dryden Hub but is not statistically differed from NWHU (note that the confidence intervals overlap).

Female premature mortality rate increased somewhat over time, while this was not the case for the male premature mortality rate, or the rates among the Dryden Hub or the NWHU. However, these differences do not appear statistically significant and should be interpreted with caution. As confidence intervals are wide due to low incidence counts, the differences between areas are largely not significant (see **Appendix 4B Supplemental Data**).

Figure 4.4-94: Premature Mortality Rates by Area, 1986-1996, 1997-2007 and 2008-2018^{1,2,3,4}



Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Includes all causes of mortality.
2. Premature Deaths include all deaths before the age of 75 years.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

As shown in **Table 4.4-42**, the leading causes in premature death were neoplasms (malignant cancers only) (36.9% of premature deaths) followed by diseases of the circulatory system

(26.3%) and injury (15.7%). Between 1986 and 2018, the premature mortality rate due to neoplasms among Ignace residents was 146.2 per 100,000 population, and the rate for circulatory system diseases was 104.2 per 100,000 population (see **Appendix 4B Supplemental Data**). The leading specific causes of premature death were lung cancer (28 deaths) and ischaemic heart disease (26 deaths).

Lung cancer and ischaemic heart disease when combined account for about 1 in 4 premature deaths. Other cancer, other heart, and other injury (not accounted for in transport accident, accidental poisoning, or self-harm) are also among the top reasons. Notably, there were 6 premature deaths due to transport accidents, 5 due to diabetes, 5 due to accidental poisoning, and 5 due to self-harm (see **Appendix 4B Supplemental Data**). These are all causes that are largely preventable and are linked to inequity.

Table 4.4-42: Ignace Resident Premature Mortality by Disease Classification, 1986-2018^{1,2,3,4,5,6,7}

Leading Causes	Total Number	Percentage	Premature Mortality rate per 100,000	Average Age at Death
Neoplasms (Malignant Cancer Only)	80	36.9%	146.2	61.9
Diseases of Circulatory System	57	26.3%	104.2	60.8
Diseases of Digestive System	34	15.7%	62.1	61.7
Diseases of Respiratory System	14	6.5%	25.6	61.9
Diseases of Nervous System	11	5.1%	20.1	27.0
Endocrine, Nutritional, Metabolic Disease	7	3.2%	12.8	62.5
External Causes (Injury)	6	2.8%	11.0	37.0
Other	8	3.7%	14.6	48.5
Total	217	100.0%	396.6	56.4

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Premature Deaths include all deaths before the age of 75 years.
2. Average age at death calculated only based on ages for premature deaths.
3. Most Responsible Diagnosis Code (MRDx) represents Underlying Cause of Death.
4. See **Appendix 4A** Detailed Methods for Coding Details.
5. Neoplasms include malignant cancers only (ICD-10 Codes C00-C97).
6. Data Extraction and Analysis by EPI Research Inc.
7. Data are presented in **Appendix 4B**.

Between 1986 and 2018, there were 65 premature deaths among female Ignace residents with a recorded cause. Nearly half of premature deaths among females (46.2%) were due to cancer (see **Table 4.4-43**). Nearly 1 in 4 were due to diseases of the circulatory system. By more specific cause, cancer and ischemic heart disease accounted for the most premature deaths among females from Ignace. Many causes of premature death occurred too few times to be presented, and as such "Other/Unknown" accounts for 23.1% of premature deaths among females (see **Appendix 4B Supplemental Data**).

