Small-Area Population Forecasts for New Brunswick with 2016 Census Data: Cohort-Component Model Report

Project Title

POPULATION DYNAMICS FOR SMALL AREAS AND RURAL COMMUNITIES

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This project was completed with the assistance of analysts at the NB-IRDT.

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1 Executive Summary

In 2017, NB-IRDT published Paul Peters' report *Small Area Population Forecasts for New Brunswick*.[1] This earlier report forecast the population of areas within New Brunswick. Two models were used to perform these forecasts: a simplified model, and a cohort-component model. Since the publication of that report, 2016 census data and citizen registry data have become available. This report presents the results of updating the cohort-component model from the first report with 2016 citizen registry data. There is also another report which presents updated 2016 results using the simplified model.[2]

The cohort-component model differs from the simplified model in that it can provide more detailed information on the main drivers of population change: fertility, mortality, and migration. In addition to sub-provincial populations, the cohort-component model can further categorize the population by age and sex. There is also more flexibility with the cohort-component model to forecast a range of scenarios based on different fertility, mortality, and migration assumptions.

The main areas of population growth/decline generally match what was found in the simplified model report. Population growth is expected in the regions surrounding Fredericton and Moncton, while the rest of the province generally faces population decline.

Net migration was found to be the main driver of population growth in New Brunswick, more so than fertility or mortality. The regions surrounding Fredericton, Moncton, and Saint John had lower rates of fertility, but higher rates of new migration than rural areas. Out-migration and in-migration both had significant effects on the population forecasts.

Labour force was forecast using population forecasts and labour force participation rates in New Brunswick. The labour force forecast faces similar trends as population forecasts, but with fewer areas of growth.

2 Key Findings

I. Population growth is expected in the Fredericton and Moncton regions

II. Population in province is declining in most other regions

III. Net migration is the main driver of population growth

IV. Cities have lower rates of fertility, but higher rates of net migration

V. Out-migration and in-migration both have significant effect on population forecasts

VI. Labour force is expected to decline in most regions

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[1] Peters's report can be read online at http://www.unb.ca/fredericton/arts/nbirdt/_resources/pdfs/report-small-area-population-forecasts.pdf.

[2] "Small-Area Population Forecasts for New Brunswick with 2016 Census Data: Simplified Model Report" by Andy Balzer, Bethany Daigle, Paul Peters (2018)

3 Data and methodology

3.1 Data

The Citizen Database was used to calculate population counts as well as migration estimates. The Citizen Database provides data on all New Brunswick residents with active Medicare registration. The New Brunswick Institute of Research, Data, and Training (NB-IRDT) provides access to de-identified datasets, such as the Citizen Database, which allows linking to individual level data while maintaining confidentiality. The Citizen Database provides longitudinal data on each resident allowing us to track more detailed information on age, sex, mobility, and mortality by geography. In contrast, the Census data used for the Simplified Model report only provides point in time population counts by geography. It should be noted though that the Citizen Database and the Census are different data sources, so their total population counts for New Brunswick will differ slightly.

The population was sampled from the Citizen Database on June 15 of each year. The migration estimates were determined using intervals from June 15 of one year to June 15 of the next year. The base period in the first report was 2006-2011, whereas this report uses 2011-2016. The population counts are split into age/sex categories with 20 age categories defined as 5 year categories with the exception of 0-1, 1-4, and 90+.

3.2 Forecasting methods

The methodology for this report follows that used in Peters (2017). The forces of population change are divided into 6 components: fertility, mortality, in-migration, out-migration, immigration, and emigration. In-migration and out-migration refer to migration within the province (e.g., moving from one county in New Brunswick to another). Immigration and emigration refer to migration to and from the province, which includes both international and within-Canada migration. Each component is constructed as 5 year rates of change using information on NB residents from the Citizen Database.

The five year component rates are constructed from the average annual/one-year rates ($\bar{r} = \sum_{t=1}^{5} \frac{r_t}{5}$) observed over the five year base period, here 2011 to 2016. The averaged one-year rates are scaled to five-year rates using the formula $r_5 = (1 + \bar{r})^5 - 1$. This process of averaging and then scaling the rates allows the five year component rates to be approximated without risk of individual disclosure.

The rates derived directly from these data are the Baseline level rates. There are also Low, Median, and High levels corresponding to 1st, 2nd, and 3rd quartiles of rates grouped by age/sex categories. That is, for each of the age/sex categories, the quartiles are calculated using rates across all regions within the geography type. Each of the 6 component rates can have a Baseline, Low, Median, or

High amount. Different scenarios for forecasts can be created using combinations of the 6 component rates with Baseline, Low, Median, or High amounts[3].

3.3 Selected geographies

Peters (2017) developed forecasts for five different small-area geographies in New Brunswick. Our research team developed updated forecasts for each of the earlier geographies, as well as three additional geographies, as requested by the Government of New Brunswick. Table 1 contains the full list of selected geographies compiled for this report. The data for the locations of 5 of these geographies (Health Regions, Health Council Communities, Provincial Electoral Districts in 2014 and 2010, and Regional Service Commissions) were obtained from the geoNB website.[4]

It should be noted the Census Division boundaries can change between census years. In particular, the Northumberland, York, and Gloucester Census Divisions have been affected by boundary changes in the periods 2006-2011 and 2011-2016. Northumberland and York changed boundaries in 2006-2011. Gloucester and Northumberland changed boundaries in 2011-2016. These boundary changes affect the population counts in those three regions depending which boundary definition is used. Our current forecasts use the population count using the Census Division boundary in 2011, which is the same as used in Peters (2017).

Table 1: Selected geographies used for population forecasting (2016)

Geography	Number of units	Median population	Minimum population	Maximum population	Source
Census Divisions	15	30,955	10,472	149,623	Statistics Canada
Health Regions	7	76,374	25,250	209,256	Health Council
Health Council Community Districts	33	15,696	5,025	81,006	Health Council
Provincial Electoral Districts in 2014	49	15,081	12,208	21,822	Service New Brunswick
Regional Service Commission Areas	12	37,332	25,812	178,781	Service New Brunswick
*Census Metropolitan Areas	8	66,435	13,114	279,058	Statistics Canada
*Provincial Electoral Districts in 2010	55	13,037	9,364	24,322	Service New Brunswick
*PETL Employment Sub-Regions	39	12,703	1,582	114,088	Post-Secondary Education, Training and Labour

*These three geographies were not included in Peters' report.

[3] Peters (2017) created "Low", "Median", and "High" scenarios based on some of these combinations. The population forecasts for these scenarios are included in Appendix A (see page 25), but not the main body of the report because the scenarios created were not directly comparable with the baseline results.
[4] http://www.snb.ca/geonb1/e/DC/catalogue-E.asp

4 Cohort-component rate analysis

Before creating forecasts, the cohort-component rates could be looked at themselves to investigate patterns of behaviour. The fertility, mortality, and migration rates were calculated per area/age/sex category. These rates can be averaged to determine the average rate per area.

Map 1 shows the average fertility rate and average mortality rate by Census Division for the 2011-2016 period these rates were calculated over. The fertility rate is lowest in the Census Divisions where Fredericton, Moncton, and Saint John are located. The average mortality rate is lowest in Gloucester and highest in the Southwest of New Brunswick.

Map 1: Average Fertility Rate (left) and Mortality Rate (right) by Census Division for 2011-2016 period
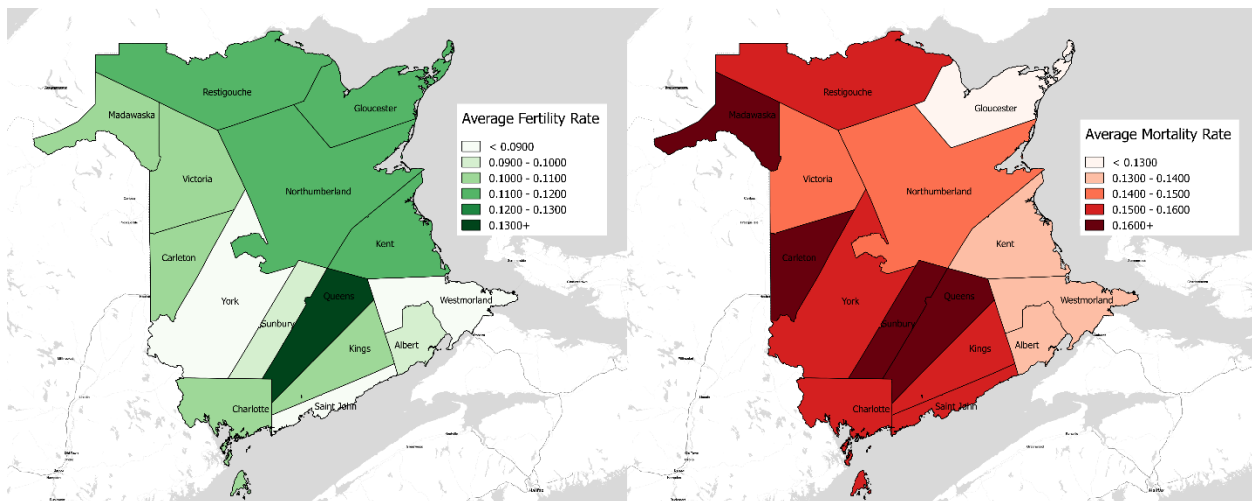
Map 2 shows the natural increase (fertility rate minus mortality rate) and the net average migration rate. The natural increase is negative in all Census Divisions of New Brunswick, and more negative in the Southwest. However, net average migration is positive in regions surrounding the urban centers Fredericton and Moncton.

Map 2: Natural Increase (left) and Net Average Migration (right) by Census Division for 2011-2016 period
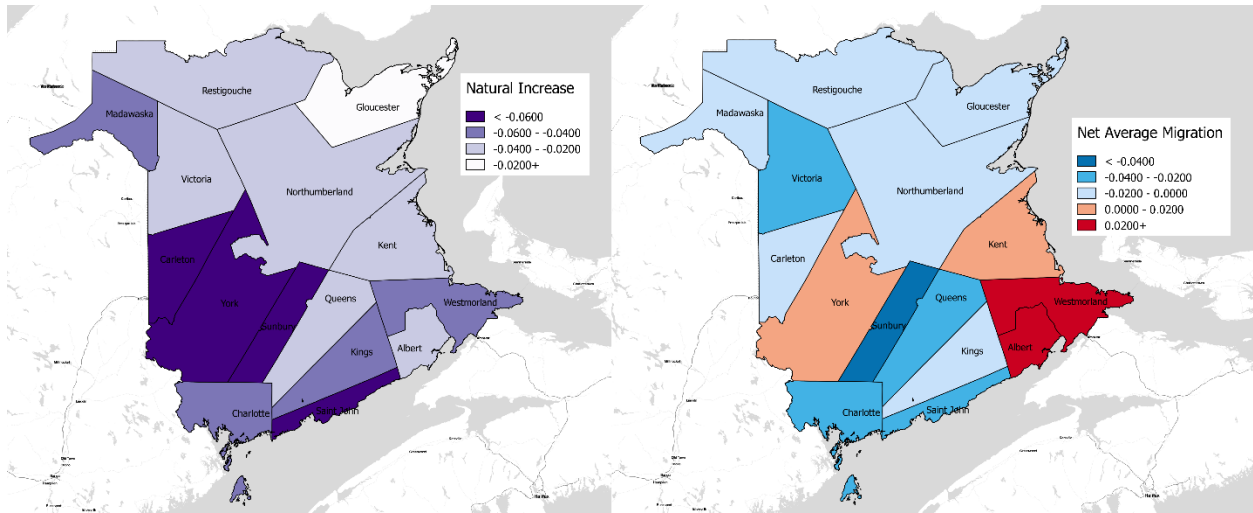
Alternate geographies can be used to break up the Census Divisions into smaller regions. Map 3 shows the average fertility rate and mortality rate by PETL Employment Sub-Regions. Northern New Brunswick has higher fertility rates and lower mortality rates on average, which suggests a younger population in the area.

