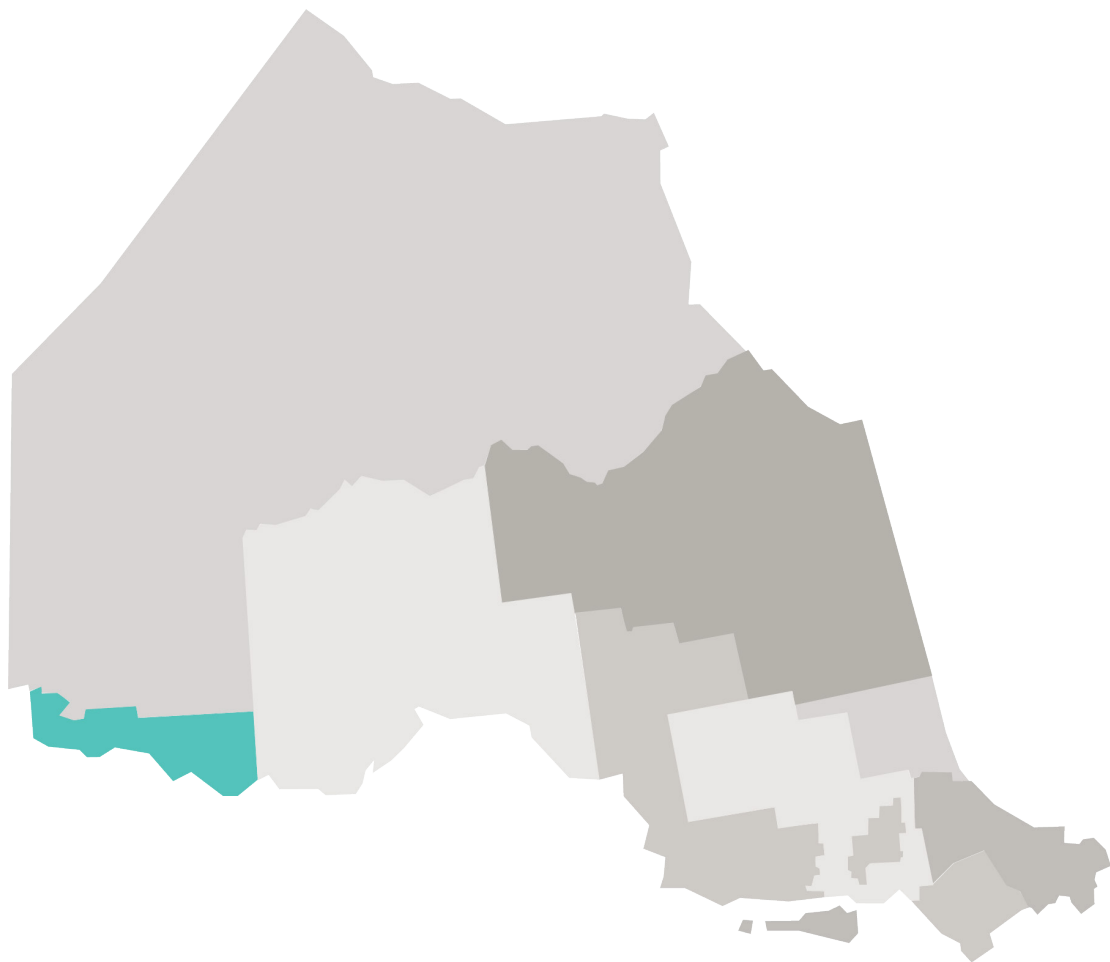




Research Paper No. 13 | January 2017 | 4/11

Northern Projections Human Capital Series - RAINY RIVER 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).



Jonathan Coulman - Executive Director
www.awic.ca
Algoma District



FAR NORTHEAST TRAINING BOARD (FNETB)
your **Local Employment Planning Council**

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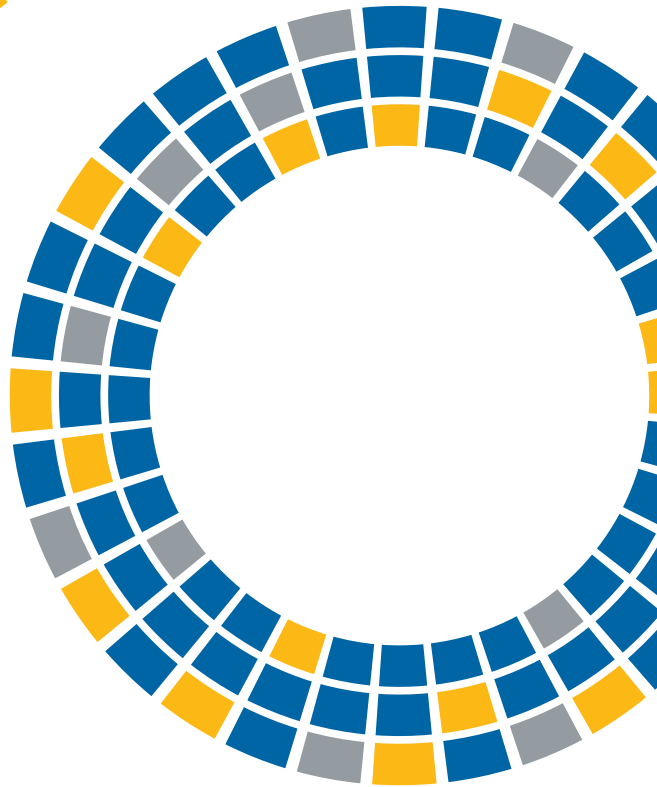
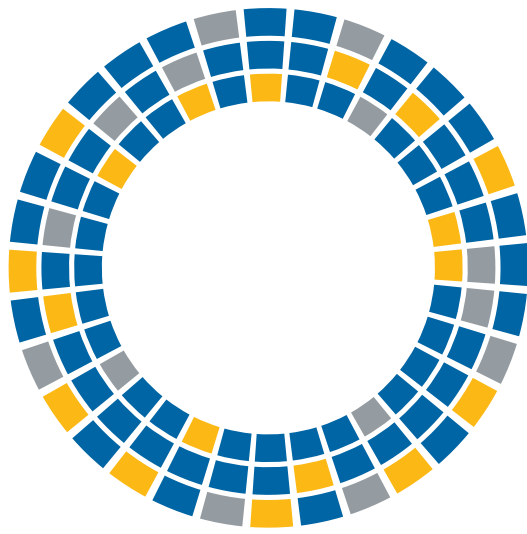


**Sudbury
& Manitoulin**
Workforce Planning
Planification en
main-d'oeuvre

Reggie Caverson - Executive Director
www.planningourworkforce.ca
Greater Sudbury, Sudbury & Manitoulin Districts



This project is funded in part by the Government of Canada and the Government of Ontario.



Who We Are

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

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President & CEO: Recommends strategic direction, develops plans and processes, and secures and allocates resources to achieve it.

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.

Research Advisory Board: A group of academic researchers who provide guidance and input on potential research directions, potential authors, and draft studies and commentaries. They are Northern Policy Institute's formal link to the academic community.

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

Authors and Research Fellows: Provide independent expertise on specific policy areas as and when needed.

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This report was made possible through the support of our partners Lakehead University, Laurentian University and Northern Ontario Heritage Fund Corporation and the financial support of Northern Ontario Workforce Planning Boards. Northern Policy Institute expresses great appreciation for their generous support but emphasizes the following: The views expressed in this report are those of the authors and do not necessarily reflect the opinions of the Institute, its Board of Directors and its supporters, Northern Ontario Workforce Planning Boards, the government of Ontario, or the government of Canada. Quotation with appropriate credit is permissible.

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

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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

Rainy River district's total population is expected to decline from 20,166 in 2013 to 17,362 in 2041.

The continuing aging of Rainy River's population is also evident, with the share of individuals under age 20 expected to decline from 24.5 percent in 2013 to 21.7 percent in 2041. The share of working-age people (ages 20 to 64) is projected to decline from 57.4 percent in 2013 to 45.5 percent in 2041, and the share of seniors is expected to rise from 18 percent in 2013 to 32.8 percent in 2041.

The education levels of the prime-working-age population in Rainy River district is lower than the skill levels in Ontario and Canada for the total population. Closing this gap will be imperative.

Rainy River district has experienced intra-provincial out-migration for the last decade and a half. Intra-provincial migration refers to the movement of individuals to another region within the province.

There has been a continuous shift away from the goods-producing sector dominated by private businesses to the service-producing sector, a large portion of which is publicly funded. The structure of Rainy River district's workforce has been changing due to a population that is simultaneously declining and aging.

The decline in the goods producing sector has not only affected the level of output, but also resulted in lower average earnings in the district. Total employment income and GDP declined in the Rainy River district by about 11.2 percent from 2001 to 2011, due partly to declining employment and partly to the changing occupational structure of the employed workforce.

The most recent information available (Taxfiler, 2014) suggests this income decline has been stabilizing in recent years and incomes are rising once more.