Table 4.4-43: Ignace Female Residents Leading Causes of Premature Mortality by Disease Classification, 1986-2018^{1,2,3,4,5,6,7,8}

Disease Classification	Total Number	Percentage	Premature Mortality rate per 100,000	Average Age at Death
Neoplasms (Malignant Cancer Only)	30	46.2%	114.8	64.6
Diseases of Circulatory System	15	23.1%	57.4	64.7
Diseases of Digestive System	5	7.7%	19.1	59.2
Other/Unknown	15	23.1%	57.4	58.6
Total	65	100.0%	248.7	61.3

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Premature Deaths include all deaths before the age of 75 years.
2. Average age at death calculated only based on ages for premature deaths.
3. Most Responsible Diagnosis Code (MRDx) represents Underlying Cause of Death.
4. See **Appendix 4A** Detailed Methods for Coding Details.
5. Neoplasms include malignant cancers only (ICD-10 Codes C00-C97).
6. Missing cause of death for 3 females.
7. Data Extraction and Analysis by EPI Research Inc.
8. Data are presented in **Appendix 4B**.

Between 1986 and 2018, there were 152 premature deaths among male Ignace residents with a recorded cause. Cancer accounted for 32.9% of these deaths and diseases of the circulatory system accounted for 27.6% (see **Table 4.4-44**). The rates per 100,000 population for both these causes were higher among males than females. Injury accounted for 20.4% of premature deaths among males. These top three causes accounted for over 80% of premature deaths among male Ignace residents.

Ischaemic heart disease and lung cancer were the first and second more specific causes of premature mortality. While not among the leading causes, there were 5 premature deaths among males due to mental illness/self-harm. "Other Injury" was the third leading cause with 14 premature deaths (9.2% of premature deaths among males) and had the youngest average age (31.3 years) (see **Appendix 4B Supplemental Data**).

Table 4.4-44: Ignace Male Resident Premature Mortality by Disease Classification, 1986-2018^{1,2,3,4,5,6,7,8}

Disease Classification	Total Number	Percentage	Premature Mortality rate per 100,000	Average Age at Death
Neoplasms (Malignant Cancer Only)	50	32.9%	175.0	60.3
Diseases of Circulatory System	42	27.6%	147.0	59.4
External Causes (Injury)	31	20.4%	108.5	35.5
Diseases of Respiratory System	11	7.2%	38.5	61
Diseases of Digestive System	6	4.0%	21.0	63.8
Other/Unknown	12	7.9%	42.0	51.4
Total	152	100.0%	531.9	54.3

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. Premature Deaths include all deaths before the age of 75 years.
2. Average age at death calculated only based on ages for premature deaths.
3. Most Responsible Diagnosis Code (MRDx) represents Underlying Cause of Death.
4. See **Appendix 4A** Detailed Methods for Coding Details.
5. Neoplasms include malignant cancers only (ICD-10 Codes C00-C97).
6. Missing cause of death for 7 Ignace male residents.
7. Data Extraction and Analysis by EPI Research Inc.
8. Data are presented in **Appendix 4B**.

4.4.7.9 Potential Years of Life Lost

Potential years of life lost ("PYLL") is the number of years of life "lost" when a person dies "prematurely" before age 75. A person dying at age 25, for example, has lost 50 years of life. For premature mortality, PYLL is a useful measurement to use. It is usually grouped by cause of death, as this measure emphasizes causes of death that normally affects younger people, such as suicide.

As displayed in **Table 4.4-45**, there were 4,028 Potential Years of Life Lost among Ignace Residents from 1986 to 2018. Of these, males accounted for 80%, meaning that premature deaths are over-represented by males, when compared to females. PYLL by cause reflect similar percentages as premature mortality (see **Section 4.4.7.8**) and overall mortality (e.g., neoplasms, circulatory system diseases, injuries) (see **Section 4.4.7.3**) but injuries (**Section 4.4.6**) stand out due to their impacts on young people, resulting in greater PYLL (32.1% of all PYLL).

The leading cause for PYLL among Ignace residents was injury (external causes), accounting for 1,291 PYLL (but only 66 PYLL were among females, and 1,225 were among males). Among females, most PYLL were attributable to cancer followed by diseases of the circulatory system, suggesting the need for greater disease prevention. About one third of potential years of life lost among men was due to injury (see **Table 4.4-45**).

