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QUÉBEC – NATIONAL REPORT

**DEMOGRAPHIC AND SPATIAL DYNAMICS:
IMPACT ON TRANSPORTATION
AND FUTURE ISSUES**

ST2 STRATEGIC DIRECTION SESSION

**SUSTAINABLE ROADS:
PART OF THE TRANSPORT CHAIN
IN A GLOBALIZED WORLD**

Pierre DESGAGNÉS
Ministère des Transports du Québec
pdesgagnes@mtq.gouv.qc.ca

Abstract

After a brief overview of the main spatial and historical trends in the settlement of Québec, this report discusses the connections between the dynamics of urban and interregional demographics. The post-war baby boom is then examined from the perspective of the scope of the fluctuations in the birth rate and the number of births before and after the baby boom, in order to clearly explain the medium- and longer-term impacts of this phenomenon on the age structure of Québec's population and the trends that affect it.

These trends and their impact on the demand for transportation are then scrutinized by cross-analyzing demographic statistics and data pertaining to driver's license holders, broken down according to gender and age group. By demonstrating that the cohorts of baby-boomers reaching adulthood have swelled the number of potential drivers, this analysis sheds light on a major contributing factor to the very sharp increase in traffic that has been seen in recent years, despite the fact that demographic growth has tapered off significantly.

Looking into the future, the aging of these cohorts of baby-boomers will continue to be the predominant demographic phenomenon, and the available forecasts lead to the conclusion that the population trend of concentration in the southwest of the province will likely persist. The report concludes with the determination that this concentration is not likely to produce any tangible benefits in terms of transportation demand from the aging population, because the regions where the traffic load is heaviest should continue to grow, and should be the least affected by the aging.

1. INTRODUCTION: A BRIEF GEOGRAPHICAL AND HISTORICAL OVERVIEW

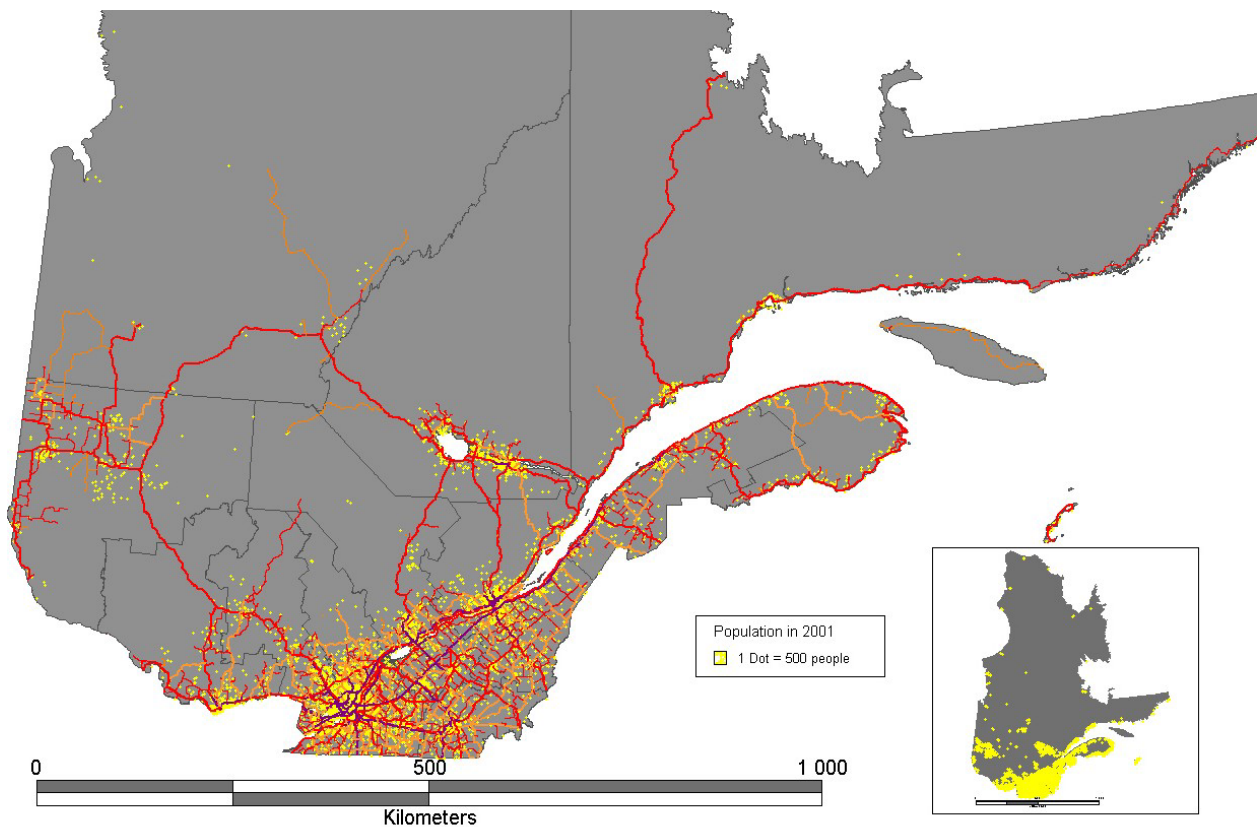
With 7.6 million residents distributed very unevenly across a territory that spans 1.67 million km², Québec was the second most populous Canadian province in 2006, and the largest in terms of area. The average population density is scarcely five people per square kilometre throughout a territory that is "three times the size of France", as Quebecers are often inclined to point out.

