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## Northern Projections Human Capital Series - PARRY SOUND DISTRICT

# Who We Are - Northern Ontario Workforce Planning

Workforce Planning Ontario is a network of 26 Workforce Planning Boards covering four regions across the province. Workforce Planning Boards gather intelligence about the supply and demand side of the local labour market and work in partnership with employers, employment services, educators, researchers, economic development, government and other stakeholders to identify, understand and address labour market issues. This includes supporting and coordinating local responses to meet current and emerging workforce needs.

Given the unique geography and labour market issues that impact Northern Ontario, all 6 planning boards in the north have collaborated to form Northern Ontario Workforce Planning. They include: Algoma Workforce Investment Corporation (AWIC); Far Northeast Training Board (FNETB); The Labour Market Group (LMG); Northwest Training and Adjustment Board (NTAB); North Superior Workforce Planning Board (NSWPB); and Workforce Planning for Sudbury & Manitoulin (WPSM). FNETB and NSWPB are currently pilot sites for Local Employment Planning Councils (LEPC).



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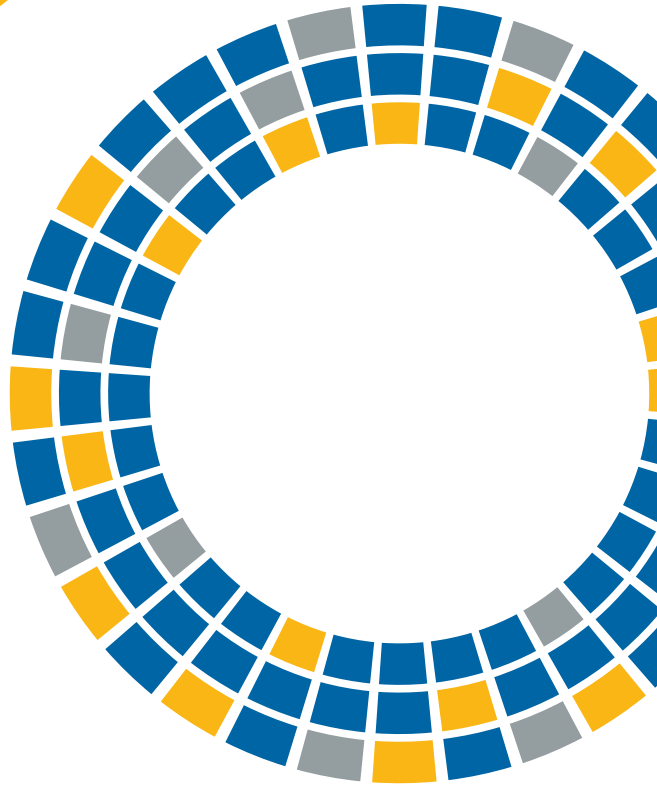
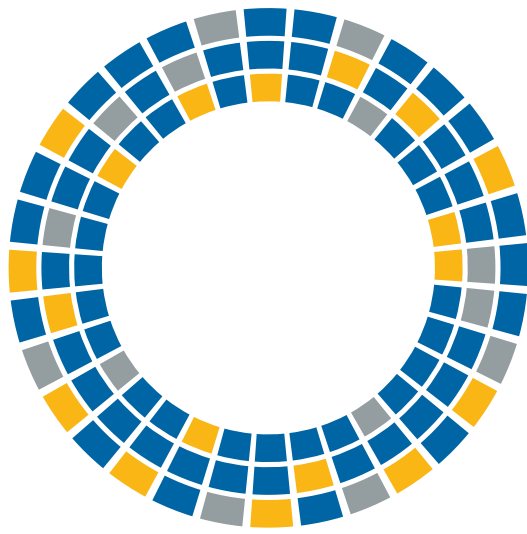


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# Who We Are

Some of the key players in this model, and their roles, are as follows:

**Board:** The Board of Directors sets strategic direction for Northern Policy Institute. Directors serve on operational committees dealing with finance, fundraising and governance, and collectively the Board holds the CEO accountable for achieving our Strategic Plan goals. The Board's principal responsibility is to protect and promote the interests, reputation, and stature of Northern Policy Institute.

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**Advisory Council:** A group of committed individuals interested in supporting, but not directing, the work of Northern Policy Institute. Leaders in their fields, they provide advice on potential researchers or points of contact in the wider community.

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**Peer Reviewers:** Ensure specific papers are factual, relevant and publishable.

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**Standing engagement tools (general public, government stakeholders, community stakeholders):** Ensure Northern Policy Institute remains responsive to the community and reflects THEIR priorities and concerns in project selection.

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Author's calculations are based on data available at the time of publication and are therefore subject to change.

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## About the Authors

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James Cuddy is a market analyst at the Canada Mortgage and Housing Corporation (CMHC). He has over 5 years of experience conducting research on various economic issues, with a particular focus on labour market and socioeconomic analysis and regional and urban economics.

Prior to his role at CMHC, Cuddy served as Northern Policy Institute's in-house Economist, where he played the role of principal in-house researcher who helped to expand and implement research priorities and assist in quality control.

James is a graduate of Carleton University with a B.A. in Economics (2013) and the University of Ottawa with a M.A. in Economics (2015).

### Dr. Bakhtiar Moazzami



Dr. Moazzami has taught Economics and Econometrics at Lakehead University since 1988. He is well known for his research activities particularly related to Northern Ontario. He has written many reports on Northern Ontario's economic development challenges and opportunities. He was commissioned by the Ministry of Northern Development and Mines to undertake a comprehensive study of Northern Ontario's economy as a part of the research conducted for the Growth Plan for Northern Ontario. Included in the study were the identification of growing, declining and emerging industrial clusters in the region. Professor Moazzami has also written extensively on Northern Ontario's Aboriginal people and Northern Aboriginal economy. Dr. Moazzami's expertise and influence reaches beyond Lakehead University and Northern Ontario. He has been a regular guest speaker at the University of Waterloo's Economic Development Program.

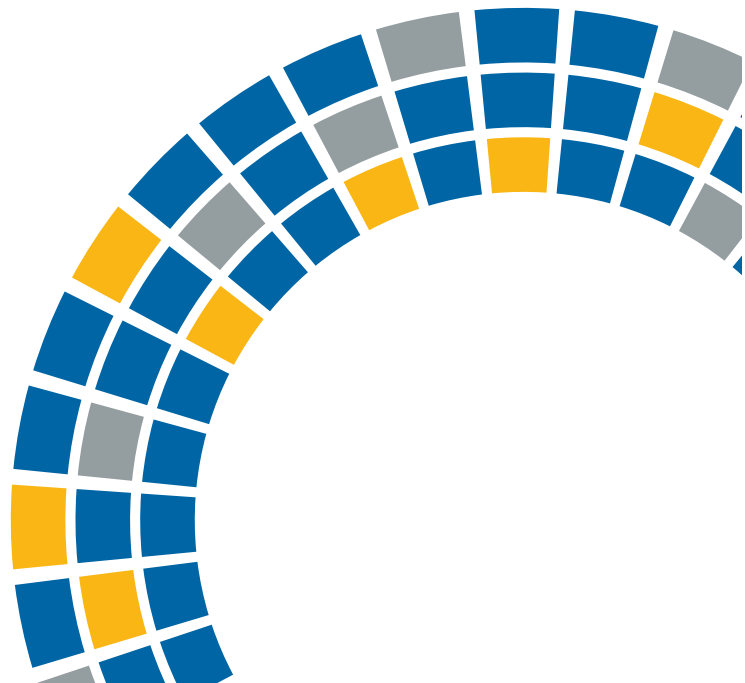
## Summary of Findings

Overall labour force trends in the Parry Sound district are disturbingly similar to those in other areas of Northern Ontario. A declining overall workforce as the population ages and shrinks, challenges in many areas to maintain educational levels commensurate with job opportunities, challenges attracting large numbers of newcomers and, less than ideal results in delivering educational levels for Indigenous peoples commensurate with those achieved by the overall population. The economy has also shifted from traditional manufacturing and resource industries to more service and knowledge related jobs resulting in an ongoing and accelerating demand for more, not less, education, even for entry level positions.

This study further demonstrates that the overall human capital composition of the working-age population in the district of Parry Sound is below that of Northeastern Ontario, Ontario and Canada. If the current level of educational achievement continues, the human capital composition of the workforce will decline in the coming years in this district and throughout Northern Ontario. The Parry Sound district is expected, however, to decline at a slower rate than all other districts in Northeastern Ontario.

Two principal factors account for this slower than average decline: Francophones in the Parry Sound district have higher levels of education and educational achievement than Francophones across Ontario and Canada, and notably higher than the total working-age population across all jurisdictions. The immigrant population in the Parry Sound District also has relatively high levels of human capital. Given the district's proximity to a ready pool of secondary immigrants in the Greater Toronto Area, these strengths are solid building blocks for the future.

In addition, the indexes for the Indigenous labour force, while below the rest of the population, are higher in Parry Sound District compared to Canada, but below regional and provincial levels. Once more, Northeastern Ontario offers greater opportunity and higher levels of success for Indigenous people than that found elsewhere.



## Introduction

The objective of this report is to examine past and present trends and characteristics in Parry Sound District's economy and to forecast its future challenges and opportunities. The report focuses primarily on the supply side of the economy. The authors examine the district's labour market including its human capital composition, employment trends, the shifting occupational composition of the employed workforce, the shifting of the district's industrial composition from goods-producing to services-producing sectors, the declining share of the private sector, the district's rising dependency on the public sector, and declining labour income and gross domestic product (GDP).

The report begins by examining demographic change in the district of Parry Sound over the past three decades and by defining and estimating various dependency indicators.

The study looks into the future and provides projections for the total and Indigenous populations of the district over the next three decades. From these population projections, the study estimates past, present and future trends in the size and composition of the regional labour force.

In the following section, the study defines and quantitatively measures the human capital composition of Parry Sound district's workforce in the coming years. This section also discusses the implications of the growing application of technology in the production process and, accordingly, the future skill requirements of the workforce.

The report then moves on to discuss the consequences of shifting the composition of the employed labour force in Northeastern Ontario from goods-producing, dominated by private businesses, to services-producing, predominantly financed by the public sector. The study also examines the shifting occupational composition of the employed workforce, and the implication thereof for total regional income and GDP in the Parry Sound district.

The study concludes with a summary and discussion of some policy implications.

## Data Sources

Most of the data used in this report is based on detailed information regarding individual census subdivisions (CSDs) in the Parry Sound district and Northeastern Ontario obtained through special tabulations from Statistics Canada. Except for the population data, the 2011 data are based on the 2011 National Household Survey (NHS). Total population forecasts are based on data made available by the Ontario Ministry of Finance. Census 2016 data are being released in stages

between February, 2017 and November 2017. At the time of publication, only population and dwelling count data had been released. Population figures have been added to this publication, where applicable, however, the vast majority of the data presented in this publication rely on Census 2016 data that will be released later in 2017. Thus, the majority of the data presented in this report are based on the 2011 National Household Survey.

## Population Groups Studied

The report provides information on the following four population groups:

- The total population;
- The Francophone population, defined as individuals who report their mother tongue to be French;
- The Indigenous population, defined by Statistics Canada as persons who reported identifying with at least one Indigenous group – that is, North American Indian, Metis or Inuit – and/or those who reported being a Treaty Indian or a registered Indian, as defined by the Indian Act, and/or those who reported they were members of an Indian band or First Nation; and
- The immigrant population defined as persons who are, or have ever been, landed immigrants in Canada.

## The Geographical Specification of Northeastern Ontario

Northern Ontario is subdivided into Northwestern and Northeastern Ontario. The three most western Census districts – namely Rainy River, Kenora and Thunder Bay – constitute Northwestern Ontario. The region that lies north and east of Lakes Superior and Huron constitutes Northeastern Ontario. It is defined to include the following census divisions: Cochrane, Timiskaming, Algoma, Sudbury, Nipissing, Manitoulin, Parry Sound and Greater Sudbury. The federal government and FedNor also include Muskoka district in their definition of Northeastern Ontario. The provincial government removed the district of Muskoka from the jurisdictional area of the Ministry of Northern Development and Mines and the Northern Ontario Heritage Fund in 2004, but has continued to include Parry Sound as a Northern Ontario division.<sup>1</sup>

<sup>1</sup> The analysis in this study is based on these jurisdictional and geographic parameters.



## Demographic Change: The Past Three Decades

The Parry Sound district covers 9,323 square kilometers and recorded a population of 42,824 in 2016. It has a population density of 4.6 persons per square kilometer which is well below that of Ontario (14.8). According to Statistics Canada's census of population, the Parry Sound district grew by 26.6 percent from 1986 to 2016 (Figure 1).

In terms of net migration flows, the Parry Sound district has experienced positive net intraprovincial migration for the last decade, as more individuals from Ontario have moved into the district than out of the district. Interprovincial migration, known as the movement of individuals from one province to another, has been negative and decreasing during this period. Thus, the total net domestic migration in 2014-15 was 47, meaning that the district experienced more individuals entering this area than leaving. (Figure 2). Also contributing to population is low immigration levels in the Parry Sound district (Figure 2). As of 2015, the district attracted 3.5 immigrants per 10,000 people compared to 64.8 in Ontario, which translates into nearly 19 times less immigrants attracted per capita in the district compared to the province as a whole (Figure 3).

