

February 6, 2004

Mr. Doug Foster  
Director of Planning  
Cape Breton Regional Municipality  
320 Esplanade  
Sydney, NS B1P 7B9

Dear Mr. Foster:

*Re: Population Projections for Cape Breton Municipal Units – 2001-2021 - FINAL*

We are pleased to provide our summary of the key results from our demographic modeling for the Cape Breton Island and its component municipal units. The model we have employed uses 1996 to 2001 data with the most recent available birth and death rates for Nova Scotia. All projections are from 2001, the most recent Census year, to 2021.

The model provides projections for the following areas or municipal units:

- Cape Breton Island;
- Cape Breton Regional Municipality;
- County of Inverness (including the Town of Port Hawkesbury);
- County of Richmond; and
- County of Victoria.

In general, our following discussion focuses on CBRM, although the section titled "Cape Breton Island" reviews projections for other areas listed and the overall demographic situation in Cape Breton.

#### *PROJECTION MODEL*

The model prepared for this assignment is a spreadsheet-based Cohort-Survival Model. It projects future population for multiple areas using recent Census of Canada data. Populations are provided by current and future Census year (i.e., 1996, 2001, 2006, ..., 2021) broken down by five-year age-sex cohorts.

The cohort-survival method is a well-recognized technique for generating accurate and detailed population projections. It is the method used by well-known author, David Foot, for his best-selling book on Canadian demographic trends, *Boom, Bust and Echo*. In our model, it involves applying birth and survival rates for Nova Scotia to the local population. We obtained 1996 and 2001 data for all municipal units on Cape Breton in five-year age-sex groups or cohorts. We derived the average of birth and death rates for the years 1996 to 2000 obtained from Statistics Canada data to estimate the influence of natural increase from 1996 to 2001. We used the so-called Residual Method to calculate net migration.

The model analyzes population change in terms of the relative contributions of natural increase (i.e., the difference between births and deaths) and migration. It calculates population increase in the youngest age cohort (i.e., 0 - 4 years) by applying age specific fertility rates derived from the most recent available data for Nova Scotia (i.e., the average of 1996-2000 data) to the numbers of females between 15 and 45 years of age (i.e., in child-bearing years). From this are subtracted expected deaths to obtain an estimate of the number of infants and very young children born between 1996 and 2001, and surviving to 2001. For older cohorts, only survival needs to be considered. The model multiplies each age-sex cohort by its Nova Scotia average survival rate for 1996 to 2001 to determine the number that will remain after five years. These individuals, by 2001, form the following age-sex cohort (i.e., individuals who are in the 20 - 24 years cohort in 1996 form the 25 - 29 years cohort by 2001). The result is a profile of the population that would be expected if there were no in-migration to or out-migration from the subject area.

Comparison of this profile to the population profile counted by the Census of Canada in 2001 provides a basis for estimating the contribution of migration, which is the only factor besides natural increase that determines population. Migration is determined by subtracting the population projected from 1996 to 2001 from the actual 2001 Census population. The difference or "residual" is assumed to represent net migration (i.e., in-migration minus out-migration).

The model applies recent birth and death rates to current (2001) populations, along with the net migration rates calculated by the residual technique to generate population estimates as described for future Census years. The model can be adjusted to derive interim estimates for non-Census years and alter migration estimates, but the following discussion focuses on projections based on 1996 to 2001 experience.

**POPULATION**

Our projections present a discouraging picture for the growth of CBRM and other areas of Cape Breton Island (Table 1 and Figure 1). As both the table and the figure indicate, the population of CBRM and the three Cape Breton counties will continue to fall steadily to 2021. The overall result will be severe depopulation, with island population declining to roughly two-thirds of its current level by 2021.