In 2015, the rate of PYLL from preventable causes was significantly higher in the NWHU at 4,966 persons per 100,000 population compared to 2,011 in Ontario. The rate of PYLL from injuries was also significantly higher for males at 3,915 persons per 100,000 population and females at 1,876 compared to males (1,169) and females (482) in Ontario (Public Health Ontario 2019e). The observed trend of a much higher rate of PYLL for males compared to females in Ignace was also observed for the NWHU and Ontario.

Table 4.4-45: Potential Years of Life Lost (PYLL), by Disease Classification and Sex, Ignace Residents, 1986-2018^{1,2,3,4,5,6}

	Female PYLL		Male PYLL		Total PYLL	
	Total Number	Percentage	Total Number	Percentage	Total Number	Percentage
External Causes (Injury)	66	7.4%	1,225	39.0%	1,291	32.1%
Neoplasms (Malignant Cancer Only)	313	35.2%	735	23.4%	1,048	26.0%
Disease of Circulatory System	154	17.3%	656	20.9%	810	20.1%
Symptoms, Signs, Abnormal Findings	92	10.4%	137	4.4%	229	5.7%
Diseases of Respiratory System	30	3.4%	154	4.9%	184	4.6%
Other	126	14.2%	23	0.7%	149	3.7%
Diseases of Digestive System	79	8.9%	67	2.1%	146	3.6%
Diseases of Nervous System		0.0%	96	3.1%	96	2.4%
Endocrine, Nutritional, Metabolic Disease	28	3.2%	47	1.5%	75	1.9%
Mental & Behavioural Disorders		0.0%		0.0%		0.0%
Total	888	100.0%	3,140	100.0%	4,028	100.0%

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. PYLL is calculated for deaths before age 75 only; calculated as 75-actual age at death.
2. Most Responsible Diagnosis Code (MRDx) represents Underlying Cause of Death.
3. See **Appendix 4A** Detailed Methods for Coding Details.
4. Missing cause of death for 10 Ignace residents.
5. Data Extraction and Analysis by EPI Research Inc.
6. Data are presented in **Appendix 4B**.

Nearly 80% of PYLL in Ignace were among males and this was much higher than the percentages found in the comparison areas, as shown in **Table 4.4-46**. This suggests a need for greater

prevention measures for premature death among males, particularly for chronic diseases such as neoplasms and diseases of the circulatory system (**Table 4.4-45**).

Table 4.4-46: Comparison of Potential Years of Life Lost (PYLL) by Sex and Area, 1986-2018^{1,2,3,4}

		Ignace	Dryden Hub	NWHU
Total Number	Female	962 (21.7%)	8,507 (34.8%)	80,763 (37.4%)
	Male	3,464 (78.3%)	15,951 (65.2%)	135,171 (62.6%)
	Total	4,426	24,458	215,934

Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

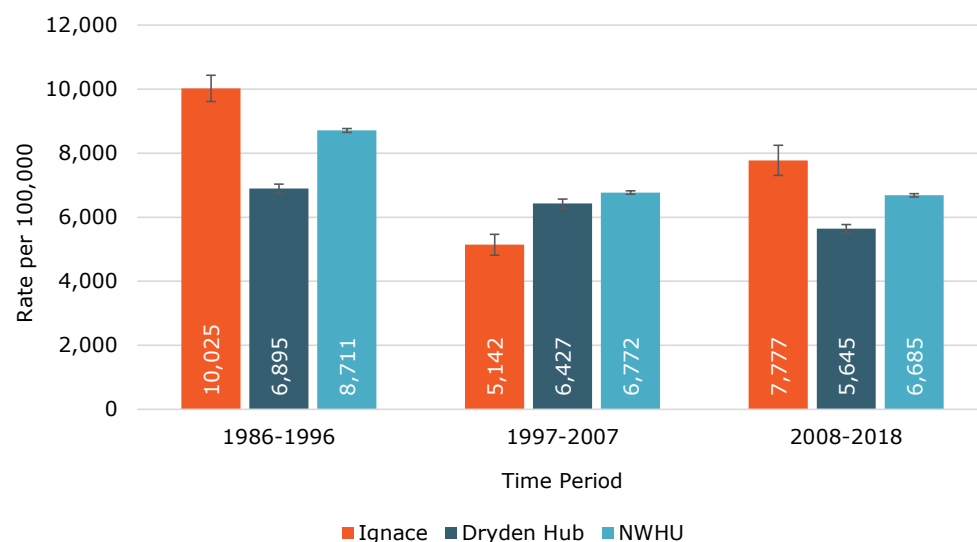
Notes:

1. PYLL is calculated for deaths before age 75 only; calculated as 75-actual age at death.
2. All causes of death included.
3. Data Extraction and Analysis by EPI Research Inc.
4. Data are presented in **Appendix 4B**.

PYLL rates in Ignace residents varied over time, as shown in **Figure 4.4-95**. Between 1986 and 1996, the rate of PYLL among Ignace residents was significantly higher than the comparison areas. PYLL rates for Ignace residents increased from the 1997-2007 time period to the 2008-2018 time period. The rates were consistently lower than the NWHU.

PYLL rates in males from Ignace dropped after 1986-1996 but rose again. In the earliest and latest time periods, the Ignace rate was higher than the comparison areas, and similar during 1997-2007 (see **Appendix 4B Supplemental Data**).

Figure 4.4-95: All Resident PYLL by Time Period and Area, 1986-1996, 1997-2007 and 2008-2018^{1,2,3}



Source: IntelliHealth Ontario 2023h. Retrieved April 28, 2023.

Notes:

1. PYLL is calculated for deaths before age 75 only; calculated as 75-actual age at death.
2. Data Extraction and Analysis by EPI Research Inc.
3. Data are presented in **Appendix 4B**.

4.4.8 Summary of Health Outcomes

Maternal and Child Health

There are no large differences in pregnancy, birth, and fertility rates of residents of the Local Study Area in comparison to the Regional Study Area. Ignace pregnancy rates were lower than rates in the NWHU population from 2002 to 2021 at 42.7 pregnancies per 100,000 compared to 52.9 pregnancies per 100,000. While the birth rate of the Local Study Area from 1996 to 2021 is statistically lower than the NWHU at 9.3 births per 1,000 compared to 11.3 per 1,000, it is not a large difference and not surprising given the age distribution of Ignace population. Further, there are no large differences in birth rates among young mothers in the area, but these rates may still be higher than Ontario overall. Maternal age is an important indicator of health outcomes for the mother and infant (World Health Organization 2023a). Not only do adolescent mothers face higher risks to their health, but they may also indicate social and cultural factors which influenced their behaviours such as choosing early motherhood (World Health Organization 2023a; Akella & Jordan 2014). The most common age group of Ignace mothers between 1996 and 2018 was 25–29, accounting for one in three mothers, while over 40% of mothers were between ages 15 and 24. About two in three births to Ignace residents occur at the Dryden RHC and about one in four at Thunder Bay RHSC.

Challenges for maternal and child health in the Local Study Area include food security, due in part to limited availability and high costs of baby food, formula, and healthy food choices for families, particularly those of low income. Access to staples, such as diapers, can also be a challenge to obtain locally and creates stress and extra transportation expenses. Further, lack of affordable and flexible daycare options is a challenge to allow both parents to work (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). Ignace mothers have expressed that the lack of postpartum depression support, lactation support, and prenatal care closer to delivery date are also challenges in the community (Ignace EarlyOn Child and Family Centre Parent Focus Group 2023).

HBHC data indicate that the proportion of screens relative to babies born to Ignace mothers increased from 74.7% for prenatal screening to 124.0% for postnatal screening from 2013 to 2021. The proportion of prenatal screening with risk in Ignace from 2014 to 2021 was 87.7% and postnatal screening with risk was 75%, both higher than the proportions in the Dryden Hub and NWHU, suggesting Ignace mothers may face less barriers to screening than those in the comparison areas. One reason for the successful screening rate is that Mary Berglund Community Health Centre Hub initiated Baby Boxes¹⁴⁴ in 2016 in partnership with NWHU (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023). It is acknowledged that this is a voluntary program and some key indicators such as age of mother (young), being a single parent and employment or housing status can create the "risk" category but does not suggest family instability or danger to the child. There are no notable differences in low or high birth rates, preterm birth rates, or infant mortality which is fortunately very rare.