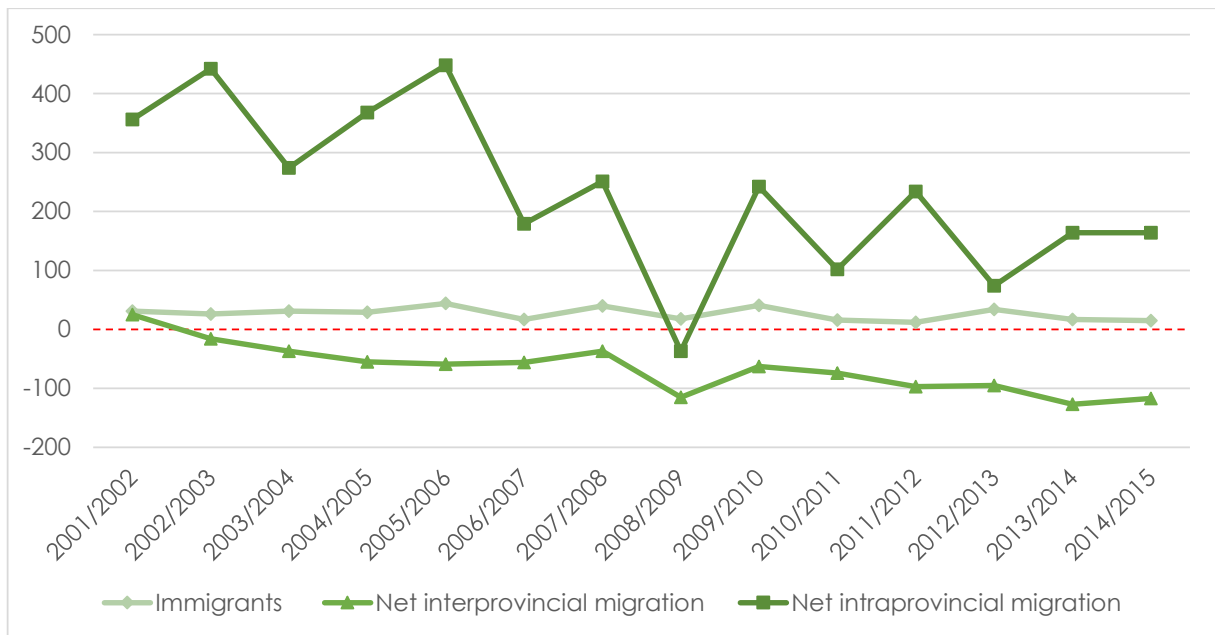
Figure 1: Population, Parry Sound District, 1986–2016



Source: Statistics Canada, Census of Canada; and idem, National Household Survey.

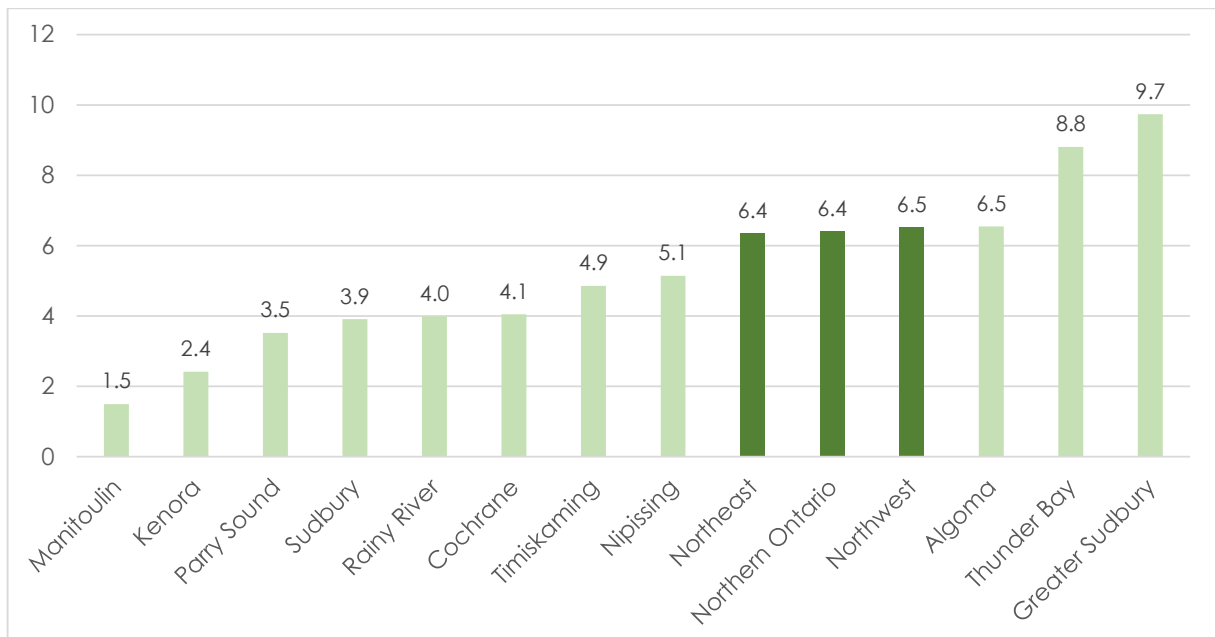


Figure 2. Net Domestic Migration and Immigration, Parry Sound District, 2001/2002–2014/2015



Source: Author's calculations based on Statistics Canada, CANSIM database, table 051-0063.

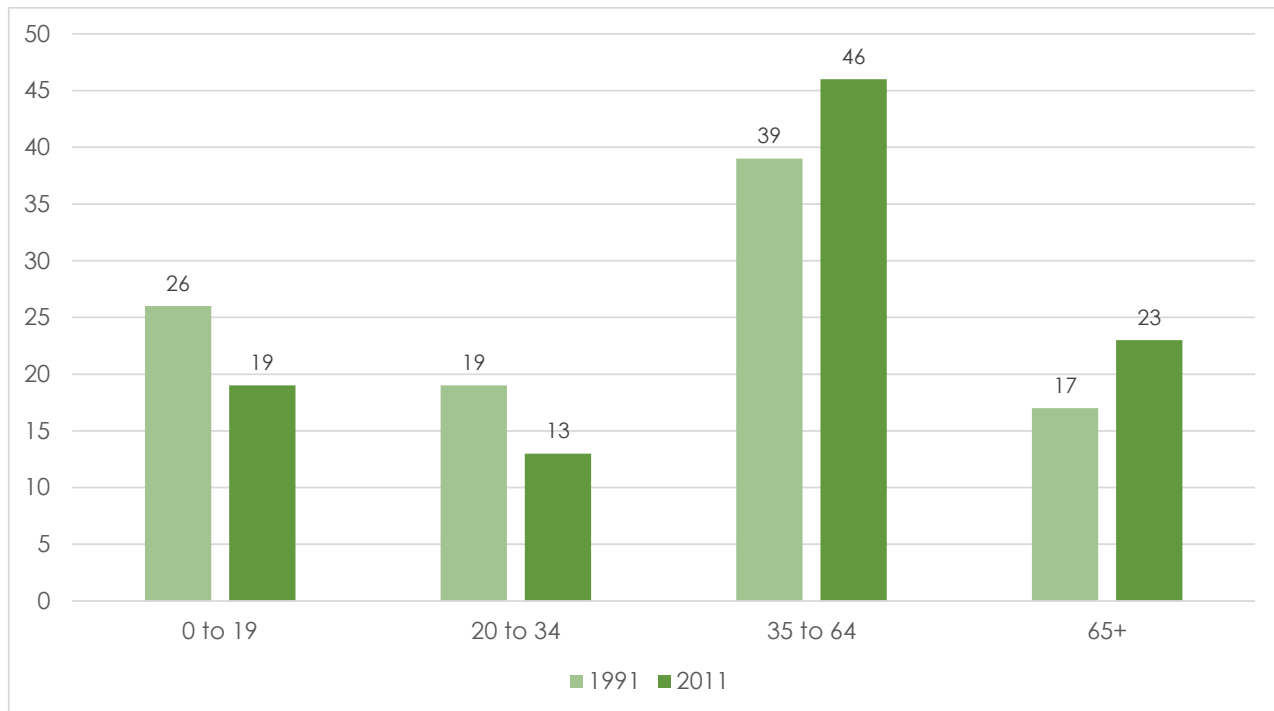
Figure 3. Number of Immigrants per 10,000 people, Northern Ontario Districts, 2014/2015



Source: Author's calculations based on Statistics Canada, CANSIM database, table 051-0062 and 051-0063.

In addition to migration patterns and low levels of immigration in the region, rising life expectancy and lower fertility rates have resulted in the aging of the district's population. At the same time, the large baby-boom generation, born in the two decades following the Second World War, is now beginning to retire. The generations that followed were much smaller, primarily due to a declining fertility rate. As a result, the share of individuals in the district below the age of 20 has declined from 26 percent in 1991 to 19 percent in 2011 while the share of seniors rose from 17 percent in 1991 to 23 percent in 2011 (Figure 4). During the same period, the share of individuals between the ages of 20 to 34 declined from 19 to 13 percent, while individuals aged 35 to 64 increased from 39 to 46 percent.

Figure 4: Age Distribution of Population, Parry Sound District, 1991 and 2011



Source: Author's calculations based on Statistics Canada, Census of Canada, and National Household Survey, custom tabulation.

These demographic changes have had a significant impact on social and economic conditions in the district. The population will continue to age in the foreseeable future, with implications for the supply of labour, production capacity, and the ability to stay economically viable. One important aspect of the aging population relates to the relationship between economically active and economically dependent age groups – that is, between the working population on the one hand and the young and elderly on the other.

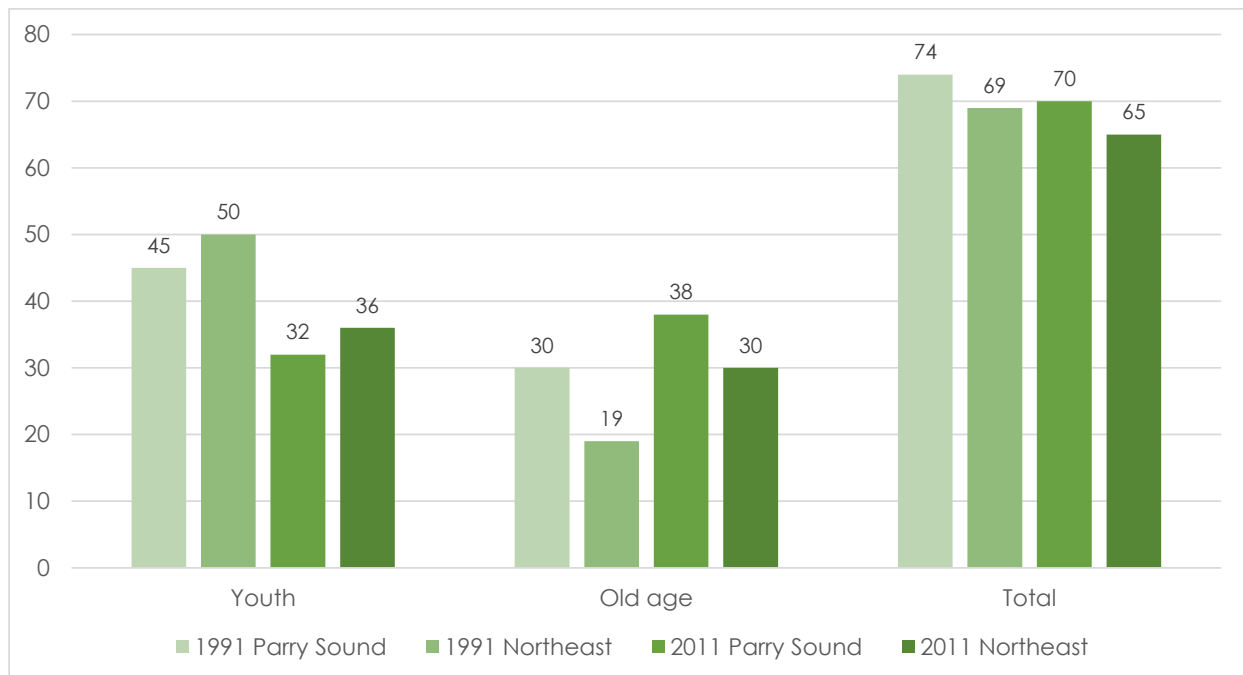
This study examines three dependency ratios: old age dependency, defined as the number of persons aged 65 years and older relative to the working-age population (ages 20 to 64); youth dependency, defined as the ratio of the number of persons aged 20 years and younger to the working-age population; and total dependency ratio, defined as the ratio of the total dependent population, which is essentially the number of mouths to feed, to the working-age population. This last ratio is a crude measure of the burden or cost associated with demographic change in terms of raising and educating children as well as taking care of the elderly at any given time. Assuming jobs are available for the working-age population, a rising dependency ratio suggests that there are more dependent persons per each member of the working-age population. A declining dependency rate implies that there are more working persons per dependent, enabling a region to reap the benefits of increased production capacity, therefore lowering the costs associated with the declining proportion of dependents.

Figure 5 shows that, in the Parry Sound district, the youth dependency ratio declined from 45 persons per every 100 working-age persons in 1991 to 32 in 2011 due to the fact that the number of youth declined much faster than the number of working age persons. During the same period, the youth dependency index declined from 44 to 38 youth to every 100 working age persons in Ontario.

At the same time, the old age dependency rose from 30 to every 100 working age individuals in 1991 to 38 in 2011 due to an increasing number of seniors relative to the working age population. In other words, there were 3.3 working persons in 1991 per each senior, but only 2.6 working persons per senior in 2011. The ratio of seniors to working age population in the district (38) is notably above the provincial value of 24 to every 100 working age persons in 2011. Having higher old age dependency ratios can have budgetary implications related to health care and other expenditures required to care for seniors in the coming years. This ratio is expected to continue to rise as working age persons retire and change their status from working to retired in the future.