Featuring massive stretches of tundra and forest interspersed with lakes and rivers, most of the land is virtually uninhabited. As a result, transportation issues focus mainly on the problems of accessing resources and servicing isolated communities, with very little focus on major shifts in population and the dynamics of aging.

In fact, most people live within a smaller territory along the southern edge of Québec, where 30,000 km of the roads that comprise the network that is under the jurisdiction of the Ministère des Transports du Québec are found.

On the other hand, this settled area is still quite large. Stretching from the Gulf of St. Lawrence to the Ontario border, it spans 1,000 km from east to west, and includes a wide variety of regions that were developed during different eras.

For many years, settlers were confined to southern Québec and the St. Lawrence Valley, where agriculture more or less flourished right from the earliest days of the French regime. They only began to move farther into the interior of the province in the latter half of the 19th century, with the construction of railroads and the opening of new land to settlements.



Map 1 – Road network under MTQ jurisdiction and population distribution, 2001

In that era, the expansion of forestry operations, the establishment of sawmills and paper mills, and the development of hydroelectricity and mining potential began to overshadow agriculture, which shifted development activities farther and higher inland, and northward into the “resource regions” of Gaspésie, Abitibi, Saguenay–Lac-Saint-Jean, Côte-Nord, and Nord-du-Québec. This led to the creation of networks of small communities and thriving industrial towns, but they were often overly dependent on a single industry.

This sequence of development phases shaped modern Québec. As new frontiers were opened up, new territories received an influx of residents, not only from other regions and established rural areas, but also from growing urban centres. Without a doubt, this is one of the unique characteristics of New World demographic dynamics, where counter-urbanization trends see city dwellers moving to outlying areas, although only for comparatively short periods of time.

In terms of the large urban areas, the three main French settlements of the 17th century – Québec City, Trois-Rivières, and Montréal – have all become sizeable agglomerations. However, only Montréal has grown into a major metropolis on a continental scale. With 3.6 million residents, the immediate metropolitan area is now home to nearly half of the population of Québec, and if Montréal’s sphere of influence is factored into the equation, this proportion increases to more than two-thirds.

In fact, while it has always been possible in the past to describe the dynamics of Québec demographics in terms of a hierarchy of spheres of influence and centres of growth, the rapid development of peri-metropolitan areas that has marked the past two decades appears to be leading to a reorganization of the regional system into a small number of large areas that are subject to very different growth prospects.

The first area is a very large and fast-growing zone that encompasses not only the Montréal Metropolitan Area, but all of southwestern Québec, extending from the Laurentian mountains north of Montréal to the American border and the Ontario border.

The second area can be called Central Québec, including the Mauricie, Centre-du-Québec, Québec City, and Chaudière-Appalaches regions, where the outlook is not completely bleak, but falls below the provincial average.

Finally, the wide belt of resource regions that were developed more recently, including the Abitibi, Saguenay–Lac-St-Jean, Côte-Nord, Bas-Saint-Laurent, and Gaspésie regions, have already started to shrink. In many respects, this phenomenon appears to be inevitable. Given the higher mortality rate of elderly residents, many of the communities in these regions are already facing the dynamics of natural shrinkage that have or soon will replace migratory losses in terms of reducing the population.

With a very large, highly urbanized, fast-growing area on the one hand, and regions that are completely vulnerable to the prospect of anemic negative growth on the other hand, it is clear that Québec cannot rely too heavily on a large influx of people in order to make the required investments in its road network in outlying areas cost-effective, and it cannot rely on natural load-balancing to solve the congestion problems in its large urban areas.

2. URBANIZATION – PERI-URBANIZATION: THE TWO-STEP URBAN GROWTH PROCESS

Cities can be more or less dense or more or less spread out, with an urban fabric that is either continuous or fragmented, but only in very rare cases do they ever redevelop entirely on top of themselves, and when they do, it is due to significant geographic, economic, or political constraints. In Québec, as in most of the North America, the abundance of land and the ownership system have helped to keep property prices low, which has clearly favoured urban sprawl.

In addition, because Québec attaches such great importance to protecting its architectural heritage and preserving existing housing, it has adopted a number of policies and regulations that limit the possibilities of redevelopment, and practically rule out demolition/reconstruction projects of any large scale. In other words, even though public authorities now favour better coordinated development and denser housing, the main thrust of urban growth will continue to take the form of developing new areas rather than extensive redevelopment projects within the existing urban fabric.

We describe this as a two-step process – urbanization and peri-urbanization – mainly because this is typically one of the concrete forms of urban growth that unfolds in two stages, not only in time, but also in space.

2.1 At the origin of the trend: Surplus population in rural areas and single-industry towns

Because land can only support a finite population with given farming techniques, and because birthrates are traditionally higher in the country than in the city, rural areas generally produce a surplus of labour, which feeds the flow of population into urban agglomerations. Québec is no exception to this rule, and the rural exodus is one of the traditional roots of urbanization.