Introduction

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

The report begins by examining demographic change in Rainy River 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 Rainy River 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 Rainy River 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 requirements of the workforce.

The report then moves on to discuss the consequences of shifting the composition of the employed labour force in the district 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 Rainy River district.

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

Data Sources

Most of the data used in this report are based on detailed information regarding individual census subdivisions (CSDs) in Rainy River district and

Northwestern 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 is based on data made available by the Ontario Ministry of Finance.

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 the Northwest and the Northeast. 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 includes 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. However, 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.¹

¹ The analysis in this study is based on these jurisdictional and geographical parameters

Demographic Change: The Past Three Decades

Rainy River district covers 15,485 square kilometers and recorded a population of 20,370 in 2011. It has a population density of 1.3 persons per square kilometer which is well below that of Ontario (14.1). According to Statistics Canada's census of population, Rainy River declined by 12 percent from 1996 to 2011 (Figure 1).

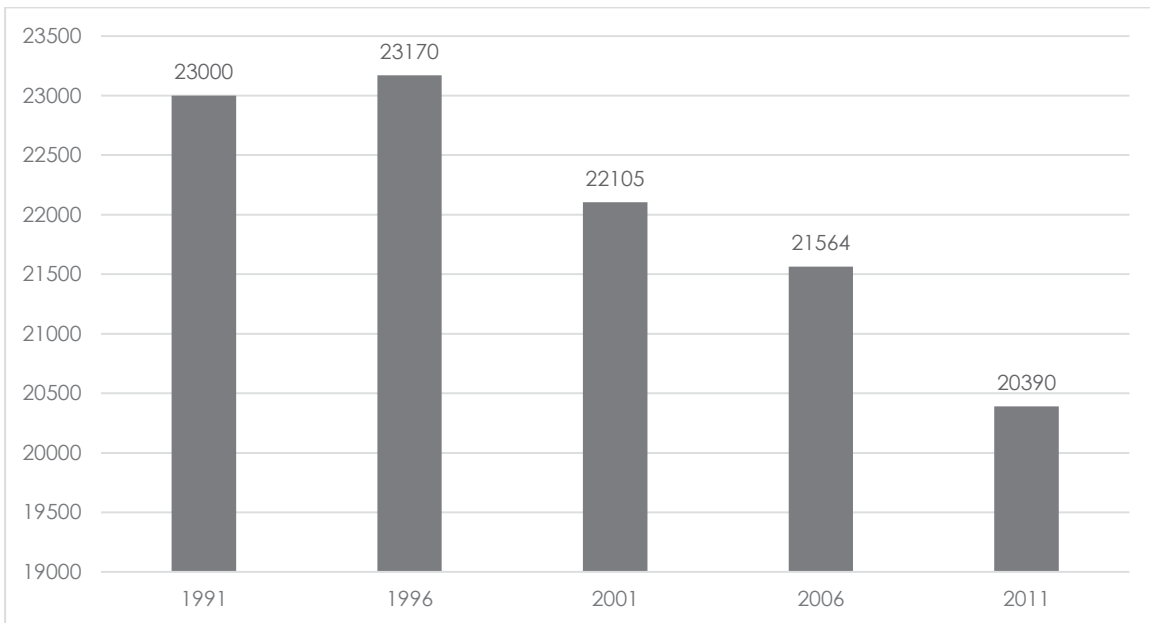
In terms of net migration flows, Rainy River district has experienced intra-provincial out-migration for the last decade and a half. Intra-provincial migration refers to the movement of individuals to another region within the province. Interprovincial migration, known as the movement of individuals from one province to another, has also been negative during this period. As a result, net domestic out-migration in 2014-15 resulted in 140 individuals who moved out of the region (Figure 2). In 2014-15, 8 immigrants moved into Rainy River, or 4 for every 10,000 people (Figure 3). This equates to roughly 16 times fewer immigrants attracted per capita than to Ontario as whole during 2014/2015.

In addition to out-migration and low levels of immigration in the region, rising life expectancy has resulted in the aging of Rainy River'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 30.9 percent in 1991 to 25.6 percent in 2011, while the share of seniors rose from 14.1 percent in 1991 to 17.3 percent in 2011 (Figure 3). During the same period, the share of individuals between the ages of 20 to 44 declined from 36.2 to 26.6 percent, while individuals aged 45 to 64 increased from 18.8 to 30.5 percent.

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 of Rainy River 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.

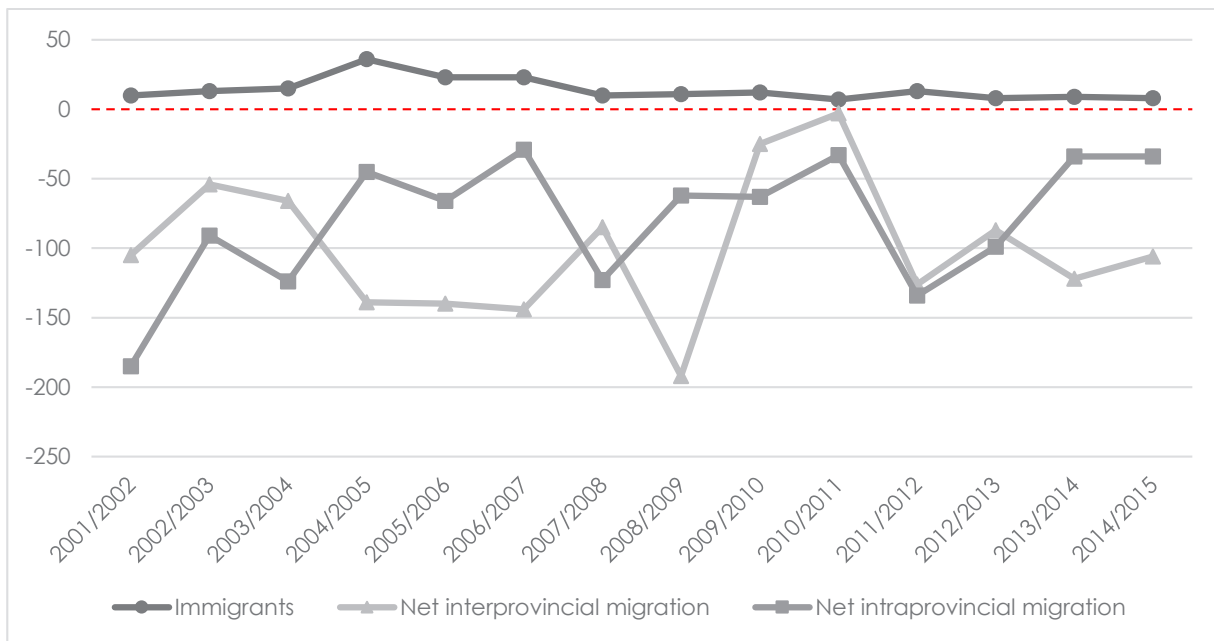


Figure 1: Population, Rainy River District, 1991–2011



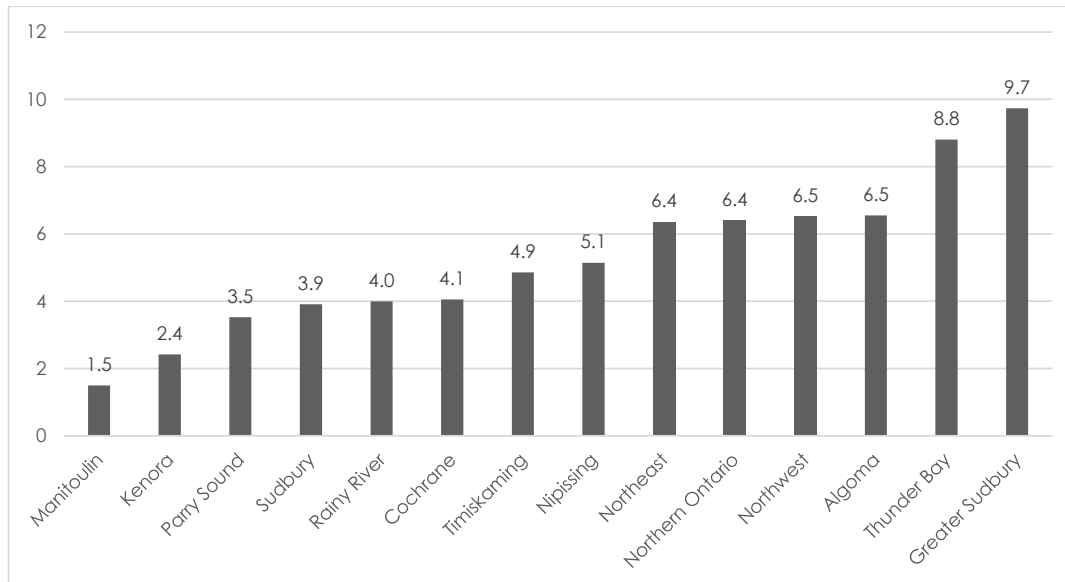
Sources: Statistics Canada, Census of Canada; and idem, National Household Survey.

Figure 2: Net Domestic Migration and Immigration, Rainy River 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, tables 051-0062 and 051-0063.