Overall, the total dependency rate – the number of youths and seniors relative to those of working age – declined from 74 in 1991 to 70 in 2011, suggesting that the district increased its capacity to support its non-working population over the period, although this rate was still above the provincial average of 62 in 2011. This ratio is expected to rise as the baby boomers start to retire in the coming years. Decreasing the gap between the dependency ratios in the district and those of the province as a whole could be a goal the region might strive to achieve in the long term.

Figure 5: Ratio of the Working-Age Population to Other Age Groups, Parry Sound District, 1991 and 2011



Source: Author's calculations based on Statistics Canada, Census of Canada, and National Household Survey, custom tabulation.

## Demographic Change: The Next Three Decades

This part of the study provides population projections for the district, both for the total population and for the Indigenous population. Estimates for the former are based on projections by the Ontario Ministry of Finance; estimates for the latter are based on Northern Ontario's Demographic Model, developed by Bakhtiar Moazzami.

A few words regarding the Ministry of Finance projections are in order. First, the Ministry's 2011 population estimates are about 3,430 greater than those reported by the 2011 census, having been adjusted for net undercoverage by the census, especially of the region's Indigenous population in the Parry Sound district.

Second, the Ministry's estimated parameters for fertility at the census division level were modelled to maintain regional differences. The census division-to-province ratio for mean age at fertility in the most recent period was assumed to remain constant.

Thirdly, the Ministry's mortality estimates at the census division level were developed using a ratio methodology. The government applied the Ontario-level mortality structure to each census division's age structure over the most recent three years of comparable data and calculated the expected number of deaths. It then compared these estimates to the actual annual number of deaths in each census division over this period to create ratios of actual-to-expected numbers of deaths. These ratios were then multiplied by provincial age-specific death rates to create death rates for each census division. These were then applied to the corresponding census division population to derive the number of deaths for each census division.<sup>2</sup>

### Population Projections

The Parry Sound district's total population is expected to slightly increase by 0.6 percent from 2013 to 2041 (Table 1). The continuing aging of the district's population is also evident from the Ministry of Finance's projections (Figure 6 and Table 2), with the share of individuals under age 20 expected to decline from 18 percent in 2013 to 15 percent in 2041, the share of working-age people (ages 20 to 64) projected to decline from 57.9 percent in 2013 to 45.3 percent in 2041, and the share of seniors is expected to rise from 24 percent in 2013 to 40 percent in 2041.<sup>3</sup> As the next part of the study will show, the dramatic decline in the working-age population has important implications for the future availability of a qualified labour force in the district.

Table 1: Population Projections by Age Group, Parry Sound District, 2013-2041

	0 to 19	20 to 44	45 to 64	65+	Total
<b>2013</b>	7,764	10,075	14,869	10,369	43,077
<b>2020</b>	7,148	9,402	14,086	12,752	43,388
<b>2030</b>	6,856	8,889	11,796	16,070	43,611
<b>2041</b>	6,520	8,121	11,488	17,192	43,321

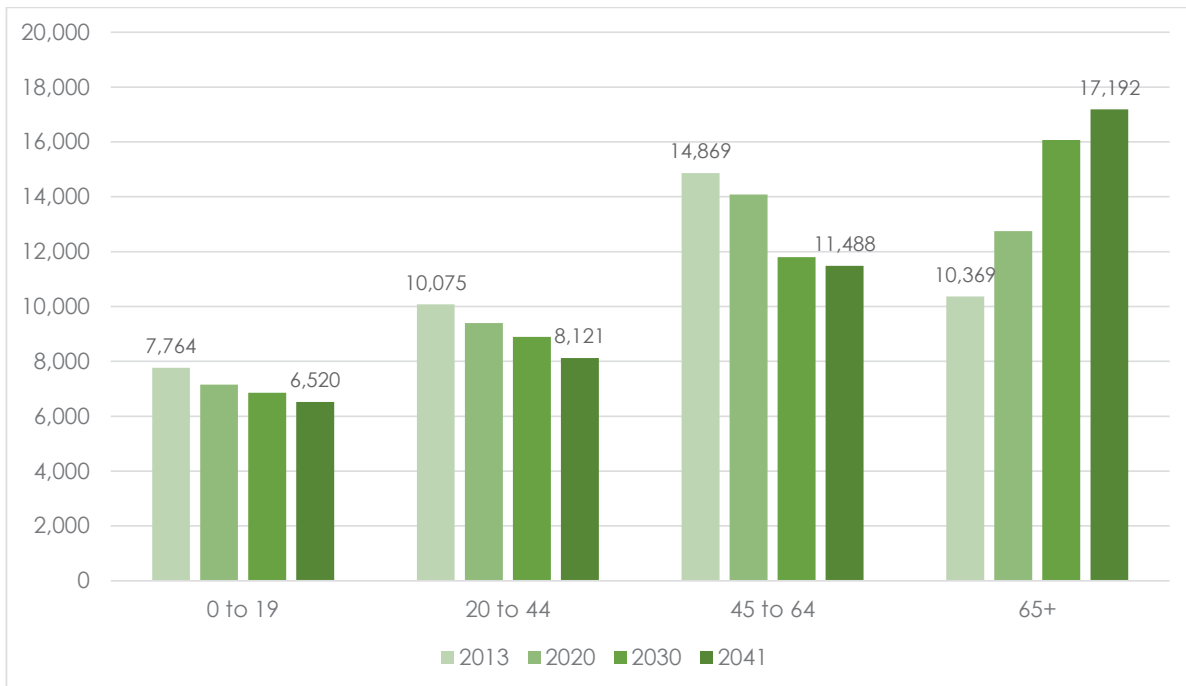
Source: Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).



2 See Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).

3 Focus is placed on individuals aged 20 to 64 as the core working-age population since there has been a declining trend in the labour force participation rate of Ontario's youth in recent years primarily due to a significant rise in enrolment rates in postsecondary education institutions.

Figure 6: Population Projections by Age Group, Parry Sound District, 2013–41



Source: Author's calculations based on Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).

Table 2: Population Projections by Age Distribution, Parry Sound District, 2013–2041

	0 to 19	20 to 44	45 to 64	65+
2013	18.02	23.39	34.52	24.07
2020	16.47	21.67	32.47	29.39
2030	15.72	20.38	27.05	36.85
2041	15.05	18.75	26.52	39.69

Source: Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).



## Indigenous Population Projections

In making projections for the Indigenous population in the district of Parry Sound out to 2041, this study employs Northern Ontario's Demographic Forecasting Model, which is based on the Cohort Component method.<sup>4</sup> The base year data for the projection are from Statistics Canada's National Household Survey for 2011. In projecting the future Indigenous population, this study does not adjust for the under coverage of Indigenous people in the region — as mentioned above, there were 1,040 omitted persons in the Parry Sound district alone — so the projections should be considered conservative. This study also assumes zero net migration of Indigenous people over the forecast period, since the existing evidence suggests there is relatively low mobility among the region's Indigenous population. The fertility rate for the Indigenous population is assumed equal to that in rural Northeastern Ontario, and the mortality rate to equal the rate for the general population of Canada based on the 2011 census.

Based on these assumptions, Figure 7 shows that the Indigenous population in the district is expected to increase from 2,457 in 2013 to 2,898 in 2041, a growth rate of about 18 percent. The number of individuals under the age of 20 is expected to increase by 14 percent during this period, while the number of working-age Indigenous people is expected to decline slightly from 1,462 in 2013 to 1,435 in 2041. The number of individuals aged 65 and over are expected to rise from 305 in 2013 to 678 in 2041, an increase of 122 percent.

The Indigenous population's share of total district's population is expected to increase from 5.7 percent in 2013 to 6.7 percent in 2041 (Figure 8). The share of prime-working-age (those ages 20 to 44) is expected to increase from 7.3 percent in 2013 to 10.7 percent in 2041. Similarly, the share of working-age Indigenous people (those ages 20 to 64) is expected to increase from 5.9 percent in 2013 to 7.3 percent in 2041. The share of Indigenous seniors is expected to rise from 2.9 percent in 2013 to 3.9 percent in 2041.

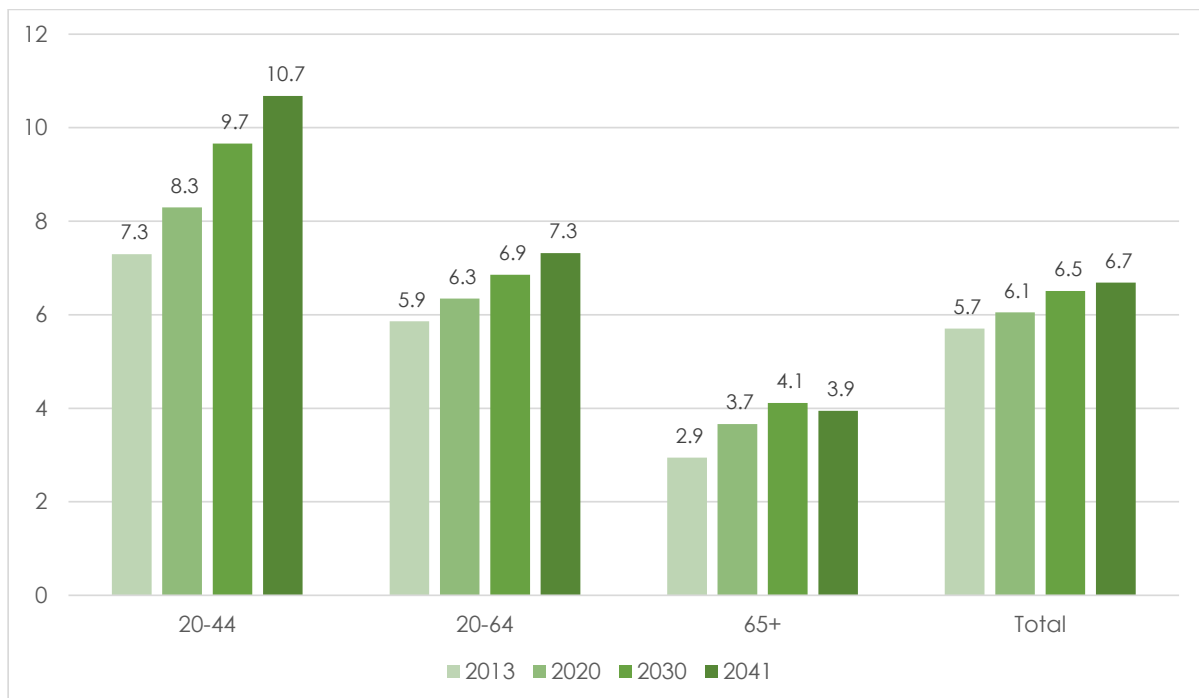
Figure 7: Indigenous Population Projections by Age Group, Parry Sound District, 2013–2041



Source: Author's calculations based on Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).

4 For a complete discussion of this model, see B. Moazzami, "It's What You Know (and Where You Can Go): Human Capital and Agglomeration Effects on Demographic Trends in Northern Ontario" (Thunder Bay, ON: Northern Policy Institute, 2015).

Figure 8: Projections of the Share of the Indigenous Population, Parry Sound District, 2013–2041



Source: Author's calculations based on Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).

## Parry Sound District's Labour Force: Past, Present and Future Trends

Demographic changes have a direct impact on the supply side of the economy through their influence on the labour force. An aging population and a declining share of working-age people can seriously restrain future economic development unless productivity growth accelerates or steps are taken to increase participation of older workers, youth and other underrepresented groups in the labour force.

This study has shown that the Indigenous population represents a growing segment of Parry Sound district's total population and its working-age population. A significant gap exists, however, between the level of educational achievement of Indigenous individuals and that of the general population, resulting in a severe labour market outcome disparity that affects the current and future productive capacity of the district's labour force.

### Labour Market Trends in Parry Sound District

Table 3 shows various labour market indicators for Northeastern Ontario in 2001 and 2011. The total core working-age population (ages 15 to 64) in the region declined from 365,020 in 2001 to 364,100 in 2011. The Francophone and immigrant population both declined during this period while the Indigenous population grew. During the same period, the labour force participation rate among women rose by 3.8 percent resulting in an increased number of people in the labour force. The Ontario Ministry of Finance reports that, "[t]he most significant trend driving the aggregate labour force participation rate in Ontario has been the increase in the number of women in the workforce. Labour force participation rates for adult women have risen dramatically, from 57.0 percent in 1976 to 82.0 percent in 2013."<sup>5</sup> Total employment among men declined while that among women increased from 2001 to 2011. The unemployment rate among men and women both declined slightly during this period.

5 Ontario Ministry of Finance, "Ontario's Long-Term Report on the Economy", 2014.



The labour force participation rate of Indigenous men declined from 70.3 percent in 2001 to 66.6 percent in 2011. On the other hand, the participation rate among Indigenous women increased from 49.2 percent in 2001 to 55.1 percent in 2011. The unemployment rate among Indigenous men declined from 21.3 percent in 2001 to 16.4 percent in 2011, which can be attributed partly to some previously unemployed persons having stopped participating in the labour force. The unemployment rate among Indigenous women also declined from 16.5 percent in 2001 to 11.0 percent in 2011. The labour market outcome for Indigenous people who live on reserve is different from those who live off-reserve, whereas those living on-reserve have lower participation rates and much higher unemployment rates.