As was mentioned earlier, this trend is sometimes reversed when new land opens up and is settled, but after the expansion phase, which may last for a longer or shorter period of time, the population reaches the point of equilibrium, and the migrations must begin again. This well known phenomenon, which appears to be self-driven, also applies to single-industry towns. The newest single-industry towns in Québec are still relatively young. Although a mining operation or a factory may be large enough to spark the birth of a small town, the workforce that it requires is finite, and this fact ultimately determines the size of the community that it can support; just as farming conditions determine the size of rural communities.

The most recent era of agricultural settlements dates back to the Great Depression of the 1930s, but many of Québec's small industrial and mining towns were founded, or suddenly flourished, in the 1940s or 1950s, and even more recently, up until the mid-1970s.

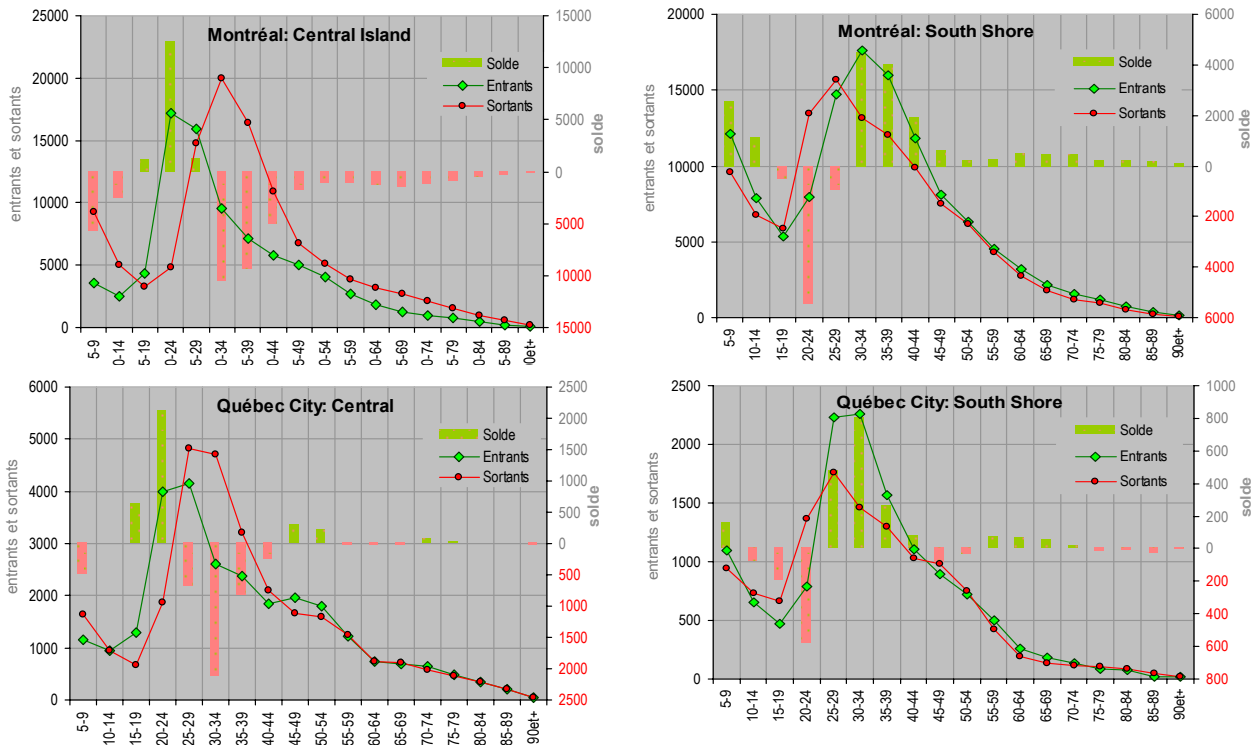
This means that there are entire regions whose development is still very recent; regions that experienced rapid growth and subsequent large migratory losses within a few decades. Although the baby boom does not have any direct connection to this problem, it intensified the growth during the expansion phase and aggravated the losses during the migratory phase, when the cohorts of baby-boomers reached working age.

2.2 Metropolitan demographic dynamics: Individual paths and spatial organization

Of course, there are always exceptions, but in general, there are two milestones that mark the residential paths taken by a great number of people: leaving the family home upon reaching adulthood or shortly thereafter; and moving into a house that then becomes their family home ten or fifteen years later. In urban areas, the predominant directions of these paths are centripetal in the first case and centrifugal in the second. These directions lead to very typical but contrasting migratory profiles toward downtown cores and toward the suburbs.

As can be seen in Figure 1, there are clearly certain ages at which people move into the city (15-29 years old) and other ages, a little later in life, when they head out to the suburbs to start a family and/or raise children (30-44 years old). Naturally, this pattern has an infinite number of nuances, but it retains its shape from one region to the next, and from one era to the next, and it always becomes apparent when the boundaries of the study area are properly defined.

We have also noted that young households generally move to peripheral residential areas because of budget constraints at a time in the life of their family when they often need the most space, but before their income has peaked. Even though the suburbs might have their own appeal, this trend appears to stem from a conjunction of demographic and economic factors much more than from a mere matter of preference.