Population Trends in Urban and Rural Areas

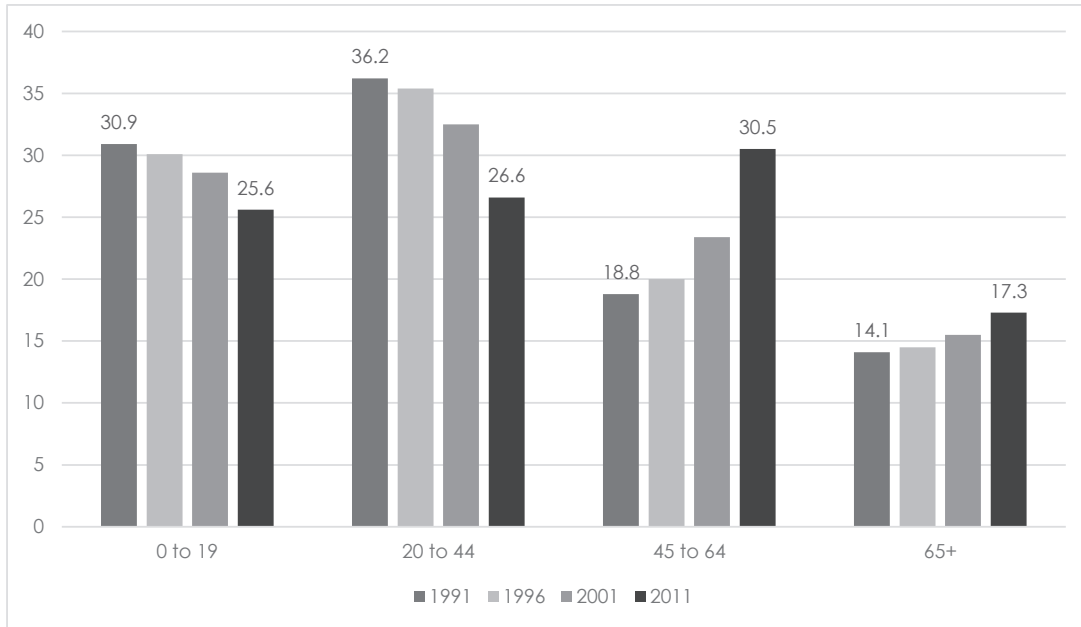
There are many ways to define rural and urban areas. The term "rural" is intuitively understood as an area with low population concentration dispersed at a low density, while "urban" is understood as a place with high population concentration at a high density. This intuitive understanding is the basis for Statistics Canada's approach to defining an urban area as having a population of at least 1,000 and a density of 400 or more people per square kilometre.⁷ An alternative and perhaps more appropriate definition, proposed by Statistics Canada and based on the commuting flows between different areas, is "rural and small towns" (RSTs) as opposed to "large urban centres." It defines urban regions as including all Census Metropolitan Areas and Census Agglomerations (CAs), and both CMAs and CAs include the total population of neighbouring census subdivisions (CSDs). According to this definition, therefore, rural and small town areas are defined as areas that are not part of any CMA or CA. RSTs are further divided into five types of zones based on the degree of influence that large urban centres have on them, as measured by the percentage of people living in an RST who commute to work in an urban centre.⁸

Using the above definition, Figure 5 shows that all of Rainy River district's population live in rural areas. Of the rural population, in 2011, only 3 percent live in areas with a moderate link to an urban centre, while 86 percent live in areas with a weak link to an urban centre, and 11 percent live in remote regions. Of the Indigenous population in the district, 82 percent live in relatively remote areas with a weak link to an urban centre, and 11 percent live in very remote regions with no link to an urban centre. These are mostly Indigenous people living on-reserve. Of the francophone and immigrant population in the district, roughly 85 percent live in relatively remote areas with only a weak link to an urban centre.

⁷ One problem with this definition is that it can lead to the misleading identification of rural and urban areas. Based on this definition, for example, the Attawapiskat First Nation on James Bay is classified as an urban area.

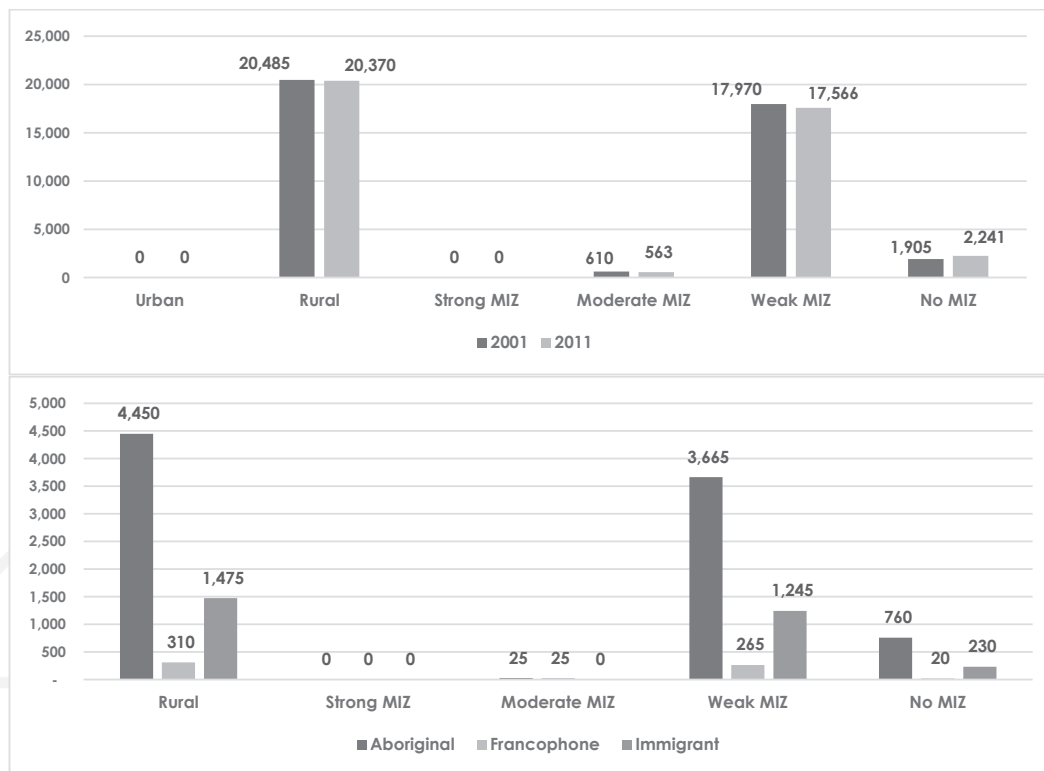
⁸ For a definition of the various zones, see Roland Beshiri and Jiaosheng He, "Immigrants in Rural Canada," Rural and Small Town Canada Analysis Bulletin 8, no. 2 (2009): 3.

Figure 4. Age Distribution of Population, Rainy River District, 1991–2011



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

Figure 5. Distribution of Total, Francophone, Immigrant, and Indigenous Populations by Urban and Rural Zones, Rainy River District, 2001 and 2011



Note: MIZ stands for Metropolitan Influenced Zone.

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 Rainy River 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 510 persons greater than those reported by the 2011 census, having been adjusted for net under coverage by the census, especially of the region's Indigenous population in Rainy River 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.

Third, the government's mortality estimates at the census division level were developed using a ratio methodology. The ministry 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.²

Population Projections

Rainy River district's total population is expected to decline from 20,166 in 2013 to 17,362 in 2041 (Table 1). The continuing aging of Rainy River'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 24.5 percent in 2013 to 21.7 percent in 2041. The share of working-age

people (ages 20 to 64) is projected to decline from 57.4 percent in 2013 to 45.5 percent in 2041, and the share of seniors is expected to rise from 18 percent in 2013 to 32.8 percent in 2041.³ As the next part of the study will show, the decline in the working-age population has important implications for the future availability of a qualified labour force in the district.

Editor's Note

Gold Flakes in the Rainy River Region

There is a greater sense of optimism in the Rainy River region as several significant new developments have occurred since Census 2011. New Gold in Emo, Rentech and Ontario Power Generation in Atikokan have all expanded. Housing and other infrastructure investments are occurring that bode well for the future attractiveness of the region. It is hoped that these "green shoots" (maybe we should call them gold flakes in this case) will result in changes to the current growth trend when 2016 Census data is released over the course of 2017. Perhaps sometime in 2018 we may be able to report on these positive changes. Indeed, using taxfiler data up to 2014, we see some support for this optimism. The number of people in Atikokan reporting employment income has, for example, risen from a low of 1630 people in 2013 to 1670 individuals in 2014. Still lower than the 1750 employed earners filing taxes in 2010. Average employment income has also risen slightly. The number of people reporting employment insurance income has also fallen, from a high of 570 people in 2008 to 360 recipients in 2014. Of course, this decline is likely made up of not only those who have found a job but also those who are no longer eligible for EI benefits as well as those who have left the region. These changes are not yet sufficient to vary the projections included in this report, but as confidence grows and if investment continues, it is to be hoped that future instalments will be able to tell a more positive story.