FIGURE 1: Recent and Projected Population, CBRM and Cape Breton Counties, 1996 to 2021

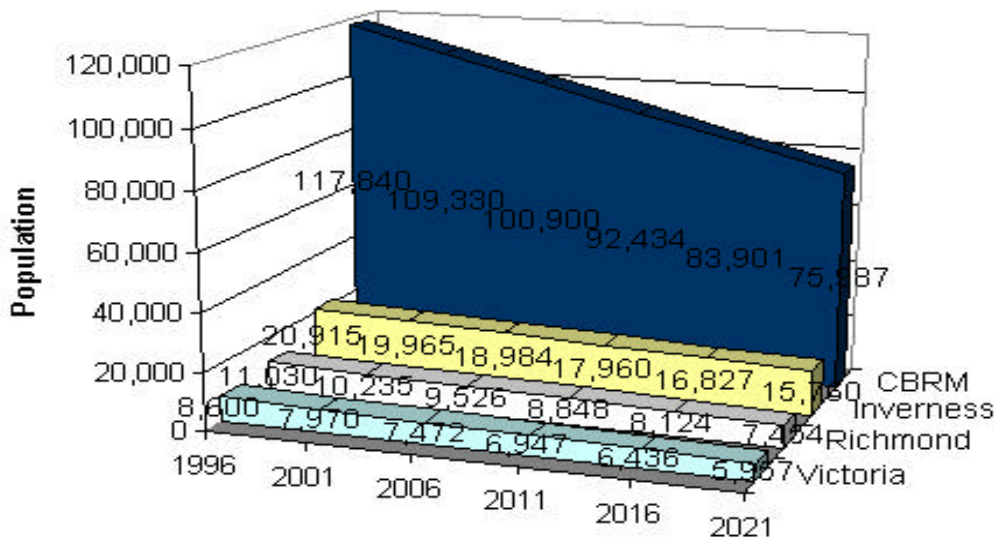


TABLE 1: Recent and Projected Population, CBRM and Cape Breton Counties, 1996-2021

	Population					
	1996	2001	2006	2011	2016	2021
CBRM	117,840	109,330	100,900	92,434	83,901	75,987
Inverness	20,915	19,965	18,984	17,960	16,827	15,760
Richmond	11,030	10,235	9,526	8,848	8,124	7,454
Victoria	8,600	7,970	7,472	6,947	6,436	5,957
Cape Breton (TOTAL)	158,385	147,500	136,882	126,189	115,288	105,158

**MIGRATION**

Figure 2 and Table 2 summarize estimated net migration rates estimated for CBRM using the Residual Method with 1996 and 2001 data. This technique, we should note, is not related to migration data collected by Statistics Canada. Migration estimates are inferred mathematically by our model and may be influenced by variations between Nova Scotia birth and death rates, and the birth and death rates that prevail in the locality being analyzed. For example, the estimated out-migration in the 0-4 year group in CBRM is probably exaggerated by the fact that birth rates are almost certainly lower in CBRM, which is a predominantly urban area, than in Nova Scotia as a whole. Migration for the three more rural counties, by contrast, showed reasonable balance in this age group and, in the case of Inverness, there was net in-migration in the 0-4 year group. In other age groups, out-migration may be exaggerated marginally where death rates are higher than the provincial norm.

With this qualification in mind, the figure and table show net out-migration from CBRM in nearly every age and sex category. Unquestionably, though, the most striking feature of the estimates is the level of out-migration among young adults (i.e., 20 to 29 years). In CBRM and Cape Breton as a whole, the model suggests that as many as a third to one-half of individuals in this group leave the area. Reference to 1996 and 2001 Census counts in these age groups backs these estimates up: in 1996 there were 8,005 young people between 20 and 24 in CBRM but by 2001, the Census found only 6,310 between 20 and 24, and 5,225 between 25 and 29.