Source: Statistics Canada (10) and (11) and MTQ calculations

Figure 1 – Infraregional migratory profiles: Montréal and Québec City areas, 1996-2001

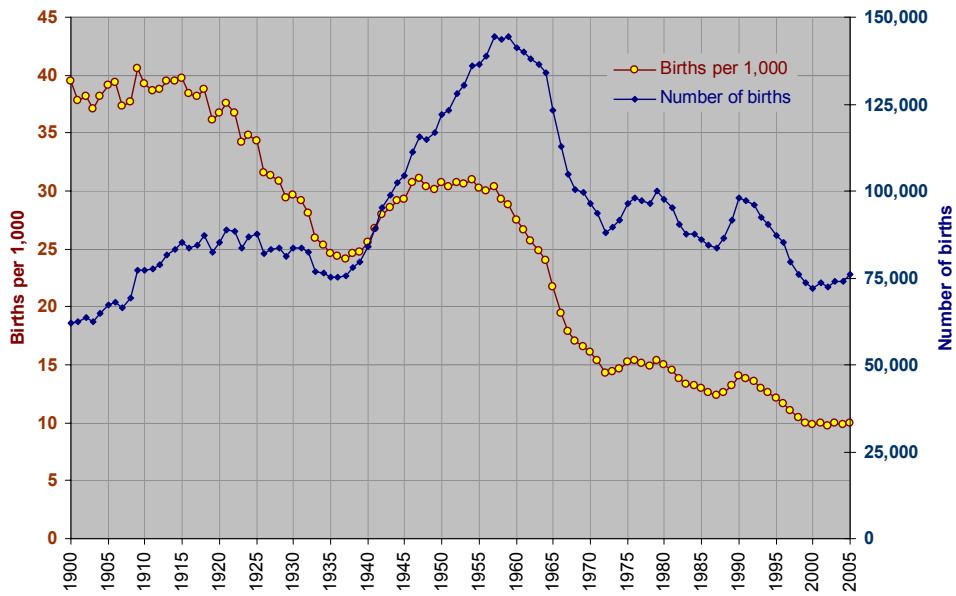
In brief, although urban growth arises primarily from the creation or arrival of young households within the metropolitan residential market, it is expected that the peri-urbanization trend that has shaped the development of cities in Québec since their founding will continue.

3. THE BABY BOOM AND TRANSPORTATION DEMAND: RECENT HISTORY

Like every other developed country, Québec and the rest of Canada were in the midst of a demographic transition at the beginning of the 20th century, from high to low mortality and from high to low birth rates. Although the annual number of births continued to climb until the mid-1920s, the birth rate began to fall steadily in 1910, which is far too early to be attributed to the stock market crash of 1929.

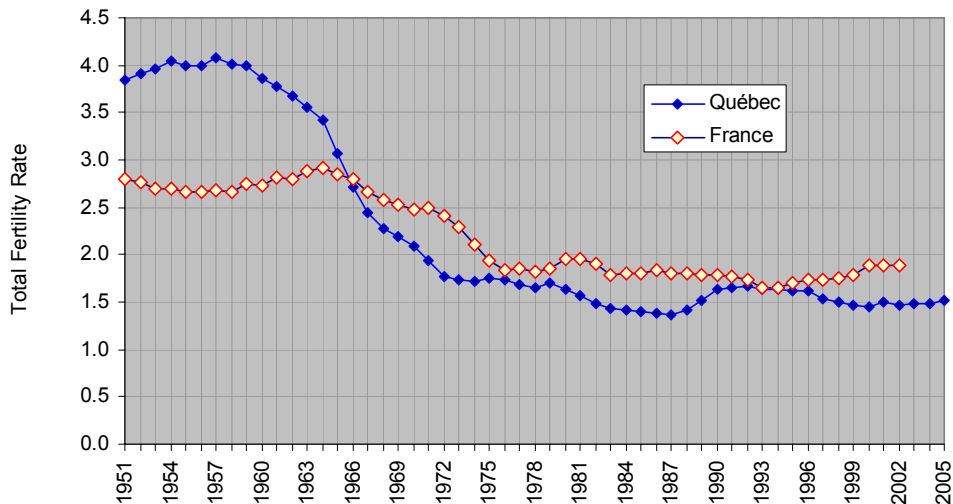
It was against this background that the post-war baby boom emerged: a sudden surge in the number of births that caused a very sharp increase in the birth rate, effectively reversing the trend (Figure 2).

Québec's total fertility rate (TFR) dropped from 5.4 children per woman in 1911 to 5.3 in 1921; to 4 in 1931; and bottomed out at 3.2 in 1939. During the baby boom, the TFR climbed back up above 3.9 in 1952, and hovered close to 4 until the late 1950s, when it peaked at 4.1 in 1957. This resurgence was very substantial, but it was completely overshadowed by the sharp drop that followed immediately on its heels. The TFR plummeted from 3.8 in 1961 to below the threshold of 2 children per woman in 1971. It has not climbed back above that threshold since.



