Township of Pickle Lake

ONTARIO - CANADA

Airport Infrastructure Opportunities Feasibility Study

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The Corporation of The Township of Pickle Lake

Prepared By:

Limestone PARTNERS

2 Anne Street South, PO Box 340,
Pickle Lake, ON
P0V 3A0
807-928-2034
www.picklelake.org
clerktreasurer@picklelake.org
edo@picklelake.org

Consultants of Record:

Jib Turner, Andrew Ault MBA MSc, Tom Ondrejicka, and Dan Shepherdson CPA CRMA
Limestone Partners Canada Inc.
17 Water St. E., Little Current, ON P0P 1K0
(705) 348-2500
www.limestonepartners.ca
jibturner@limestonepartners.ca

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Executive Summary

Pickle Lake, a community of just under 400, is facing significant disruptions with the nearly $9 billion in estimated construction of all-season roads over the coming two decades, significant growth in the regional mining industry including reasonable prospects of restarting a mine near the town site, and the electrification of remote Indigenous communities with the Watay Power Project, which in turn, reduces the need for diesel fuel to be shipped from Pickle Lake, to connected communities, for energy. Additionally, as the hub to Ontario's far north, Pickle Lake is also in the centre of northern issues, including climate change, food security and Indigenous affairs. Overall, the economic disruptions point to tremendous opportunity, with further potential for Pickle Lake to evolve yet maintain its role as a service centre for the remote northwest of Ontario. This study specifically examines the Airport district, to make recommendations for land use and infrastructure development. This district consists of a tract of land from the old beach and alongside the Lake, land near Graveyard Lake, and with the creation of a new road connecting the town site to the Highway, both, a new corner entering Pickle Lake land development alongside the new road access.

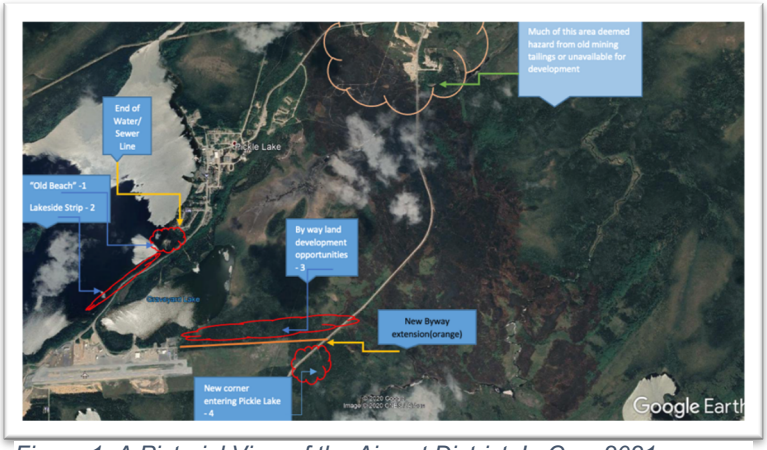


Figure 1: A Pictorial View of the Airport District, L. Cox, 2021

This study is evidence-based and uses solid strategic analyses tools to devise its recommendations, refined by community input and confirmed with economic modelling. This study uses the PESTEL framework to analyze trends in the macro-environment as either opportunities or threats, uses VRIO to classify economic, geographic and infrastructural strengths and weaknesses within the community, the GE-McKinsey Matrix to classify sunsetting and growing industries, and the TOWS matrix to devise actionable strategies towards these goals. Using community-informed methods of consultation, and drawing on over twenty one-on-one interviews, actionable items were outlined for realization, a new vision and values for the economic development of the community were devised and an analysis of costs and benefits of water and sewer analysis was completed.

The analysis reveals several major areas of change, which include an approximate annual loss of $335,000 in GDP loss from the reduction in fuel shipments further north. It is noted that, while this is a great reduction in fuel shipments, it does not necessarily mean elimination as there will still be some communities not connected to the grid through the Watay Power Project, and that gasoline will still have to be flown north given the limited storage available in remote Far Northwestern Ontario communities. Interview data revealed the immediate impacts would be lesser than our estimate of three to five people based in Pickle Lake, given very reasonable potential to offset the fuel deliveries with supplies that did not make the Ice Road and growth in shipments for off-season building supplies and on-demand groceries, for which Pickle Lake has 90% of a market share for its catchment area.

The community also faces numerous opportunities, over the next two decades. The largest and most reasonable of these projects, is a nearly $9.5 billion road construction project to connect Indigenous communities with all-season roads, which will be reasonably announced in the coming years over phases. Some communities have plans in the works for these developments, and one community just connected two years ago (Weagamow). Mining development is also ongoing in the local region, with Newmont's Musselwhite Mine just a few hundred kilometers to the north of the townsite, and with many projects planned for commercialization within the next ten years. Opportunities to enhance the role of Pickle Lake as a major service centre for remote northern Ontario also exist from the perspective of retail, training, and primary government service. With increasing attention to Indigenous policy, Pickle Lake also has further capacity to build on its strengths as a transportation hub for the existing Winter Road season traffic and increasing transport traffic that will become present on Highway 599 outside of the Winter Road season, with the all-season road developments. In addition, it can greatly enhance its role as a northern hub by playing host to a commercial demonstration project for airships and supporting Indigenous economic participation.

Pickle Lake's major competitive strength is that it is the closest in proximity to many of the northern Indigenous communities, in Ontario, and most northern municipality connected by road. Additional strengths come from its airport infrastructure, and proximity to mining developments. Its weaknesses rely in its low availability of built infrastructure to accommodate warehousing and worker accommodation, as well as the relative lack of qualified employees for its many jobs. It is noted that Pickle Lake ranks first, of nearly 200 northern Ontario communities, in its employment rate of over 70%. In terms of infrastructure, a concurrent study from *Northern Community Solutions* identified excess capacity of serviceable lots along the existing Pickle Lake Road, within an area called "The Loops" and several serviced lots available within the community.

In terms of industries, this study identified fuel shipments as a shrinking industry that will be smaller after electrification to remote reservations, yet still present for many years to come. Power Line Construction will be the most immediate negative change in the economy as Phase II of the Watay Power Line project is scheduled for completion within the next two years. Industries that are poised for growth come from five major sources. First, there is an immediate ability for Pickle Lake to service the existing and future mining sector within its proximity, with warehousing and training needs. Second, there is a role for Pickle Lake to advance Indigenous economic participation through serving as a major service centre for training and employment access. Third, its northern geographic location yet accessibility by road, points to potential capacity for development of search and rescue services within the country's north. Fourth, as it will play an increasing role as a transportation centre to far northwestern Ontario, the community will, over time, be able to benefit by servicing truckers to the north as well as enhance its retail space to service nearby communities. Fifth, given the disruptive technology of airships being able to service remote mines otherwise unfeasible with the costs of road construction, and enable Indigenous communities with lower food costs and further economically

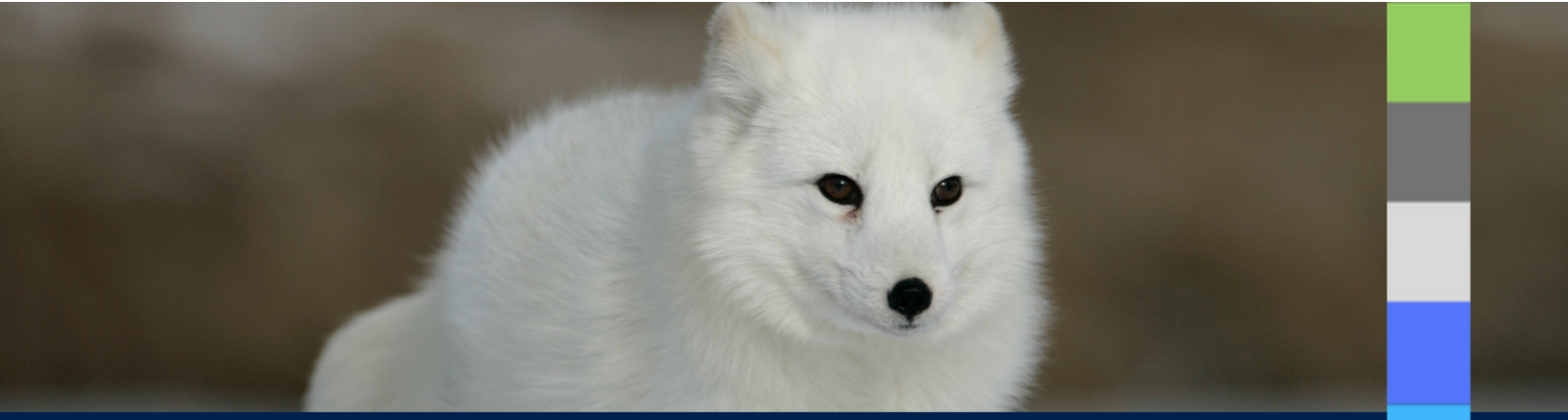
develop, Pickle Lake is ideally situated to become a regional hub for airships and idyllic community for a commercial demonstration pilot project, within the next five to seven years.

This study recommends the *Old Beach and Airport Road Strip* be left status-quo, in terms of zoning, yet suggests enhancement of the beach area to improve public accessibility. The old terminal building has been analyzed to ideally house training facilities that cater to mining and aviation services, or be repurposed for a voluntary search and rescue association base, should the training facility be located successfully in the new *Fire Hall*. With respect to Graveyard Lake, this study recommends that the land continue as status-quo, but be highly considered for future residential zoning, as it would provide the most reasonable plot of land for a future housing development. However, given the excess capacity identified in the dovetailing strategy by *Northern Community Solutions*, it is recommended that the Township only seriously consider this if other identified capacities become exceeded. The new corner is suggested to be zoned industrial and not be serviced with water or sewer. Serviceable commercial land is available further down the road, for businesses needing such service, in Central Patricia, which would be more economically justified for development given the existing lines. The *Airport strip* was identified to be acquired from the Crown, and zoned for industrial purposes upon acquisition, given its competitive advantages of being able to service a wider range of industries than the airport, which as it is owned by the MTO, only caters to aviation-related organizations. The strip can be subdivided into up to seven lots, and potentially host an airship hangar.

Given the recommended land uses, interview data and economic modelling, the benefits did not exceed the costs of water and sewer extension. The costs were approximated to be $1,600 per meter, based on comparable projects in other communities with little difference expected between only installing water and not sewer. Through interviews, it was revealed that no existing tenant necessarily needed these services, and further, given the land use planning primarily being used as warehousing and industrial properties, such uses would not necessitate these services. More importantly, a significant amount of vacant and serviced land already exists at the Central Patricia intersection, and along Pickle Lake Road, for interested developers in the commercial or industrial areas. Furthermore, with respect to residential development, Graveyard Lake should only be developed after the current capacity is met and can be serviced in alternate routes around the other side of the lake such as not to be within proximity of the road. Despite this analysis, based on the needs, we do obviously believe connections to hydro and broadband services should be made.

Since much of the land analyzed in this study is crown land, government relations are a major actionable item. We recommend the Town engage with the MNDMNRF (Ministry of Northern Development, Mines, Natural Resources and Forestry) for permission of the Town to erect signage, and amenities at the beach. This will serve as a potential retention tool for regional employees, which experience high turnover, and as an attraction tool for newcomers. With respect to the Airport Strip, we recommend the Town enter discussions with the MNDMNRF to acquire the land, access a specific fund, and subdivide the properties, marketed to the existing mining sector, construction sector, food sector, and aviation cluster to support their growth. We do not see any immediate need to acquire the property surrounding Graveyard Lake though the town should pay attention to this property going forward. To develop as an airship base, action items are proposed to discuss with an organization and communicate competitive advantages and resources for support. Specific action items for a SAR base are also proposed and outlined, starting with establishment of a volunteer branch. Funds to support implementation were outlined where applicable as well as regional and national partners identified.

In conclusion, Pickle Lake is experiencing a “boom” and this study recommends ways in which its land use zoning can best support this growth. The land studied herein, has potential to serve existing demand, accent future growth and provide for growth in the long-term as well. Strategies herein best position Pickle Lake to economically grow its community sustainably, through embracing technology, training, and its geographical assets.



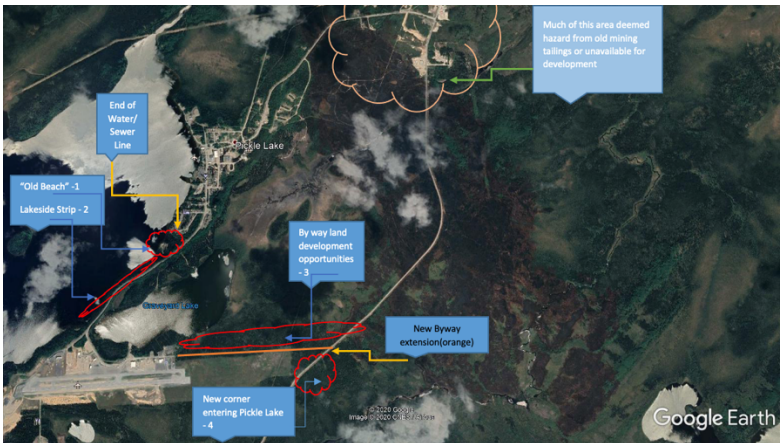
Introduction

1.1 - Introduction to the Study

Pickle Lake, Ontario's last frontier, is facing several significant changes in its economy. Once known as the place where all roads end, Pickle Lake is now poised to be the gateway to Ontario's all-season road system, which will service many First Nation communities, who were otherwise remote. With the "boom and bust" of mining, Pickle Lake is also simultaneously faced with prospects of another "boom" as interest peaks by Australian mine companies in the Pickle Crow mine deposit, just minutes from the town centre, and as Newmont's *Musselwhite* property continues to very efficiently mine gold, a few hours north of the community. Pickle Lake is also seeing an evolution in its prominent role as a hub community, from fuel service to northern First Nations, to servicing the increasing traffic on Highway 599.

Alongside these major changes to the economy, the small community of just under 400 residents, located approximately seven hours north of Thunder Bay, needs to be resourceful in its pursuits to respond to the changes in the macroenvironment. It must also have some ingenuity to harness enough benefits from the positive disruptions, to outweigh the negative impact of fuel shipments, and do so on a constrained and limited budget. Pickle Lake is the most northern municipality in Ontario accessible by road, and services a population of 1,000, who are mostly Indigenous peoples.

Given the major positive disruptions, a significant demand for commercial, residential and industrial land has started and the availability of built infrastructure to service those uses, is believed to be in short supply. Hence, this study mostly focusses on potential needs to acquire crownland to support the demand for such land. The consultants for this study worked in close collaboration with Northern Community Solutions, who completed the Pickle Lake Infrastructure Feasibility Study, which focussed on repurposing and uncovering existing land for development within the community. Using these findings, this study adds the perspective for future land development and closely analyzes industrial statuses, applicable to land surrounding the airport, known as the "Airport District".



The ***Pickle Lake Airport District*** may be well poised to anchor much of the responses to the land undersupply, in servicing demands from changes in the regional economy. Given the considerable land acreage available, compared to the size of the townsite, considerable land for development opportunities were identified as worthy to investigate as per their feasibility.

Further accenting this, is the construction of the new "Connecting Link" Road, pictured in yellow above, which will link the community, to Highway 599. Presently, only one road links the community to this nearby Highway, which has led to several concerns surrounding community evacuation and community safety. This new roadway addresses these concerns and will become the first entry to the community upon its completion.