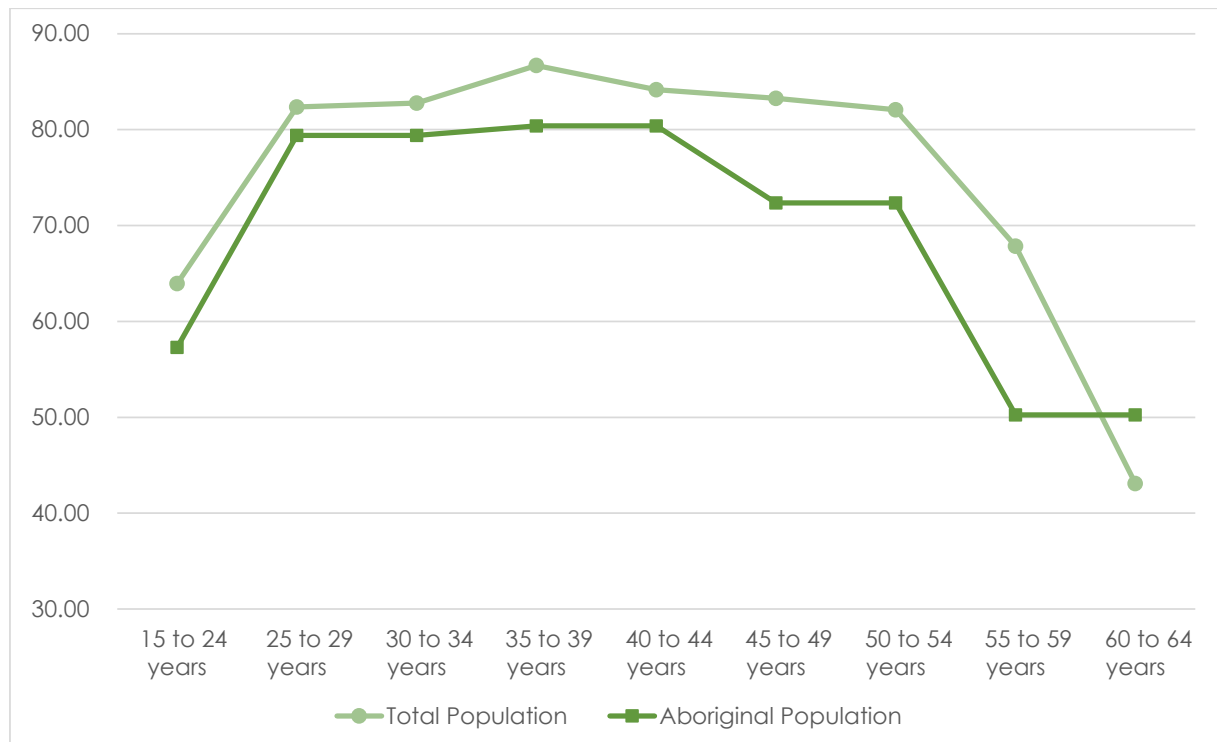
Table 3: Labour Market Trends, Working-age Population (ages 15 to 64), Northeastern Ontario, 2001 and 2011

<b>Labour Market Outcome</b>	<b>Men</b>		<b>Women</b>	
<b>Total Regional Population</b>	<b>2001</b>	<b>2011</b>	<b>2001</b>	<b>2011</b>
Total population 15 to 64 years of age	179,755	180,120	185,265	183,980
In the labour force	137,045	135,580	123,265	129,300
Employed	122,290	121,260	112,320	118,615
Unemployed	14,760	14,320	10,945	10,680
Not in the labour Force	42,705	44,540	61,995	54,680
Participation Rate	76.2	75.3	66.5	70.3
Employment Rate	68.0	67.3	60.6	64.5
Unemployment Rate	10.8	10.6	8.9	8.3
<b>Francophones</b>				
Total population 15 to 64 years of age	44,465	37,800	46,575	40,405
In the labour force	33,855	28,640	30,285	27,975
Employed	30,060	26,125	28,230	26,390
Unemployed	3,795	2,510	2,060	1,585
Not in the labour Force	10,605	9,155	16,285	12,430
Participation Rate	76.1	75.8	65.0	69.2
Employment Rate	67.6	69.1	60.6	65.3
Unemployment Rate	11.2	8.8	6.8	5.7
<b>Immigrants</b>				
Total population 15 to 64 years of age	9,555	7,345	10,650	8,660
In the labour force	7,165	5,415	6,440	5,480
Employed	6,670	5,055	6,070	5,080
Unemployed	495	355	370	400
Not in the labour Force	2,390	1,930	4,205	3,175
Participation Rate	75.0	73.7	60.5	63.3
Employment Rate	69.8	68.8	57.0	58.7
Unemployment Rate	7.0	6.6	5.8	7.3
<b>Indigenous</b>				
Total population 15 to 64 years of age	13,015	19,135	13,855	20,635
In the labour force	9,145	12,740	8,155	12,765
Employed	7,195	10,655	6,810	11,360
Unemployed	1,950	2,085	1,345	1,410
Not in the labour Force	3,870	6,400	5,700	7,870
Participation Rate	70.3	66.6	58.9	61.9
Employment Rate	55.2	55.7	49.2	55.1
Unemployment Rate	21.3	16.4	16.5	11.0

Source: Statistics Canada, 2001 Census and 2011 NHS, custom tabulation.

According to the available data, Indigenous peoples tend to participate less in the formal labour force as compared to the non-Indigenous population. It is important to note that these findings do not necessarily take into account alternative and traditional economies that Indigenous populations historically and presently participate in. As Figure 9 shows, their labour force participation rate was below the regional average in 2011. Their unemployment rate was also significantly higher than the regional average. In fact, their lower labour force participation rate is partly attributable to the high unemployment rate among the Indigenous workforce and partly related to the fact that their level of educational attainment is below that of the regional average.

Figure 9: Labour Force Participation Rates (%), Total and Indigenous Population, by Age Group, Northeastern Ontario, 2011



Sources: Statistics Canada, Census of Canada 2011, and National Household Survey 2011, custom tabulation.

Figure 10 compares labour force characteristics among various demographics of the population in the Parry Sound district and Northeastern Ontario.<sup>6</sup> The labour force participation rate among men is 76.2 percent in the district compared to 75.3 percent in Northeastern Ontario and 76.0 percent in Ontario in 2011. The male Indigenous population living on-reserve had the lowest participation rates followed by those living off-reserve in both the Parry Sound district and the Northeast as a whole. The participation rate among women was 69.5 percent in the district compared to 70.3 in Northeastern Ontario and 72.6 in Ontario. The participation rate among Indigenous women on-reserve in the district was notably higher than in the Northeast as a whole.

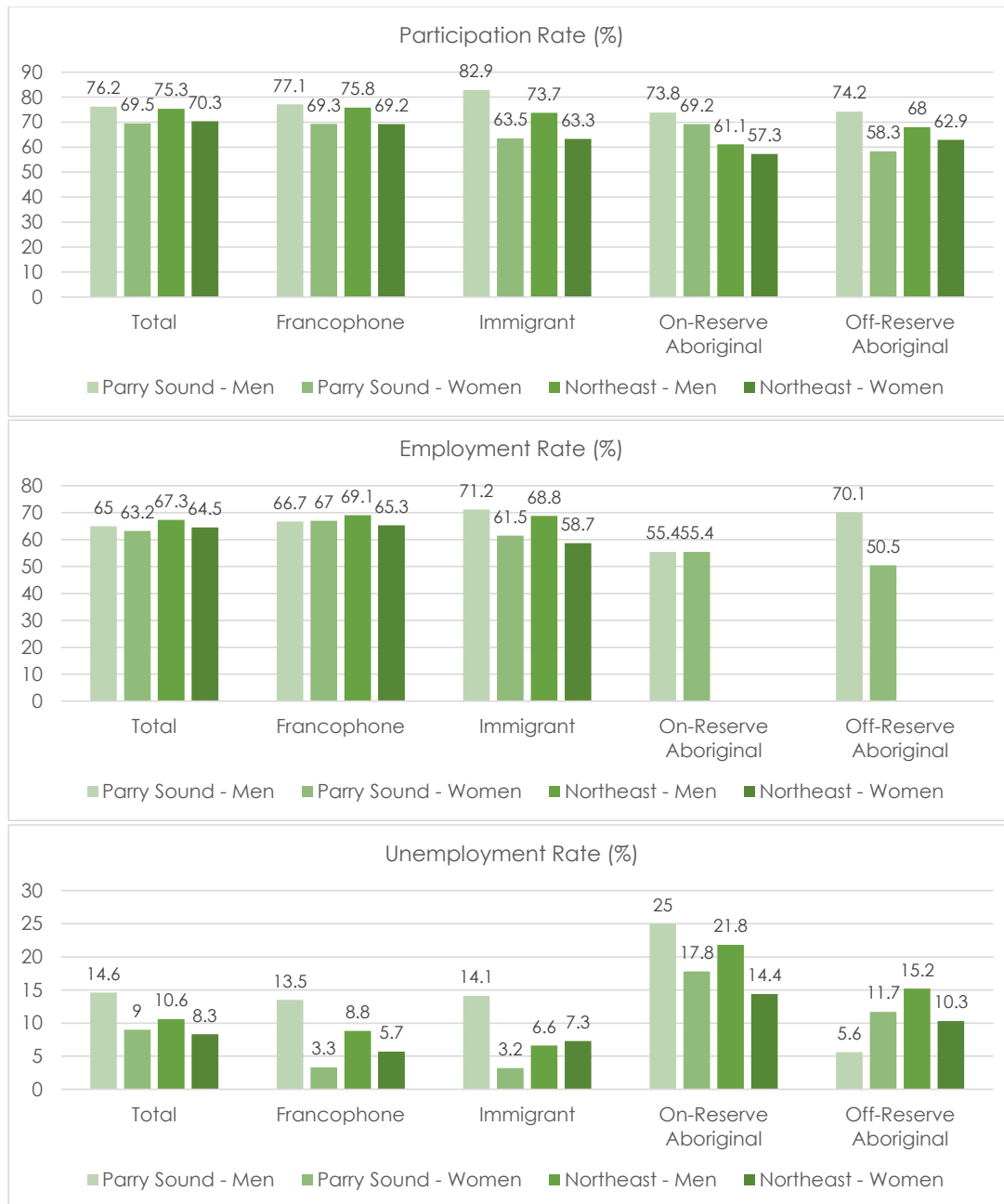
The unemployment rate among men in the district of Parry Sound was 14.6 percent compared to 10.6 and 8.4 in Northeastern Ontario and Ontario, respectively.

The unemployment rate among women in the district of Parry Sound was 9 percent compared to 8.3 percent in both Northeastern Ontario and the province as a whole. The unemployment rate among the on-reserve Indigenous population was generally the highest in the district.

The employment rate which represents the share of the working-age population who were employed was 65 percent for men in the district compared to 67.3 percent in Northeastern Ontario in 2011. Again, the employment rates are generally lower for the on-reserve Indigenous population. Notably, the off-reserve Indigenous male population had a relatively high employment rate in this district. The employment rate among working-age women is 63.2 percent in the district compared to 64.5 percent in the Northeast.

<sup>6</sup> Note that the indicators for population groups with fewer than 500 individuals are not very reliable.

Figure 10: Labour Force Participation, Employment and Unemployment Rates (%), Ages 15 to 64 years, Parry Sound District and Northeast Ontario, 2011



Note: Missing bars indicate that data was not available.

Sources: Statistics Canada, Census of Canada 2011, and National Household Survey 2011, custom tabulation.

## Size and Composition of the Future Labour Force

To forecast the future labour force in the Parry Sound District and Northeastern Ontario, this study uses detailed population projections along with information regarding labour force participation rates for men and women in different age groups. It is assumed that participation rates during the projection period (out to 2041) stay constant at their 2011 level. Different assumptions regarding participation rates would alter the labour force estimates, but only to a limited extent. The main determinants of the future labour force are the size and age distribution of the population in each jurisdiction.