Source: ISQ (4)

Figure 2 – Number of births and live birth rate, Québec, 1900-2005



Source: INED for France; ISQ (3) for Québec

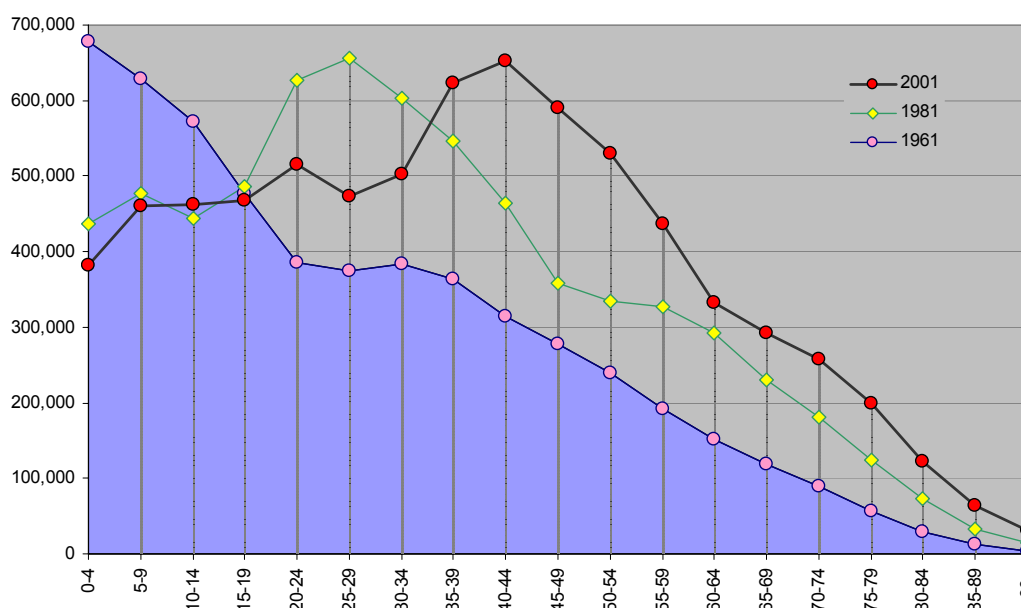
Figure 3 – Fertility trend: Québec, 1951-2005; and France, 1951-2002

The magnitude of this shift can be seen in Figure 3, which shows the trends in the TFR in Québec and in France since 1951. Despite the sharp drop in the 1960s, the fluctuations in the TFR in France are much smaller than those that occurred in Québec over the same period. Understanding that these variations in the TFR impacted the number of births, it becomes clear that the differential between the baby boom and subsequent generations is much greater in Québec than it is in France.

3.1 The long march of the baby-boomers

712,000 Quebecers were born between 1956 and 1960, which was the peak of the baby boom. This number was 59,000 more than during the preceding five-year period, and 41,000 more than during the following period, from 1961 to 1965. After 1965, things got worse. Driven by the drop in the TFR, the number of births plummeted to 514,000 between 1966 and 1970, and fell to well below the 500,000 mark between 1971 and 1976, when a mere 459,000 births were recorded in Québec. This number has not climbed above that level ever since.

This drop in the number of births occurred despite an increase in the number of women of childbearing age. This reflects the depth of the change in attitude towards maternity, as well as the magnitude of the shortfall resulting from the ongoing downward trend in fertility, as the cohorts of baby-boomers gradually reached procreative age. One of the most striking facts among recent demographic trends is that the baby boom never had a ripple effect. Even with the low fertility rate, it was expected that a second wave in the number of births would occur when baby-boom daughters reached childbearing age, simply on the basis of numbers. However, the fertility rate continued to decline, and reached an all-time low in Québec in the late 1980s, which is precisely when the fertility of the largest segment of baby-boomers should have been peaking.



Source: Statistique Canada (9) and (12)

Figure 4 – Age structure of Québec's population, 1961, 1981, and 2001

With the natural aging of the baby-boomers, the low level of births that has prevailed since the end of the baby boom has resulted in a unique profile in the age structure of Québec's population. As shown in Figure 4, this trend increasingly suggests a groundswell that is sweeping up everything in its path.

It is very clear that those who were under 4 years old in 1961, who formed the largest segment of baby-boomers, were still the largest group 20 years later in 1981, forming the 20-to-24 age bracket, and then again in the 2001 census, at the age of 40 to 44. Between these various ages, they went through all of the main stages from infancy to maturity:

preschool, school, entering the workforce, starting a family, etc.; and moved from baby carriages and strollers to family cars or sports utility vehicles (SUVs), passing through bicycles, school buses, etc.

3.2 The other slope

Figure 4 also reveals that, in 2001, the 0-to-4 age group was the smallest among all groups under 60. Their numbers amounted to a mere 376,000, which represents a sharp drop from their predecessors. The 1996 census reported 455,000 children aged 0 to 4, the vast majority of whom were among the 457,000 children who were aged 5 to 9 in 2001.

Although Québec is an open society that generally benefits from its interaction with the rest of the world, past birth trends remain the most important factor in the distribution of population by age group. The 0-to-4 age group of 2001 is so small as a result of the low fertility rate from 1996 to 2001, which was down slightly from the preceding period; and also because the population of women of childbearing age was declining. If we look only at the population between the ages of 20 and 44 at the time of the census, we find that the reference female population was 1,330,000 in 2001, compared to 1,395,000 in 1996, which was also less than the peak of 1,428,000 that was reached in 1991.