Limited data available for children and youth show that immunization coverage in the Local Study Area is better or similar to the Regional Study Area, for younger children in particular. Rates are generally slightly higher in the Local Study Area and Regional Study Area for younger children compared to Ontario, but similar for older children (Public Health Ontario 2023q).

Communicable Disease

Review of communicable disease data do not show any obvious differences between the Local Study Area and Regional Study Area, and it is noted that the rates of STIs in the Local Study Area are lower than Regional Study Area. The rates of STIs in the Regional Study Area are generally much higher compared to Ontario. The lower rates for Ignace residents may be related to the age distribution of Ignace.

Among Ignace residents from 2005 to 2021, the rate of campylobacter was 27.7 cases per 100,000 population. This rate is statistically similar to the rates among residents of the Dryden Hub and NWHU (29.7 and 15.3 cases per 100,000 population respectively). There were 13 infections among Ignace residents, translating to the rate of Hepatitis C was 60.0 infections per 100,000 population. This is not statistically different to the rate among residents of the Dryden Hub (77.1 per 100,000 population) but is significantly lower than the rate for NWHU (97.8 per 100,000 population). The rate for Hepatitis C was notably higher in Ignace compared to Ontario

¹⁴⁴ Baby boxes provide parents with a variety of childcare products that may not otherwise be readily available in smaller municipalities such as a mattress and other products from Canadian vendors (Khoo 2016).

(See **Supplemental Data Appendix 4B**). The rate of confirmed salmonella cases per 100,000 population among Ignace residents was 23.1 per 100,000 residents, which was not significantly different to either the Dryden Hub or NWHU.

Between January 2021 to November 2022, 90% of Ignace residents received at least one dose of COVID-19 vaccine. The COVID-19 vaccine is an effective measure to help protect individuals and communities against severe illness and death from the virus (Government of Canada 2023c). The coverage percentage declined as the number of shots administered increased, with 25.8% of Ignace residents having received 4 or more doses. Data for first, second, and third doses indicate that the Ignace vaccination coverage percentages are very similar to the Dryden Hub, NWHU, and Ontario comparison populations.

The rate of chlamydia cases among Ignace residents was 235.3 per 100,000 between 2005 and 2021, which was significantly lower than both Dryden Hub (373.3 per 100,000 population) and NWHU (522.9 per 100,000 population), but similar to the 2012-2021 provincial average. The rate of gonorrhea among Ignace residents between 2005 and 2021 was 23.1 per 100,000 population, which was lower, although not statistically lower, to the rate among residents of the Dryden Hub, but was significantly lower than the NWHU rate (99.0 per 100,000 population).

Chronic Disease

Chronic diseases are significantly impacted by determinants of health. In an older population, it is not unexpected to see higher rates of chronic disease as this is a normal pattern of aging and health. However, earlier onset of chronic disease creates higher risk for poor health outcomes including earlier mortality or other disability association with the chronic disease. For illnesses such as ischemic heart disease, diabetes and hypertension, there is a clear increase in mortality associated with younger age of onset of these illnesses. Health behaviours can be an indicator of an individual's likelihood of disease, such as exercise, access to and consumption of healthy foods, and smoking (see **Section 4.2.6**). Understanding the rates of chronic diseases in the Local Study Area can help to identify what types of health care supports are needed (see **Section 4.3**).

In the Local Study Area, between 2002 and 2021, chronic disease accounted for 57% of all hospitalizations and 52% of hospital days in care. The leading reasons for chronic disease hospitalization were cardiovascular disease, which is almost twice as high as the next leading classifications of Cancer and Respiratory diseases.