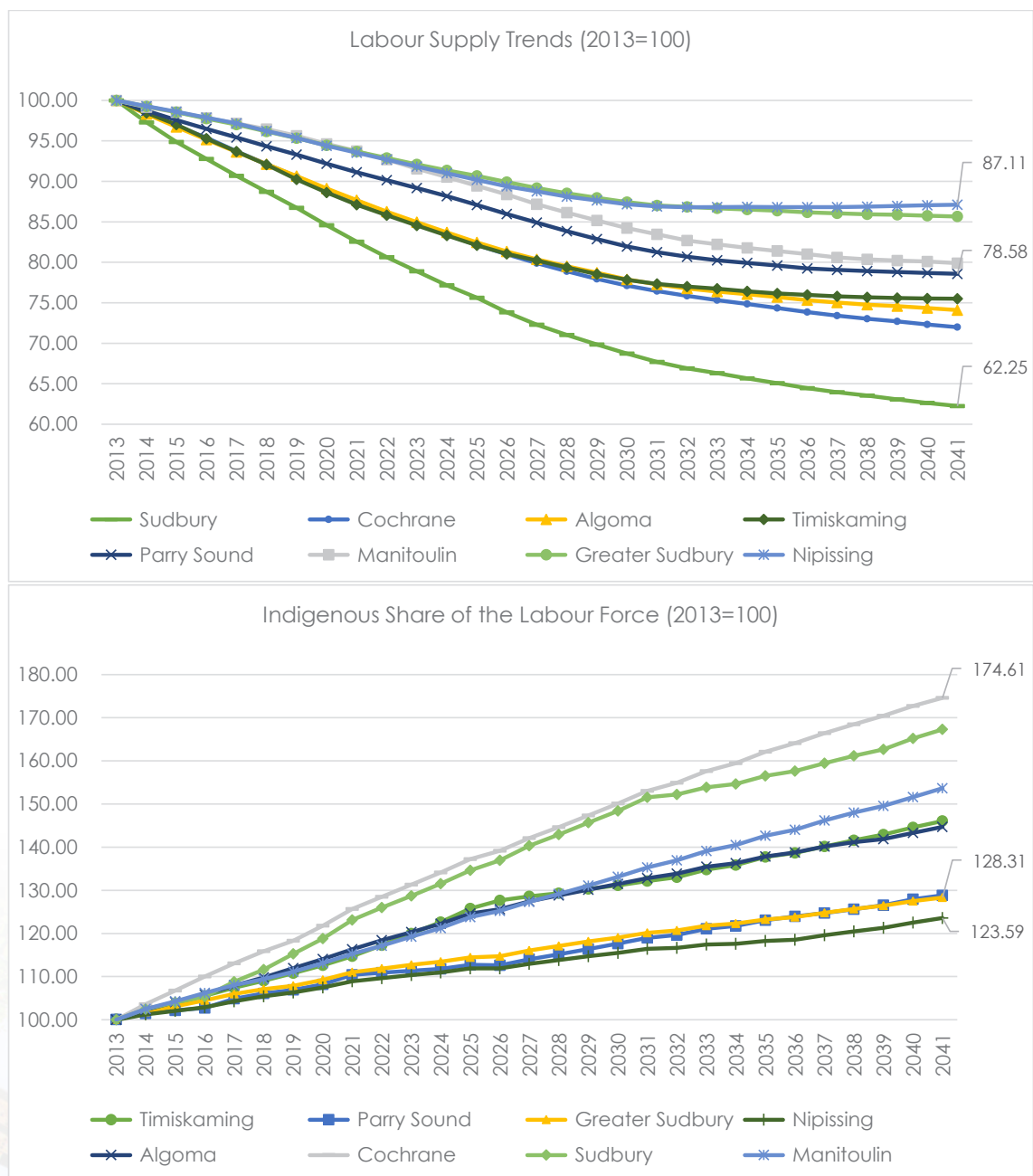
Table 4 and Figure 11 provide labour supply projections for the Parry Sound district and Northeast Ontario for the period from 2013 to 2041. The district's labour force is expected to decline by about 21 percent over the period, while the Indigenous labour force is expected to remain relatively constant. As a result, the share of the Indigenous labour force in the region is expected to increase from 6.25 percent in 2013 to 8.05 percent in 2041.

Table 4: Projected Labour Supply, Total and Indigenous, Parry Sound District and Northeastern Ontario, 2013–2041

Year	Parry Sound District			Northeast Ontario		
	Total Labour Force	Indigenous Labour Force	Indigenous Share (%)	Total Labour Force	Indigenous Labour Force	Indigenous Share (%)
2013	18,901	1,182	6.25	264,860	27,372	10.33
2014	18,661	1,183	6.34	261,674	27,632	10.56
2015	18,442	1,177	6.38	258,626	27,751	10.73
2016	18,235	1,171	6.42	255,558	27,874	10.91
2017	18,038	1,182	6.55	252,470	28,059	11.11
2018	17,830	1,182	6.63	249,289	28,142	11.29
2019	17,635	1,178	6.68	246,155	28,200	11.46
2020	17,423	1,178	6.76	242,891	28,327	11.66
2021	17,224	1,189	6.9	239,896	28,554	11.9
2022	17,037	1,181	6.93	236,948	28,590	12.07
2023	16,853	1,173	6.96	234,070	28,611	12.22
2024	16,664	1,165	6.99	231,333	28,627	12.37
2025	16,458	1,159	7.04	228,687	28,737	12.57
2026	16,251	1,144	7.04	226,057	28,594	12.65
2027	16,047	1,143	7.12	223,711	28,695	12.83
2028	15,846	1,141	7.2	221,550	28,741	12.97
2029	15,664	1,139	7.27	219,616	28,813	13.12
2030	15,489	1,139	7.35	217,788	28,885	13.26
2031	15,355	1,142	7.44	216,402	29,033	13.42
2032	15,251	1,141	7.48	215,433	29,087	13.5
2033	15,166	1,148	7.57	214,669	29,304	13.65
2034	15,106	1,149	7.61	213,998	29,374	13.73
2035	15,043	1,157	7.69	213,288	29,586	13.87
2036	14,980	1,161	7.75	212,569	29,671	13.96
2037	14,944	1,165	7.79	211,992	29,880	14.09
2038	14,917	1,171	7.85	211,538	30,067	14.21
2039	14,895	1,178	7.91	211,198	30,240	14.32
2040	14,873	1,189	8	210,792	30,497	14.47
2041	14,853	1,196	8.05	210,397	30,706	14.59

Source: Author's estimates based on Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).

Figure 11: Future Supply of Labour, Total and Indigenous Share, Northeastern Ontario Districts, 2013–2041



Source: Author's estimates based on Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).

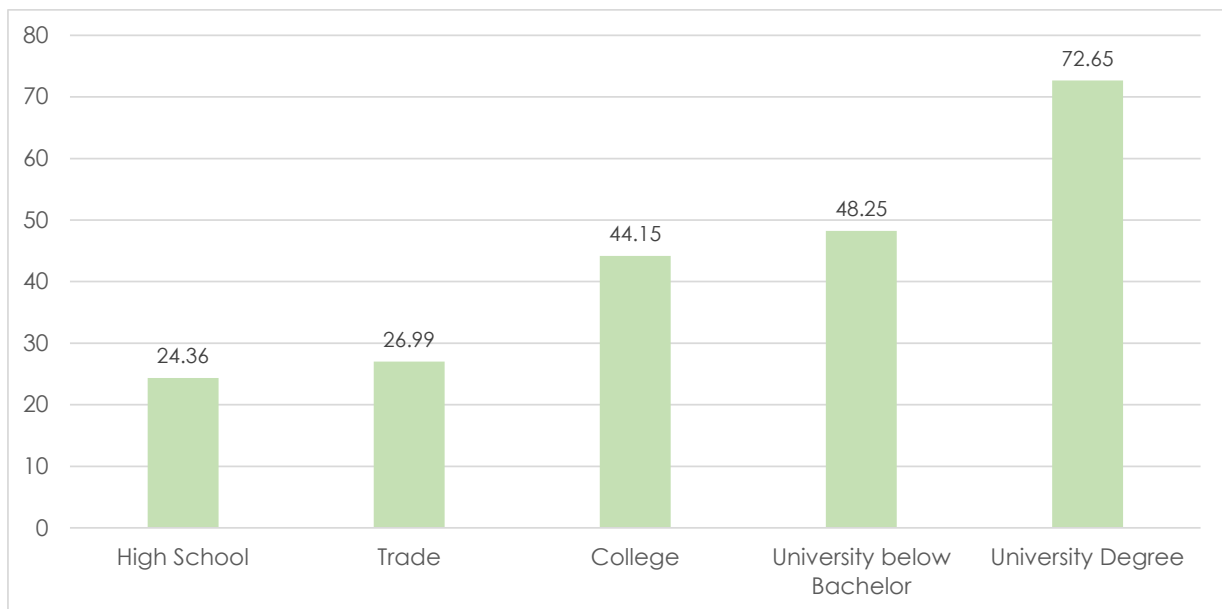
# Productivity and the Human Capital Composition of the Workforce in Parry Sound District and Northeastern Ontario

Productivity growth is directly linked to the human capital composition of the workforce. Human capital is defined as the stock of knowledge, skills and abilities embodied in individuals that directly affects their level of productivity. Since knowledge and skills are acquired through education and experience, investing in human capital represents an avenue through which the Parry Sound district can enhance productivity and minimize the impact of its declining labour force.

To estimate the human capital composition of the regional workforce, one needs to specify and measure a proxy for human capital that also reflects and incorporates a measure of productivity of the workforce in the district and Northeastern Ontario. To obtain such an index, this study first estimated a standard earnings model using the 2006 census micro-data file.<sup>7</sup> This study used data pertaining to all working Canadians between the ages of 15 and 64 who were not attending school and whose employment earnings were greater than \$1,000 and less than \$1 million. The benchmark or reference group is those with less than a high school diploma.

The estimated return-to-schooling coefficients (Figure 12) show the increased earnings, compared to the reference group, of obtaining different levels of education. Therefore, they represent the average rate of return to schooling at the national level. For example, obtaining a high school diploma increases a person's earnings by 24.4 percent above the earnings of those without a high school diploma. Similarly, obtaining a trade or college diploma increases earnings by 27.0 and 44.1 percent respectively. A university degree increases earnings by 72.6 percent. The return to schooling estimates reflect higher productivity resulting from an increased level of education. In short, the return to education increases as the level of schooling rises, reflecting higher earnings commensurate with higher productivity as the level of education increases.

Figure 12. The Return to Education (%), by Level of Educational Attainment, Canada, 2006



Note: Persons with an education who do not have a job are not included.

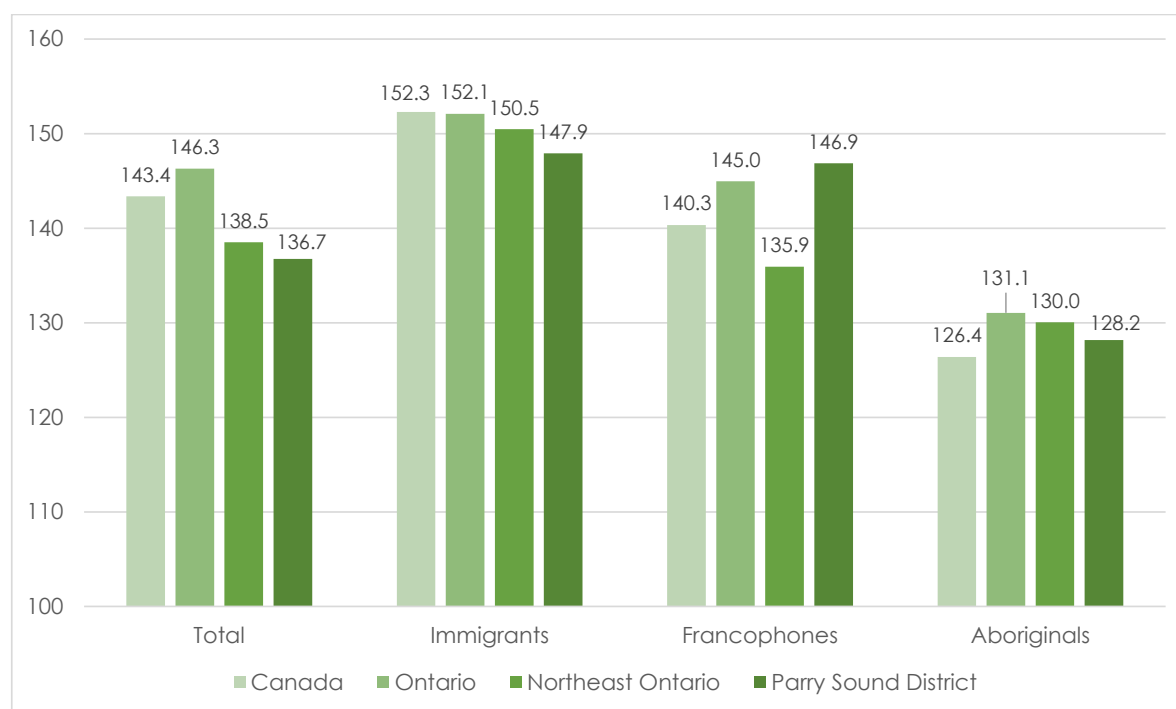
Source: Author's estimates based on Statistics Canada's 2006 Census Microdata file.

<sup>7</sup> The earnings model is of the form:  $\ln Wage = \alpha + \sum \beta_i S_i + \sum \delta_j X_j + \epsilon_i$ , where  $S_i$  are the highest level of schooling,  $X_j$  are other control variables which include age categories, marital status, etc. and  $\epsilon_i$  is an error term.

This study then used the estimated return-to-schooling coefficients as weights to calculate a weighted average index of the share of individuals aged 15 to 64 with different levels of schooling for each of the districts in Northeastern Ontario.<sup>8</sup> Figure 13 shows estimated human capital indices for working-age Indigenous people, immigrants, Francophones and the total population in Canada, Ontario, Northeastern Ontario and the district of Parry Sound.<sup>9</sup> The estimated indexes range from 100 if none of the area's residents have completed high school to about 200 if all residents have obtained a university degree.

As Figure 13 shows, the human capital composition of the working-age population in the Parry Sound district is below that in Northeastern Ontario, Ontario and Canada. Meanwhile, the human capital indexes for Francophones in the district are higher than in Ontario and Canada, and notably higher than the total working-age population across all jurisdictions. The immigrant population in the district also has relatively high levels of human capital. In addition, the indexes for the Indigenous labour force, while below the rest of the population, are higher in the district compared to Canada, but below regional and provincial levels.

Figure 13. Human Capital Index for the Working-Age Population, Canada, Ontario, Northeastern Ontario and Parry Sound District, 2011



Source: Author's estimates based on Statistics Canada's 2006 Census Microdata file.

8  $HCI = \exp\{\sum \beta_i \cdot S_i \text{ shares}\}$ , where HCI stands for Human Capital Index, exp stands for exponential, and  $S_i$  shares are the share of the population ages 15 to 64 with  $S_i$  level of education in a given census subdivision. The formulation of the human capital measure is based on R.E. Hall and C.I. Jones (1999), "Why Do Some Countries Produce So Much More Output per Worker than Others?" Quarterly Journal of Economics 114 (1, 1999): 83–116. See also Francesco Caselli, "Accounting for Cross-Country Income Differences", First Draft, November 2003.

9 Note that the human capital indexes reported here are numerically different from the ones reported in my previous report since I have used return to education or productivity measure in Canada as a benchmark in calculating the above indexes where Ontario was the benchmark in my previous report. Using Canada as a benchmark has an advantage of making the indexes comparable to other provinces as well.