FIGURE 2: Estimated Net Migration, CBRM, 1996-2001

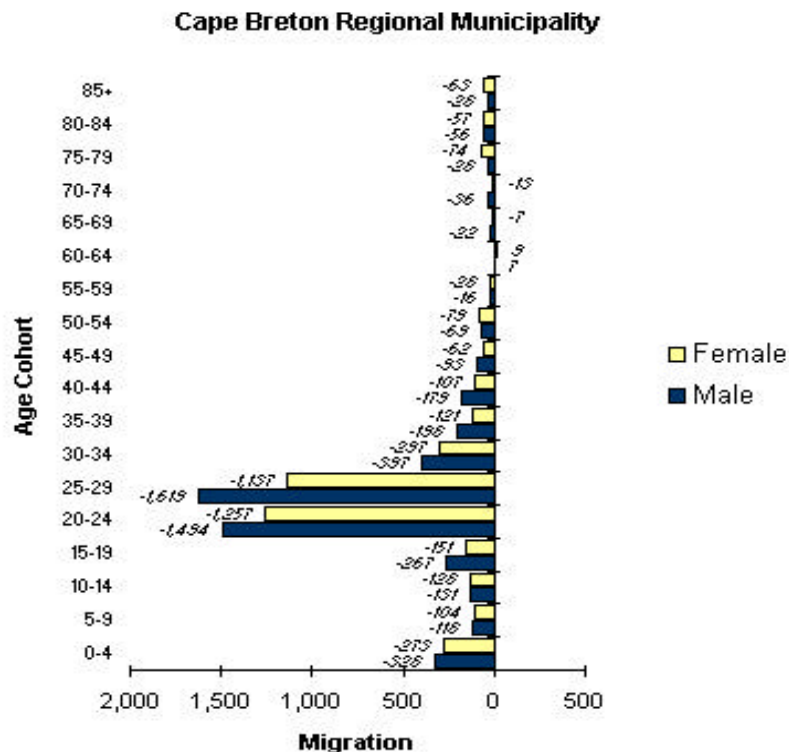


TABLE 2: Estimated Out-Migration, CBRM, 1996-2001

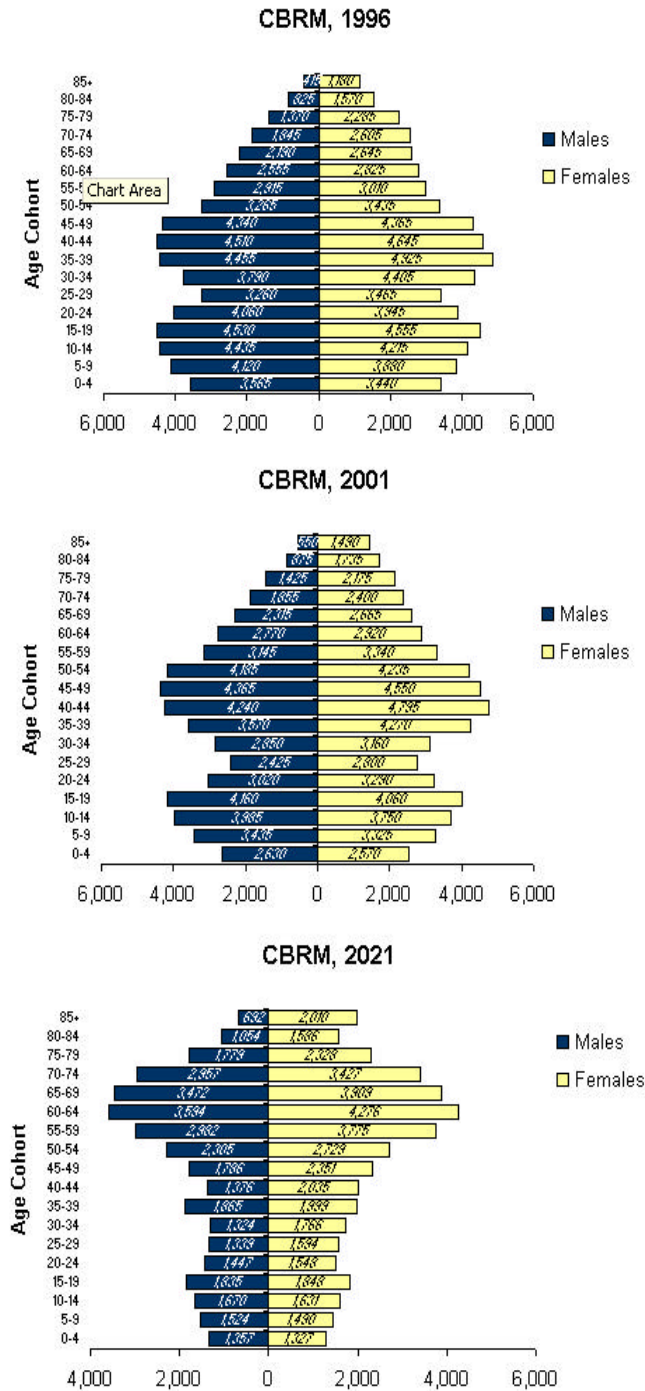
Cohort	Estimated Out-Migration		Estimated Rate	
	Males	Females	Males	Females
0-4	-328	-273	-9%	-8%
5-9	-118	-104	-3%	-3%
10-14	-131	-128	-3%	-3%
15-19	-267	-151	-6%	-3%
20-24	-1,494	-1,257	-37%	-32%
25-29	-1,619	-1,137	-50%	-33%
30-34	-397	-297	-10%	-7%
35-39	-198	-121	-4%	-2%
40-44	-179	-107	-4%	-2%
45-49	-93	-62	-2%	-1%
50-54	-69	-79	-2%	-2%
55-59	-16	-28	-1%	-1%
60-64	7	9	0%	0%
65-69	-22	-7	-1%	0%
70-74	-36	-13	-2%	0%
75-79	-28	-74	-2%	-3%
80-84	-56	-57	-7%	-4%
85+	-28	-63	-7%	-5%
TOTAL	-5,072	-3,949	-9%	-6%