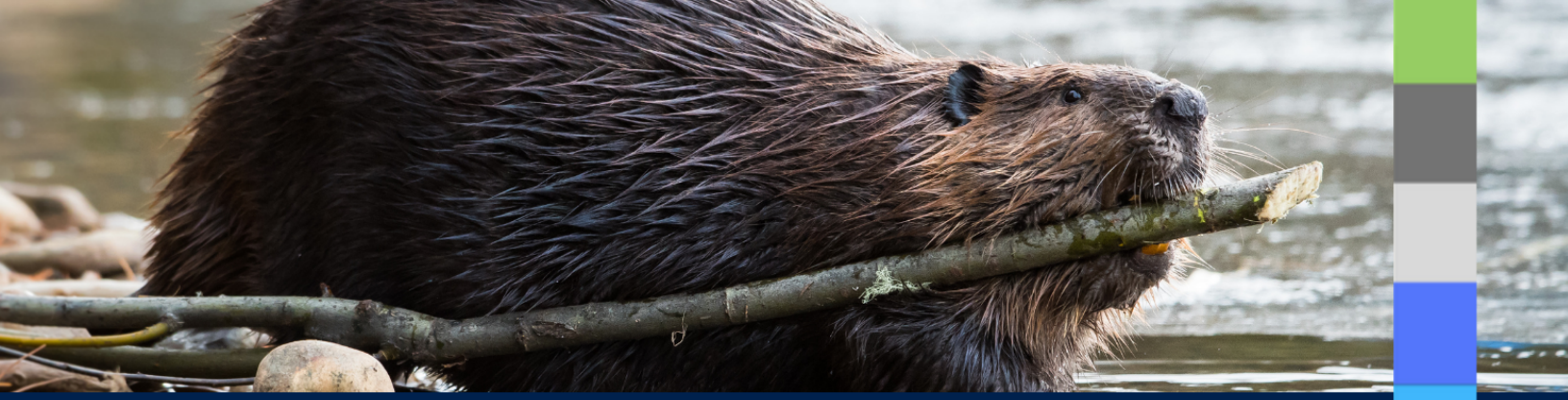
This study assesses reasonable uses of the properties within this district and how they can help Pickle Lake respond to the external drivers, in an economically maximizing way. Accordingly, this study considers the properties of (a) the airport strip, defined as the roadway across from the Pickle Lake Airport on the new road, (b) the airport terminal building, which now sits vacant, (c) crownland accessing Graveyard Lake, (d) crownland known as "the old beach" and "lakeside strip", which both access the waterbody of Pickle Lake, and (e) a new corner which will be created by the new road, and the existing highway. This study also identifies prospective industries to anchor business at the airport, and assesses weather or not water, sewer and fibreoptic installations are necessary to support the developments. In addition, this study also economically models the disruptions caused by sunsetting, growing and prospective industries, in terms of GDP impact, to aid in decision making.

This study proceeds in eight subsequent parts. First, the methodology for the study is described, which includes a detailed description of the strategic tools employed, the sources of empirical data, and sources of community-informed data. The analysis then proceeds in six stages, which begins with a scan of trends within the macro-environment, where major drivers of change are classified as either an opportunity or threat. It then proceeds with a review of infrastructural, geographic, and economic resources within Pickle Lake's Airport District, to understand competitive advantages and gaps, which in turn, suggests strengths and weaknesses. Reflecting on these, an industrial analysis is then conducted, which synthesizes the strengths, weaknesses, opportunities, and threats of the major industries which may impact land development within the study area. A TOWS Matrix is then created where land use recommendations and strategies are proposed, to build allow Pickle Lake to leverage its strengths towards opportunities while mitigating threats and addressing weaknesses. This is followed by an opportunities action plan where partners are identified to realize timely objectives, and analysis of water, and sewer line extension to the existing and planned roadways of the Airport district. The study then concludes with major findings, recommendations, and summarizes major next steps.

1.2 Objectives

The objectives of this study are as follows:

a) Identify economic development opportunities that build upon major activity within the Pickle Lake region.
b) Examine sunsetting and growing industries with impacts on activity, which may impact land use within the Airport District.
c) Examine the existing inventory of infrastructural assets in Pickle Lake's Airport district and understand the geographic and economic competitive advantages to such.
d) Recommend land use and infrastructure development strategies within the study area.
e) Analyze costs and benefits of installation of water and sewer line extensions.
f) Provide an actionable plan and materials that can help the community achieve the strategic objectives herein recommended.



Methodology

2.1 Methodological Frameworks

This project will provide a comprehensive strategic analysis, to examine external, internal and industrial trends and recommend land use for the crown land within the study. This research, as well as the community-informed consultations, will also form basis for the establishment of a new mission and values for economic development within the community. This is followed by a close study of costs and benefits to water and sewer extension, and an actionable plan to put into place the strategies discovered.

Phase 1: Strategic Analysis	Phase 2: Water and Sewer Feasability Analysis	Phase 3: Actionable Plan
•Situational Analysis •Resource Analyisis •Industrial Analysis •Strategic Development •Land Use Strategies •Establishment of Mission and Vision	•Examination of costs and benefits of water and sewer lines using comparative analysis and interviews	•Action Plan Development

An Evidence-Based and Community-Driven Approach

Limestone's methods used to develop this study, are systematic and employ evidence-based management principles. This allows us to provide relatively unbiased, and independent advice, allowing the community and its partners, to make effective and supportable decisions with confidence. Accenting the empirical research with the community-informed consultations, this study recognizes the important role of ensuring the community is at the heart of all decisions effecting it, with the information informing decisions, and the values guiding decisions.

With a focus on evidence, this study maximizes its access to all leading research databases available to it which will systematically provide critical statistics and insights, relevant of the current landscape. Constant community consultation and interviews are key to ensuring

recommendations that flow from the analysis are in line with the community and that sectors objectively analyzed include those driven by the community.

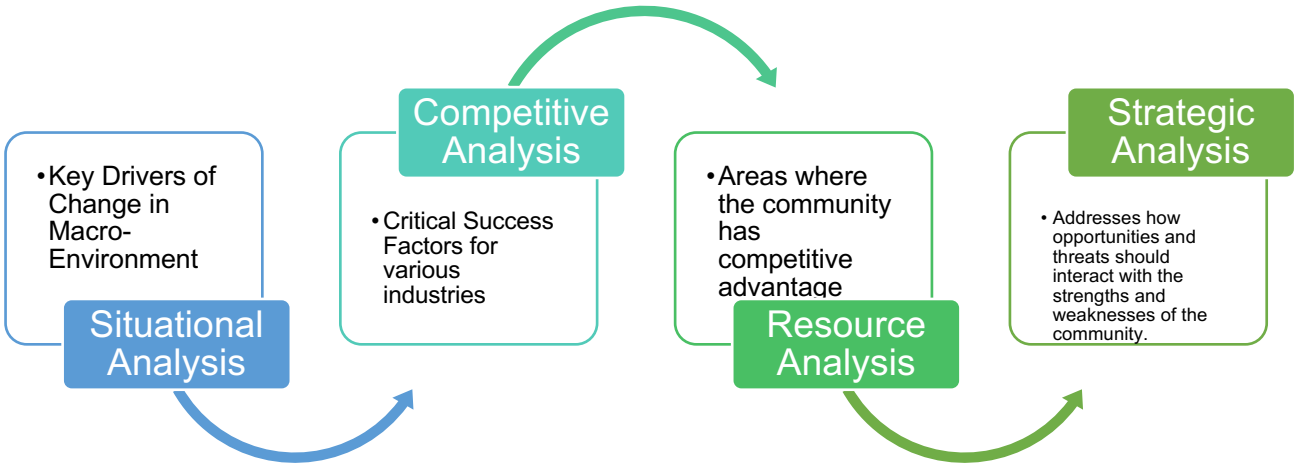
Review of Background Information

Before beginning this study, the consultants obtained preliminary background information and documentation to assist in our understanding the current nature and extent of the Township's economic profile, which included strategic plans, former studies and the community profile. Important documents of neighboring communities were also scanned for their relevance to Pickle Lake.

Synthesizing these reports, a foundation of opportunities and threats in the Township and region were synthesized and thoroughly reviewed for their impacts to the study area. If applicable, they are referenced with their associated information, in the body of the report.

Phase 1: Strategic Analysis

Under the directions of the community, Phase 1 examines evidence to suggest what land use and infrastructure development strategies are most feasible for the study area. Many of these studies and plans begin with SWOT. However, most times, a SWOT matrix is filled up with insights that "come out of the thin air." Limestone is keen on ensuring the strategy is evidence-driven, and accordingly, uses tools to systematically analyze the strengths, weaknesses, opportunities and threats. It then merges these into actionable strategies in the TOWS matrix.



Identifying Opportunities and Threats: Situational Analysis

In this component, the macro-environment surrounding the remote north of Ontario, Pickle Lake region and Township. This section begins with a review of the macro-environment based on data drawn from literature, industry statistics, and relevant Township metrics. Developments in the world, the country, and the regional environments were all explored and documented when relevant. In this analysis, the study discerned the political, economic, social, technological, legal, and environmental changes (PESTLE), and the data collected was synthesized, to determine the

critical drivers of change. This effectively systemically uncovers the strengths and weaknesses of a community.

Identifying Strengths and Weaknesses: Resources Analysis

This study proceeds with an infrastructural inventory and geographic and economic analysis of the resources available in Pickle Lake, to explore areas where the Township could have a competitive advantage. This analysis considers resources contributing to the economy, including geographic proximity to other centres. It will classify all characteristics according to a VRIO analysis, which would highlight those resources having a competitive disadvantage, competitive parity, a temporary competitive advantage, or a sustainable competitive advantage, when compared to other regional centres, on the critical success factors, identified in the Competitive Analysis. Effectively, this systematically identifies the strengths and weaknesses of the community in the various economic sectors.

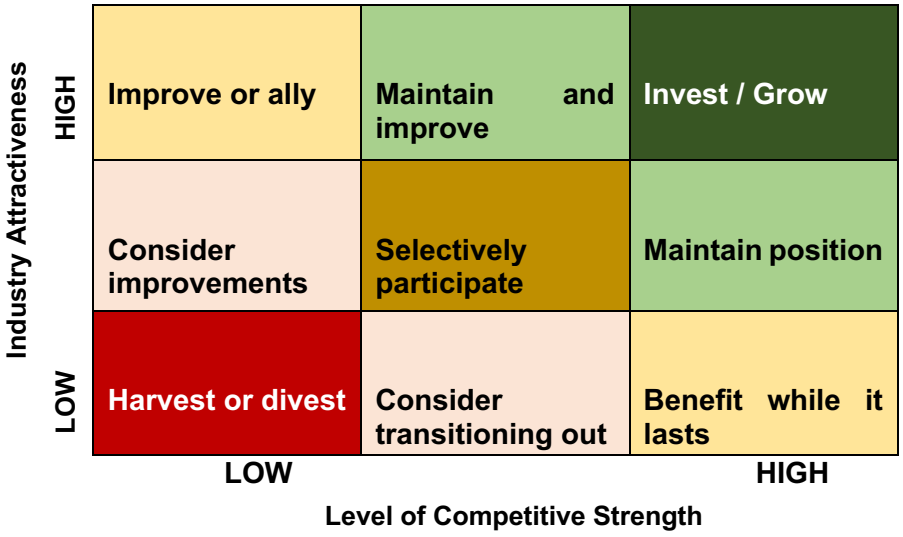
Assessing Industrial Opportunities and Threats: Industrial Analysis

Not all economic sectors have the same attractiveness, in the short, medium, and long-term. To analyze the industries, each sector was analyzed for their competitive forces, and growth prospects in the Pickle Lake area. Where applicable, this analysis discerns the critical success factors for each industry, which are those factors a community must have to succeed in the sector. The industries compared would include those to which the situational analysis points to potential.

The industrial analysis will be summarized using a GE-McKinsey Matrix, which will compare industry attractiveness with market strength, in the Pickle Lake region. This analysis will expose those industries where investment should be grown, held and maintained, or divested.

Drawing on interviews from stakeholders in each of the various industries, key gaps in infrastructure were highlighted.

GE-McKinsey Matrix



Determining Actionable Directions: Strategic Development

Based on the trends noted in the macro-environment, the community resources established as a competitive advantage, and the prospects and gaps facing various industries, the various strategic opportunities are then assessed, with the use of the TOWS matrix, which examines the threats, opportunities, weaknesses, and strengths of the Huntsville resources. Compared to SWOT and SOARR matrices, the TOWS matrix relies on the systematic uncovering of strengths, weaknesses, opportunities and threats, and places actionable strategies in the corresponding quadrants:

TOWS Matrix

	Opportunities	**Threats**
Strengths	Strategies that leverage strengths, to capture opportunities	Strategies that leverage strengths, to defend against threats
Weaknesses	Strategies that mitigate weaknesses, to capture opportunities	Strategies that work on underperforming areas needed to be developed, for defense against strength

Establishment of Development Vision and Mission

From the strategies, a vision is synthesized that is responsive, adaptive, and reactive, in preparation for the Township undertaking strategies and actions for the region. Community voices were the primary source of this vision, which direct how the objective information is synthesized into actionable statements. Voices were heard by the community, steering committee, relevant staff, and from Mayor and Council.

Development of Actionable Plans

From the strategies and vision, an actionable plan follows, on where each strategy is broken down into more detailed, time-bound, measurable objectives for which the responsibilities will be defined and assigned. These will include the identification of tactics, human resource and capital requirements, and responsible parties, and will also provide an evaluation strategy, and a realistic budget required to achieve each recommendation. Each of the objectives are given a time orientation including the short (under 6 month) medium (6 to 18 month) and long (18 month and beyond) timeframes. The plan also features performance metrics, resource requirements and budgetary implications for each recommendation, where and if applicable. Roles including leading, supporting, and tertiary involvements by agencies, partners, staff, and other organizations are highlighted.

For each sector, the following information will be presented:

- **Infrastructure Resource Development** suggesting ways in which improvements to infrastructure can facilitate strategies come to life
- **Marketing Asset Development** including routes to develop materials necessary to attract developers, realtors, consultants, and targeted individuals, who would be best to position the community for development success.
- **Suggestions of potential funding**, and government relations campaigns, to advance in areas of concern such as labour force development newcomer attraction, and small business growth.
- **Key milestones,** to ensure timely completion towards each goal.

2.2 Data Sources

Evidence Informed Sources

Only reliable, official or academic sources were used for data in this study. This includes official governmental publications and academic journals, including those from Northern Policy Institute (NPI). For statistical information on Pickle Lake, this study limited itself to public statistics from the 2016 Census by Statistics Canada, and the *Community Accounts* data available through NPI. To capture all physical elements, Google Maps were used as well as the one-on-one interviews. Given COVID-19, there was no physical visit to the community. LexisNexis and FACTIVA databases were employed for media trend analysis, to capture the scope of various projects in the north. Statista, a leading business database, also was used to gauge industrial attractiveness and ensure thorough trend analysis. The economic calculator of Dr. B. Moazammi (Professor of Economics, Lakehead University) was employed for all economic modelling, where possible. Costs for sewer came from documentation of project costs for comparable northern communities.

Community informed Consultation

For any change to be possible, the study must be grounded in the community and have a “change champion”. Further, for the work to be innovative and grow the economy, close relations with developers and the business community are quintessential to expanding the tax base and bringing “strategies to life.” Throughout all stages of this project, our consultations with municipal officials, government agencies, business owners, residents, and any other stakeholder are treated with high importance.

PersonaVisions by Limestone

This study uses a committee structure to ensure these communications are maintained, and to assist with completion of the work for this project. Participants in the Committee should include the Clerk Treasurer and EDO, as well as township residents and Council representation. This was held in sequence with a dovetailing strategy, on overall infrastructure feasibility for the Pickle Lake area, by Northern Community Solutions (NCS). It is noted NCS was the lead consultant on the overall project.

Local knowledge and experiences are important, for the purpose to capture the complexities of the local economy. Through one-on-one interviews, and a series of committee meetings, this study captures multiple directions and voices from many people.