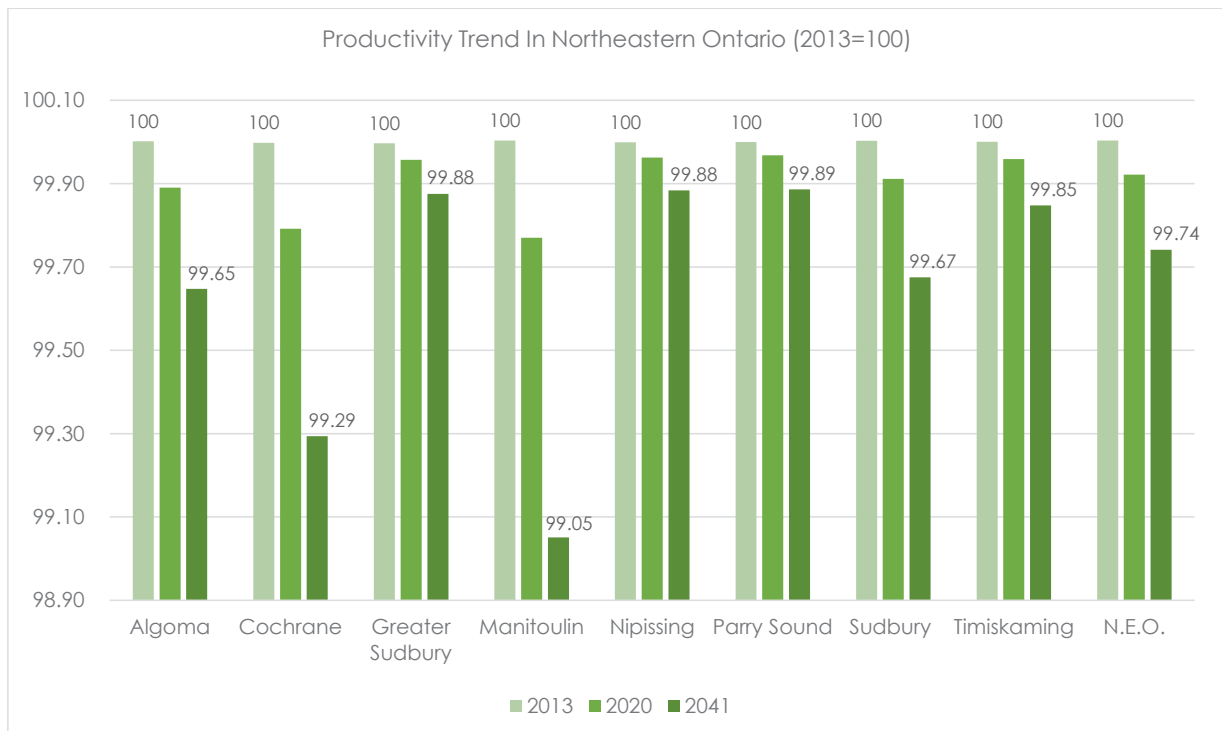


## A Perfect Storm: Declining Labour Supply and Labour Productivity in Parry Sound District

Earlier, this study identified two important demographic trends in the district of Parry Sound. First, the working-age population is declining; as a result, the supply of labour is expected to decline over the coming years. Second, a growing Indigenous labour force potentially could offset that trend, but the human capital composition of the Indigenous workforce is lower than the rest of the population, so if the current situation continues, future labour productivity will decline.

To estimate the human capital composition of the future regional workforce, this study combined the labour force projections with the human capital indexes for various segments of the workforce. As Figure 14 shows, that if the current level of educational achievement continues, the human capital composition of the workforce will decline in the coming years in both Parry Sound district and across Northern Ontario, however this district is expected to decline at a slower rate than all other districts in Northeastern Ontario. This index is positively correlated with labour productivity, labour income and output in the region.

Figure 14. Human Capital Composition of the Workforce in Northeastern Ontario Districts, 2013–2041



Source: Author's estimates based on Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).



The declining supply of labour and declining labour productivity in the Parry Sound district is only half of the story. Technological changes and the emergence of the knowledge economy have altered the requirements of the labour market. Various studies suggest that, by 2031, about 80 percent of the workforce need to have post-secondary credentials such as an apprenticeship, college or university degree. Currently, 70 percent of the new jobs and an average of 63.4 percent of all jobs require some post-secondary credential.<sup>10</sup> Based on various studies by the Ontario Ministry of Education, Human Resources and Skills Development Canada, the British Columbia Ministry of Skills, Training and Education,

the British Columbia Ministry of Advanced Education and Labour Market Development and other government agencies, Miner Management Consultants provides estimates of the percentage of new jobs that will require post-secondary education in the coming years (Figure 15). Yet, as Figure 16 shows, the skill levels of the prime-working-age population in the Parry Sound district are lower than the skill levels in Ontario and Canada for the total population, while the Indigenous population has skills levels near provincial levels and higher than national levels. Importantly, however, the present skill level in the district overall are well-below the current estimated skill requirements of about 63.4 percent.

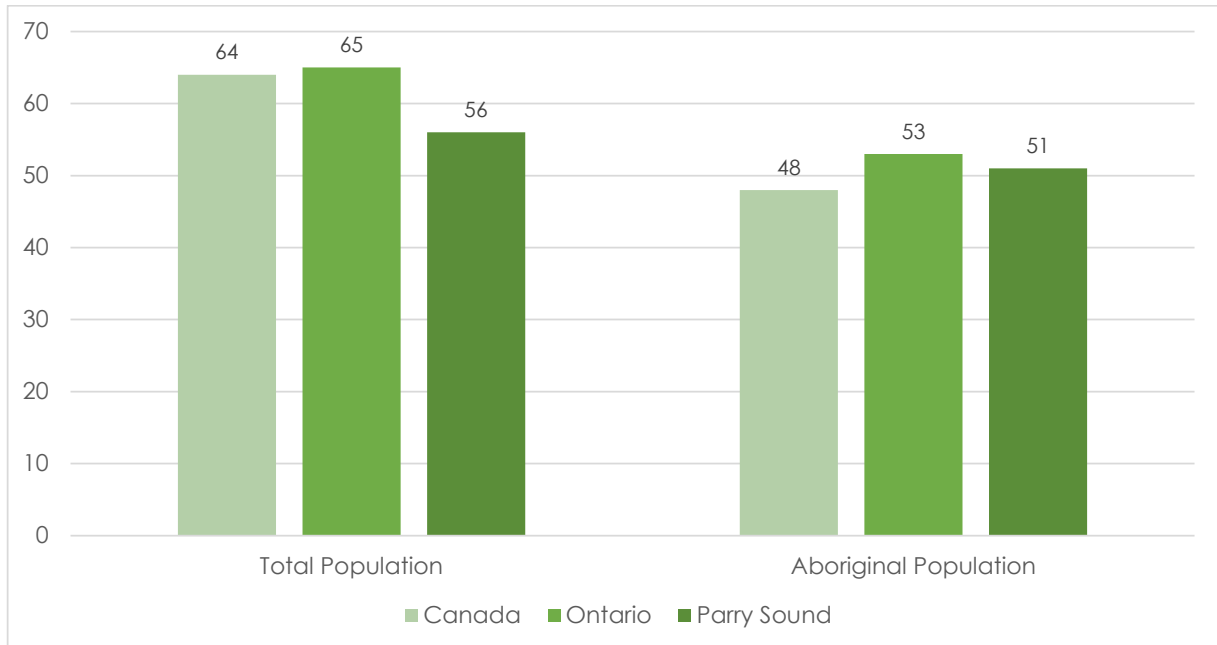
Figure 15. Percentage of Jobs Requiring Post-Secondary Education, Canada, 2006–2031



Source: Rick Miner, "People without Jobs, Jobs without People: Canada's Future Labour Market" (Toronto: Miner Management Consultants, 2010).

10 Miner Management Consultants, 'Ontario's Labour Market Future- People without Jobs, Jobs without People', February 2010.

Figure 16: Percentage of the Labour Force Ages 25–64 with Postsecondary Credentials, Parry Sound District, Ontario and Canada, 2011



Source: Author's estimates based on Statistics Canada, Census of Canada 2011, and National Household Survey 2011, custom tabulation.

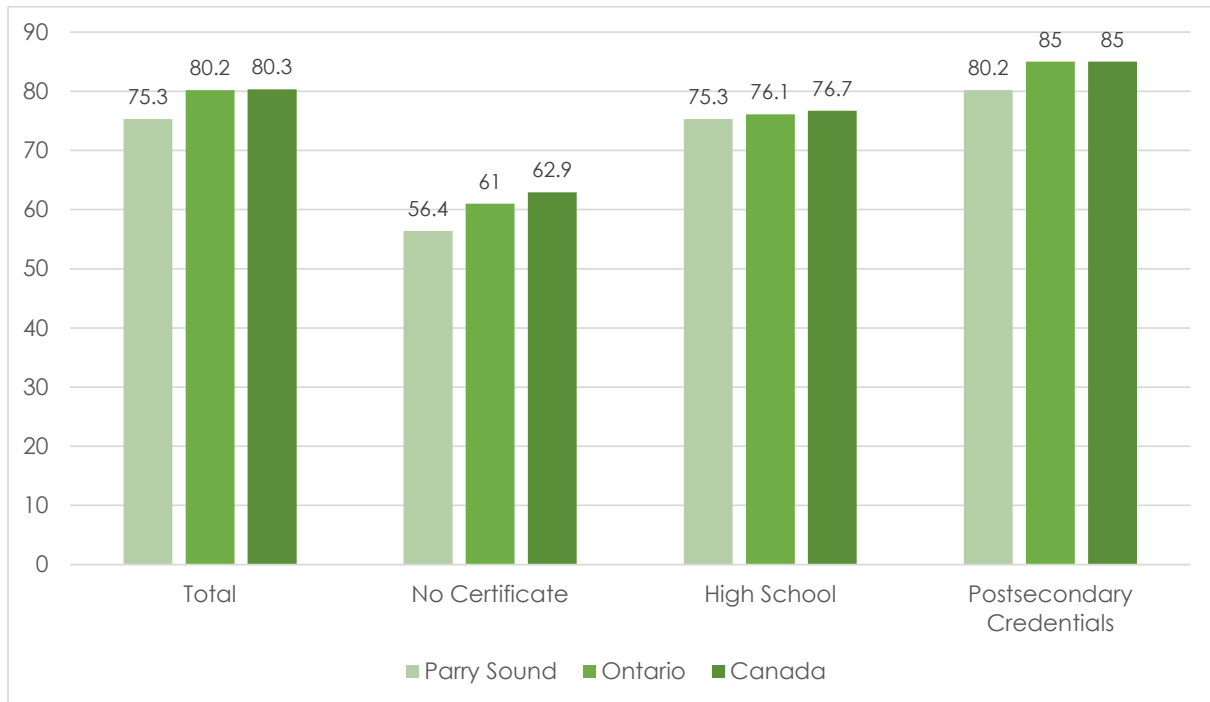
Since the Indigenous labour force will account for a growing share of the Parry Sound district's future workforce, it is vital for the social and economic viability of the region to adopt education policies that enable this segment of the labour force to meet the requirements of the future labour market.

Does the level of skills affect labour market performance – that is, the likelihood of employment, labour force participation and unemployment rates? Figure 17 shows that a higher skill level increases the likelihood of participation in the workforce. In the Parry Sound district in 2011, the participation rate of the prime working age population (25-64) without a high school diploma was 56.4 percent compared to 75.3 percent for those with a high school diploma and 80.2 percent for those with postsecondary credentials. Figure 17 also shows that total labour force participation rates in this district lag behind the provincial and national averages.

Similarly, as shown in Figure 18, the average unemployment rate among those without a high school diploma was 12.8 percent compared to 12.1 percent for those with a high school diploma and 7.9 percent for those with a postsecondary credentials. Overall, the total unemployment rate in 2011 in the Parry Sound district was 9.7 percent, which was notably higher than in Ontario and Canada.

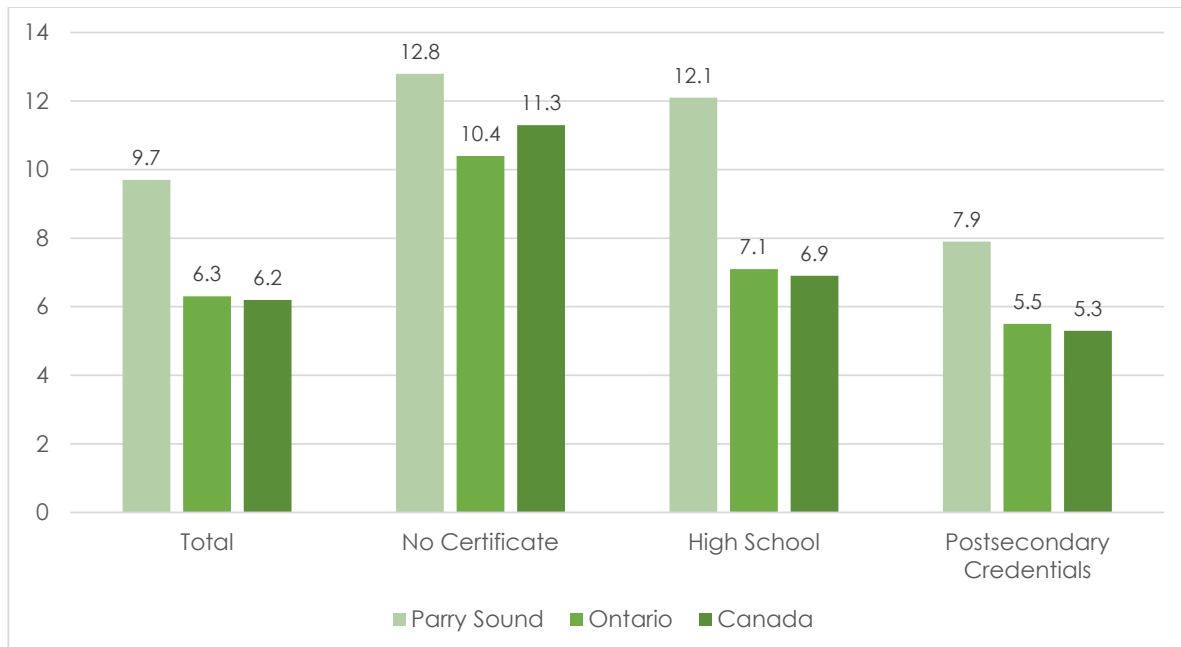
The employment rate – defined as the percentage of the prime working age population who are employed – was 49.3 percent for those without a high school diploma, which increases to 66.3 percent for those with a high school diploma and 73.9 percent for those with a postsecondary credential (Figure 19). Again, the employment rates in the district lag behind the provincial and national averages.