While it is normal for areas in Nova Scotia, outside of Halifax to lose young people in their twenties to Halifax, the level of out-migration from Cape Breton in the past Census period is remarkable. Furthermore, whereas many of the young people drawn to Halifax and other major centres by educational and job opportunities return to their home area afterwards, there is little evidence of this in Cape Breton's recent experience. Out migration was also at high levels for individuals in their early thirties.

CBRM and Cape Breton generally retain population above 35 years of age. Once individuals reach their late thirties, family roots and investments normally keep them in place, but even at that stage it appears a small proportion of residents decided that the cost and disruption of "pulling up stakes" was outweighed by the benefits of moving to another area.

Some out-migration is also apparent in elderly age groups. Again, a degree of out-migration among seniors is normal in areas of Nova Scotia outside Halifax, especially among the most elderly who may move to locations such as Halifax where homes with special care and more extensive medical services are available. The estimated out-migration for these groups in CBRM is higher than that for the other three Cape Breton counties but is not unprecedented, in relation to our experience applying this type of model to other localities. It may also be influenced by higher than average death rates in Cape Breton.

FIGURE 3: Population Profiles, CBRM, 1996, 2001, and 2021



AGE STRUCTURE

Current age structure in all Canadian communities is strongly influenced by the Baby Boom. Baby Boomers born between 1946 and 1966 are the dominant group in Canada's population and will be for several decades to come. In the 1980s they had their own children and produced the Echo Boom or a second rise in the number of children in society caused not by an increase in the birth rates but by an increase in the number of potential parents. Baby Boomers are now in their forties and fifties, and beyond the reproductive stage. As a result, the number of children in our society will soon begin to decline in absolute terms.