To facilitate discussion, the study employs evidence-informed personas, as a basis for its series of workshops. Personas are research-based, fictional characters, created using psychographic, demographic, and market data, that help people leverage empathy for those of specific segments. The personas allow for an uncovering of motivations, supply chain diversification, issues on investment readiness and areas necessary for improvement in service delivery. As personas are presented, discussions in the roundtable following, will identify touchpoints they may experience to fulfil their needs, pain points in their service journey and barriers to address.

The workshops also support capturing areas of strategic direction. The first workshop focus is on uncovering opportunities and threats, the second focusses on areas of competitive advantage and the third ties it altogether into actionable strategies and respective barriers that must be addressed. These workshops help ensure the community is driving the study, such as uncovering important sectors, while the evidence and insights drive the strategy and aid in the prioritization.

Mayor and Council was also consulted for the overall strategic directions and key recommendations from the Report and were incorporated in this final copy.

Interviews

Throughout the project, and mostly in April and May, the study engaged in one-hour-long, one-on-one interviews with relevant business and community leaders. In total, twenty interviews captured the trends in most industries, where Limestone discussed with them, their expansion, attraction of new investment and current operations alongside challenges they may face, such as in the labour force, training, infrastructure planning and land use planning. These interviews offered true assessments of Pickle Lake and will give perspectives to direct land use and strategy development.

For interviews, we followed guidelines from the *Social Sciences and Humanities Research Council* (SSHRC), including anonymizing data where appropriate, informing participants of the reason for their interview, and storing their responses on a secured USB drive, stored in a locked drawer, at the office of Limestone Partners Canada Inc., for a period of two years.

Interviews were conducted with executives from existing aviation and non-aviation businesses in Pickle Lake, relevant mining companies, the Ontario government (Ministry of Northern Development and Mines) and construction companies.

Macro-environmental Analysis

Examining the Township's environmental factors reveals the drivers of change in building those approaches that best present the opportunities and obstacles, and how best to tackle those approaches. This section summarises the political, economic, social, technical, legal, and environmental drivers of change (PESTLE), each allowing for an evaluation of the macro-level opportunities and threats. The ultimate success of a strategy is how effectively a region can exploit its advantages to opportunities, while preventing or minimizing external marketplace threats.

3.1 Political Drivers of Change

NOHFC supports Indigenous employment and rural community development.

The Northern Ontario Heritage Fund Corporation (NOHFC) has recently revitalized its programming to better support community economic development. Some highlight programs include:

- Indigenous Workforce Program, which is to strengthen the Indigenous workforce by offering internships to Indigenous people, covering 90% of eligible costs for municipalities and not-for-profits and 75% for costs for businesses.
    - There is emphasis on skilled trade, resulting in a full-time job, gaining transferrable skills and having quality supervision.
- Workforce Development Program, which caters to providing jobs to recent graduates, covering up to 90% of a municipality's cost up to $35,000 per year and eligible businesses up to 50% of such salary.
- The Invest NORTH stream, which is designed to grow northern Ontario through attraction of new businesses, expansion of existing businesses, commercialization of innovative technologies and locating investment.

Other funds include those targeting use for film, community events, cellular and broadband and rural community enhancement. Altogether, NOHFC can provide funding for business expansion in terms of infrastructure and can also provide support to employers hiring qualified Indigenous applicants.

FedNor's new programs build community resilience following COVID-19 and improve the ability of communities to participate in innovation.

FedNor recently announced the *Canada Community Revitalization Fund*, which aims to help build community infrastructure projects across Canada so they can rebound from the pandemic and the Regional Air Transportation Initiative in Northern Ontario. This accents their core programs of Regional economic and growth through innovation (REGI), development of diversification (NODP), the Community Futures program and the Economic Development initiative.

Arctic Sovereignty challenges present northern communities, opportunities to service government interests.

While Canada, Denmark, Russia and Norway regard Arctic seas as national waters, the US and most EU countries regard it as international waters and hence do not recognize Canada's sovereignty of some of the arctic. Climate change and the melting ice presents numerous challenges for countries in the battle for sovereignty over key shipping routes, given less ice opens more waters which are contested in terms of sovereignty. There are ongoing discussions between the UN, Russia, and Canada with respect to sovereignty. Russia is currently submitting, for review by the UN, an expansion plan of their sovereignty of most of the arctic ocean, within the 200km limit to the North Pole.

In 2020, China and Russia were conducting a joint exercise in open water without knowledge of Canada. It is believed that potential enemies are doing much more than is known. Accordingly, Canada is in a position to either guard the arctic as a sovereign or lose its sovereignty over the waters.

NORAD is building up to cover the northern part of continent. The Canadian Coast Guard now also regularly has presence in the High Arctic every summer and Fall, and the Canadian Armed Forces have been testing unmanned sensors and underwater microphones. The Navy operated in Baffin Bay and Beaufort Sea recently, sailing with Canadian and US cost guards.

Increasing Focus on Reconciliation with Indigenous communities in national policy

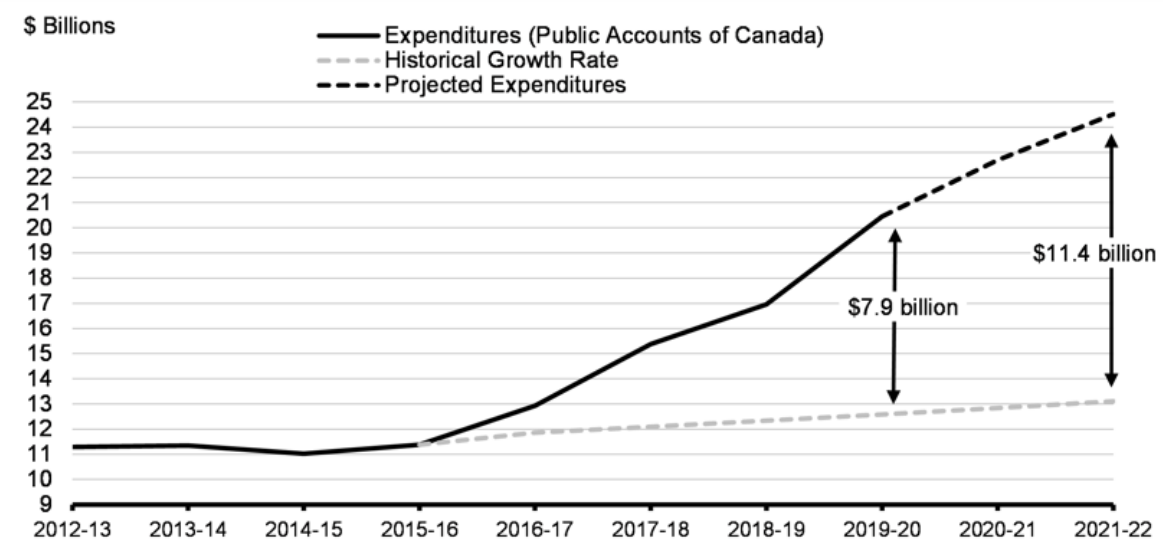


Figure 2 Indigenous Investments as at 2021 budget, Gov't of Canada, 2021

There is a growing focus in government policy to support Indigenous community resilience and reconciliation efforts. Some recent examples include, a new policy to allow Indigenous peoples restore their names on government-issued identification, funding for Indigenous tourism and economic development and, in 2019, the Canadian government made historic investments of $18 billion in five years, to improve the quality of life of peoples in Indigenous communities.[1]

3.2 Economic Drivers of Change

All-season road development is a potentially $9.5 billion long-term project, that will increase truck traffic through Pickle Lake.

All-season roads connecting northern Indigenous communities are being seriously discussed, and in some cases, developed. Weagamow Lake recently built their road[2]. The *Northern Link Project*[3] are currently in feasibility stage, connecting Highway 11 with James Bay coastal communities; Webequie to a mineral deposit, and Marten Falls to Nakina, Ontario.

While some communities closest to Pickle Lake are considering an all-season road, as are the two communities within the Nakina corridor, most do not have any plans at the moment to be connected with an all-season road. The estimated dates for a reasonable network of all-season development is close to the year 2040, however this is generally a rough estimate and considers that many communities do not desire a road at all. The total cost of the project is estimated at $9.5 billion.[4]

[1] https://www.canada.ca/en/department-finance/news/2021/04/budget-2021-strong-indigenous-communities.html
[2] https://www.cbc.ca/news/canada/thunder-bay/north-caribou-lake-bridge-1.4359875
[3] https://www.ontario.ca/page/northern-road-link-project
[4] https://www.sudbury.com/local-news/rate-of-climate-change-may-render-northern-ontario-winter-road-network-unsafe-778345

Completion of the Watay Power Project will decrease the amount of fuel needing to be shipped north.

To decrease the reliance of northern communities on diesel fuel, the Watay Power project connects these communities to the grid. The construction for the major phase will end within one and a half years and would have an immediate impact on fuel shipments flowing through Pickle Lake. This project will have disruptive impacts on northern energy (Coady and Duquette, 2021; Hosszu, 2017) however, it is important to note that communities will still need some fuel shipped by plane, for vehicular use. Furthermore, not all communities will be hooked up to the grid though this project, namely those in the Nakina corridor (Marten Falls, Eabamotoong, Nibinamik, Webequie), and those in phase 2-b (Wunnumin Lake, Kasabonika).

Mining construction could potentially begin in late 2020's which will provide decades of mining activity near the Township.

Recently, the Pickle Crow Mine is currently in exploration phase and they hope to have six rigs in operation by years end. [5] Other mining developments include ongoing work at the Musselwhite mine, and close out procedures to begin around 2028 for that mine. The Pickle Crow mine is a promising deposit (Andrews, 2021; Palmer, 2021), and faces a strong market for its minerals given the timing.

Pickle Lake has a high employment rate, implying a shortage of staff to available positions and given its labour market participation rate, also a low level of retirees.

Pickle Lake has the third highest employment rate of any northern Ontario community, at 71% (2016 census) of all residents 16+, next to Ear Falls (at 71.4%) and Kerns (72.9%). This exceptional employment rate is higher than Sioux Lookout (66.9%), Kenora (60.7%), Thunder Bay (56%) and most cities to the north of it.

Pickle Lake has a relatively high after-tax income.

The median individual after-tax income, likewise, is the 47th highest in northern Ontario at 32,320 per person. This is not much less than Dryden (33,516) and is relatively on-par with Thunder Bay ($32,400). It is considerably more than most other nearby communities. Discretionary income, however, may be far lower due to increased food and building supplies costs.

Economic Participation is relatively stable in Pickle Lake.

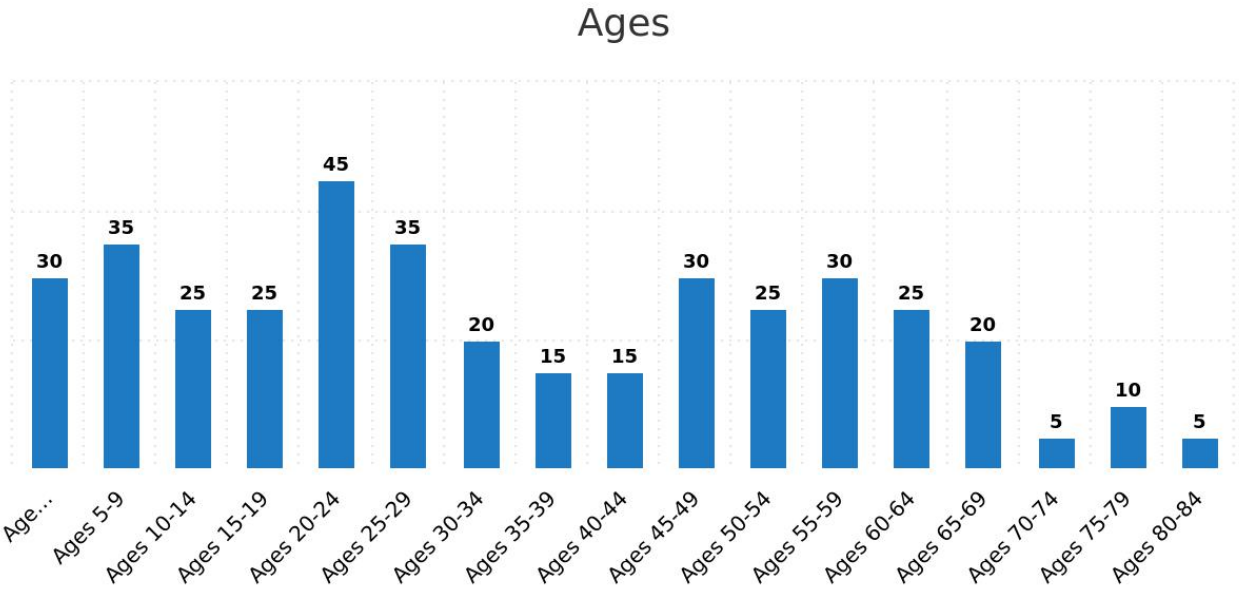
The economic participation change rate is -2.6% (new jobs vs retirements). Thus, there will be slightly less jobs will be available to the workforce, also affected by automation (Mozammi, 2019).

[5] https://www.northernontariobusiness.com/industry-news/mining/australians-see-open-pit-potential-at-former-pickle-lake-gold-mine-3893367

3.3 Social Drivers of Change

Pickle Lake has a young demographic, similar to Mishkeegomang First Nation.

Pickle Lake's demography is split between those who are younger and those who are aging (baby boomers)[6]. In particular, most people are either within the age range of 60-64, or 20-24, with considerable sizes at each of 50-54, 25-29 and 15-19. This implies a younger workforce will soon be available within the community to serve the various industries around the community, should they become qualified to do so.



Source: Statistics Canada, Accessed via Northern Policy Institute's Community Accounts

Indigenous Population Growing Considerably Fast

Indigenous Population grows much faster than the rest of mainstream Canada. In particular, there has been a 54% increase in the Indigenous population from 2006 to 2016 though this statistic may not accurately reflect natural growth (ie. birth), given the increase of Indigenous people completing the Census. In all cases unemployment and a lack of economic participation remain high within these communities. Hence, employers need to take advantage for this population, especially for the surrounding developments. In northwestern Ontario, the Indigenous population on reserves, grows roughly 12.6% over 5 years[7].

Growth and Attraction of New Residents is an important challenge.

In a nearby community, interviews reveal that just 4 of 10 stay longer than 5 years. Newcomer welcoming and integration is needed for all northern communities to maintain a positive, healthy workforce. *Northern Policy Institute* recently issued a report, suggesting a need to attract newcomers to the north by as much as 50,000 in 50 years, to fill jobs that would be left from baby boomers.

[6] https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3560049&Geo2=PR&Code2=35&
[7] https://www.statcan.gc.ca/eng/subjects-start/indigenous_peoples

3.4 Technological Drivers of Change

Pickle Lake is close to Weagamow Lake FN, which has an all-season road.

All-season road development is expected to continue for several far northern communities. While there are no confirmed and concrete plans for any communities in the Pickle Lake corridor currently, there was a recently opened community, Weagamow Lake First Nation, for which a bridge served to connect the community to the all-season road network of Ontario. Pickle Lake is now connected through road access to this community, located approximately five hours to the north of the community. Given many travel to Winnipeg, a 9.5 hour drive from Pickle Lake, there is potential for Pickle Lake to serve as an accommodation stopover, should there be demand.

Airships are a technology that can service communities without roads.