Map 3: Average Fertility Rate (left) and Mortality Rate (right) by PETL Employment Sub-Region for 2011-2016 period
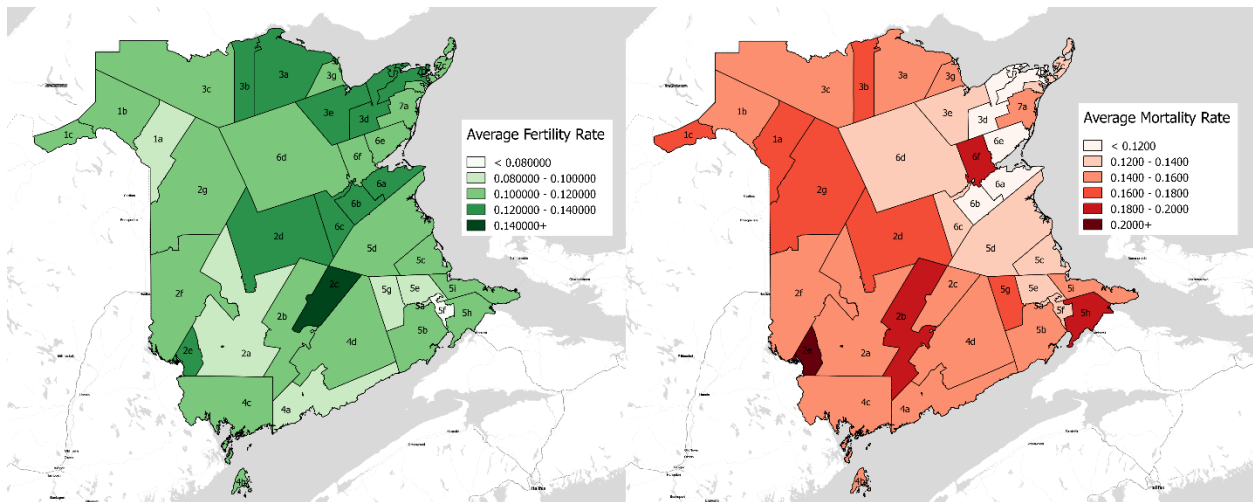
Map 4 shows the natural increase and net average migration by PETL Employment Sub-Regions. Regions in the Northeast like Gloucester have positive natural increase, but negative net migration. The regions surrounding Fredericton and Moncton on the other hand have negative natural increase, but positive net migration.

Map 4: Natural Increase (left) and Net Average Migration (right) by PETL Employment Sub-Region for 2011-2016 period
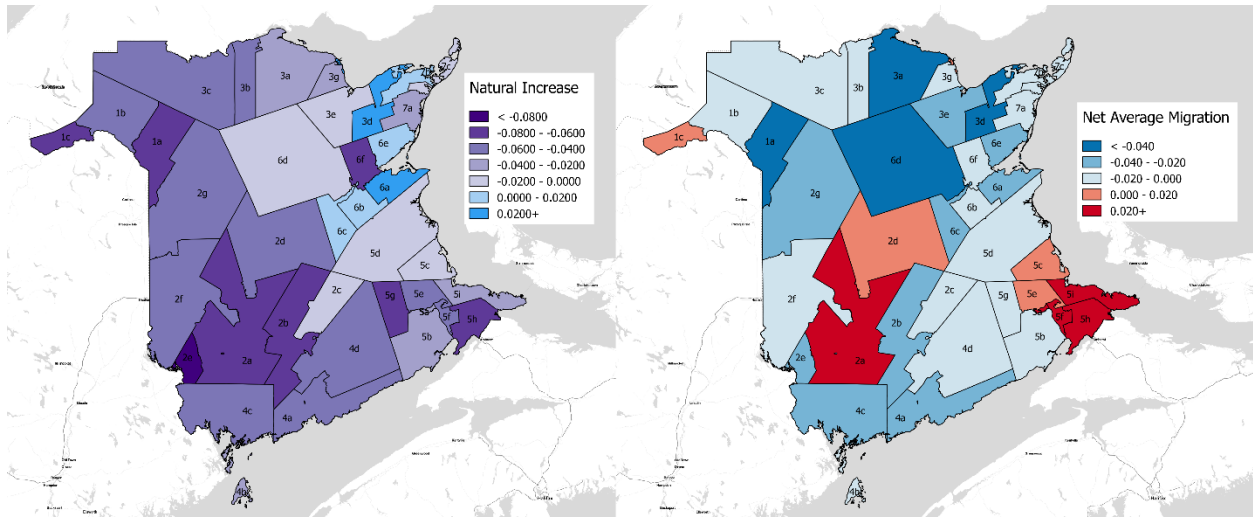
One possible explanation for regions with higher natural increase is the presence of Aboriginal communities. The Aboriginal population is known to have a younger population on average and higher rates of fertility.[56] Map 5 shows the natural increase for Census Divisions and PETL Sub-Regions, and includes the Aboriginal communities in New Brunswick[7]. The relationship between Aboriginal communities and higher rates of natural increase is not clear at this point, but questions like these are worth exploring using the available component rates.

Map 5: Natural Increase by Census Division (left) and PETL Employment Sub-Region (right) for 2011-2016 period, along with Aboriginal communities indicated by dots

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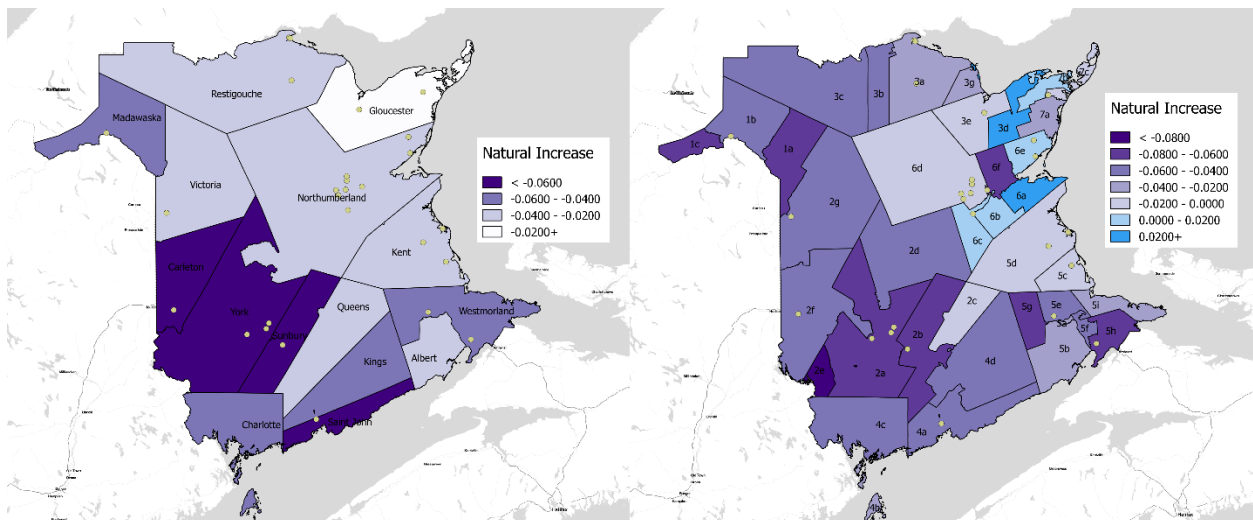
[5] http://www.statcan.gc.ca/pub/89-656-x/89-656-x2016005-eng.htm
[6] http://www.edsc-esdc.gc.ca/img/edsc-esdc/jobbank/CSPs/ATL/201401Aboriginal/abor_march2014.pdf
[7] Locations for these Aboriginal communities come from the GeoNB website

5 Cohort-component model forecasts

5.1 Population change, by Census Division

Population forecasts were created using the methodology established in Peters (2017) and the cohort-component rates calculated for this report. The baseline forecast is the population forecast which comes directly from forecasting the population using the cohort-component rates. The constrained forecasts adjust the baseline forecast so it matches the provincial forecasts Statistics Canada has for New Brunswick. Statistics Canada has seven high, low, and medium growth scenarios for the provincial population, so there are therefore seven constrained forecasts. This section shows the forecast population change by Census Division using the baseline and constrained forecasts.

5.1.1 Baseline population change

Table 2 is taken directly from Peters (2017), and shows the population difference between the base year 2006 and the end year 2036. Overall, Peters (2017) forecasts showed population growth is expected in New Brunswick by 2036 with a few areas, such as Gloucester and Restigouche, predicting population decline.

Table 2: Baseline population change from 2006-2036 by Census Division, base period 2006-2011.

Census Division	Population in 2006	Baseline population change
Saint John	77,592	4,851
Charlotte	27,813	1,800
Sunbury	23,567	16,633
Queens	12,154	764
Kings	68,023	21,475
Albert	28,533	8,577
Westmorland	131,849	12,425
Kent	32,391	581
Northumberland	52,260	-703
York	88,959	14,132
Carleton	27,737	4,936
Victoria	21,545	2,520
Madawaska	35,375	-1,798
Restigouche	35,806	-1,403
Gloucester	82,002	-8,169
New Brunswick	745,606	76,621

Table 3 shows the same population difference values, but using the 2011-2016 base period for rates instead of the 2006-2011 base period from Peters (2017). Unlike Table 2, population decline

is predicted for New Brunswick overall, with only a few areas, such as York and Westmorland, predicting population increase.

Table 3: Baseline population change from 2011-2036 by Census Division, base period 2011-2016.

Census Division	Population in 2011	Baseline population change
Saint John	74,980	-19,972
Charlotte	26,455	-4,524
Sunbury	24,300	-2,103
Queens	11,220	-3,502
Kings	70,085	-733
Albert	29,480	3,767
Westmorland	142,530	30,547
Kent	31,390	-567
Northumberland	48,860	-4,697
York	93,655	6,269
Carleton	26,850	-2,058
Victoria	19,695	-3,050
Madawaska	33,170	-2,994
Restigouche	32,510	-3,335
Gloucester	78,040	-5,076
New Brunswick	743,220	-12,028

5.1.2 Constrained population change by StatCan scenarios

Statistics Canada produces population forecasts on a provincial level up to 2036. The forecasts from the baseline model were constrained, or scaled, so the sum of the sub-provincial totals would equal the StatCan provincial forecast. Table 4 shows the population difference results from the 2006-2011 base period population using the StatCan scenarios.
Table 5 shows the corresponding population difference results using the 2011-2016 base period.

In the StatCan scenarios, the population totals produced under the Low scenario likely reflect what New Brunswick would see under current levels of immigration and outmigration. The M scenarios represent a sustained higher level of immigration along the expectations for the Atlantic Immigration Pilot. M2 and M5 represent population totals arising from high immigration levels and much lower out-migration from the province.

Tables 4 and 5 suggest an important change in forecasts between the base periods of 2006-2011 and 2011-2016. First, projected population growth for New Brunswick is slower using rates observed between 2011 and 2016. Second, population increase is concentrated in a smaller number of Census Divisions suggesting that the population of New Brunswick will be more concentrated than projected in Peters (2017). Third, higher immigration as reflected in a comparison of the Low to M scenarios in

Table 5 results in higher population increase in the Census Divisions that are growing but does little for those Census Divisions that are contracting.

Table 4: Constrained population change from 2006-2036, by scenario, by Census Division, base period 2006-2011.

Census Division	Low	M1	M2	M3	M4	M5	High
Saint John	-1,810	1,653	2,124	1,653	-1,780	4,167	5,897
Charlotte	-970	254	420	254	-965	1,146	1,760
Sunbury	2,638	3,839	4,002	3,839	2,652	4,704	5,304
Queens	-1,879	-1,410	-1,347	-1,410	-1,877	-1,071	-835
Kings	1,247	4,421	4,850	4,421	1,277	6,715	8,294
Albert	-273	1,017	1,193	1,017	-264	1,955	2,599
Westmorland	-2,789	3,117	3,918	3,117	-2,732	7,394	10,335
Kent	-2,666	-1,305	-1,124	-1,305	-2,655	-322	357
Northumberland	-2,871	-609	-302	-609	-2,852	1,030	2,151
York	434	4,522	5,077	4,522	469	7,483	9,524
Carleton	14	1,284	1,453	1,284	26	2,205	2,836
Victoria	-318	651	784	651	-309	1,356	1,842
Madawaska	-2,454	-942	-741	-942	-2,436	150	896
Restigouche	-2,999	-1,502	-1,299	-1,502	-2,988	-413	333
Gloucester	-7,115	-3,690	-3,220	-3,690	-7,081	-1,207	502
New Brunswick	-21,811	11,300	15,788	11,300	-21,515	35,292	51,795

Table 5: Constrained population change from 2011-2036, by scenario, by Census Division, base period 2011-2016.