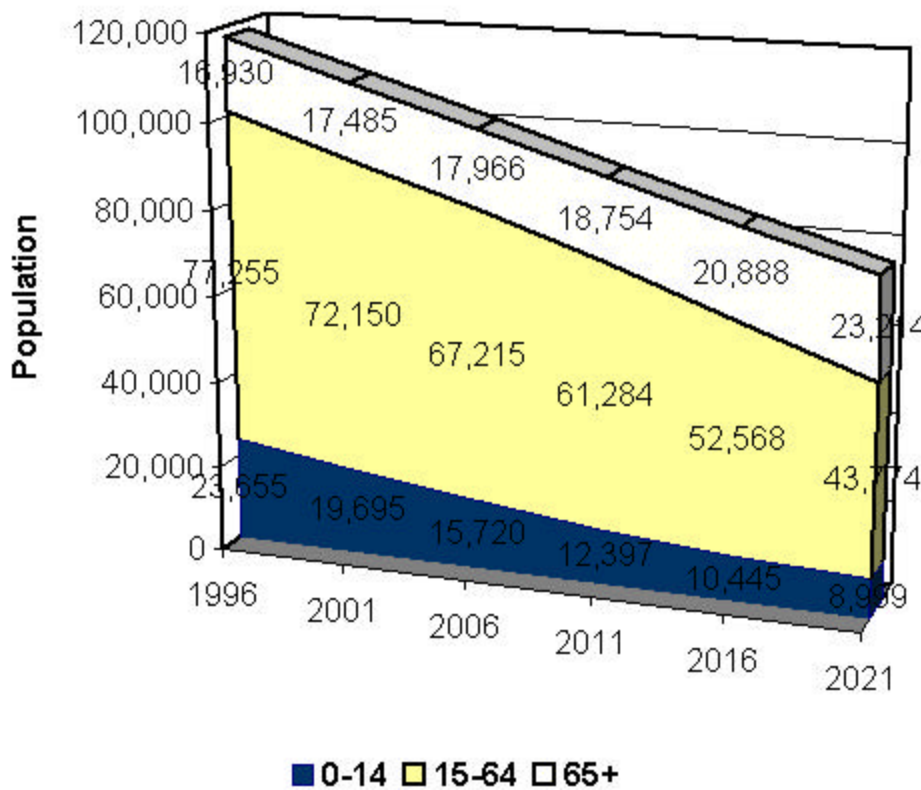
In Cape Breton, the effects of out-migration by young people are powerfully exaggerating the influence of the Baby Boom. The Echo Boomers are now leaving the island in large numbers because of the apparent lack of economic opportunity. If younger residents continue to leave while most older residents stay in place, the population profile for CBRM and Cape Breton will become increasingly top heavy, with many more mature adults and seniors than children and young adults. This trend is already apparent in population profiles for CBRM from the 1996 and 2001 Censuses and will be much more prominent by 2021 (Figure 3).

This gradual evolution will cause a related shift in social priorities that has been anticipated for some time. The major shift will not, however, come until 2011, when the first Baby Boomers will hit their 65<sup>th</sup> birthdays and seniors begin to dominate our

society, not only in Cape Breton but also across Canada. A key concern with an increasing number of seniors will be the Dependency Ratio, or the measure of the portion of a population composed of dependents (people who are too young or too old to work). The ratio will actually fall in CBRM until 2011 because the increasing number of seniors will be more than counterbalanced by a falling number of children. Between 2011 and 2016, however, the increase in seniors will begin to overwhelm the balance of the population (see Figure 4).

A review of the Cape Breton Labour Market recently prepared by Human Resources Development Canada (HRDC) outlines the main impact of the current trend:

Figure 4: Recent and Projected Population by Age Group, CBRM, 1996-2021



The employment share in the 45 - 64 age group has risen from 26.3 percent in 1987 to 38.4 percent in 2002. Those aged 25 - 44 represent 47.4 percent of the employed in 2002, down from 54.3 percent in 1987. Youth employment (aged 15 - 24) has fallen to 14.2 percent of the employed workforce from just over 19.4 percent in 1987. (<http://www.ns.hrdc.gc.ca/english/LMI/lmr/cb.htm>)

The HRDC Report goes on to note that declining birth and death rates across Canada have created a nation-wide trend toward an older workforce. In Cape Breton, however, the trend has been exacerbated by a weak economy:

From 1995 to 2002, employment has risen nationally by 15.4 percent and in Nova Scotia by 13.6 percent. In Cape Breton, however, employment only rose by 3.4 percent over this same period. Canada's labour force grew by 13.1 percent and in Nova Scotia by 10.6 percent since 1995. The labour force contracted in Cape Breton by 3.8 percent or 1,900 persons.