While a relatively old technology, there has been research published by Northern Policy Institute, numerous academic journals and an inclusion of the technology in *Connecting the North: A Draft Transportation Pan for Northern Ontario*. There is a call, in action item number 53, to "explore the potential of new and emerging freight technology, such as drones and airships, to help improve the movement of goods in the north. If feasible, such technologies may help improve the transportation of cargo to remote communities and help address the challenges of transporting goods over winter roads".[8]

Airships are powered by hydrogen, instead of gasoline and are much more cost effective than conventional aircraft (Prentice and Russell, 2009; Prentice and Adaman, 2014). In an economic model by Dr. Barry Prentice and his graduate student, Pickle Lake was identified as a key hub for airship development given its proximity to northern communities. Airships are also much more cost effective. It has been estimated to reduce food costs in far northern communities by various amounts. Dr. Prentice is also founder of BASI in Winnipeg, which aims to commercialize its airship technology.

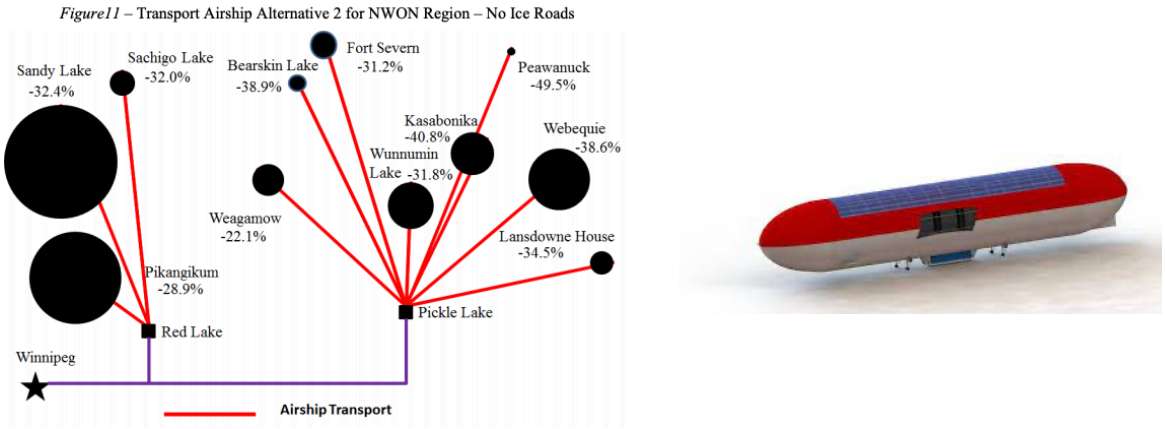


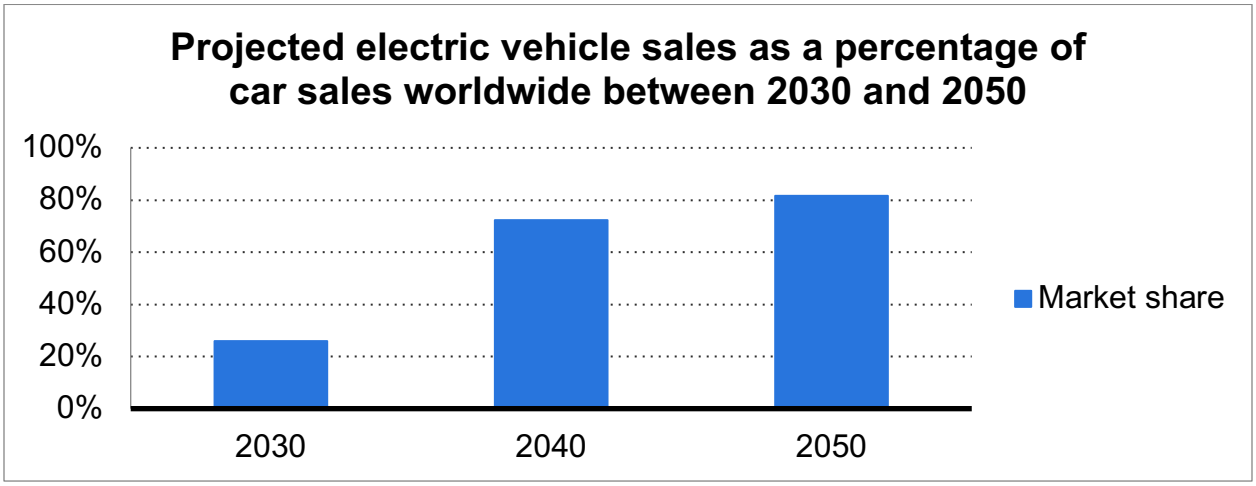
Figure 3: Projected decrease in food prices through airship transport in various communities and a Prototype Airship; Prentice and Adaman, 2015.

[8] https://www.ontario.ca/page/connecting-north-draft-transportation-plan-northern-ontario

3.5 Environmental Drivers of Change

Electric Vehicles are quickly becoming the vehicle of choice, which may increase feasibility of some area mines.

It is estimated by 2035, Canada will ban the sales of gas-powered cars. This has tremendous potential for the Pickle Lake region given the rare earths necessary to be mined to support battery production. Mines for electric vehicle battery production include zinc, cobalt, lithium and graphite among others such as copper. It is anticipated that these minerals will increase in demand.



Source: Morgan Stanley, 2020; Accessed via Statista ID 1202364

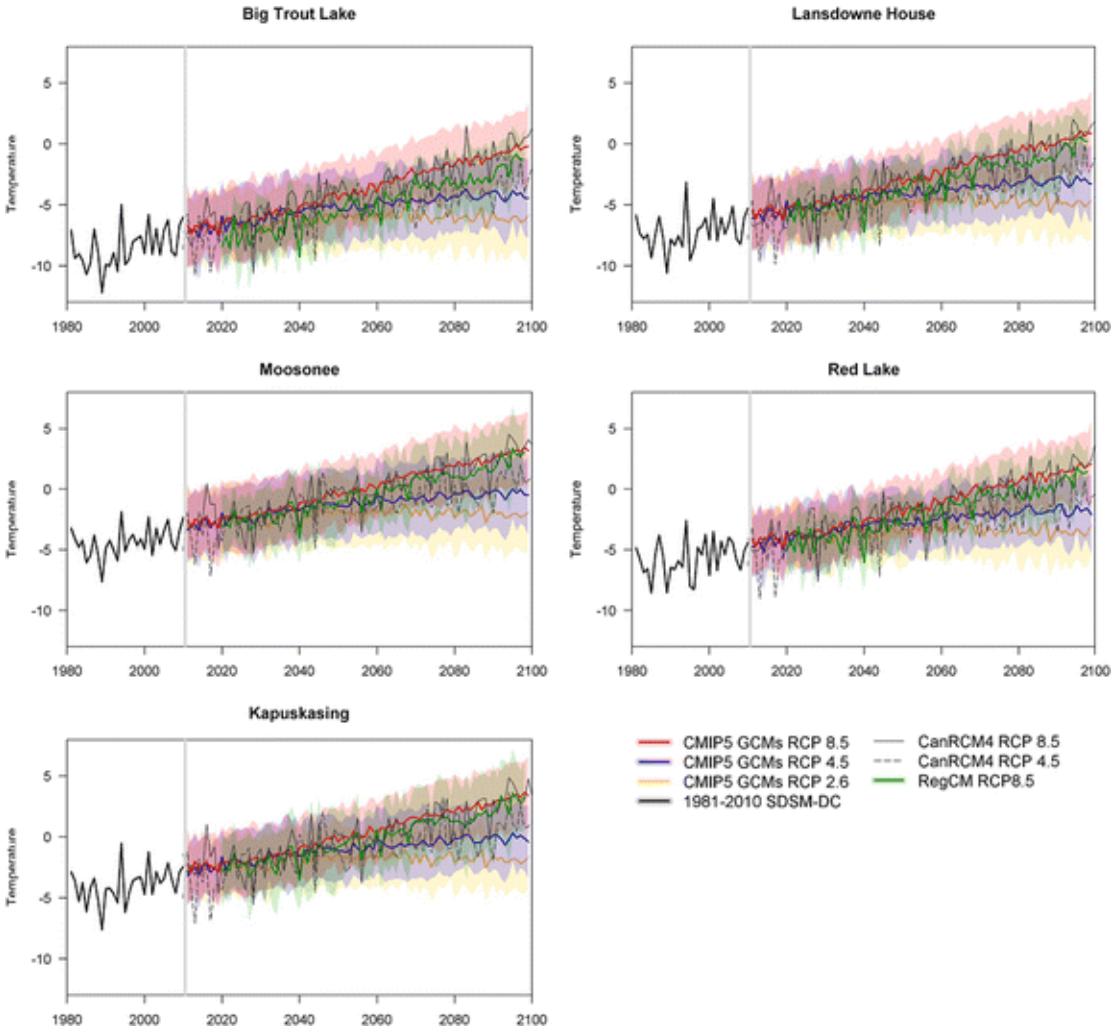
Climate change impacts road predictability.

Based on anecdotal evidence, there are some very visible patterns of decreasing freezing degree-days and increasingly variable season lengths of winter roads. According to interviews, it is believed that climate change is currently effecting the extreme points of the winter road seasons in that, the average seasonal length remains constant over ten years, yet there is greater sharpness in that some seasons are very short, while others are very long. In both cases, there is a high degree of unpredictability. Accordingly, this implies air carriers need to transport back shipped goods that did not make the roads in unexpectedly short winters, which is becoming relatively regular.

In a typical year, the following gets shipped on winter roads:
~1,000,000 kg of materials for summer projects
~15 homes, 2 community centres, and 200,000 extra kg of building materials
~2,200,000 kg of supplies and groceries
~3,000,000L of gasoline; ~1,400,000 L of diesel

Climate change modelled to negatively impact the ability to service some communities with winter roads by the end of the century.

The following graphs demonstrate that climate conditions may be unfavourable during winter, for road construction, by the end of the century for mid-northern communities such as Landsdowne House, while other communities such as Big Tout Lake, would likely see favourable conditions for road construction through 2100. This implies that at least some communities will need to develop all-season roads or an alternative form of transportation by the end of the century due to environmental pressures (Hori, Cheng, Gough, Juen and Tsuji, 2018).



Freezing Degree Days in Selected Locations
Source: Hori, Cheng, Gough, Jien and Tsuji, 2018, *Climatic Change*, 109-122

3.6 Legal Drivers of Change

Land disputes surrounding the resource sector may impact resource development.

In many regions of Canada, there are disputes as to development of mineral resources. In northern Ontario, there is fierce dispute of traditional territory for mineral development with respect to the Ring of Fire, and communities such as Attawapiskat, Fort Albany and Neskantaga have recently declared a moratorium on the Ring of Fire, for a need of genuine community consultation and demonstrates just one of many ongoing disputes of land for resource development in northern Ontario.

All-weather road development is disputed among Indigenous communities

As many northern Indigenous communities' plan for all-weather road development, it would be very important for an understanding of the key issues surrounding resistance to the idea. In particular, many communities of far northern Ontario are dry communities, and aim to be free of alcohol and drugs. Several community leaders believe a road will increase access to alcohol and drugs and hence jeopardize community safety and wellbeing. Others believe community wellbeing will be strengthened through the road facilitating greater economic participation and reducing the need for drugs and alcohol. It is currently hard to say which side is more correct, and given these challenges, Weagamow Lake erected a toll booth on its road which also serves as an inspection station.

Differences of opinion on mineral development also underly some tensions on road development. Communities of Marten Falls and Webequie are currently planning for all-season road development, however, Neskantaga disagrees with the plans for road development. The reasons for this are twofold, namely that the purpose of the road in Webequie is to connect the Ring of Fire, which is on traditional territory of several First Nations including Neskantaga, and other priorities seen as more important within Neskantaga.

Resource Analysis

Understanding the aviation and infrastructural assets in terms of competitive advantage, leads to an understanding of key strengths and weaknesses, as capacities for responding to the external climate, and its key challenges.

A VRIO review asks, on a yes / no basis, four questions relating to each asset.

(a) **Value**: Is it valuable in providing something that tourists like?
(b) **Rarity**: Is it rare compared to its immediate competition?
(c) **Imitability:** Is it easy for competition to imitate the resource?
(d) **Operability:** Are activities in the town organized for exploitation economically?

When a "no" on any of the ordered questions is reached, the analysis ends and the asset is able to be classified as either:

(a) **Competitive Disadvantage** – Providing something that is not valuable
(b) **Competitive Parity** – Providing something valuable, but not rare
(c) **Temporary Competitive Advantage** – Providing something rare, yet easily imitated
(d) **Underused Competitive Advantage** – Providing something valuable, rare, and imitable, but not organized to exploit for economic potential; or
(e) **Sustainable Competitive Advantage** – Providing something valuable, rare, difficult to imitate, and organized for exploitation economically

This VRIO analysis includes study of two groups of assets of geographic and economic resources, and existing sectoral services, ultimately creating strengths and weaknesses of Pickle Lake in terms of its location and key business infrastructure

4.1 Geographical and Economic Assets

Geographical/ Economic Asset	Description	V	R	I	O	Classification
Proximity to Mining developments: Pickle Lake is within a three-and-a-half hour drive from Musselwhite mine by Newmont, one of the largest gold mines, which has a life expected until 2028. In addition, it is surrounded by new mining developments as close as 3km from the town centre (Pickle Crow mine) and many deposits.	**Value:** The proximity of the mines can enable Pickle Lake to participate through direct employment, and through provision of mining support services. Many trucks pass through the town on Highway 599 for equipment. **Rarity:** Given the remoteness of Pickle Lake to other centres, the capacity of a town to service these specific mines would be limited. **Imitability:** While Pickle Lake is the closest town, which cannot be imitated, it is noted that it can be imitated where leased Crown land can be used for unsecured storage closer to mine sites in the case of Newmont. In the case of Pickle Crow, 3km from the town centre, there is very low chance of this occurring. **Operability:** Currently very little economic participation in the existing or coming mining developments, aside from provision of limited accommodations to guests in the Pickle Crow mine. There is opportunity to provide storage and to participate in the labour force.	V	R	I	O	Underutilized Competitive Advantage

Proximity to Miskeegomang: Pickle Lake is within a 30 minute drive from the Miskeegomang First Nation reserve; and is the closest town to the community.	**Value:** There is a growing population in the surrounding First Nations as well as a need to bring further opportunities to the north. Pickle Lake is well positioned as a retail service centre and can grow in its role as the hub for the immediate area. Michkeegomang has a population of 1,000 on-reserve, for a total of just under 1,400 in the total area. **Rarity:** There is no other community along Highway 599, or anywhere, within a 2.5 hour drive from Mishkeegomang. **Imitability:** While there is some retail on Mishkeegomang, the closer centricity to a serviced airport means that Pickle Lake will continue its role as a grocery and general goods hub. **Operability:** It currently services Mishkeegomang communities well with retail services. The town can build on this position, and if expanding its selection of goods, may be enabled to service Weagamow (five hour drive north).	V	R	I	O	Sustainable Competitive Advantage

Proximity to Far North First Nations: Pickle Lake is the most northern, full-service municipality, poised to service an area roughly the size of France to the north of it, with over two dozen Indigenous communities. Most of these communities are only accessible by plane, for which, Pickle Lake serves 90% of their food shipments and specializes in fuel shipments.	**Value:** Approximately 20,000 people live in the communities to the north of Pickle Lake, for which, many face growing natural populations. **Rarity:** Pickle Lake is the furthest community north accessible by road, enabling these communities to be serviced with cost-effective freight solutions. **Imitability:** Due to cost economics, it would be impossible for any other existing airport to compete, on a cost basis, with Pickle Lake. **Operability:** Pickle Lake currently services the far northern communities as a northern freight hub, with 90% of their food shipments from Pickle Lake, and a majority of their dry goods and building materials also being shipped from Pickle Lake. There is opportunity to greater service these communities in ways beyond freight.	V	R	I	O	Sustainable Competitive Advantage