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

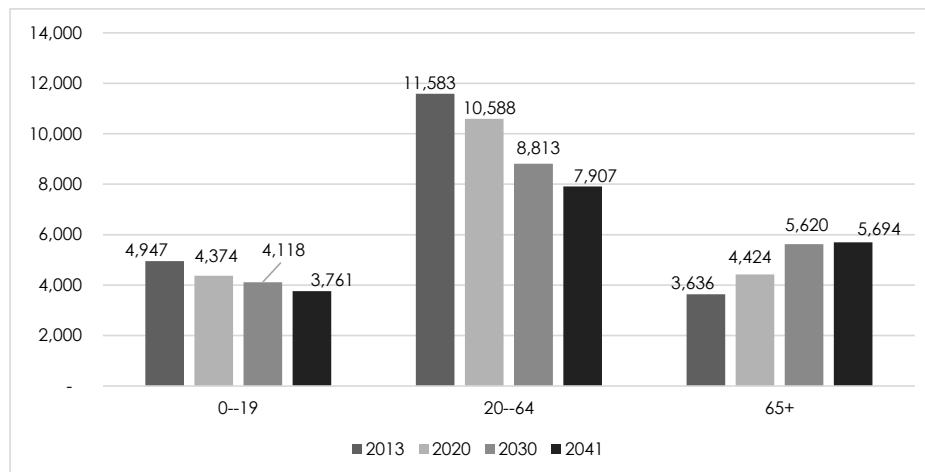
3 Focus is placed on individuals aged 20 to 64 as the core working-age population since there has been a declining trend in the labour force participation rate of Ontario's youth in recent years primarily due to a significant rise in enrolment rates in postsecondary education institutions.

Table 1: Population Projections by Age Group, Rainy River District, 2013–2041

Year	0--19	20--44	45--64	65+	Total
2013	4,947	5,432	6,151	3,636	20,166
2014	4,846	5,356	6,086	3,731	20,019
2015	4,730	5,306	6,006	3,841	19,883
2016	4,649	5,219	5,931	3,962	19,761
2017	4,555	5,192	5,842	4,065	19,654
2018	4,485	5,124	5,788	4,166	19,563
2019	4,436	5,059	5,687	4,292	19,474
2020	4,374	5,001	5,587	4,424	19,386
2021	4,337	4,950	5,474	4,539	19,300
2022	4,325	4,868	5,342	4,683	19,218
2023	4,305	4,828	5,166	4,839	19,138
2024	4,264	4,810	5,006	4,979	19,059
2025	4,229	4,788	4,858	5,104	18,979
2026	4,194	4,773	4,690	5,241	18,898
2027	4,185	4,741	4,531	5,358	18,815
2028	4,163	4,709	4,414	5,443	18,729
2029	4,148	4,650	4,317	5,526	18,641
2030	4,118	4,616	4,197	5,620	18,551
2031	4,077	4,591	4,130	5,659	18,457
2032	4,043	4,566	4,064	5,687	18,360
2033	3,997	4,554	4,002	5,707	18,260
2034	3,973	4,516	3,949	5,718	18,156
2035	3,947	4,475	3,896	5,731	18,049
2036	3,921	4,429	3,838	5,752	17,940
2037	3,893	4,371	3,828	5,735	17,827
2038	3,862	4,321	3,788	5,742	17,713
2039	3,829	4,271	3,763	5,736	17,599
2040	3,796	4,219	3,739	5,727	17,481
2041	3,761	4,181	3,726	5,694	17,362

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

Figure 6: Population Projections by Age Group, Rainy River 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, Rainy River District, 2013–2041

Rainy River	0 to 19	20 to 64	65+
2013	24.53	57.44	18.03
2020	22.56	54.62	22.82
2030	22.20	47.51	30.29
2041	21.66	45.54	32.80

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

Indigenous Population Projections

In making projections for the Indigenous population in Rainy River out to 2041, this study employs Northern Ontario's Demographic Forecasting Model, which is based on the Cohort Component method.⁴

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 510 omitted persons in Rainy River 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 (see figure 2) suggests there is relatively low mobility among the Indigenous population in the region. 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.⁵

Based on these assumptions, Table 3 and Figure 7 show that the Indigenous population in Rainy River is expected to increase from 4,895 in 2013 to 6,771 in 2041, a growth rate of about 38 percent. The number of individuals under the age of 20 is expected to increase slightly during this period, while working-age Indigenous people are expected to rise from 2,771 in 2013 to 3,704 in 2041. The number of individuals aged 65 and over are expected to rise from 308 in 2013 to 1,083 in 2041, and increase of over 250 percent.

The Indigenous population's share of total district's population is expected to increase from 24 percent in 2013 to 39 percent in 2041. The share of working-age Indigenous people (those ages 20 to 64) is expected to increase from 23.4 percent in 2013 to 46.8 percent in 2041 (Figure 8). The share of Indigenous seniors is expected to rise from 8.5 percent in 2013 to 19 percent in 2041.

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" (Rainy River, ON: Northern Ontario Policy Institute, 2015).

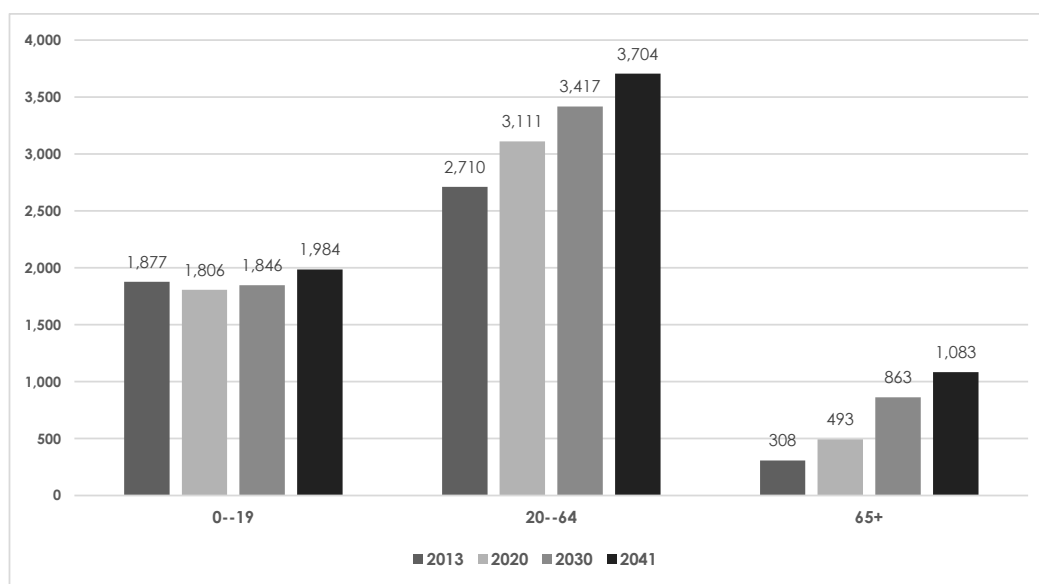
5 For additional discussion of these assumptions, see B. Moazzami, "It's What You Know (and Where You Can Go): Human Capital and Agglomeration Effects on Demographic Trends in Northern Ontario" (Rainy River, ON: Northern Ontario Policy Institute, 2015).

Table 3. Projected Indigenous Population, Rainy River District, 2013–2041

Year	0--19	20--44	45--64	65+	Total
2013	1,877	1,661	1,050	308	4,895
2014	1,857	1,702	1,075	332	4,966
2015	1,841	1,743	1,091	363	5,038
2016	1,824	1,781	1,117	389	5,111
2017	1,816	1,823	1,130	417	5,185
2018	1,813	1,861	1,149	437	5,260
2019	1,813	1,894	1,165	463	5,335
2020	1,806	1,935	1,176	493	5,410
2021	1,814	1,957	1,185	528	5,484
2022	1,801	2,006	1,176	575	5,559
2023	1,810	2,034	1,172	618	5,633
2024	1,822	2,057	1,169	659	5,707
2025	1,834	2,077	1,168	702	5,781
2026	1,849	2,096	1,169	738	5,852
2027	1,842	2,125	1,186	770	5,922
2028	1,848	2,158	1,179	806	5,992
2029	1,851	2,191	1,187	831	6,060
2030	1,846	2,237	1,180	863	6,126
2031	1,854	2,266	1,171	901	6,192
2032	1,874	2,288	1,170	923	6,256
2033	1,893	2,308	1,169	949	6,318
2034	1,910	2,303	1,195	972	6,379
2035	1,925	2,302	1,220	992	6,439
2036	1,938	2,306	1,238	1,016	6,497
2037	1,949	2,302	1,273	1,030	6,555
2038	1,959	2,291	1,319	1,042	6,611
2039	1,968	2,280	1,362	1,055	6,665
2040	1,976	2,272	1,402	1,068	6,719
2041	1,984	2,262	1,442	1,083	6,771