In concrete terms, the report states:

The short-term reality, however, is that those aged 25 to 54 had employment gains of 1,800 in 2002 while employment among those aged 15 to 24 fell by 1,200.

In the longer run, the older age group can be expected to gradually leave the work force or "gear down" their activity. As this occurs, many analysts have pointed out the potential threat of labour shortages and lost skills across Canada. This may ultimately create a situation of labour under supply in relation to high demand that may resolve population outflow. Those who have chosen to remain in Cape Breton will likely, however, wait many years for meaningful opportunities to emerge.

#### CAPE BRETON ISLAND

The trend estimated for the three Cape Breton counties is similar to CBRM. All three show substantial declines in population, although marginally less than the downward trend estimated for CBRM. Inverness shows slightly more modest losses.

The model indicates, furthermore, that population losses will tend to accelerate over the projection period. The reason is the changing age structure just discussed. An aging population will gradually reduce the ability of local population to grow through natural increase. This factor will be important for all of Canada in coming years but is likely to be especially pronounced in Cape Breton. All areas of Cape Breton have lost young people at similar rates to CBRM. Regardless of future birth rates, the loss of these young people severely reduces the number of candidates available on the island to start and raise families.

TABLE 3: Recent and Projected Population Change, Cape Breton Island, 1996-2021

	1996	2001	2006	2011	2016	2021
CBRM	117,840	109,330	100,900	92,434	83,901	75,987
% Change		-7.22%	-7.71%	-8.39%	-9.23%	-9.43%
Inverness County	20,915	19,965	18,984	17,960	16,827	15,760
% Change		-4.54%	-4.92%	-5.39%	-6.31%	-6.34%
Richmond County	11,030	10,235	9,526	8,848	8,124	7,454
% Change		-7.21%	-6.93%	-7.12%	-8.18%	-8.25%
Victoria County	8,600	7,970	7,472	6,947	6,436	5,957
% Change		-7.33%	-6.25%	-7.02%	-7.37%	-7.44%
<b>CAPE BRETON TOTAL</b>	<b>158,385</b>	<b>147,500</b>	<b>136,882</b>	<b>126,189</b>	<b>115,288</b>	<b>105,158</b>
<b>% Change</b>		<b>-6.80%</b>	<b>-7.20%</b>	<b>-7.81%</b>	<b>-8.64%</b>	<b>-8.79%</b>

#### SUMMARY

The population of Cape Breton is declining precipitously. Cape Breton is not alone in this situation. Coastal communities in Newfoundland, some communities on the North Shore of New Brunswick, and much of rural Saskatchewan are experiencing similar outflows of people. Each area has been subject to fundamental economic changes. CBRM is distinguished by the fact that it is considerably more urbanized than most areas of Canada that are subject to large population losses.

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*It is important to note in considering the foregoing that all estimates are "projections" strictly based on trends from the 1996 to 2001 period (the most recent years for which reliable data is available). The period between the last two Censuses was particularly challenging for Cape Breton as it reached what is, hopefully, the last stage in the long-term adjustment of the local economy. Had our estimates been based on the 1991-2001 period, the trend projected would definitely be more moderate. At the same time, we must recognize that the decline of the Cape Breton economy and the associated loss of population are long-standing, and fundamental changes will be required to reverse this trend.*

Adjustment may come naturally through demographic shifts. After 2011, retirements from the labour force could well create job openings for the next generation of young people on the island that would stem their out-migration. In addition, as a recent speech by Dr. Michael MacDonald asserted (<http://www.aims.ca/commentary/cbeconomy.html>), the primary impetus for growth is people, their belief, and their initiative. Where there are assets on which to build, capital with which to build, and a population that wants to succeed, the future can be transformed.

Yours sincerely,

TERRAIN GROUP INC.

John Heseltine, MCIP  
Manager, Consulting Practice

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