Census Division	Low	M1	M2	M3	M4	M5	High
Saint John	-21,770	-19,280	-18,942	-19,280	-21,748	-17,475	-16,233
Charlotte	-5,184	-4,191	-4,056	-4,191	-5,175	-3,471	-2,977
Sunbury	-2,730	-1,725	-1,589	-1,725	-2,721	-997	-496
Queens	-3,766	-3,416	-3,369	-3,416	-3,762	-3,163	-2,989
Kings	-2,595	545	972	545	-2,566	2,821	4,386
Albert	2,942	4,447	4,652	4,447	2,956	5,539	6,289
Westmorland	26,437	34,272	35,337	34,272	26,508	39,953	43,858
Kent	-1,399	-4	186	-4	-1,386	1,008	1,704
Northumberland	-5,953	-3,954	-3,682	-3,954	-5,935	-2,504	-1,508
York	3,708	8,232	8,846	8,232	3,749	11,511	13,766
Carleton	-2,754	-1,631	-1,479	-1,631	-2,743	-818	-258
Victoria	-3,545	-2,791	-2,689	-2,791	-3,538	-2,245	-1,869
Madawaska	-3,848	-2,482	-2,296	-2,482	-3,836	-1,492	-811
Restigouche	-4,168	-2,848	-2,668	-2,848	-4,156	-1,890	-1,232
Gloucester	-7,106	-3,803	-3,354	-3,803	-7,076	-1,408	239
New Brunswick	-31,731	1,371	5,869	1,371	-31,429	25,369	41,869

Map 6 shows the linear growth rate[8] for Census Divisions with a 2011-2016 base period under the low growth scenario (top left), high growth scenario (right), and M1 growth scenario (bottom left). The areas of population increase are mainly around York and Westmorland, while other areas throughout the province face moderate to severe population decline.

Map 6: Linear Growth Rate for Census Divisions under low growth scenario (top left), high growth scenario (right), and M1 growth scenario (bottom left); base period 2011-2016, end year 2036.

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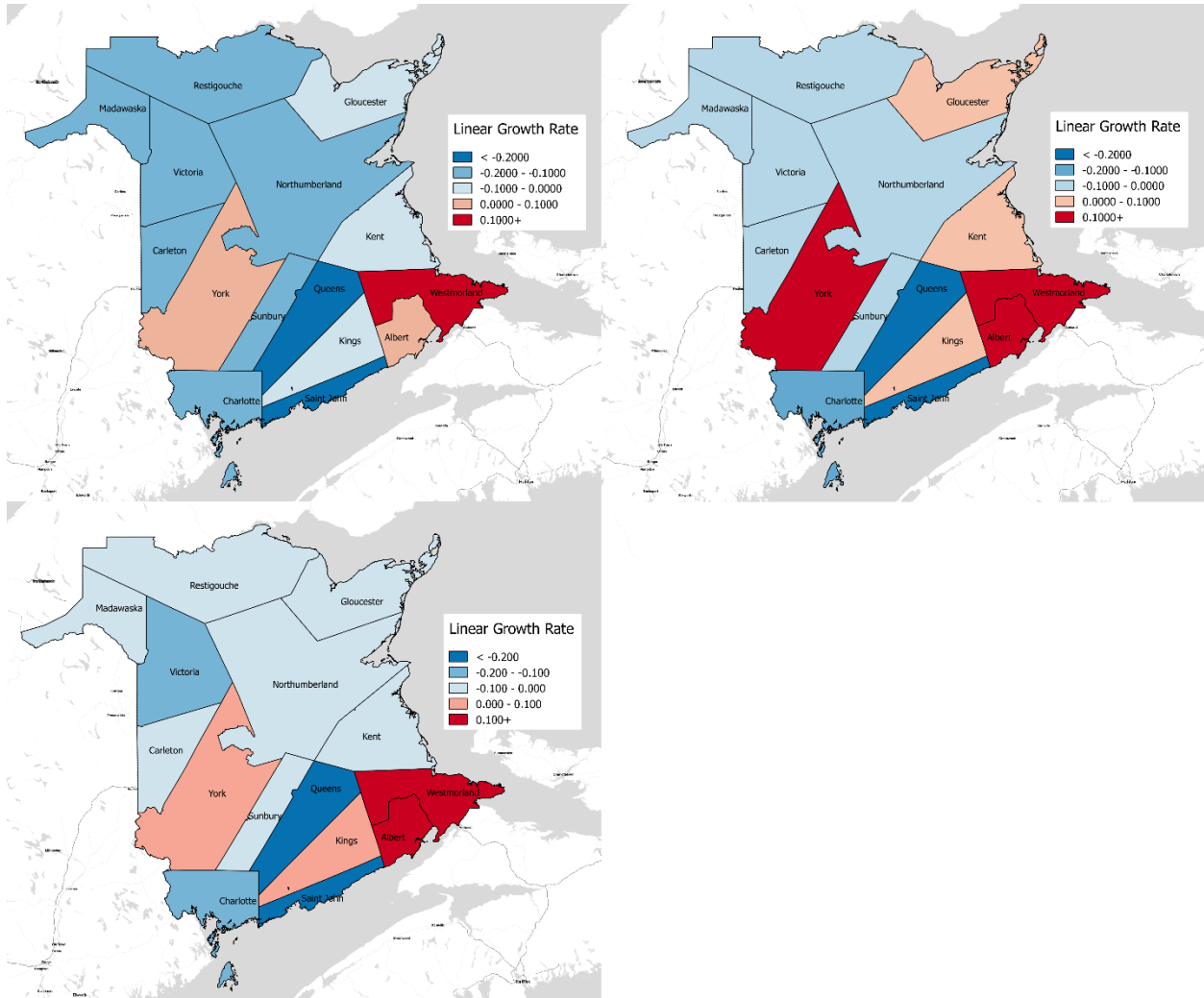
[8] The linear growth rate is calculated by dividing the population difference by the base year population.

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5.2 Effects of in-migration and out-migration

What effect do out-migration and in-migration have on the forecast results? The first report investigated this question by comparing the baseline forecasts with the high/low in/out-migration forecasts. Four new sets of forecasts were created: one with high out-migration, one with low out-migration, one with high in-migration, and one with low in-migration. In each of these 4 cases, baseline results were used for the other 5 component rates. For example, the high out-migration scenario uses baseline rates for all 6 component rates except for out-migration, which is set to the low (1st quartile) amount. The low out-migration, high in-migration, and low in-migration scenarios similarly follow from the high out-migration example. Table 6 shows the out/in-migration results from the first report.

Table 6: Population difference from baseline population forecast (2006-2036) for high/low in/out-migration scenarios, base period 2006-2011.

Census Division	Population in 2006	High out-migration	Low out-migration	High in-migration	Low in-migration
Saint John	77,592	-4,118	5,943	4,159	3,109
Charlotte	27,813	844	4,782	954	591
Sunbury	23,567	9,383	14,367	16,189	15,624
Queens	12,154	-1,518	-48	379	214
Kings	68,023	7,769	18,246	20,972	19,807
Albert	28,533	697	4,708	8,026	7,552
Westmorland	131,849	-3,684	13,533	12,511	10,696
Kent	32,391	-2,086	1,879	-306	-690
Northumberland	52,260	-1,357	5,559	-2,071	-2,692
York	88,959	3,498	16,307	13,393	12,068
Carleton	27,737	2,921	7,408	4,108	3,678
Victoria	21,545	371	3,433	1,877	1,575
Madawaska	35,375	-2,664	1,637	-2,841	-3,227
Restigouche	35,806	-1,809	2,680	-2,431	-2,834
Gloucester	82,002	-8,787	408	-10,176	-10,991
New Brunswick	745,606	-540	100,842	64,743	54,480

Table 7 shows the results from this report for both in-migration and out-migration. In general, the "high out-migration" and "low in-migration" scenarios lead to less population growth, while the "low out-migration" and "high in-migration" scenarios lead to more population growth[9]. Both in-

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[9] There are also areas where population growth is greater for the "high out-migration" scenario than the "high in-migration" scenario, and other areas where population decline is more severe for the "low out-migration" scenario than the "low in-migration" scenario. This likely has to do with how the "low" and "high" scenarios are set up as the 1st and 3rd quartiles. Areas which decrease in the "high in-migration" scenario typically have higher than 3rd quartile rates of in-migration, and areas which decrease in the "low out-migration" scenario typically have lower than 1st quartile rates of out-migration.

migration and out-migration have a significant effect on the forecasts, whereas the first report only found out-migration to be significant. The population change estimates are generally more extreme than the population change using baseline rates.

Table 7: Population difference from baseline population forecast (2011-2036) for high/low in/out-migration scenarios, base period 2011-2016.

Census Division	Population in 2011	High out-migration	Low out-migration	High in-migration	Low in-migration
Saint John	74,980	-42,936	-17,495	37,445	-17,465
Charlotte	26,455	-14,529	-5,274	21,935	-1,688
Sunbury	24,300	-5,425	9,851	2,219	-10,101
Queens	11,220	15,112	50,940	-5,740	-8,161
Kings	70,085	1,662	66,767	-242	-31,896
Albert	29,480	3,937	34,937	-487	-13,622
Westmorland	142,530	-32,183	56,423	103,316	-13,702
Kent	31,390	2,507	32,421	-2,652	-15,812
Northumberland	48,860	-24,713	-5,377	42,089	-2,715
York	93,655	-13,624	53,587	24,848	-29,923
Carleton	26,850	-11,081	2,224	12,257	-6,522
Victoria	19,695	-6,220	5,103	425	-8,942
Madawaska	33,170	-15,963	-1,789	22,007	-4,864
Restigouche	32,510	-15,545	-1,494	20,734	-5,065
Gloucester	78,040	-39,610	-9,156	68,464	-2,876
New Brunswick	743,220	-198,613	271,667	346,617	-173,355

The four migration scenarios presented in this report are just a few of the potential scenarios that could be used to generate forecasts. Another scenario which could be generated is a low internal migration scenario by combining high out-migration and low in-migration (or high internal migration from high in-migration and low out-migration). Table 8 shows the population differences for both low and high internal migration scenarios. All areas show population decline for the low internal migration scenario and population increase for the high internal migration scenario. Other scenarios could be generated as well depending on where interest lies.

Table 8: Population difference from baseline population forecast (2011-2036) for High Internal Migration and Low Internal Migration scenarios, base period 2011-2016.

Census Division	Population in 2011	Low Internal Migration	High Internal Migration
Saint John	74,980	-41,898	42,375
Charlotte	26,455	-13,235	19,768
Sunbury	24,300	-12,126	16,457
Queens	11,220	-6,360	6,500

Census Division	Population in 2011	Low Internal Migration	High Internal Migration
Kings	70,085	-31,160	66,195
Albert	29,480	-13,552	24,798
Westmorland	142,530	-59,301	141,488
Kent	31,390	-14,225	28,344
Northumberland	48,860	-23,722	40,204
York	93,655	-42,245	81,592
Carleton	26,850	-13,879	18,916
Victoria	19,695	-10,989	10,415
Madawaska	33,170	-16,933	24,277
Restigouche	32,510	-16,468	24,340
Gloucester	78,040	-38,385	59,698
New Brunswick	743,220	-354,478	605,368

5.3 Population forecasts for alternate geographies

The cohort-component model was used to create population forecasts for 7 other geographies in addition to Census Divisions. These alternate geographies allow a variety of ways for New Brunswick to be split up into areas. For example, the PETL Employment Sub-regions are divided into 39 areas rather than the 15 areas used for Census Divisions. This section will examine PETL Employment Sub-Regions in more detail while Appendix B and C (pages 37, 43) provide results for the remaining geographies. Table 9 shows the baseline population change by PETL Sub-region, while Table 10 shows the population change using constrained StatCan scenarios.

Table 9: Baseline population change from 2011-2036 by PETL Employment Sub-Region, base period 2011-2016.