Proximity to base of winter roads and future all-season roads: Pickle Lake is the most northern town in Ontario, on Highway 599. There is a large all-season road network planned for the north of Highway 599, expected to service some communities over the course of the next twenty years.	**Value:** Highway 599 will become the beginning of all roads north, for communities who wish to be connected with all-weather roads (not all communities). Further, Pickle Lake is the existing winter road hub for these communities, and attracts a significant amount of traffic each year. **Rarity:** While Red Lake and Nakina will be well positioned to service a small collection of communities with all-weather road hubs, the Highway 599 corridor will lead to nearly two-thirds of communities, if these projects continue and if the communities themselves desire a road. **Imitability:** Given the proximity to Windigo Lake (where the current highway ends), it would not be imitated by others. **Operability:** Given the existing Winter Road traffic and traffic from the mine, it is noted that Pickle Lake does not provide any services accommodating this traffic. Interviews revealed truckers either pass by town completely, or come into town to rest, and not using any facilities within the community. Accordingly, there is clear capacity today with existing traffic for Pickle Lake to greater serve the transport market, and the prospects of this will grow substantially over time as communities decide to build all-weather roads.	V	R	I	O	Underused Competitive Advantage

Cargo Freight Hub/ Airport: Pickle Lake is the furthest municipality accessible by road, and its airport thereby plays a pivotal role in ensuring goods can be trucked as far as they can, at a lesser cost, before flown to the remote communities of Ontario.	**Value:** The airport in Pickle Lake generates employment of approximately 25 between both major carriers, 2 with the MTO and hosts additional smaller tenants. In addition, the MNDMNRF base is a substantial economic driver in Pickle Lake. Most of the employees at major carriers are ground personnel who deal with freight. There are approximately three dealing with fuel shipments to the far north. **Rarity:** The Pickle Lake Airport is a rare feature as no other community in far northwestern Ontario has capacity as the northern freight hub. **Imitability:** It would not easily be imitated given cost economics. It is noted, in terms of passenger services, Sioux Lookout is a hub given strength in government, health and social services. **Operability:** The Airport is well integrated into Pickle Lake with many locals employed at the Airport. There is capacity to increase the operability at the airport by expanding offered services.	V	R	I	O	Sustainable Competitive Advantage

Skilled Workforce: Pickle Lake and its immediate area have a lack of qualified workers for servicing the job opportunities in the region, namely in the aerospace and mining sectors.	**Value:** Many northern employers, including the mining projects, badly need qualified employees to fulfil a number of important roles in the mine. **Rarity:** The workforce that exists in the surrounding region would be more cost effective for hiring (no flight and accommodation cost and less turnover). Pickle Lake and Mishkeegomang are the closest communities to the Pickle Crow mining development and are the closest communities to the Newmont Mine **Imitability:** Workers can be flown in and relocated from elsewhere. **Operability:** Despite the potential for employment, interviews reveal very few people actively participating in skilled jobs within the mining sector. There are some that work in the construction sector, but many work in unskilled capacities. Pickle Lake and Mishkeegomang can increase their share of the economic benefits through better training their workforces.	V	R	I	O	Competitive Disadvantage

Newcomer Support: In northern communities, newcomer integration is very important to ensure many stays in the community for a longer period of time. In Pickle Lake, the township is currently working on a "bucket list", and newcomer package. This accents volunteer activities and inclusivity in Pickle Lake.	**Value:** Newcomer integration ensures newcomers feel welcome and end up wanting to stay in the community. The programs underway aim to provide value of connections and sense of belonging. It is not currently developed, but upon completion, will be valuable. **Rarity:** Other communities, like Sioux Lookout, are also heavily invested in newcomer integrated supports to support employee retention in their communities. **Imitability:** Employers themselves could run these programs but it would be unlikely. **Operability:** Not currently developed.	V	R	I	O	Competitive Parity

4.2 Existing Sectoral Assets

Geographical/ Economic Asset	Description	V	R	I	O	Classification
Retail: Pickle Lake has the largest department store in an over four hour radius, serving regional communities and contractors.	**Value:** The community is near a major airport and services Mishkeegomang, Pickle Lake residents, tourists and contractors. The retail sector will grow in its ability to cater to specialty products with greater connections to northern communities. **Rarity:** The retail services are the same as those offered in far northern communities. There are no specialty services at its Northern Store beyond those usually offered. There is also no price advantage at its Northern Store of most dry goods, with prices at the same level to those in the north. **Imitability:** Other retailers can easily enter the scene, however, would require very strong transportation networks given distance to service hubs of Winnipeg and Thunder Bay. **Operability:** Pickle Lake currently services contractors and residents of its community and neighboring communities well with general merchandise and grocery. The high price of goods and limited selection, however, limits its ability to provide services to communities further north.	V	R	I	O	Competitive Parity

Aviation Cluster: Pickle Lake hosts two airlines, Wasaya and North Star, the former providing twice-weekly passenger service from Thunder Bay. Both airlines offer cargo services where Pickle Lake is the hub. In addition, the MNDMNRF is located at the airport and the airport is also serviced by Forest Helicopters and several smaller, charters.	**Value:** Pickle Lake's existing airport tenants provide a solid base for further supporting with warehousing and multi-modal connections (transport to airplane). The existing cluster is truly a northern freight hub. **Rarity:** There is no space available for warehousing outside of Pickle Lake. **Imitability:** Given remoteness to other centres, it would not make economic sense to warehouse in communities, further south or north. **Operability:** There is currently limited specialty warehousing land available.	V	R	I	O	Sustainable Competitive Advantage
Accommodations (hotel/motel): The Community has one operating hotel, which operates the first of its two floors as a hotel and the second as apartments. There is an on-site restaurant and a total of eight rentable rooms. There is also a bed and breakfast within the community, hosting five rooms.	**Value:** Pickle Lake has strength in serving accommodation markets for long-term stays and short-term stays. This is due to increasing mining activity within three kilometers of the town centre, increasing tourism, and construction workers. **Rarity:** Pickle Lake is the only community with water and sewer for several hours of radius and is central to all major regional points of work. **Imitability:** Other accommodations can easily be redeveloped/ developed within the community. **Operability:** Currently, the accommodation market underservices the market, as there is capacity to serve many more short-term stays.	V	R	I	O	Temporary Competitive Advantage

Residential Units: Pickle Lake's housing stock includes mostly single-family dwellings and some apartment buildings, duplexes and mobile homes.	**Value:** Pickle Lake's housing stock allows workers to stay within the community, while working, which substantially increases the ability of the community to capture indirect effects of the economic activity surrounding the townsite. Pickle Lake will play host to an increasing number of workers in the next ten years. **Rarity:** Pickle Lake will play host to mining developments and some other potential industries (construction, transportation), hence requiring employees to be based in Pickle Lake. However, camps can also be developed, as seen with the current Valard site, to accommodate short-term workers. **Imitability:** Given the ability to deploy camps, the service of housing workers can be imitated. **Operability:** There is little awareness of the existing land for development opportunities within the community. Greater promotion of this would entail a stronger number of developments within Pickle Lake, to house more workers. Housing workers is very important to ensuring indirect effects of economic activity can be captured.	V	R	I	O	Competitive Parity

Industrial: There is clear demand from industry for storage facilities that are secured, and warehousing facilities that can expand capacity of the Pickle Lake bases to service their respective verticals. With a reduction in fuel shipments, most air carriers believe their shipments of freight will increase for which must be supported by warehousing and industrial space.	**Value:** There is clear demand from industry for cold storage, secured storage. There is currently no land available whatsoever in Pickle Lake for warehousing or industrial development. **Rarity:** Locations for industrial purposes are limited surrounding Pickle Lake. **Imitability:** Currently, the ability of air service cargo carriers are limited by their storage capacities, and cargo beyond this is flown from other bases with the capacity or delayed to subsequent years on the ice roads (as a substantial volume of cargo does not meet the ice roads). **Operability:** There is no land available, owned by the town, that is well suited for industrial uses. Current commercial use is located downtown, and some potential may exist on Pickle Lake road. All airport property must be developed for aviation-related businesses only, and property along the airport is sparse.	V	R	I	O	Competitive Disadvantage

4.3 Infrastructural Assets

To also understand key gaps in infrastructure catering to the business surrounding the airport, it is essential to review buildings in the study area. This includes an understanding of specific tenants' current building usage and projected usage. Based on this, the study classifies the asset in terms of its ability to serve as an opportunity for future repurpose.

Building	Current Use	Project Use within 5 years	Classification
Terminal Building	Former terminal building for Pickle Lake airport, currently sitting empty. It is approximately 300m^2.	There are no plans currently	Potential for repurpose
MNDMNRF Building	1, 179 square meters with maintained free exterior Main floor: Lunch/ training room, locker/shower room and warehouse space Second floor: office space, room for additional expansion, lounge with screened porch, prone rooms for pilots 4 helipads, 8,800 sq. meter apron for four water bomber aircraft and scout planes	Their plan is to use the expansion space as the base grows.	Potential for limited community use of areas for future expansion, but these uses would not be long-term.
North Star Air Buildings	A small collection of buildings for the North West Company and North Star Air. This includes a 300m^2 office building, 700m^2 warehouse and 250m^2 warehouse.	Their buildings are near capacity and would need extra capacity.	No extra capacity. Needs extra capacity (warehousing)
Wasaya Buildings	A small office building and a warehouse building. Currently expanding warehouse building. Terminal part of the building is only used Monday and Tuesday for the scheduled air passenger service (WP711/716/735). The main building is approximately 2,150m^2.	Their buildings are near capacity and would need extra capacity (currently in the works).	No extra capacity. Needs extra capacity (warehousing)

MTO Buildings	A collection of buildings owned and used by the MTO for maintenance of the Pickle Lake Airport and the airports further north. This includes buildings of $350m^{2,}$ $450m^2$ and smaller buildings/storage units.	Plans would be to continue using their space.	No extra capacity.

4.4 Summary

Summary Table

Resource	V	R	I	O	Classification
Geographic/ Economic Asses					
Proximity to Mining developments	V	R	I	O	Underutilized Competitive Advantage
Proximity to Miskeegomang	V	R	I	O	Sustainable Competitive Advantage
Proximity to Far North First Nations	V	R	I	O	Sustainable Competitive Advantage
Proximity to base of winter roads and future all-season roads	V	R	I	O	Underused Competitive Advantage
Cargo Freight Hub/ Airport	V	R	I	O	Sustainable Competitive Advantage
Skilled Workforce	V	R	I	O	Competitive Disadvantage
Newcomer Support	V	R	I	O	Competitive Parity
Existing Sectoral Assets					
Retail	V	R	I	O	Competitive Parity
Aviation Cluster	V	R	I	O	Sustainable Competitive Advantage
Accommodations (hotel/ motel)	V	R	I	O	Temporary Competitive Advantage
Residential Units	V	R	I	O	Competitive Parity
Industrial/ Warehousing Space	V	R	I	O	Competitive Disadvantage

In summary, Pickle Lake's major areas of strength where future opportunity should be leveraged, are in its proximity to mining developments and as a primary base for winter roads. Pickle Lake should maintain its positions in services that leverage its strengths as a service community to Mishkeegomang, by road, and over the one dozen First Nation communities within its corridor, to the North. It would be important for the community to maintain its position as a cargo freight hub and grow in its capacity to service communities within this regard. Growth in this area would necessitate new infrastructure for storage and warehousing.

The most sustainable and operatable competitive advantage of Pickle Lake is the aviation cluster, which builds on its strength as a northern service hub. There is only a temporary competitive advantage of existing accommodations and there is an immediate need for further capacity development to this regard. Residential units are greatly lacking within the community, and this competes with camp accommodation which is currently being used by existing contractors. Accordingly, the service areas presenting most opportunity are within the industrial/ warehousing space cluster, for its ability to contribute towards the economic base, and residential units and accommodations which enable the community to increase greatly the ability to harness indirect spending of visiting workers and tourists.

Industrial Analysis

5.1 Industrial Cluster Analysis

This analysis evaluates the attractiveness of several current and future industries, and the relative competitive strength of Pickle Lake in servicing industries. It also considers timelines in terms of industries which are sunsetting and those to which are growing or are phased in the future. The purpose of this analysis is to give perspective to the priorities of the community in servicing the various industries around the Pickle Lake region.

Mining Service: Invest/ Grow
Industry Attractiveness: High (strong GDP impact; immediate and growing)
Level of Competitive Strength: High (locational advantage)

With close proximity to several mines, and current and future projects planned, mining and the mining service sector, present themselves as the most immediate and disruptive industry surrounding Pickle Lake.

Currently, the mining sector in and around Pickle Lake is exceptionally strong and will continue to grow. At present, Pickle Lake is the closest townsite to the Musselwhite Mine, of Newmont Gold, which is located 195 km north (an approximate three-and-a-half-hour drive north). The mine is accessible by road, which connects to Highway 599.

This mine of exclusively fly-in, fly-out workers, includes ore processing onsite and achieves gold recoveries of 96%. It is one of the largest gold mines in Canada and has an estimate of 2.3 million ounces of gold. This mine is expected to be in operation until 2028, when a close-out procedure would then follow. This represents an eleven-year addition to its original 2017 closure date as result of new findings for gold. Despite the close proximity, Pickle Lake does not currently play a very active role in servicing the mine or its traffic.

Interviews have revealed several areas where Pickle Lake can improve. First, there was clear demand for secured storage near Pickle Lake. Security is important given the high values of equipment and a history of theft in unsecured areas. In addition to storage, there is also greater potential to service the sector with labour, specifically with individuals holding WHIMIS, Core drilling, Mining Health and Safety, Heavy Equipment and Fall Awareness certifications. It is noted this can also increase the ability of Pickle Lake, as a community, to harness the benefits of the surrounding developments. Since mining is a primary industry, a general guide is that 0.4 indirect jobs will be created for every employee directly employed within the sector.

While Musselwhite is planned to be phased out by 2028, there are also several mines with much closer proximity to Pickle Lake in the planning stages. Auteco Minerals have acquired the former Pickle Crow gold mine, located three kilometers from town. This new discovery will have 5.3 grams per ton over 20.4 meters within a relatively shallow depth of 102 meters. This past June (2021), the company approved a 50,000-meter program. The company recently engaged an environmental consultant to obtain an advanced exploration permit from the province and are in talks with engineers on processing equipment and mine-related infrastructure necessary. The mine seeks to employ six drill rigs by year's end.

The proximity of this mine will allow Pickle Lake to service this sector strongly. In addition to the infrastructure of secured storage and training programs, there is also potential for retail and hospitality services, to serve and accommodate visitors and workers during the construction of the mine.

GDP Impact of Warehouse Development: The GDP potential of five employees, and their indirect effects, employed in secured storage facilities, is estimated to be approximately $340,000 assuming 3.5 FTE indirect jobs that will appear as a result.

GDP Impact of Pickle Crow Development: The mining exploration stage of fifteen exploration employees, spending half of their time in Pickle Lake, will be approximately $530,000 in direct and indirect effects. As this grows into construction and operation, $3.2 million will be generated through direct and indirect effects for each fifty employees living full-time in Pickle Lake, or $760,000 for each fifty who live in other areas, should Pickle Lake participate in the camp operations (food and hospitality) for these employees.

Airships: Invest/ Grow
Industry Attractiveness: High (GDP Impact; medium-term (5 to 10 years))
Level of Competitive Strength: High (geographic advantage)

Airships have been recognized to be a strong technology for northern transportation. Airships have been around for a very long time and have recently been prototyped for northern environments with BASI, out of Winnipeg. Under studies of Dr. Barry Prentice, who is also CEO of BASI in addition to his role as Professor at the Asper School of Business (University of Manitoba), Pickle Lake has been identified as an area of interest by an airship company, for a pilot project. This would be an important opportunity to capture, as it would position Pickle Lake as a trailblazer in the industry, in addition to the benefits that would be derived from serving a wide range of northern mining and First Nations communities. The pilot project would cover a 5-year term, whereby over time, three airships would be built, and operated, while seeking certification from Transport Canada. It should also be noted that the current MP for Kenora, Eric Melillo, is a cited scholar for a study he did on airships, and their applications in northern Ontario.