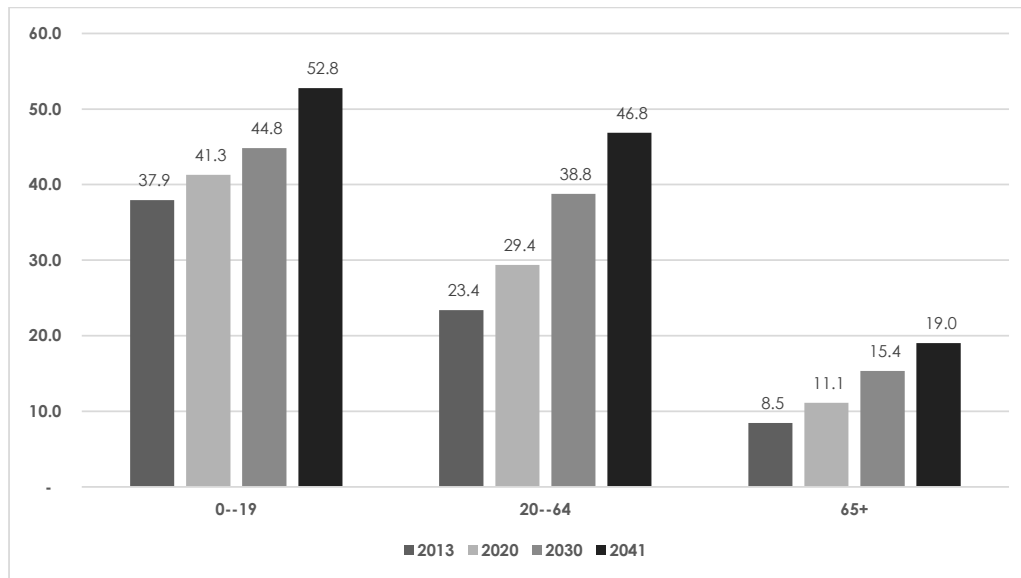
Source: Author's calculations based on Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).

Figure 7: Indigenous Population Projections by Age Group, Rainy River District, 2013–2041



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

Figure 8: Projections of the Share of the Indigenous Population, Rainy River District, 2013–2041



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

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 Rainy River 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 Rainy River's labour force.

hand, the unemployment rate declined both for men and women.

Labour force participation rates among the Indigenous population in Rainy River was generally lower and unemployment rates higher than the rest of the population (Figure 9). There was also a notable difference between the Indigenous labour force on-reserve and off-reserve, with the unemployment rate among the former at 23.6 and 16.5 percent in 2011 for men and women, respectively. In contrast, the unemployment rate among the off-reserve Indigenous workforce was much lower, at 11 percent for men.

Labour Market Trends

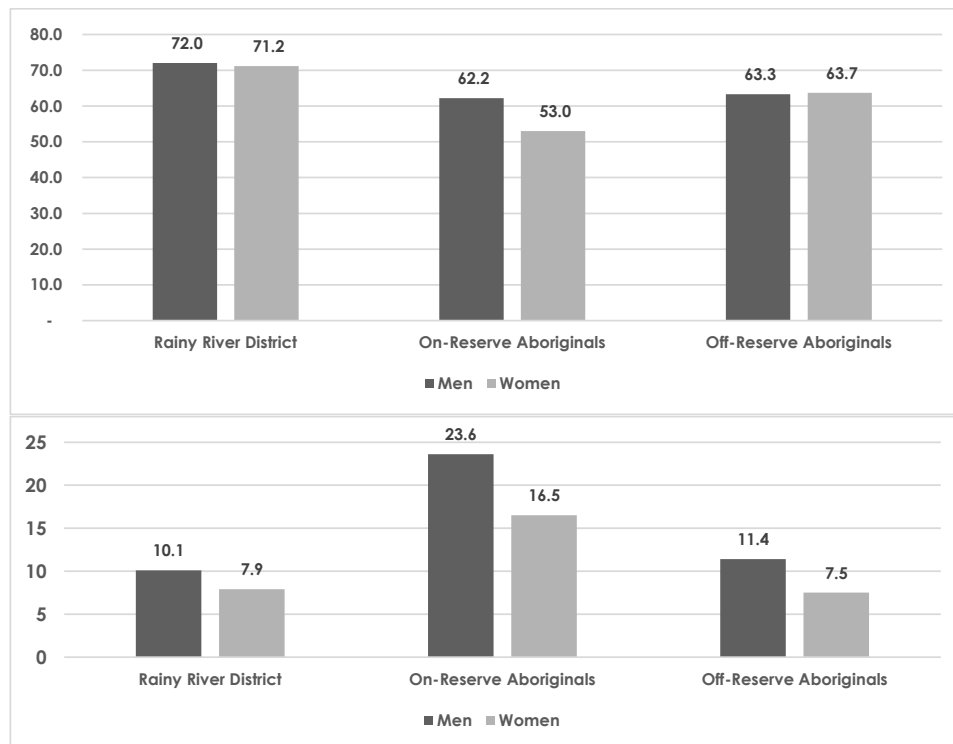
Table 4 and Figure 9 show labour market trends among the population ages 15 to 64 in the Rainy River district. As the table shows, both the total population and the labour force in the district declined between 2001 and 2011. Labour force participation and employment rates declined among men, but employment rates rose among women over the same period. On the other

Table 4: Labour Market Trends, Population 15 to 64 Years of Age, Rainy River District, 2001 and 2011

Labour Market Outcome	Men	Men	Women	Women
Rainy River District	2001	2011	2001	2011
Total population 15 to 64 years of age	6,965	6,475	6,925	6,510
In the labour force	5,695	4,665	4,960	4,635
Employed	5,115	4,195	4,515	4,265
Unemployed	580	470	445	360
Not in the Labour Force	1,275	1,815	1,965	1,880
Participation Rate	81.70	72.00	71.60	71.20
Employment Rate	73.40	64.80	65.30	65.60
Unemployment Rate	10.20	10.10	9.00	7.90
Indigenous	2001	2011	2001	2011
Total population 15 to 64 years of age	1,120	1,410	1,165	1,470
In the labour force	850	880	805	855
Employed	685	730	685	760
Unemployed	165	150	125	100
Not in the labour Force	275	530	350	615
Participation Rate	75.90	62.40	69.40	58.00
Employment Rate	61.20	51.80	59.10	51.50
Unemployment Rate	19.40	17.00	14.90	11.70

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

Figure 9: Labour Force Participation and Unemployment Rates, Rainy River, 2011



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

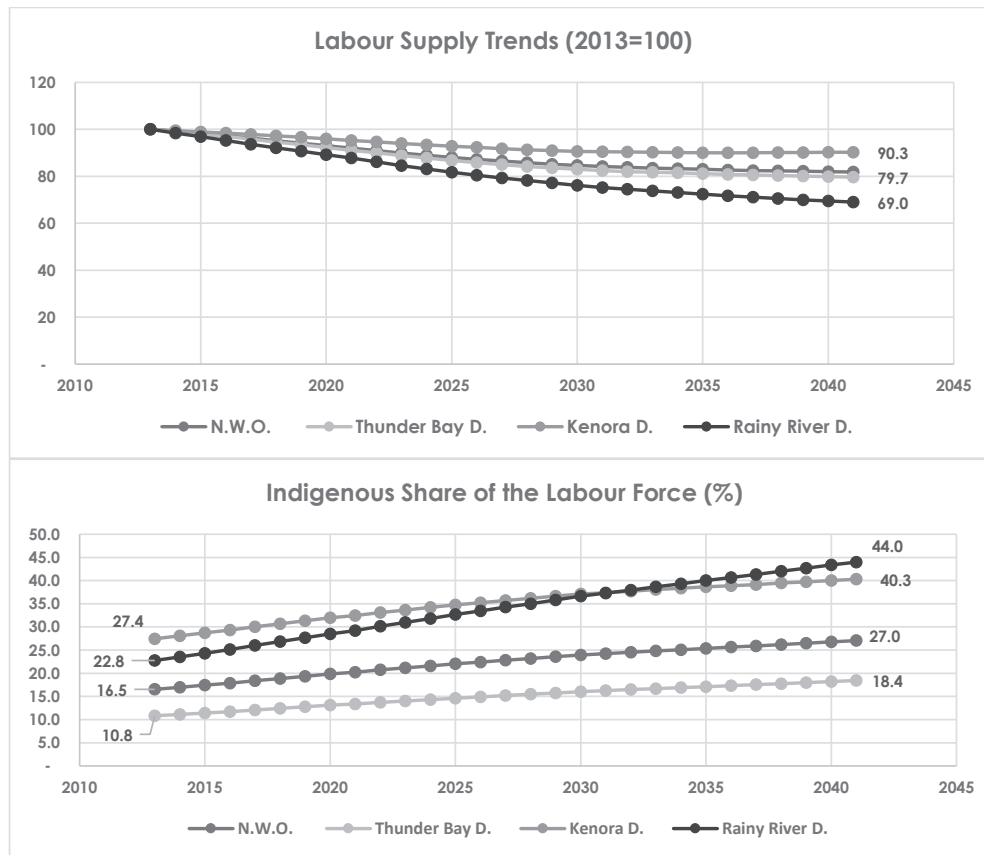
Size and Composition of the Future Labour Force

To forecast the future labour force in Rainy River District and Northwestern 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.