PETL Employment Sub-Region	Label	Baseline population in 2011	Baseline population change
Grand Falls Region	**1a**	14,130	-4,042
Edmundston Region	**1b**	24,375	-3,052
Haut Madawaska Region	**1c**	4,425	-154
Fredericton	**2a**	91,955	20,777
Oromocto/Gagetown	**2b**	17,565	-108
Chipman/Minto	**2c**	6,705	-686
Doaktown area	**2d**	5,020	266
McAdam/Harvey	**2e**	1,705	-297
Woodstock	**2f**	30,085	-2,564
Perth-Andover	**2g**	14,580	-1,298
Restigouche-est	**3a**	13,400	-3,263
Restigouche-centre	**3b**	12,585	-1,949

PETL Employment Sub-Region	Label	Baseline population in 2011	Baseline population change
Restigouche-ouest	3c	4,450	-546
Allardville	3d	3,425	24,706
Greater Bathurst	3e	17,235	-4,753
Pte-verte-Petit-Rocher	3f	2,805	161
Beresford-Nigadoo	3g	11,400	-1,373
Saint John	4a	115,240	-14,759
St.Stephen (Islands)	4b	4,235	-115
St.Stephen (Main land Charlotte County)	4c	22,260	-3,486
Sussex (including Hampton)	4d	31,825	-905
Riverview	5a	19,385	3,958
Hillsborough, Elgin, Hopewell, Alma and surrounding areas	5b	10,095	-414
Bouctouche, Saint Antoine, Cocagne and surrounding areas	5c	16,950	2,481
Richibucto, Saint-Louis, Acadieville and surrounding areas	5d	14,440	-522
Moncton and surrounding areas	5e	77,825	7,970
Dieppe, Memramcook and surrounding areas	5f	28,190	11,050
Salisbury, Petitcodiac, and surrounding areas	5g	6,715	-168
Dorchester, Port Elgin, Sackville and surrounding areas	5h	8,830	923
Shediac, Beaubassin, Cap-Pelé and surrounding areas	5i	20,950	3,427
Baie Sainte Anne and surrounding areas	6a	3,925	217
Rogersville and surrounding areas	6b	3,310	-97
Blackville and surrounding areas	6c	4,095	51
Sunny Corner and surrounding areas	6d	4,695	-290
Neguac and surrounding areas	6e	9,075	-929
Miramichi and surrounding areas	6f	20,075	-348
Tracadie	7a	2,655	464
Caraquet	7b	13,315	-1,061
Shippagan	7c	15,285	-989
New Brunswick		729,215	28,283

Table 10: Constrained population change from 2011-2036, by scenario, by PETL Employment Sub-Region, base period 2011-2016.

PETL Employment Sub-Region	Low	M1	M2	M3	M4	M5	High
1a	-5,000	-4,559	-4,499	-4,559	-4,996	-4,240	-4,020
1b	-4,880	-3,948	-3,822	-3,948	-4,872	-3,273	-2,808
1c	-504	-317	-292	-317	-502	-182	-89
2a	12,444	17,370	18,039	17,370	12,488	20,941	23,397
2b	-1,518	-756	-652	-756	-1,511	-202	178

PETL Employment Sub-Region	Low	M1	M2	M3	M4	M5	High
2c	-1,196	-933	-897	-933	-1,193	-742	-611
2d	-151	80	112	80	-148	248	363
2e	-421	-360	-352	-360	-421	-315	-285
2f	-4,874	-3,671	-3,508	-3,671	-4,863	-2,799	-2,200
2g	-2,415	-1,834	-1,755	-1,834	-2,410	-1,414	-1,124
3a	-4,198	-3,755	-3,695	-3,755	-4,194	-3,434	-3,213
3b	-2,876	-2,412	-2,348	-2,412	-2,872	-2,075	-1,843
3c	-880	-709	-686	-709	-878	-586	-501
3d	23,331	24,561	24,728	24,561	23,343	25,452	26,065
3e	-5,931	-5,385	-5,311	-5,385	-5,926	-4,990	-4,718
3f	-72	57	75	57	-71	151	216
3g	-2,230	-1,792	-1,732	-1,792	-2,226	-1,474	-1,256
4a	-23,387	-18,997	-18,400	-18,997	-23,348	-15,813	-13,624
4b	-451	-271	-246	-271	-449	-140	-51
4c	-5,125	-4,304	-4,193	-4,304	-5,117	-3,710	-3,301
4d	-3,429	-2,078	-1,895	-2,078	-3,417	-1,099	-425
5a	2,220	3,240	3,379	3,240	2,229	3,980	4,488
5b	-1,209	-786	-729	-786	-1,205	-479	-269
5c	1,005	1,854	1,969	1,854	1,012	2,469	2,892
5d	-1,662	-1,054	-971	-1,054	-1,657	-613	-310
5e	1,345	5,093	5,603	5,093	1,379	7,812	9,681
5f	8,287	10,001	10,235	10,001	8,302	11,245	12,099
5g	-702	-416	-377	-416	-699	-208	-66
5h	171	597	655	597	175	906	1,118
5i	1,586	2,651	2,796	2,651	1,596	3,424	3,955
6a	-109	72	97	72	-107	204	294
6b	-359	-219	-200	-219	-358	-117	-47
6c	-281	-100	-75	-100	-279	32	122
6d	-655	-463	-436	-463	-653	-323	-227
6e	-1,618	-1,262	-1,214	-1,262	-1,615	-1,004	-827
6f	-1,950	-1,088	-971	-1,088	-1,943	-463	-34
7a	230	366	385	366	231	465	533
7b	-2,087	-1,552	-1,479	-1,552	-2,082	-1,163	-897
7c	-2,176	-1,552	-1,467	-1,552	-2,171	-1,099	-787
New Brunswick	-31,727	1,369	5,871	1,369	-31,428	25,372	41,868

Map 7 shows the linear growth rate by PETL Employment Sub-region for the StatCan low growth (top left), high growth (right), and M1 growth (bottom left) scenarios. The population growth for PETL Sub-Regions resembles the population growth shown in Map 6 for Census Divisions.

Population growth is forecast around the Fredericton and Moncton regions, while population decline is forecast in much of the rest of the province. However, the Allardville (3d) and Tracadie (7a) PETL Sub-Regions also show population growth. Both of these Sub-Regions are within the Gloucester Census Division. Having these smaller area forecasts allows population change to be specified at a more localized level. However, smaller areas are more prone to error. For example, the population forecast in Allardville is suspiciously high considering its small base population, but the forecast can still be used to indicate population growth in the sub-region. Therefore, these small-area forecasts are best used to provide guidance on general trends in population change rather than specific growth values.

Map 7: Linear Growth Rate for PETL Employment Sub-Regions under low growth scenario (top left), high growth scenario (right), and M1 growth scenario (bottom left); base period 2011-2016, end year 2036.

6 Labour Force Forecasts

The population forecasts in this report could be extended through forecasts of the labour force population. New Brunswick has a higher dependency ratio compared to other provinces, and also has a declining population, which when combined is expected to lead to a decreasing labour force. The population forecasts can be combined with labour force participation rate data to forecast the labour force by age/sex in areas of New Brunswick.

There are two main pieces needed to forecast the labour force: population forecasts with an age distribution, and labour force participation rates by age/sex category. The population forecasts have already been completed and shown in this report. The labour force participation rates (LFPR) were obtained from CANSIM[10]. These LFPR values were merged with the population forecasts by age/sex category, and multiplied to estimate the labour force forecast.

Table 11 shows the results of these labour force forecasts by Census Division for the years 2016, 2026, and 2036, along with the linear growth rates from 2016 to 2036. New Brunswick forecasts labour force decline overall, with positive growth only shown in the Albert and Westmorland Census Divisions.

Table 11: Forecast by Census Division of Labour Force in 2016, 2026, and 2036, along with linear growth rate from 2016 to 2036

Census Division	Labour Force in 2016	Labour Force in 2026	Labour Force in 2036	Linear Growth Rate
Saint John	35,814	27,509	25,779	-0.28
Charlotte	12,327	9,610	9,483	-0.23
Sunbury	11,942	10,166	9,868	-0.17
Queens	4,637	3,096	3,037	-0.35
Kings	34,617	29,232	29,903	-0.14
Albert	14,901	13,434	15,010	0.01
Westmorland	76,295	73,617	83,106	0.09
Kent	15,108	12,416	13,186	-0.13
Northumberland	22,682	17,685	18,301	-0.19
York	47,811	43,360	46,456	-0.03
Carleton	12,849	10,515	10,744	-0.16
Victoria	9,096	7,033	7,244	-0.20
Madawaska	15,689	12,500	13,339	-0.15
Restigouche	14,935	11,303	12,218	-0.18
Gloucester	37,333	29,182	30,937	-0.17
New Brunswick	366,036	310,658	328,611	-0.10

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[10] CANSIM table 282-0002 http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=2820002

The labour force forecasts were compared by sex to check for differences in labour force growth between male and female populations. Map 8 shows the labour force forecasts by Census Division with the male population (left side) and the female population (right side). Several Census Divisions to the north and west of New Brunswick expect more labour force decline for males than females, while other areas such as the Albert Census Division expect more labour force decline for females.

Map 8: Linear Growth Rate of Labour Force Forecast from 2016-2036 by Census Division; Male population on left, Female population on right
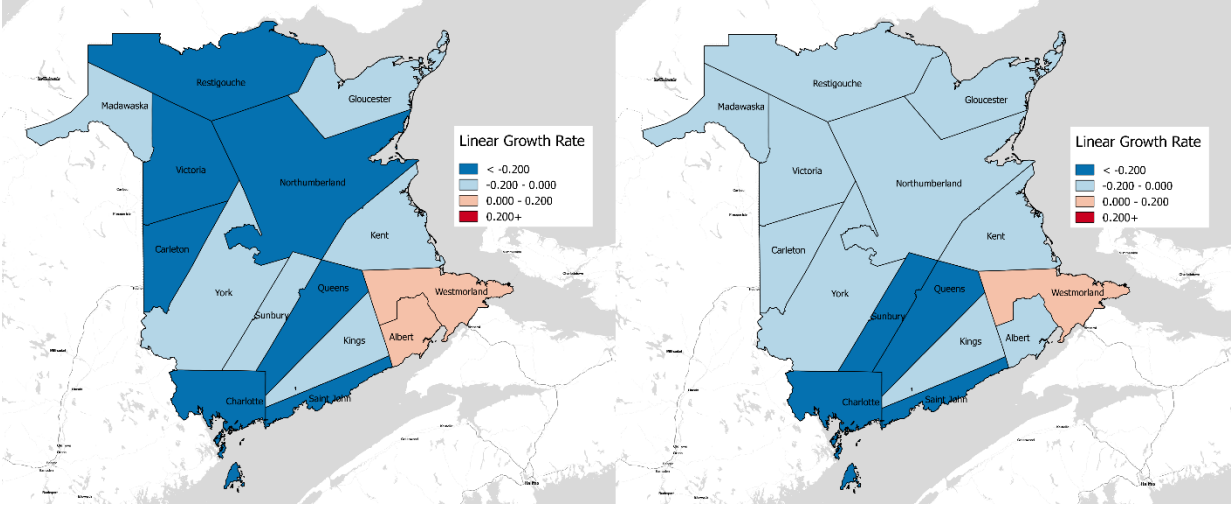
These labour force forecasts were also done for PETL Employment Sub-Regions. Table 12 shows the results for PETL Employment Sub-Regions of forecast labour force in 2016, 2026, and 2036, along with the linear growth rate from 2016 to 2036. Similar to the population forecasts for the PETL Employment Sub-Regions, the areas of positive growth are mainly regions surrounding Moncton and Fredericton. The Allardville (3d) sub-region has the highest rate of growth, though most of its growth happens between 2026 and 2036.