Among Ignace residents, hospitalization for all cardiovascular conditions was about 47% higher among men than women. This was mirrored in ischemic heart disease where over 65% of hospitalizations for ischemic heart disease in Ignace residents were men. No other diseases showed significant differences by sex, but males generally had higher rates, except for arthritis and diabetes.

Although diabetes represented the smallest proportion of hospitalizations among the chronic diseases reviewed, the average number of hospitalizations per patient among Ignace women was almost twice as high as it was for men, at 2.8 compared to 1.5. However, this did not reach the level of statistical significance likely due to the small numbers and wide confidence intervals.

Ignace self-reported chronic disease conditions illustrate that one-half of male respondents indicated having high blood pressure and one in three (32.4%) indicated living with chronic pain

or injury (InterGroup and EPI Research Inc. 2023). More male respondents (32.4%) than female respondents (7.7%) reported chronic pain. The higher prevalence of some conditions among male respondents is likely attributable to their older age distribution among respondents (more than 65% of male respondents were aged 60 and older).

Overall, chronic disease hospitalization rates among Ignace residents were lower than the Dryden Hub and similar to the NWHU for most chronic diseases reviewed. One exception was cancer, for which Ignace had significantly higher rates (816.5 per 100,000) than the NWHU (386.9 per 100,000). This may be partly related to the older age distribution of Ignace residents compared to the NWHU, as cancer risk increases notably with increased age, particularly over age 65.

The average age at hospitalization was similar between men and women for all diseases. The average age of hospitalization for Ignace residents is 65.6 for cancer, 67.1 for cardiovascular disease, 68.6 for cerebrovascular diseases, 63.2 for ischemic heart disease, 55 for diabetes, 66.5 for chronic lower respiratory disease, 70.4 for COPD, and 18 for asthma. Ignace residents also had similar average ages of hospitalization to the Regional Study Area, except for asthma, where Ignace patients were younger on average (18 years of age in Ignace compared to 29.8 years of age in the NWHU). Average ages at chronic disease hospitalization in the Local Study Area were youngest for those admitted for diabetes (55 years old) and respiratory conditions (56.8 years old), with asthma in particular being a much younger age of hospitalization.

Lung cancer is the leading reason for physician visits for cancer-related illnesses among Ignace residents, accounting for almost 29 visits per patient on average (beyond treatment received at Mary Berglund Community Health Centre Hub). Lung cancer also accounts for almost one half of all Ignace resident cancer hospitalizations from 2002 to 2021. It is noted that both physician visits and cancer hospitalization do show a statistically significant increase for Local Study Area residents between 2002-2011 and 2012-2021 (both overall and for females specifically).

Overall, hospitalization rates for respiratory disease for the Local Study Area have remained statistically lower than the Regional Study Areas at 808.9 per 100,000 compared to 959.8 per 100,000, and no significant increase over time is observed. COPD, as a key indicator, does show residents aged 75 and older (particularly male) are at increased risk for hospitalization, but there were no significant changes over time, and rates are just slightly higher than the NWHU and similar to the Dryden Hub.

While older and vulnerable populations were disproportionately impacted by severity of disease during the COVID-19 pandemic, there was insufficient data to comment on the experiences of Ignace residents with this respiratory and communicable illness.

Ignace residents spent nearly 1 in 5 days in an alternate level of care for cardiovascular disease and nearly 1 in 3 days for arthritis. This was as high as 2 in 5 days for cerebrovascular disease. In the cases of ischemic heart disease and arthritis, Local Study Area proportions were much higher than the Dryden Hub and NWHU. This highlights the difficulties in securing appropriate care placements and/or home support for Ignace residents hospitalized with these chronic conditions and supports that inequity is a factor in these kinds of hospitalizations.