This is a major and realistic option, within the next five years or so, that could bring tremendous prosperity to Pickle Lake. Airships have been modelled to be a very advantageous alternative to the air space needs in northern areas. One major advantage of airships is their ability to bring fully loaded equipment to areas without roads. This is especially important, considering most mining sites need fully loaded equipment, but would be unfeasible if roads needed to be developed. Airships thereby provide a solution for the development and transportation to remote claims or mine sites, where they would otherwise be unfeasible to operate. Other potential airship uses include providing a lower cost of freight to northern communities, which creates an immediate advantage, as it could lower the cost of food by up to 30% in northern communities and assist with the economic development of the more remote Indigenous communities. Airships

are modelled to cost less than half the cost of trucking into the northern communities, and are carbon neutral, which is timely. Instead of being powered by gasoline, they are powered by hydrogen, for which can be produced in Pickle Lake, from the surrounding water bodies.

For airships, it is very important that they are located as close to their destinations as possible as it is most cost-effective for materials to be trucked in and then flown. Pickle Lake therefore has an advantage given the proximity to other centres, over Sioux Lookout and Red Lake for this development.

GDP Impact of commercial demonstration: This activity, at estimated $730,000 from direct and indirect effects of eleven employees at the airship base, plus unmeasured GDP impacts in terms of its accomplishments for Far Northern communities and supporting needs of the mining sector.

Residential Development: Maintain and Improve
Industry Attractiveness: High (given ability to capture indirect economic effects; immediate and growing)
Level of Competitive Strength: Medium (alternatives exist)

The most pressing issue in Pickle Lake is residential development. There is a strong need for contractors and employees to be housed properly within the community however there is a shortage of available space. The estimated number of employees needing housing would largely be dependent upon which development plans come to fruition, though the community will need to acutely be aware of these as they plan for developments. Currently, there is a shortage of at least a dozen units, to accommodate workers at the nearby Pickle Crow development and address existing capacity constraints from ongoing work.

The level of competitive strength for housing in the Pickle Lake region, within the organized community of Pickle Lake, is strong, and competes with alternatives of living in camp accommodation. Housing is essential to capture the indirect effects of the economic activities surrounding the community, as it enables workers to then spend their money within the Town during the week, and enables tax revenue that can go towards community improvement and services. There is an immediate need for housing to better accommodate workers, in the area, and this will grow alongside the growth in the other industries around the community.

Training: Improve or Ally
Industry Attractiveness: High (given high GDP impact and one-year timeline)
Level of Competitive Strength: Low (due to lack of facilities)

An immediate need for Pickle Lake, is to increase the availability and promotion of accessible training programs. This has been identified from two perspectives, namely, a desire by local employers for qualified employees to which there are sizable shortages, and to increase the ability of the Township citizens to economically gain from the investments occurring near it.

Currently, much of the economic inflow from the projects near the community will go to transient employees, who may live in camps, and thus not contribute to the local economy as optimally. It is estimated that for every employee who lives in Pickle Lake, an additional 40% of employment would also be created in the secondary and tertiary economy. Training programs enable those already living in and near Pickle Lake to participate in the labour force of these developments, and the benefits would be seen not only by their own incomes and taxes, but also in their spending within the Pickle Lake area.

A large factor to educational participation is the distance to an educational institution. The nearest educational campus to Pickle Lake is three hours away, and that campus offers very limited hands-on programming or training. Currently, Pickle Lake is home to Contact North, a training centre primarily delivering on-line programming, with a small office at Crolancia Public School. It is noted that the marketing for programming desired by employers is lacking. Grade 12 diplomas are normally required for programs, and banner signs actively market a qualification program available within the community.

The terminal building would be an appropriate home for this, as it can incorporate training on airport-based operations, as well as other areas, and provide for qualified workforces in the mining, aerospace, construction, and maintenance industries. The population of Pickle Lake, and the neighboring First Nations communities, could likely support a small college for hands-on training. While larger, it is noted that the communities of Red Lake, Sioux Lookout, Fort Frances, Marathon, Greenstone, and Wawa, have full-service college campuses. Given the size differences in Pickle Lake and its catchment area of approximately 1,000 people, an accessible and reasonable option is to assist in marketing and supporting capacity building with ContactNorth programs that are demanded by industry, and partner with a private career college to offer existing online portions of coursework in Pickle Lake, accented by existing residency periods in larger centers. Offering these using public computers designated for education, enables students to learn with supports and have increased accountability towards ensuring their educational goals are being met.

From consultation and projections, the major programs useful by the local business community are identified as:

- WHIMIS
- Core drilling
- Mining Core
- Health & Safety in Mines
- Heavy Equipment
- Community and Social Services
- Office Administration
- Retail Management
- Aerospace Administration
- Fall Awareness

All of these programs, except for core drilling and the mining core, already can be offered through existing partnerships of Contact North. The heavy equipment program, such as that offered in partnership with Fleming College, also requires residency for a period of time in Peterborough.

Partnerships with private career colleges, such as Northern Construction Academy, can fill the gaps in unoffered programs, such as core drilling. Currently, they have programs in place where theory is delivered online and the hands-on training occurs at their campus in Sudbury. This would make a partnership a very low-cost option for this organization in Pickle Lake. With an annual block cohort model, truck training programs can also be offered. It is noted Northern College also offers programs, such as DZ truck driving, where courses are offered online, and a residency is offered on campus in Sudbury. It is also noted they also offer many mining services programs in similar formats, with residencies between one and two months at a mine site.

GDP Impact: This development would result in an estimated 1 full-time job, 3 part-time jobs per 15 students, which would equate to an estimated $1.3 million per year, for each 15 students, considering multipliers of direct employment, improvements to student earnings, and multipliers.

Warehousing and Industrial Services: Invest/ Grow
Industry Attractiveness: High (given high GDP and immediacy of demand)
Level of Competitive Strength: High (given lack of reasonable alternatives)

Warehousing and industrial services are needed to service each of the mining, construction and aviation sectors.

Interviews have revealed there are immediate demands from industry for warehousing and secure industrial space. There is currently a lack of space in Pickle Lake to accommodate these uses, as the availability of space at the airport for non-aviation business interests is limited and there is also equally limited alternative plots of land, therefore, it would make sense to include designated zoning for industrial development, on the land on the north end of the "*Connecting Link*" to Highway 599.

The existing businesses at the airport already have a need for expanded warehousing and storage, for dry goods and refrigerated items, and could be most optimally located on this vacant property. Mining organisations, both present and future, have also expressed a major need for secure storage. Transport companies, including those that service places north of Pickle Lake already, also have demand for freight storage, and eventual facilities, upon further development of the all-season road network.

The construction sector would also make use of this service. This would include road crews for all-season road development, mining construction, and to support the wide range of other ongoing seasonal infrastructure work, with accommodations and services. Currently, Pickle Lake plays host to a limited number of contractors, such as Valard, however these contractors will soon vacate the community. New construction is ongoing with continued efforts towards all-season road developments in northern Ontario, construction and exploration of the nearby Pickle Crow mine and coming construction of the new "Connecting Link" roadway.

The community has significant potential to ramp up its ability to serve contractors with housing and services in order to appeal to a number of contractors that will soon be within the community.

It is our understanding that there is land, serviced with water and sewer, which is situated in the Town already, and that there is also land on Pickle Lake Road, that can be serviced at a reduced cost to the property along the Airport strip. Accordingly, we believe leaving this land not serviced with water or sewer, would be most appropriate.

From these developments, 5 new FTE jobs can be created, approximately, per building, which translates to $322,992.85 annually in estimated GDP.

Transport Services: Invest/ Grow
Industry Attractiveness: High (given very strong potential GDP impacts through employment)
Level of Competitive Strength: High (given high existing traffic and growing potential traffic)

With the current strong traffic during winter months for the Ice Road, existing all-season traffic servicing mines north of Pickle Lake, and the projected increase in volumes of all-season roads, there is a present gap in transport services. Presently, the next nearest truck stop is a small station in Sioux Lookout, with major truck stops in Dryden. Dryden is strategic as it is a "hub" of Red Lake/ Ear Falls, Sioux Lookout and between Winnipeg and Thunder Bay. However, Pickle Lake is a seasonal hub, five hours north of Dryden, that services a vast network of winter roads, a popular mine and has very strong prospects of being a hub for all-season development.

The best way to develop these services is through a phased plan, beginning with a formal truck stop. Interviews revealed that truck drivers do not have access to bathrooms, and do not actively consume any specialty services from the community. Interviews also revealed there is currently sufficient demand for a small, all-season truck stop, including washrooms, showers and a roadside restaurant. Future phases could also encompass truck repair, with the next nearest station in Dryden. Pickle Lake will be the "hub" of the all-season road network at an increasing level between now and 2040, servicing a population of approximately 20,000 people. Having access to a truck repair facility, considering the road conditions and vast distances, would make sense for safe travels to and from these communities. It is noted that both, a truck stop and repair facility, would also service construction, mining and other developers within the community. A restaurant could also add to the community's range of offerings, in appealing to a wider variety of tastes and cultures.

There are approximately 700 loads passing through Pickle Lake each winter road season, though this number can change greatly depending on the length of the winter road seasons.

GDP Impact of warehousing: For warehousing, assuming four employees at average salaries, the direct and indirect effects would total approximately $290,000.

GDP Impact of Truck Centre: For a truck centre of 7 full-time equivalent individuals, the approximate GDP impact would be $466,000.

GDP Impact of Truck Repair Service Centre: For a truck repair facility and given average salaries, a shop of two would generate $135,000 in annual impact.

Fuel Shipments: Benefit while it lasts
Industry Attractiveness: Low (given sharp decrease upon the far northern communities connecting to the grid)
Level of Competitive Strength: High (given locational advantage ensuring fuel can be trucked in further than any other location before it gets flown)

The immediate impacts would be the loss of diesel fuel shipments north, which will have the following impacts. Assuming a loss of 3 direct jobs to 5 direct jobs, the economic impact would be -~199,796 to ~332,994 (using 2016 census data) including all multipliers and indirect impacts.

This Range is reflective based on the following assumptions: (a) Jobs lost will not include ground material handling personnel, which are the majority of employees based full-time in Pickle Lake, (b) a minimum of 1 to a maximum of 3 jobs where fuel cargo is the primary task will be offset in other areas of cargo shipments, and (c) communities which have not been hooked to the grid under the Watay power project (Marten Falls, Eabamotoong, Nibinamik, Webequie), and those in phase 2-b (Wunnumin Lake, Kasabonika).

Cargo Air Shipments: Maintain Position
Industry Attractiveness: Medium (given moderate GDP and existing but limited growth)
Level of Competitive Strength: High (due to locational advantage of airport ensuring freight can be trucked furthest before flown)

While there would be a loss in diesel fuel shipments, the aviation sector is relatively stable. It is noted the air service providers suggested the lost traffic would be mostly absorbed by servicing shipments for the Winter Road, as winter road seasons are becoming increasingly less

predictable, which means there are substantial volumes of dry goods and building supplies needing to be shipped north each year by plane. Currently, an estimated 90% to 95% of the food for the north goes through Pickle Lake, which serves as a strong and stable industry.

Government Services: Invest/ Grow

Industry Attractiveness: High (given existing GDP impact and future GDP)
Level of Competitive Strength: High (given locational advantages of the furthest road-accessible community in Ontario)

Current government services operating out of Pickle Lake include the OPP and the Ministry of Northern Development, Mines, Natural Resources and Forestry's Forest Fire Attack Base Number 3. This base is important, not only to battling the fires of northwestern Ontario, but also in training, for which Pickle Lake is a popular destination of choice.

While currently strong, there is also room to improve Pickle Lake's service in government aerospace. This could have potential in Pickle Lake, though would require a tremendous effort in attracting the proper trained resources and would likely be tied directly to the activity in the mining sector. As development and road expansion extends to the North, along with increased mining activity in the region, the airport could benefit from establishing a Search and Rescue Station, that will actively save lives, in remote areas, within First Nations communities and service northern Canada. Major priorities of the DND are in renewed commitments towards Indigenous reconciliation, and the increasing challenges of arctic sovereignty. Given the proximity to other bases and accessibility by mainstream road, Pickle Lake is well positioned for development of such a base.

For a volunteer SAR base, the GDP impact immediately would be small, as there would be limited multiplier effects from any direct spending on fuel or rent. Should this develop into a full-time SAR base, there would be very large economic impacts dependent upon its size, with approximately $66,598 in economic impact per full-time stationed individual, assuming $40,362.77 annual salary.

Accommodation Development: Maintain and Improve

Industry Attractiveness: Medium (given it is a support function to other developments)
Level of Competitive Strength: Medium (given market size)

There is definitely immediate need for accommodation development, such as a 24 unit hotel facility, to support the need to accommodate, with short-term stays, the growing number of contractors in the region.

GDP Impact: Assuming 24 rooms and catering 50% to tourists with an average vacancy rate of 30%, and with 3 full-time employees, the GDP estimated impact is $2.45 million annually due to multipliers of tourism, direct spending and indirect effects of employment. Partnering with regional First Nations communities can be vital towards attracting development in the area.

Pickle Lake's recent tourism strategy had a similar recommendation.

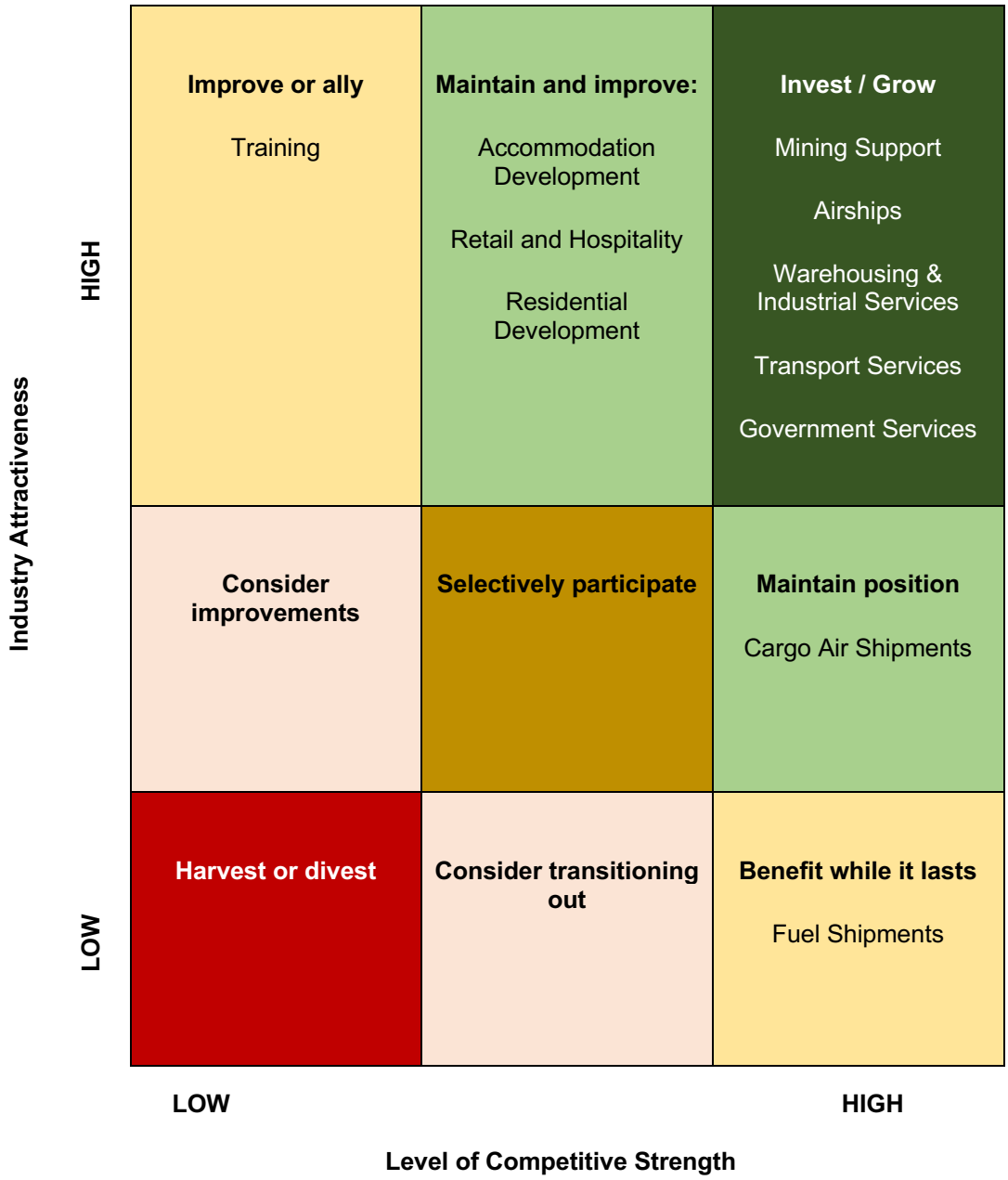
Retail and Hospitality: Maintain and Improve
Industry Attractiveness: Medium (given it is a support function to other developments)
Level of Competitive Strength: Medium (given major retail hubs to the South, and lack of price advantage compared to far northern communities)

At present, Pickle Lake acts as a service center for approximately 1,000 people including its residents, and those within Miishkeegomang First Nation. Its current retail facilities include a LCBO, hardware store, tackle shop, smaller but full-service general northern store with grocery, furniture, toys and housewares, gas stations, mechanical garages, a gift shop and a postal outlet. As the number of all-season roads can connect further communities, it is likely that Pickle Lake can grow its retail presence strongly with a larger footprint for grocery and housewares to include more specialty items, as well as offer four-season recreational vehicles. Currently, a handful of used car dealers exist in Pickle Lake, and it is likely that a smaller, satellite dealer of popular brand could also succeed within the community.