Table 12: Forecast by PETL Employment Sub-Region of Labour Force in 2016, 2026, and 2036, along with linear growth rate from 2016 to 2036

PETL Employment Sub-Region	Labour Force in 2016	Labour Force in 2026	Labour Force in 2036	Linear Growth Rate
1a	6,614	4,941	4,590	-0.31
1b	11,374	8,854	9,425	-0.17
1c	2,124	1,692	1,835	-0.14
2a	48,690	46,503	52,692	0.08
2b	8,352	7,226	7,353	-0.12
2c	2,901	2,123	2,379	-0.18
2d	2,283	1,902	2,187	-0.04
2e	741	557	563	-0.24

PETL Employment Sub-Region	Labour Force in 2016	Labour Force in 2026	Labour Force in 2036	Linear Growth Rate
2f	14,239	11,675	12,006	-0.16
2g	6,670	5,235	5,566	-0.17
3a	5,943	4,130	4,137	-0.30
3b	5,565	4,039	4,433	-0.20
3c	2,178	1,710	1,722	-0.21
3d	1,517	1,606	10,191	5.72
3e	7,586	5,340	5,136	-0.32
3f	1,252	903	1,198	-0.04
3g	5,602	4,244	4,218	-0.25
4a	56,472	46,079	45,924	-0.19
4b	1,975	1,642	1,789	-0.09
4c	10,380	7,961	7,910	-0.24
4d	15,167	12,622	13,314	-0.12
5a	9,891	9,151	10,435	0.05
5b	4,960	4,032	4,176	-0.16
5c	8,104	6,629	8,050	-0.01
5d	6,757	5,375	5,855	-0.13
5e	41,257	38,100	41,604	0.01
5f	15,916	16,468	18,958	0.19
5g	3,204	2,856	3,058	-0.05
5h	4,212	3,659	4,259	0.01
5i	10,553	9,333	10,653	0.01
6a	1,820	1,315	1,475	-0.19
6b	1,528	1,191	1,267	-0.17
6c	1,936	1,547	1,625	-0.16
6d	2,220	1,717	1,823	-0.18
6e	4,344	3,346	3,346	-0.23
6f	9,197	7,358	8,187	-0.11
7a	1,344	1,055	1,223	-0.09
7b	6,352	4,928	5,283	-0.17
7c	7,304	5,623	6,016	-0.18
New Brunswick	358,524	304,667	335,861	-0.06

Map 9 shows the labour force forecasts by PETL Employment Sub-Region with the male population (left side) and the female population (right side). Several of the northern regions expect sharper labour force decline for males than females, similar to Map 8. The biggest differences though come from the Allardville (3d) and Tracadie (7a) sub-regions. Allardville shows significant increase for males versus significant decrease for females, which helps specify where the significant increase in labour force of Allardville overall is coming from. Tracadie also contrasts between male and female with significant decrease for males and moderate increase for females.

Map 9: Linear Growth Rate of Labour Force Forecast from 2016-2036 by PETL Employment Sub-Region; Male population on left, Female population on right
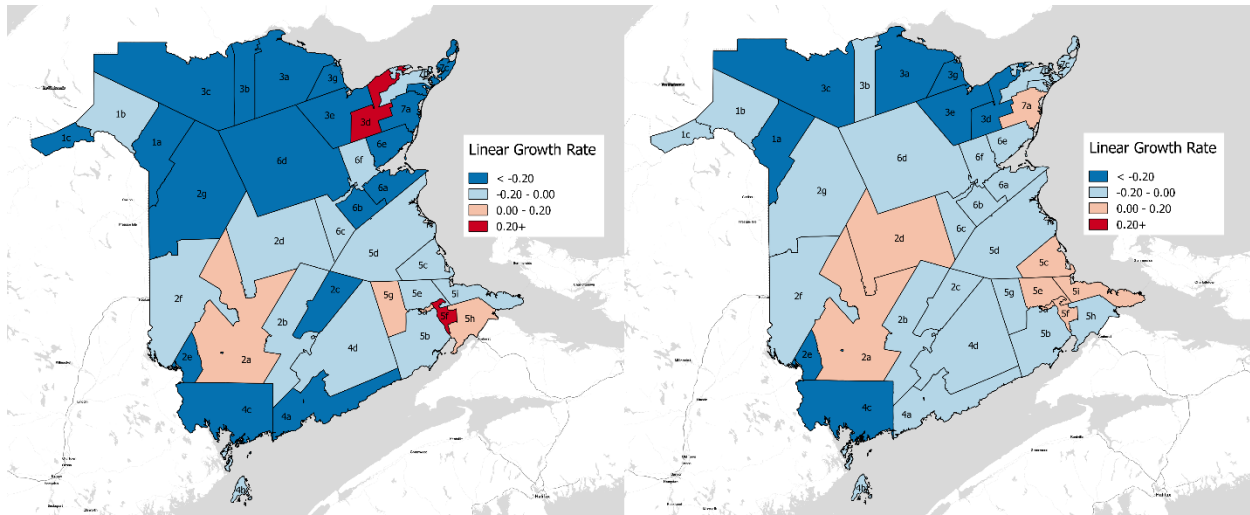
Overall, the labour force forecasts resemble their corresponding population forecasts. The main areas of growth are regions surrounding Moncton and Fredericton, with much of the rest of the province facing labour force decline. Fewer areas of growth are shown for labour force forecasts than there were for population forecasts. These trends generally persist when comparing male and female populations, though there are some exceptions with regard to magnitude and direction of labour force growth/decline. The PETL Employment Sub-Regions allow more specificity in identifying labour force growth/decline than Census Divisions, though much of the trends remain the same. The current forecasts expect few areas of growth for labour force, even fewer than for population forecasts.

7 Summary

This report updates the cohort-component model forecasts from the Peters (2017) report using a base period of 2011-2016 instead of 2006-2011. The same methodology was used to implement the cohort-component model. Rates of fertility, mortality, and migration were calculated using the Citizen Database, which were then used to forecast the population. The forecasts from the cohort-component model were constrained to seven independent provincial forecasts from Statistics Canada to provide the forecasts with a range of growth scenarios. These forecasts were applied to eight different geography types, which is three additional geographies not included in Peters (2017).

The cohort-component rates were analyzed using the rates calculated from 2011-2016. Average fertility rates were lower than average mortality rates in all regions of New Brunswick. In particular, fertility rates were lower in cities than in other regions. Northern New Brunswick has higher natural increase, but lower net migration, leading to population decline. On the other hand, the urban centers have lower natural increase, but higher net migration, leading to population growth. Alternate geographies generally confirm and specify these areas of increase/decrease. One possible explanation for regions with higher fertility rates and lower mortality rates is the presence of Aboriginal communities, who are known to have a younger population on average. Results for this explanation are inconclusive at this point, but the option remains to investigate similar possibilities regarding component rates.

Similar to Peters (2017), the main areas of population growth in this report are the regions surrounding Fredericton and Moncton. However, this report forecasts population decline in most other areas of New Brunswick, whereas Peters (2017) forecast population growth in most other areas. Population change for the city of Saint John remains uncertain, with some scenarios showing stability or moderate growth, where other scenarios show decline. Alternate and finer-scale geographies generally confirm and specify these forecasts.

Migration effects were examined using different cohort-component model scenarios. The Peters (2017) report found out-migration to be significant, but not in-migration. This report however, found both out-migration and in-migration to have significant effects on population forecasts. This is likely due to lagged effects of in-migration after the 2008-09 financial crises, and increased immigration in recent years that were not apparent in previous work. Other scenarios can be generated as well to investigate different components of population change.

The population forecasts were extended through forecasts of labour force in New Brunswick. Our current population forecasts were combined with New Brunswick labour force participation rates by age/sex category to forecast labour force. These forecasts were specified for male and female populations, and were completed for Census Divisions and PETL Employment Sub-Regions. The labour force forecasts generally resembled population forecasts, but showed even fewer areas of growth than the population forecasts. Labour force decline can unfortunately be expected when combining a declining population with an aging one, which is what the forecasts currently show.

8 References

Peters, Paul A. 2017. *Small Area Population Forecasts for New Brunswick*. Report No. 2017-02. Fredericton, NB: New Brunswick Institute for Research, Data and Training (NB-IRDT). http://www.unb.ca/fredericton/arts/nbirdt/_resources/pdfs/report-small-area-population-forecasts.pdf.

Statistics Canada. 2010. *Population Projections for Canada, Provinces and Territories: 2009-2036*. Ottawa, ON. http://www.statcan.gc.ca/pub/91-520-x/91-520-x2010001-eng.htm.

Wilson, Tom. 2015. "New Evaluations of Simple Models for Small Area Population Forecasts." *Population, Space and Place* 21:335–53.

Appendix A: Tables for population change by cohort-component model scenario

In addition to the Baseline rates, Peters (2017) created three additional scenarios which were called "Low", "Median", and "High" in Peters (2017), but will be called S1, S2, and S3 in this report. The Baseline, S1, S2, S3 scenarios indicate whether the 6 component rates are all taken directly from the data (Baseline), use the 1st quartile (S1), 2nd quartile (S2), or 3rd quartile (S3) amounts for the rates. Table 13 shows the population change for the 2006-2036 period from Peters (2017) by Census Division using the Baseline, S1, S2, and S3 scenarios. Tables 14-21 show the updated population change results for the 2011-2036 period by each of the eight geographies.

Table 13: Population change from 2006-2036, by scenario, by Census Division, base period 2006-2011.

Census Division	Population in 2006	Baseline population change	S1 population change	S2 population change	S3 population change
Saint John	77,592	4,851	3,165	7,118	11,761
Charlotte	27,813	1,800	826	2,202	3,814
Sunbury	23,567	16,633	4,015	5,629	7,542
Queens	12,154	764	-1,045	-619	-119
Kings	68,023	21,475	5,657	9,330	13,628
Albert	28,533	8,577	1,584	3,043	4,752
Westmorland	131,849	12,425	5,775	12,412	20,197
Kent	32,391	581	-454	897	2,481
Northumberland	52,260	-703	601	3,004	5,811
York	88,959	14,132	6,127	10,892	16,493
Carleton	27,737	4,936	1,777	3,266	5,015
Victoria	21,545	2,520	1,066	2,172	3,482
Madawaska	35,375	-1,798	-10	1,478	3,224
Restigouche	35,806	-1,403	-569	928	2,691
Gloucester	82,002	-8,169	-1,385	1,867	5,656
New Brunswick	745,606	76,621	27,130	63,619	106,428

Table 14: Population change from 2011-2036, by scenario, by Census Division, base period 2011-2016.

Census Division	Population in 2011	Baseline population change	S1 population change	S2 population change	S3 population change
Saint John	74,980	-19,972	-1,729	-143	91
Charlotte	26,455	-4,524	-1,979	-1,473	-1,458
Sunbury	24,300	-2,103	3,352	4,164	4,437

Census Division	Population in 2011	Baseline population change	S1 population change	S2 population change	S3 population change
Queens	11,220	-3,502	-2,535	-2,383	-2,412
Kings	70,085	-733	-64	1,538	1,727
Albert	29,480	3,767	-1,107	-515	-479
Westmorland	142,530	30,547	-2,848	-38	325
Kent	31,390	-567	-4,881	-4,466	-4,552
Northumberland	48,860	-4,697	-5,939	-5,154	-5,227
York	93,655	6,269	1,224	3,449	3,902
Carleton	26,850	-2,058	-592	4	82
Victoria	19,695	-3,050	-1,397	-996	-972
Madawaska	33,170	-2,994	-4,759	-4,298	-4,397
Restigouche	32,510	-3,335	-5,518	-5,055	-5,151
Gloucester	78,040	-5,076	-13,561	-12,667	-13,055
New Brunswick	743,220	-12,028	-42,333	-28,033	-27,139

Table 15: Population change from 2011-2036, by scenario, by PETL Employment Sub-Region, base period 2011-2016.