Mental Health

Analyzing mental health in the Local Study Area is helpful to understand what mental health supports are in place and/or need to be in place to best support individuals. It can also help identify linkages to social determinants of health that may be influencing an individual's mental health, such as food security (**Section 4.2.6.3**) and personal safety (**Section 4.2.5.4**). Individuals facing mental health challenges often have multifaceted needs from their community and health care system. Individuals living in rural and northern communities can face additional challenges with their mental health, including social isolation, lack of access to appropriate resources, and social stigma around mental health and seeking help, particularly in small communities where there may be less anonymity.

About 4 in 10 families screened in the HBHC program indicate a history of depression, anxiety, or other mental health concerns and one in three mothers screened experienced mental health concerns during their pregnancy. This is notably higher than provincial data which found that 15.8% of mothers reported mental health concerns in 2015 (Public Health Ontario 2018b). This included 9.1% of mothers who faced anxiety during pregnancy and 7.7% who experienced depression, with rates being higher for mothers under 25 years old. Understanding maternal mental health is important as it can impact the socio-emotional and cognitive development of children (Bernard-Bonnin et al. 2004).

Community Health and Wellness Survey (2023) data showed one in five Ignace adult residents reporting a mental health condition of depression or anxiety, with a difference among females at 25% and males at 15%. It is evident that as identified in key person interviews, mental health is an important issue in the Local Study Area and Regional Study Area (NWO Community and Baseline Studies Key Person Interview Program 2022; NWO Baseline Studies Key Person Interview Program 2022-2023).

For recorded physician visits, substance-related and mood or anxiety disorders each accounted for approximately one in three physician visits for mental health. Further, Mary Berglund Community Health Centre Hub data show that, mental health is a common cause for visits to practitioners. Physician visit rates for mood or anxiety disorder were more than twice as high as the next leading specific mental health disorder and this is the only case where there is an observed statistically significant difference in rates by sex with females being higher than males.

Visits by Ignace residents for mental health at the primary care level included an average of 7.4 visits per general and family practitioner, 5.6 visits to psychiatrists, and 2.5 visits to internal medicine specialists. The support of specialists such as internal medicine and respiratory disease specialists underscore the link between chronic disease and mental health. Psychiatrists are more likely to spend time (i.e., more visits) with older residents which likely links to illnesses such as dementia and Alzheimer's. Ignace residents show much lower physician visit rates for psychiatric care compared to the Regional Study Area.

The highest rate of mental health related ED visits is among Ignace residents aged 10 to 19 and 20 to 44. Overall, the rate of ED visits for mental health among Ignace youth is statistically higher than all age groups, with the exception of those aged 20 to 44 for which the difference is not statistically significant. In Ontario, mental health or addiction-related emergency department visits have increased dramatically during the last few decades, with rates rising by 89.1% between 2006 and 2017. The greatest increases were observed for those aged 14-21 and for anxiety and mood-related disorders (Chiu et al. 2020).

Anxiety and stress and substance-related disorders were the leading reasons for mental health related ED visits among Ignace residents. ED visits for anxiety and stress disorders among Ignace females has notably increased, although lower than the Regional Study Area. Further, 45.6% of all mental health ED visits were assessed as urgent/potentially serious and 12.4% were assessed as emergent/potentially life-threatening. There was not a strong pattern between triage level and age group, but there were fewer visits assessed as “less urgent” in residents aged 10 to 19 and more assessed as “urgent or potentially serious” compared to other age groups.

More than half of the mental health hospitalizations for Ignace residents occur between ages 10 and 44, with more than 10% between ages 10 and 19. However, there are no statistically significant differences in mental health hospitalization by sex or age group, with the exception of males aged 10-19 (suppressed due to small numbers). This is not positive, as it means, statistically, youth aged 10 to 19 are as likely as other age groups to become ill enough to require inpatient mental health care.

Leading reasons for hospitalization are mood/affective disorder followed by schizophrenia; each accounted for almost one in four hospitalizations. Hospitalization rates of both Alzheimer's/dementia and schizophrenia are significantly lower than the Regional Study Areas, which may signal less need, or that people requiring more intensive services have left Ignace. Overall, mental health hospitalizations of Ignace residents have increased over time and are similar to the Dryden Hub rates. Hospitalization for substance use disorders have remained stable over time and lower than comparison areas; however, participants in the GBA+ workshop noted that drug use is increasing. A disproportionate number of youth and Indigenous people, in particular those who have lower socio-economic status, are using illicit substances and partaking in heavy alcohol use (GBA+ Workshop 2023).