In addition to greater retail, there is also potential for greater restaurant services. Only one restaurant is in the community, and there is a notable lack of quick-service options. A quick-serve coffee or lunch place would not only serve existing residents but be very well suited to service the highway traffic and traffic catering to the Pickle Crow Mine and Airport. For this reason, it is best that this be located at the Central Patricia corner, given the central location of the corner to places of work.

GDP Impact of new retail facility: Assuming three additional jobs, the estimated impact would be approximately $98,000 including direct and indirect effects.

5.2 GE-McKinsey Matrix



5.3 Summary

In summary, the areas that need investment and growth, into new areas of the economy, are within the mining support, airship, warehousing and industrial service, transport service, and government service sectors. The mining support sector includes opportunities for servicing the mines with worker accommodations and light industrial services, shrinking their need to engage contractors to the South. Airships are a looming opportunity, which will bring substantial disruption to the northern aerospace environment as a complementor to aircraft. This technology will enable mine sites to be serviced without a need for building a road, and service First Nations communities

with increased access to markets. The technology needs to be commercially piloted, and Pickle Lake is well suited for this activity. Warehousing and industrial space is needed to respond to demands by regional developments today and in the future, namely in the mining and aviation sector. Given the arctic sovereignty and focus on Indigenous reconciliation, there is also opportunity for the community to grow in its ability to house government training programs, namely in underserved areas such as search and rescue. With high volumes of truck traffic during the Ice Road season, a consistent volume of transports during all months of the year and a growing possibility of all-season road development, Pickle Lake is ideal to service transports passing through the community and its drivers with services. This is an immediate lost opportunity, which can bring substantial benefits to the area.

Accommodation development, retail and hospitality and residential development are all support industries to which Pickle Lake will need to maintain and improve in its ability to support the primary economic sectors of the community, in order to capture indirect effects of the surrounding economic activities. Training would be vital to increasing economic participation in skilled areas, which will greatly enhance community wellbeing with higher individual incomes and indirect effects through spending.

Pickle Lake should work hard to maintain its position in cargo air shipments, as this sector employs ~20 people within the community and would be much needed to displace the effects within the aviation sector from the decrease in fuel flying to the north. Increasing warehouse capacity to this regard, would be vital to ensuring the airlines have capacity to service greater demand. It is evident that fuel shipments are a sunsetting industry, though while the completion of the Watay Power Line project will greatly reduce shipments, the industry would not totally disappear given limited gasoline storage capacities within the northern communities, and the unconnected communities that would need servicing.

Evaluation of Water and Sewer

Adding water and sewer lines was identified as a key consideration, it would obviously be less costly and less disruptive should they be installed at the same time as the new road. The current water and sewer line ends at Lakeview Crescent, in the Township of Pickle Lake.

This leaves three major considerations for extension, depending on demands and costs:

a) From Lakeview to the existing Airport Road corner, to service major airport tenants.
b) From the Airport Corner to the end of the existing road, to service airport tenants and potential residential development along Graveyard Lake.
c) From the end of the existing road to the new corner.

Costs and Assumptions

The cost assumption is that installation of water and sewer would be 50% greater compared to relatively similarly sized and isolated communities, due to the more extreme northern location of Pickle Lake. This is an important consideration considering it impacts how far one must dig to install the appropriate service lines (below the frost lines).

The data from comparable communities, suggests the total cost for installation in Pickle Lake would be **$1,600 per meter**. A recent project in Ignace was ~$1,200 per meter for similar work.

A major cost assumption is that installation of just water would not necessarily be much cheaper than water and sewer and could be as much as **$500,000** less in total cost (representing costs for lift station, pipe and installation). This results in an approximate difference of $100,000 from the tax-base assuming a 20% municipal contribution in addition to FedNor and NOHFC. It is also estimated there would be little difference in demand between installation of water and installation of water *and* sewer.

Assuming the municipal contribution of 20%, the total cost to the tax base **$1,344,320** for the project. This should be verified by quotes.

From Lakeview to Airport Corner	From Airport Corner to end of existing road	From end of existing road to new corner
•1540m @ 1600 = **$2,464,000**	•1081m @ 1600 = **$1,729,600**	•1580m @ 1600 = **$2,528.000**

Benefits

It was found that there is no demand for water or sewer in existing tenants.

Based on interview data, it was discerned that there was no real demand, for purpose of economic development, from airport businesses nor need for any future airport tenant based on interviews with prospective tenants of properties along the new byway. Interviews were held with all private sector tenants at the Airport, management of the airport and several identified prospective tenants for warehousing along the strip.

Any development needing water and sewer could be accommodated in other lands available within the community.

It is foreseeable that many future developments, especially in the retail sector, would need services. However, organizations needing these services can be located on existing serviced vacant properties within other areas of the townsite. For example, there are many vacant lots within the community, the loops are serviced for residential lots and Pickle Lake Road and the Central Patricia Corner, both provide highly attractive, serviced land for development, that would have more than enough capacity to accommodate all projected residential, industrial and commercial needs with requirements for services.

The Central Patricia corner would be attractive for the truck stop given Morgan Fuels' current operations at the stop, would entail a truck stop would simply be an addition either owned by Morgan or someone else, potentially, on an adjacent property.

The retail developments are highly suited to also be accommodated either downtown, on Pickle Lake Road or at the Central Patricia corner, as it would cluster all retail businesses together and maintain accessibility to those without a vehicle. It would further prevent sprawl of the townsite.

Only reasonable need for water and sewer would be residential development on Graveyard Lake

The only requirement for water and sewer would be for future residential development along Graveyard Lake, however, there is tremendous uncertainty as to the need to develop this property, given other vacancies in the community (given the vacancies uncovered in the Northern Community Solutions report). Further, should the development be necessary, the sewer line could be installed to extend from the end at the existing apartment buildings and be installed on the other side of the lake through a trail (a suggestion by Northern Community Solutions). This would also ensure a smaller line can be installed to service the residences, given the distance to the development from the backway is shorter than around the lake through Airport road. It is unlikely that there would be a need exceeding current lot capacity within the foreseeable future. The sewer line can be installed in part, or in full, at developer expense, given its ability to incentivize density, which the developer would need to do to recover these costs.

Strategies

7.1 Vision and Values of Development

The vision sets the strategic direction of the community's economic development initiatives and sets the tone of strategic direction for development today and into the future. The vision and values were discerned from the scale of needs rankings sent to Committee members, as well as incorporated feedback from the greater community and Mayor and Council.

VISION:

Pickle Lake aspires to be the gateway to sustainable opportunity, economic growth, and stability, with an emphasis on indigenous inclusion, and the region's prosperity and development. No longer the town at the end of the road, but the town where all roads begin!

VALUES:

Regional	Sustainable	Innovative	Inclusive	Distinctively Northern
• Pickle Lake will build on its role as a regional service centre for surrounding tourism, mining and Indigenous sectors.	• Pickle Lake will champion Sustainable Development, with long-term environmental, economic and social responsibility.	• Pickle Lake will embrace new and emerging technologies to solve real world issues in and around its region.	• Pickle Lake will build on partnerships with neighboring indigenous communities, and will be family-centred and made a town where families want to stay	• Pickle Lake will be resourceful and embrace northern challenges through collaboration

7.2 TOWS Matrix

	Opportunities: • NOHFC supports Indigenous employment and rural community development. • FedNor's new programs build community resilience following COVID-19 and improve the ability of communities to participate in innovation. • FedNor focus on innovation commercialization • Arctic Sovereignty challenges point to potentially new service roles of northern communities • Focus on Indigenous Reconciliation • All-season roads connecting communities which will increase truck traffic • Mine construction will occur near town • Young demographic of Pickle Lake and Mishkeegomang points to a strong future workforce • Growing northern Indigenous population • Airships can service areas without roads from Pickle Lake	**Threats:** • Completion of the Watay Power Project will decrease the amount of fuel needing to be shipped north • Challenges in attracting new residents and integrating newcomers • Climate change impacts road predictability, shrinking some winter road seasons and increasing backlogged cargo for the north • Land disputes in resource sector may impact resource development. • All-season road development is disputed among some Indigenous communities providing some uncertainty to the project
Strengths: • Proximity to mining developments • Proximity to Mishkeegomang First Nation • Proximity to Far North First Nations • Proximity to base of winter roads and new all-season roads • Established Aviation cluster	**Promote the opportunity for tenancy at the former terminal building to the expanding aviation and transportation businesses interested in servicing the north, from Pickle Lake.** **Actively work towards establishing Pickle Lake as a premiere location for hosting a commercial demonstration project for airship technology in northwestern Ontario.**	**Monitor developments of property surrounding Graveyard Lake.**
Weaknesses: • Newcomer support • Lack of skilled labour force to fulfil regional job openings • Retail sector is not competitive • Accomodations are under capacity • Housing is under capacity • Lack of land available for general industrial use and warehousing	**Establish a civilian Search and Rescue office in Pickle Lake and gain a volunteer base needed to support assessment of a future Joint Search and Rescue Coordination Centre in Pickle Lake.** **Acquire property on the north side and new corner of the Connecting Link, zone as Industrial, and actively market the lots towards servicing the mining, construction and transport sectors.**	**Preserve the natural beauty of the old beach and leverage the natural asset as a community attraction icon.**

7.3 Major Strategic Opportunities

Preserve the natural beauty of the old beach and leverage the natural asset as a community attraction icon.

There would not be any feasible commercial, industrial or residential development in this area at this time, due to the nature of the terrain. There will also not be any use for an RV park or other light infrastructure, given other community assets providing similar services.

Accordingly, there best potential use of the beach, which would include making some small enhancements, to maximize public use. This could be a recruitment driver for new residents and maintain existing residents, if marketed appropriately in Pickle Lake township assets.

To this extent, the Town should enter an agreement with the Government of Ontario, to operate the beach by installation of signage and amenities. Signage will increase public usage of the beach and installations of recycling and garbage cans should also be important to keep the lake is clean.

This strategy works to improve newcomer welcoming and attraction, by leveraging the opportunity to house more long-term workers for the current, and future developments surrounding the community.

Acquire property on the north side and new corner of the Connecting Link, zone as Industrial, and actively market the lots towards servicing the mining, construction, and transport sectors.

The “connecting link” property would be idyllic to service the pressing needs for warehousing, light industry and service enterprises catering to the mining, construction, transportation, and aviation sectors. It is noted that this property would not be feasibly serviced with water and sewer, though would not be necessary for industrial zoning nor industrial uses.

The Central Patricia corner would be better suited to house developments for accommodations, restaurants, washroom and shower facilities, and some retail outlets that carry Pickle Lake branded items; given that these properties either are, or would at very cost effectively, serviced with water and sewer. The Central Patricia corner is also in greater proximity to centres of work throughout the community.

This strategy works to address the most immediate weakness, namely the lack of warehouse space, which will enable growth in the cargo air service sector and builds upon the opportunities seen with the growing population in the far northern Indigenous communities to which it services.

Actively work towards establishing Pickle Lake as a premiere location for hosting a commercial demonstration project for airship technology in northwestern Ontario.

Airships are a realistic, innovative technology that will disrupt northern transportation. Currently, airships are not yet certified by Transport Canada. There needs to be a demonstration of working airships in order for the type of aircraft to gain certification. Accordingly, a commercial demonstration site is needed. This will see a small number of airships (3) become created, and serviced from a hangar. The process for the commercial demonstration should take approximately five years, from building of the hangar to completion, with commercial service commencing in year three.

With Pickle Lake's central northern location, access to water, and being the furthest community by road, it is idyllic for this development. Future infrastructure can be located to the north of the Airport, through future development, along the lakeshore of Pickle Lake. While the direct effects are appealing, the indirect effects of airships, are truly disruptive in their ability to lower food costs for Indigenous communities, assist with increasing their economic participation, and servicing mines that would otherwise not be feasibly connected with road access.

This strategy builds upon Pickle Lake's locational advantage of being the furthest full-service community in Ontario accessible by road and existing air cluster, with the opportunity of airships.

Promote the opportunity for tenancy at the former terminal building to the expanding aviation and transportation businesses interested in servicing the north, from Pickle Lake.

The terminal building would be best suited for offices catering to those doing businesses at the Airport. These offices can be marketed towards supporting the expanding needs for airport hangar tenants with separate office space, and/or to transport companies who work within multimodal logistics (ie from plane to transport or vica-versa).

This strategy builds upon the strengths of servicing the aviation sector in Pickle Lake, while leveraging growing opportunities for multi-modal transportation and government service.

Establish a civilian Search and Rescue office in Pickle Lake and gain a volunteer base needed to support assessment of a future Joint Search and Rescue Coordination Centre in Pickle Lake.

Pickle Lake's strategic location is a key resource that can be leveraged to expand the reaction time in northwestern Ontario skies, with the establishment of a civilian Search and Rescue office (ie satellite of Northwestern Ontario Air Search and Rescue Association), to meet the opportunity of substantial plane traffic, growing alongside mines and the northern Indigenous communities. Once this is established, the Town should pursue next steps targeting establishment of a full-time base in Pickle Lake, which would make use of its strategic location to protect Indigenous communities in Canada as well as be pivotal with respect to arctic sovereignty.

This strategy builds upon the opportunities for communities to participate in working with the Government to address national arctic sovereignty challenges, while leveraging Pickle Lake's strength as a road-accessible, northern community.