PETL Employment Sub-Region	Label	Baseline	S1	S2	S3
Grand Falls Region	1a	-4,042	614	198	-153
Edmundston Region	1b	-3,052	-1,408	-2,268	-2,952
Haut Madawaska Region	1c	-154	-261	-417	-544
Fredericton	2a	20,777	13,229	10,995	8,875
Oromocto/Gagetown	2b	-108	4,558	4,403	4,201
Chipman/Minto	2c	-686	-938	-1,160	-1,332
Doaktown area	2d	266	-449	-595	-719
McAdam/Harvey	2e	-297	-93	-138	-180
Woodstock	2f	-2,564	2,176	1,389	698
Perth-Andover	2g	-1,298	544	170	-154
Restigouche-est	3a	-3,263	-1,403	-1,868	-2,226
Restigouche-centre	3b	-1,949	-886	-1,313	-1,633
Restigouche-ouest	3c	-546	-38	-181	-298
Allardville	3d	24,706	-459	-593	-697
Greater Bathurst	3e	-4,753	-1,430	-2,020	-2,494
Pte-verte-Petit-Rocher	3f	161	-428	-531	-612
Beresford-Nigadoo	3g	-1,373	-53	-463	-784
Saint John	4a	-14,759	11,945	8,794	5,990
St.Stephen (Islands)	4b	-115	132	26	-70
St.Stephen (Main land Charlotte County)	4c	-3,486	620	-35	-591
Sussex (including Hampton)	4d	-905	1,759	953	241
Riverview	5a	3,958	2,234	1,729	1,276

PETL Employment Sub-Region	Label	Baseline	S1	S2	S3
Hillsborough, Elgin, Hopewell, Alma and surrounding areas	5b	-414	-104	-444	-736
Bouctouche, Saint Antoine, Cocagne and surrounding areas	5c	2,481	-1,275	-1,876	-2,367
Richibucto, Saint-Louis, Acadieville and surrounding areas	5d	-522	-533	-982	-1,358
Moncton and surrounding areas	5e	7,970	9,018	6,865	4,855
Dieppe, Memramcook and surrounding areas	5f	11,050	5,031	4,290	3,537
Salisbury, Petitcodiac, and surrounding areas	5g	-168	534	376	226
Dorchester, Port Elgin, Sackville and surrounding areas	5h	923	-195	-450	-670
Shediac, Beaubassin, Cap-Pelé and surrounding areas	5i	3,427	-1,215	-1,926	-2,525
Baie Sainte Anne and surrounding areas	6a	217	-270	-422	-545
Rogersville and surrounding areas	6b	-97	-362	-474	-563
Blackville and surrounding areas	6c	51	-128	-263	-365
Sunny Corner and surrounding areas	6d	-290	-7	-162	-291
Neguac and surrounding areas	6e	-929	105	-204	-458
Miramichi and surrounding areas	6f	-348	-44	-615	-1,093
Tracadie	7a	464	-137	-245	-331
Caraquet	7b	-1,061	-1,628	-2,151	-2,565
Shippagan	7c	-989	-1,528	-2,120	-2,599

Table 16: Population change from 2011-2036, by scenario, by CMA, base period 2011-2016.

CMA	Label	Baseline	S1	S2	S3
Moncton	305	18,455	-1,919	8,721	15,489
Saint John	310	-13,424	-3,732	6,219	12,427
Fredericton	320	3,071	1,379	9,025	13,911
Bathurst	328	-4,915	-6,074	-4,070	-2,888
Miramichi	329	-1,313	-3,563	-1,619	-433
Campbellton (New Brunswick part)	330	-991	-2,736	-1,804	-1,260
Edmundston	335	-1,743	-3,772	-2,432	-1,619
Non-CMA	999	-45,650	-36,193	-16,392	-4,304

Table 17: Population change from 2011-2036, by scenario, by Health Council Community, base period 2011-2016.

Health Council Community	Label	Baseline	S1	S2	S3
Kedgwick	1	-596	-567	-352	-342
Campbellton	2	-1,478	-2,341	-1,919	-1,922

Health Council Community	Label	Baseline	S1	S2	S3
Dalhousie	3	-2,591	-2,962	-2,559	-2,592
Bathurst	4	-6,481	-5,263	-4,269	-4,308
Caraquet	5	-2,446	-3,264	-2,919	-3,016
Shippagan	6	-3,197	-3,019	-2,636	-2,733
Tracadie-Sheila	7	1,287	-1,897	-1,466	-1,515
Néguac	8	-1,164	-888	-577	-573
Miramichi	9	-4,140	-4,593	-3,321	-3,238
Bouctouche	10	-946	-3,153	-2,519	-2,524
Salisbury	11	215	-332	-18	31
Shediac	12	5,593	-4,719	-3,797	-3,888
Sackville	13	-493	-1,424	-1,067	-1,042
Riverview	14.1	6,983	-329	740	894
Moncton	14.2	7,518	-185	3,263	3,550
Dieppe	14.3	9,326	1,601	2,951	3,099
Hillsborough	15	-273	-943	-779	-786
Sussex	16	-602	-1,192	-128	67
Minto	17	-2,655	-2,187	-1,917	-1,927
Saint John	18.1	-19,049	-1,928	1,343	1,681
Grand Bay-Westfield	18.2	-1,650	-612	-193	-132
Quispamsis	18.3	3,092	499	2,387	2,776
St. George	19	-1,134	-797	-345	-301
St. Stephen	20	-2,049	-1,295	-675	-598
Oromocto	21	-4,221	2,522	3,679	4,060
Fredericton	22.1	3,172	1,404	4,068	4,493
New Maryland	22.2	1,140	882	2,182	2,421
Nackawic	23	1,165	-1,214	-776	-709
Douglas	24	-608	-658	-22	48
Florenceville-Bristol	25	-2,934	-789	427	644
Perth-Andover	26	-1,058	-831	-398	-316
Grand Falls	27	-2,868	-1,330	-709	-666
Edmundston	28	-1,625	-4,208	-3,415	-3,464

Table 18: Population change from 2011-2036, by scenario, by Health Region, base period 2011-2016.

Health Region	Label	Baseline	S1	S2	S3
Zone 1 - Moncton / South-East Area	1301	30,169	7,131	-3,739	16,233
Zone 2 - Fundy Shore / Saint John Area	1302	-18,583	10,231	540	18,535
Zone 3 - Fredericton / River Valley Area	1303	-7,521	14,744	5,483	23,631
Zone 4 - Madawaska / North West Area	1304	-4,728	-2,464	-5,005	-720
Zone 5 - Restigouche Area	1305	-3,103	-3,166	-4,496	-2,328

Health Region	Label	Baseline	S1	S2	S3
Zone 6 - Bathurst / Acadian Peninsula Area	1306	-5,464	-8,410	-12,354	-6,187
Zone 7 - Miramichi Area	1307	-1,474	-1,909	-4,304	-245

Table 19: Population change from 2011-2036, by scenario, by Provincial Electoral District (2010), base period 2011-2016.

Provincial Electoral District (2010)	Label	Baseline	S1	S2	S3
Campbellton-Restigouche Centre	1	-826	-2,148	-1,453	-1,236
Dalhousie-Restigouche East	2	-2,378	-2,194	-1,585	-1,426
Nigadoo-Chaleur	3	-2,276	-1,897	-1,227	-1,029
Bathurst	4	-3,555	-2,174	-1,606	-1,452
Nepisiguit	5	-2,018	-1,724	-1,104	-948
Caraquet	6	-1,411	-2,249	-1,806	-1,735
Lamèque-Shippagan-Miscou	7	-2,078	-2,005	-1,494	-1,408
Centre-Péninsule-Saint-Sauveur	8	-736	-2,083	-1,587	-1,550
Tracadie-Sheila	9	997	-1,366	-754	-628
Miramichi-Bay-Neguac	10	-658	-1,074	-272	-25
Miramichi-Bay du Vin	11	-3,036	-1,970	-1,292	-1,090
Miramichi Centre	12	-221	-728	-110	97
Southwest Miramichi	13	-1,505	-1,550	-866	-647
Rogersville-Kouchibouguac	14	-1,123	-2,395	-1,898	-1,804
Kent	15	153	-1,220	-468	-232
Kent SouthKent-Sud	16	6,076	-2,059	-1,255	-1,086
Shediac-Cap-Pelé	17	4,383	-2,462	-1,656	-1,508
Tantramar	18	-494	-1,341	-752	-567
Memramcook-Lakeville-Dieppe	19	4,249	317	1,481	1,793
Dieppe Centre-Lewisville	20	9,331	1,499	2,941	3,356
Moncton East	21	-1,507	30	1,125	1,401
Moncton West	22	-2,934	-1,425	-639	-529
Moncton North	23	-4,123	631	1,657	1,999
Moncton Crescent	24	5,628	1,618	3,425	3,990
Petitcodiac	25	175	-481	541	879
Riverview	26	-1,854	-342	793	1,209
Albert	27	744	-727	173	453
Kings-East	28	-1,101	-663	403	819
Hampton-Kings	29	913	-522	658	1,094
Quispamsis	30	10,241	999	2,435	3,032
Saint John-Fundy	31	3,203	-234	824	1,149
Rothesay	32	5,484	103	1,136	1,555
Saint John East	33	-2,305	-189	818	1,125
Saint John Harbour	34	-6,697	684	1,677	1,943

Provincial Electoral District (2010)	Label	Baseline	S1	S2	S3
Saint John Portland	35	-2,872	-377	713	1,104
Saint John Lancaster	36	-2,621	-873	13	307
Fundy-River Valley	37	-996	-544	231	467
Charlotte-The Isles	38	-1,745	-916	-126	125
Charlotte-Campobello	39	-2,104	-958	-41	299
Oromocto	40	-4,399	2,881	4,418	5,190
Grand Lake-Gagetown	41	-3,212	-2,505	-1,985	-1,828
Fredericton-Nashwaaksis	42	-1,320	-523	469	823
Fredericton-Fort Nashwaak	43	864	1,409	2,912	3,389
Fredericton-Lincoln	44	-273	1,292	2,561	3,014
Fredericton-Silverwood	45	4,311	-204	968	1,315
New Maryland-Sunbury West	46	2,149	838	1,863	2,267
York	47	-39	-241	662	992
York NorthYork-Nord	48	-1,039	-687	344	676
Woodstock	49	151	-318	788	1,209
Carleton	50	-1,630	-429	496	857
Victoria-Tobique	51	-1,232	-790	-13	301
Grand Falls-Drummond-Saint-André	52	-1,670	-730	-30	189
Restigouche-la-Vallée	53	-1,589	-1,326	-577	-370
Edmundston-Saint-Basile	54	717	-2,356	-1,668	-1,483
Madawaska-les-Lacs	55	-190	-1,398	-786	-637

Table 20: Population change from 2011-2036, by scenario, by Provincial Electoral District (2014), base period 2011-2016.

Provincial Electoral District (2014)	Label	Baseline	S1	S2	S3
Restigouche West	1	-2,261	-1,540	-352	-421
Campbellton-Dalhousie	2	-2,365	-2,922	-1,767	-1,811
Restigouche-Chaleur	3	-446	-2,117	-1,105	-1,186
Bathurst West-Beresford	4	-3,429	-1,799	-721	-725
Bathurst East-Nepisiguit-Saint-Isidore	5	-1,647	-2,878	-1,796	-1,919
Caraquet	6	-1,207	-2,677	-1,844	-1,989
Shippagan-Lamèque-Miscou	7	-2,586	-2,468	-1,532	-1,671
Tracadie-Sheila	8	467	-1,505	-491	-581
Miramichi Bay-Neguac	9	-1,167	-927	518	519
Miramichi	10	-1,348	-1,686	-462	-480
Southwest Miramichi-Bay du Vin	11	-2,040	-2,110	-930	-960
Kent North	12	-1,487	-2,257	-942	-987
Kent South	13	-768	-2,436	-1,291	-1,394
Shediac Bay-Dieppe	14	12,884	585	2,129	2,112
Shediac-Beaubassin-Cap-Pelé	15	4,004	-2,330	-1,139	-1,264

Provincial Electoral District (2014)	Label	Baseline	S1	S2	S3
Memramcook-Tantramar	16	368	-1,640	-388	-425
Dieppe	17	5,565	1,159	2,771	2,728
Moncton East	18	2,160	381	1,863	1,820
Moncton Centre	19	-3,938	-329	1,140	954
Moncton South	20	-3,028	-1,515	-179	-380
Moncton Northwest	21	8,451	2,495	4,525	4,615
Moncton Southwest	22	1,790	249	1,807	1,814
Riverview	23	-2,238	-58	1,417	1,467
Albert	24	70	-684	930	930
Gagetown-Petitcodiac	25	-1,377	-1,135	297	346
Sussex-Fundy-St. Martins	26	-1,546	-535	1,055	1,122
Hampton	27	2,971	266	1,958	1,989
Quispamsis	28	4,576	1,206	2,970	3,152
Rothesay	29	2,969	320	1,778	1,871
Saint John East	30	-317	-87	1,470	1,447
Portland-Simonds	31	-4,827	-317	1,383	1,405
Saint John Harbour	32	-7,090	506	2,201	2,084
Saint John Lancaster	33	-2,372	-793	455	439
Kings Centre	34	-917	-514	802	805
Fundy-The Isles-Saint John West	35	-1,727	-870	570	542
Charlotte-Campobello	36	-2,611	-1,351	191	212
Oromocto-Lincoln	37	-5,669	3,629	6,218	6,538
Fredericton-Grand Lake	38	-4,176	-863	546	515
New Maryland-Sunbury	39	4,289	1,209	3,109	3,228
Fredericton South	40	1,419	654	2,186	2,124
Fredericton North	41	-2,594	627	2,192	2,238
Fredericton-York	42	617	115	1,865	1,885
Fredericton West-Hanwell	43	832	313	1,881	1,950
Carleton-York	44	-76	-1,019	442	475
Carleton	45	-1,887	-289	1,332	1,380
Carleton-Victoria	46	-2,116	-787	779	863
Victoria-La Vallée	47	-2,834	-667	763	784
Edmundston-Madawaska Centre	48	3,250	-2,586	-1,585	-1,665
Madawaska Les Lacs-Edmundston	49	-1,032	-1,694	-526	-591

Table 21: Population change from 2011-2036, by scenario, by Regional Service Commission, base period 2011-2016.