Figure 17: Labour Force Participation Rate by Level of Educational Attainment (%), Canada, Ontario and Parry Sound District, 2011



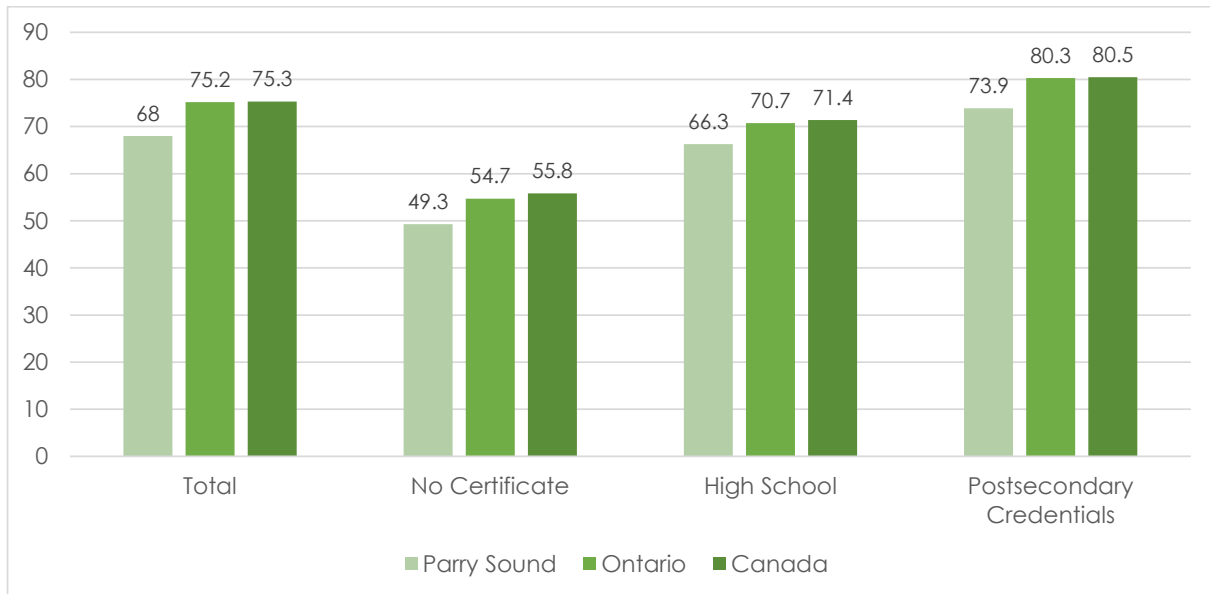
Source: Author's calculations based on Statistics Canada, Census of Canada 2011, and National Household Survey 2011, custom tabulation.

Figure 18: Likelihood of Unemployment by Highest Level of Schooling (%), Canada, Ontario and Parry Sound District, 2011



Source: Author's calculations based on Statistics Canada, Census of Canada 2011, and National Household Survey 2011, custom tabulation.

Figure 19: Labour Force Employment Rate by Level of Educational Attainment (%), Canada, Ontario and Parry Sound District, 2011



Source: Author's calculations based on Statistics Canada, Census of Canada 2011, and National Household Survey 2011, custom tabulation.

In short, individuals who do not have post-secondary credentials have a higher likelihood of non-participation in labour force and face a greater probability of unemployment, and these probabilities will only increase in the coming years. To the extent that the skill level of the workforce in the Parry Sound district is below the estimated requirement needed for emerging occupations, the region will face a situation of workers with qualifications that do not match the existing jobs and of jobs that cannot find qualified workers — Miner's "People without Jobs, Jobs without People." Even if markets adjust to bring labour demand and supply into balance, the social impact of having many unemployable people in the region will be enormous.

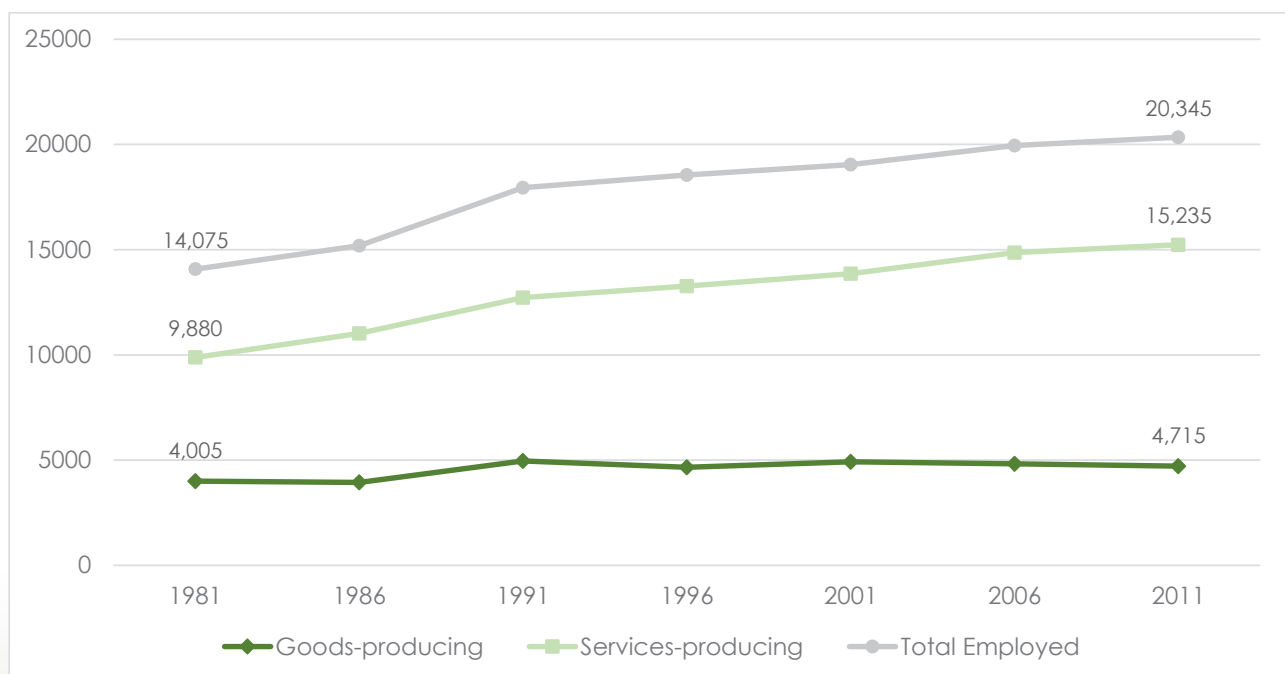
The above evidence suggests that one potential solution to the district's declining workforce size and productivity is to promote higher education through increased access to services, especially for the Indigenous population who experience lower levels of educational achievement. One of the benefits of investing in education is a lower likelihood of unemployment and dependency on government transfer payments. Additionally, regardless of what happens with agreements such as the Trans-Pacific Partnership, labour will continue to be more mobile among various countries, increasing the importance of achieving higher levels of education.

In this case, workers in Northern Ontario will not only be competing with other workers in Ontario and Canada, but will be facing competition from other countries as well. To the extent that the skill level of the workforce in the Parry Sound district is below the estimated skill requirement needed for the emerging occupations, the region will face workers whose qualifications do not match the existing jobs and jobs that cannot find qualified workers.

## The Consequences of Shifting the Composition of the Employed Labour Force in Parry Sound District

The structure of the Parry Sound district's workforce has been changing due to a population that is simultaneously declining and aging. At the same time, the industrial and occupational composition of the employed workforce is shifting due to changing market conditions. As a result, the size and industrial makeup of the employed workforce has changed over the past three decades. Using data from various Censuses of Canada as well as the 2011 NHS, Figure 20 and Table 5 show the changing industrial composition of the employed workforce in the district.

Figure 20: Employment in the Goods- and Services-Producing Industries, Parry Sound District, 1986–2011



Source: Author's calculations based on Statistics Canada, Census of Canada (various years), and National Household Survey 2011, custom tabulation.

Since the early-1980s, the goods-producing sector has remained relatively constant. From 2001 to 2011, total employment in agriculture, forestry, fishing and hunting sector declined by 55 percent, while manufacturing employment declined by 24 percent and utilities declined by 10 percent. On the other hand, these declines were partly offset by 32 percent employment growth in the mining and oil and gas sector and 28 percent growth in construction jobs.

Alternatively, employment in the services-producing sector has grown by 45 percent since the early-1980s. Since 2001, services-producing industries that experienced notable growth included public administration (55 percent), educational services

(37 percent), real estate and rental and leasing (27 percent), health care and social assistance (23 percent), professional, scientific and technical services (23 percent), and information and cultural industries (23 percent). On the other hand, industries that experienced a decline during this period included management of companies (100 percent), accommodation and food services (18 percent), and transportation and warehousing (16 percent). Importantly, the growth of public administration, education and health care, which are referred to as quasi-base sectors since they are financed from outside the region, have been key industries in driving employment growth since 2001.

Table 5: Industrial Composition of the Employed Workforce Ages 15 and Older, Parry Sound District, 2001–2011

	2001	2006	2011	Employment change from 2001 to 2011	
	(number)			(number)	(percent)
<b>Total</b>	<b>19,045</b>	<b>19,950</b>	<b>20,345</b>	<b>1,300</b>	<b>6.83</b>
Industry - not applicable	275	265	390	115	41.82
All industries	18,770	19,690	19,955	1,185	6.31
<b>Goods-producing sector</b>	<b>4,920</b>	<b>4,830</b>	<b>4,715</b>	<b>-205</b>	<b>-4.17</b>
Agriculture, forestry, fishing and hunting	650	400	295	-355	-54.62
Mining, quarrying, and oil and gas extraction	95	75	125	30	31.58
Utilities	150	190	135	-15	-10.00
Construction	2,125	2,260	2,710	585	27.53
Manufacturing	1,900	1,905	1,450	-450	-23.68
<b>Services-producing sector</b>	<b>13,860</b>	<b>14,855</b>	<b>15,235</b>	<b>1,375</b>	<b>9.92</b>
Wholesale trade	415	585	440	25	6.02
Retail trade	2,715	2,670	2,565	-150	-5.52
Transportation and warehousing	1,065	1,110	890	-175	-16.43
Information and cultural industries	215	335	265	50	23.26
Finance and insurance	290	315	315	25	8.62
Real estate and rental and leasing	315	465	400	85	26.98
Professional, scientific and technical services	520	600	640	120	23.08
Management of companies and enterprises	10	15	0	-10	-100.00
Administrative and support, waste management and remediation services	585	820	660	75	12.82
Educational services	1,145	1,325	1,565	420	36.68
Health care and social assistance	2,215	2,320	2,725	510	23.02
Arts, entertainment and recreation	455	665	540	85	18.68
Accommodation and food services	2,020	1,765	1,650	-370	-18.32
Other services (except public administration)	905	845	1,045	140	15.47
Public administration	990	1,020	1,535	545	55.05

Source: Author's calculations based on Statistics Canada, Census of Canada (various years), and National Household Survey 2011, custom tabulation.



The changing industrial composition of the workforce has also been accompanied by a shift in the occupational structure of the employed workforce (Table 6). Since 2001, some occupations experienced notable growth, including occupations in education, law and social, community and government services (87 percent), health occupations (24 percent), and natural and applied sciences and related occupations (24 percent). On the other hand, occupations that experienced decline included natural resources, agriculture and related production occupations (37 percent), occupations in manufacturing and utilities (15 percent), and sales and service occupations (13 percent).