These are obviously very crude statistics. They completely ignore substantial variations in fertility between age groups, as well as the trend toward postponing maternity, which leads to the conclusion that the cumulative birth rate of the baby-boom generation should be approximately 1.6 children per woman, which is higher than the 1.4 or 1.5 that was feared based on the statistics that were available in the 1980s.

The cumulative birth rate itself represents the entire problem, because the last segments of baby-boomers are currently in the process of leaving their procreative years. Daughters who were born in the early 1960s are now in their forties. Their remaining contribution to the population, albeit more than zero, can only be marginal. Therefore, it is clear that the entire generation of baby-boomers completely failed to replace themselves. However, this shortfall will only become clearly apparent in the very long term, once the baby-boomers reach the age where mortality begins to significantly reduce their numbers.

Until then, the major demographic phenomenon will continue to be the aging of the baby-boomers, and in its wake, we will continue to see a sharp and increasingly rapid aging of the population.

3.3 Demographic aging and transportation demand: An analysis from the perspective of driver's license holders

Although the number of vehicles on the road and the total kilometres driven cannot be seen simply as a function of the number of people who hold a driver's license, there is a sufficiently close correlation between those figures that an analysis of the trend in the population of licensed drivers is of definite practical interest to a road administration. In fact, this sort of analysis sheds light on much of the increase in traffic by pointing to indisputable social and demographic phenomena, and therefore, it can contribute to dispelling some particularly harmful myths from the standpoint of transportation planning.

First of all, Figure 5 reveals that the number of licensed drivers and passenger vehicles grew roughly in parallel from 1985 to 2005, although the number of vehicles rose slightly faster than the number of drivers, and even though the number of vehicles is not evenly

distributed, the ratio of 1.26 drivers per passenger vehicle in 2005 also indicates that the general extent of motorization was very high. In fact, as in the rest of Canada, the threshold for access to an automobile in Québec is very low, and accommodates students, part-time workers, and low-income households. It is also worth noting that, outside of the main urban centres, distances are long and there is little if any public transit, which means that an automobile is often a necessity.

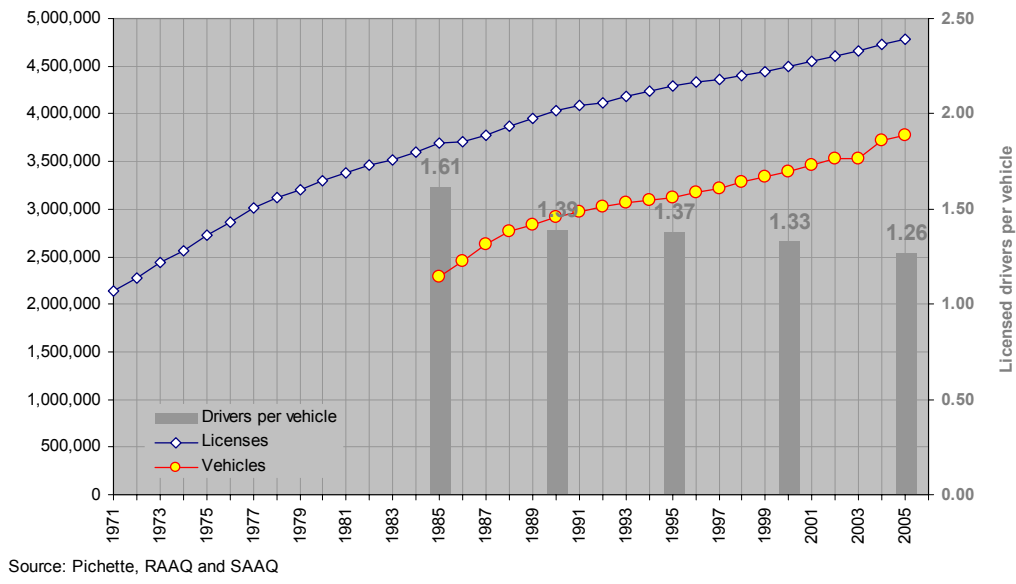


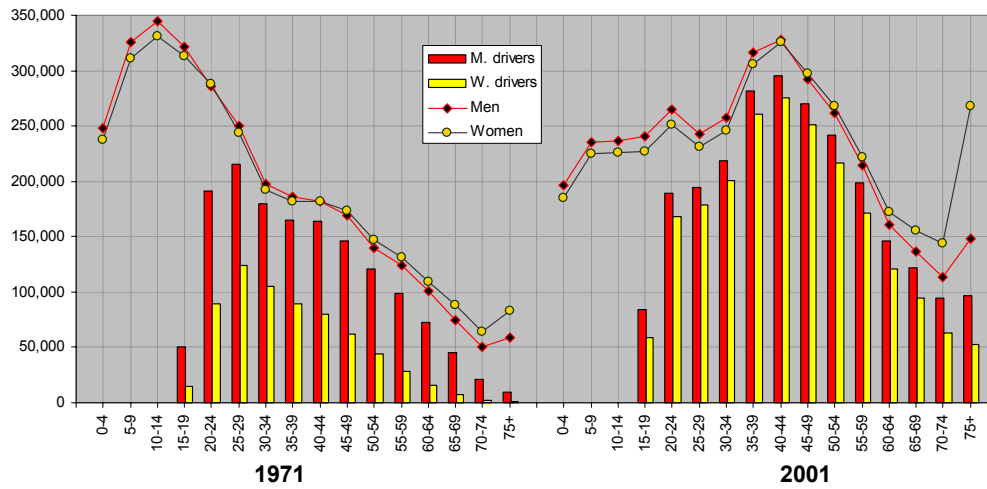
Figure 5 – Number of licensed drivers in Québec, 1971-2005; and number of passenger vehicles in Québec, 1985-2005

Over the past 20 years, the number of passenger vehicles increased by 1.495 million, while the number of licensed drivers rose by slightly more than a million, from 3.69 to 4.77 million. These are very large increases and significant portions of the total population. In 2005, licensed drivers represented 63% of Québec’s population, compared to only 55% in 1985.