Figure 10 and Table 5 provide labour supply projections for Northwestern Ontario and Rainy River district for the period from 2013 to 2041. Rainy River district's labour force is expected to decline by about 31 percent over the period, while the Indigenous labour force is

expected to increase by about 33 percent. As a result, the share of Indigenous people in the total regional labour force is expected to increase from 22.8 percent in 2013 to 44 percent in 2041.

Figure 10: Future Supply of Labour, Total and Indigenous Share, Rainy River District and Northwest Ontario, 2013–2041



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

Table 5: Projected Labour Supply, Total and Indigenous, Rainy River District and Northwestern Ontario, 2013–2041

Year	Rainy River District			Northwest Ontario		
	Total Labour Force	Indigenous Labour Force	Indigenous Share (%)	Total Labour Force	Indigenous Labour Force	Indigenous Share (%)
2013	9,480	2,157	22.75	118,066	19,513	16.53
2014	9,327	2,196	23.54	117,057	19,863	16.97
2015	9,187	2,233	24.31	115,941	20,200	17.42
2016	9,032	2,268	25.11	114,821	20,511	17.86
2017	8,878	2,310	26.02	113,659	20,896	18.38
2018	8,737	2,346	26.85	112,368	21,218	18.88
2019	8,597	2,379	27.67	111,155	21,513	19.35
2020	8,457	2,409	28.49	109,865	21,790	19.83
2021	8,323	2,430	29.19	108,663	21,972	20.22
2022	8,164	2,462	30.16	107,446	22,267	20.72
2023	8,017	2,485	30.99	106,188	22,468	21.16
2024	7,879	2,508	31.83	105,063	22,674	21.58
2025	7,750	2,534	32.69	103,985	22,909	22.03
2026	7,632	2,552	33.44	102,983	23,079	22.41
2027	7,516	2,577	34.29	102,098	23,309	22.83
2028	7,422	2,596	34.98	101,264	23,485	23.19
2029	7,320	2,621	35.8	100,545	23,708	23.58
2030	7,214	2,644	36.65	99,887	23,923	23.95
2031	7,135	2,660	37.28	99,352	24,070	24.23
2032	7,066	2,682	37.96	98,929	24,284	24.55
2033	6,998	2,703	38.63	98,613	24,480	24.82
2034	6,931	2,723	39.28	98,313	24,664	25.09
2035	6,861	2,744	40	97,962	24,865	25.38
2036	6,794	2,763	40.67	97,608	25,048	25.66
2037	6,743	2,784	41.29	97,398	25,241	25.92
2038	6,687	2,809	42	97,219	25,474	26.2
2039	6,634	2,831	42.68	97,046	25,690	26.47
2040	6,583	2,856	43.38	96,808	25,920	26.77
2041	6,545	2,878	43.98	96,618	26,132	27.05

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

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 Rainy River 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 Rainy River and Northwestern Ontario.

To obtain such an index, this study first estimated a standard earnings model using the 2006 census micro-data file.⁶ 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 are those with less than a high school diploma.

The estimated return-to-schooling coefficients (Figure 11) 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.

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 Rainy River district and Northwestern Ontario.⁷ Figure 12 shows estimated human capital indexes for working-age Indigenous people, immigrants, francophones and the total population in Canada, Ontario, Northwestern Ontario and Rainy River.⁸ 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 12 shows, the human capital composition of the working-age population in Rainy River is below that in Northwestern Ontario, Ontario and Canada. Notably, the human capital indexes for francophones in Rainy River are both higher than any other comparator in Figure 12. Lastly, while human capital indexes for the Indigenous labour force are lower than that of Ontario, they are at national levels and higher than regional levels.

A Perfect Storm: Declining Labour Supply and Labour Productivity

Earlier, this study identified two important demographic trends in Rainy River. 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 total working-age population in the Rainy River district, 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 indices for various segments of the workforce. As Figure 13 shows, if the current level of educational achievement continues, the human capital composition of the workforce will decline in the coming years in both Rainy River district and Northwestern Ontario. This index is positively correlated with labour productivity, labour income and output in the region.

The declining supply of labour and declining labour productivity in Rainy River 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.⁹ 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 14). Notably, as Figure 15 shows, the education levels of the prime-working-age population in Rainy River district is lower than the education levels in Ontario and Canada for the total population. Closing this gap will be imperative.

Since the Indigenous labour force will account for a significant and growing share of Rainy River 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.

6 The earnings model is of the form: $\ln Wage = \alpha + \sum \beta_i S_i + \sum \gamma_i X_i + \epsilon_i$, where S_i s are the highest level of schooling, X_i s are other control variables which include age categories, marital status, etc. and ϵ_i is an error term.

7 $HCI = \exp\{\sum \beta_i \cdot S_i \text{ shares}\}$, 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.

8 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.

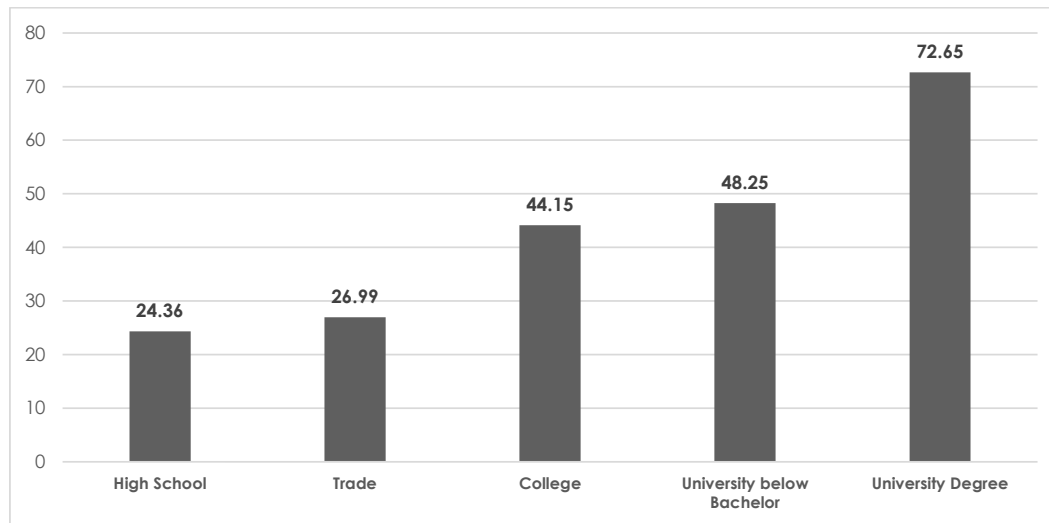
Does the level of education affect labour market performance – that is, labour force participation and unemployment rates? Figure 16 shows that a higher education level increases the likelihood of participation in the workforce. In Rainy River district in 2011, the participation rate of the prime-working-age population (25-64) without a high school diploma was 61 percent compared to 74.5 percent for those with a high school diploma and 81.7 percent for those with a postsecondary credentials. Figure 16 also shows that total labour force participation rates in Rainy River district lag behind the provincial and national averages.

Similarly, as shown in Figure 17, the average unemployment rate among those without a high school diploma in Rainy River was 11 percent compared to 8.3 percent for those with a high school diploma and 6.6 percent for those with postsecondary credentials. Overall, the total unemployment rate in Rainy River district of 7.6 percent was higher than Ontario and Canada.

In short, individuals who do not have post-secondary credentials have a higher likelihood of non-participation in the 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 Rainy River 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 — essentially 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 people with low education in the region will be enormous.

The above evidence suggests that one potential solution to Rainy River'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. The Rainy River workers will continue to compete not only 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 Rainy River 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.