Injury and Mortality

Understanding injury and mortality rates can help to identify socio-economic and health care inequities.

Rates of hospitalization and emergency department visits for intentional injury have remained statistically lower than the comparisons areas. But it is noted that among Ignace resident females are more likely to be seen at an emergency department and be hospitalized for intentional injury, the vast majority of which are self-inflicted injuries.

In all comparison areas, the emergency department visit rate for intentional self harm appears to be among youth aged 10 to 19, suggesting a greater proportion of youth in all comparison areas may be facing mental health challenges than other age groups (see also **Section 4.4.5.5**). However, for Ignace specifically, the rate is not statistically higher than 20 to 44-year-olds, while it is in the Regional Study Area.

The highest number of deaths (103) among Ignace residents occurred among residents aged 45-64, accounting for approximately one in three deaths. This is likely due to this group representing the highest proportion of residents by age group. Nevertheless, this suggests a substantial number of premature deaths (deaths occurring before age 75) among Ignace residents. The second most represented age group was residents aged 75 and older (95 deaths).

While the Local Study Area mortality rates were statistically lower than the Regional Study Area between both 1986-1996 and 1997-2007, there was a statistically significant increase between

2008 and 2018. The mortality rate over this time period is no longer statistically lower than the Regional Study Area.

Although there are no large differences in the Ignace population distribution of male and females, males did account for about two in three deaths in the Local Study Area. This is different from just over 50% of deaths attributed to males in the Dryden Hub and NWHU. Although the mortality rate in the study period is statistically higher among males than females in all areas, the difference between Ignace resident females and males is much more noteworthy than the Regional Study Area.

Among Ignace residents, the average ages at death (63.6) are notably lower among both Ignace females (69.3) and males (60.4) compared to the Regional Study Area. However, with small numbers, a small number of young deaths can materially impact the overall average.

As noted with small numbers, it is difficult to disaggregate by specific causes of deaths, ages, and sex. However, as the illness data related to hospitalization support, the leading causes of death among Ignace residents are cancer (one in three deaths) and diseases of the circulatory system (almost 30% of deaths). The most common specific causes of death are ischaemic heart disease followed by lung cancer, which aligns with the burden of hospitalization and chronic disease data reviewed. There is limited information that can be provided for Ignace about both leading specific causes of death by sex, but for both, lung cancer and ischaemic heart disease are the top two causes of all deaths.

Mortality data that cannot be predicted by health status of a population includes injury, which is sudden and usually not related to other health conditions (except for mental health). In the case of Ignace, injury is the third leading cause of death (12.2%), with the youngest average age at death by injury (42 years old) compared to the Regional Study Area. Mental health disorders accounted for less than 2% of deaths. However, this classification does not include the self-inflicted injury that is within injury deaths.

Among Ignace residents, males account for 70% of all deaths before the age of 75, known as premature mortality, compared to 61% in the Regional Study Area. The PMR in Ignace has increased significantly since 2007 and was statistically higher than the Regional Study Area, though wide confidence intervals are noted. Although PMR increased for both females and males separately, neither the increases over time or differences to the comparison areas are statistically significant. Cancer accounted for just over one in three premature deaths, while disease of the circulatory system accounted for about one in four deaths before age 75. However, injury accounts for 16% of premature deaths compared to 6% of all deaths.

The most notable impact of injury is related to the actual years of life lost before age 75. Injury accounts for one third of all lives lost before the age of 75, followed by cancer accounting for one in four years of lost life, and disease of the circulatory system at one in five years of life lost. Most notably, Ignace males lost almost 40% years of potential life before age 74 due to injuries while more than one third of potential years of life lost among females was related to disease of the circulatory system.

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