Regional Service Commission	Label	Baseline	S1	S2	S3
Northwest Regional Service Commission	1	-10,212	-6,523	-7,333	-6,432
Restigouche Regional Service Commission	2	-5,076	-5,034	-5,505	-5,019

Regional Service Commission	Label	Baseline	S1	S2	S3
Chaleur Regional Service Commission	**3**	-8,144	-6,524	-7,138	-6,528
Acadian Peninsula Regional Service Commission	**4**	-4,213	-9,430	-10,276	-9,599
Greater Miramichi Regional Service Commission	**5**	-4,954	-4,983	-5,683	-4,803
Kent Regional Service Commission	**6**	-1,611	-5,904	-6,472	-5,899
Southeast Regional Service Commission	**7**	12,859	-5,725	-8,374	-4,550
Regional Service Commission 8	**8**	493	-1,574	-2,093	-1,296
Fundy Regional Service Commission	**9**	-13,530	-2,491	-4,453	-1,483
Southwest New Brunswick Service Commission	**10**	-4,012	-2,861	-3,364	-2,689
Regional Service Commission 11	**11**	-2,038	1,724	-150	3,275
Regional Service Commission 12	**12**	-4,175	-1,808	-2,443	-1,460

Appendix B: Tables for alternate geographies of constrained population change by Statistics Canada scenario

Table 22: Constrained population change from 2011-2036, by scenario, by CMA, base period 2011-2016.

CMA	Label	Low	M1	M2	M3	M4	M5	High
Moncton	305	22,250	29,677	30,687	29,677	22,317	35,062	38,764
Saint John	310	-11,126	-5,761	-5,032	-5,761	-11,077	-1,872	803
Fredericton	320	5,234	9,729	10,340	9,729	5,275	12,988	15,229
Bathurst	328	-4,370	-3,036	-2,855	-3,036	-4,358	-2,070	-1,405
Miramichi	329	-733	548	722	548	-721	1,476	2,115
Campbellton (New Brunswick part)	330	-697	-38	52	-38	-691	441	770
Edmundston	335	-1,321	-362	-231	-362	-1,313	334	812
Non-CMA	999	-40,967	-29,387	-27,812	-29,387	-40,862	-20,990	-15,218

Table 23: Constrained population change from 2011-2036, by scenario, by Health Council Community, base period 2011-2016.

Health Council Community	Label	Low	M1	M2	M3	M4	M5	High
Kedgwick	1	-654	-411	-378	-411	-652	-235	-114
Campbellton	2	-1,610	-1,066	-992	-1,066	-1,605	-672	-400
Dalhousie	3	-2,741	-2,201	-2,128	-2,201	-2,736	-1,810	-1,541
Bathurst	4	-6,827	-5,621	-5,457	-5,621	-6,816	-4,746	-4,145
Caraquet	5	-2,598	-2,035	-1,959	-2,035	-2,593	-1,627	-1,346
Shippagan	6	-3,360	-2,802	-2,726	-2,802	-3,355	-2,397	-2,119
Tracadie-Sheila	7	1,164	1,892	1,991	1,892	1,171	2,419	2,782
Néguac	8	-1,255	-891	-841	-891	-1,252	-627	-445
Miramichi	9	-4,500	-3,029	-2,829	-3,029	-4,486	-1,963	-1,230
Bouctouche	10	-1,136	-256	-137	-256	-1,128	381	820
Salisbury	11	152	490	536	490	155	735	904
Shediac	12	5,354	7,029	7,257	7,029	5,369	8,244	9,080
Sackville	13	-588	-152	-92	-152	-584	165	382
Riverview	14.1	6,816	8,246	8,440	8,246	6,829	9,282	9,995
Moncton	14.2	6,869	10,774	11,305	10,774	6,905	13,606	15,553
Dieppe	14.3	9,132	10,889	11,128	10,889	9,148	12,163	13,039
Hillsborough	15	-325	-88	-55	-88	-322	84	202
Sussex	16	-822	238	382	238	-812	1,007	1,535
Minto	17	-2,760	-2,452	-2,410	-2,452	-2,757	-2,229	-2,075

Health Council Community	Label	Low	M1	M2	M3	M4	M5	High
Saint John	18.1	-19,861	-17,351	-17,010	-17,351	-19,838	-15,531	-14,280
Grand Bay-Westfield	18.2	-1,754	-1,367	-1,314	-1,367	-1,750	-1,086	-894
Quispamsis	18.3	2,749	4,741	5,012	4,741	2,767	6,185	7,178
St. George	19	-1,245	-777	-714	-777	-1,241	-438	-205
St. Stephen	20	-2,203	-1,598	-1,516	-1,598	-2,197	-1,159	-858
Oromocto	21	-4,393	-3,875	-3,804	-3,875	-4,388	-3,499	-3,240
Fredericton	22.1	2,720	5,270	5,617	5,270	2,743	7,119	8,390
New Maryland	22.2	907	2,177	2,350	2,177	919	3,098	3,731
Nackawic	23	1,069	1,648	1,727	1,648	1,075	2,068	2,357
Douglas	24	-756	-58	37	-58	-750	448	796
Florenceville-Bristol	25	-3,201	-2,099	-1,949	-2,099	-3,191	-1,300	-751
Perth-Andover	26	-1,156	-747	-691	-747	-1,152	-450	-246
Grand Falls	27	-3,039	-2,415	-2,330	-2,415	-3,033	-1,963	-1,652
Edmundston	28	-1,879	-733	-577	-733	-1,869	98	669

Table 24: Constrained population change from 2011-2036, by scenario, by Health Region, base period 2011-2016.

Health Region	Label	Low	M1	M2	M3	M4	M5	High
Zone 1 - Moncton / South-East Area	1301	24,023	34,578	36,013	34,578	24,119	42,231	47,493
Zone 2 - Fundy Shore / Saint John Area	1302	-23,310	-16,296	-15,343	-16,296	-23,246	-11,211	-7,715
Zone 3 - Fredericton / River Valley Area	1303	-12,197	-4,972	-3,989	-4,972	-12,131	267	3,869
Zone 4 - Madawaska / North West Area	1304	-6,060	-4,070	-3,799	-4,070	-6,042	-2,626	-1,634
Zone 5 - Restigouche Area	1305	-3,826	-2,761	-2,616	-2,761	-3,816	-1,989	-1,458
Zone 6 - Bathurst / Acadian Peninsula Area	1306	-7,620	-4,341	-3,895	-4,341	-7,590	-1,964	-330
Zone 7 - Miramichi Area	1307	-2,741	-768	-500	-768	-2,723	662	1,646

Table 25: Constrained population change from 2011-2036, by scenario, by Provincial Electoral District (2010), base period 2011-2016.

Provincial Electoral District (2010)	Label	Low	M1	M2	M3	M4	M5	High
Campbellton-Restigouche Centre	1	-1,192	-651	-578	-651	-1,187	-259	11
Dalhousie-Restigouche East	2	-2,697	-2,268	-2,209	-2,268	-2,693	-1,957	-1,743
Nigadoo-Chaleur	3	-2,612	-2,154	-2,091	-2,154	-2,608	-1,821	-1,592
Bathurst	4	-3,833	-3,497	-3,451	-3,497	-3,830	-3,254	-3,086
Nepisiguit	5	-2,346	-1,895	-1,833	-1,895	-2,342	-1,567	-1,342
Caraquet	6	-1,694	-1,295	-1,241	-1,295	-1,690	-1,006	-807
Lamèque-Shippagan-Miscou	7	-2,375	-1,972	-1,917	-1,972	-2,371	-1,680	-1,479
Centre-Péninsule-Saint-Sauveur	8	-1,062	-580	-514	-580	-1,058	-230	10
Tracadie-Sheila	9	647	1,209	1,286	1,209	652	1,617	1,897
Miramichi-Bay-Neguac	10	-1,034	-474	-398	-474	-1,029	-68	211
Miramichi-Bay du Vin	11	-3,359	-2,940	-2,883	-2,940	-3,355	-2,636	-2,428
Miramichi Centre	12	-496	-79	-22	-79	-493	224	432
Southwest Miramichi	13	-1,829	-1,369	-1,307	-1,369	-1,825	-1,036	-807
Rogersville-Kouchibouguac	14	-1,431	-988	-928	-988	-1,427	-667	-446
Kent	15	-200	346	420	346	-195	741	1,013
Kent SouthKent-Sud	16	5,540	6,518	6,651	6,518	5,548	7,227	7,715
Shediac-Cap-Pelé	17	3,864	4,773	4,896	4,773	3,873	5,431	5,884
Tantramar	18	-776	-355	-298	-355	-772	-50	160
Memramcook-Lakeville-Dieppe	19	3,698	4,652	4,782	4,652	3,707	5,344	5,820
Dieppe Centre-Lewisville	20	8,671	9,921	10,091	9,921	8,682	10,828	11,451
Moncton East	21	-1,920	-1,324	-1,243	-1,324	-1,914	-892	-595
Moncton West	22	-3,298	-2,814	-2,749	-2,814	-3,294	-2,464	-2,222
Moncton North	23	-4,443	-4,056	-4,004	-4,056	-4,439	-3,776	-3,584
Moncton Crescent	24	4,878	6,172	6,348	6,172	4,890	7,110	7,755
Petitcodiac	25	-265	415	508	415	-259	909	1,248
Riverview	26	-2,287	-1,669	-1,585	-1,669	-2,282	-1,221	-913
Albert	27	326	987	1,077	987	332	1,467	1,797
Kings-East	28	-1,513	-909	-826	-909	-1,508	-470	-169
Hampton-Kings	29	421	1,199	1,305	1,199	428	1,763	2,151
Quispamsis	30	9,579	10,855	11,029	10,855	9,590	11,781	12,418
Saint John-Fundy	31	2,714	3,545	3,658	3,545	2,722	4,148	4,562
Rothesay	32	5,020	5,872	5,987	5,872	5,027	6,489	6,914
Saint John East	33	-2,682	-2,162	-2,092	-2,162	-2,677	-1,786	-1,527

Provincial Electoral District (2010)	Label	Low	M1	M2	M3	M4	M5	High
Saint John Harbour	34	-6,979	-6,717	-6,681	-6,717	-6,977	-6,526	-6,396
Saint John Portland	35	-3,271	-2,733	-2,659	-2,733	-3,266	-2,342	-2,074
Saint John Lancaster	36	-2,975	-2,498	-2,434	-2,498	-2,970	-2,153	-1,916
Fundy-River Valley	37	-1,332	-842	-775	-842	-1,328	-486	-242
Charlotte-The Isles	38	-2,090	-1,605	-1,539	-1,605	-2,086	-1,254	-1,012
Charlotte-Campobello	39	-2,476	-1,959	-1,888	-1,959	-2,472	-1,583	-1,325
Oromocto	40	-4,744	-4,327	-4,270	-4,327	-4,741	-4,024	-3,816
Grand Lake-Gagetown	41	-3,485	-3,148	-3,102	-3,148	-3,482	-2,903	-2,736
Fredericton-Nashwaaksis	42	-1,706	-1,148	-1,072	-1,148	-1,701	-743	-465
Fredericton-Fort Nashwaak	43	297	1,190	1,311	1,190	305	1,837	2,282
Fredericton-Lincoln	44	-700	-52	36	-52	-694	418	740
Fredericton-Silverwood	45	3,803	4,693	4,814	4,693	3,811	5,338	5,782
New Maryland-Sunbury West	46	1,760	2,412	2,501	2,412	1,766	2,885	3,210
York	47	-419	163	242	163	-414	586	876
York NorthYork-Nord	48	-1,478	-831	-743	-831	-1,472	-362	-40
Woodstock	49	-297	395	490	395	-291	898	1,243
Carleton	50	-1,982	-1,483	-1,416	-1,483	-1,978	-1,122	-873
Victoria-Tobique	51	-1,539	-1,099	-1,039	-1,099	-1,535	-780	-560
Grand Falls-Drummond-Saint-André	52	-1,962	-1,556	-1,501	-1,556	-1,959	-1,262	-1,060
Restigouche-la-Vallée	53	-1,951	-1,436	-1,366	-1,436	-1,946	-1,062	-805
Edmundston-Saint-Basile	54	309	953	1,040	953	315	1,420	1,740
Madawaska-les-Lacs	55	-524	-16	53	-16	-519	352	606

Table 26: Constrained population change from 2011-2036, by scenario, by Provincial Electoral District (2014), base period 2011-2016.