Table 6: Employed Workforce by Occupation, Parry Sound District, 1996–2011

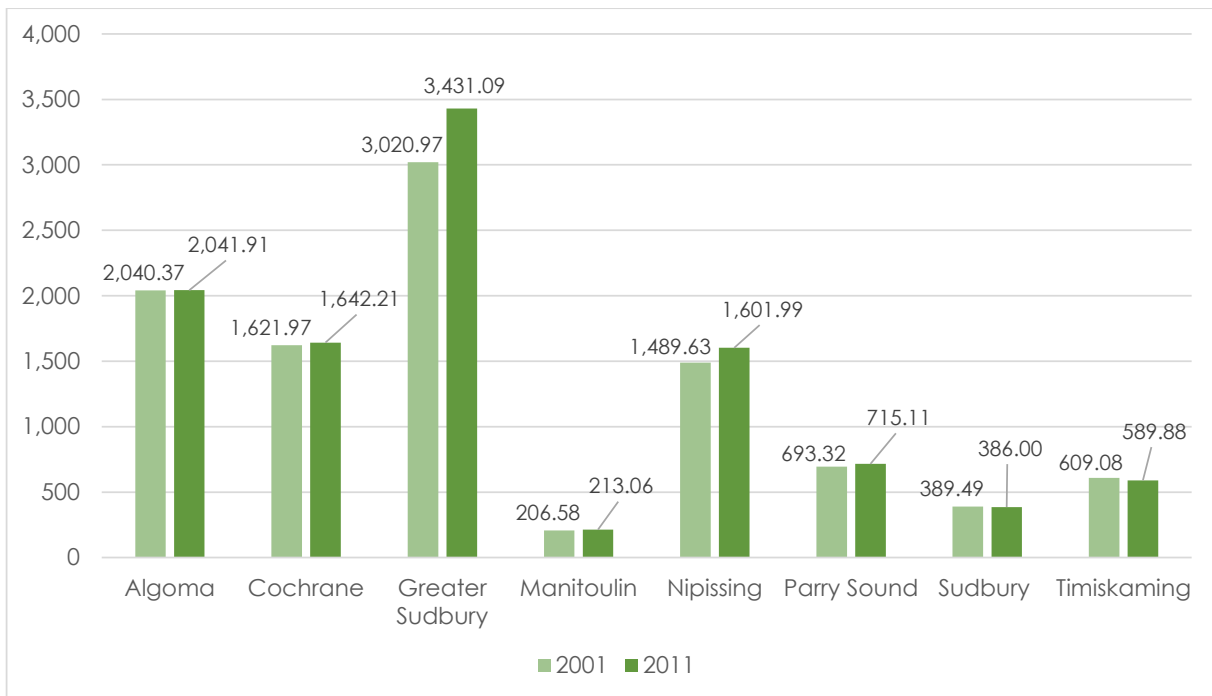
	1996	2001	2006	2011	Employment change from 2001 to 2011	
	(number)				(number)	(percent)
<b>Total</b>	<b>18,545</b>	<b>19,045</b>	<b>19,955</b>	<b>20,350</b>	<b>1,305</b>	<b>6.85</b>
Occupation - not applicable	600	275	260	390	115	41.82
All occupations	17,945	18,770	19,690	19,955	1,185	6.31
Management occupations	1,810	2,270	2,125	2,245	-25	-1.10
Business, finance and administration occupations	2,340	2,330	2,640	2,515	185	7.94
Natural and applied sciences and related occupations	600	600	650	745	145	24.17
Health occupations	980	1,105	1,160	1,375	270	24.43
Occupations in education, law and social, community and government services	1,370	1,260	1,610	2,350	1,090	86.51
Occupations in art, culture, recreation and sport	230	390	375	480	90	23.08
Sales and service occupations	5,205	5,125	5,110	4,460	-665	-12.98
Trades, transport and equipment operators and related occupations	3,620	3,775	4,235	4,335	560	14.83
Natural resources, agriculture and related production occupations	750	810	725	510	-300	-37.04
Occupations in manufacturing and utilities	1,040	1,110	1,055	940	-170	-15.32

Source: Statistics Canada, Census of Canada (various years), and National Household Survey 2011, custom tabulation.

## Labour Income and Gross Domestic Product in Parry Sound District

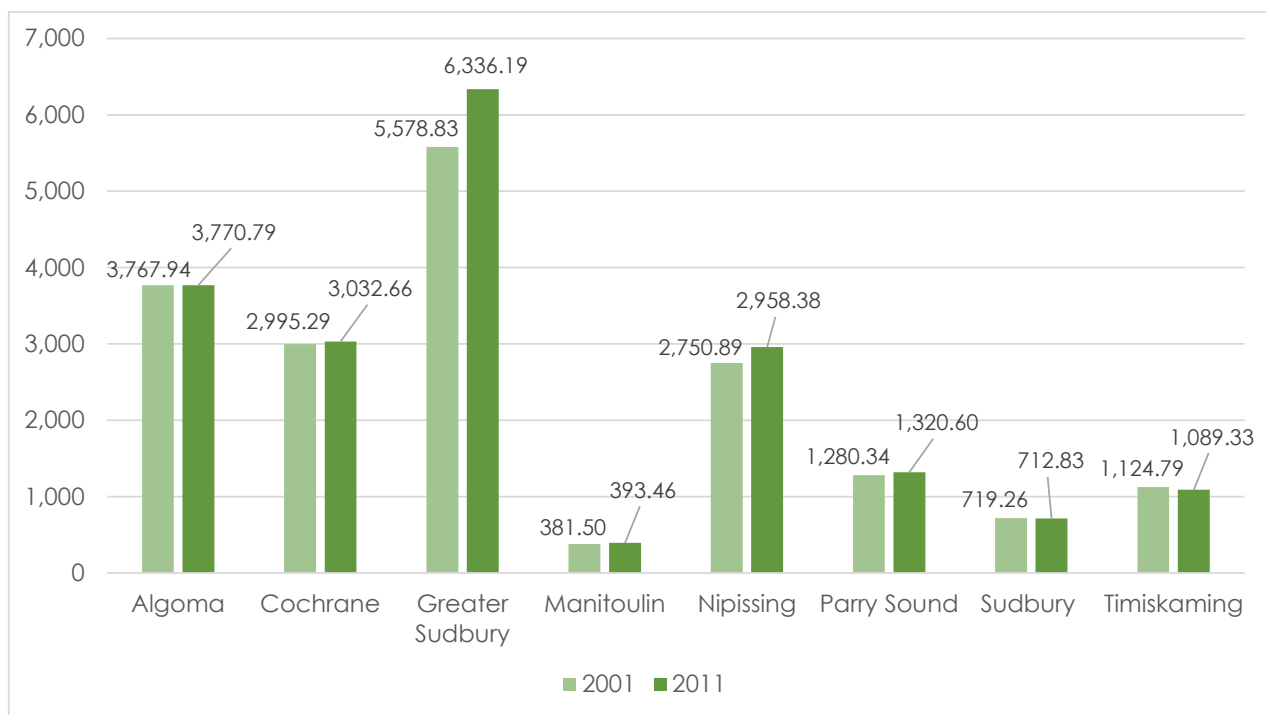
The changing size and composition of the district's employed workforce has also impacted total labour income and output in district. Using detailed employment by occupation and industry data along with average employment earnings by industry and occupation, this study estimated trends in total labour income in 2010 dollars in the district of Parry Sound, shown in Figure 21. Labour income is influenced by size, productivity and the occupational composition of the employed workforce. From 2001 to 2011, labour income in the Parry Sound district increased by 3.2 percent from \$693 million to \$715 million, compared with a 6.7 percent increase in Northeastern Ontario during the same period. Assuming that the share of labour in regional gross domestic product (GDP) stayed relatively constant during 2001-2011, it is evident that the district also experienced positive growth in GDP, from \$1.28 to \$1.32 billion, as show in Figure 22.

Figure 21: Total Labour Income (millions of 2010 dollars), Northeastern Districts, 2001–2011

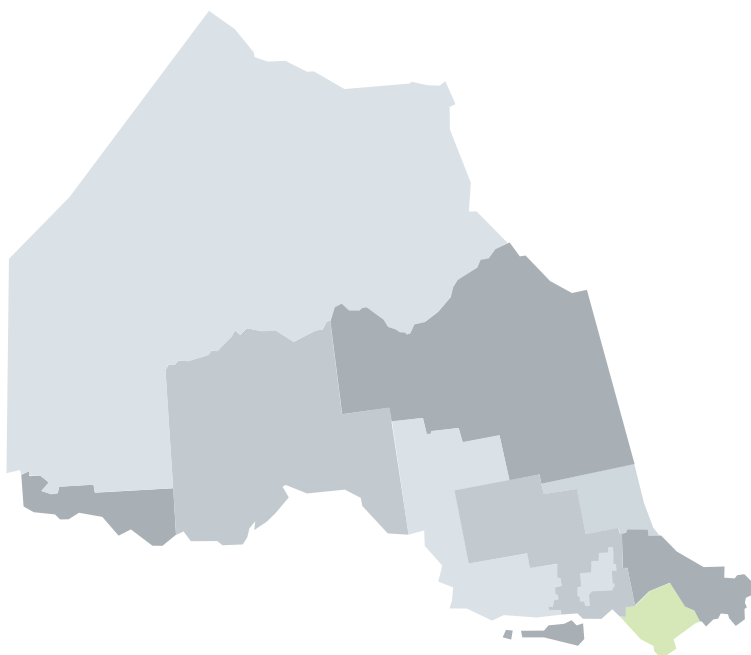


Author's calculations based on Statistics Canada, Census of Canada (various years), and National Household Survey 2011, custom tabulation.

Figure 22: Regional Gross Domestic Product (millions of 2010 dollars), Northeastern District, 2001–2011



Author's calculations based on Statistics Canada, Census of Canada (various years), and National Household Survey 2011, custom tabulation.



## Recommendations

### 1. Work to build Parry Sound District as a centre for Francophone success in Northern Ontario

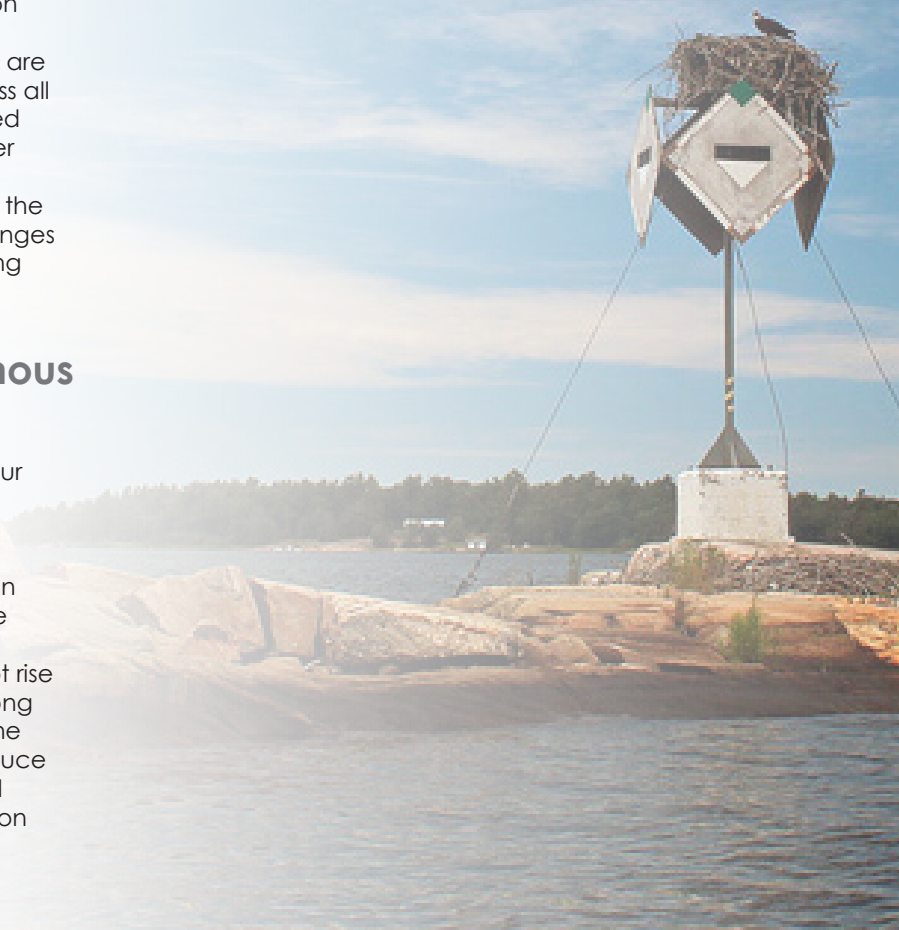
Ontario wants to see its Francophone population grow and prosper. Parry Sound district has a strong Francophone population from which to build and an enviable track record of educational achievement and employment success for Francophones compared to other districts in the North. Indeed, Francophones in the Parry Sound district have higher levels of education and educational achievement than Francophones in other districts and across Ontario. The district could expand its role as a leader in this effort to attract and support northern Francophones.

### 2. Market the district of Parry Sound as a desirable destination for secondary migration in Ontario

The Parry Sound district has experienced positive intraprovincial migration for the past decade as more individuals from Ontario have moved into the region from other parts of the province. Meanwhile, the human capital indexes for immigrants in the district are higher than the total working-age population across all jurisdictions. With significant numbers of unemployed and underemployed new Canadians in the Greater Toronto Area, and Parry Sound district's relative proximity to this area, there is a real opportunity for the Parry Sound district to address its population challenges by playing to its demonstrated strength in supporting newcomer success.

### 3. Continue to build on Indigenous partnerships

The human capital indexes for the Indigenous labour force in the district of Parry Sound, while below the rest of the population, are higher than in Canada. Given that the Indigenous share of the population as a whole is increasing, and given that their human capital composition is lower than total working-age population in the Parry Sound district, future labour productivity will decrease if education levels do not rise among this segment of the population. There is strong evidence showing that higher skill levels increase the likelihood of participation in the workforce and reduce unemployment rates in the Parry Sound district and addressing these issues for the Indigenous population will have positive benefits for the entire region.



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## About Northern Policy Institute

*Northern Policy Institute is Northern Ontario's independent think tank. We perform research, collect and disseminate evidence, and identify policy opportunities to support the growth of sustainable Northern Communities. Our operations are located in Thunder Bay, Sudbury, and Sault Ste. Marie. We seek to enhance Northern Ontario's capacity to take the lead position on socio-economic policy that impacts Northern Ontario, Ontario, and Canada as a whole.*

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