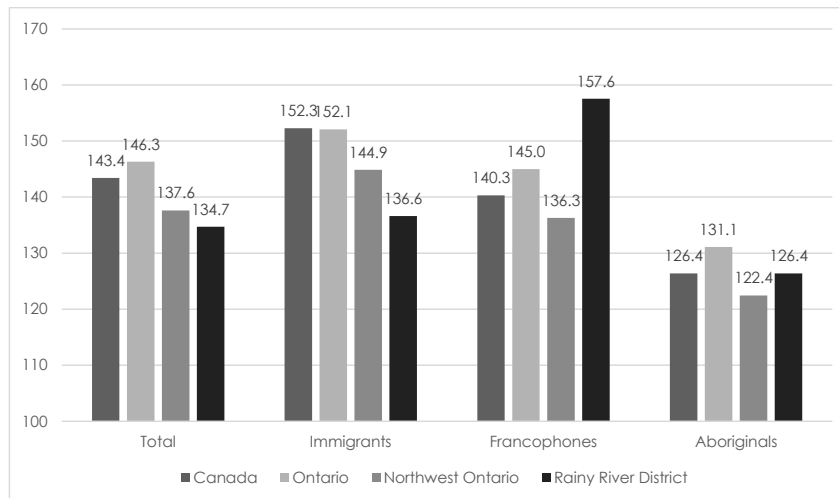
Figure 11. The Return to Education (%), by Level of Educational Attainment, Canada, 2006



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

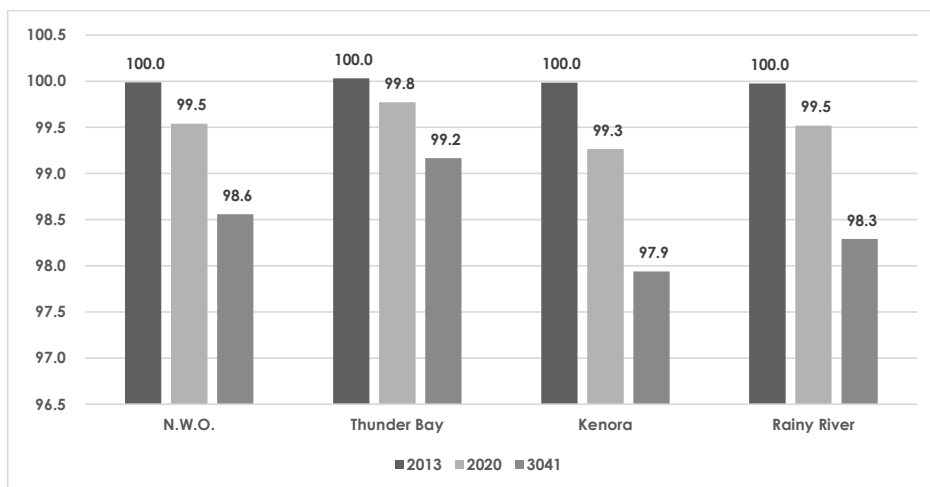
Source: Author's estimates based on Statistics Canada's 2006 Census Microdata file.

Figure 12. Human Capital Index for the Working-Age Population, Canada, Ontario, Northwestern Ontario and Rainy River District, 2011



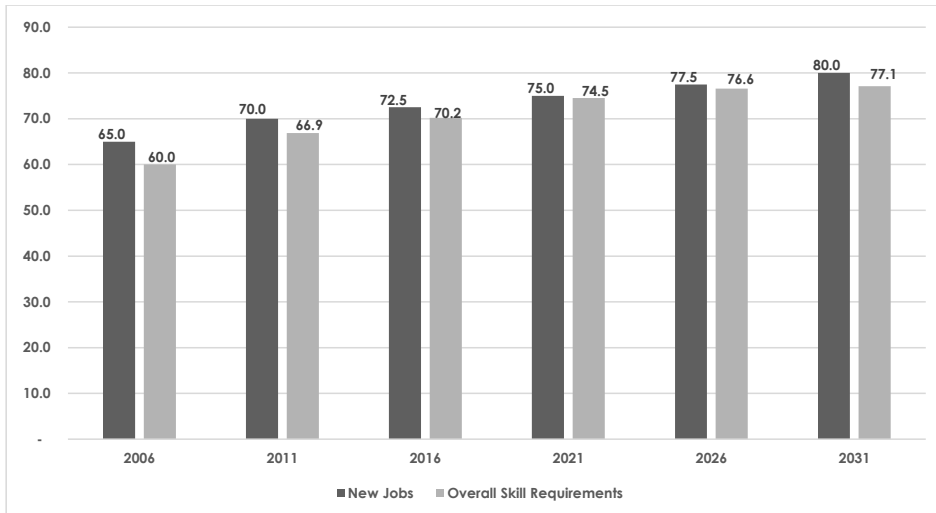
Source: Author's estimates based on Statistics Canada's 2006 Census Microdata file.

Figure 13. Projected Productivity Index of the Workforce in Northwestern Ontario, 2013–2041



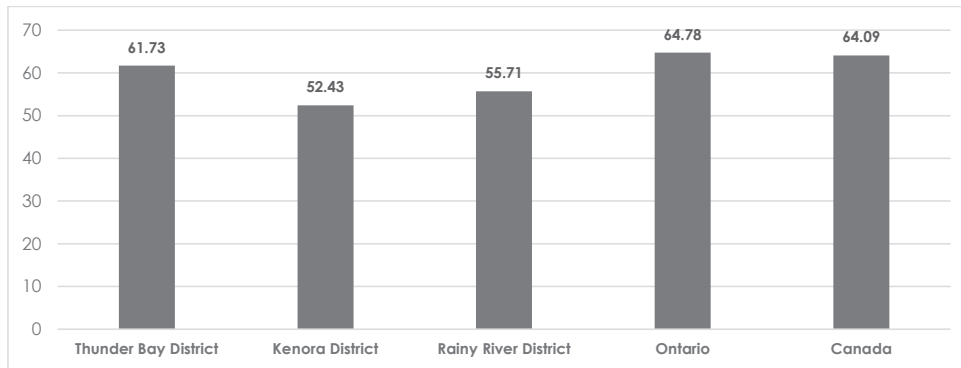
Source: Author's estimates based on Ontario, Ministry of Finance, "Ontario Population Projections, 2013-2041" (Toronto, 2014).

Figure 14. Percentage of Jobs Requiring Post-Secondary Education, Canada, 2006–2031



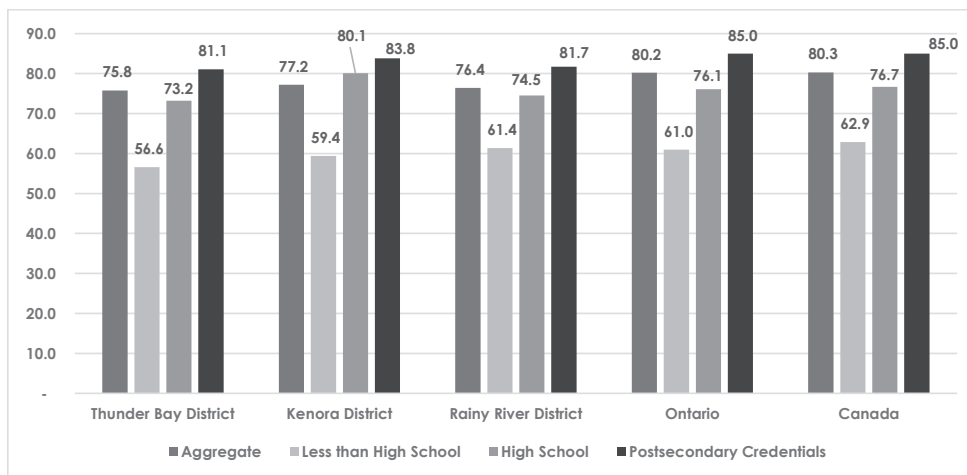
Source: Rick Miner, "People without Jobs, Jobs without People: Canada's Future Labour Market" (Toronto: Miner Management Consultants, 2010).

Figure 15: Percentage of the Labour Force Ages 25–64 with Postsecondary Credentials, Northwestern Ontario, Ontario and Canada, 2011



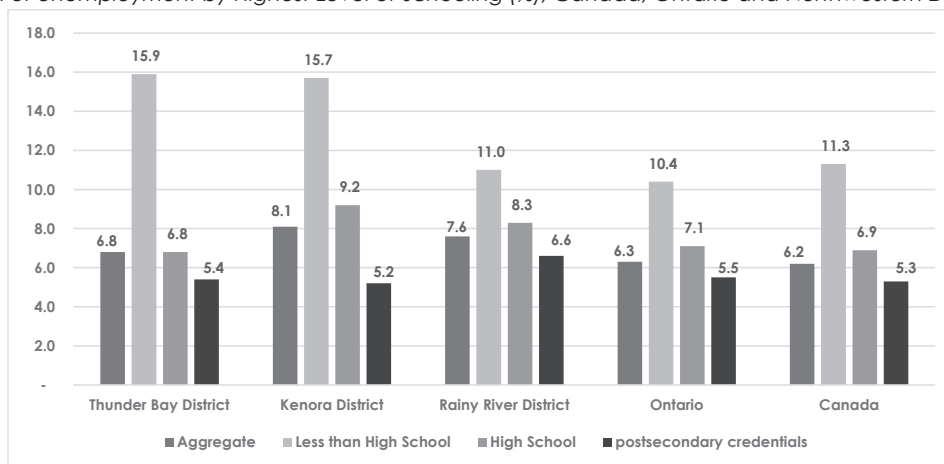
Source: Author's calculations based on Statistics Canada, National Household Survey 2011, custom tabulation.