Monitor developments of property surrounding Graveyard Lake

There is a clear need for housing in the Township. Graveyard Lake presents a major piece of property that can be developed into a residential subdivision given its size to build many homes at once. However, there is land already serviced and ready for development in Pickle Lake. Accordingly, acquisition of this property should only be pursued if and only if that land becomes filled. Monitoring of this development would be quintessential in the interim.

This strategy mitigates the threats of uncertainty to the surrounding resource development, by taking a cautious approach, while also leveraging Pickle Lake's strength to service these developments, especially the Pickle Crow Mine, with housing.

Opportunities Action Plan

The following outlines actionable objectives to achieve each strategy in the previous section. This is an important component, in bringing the strategies to life. Below, each strategy is defined and then broken down into actionable objectives, that are timely and are assigned responsibility to parties involved in economic development of Pickle Lake.

Preserve the natural beauty of the old beach and leverage the natural asset as a community attraction icon.

1. Enter an agreement with the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF)**, for the Township of Pickle Lake to operate the Old Beach.**

The Old Beach is currently owned by the MNDMNRF, and accordingly, Pickle Lake will have to either acquire or enter an agreement with the MNDMNRF to use and promote the site accordingly. Since there is limited commercial potential to such area, it is recommended that Pickle Lake enter an agreement with the MNDMNRF. Many other northern Ontario municipalities have successfully entered service agreements with the Ministry, ranging from taking care of nature trails to running full-service provincial parks, such as how the City of Dryden operates Aaron Provincial Park, on behalf to the Ministry. In this case, the agreement should make clear that Pickle Lake will simply promote the area, erect signage, and port-a-potty and garbage bins. In turn, it should be noted that the Township does not assume any legal liabilities, and that there would be no lifeguards on duty.

2. Purchase garbage and recycling bins for the area, erect a sign, and staff with summer students.
Garbage and recycling bins, as well as port-a-potties help keep the Lake clean. The upset cost for the municipality, is estimated at $1,000 per year to pay for summer students to maintain the area in the summer and rent port-a-potties, in addition to an initial outlay of $2,200 for signage and installation.

3. Include the beach in the marketing material.
Hire a professional, local photographer to take a picture of the beach, perhaps at sunset. This photo can be used in marketing material, including on its own website, and with partners targeting newcomers and visitors.

WHAT	HOW	WHEN	WHO
Enter agreement to use	Engage in conversation with MNDMNRF to operate the Pickle Lake beach area, providing signage, port-a-potties and garbage bins at Town expense	Summer 2021	EDO Clerk/Tr. Council
Establish infrastructure	Procure a sign, port-a-potty and garbage/ recycling bins to establish at an upset cost of $1,000.00.	Summer 2021	EDO Public Works
Create marketing materials	Take a picture of the beach and include in marketing materials targeting newcomers and tourists.	Fall 2021	EDO

Acquire property on the north side of the Connecting Link, zone as Industrial, and actively market the lots towards servicing the mining, construction and transport sectors.

1. Enter an agreement with the Crown to purchase the land, as the Township of Pickle Lake.

There are immediately lost opportunities for secure storage, cold food storage, warehousing for mining, construction and grocery sectors and a clear need for increased industrial services. The land, currently owned by the MNDMNRF, for which, should be a seamless process.

2. Zone the property as Industrial.

Zoning is the second step, which can be passed by resolution of Council. The subdivision of lots would need to be surveyed by a professional surveyor.

3. Connect with Energy and Broadband Services

As the business park becomes subdivided, it would be essential for electricity service to be installed given the need for heated, cooled and secured storage. Further, broadband services would be required to support secured storage prospects. Interviews revealed a major concern is security, and broadband internet service would be required to provide secure services. NOHFC can be used to leverage funding for broadband services

4. Develop the land

Seeking formal quotes from constructors to develop the land, would be vital as this would inform pricing. A real estate professional should be consulted in this process, to determine the price, in making sure it is competitive with other similarly serviced lots within Pickle Lake.

The land should be developed in the sense that all lots will have electricity access. Broadband can be only made possible with Wi-Max technology with the current provider and be installed only upon a building being first erected.

5. Market the lots to existing and new tenants in the mining, construction and aerospace sectors of the economy.

After this, marketing the lots to the respective tenants would be important. The range of prospective tenants is long and includes:

a) Newmont Mine
b) Auteco Minerals
c) Manitoulin Transport
d) Gardewine
e) Peterbilt
f) The Food Bank service
g) NorthStar Air/ North West Company
h) Regional automotive and industrial organizations seeking a branch location, for example, NAPA Auto Parts.
i) Service contractors for the mining sector
j) Road Construction businesses

This list was based on what is found in comparable communities, such as Thompson, Manitoba, with respect to warehousing and industrial space.

Impact on Existing Business(es): Positive, provides employment and generates tax revenue and increase consumer spending within the community.

WHAT	HOW	WHEN	WHO
Acquire property	Work with MNDMNRF to explore acquisition of this property for economic development purposes at an upset cost.	Fall 2021	EDO Clerk/Tr. Council
Zoning	Upon acquisition, Council to pass motion zoning as industrial.	Winter 2022	Council Clerk/ Tr.
Subdivide Lots	Work with a surveyor to develop the business park into six or seven lots.	Summer 2022	EDO Public Works
Market Business Park	Apply under Rural Enhancement Stream (NOHFC) to market the business park for warehousing usage. Upon tenancy, connections to electricity and broadband should be made available. Developer would have to pay for septic and water.	Fall 2021 to Fall 2022 or later	EDO Clerk/Tr. Council

Actively work towards establishing Pickle Lake as a premiere township to play host to a commercial demonstration project for airship technology in northwestern Ontario.

1. Engage regional development partners to support airship attraction, through the use of a committee.

Making early contact would be essential to understanding the specific needs and finding ways in which the Township can support its development, such as through joint funding proposals etc.). Engaging with a committee, after initial contact by the EDO, would be important as (a) it could enable all the regional partners, including funding partners such as FedNor and NOHFC, to be fully informed with the state of affairs as it moves forward and (b) be effective in offering committee structure to the project.

2. Engage with the stakeholders of Canadian airship technology, to promote Pickle Lake's competitive advantages.

Establishing an airship base in Pickle Lake, as realized by researchers with BASI, would make very feasible sense given its northern location and proximity to many northwestern Ontario regional communities.

The process to make Pickle Lake stand out above other northwestern Ontario communities, is through being an early mover and engaging with the key stakeholder.

A brochure highlighting the competitive advantages may be produced, in specific, its close proximity to other regional centres, water body and employment situation as well as how it can also accent the mineral sector given the much closer proximity to the mining sector compared to other competitor communities.

Likely, within conversations, the company will inform the town as to how they could best support development throughout the different phases of their works.

Land: Adjacent to MNDMNRF base, or a closed open pit mine in the area

Prospective tenant(s): BASI (Buoyant Aircraft Systems International)

Impact on Existing Business(es): On one hand, it provides employment and supports the regional mining sector. There will be some disruption to the aviation sector (with respect to fuel delivery) but it is mostly a complementor.

WHAT	HOW	WHEN	WHO
Stakeholder engagement	Make early contact with BASI to discuss their proposition and how Pickle Lake can support their growth, at the right time.	Fall 2021	EDO Clerk/Tr. Council
Partner Engagement	Work with regional partners to attract support for pilot demonstration project of the airship, at the right time.	Fall 2022 to Winter 2024	EDO Public Works

Promote the opportunity for tenancy at the former terminal building to the expanding aviation and transportation businesses interested in servicing the north, from Pickle Lake.

1. Work with the MTO to identify their requirements for tenancy, from a shortlist of prospective tenants.

As the primary use is office space, the town can promote the opportunity for tenancy to existing airport tenants, and to those in multimodal transportation (i.e. transport companies).

Since the township is not a real estate agent, promoting the tenancy should only be concerned with making potential connections between organizations and the MTO, for the purposes of economic development.

A list of tenants would be similar to those for warehousing space, and also include Forest Helicopters, NWOASRA, transport companies, Morgan Fuels, Northern Skies Air Service; as well as potential for a virtual car rental kiosk.

Building(s): Terminal Building

Impact on Existing Business(es): Provides skilled workers to increase Indigenous and non-Indigenous labour market participation

Establish a civilian Search and Rescue office in Pickle Lake and apply to comprehensively study a Search and Rescue base in Pickle Lake.

1. Engage the Northwestern Ontario Air Search and Rescue, optimally promoting Pickle Lake as a base for volunteers for training

To establish a Search and Rescue Base in Pickle Lake, it is important for the Township of Pickle Lake to engage a partner, to apply under the SAR initiatives Fund. Partners can be sought as either the regional coordinator, or national coordinator of volunteer bases. To seek a partnership, it would be important for Pickle Lake to develop a satellite location of the *Northwestern Ontario Air Search and Rescue Association* (NWOARSA), which currently has offices in Thunder Bay and Fort Frances; or partner with an airline to begin one in Pickle Lake. This would provide some leverage to apply for the SAR initiatives Fund.

2. Engage government officials in Pickle Lake's bid

Government relations would be very important in this respect. Accordingly, it would be very important to engage the current MP and MPP when applying to the SAR Initiatives Fund.

3. Gain the support of NWOASRA for applying under the SAR Initiatives Fund for an assessment of a full-time base in Pickle Lake

An application to the SAR initiatives fund would be to commission a study for developing Pickle Lake as a new air search and rescue base. In our preliminary analysis, we believe Pickle Lake meets all of the criteria and priorities, including its role towards Indigenous reconciliation and locational proximity to serve arctic sovereignty in the north. Pickle Lake is important as it is connected by road to the national highway system and has an appropriately sizable airport.

Building(s): Terminal Building (for civilian organization); land opposite to runway (full base)

Prospective tenant(s): Northwestern Ontario Air Search and Rescue Association (at first), DND (long-term)

Impact on Existing Business(es): Generates employment which will generate tax revenue and increase consumer spending within the community.

WHAT	HOW	WHEN	WHO
Create Interest	Form a Civilian organization, or a satellite of NWOASRA, which is a volunteer S&R team servicing a specific area. Enable this organization to be an Adventure Smart training partner.	Winter 2022	EDO Clerk/Tr. Council
Seek Government Support	Apply under the SAR Initiative Fund for a study to add a fourth full-time SAR base in Pickle Lake.	Spring 2023	EDO Public Works
Liaise with Government Officials	Using the study, involve local MPP and MP to support a government relations campaign to Department of National Defense and actively pursue base attraction.	Fall 2023 to Fall 2024	EDO Clerk/Tr. Council GR Consultant

Conclusion

In conclusion, the major land development priority in the airport district is the acquisition and marketing of lots alongside the new Connecting Link road. This property would add much needed space to Pickle Lake for warehousing and industrial purposes. The economy of today within Pickle Lake, presents itself nicely to play a greater role in servicing the mining sector with secure warehousing and increase its capacity to house industrial businesses. This sector has strong economic potential to diversify the economic base in Pickle Lake and presents well towards the community's vision for economic development. Alongside all-season road development and the continuing busy seasons for truckers visiting the north, there is strong potential to service the trucking industry. While one potential application could be a truck stop in Central Patricia, having a certified repair shop and warehousing spaces for trucking companies themselves, will add considerably to driver safety in the northern roads and make economic sense for trucking companies. These lots on the new "connecting link" would be well-suited to support these developments.

Based on the cost estimations, interviews with present tenants and research on prospective tenant uses, it is not advised to proceed with water and sewer for these lots. The main reasoning underlying this, is that, commercial and industrial applications needing serviced property would be better serviced on existing serviceable land including Pickle Lake Road, Central Patricia and, for residential purposes, "the loops", in addition to the many vacant lots within the community. These goals also strengthen community resilience by locating retail and consumer services as a cluster closer to the centre of the community. There is also sufficient demand for industrial and warehousing needs that would not require service, and fit well in the airport development district. It is noted no current tenant at the airport saw a need for these services, and alternate paths can be examined for any future residential developments around Graveyard Lake.

Other priorities, such as signage at the old beach and transitioning the former terminal building into either potential use described herein, could also be pursued in the short-run. Residential development along Graveyard Lake is something the town should continue to be mindful of, and engage in conversations when existing capacity, as identified by Northern Community Solutions' report, becomes much smaller. Further, increasing visitor and worker accommodations would be vital to the community's economy, though it is noted that these developments can be better developed elsewhere in the community than within the airport district.

With respect to longer-term initiatives, it is also important that the Town make early contact with an airship company to establish itself as a leader, over similar northwestern Ontario communities, as a location for pilot demonstration project. The Airship technology is near commercialization for northern transportation, and Pickle Lake's competitive strengths align very well to the need for

such hanger, notably, its northernmost location would allow things to be trucked in as far as possible before being loaded into more expensive aircraft. Second, engaging government officials in creating a volunteer Search and Rescue base in Pickle Lake, and following through with a subsequent study for establishing a new base in the community, would be a worthwhile endeavour for the community, given increasing concerns of arctic governance and Indigenous reconciliation.

Clearly, there are an enormous amount of opportunities within the small community of Pickle Lake, given its prime geographical location as the northernmost full-service municipality in Ontario accessible by road. As developments progress, specifically in mineral exploration, mine development, and all-season roads, it would be wise to pursue the many ways for which Pickle Lake can add value to these industries in leveraging its strengths. We imagine these would evolve with technology over time, though would all fall in the realm of industrial service and support. Future studies of properties, such as residential development at Graveyard Lake, should be conducted when existing capacity becomes constrained in the Central Patricia and Pickle Lake road areas.

In closing, this study suggests the values and vision of the community are well-defined to be resilient and supportive of regional goals, actively consider climate change and focus strongly on Indigenous inclusion, within all economic development. It is hoped the vision and these values, guide future economic development in the decades to come.

References

Andrews, M. (2021). More to come from Pickle Crow. *Gold Mining Journal, 1*(142), 50.

Bonin, J. (2015). *Diversify, Innovate, Invest, and Grow.* Northern Policy Institute.

Carnaghan, M., & Goody, A. (2006). *Canadian Arctic Sovereignty*. Ottawa: Parliamentary Information and Research Service.

Coady, J., & Duquette, J. (2021). Quantifying the impacts of biomass driven combined heat and power grids in northern rural and remote communities. *Renewable and Sustainable Energy Reviews, 148*, 111296.

Griffiths, F., Huebert, R., & Lackenbauer, P. W. (2011). *Canada and the changing Arctic: Sovereignty, security, and stewardship*. Wilfrid Laurier Univ. Press.

Hori, Y., Cheng, V. Y., Gough, W. A., Jien, J. Y., & Tsuji, L. J. (2018). Implications of projected climate change on winter road systems in Ontario's Far North, Canada. *Climatic Change, 148*(1), 109-122.

Hosszu, M. (2017). *The economic feasibility of replacing diesel with renewable energy resources in remote First Nation communities in Northern Ontario* (Doctoral dissertation).

Kuhlberg, M. (2016). *From Resource to Revenue: Dryden Mill Lessons for the Ring of Fire.* Northern Policy Institute.

Moazzami, B. (2019). *Are Robots Coming for Our Jobs?: The Economic Impact of Automation on Northern Ontario's Economy*. Northern Policy Institute.

Melillo, E. (2018). *Setting the Table: Food Insecurity and Costs in Ontario's North*. Northern Policy Institute.

Palmer, J. K. (2021). *Assisting Miners and Prospectors in Northwestern Ontario. Engineering and Mining Journal, 222*(2), 28-29.

Prentice, B. E., & Adaman, M. (2014) *Economics of Transport Airships for Food Distribution to Isolated Communities in Northern Manitoba and Ontario, Canada*. ISO Polar.

Prentice, B. E., & Russell, S. (2009). Competing technologies and economic opportunities for northern logistics: The airship solution.

Township of Pickle Lake

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The Corporation of The Township of Pickle Lake

Prepared By:

Limestone PARTNERS