Changes in definitions and the emergence of new classes make it too difficult to track the fleet of vehicles over the lengthy period since 1971, but it is possible to determine that the number of licensed drivers rose from 2.14 million to 4.77 million. This is an unusual increase when compared to the total population growth of 930,000 during the same period. It might be tempting to consider the increase to be totally out of proportion, and to fear the worst in terms of the outlook for automobile traffic. However, it is more worthwhile to determine what really happened. In essence, this increase is attributable to two phenomena: the first simply reflects the aging of the army of baby-boomers; while the second concomitant phenomenon reflects the widespread effects of the women’s liberation movement in the realm of transport.

As Figure 6 shows, the difference between the growth in total population and the number of licensed drivers is easier to understand when the data is broken down by age and gender. Although the vast majority of baby-boomers were still school-aged children in 1971, and therefore, too young to have a driver’s license, they were in a completely different position by 2001, when almost all of them were over the age of 40. We can also see that the number of people in the youngest age brackets represented a very small percentage of the total population in 2001. On the other hand, those under the age of 20 in 1971 still accounted for 40% of the population, but by 2001, they only accounted for 24%.

The demographic weight of the youngest age group (0 to 14), which is excluded from the group of licensed drivers, but is obviously included in the total population, decreased from 29% to 17% during those 30 years.



Source: Statistics Canada (9), Pichette, and SAAQ

Figure 6 – Population and licensed drivers in Québec by age and gender, 1971 and 2001

Furthermore, with all other factors being equal, the natural effect of the aging of the baby-boomers would have and did produce a sharp increase in the number of drivers that is unrelated to total demographic growth.

If the population were uniformly distributed among age groups, or if the demographic pattern made it possible to maintain a strictly pyramidal distribution, as is probably still the case in most developing countries, the total number of people could definitely serve as an adequate indicator of the trend in transportation demand. However, in countries where the phenomena of the baby boom occurred, and which are particularly vulnerable to the dynamics of aging as a result, the number of people, in itself, is a very poor indicator, especially when it comes to comparing trends. This holds true in terms of assessing the number of drivers and the extent of motorization, and for gauging the student population, the active workforce, etc.

Moreover, a look at the detailed data (Figure 6) also makes it possible to discern gender differences, and to determine that, although women were very largely under-represented in the population of licensed drivers in 1971, the gap has narrowed considerably since then.

For a better understanding of the extent of the reduction in disparities between the genders, it would be worthwhile to look at the change in the percentage of licensed drivers by age and gender. This rate would represent the percentage of the population in each subgroup with a driver's license. As Figure 7 indicates, the rate at which women closed the gap is truly remarkable. Over a period of 30 years, the gender gap among 20-to-45-year-olds shrank from 35%, 40%, and 45% to 3%, 4%, or 5%, while the rate among older women climbed from practically zero to levels that are entirely comparable to those among men in 1971.