Figure 16: Labour Force Participation Rate by Level of Educational Attainment (%), Canada, Ontario and Northwestern Districts, 2011



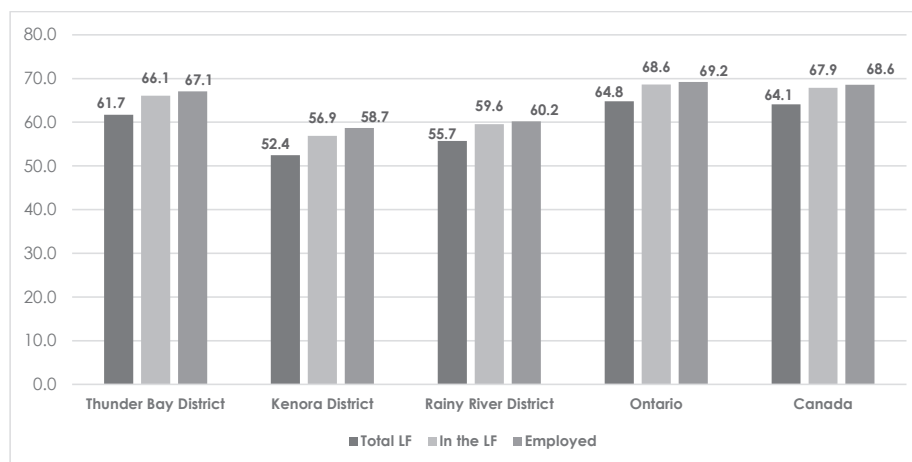
Source: Author's calculations based on Statistics Canada, Census of Canada 2011, and National Household Survey 2011, custom tabulation.

Figure 17: Likelihood of Unemployment by Highest Level of Schooling (%), Canada, Ontario and Northwestern Districts, 2011



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

Figure 17: Labour Force Employment Rate by Level of Educational Attainment (%), Canada, Ontario and Northwestern Districts, 2011



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

The Consequences of Shifting the Composition of the Employed Labour Force

The structure of Rainy River 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. There has been a continuous shift away from the goods-producing sector dominated by private businesses to the service-producing sector, a large portion of which is publicly funded. Using data from various Censuses of Canada as well as the 2011 NHS, Table 6 shows the changing industrial composition of the employed workforce in Rainy River.

Table 6 shows employment trends in the goods- and services-producing sectors of Rainy River district's economy. Total regional employment has declined from 9,915 in 1986 to 8,935 in 2011, a decline of about 10 percent. As is the case with the overall regional economy, employment in the goods-producing sector has declined from 3,245 in 1986 to 2,180 in 2011, a decline of about 33 percent. During the same time,

the services-producing sector has grown slightly, but has experienced declines since 2006. The share of the goods-producing sector in total regional employment has also declined from 33 percent in 1986 to about 24 percent in 2011. Notably, however, utilities and mining have been increasing since 2006. With future growth identified through 2014 (see Taxfiler data cited on page 12).

A shift in the industrial structure of the workforce in the Rainy River district was accompanied by a change in the occupational distribution of the labour force (Table 7). Employment in most occupational groups declined, except for occupations in social science, education, government service and religion and health occupations. Figure 19 shows that total employment income and GDP declined in the Rainy River district by about 11.2 percent from 2001 to 2011, due partly to declining employment and partly to the changing occupational structure of the employed workforce. The goods-producing sectors of the district's economy include high-wage and high-value-added industries, and their decline has not only affected the level of

Table 6: Industrial Composition of the Employed Workforce Ages 15 and Older, Rainy River District, 2001–2011

	1986	1991	1996	2001	2006	2011
Goods-Producing Sector	3,245	3,085	3,135	3,200	2,910	2,180
Agriculture, fishing & hunting	320	445	370	340	345	355
Logging & forestry	680	535	295	255	305	290
Mining & quarrying	30	85	55	55	70	200
Utilities	330	280	280	160	115	165
Construction	440	440	675	730	705	445
Manufacturing	1,445	1,300	1,460	1,660	1,370	725
Wood industries	345	180	465	720	485	80
Paper & Allied industries	910	875	865	780	725	560
Service-Producing Sector	6,670	7,085	7,085	6,675	7,180	6,745
Trade	1,550	1,455	1,540	1,490	1,215	1,160
Transportation & warehousing	590	455	470	460	460	340
Finance, insurance, real estate and leasing	280	340	265	330	375	285
Professional, scientific and technical services	150	165	225	185	150	155
Educational services	700	790	850	705	835	730
Health care and social services	900	1,200	1,475	1,215	1,435	1,545
Accommodation and food services	1,115	980	915	730	915	655
Other services	445	495	630	855	900	840
Public administration	940	1,205	715	705	895	1,035
Total Employment	9,915	10,170	10,215	9,870	10,070	8,935

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

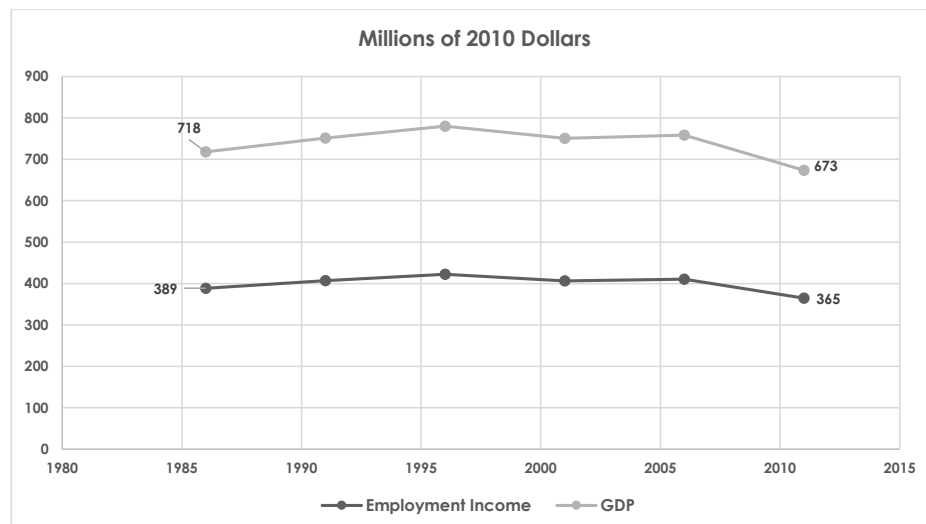
output, but also resulted in lower average earnings in the district. Recent positive news in these areas will see improved incomes reported in coming years but, as of 2014, the district still lags behind past highs in income and employment levels.

Table 7: Employed Workforce by Occupation, Rainy River District, 1996–2011

National Occupational Classification 2006	2001	2011
A Management occupations	870	750
B Business, finance and administrative occupations	1,255	1,040
C Natural and applied sciences and related occupations	310	330
D Health occupations	570	750
E Occupations in social science, education, government service and religion	795	1,005
F Occupations in art, culture, recreation and sport	145	155
G Sales and service occupations	2,230	2,060
H Trades, transport and equipment operators and related occupations	1,860	1,415
I Occupations unique to primary industry	555	605
J Occupations unique to processing, manufacturing and utilities	1,040	350
Total Employment	9,630	8,460

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

Figure 19: Total Labour Income and GDP (millions of 2010 dollars), Rainy River District, 2001–2011



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

Recommendations

1. Enhanced access to remote and on the job educational opportunities

One potential solution to Rainy River'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. In addition, regardless of what occurs with the Trans-Pacific Partnership, labour will continue to be more and more mobile among various countries, increasing the importance of achieving higher levels of education.

2. Continue to invest in the Indigenous population

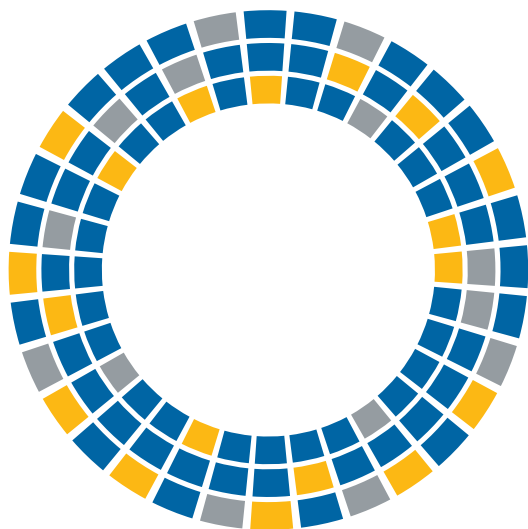
Labour force participation rates among the Indigenous population in Rainy River was generally lower and unemployment rates higher than the rest of the population. There was also a notable difference between the Indigenous labour force on-reserve and off-reserve, with the unemployment rate among the former at 23.6 and 16.5 percent in 2011 for men and women, respectively. In contrast, the unemployment rate among the off-reserve Indigenous workforce was much lower, at 11 percent for men. To the extent that desire to engage in the broader economy exists continued investments in supporting that engagement through education and skills enhancement should be made.

3. Urban solutions will not work for Rainy River

Essentially all of Rainy River district's population live in rural areas as defined by Statistics Canada. Only 3 percent live in areas with a moderate link to an urban centre, while 86 percent live in areas with a weak link to an urban centre, and 11 percent live in remote regions. Given the geography and distances involved, economic investment and immigrant attraction efforts should continue to focus on industries that flourish in this environment: agriculture, forestry and mining.

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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, Sault Ste. Marie, and Kenora. 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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