Provincial Electoral District (2014)	Label	Low	M1	M2	M3	M4	M5	High
Restigouche West	1	-2,546	-2,001	-1,927	-2,001	-2,541	-1,606	-1,334
Campbellton-Dalhousie	2	-2,675	-2,077	-1,996	-2,077	-2,670	-1,644	-1,346
Restigouche-Chaleur	3	-729	-122	-39	-122	-723	319	621
Bathurst West-Beresford	4	-3,690	-3,241	-3,180	-3,241	-3,686	-2,916	-2,692
Bathurst East-Nepisiguit-Saint-Isidore	5	-1,964	-1,326	-1,240	-1,326	-1,958	-864	-546

Provincial Electoral District (2014)	Label	Low	M1	M2	M3	M4	M5	High
Caraquet	6	-1,467	-939	-868	-939	-1,462	-557	-294
Shippagan-Lamèque-Miscou	7	-2,856	-2,356	-2,288	-2,356	-2,852	-1,993	-1,743
Tracadie-Sheila	8	192	816	901	816	197	1,268	1,579
Miramichi Bay-Neguac	9	-1,488	-823	-733	-823	-1,482	-341	-10
Miramichi	10	-1,636	-1,052	-972	-1,052	-1,630	-628	-337
Southwest Miramichi-Bay du Vin	11	-2,345	-1,748	-1,667	-1,748	-2,339	-1,316	-1,019
Kent North	12	-1,814	-1,148	-1,058	-1,148	-1,808	-665	-333
Kent South	13	-1,086	-412	-321	-412	-1,080	77	413
Shediac Bay-Dieppe	14	12,506	13,813	13,991	13,813	12,518	14,761	15,413
Shediac-Beaubassin-Cap-Pelé	15	3,664	4,562	4,684	4,562	3,672	5,213	5,660
Memramcook-Tantramar	16	61	751	845	751	67	1,251	1,595
Dieppe	17	5,247	6,154	6,277	6,154	5,255	6,811	7,263
Moncton East	18	1,850	2,614	2,718	2,614	1,856	3,168	3,549
Moncton Centre	19	-4,221	-3,743	-3,678	-3,743	-4,217	-3,396	-3,158
Moncton South	20	-3,329	-2,777	-2,702	-2,777	-3,324	-2,376	-2,101
Moncton Northwest	21	8,063	9,230	9,388	9,230	8,073	10,076	10,658
Moncton Southwest	22	1,479	2,231	2,333	2,231	1,486	2,776	3,151
Riverview	23	-2,526	-1,973	-1,898	-1,973	-2,521	-1,572	-1,296
Albert	24	-287	504	612	504	-280	1,078	1,472
Gagetown-Petitcodiac	25	-1,692	-1,049	-962	-1,049	-1,686	-583	-262
Sussex-Fundy-St. Martins	26	-1,864	-1,219	-1,131	-1,219	-1,859	-750	-428
Hampton	27	2,620	3,503	3,623	3,503	2,628	4,144	4,584
Quispamsis	28	4,221	5,174	5,303	5,174	4,229	5,865	6,340
Rothesay	29	2,678	3,429	3,531	3,429	2,685	3,974	4,348
Saint John East	30	-638	58	153	58	-631	563	910
Portland-Simonds	31	-5,145	-4,622	-4,551	-4,622	-5,140	-4,243	-3,982
Saint John Harbour	32	-7,379	-7,003	-6,952	-7,003	-7,375	-6,730	-6,543
Saint John Lancaster	33	-2,634	-2,143	-2,076	-2,143	-2,630	-1,787	-1,542
Kings Centre	34	-1,197	-614	-535	-614	-1,192	-191	99
Fundy-The Isles-Saint John West	35	-2,048	-1,404	-1,317	-1,404	-2,042	-938	-617
Charlotte-Campobello	36	-2,950	-2,299	-2,210	-2,299	-2,945	-1,826	-1,501
Oromocto-Lincoln	37	-6,033	-5,441	-5,360	-5,441	-6,027	-5,012	-4,717
Fredericton-Grand Lake	38	-4,476	-3,969	-3,900	-3,969	-4,471	-3,602	-3,350
New Maryland-Sunbury	39	3,931	4,877	5,006	4,877	3,940	5,563	6,034
Fredericton South	40	1,151	1,793	1,881	1,793	1,157	2,259	2,579

Provincial Electoral District (2014)	Label	Low	M1	M2	M3	M4	M5	High
Fredericton North	41	-2,874	-2,353	-2,282	-2,353	-2,869	-1,975	-1,715
Fredericton-York	42	256	1,075	1,187	1,075	264	1,669	2,077
Fredericton West-Hanwell	43	515	1,244	1,343	1,244	522	1,773	2,136
Carleton-York	44	-404	316	413	316	-397	837	1,195
Carleton	45	-2,213	-1,563	-1,475	-1,563	-2,207	-1,092	-768
Carleton-Victoria	46	-2,433	-1,811	-1,727	-1,811	-2,428	-1,360	-1,050
Victoria-La Vallée	47	-3,133	-2,578	-2,502	-2,578	-3,128	-2,175	-1,898
Edmundston-Madawaska Centre	48	2,942	3,741	3,850	3,741	2,949	4,321	4,719
Madawaska Les Lacs-Edmundston	49	-1,333	-707	-622	-707	-1,327	-254	58

Table 27: Constrained population change from 2011-2036, by scenario, by Regional Service Commission, base period 2011-2016.

Regional Service Commission	Label	Low	M1	M2	M3	M4	M5	High
Northwest Regional Service Commission	1	-9,640	-7,840	-7,595	-7,840	-9,624	-6,534	-5,637
Restigouche Regional Service Commission	2	-4,729	-3,679	-3,536	-3,679	-4,719	-2,918	-2,395
Chaleur Regional Service Commission	3	-7,737	-6,421	-6,242	-6,421	-7,725	-5,466	-4,810
Acadian Peninsula Regional Service Commission	4	-3,405	-1,271	-981	-1,271	-3,385	275	1,339
Greater Miramichi Regional Service Commission	5	-4,336	-2,633	-2,401	-2,633	-4,320	-1,398	-549
Kent Regional Service Commission	6	-1,011	512	719	512	-997	1,616	2,375
Southeast Regional Service Commission	7	16,678	25,438	26,629	25,438	16,758	31,789	36,155
Regional Service Commission 8	8	1,095	2,537	2,733	2,537	1,108	3,582	4,301
Fundy Regional Service Commission	9	-11,735	-6,828	-6,161	-6,828	-11,691	-3,271	-825
Southwest New Brunswick Service Commission	10	-3,574	-2,347	-2,180	-2,347	-3,563	-1,457	-846
Regional Service Commission 11	11	274	5,972	6,747	5,972	325	10,105	12,945
Regional Service Commission 12	12	-3,610	-2,069	-1,860	-2,069	-3,596	-953	-185

Appendix C: Maps for selected geographies of constrained population change by Statistics Canada scenario

Map 10: Linear Growth Rate for Health Council Communities under low growth scenario (top left), high growth scenario (right), and M1 growth scenario (bottom left); base period 2011-2016, end year 2036.
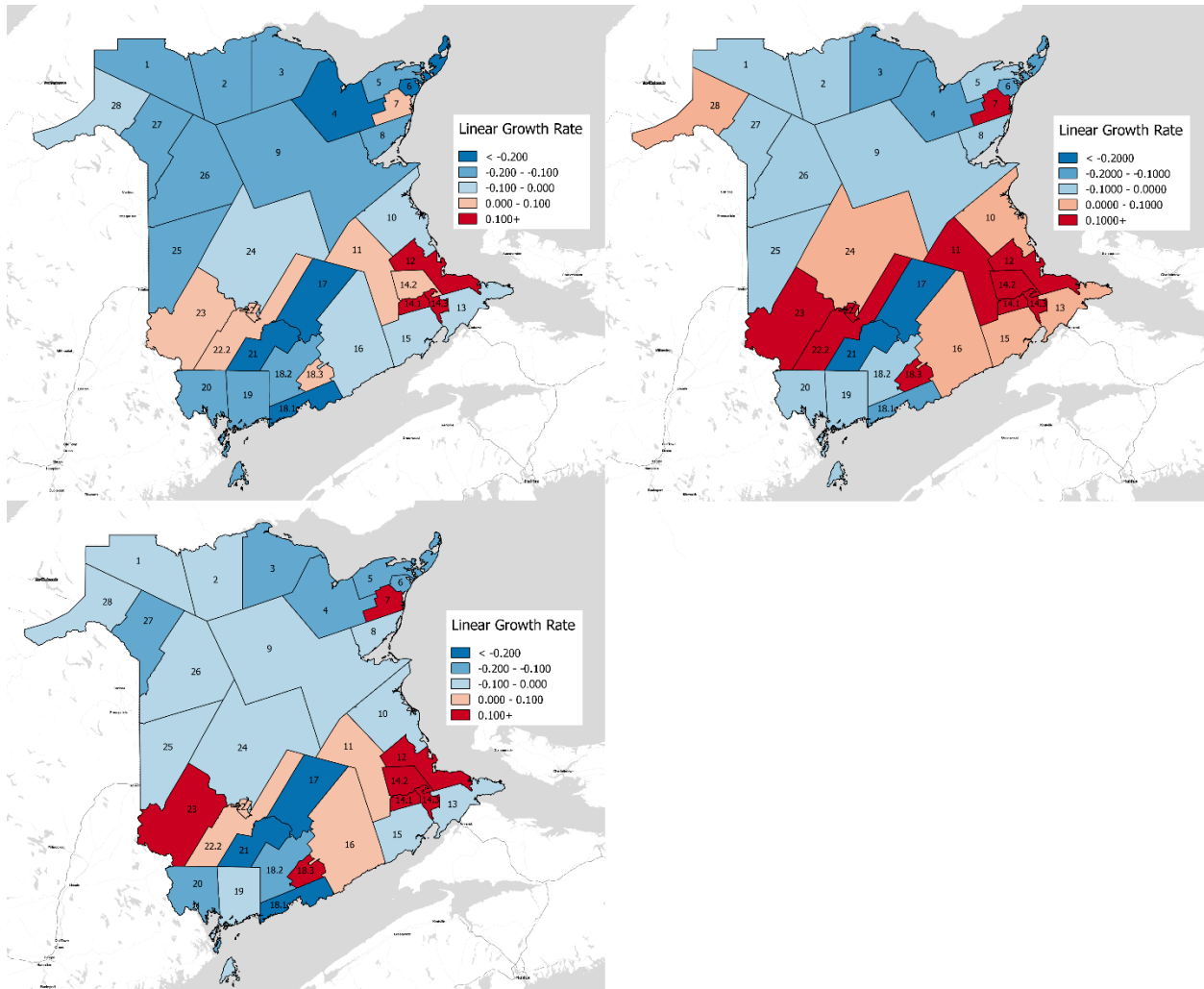
Map 11: Linear Growth Rate for Provincial Electoral Districts (2014) under low growth scenario (top left), high growth scenario (right), and M1 growth scenario (bottom left); base period 2011-2016, end year 2036.