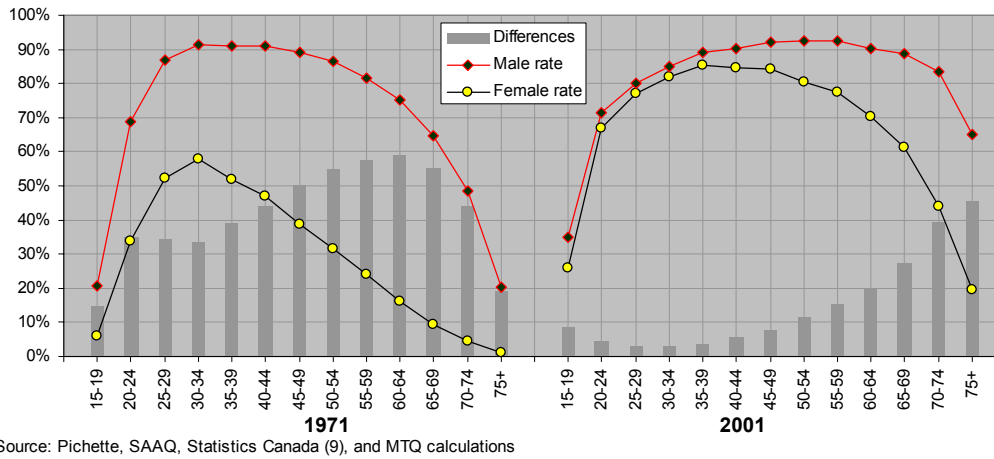


Figure 7 – Percentage of licensed drivers, gender difference, 1971 and 2001

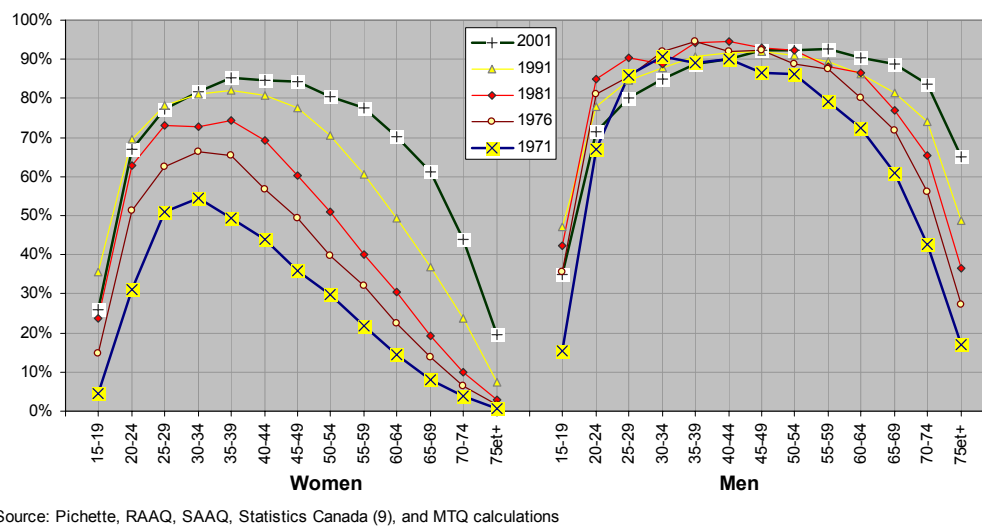


Figure 8 – Change in percentage of licensed drivers by gender and age, Québec, 1971 and 2001

This also illustrates the other most significant aspect of this dynamic, namely the fact that not only did the male rates change, but they show a systematic increase in the oldest age brackets. The rate increase was definitely much less regular among men than among women. In fact, we see fluctuations in the under-50 group that even result in net declines for the youngest men (Figure 8). However, the rates for the older groups indicate steady increases that become larger with age.

This state of affairs obviously dampens the predictions of those who expected the aging of the population to curb the use of automobiles and encourage the use of public transit.

The statistics pertaining to driver's licenses and the results of trip surveys in large urban areas actually reveal that older age groups were much less motorized and made greater use of public transit in order to get around. On that basis, it might be tempting to conclude that large increases in the size of the older age groups would naturally lead to a modal shift to public transit. Unfortunately, based on a misinterpretation of the age data, this reasoning is erroneous. While we see increases in the columns of our data tables, the reality of aging is rather that of people who grudgingly experience the passage of time. While youth is a time when it seems like life's big events never happen fast enough, the later years are a time when everything happens too fast, and change is rarely welcomed.

In brief, the real force that is driving the change that we see in the behaviour by age group is often resistance to change and the persistence of habits acquired in younger days. Today's older men and women are far more motorized than their predecessors, because these former youths are doing everything they can to hang onto their cars as long as possible.

We can talk about the effects of age and the effects of segments of the population in more abstract terms. Many of the phenomena that we have seen stem from very large groups of people (the baby-boomers) reaching key ages. Others phenomena that are just as important, if not more so, stem from the fact that, as they age, the baby-boomers are spreading their new behaviour throughout society by carrying it with them from age to age.

3.4 Regional variations

Trends such as those that we have seen are based on such fundamental factors that no area or region of Québec can escape them. Despite all of the local nuances and particularities, every region was affected by the baby boom, and the new-generation women and baby-boomers became drivers in every region as they grew older.

Table 1 – Population, licensed drivers, and passenger vehicles by large regional area, 1986-2005

	Southwest						Central Québec						Ressource regions					
	Population		Licenses		Vehicles		Population		Licenses		Vehicles		Population		Licenses		Vehicles	
1986	4,368,255	100	2,376,588	100	1,562,782	100	1,425,717	100	832,905	100	559,923	100	914,496	100	486,054	100	320,876	100
1991	4,672,688	107	2,655,041	112	1,921,963	123	1,483,363	104	912,289	110	669,598	120	908,535	99	520,489	107	377,615	118
1996	4,829,982	111	2,806,188	118	2,039,463	131	1,511,381	106	968,966	116	720,730	129	905,533	99	547,250	113	413,435	129
2001	4,996,677	114	2,978,778	125	2,244,768	144	1,525,282	107	1,012,275	122	780,041	139	875,031	96	552,392	114	433,576	135
2005	5,191,729	119	3,160,156	133	2,470,662	158	1,550,981	109	1,057,478	127	844,986	151	855,436	94	558,697	115	463,958	145

Source: RAAQ, SAAQ, Statistics Canada (9), and MTQ calculations

While the phenomena themselves occurred everywhere, there are significant regional variations in their scope and pace. The most significant of these variations is probably the clearly visible discordance between the declining population and the substantial increases in the number of licensed drivers and passenger vehicles in resource regions (Table 1). From an index of 100 in 1986, the population in these regions shrank by 6% over 20 years, to an index of 94, while the number of licensed drivers grew by 15%, and the number of automobiles increased by 45%.

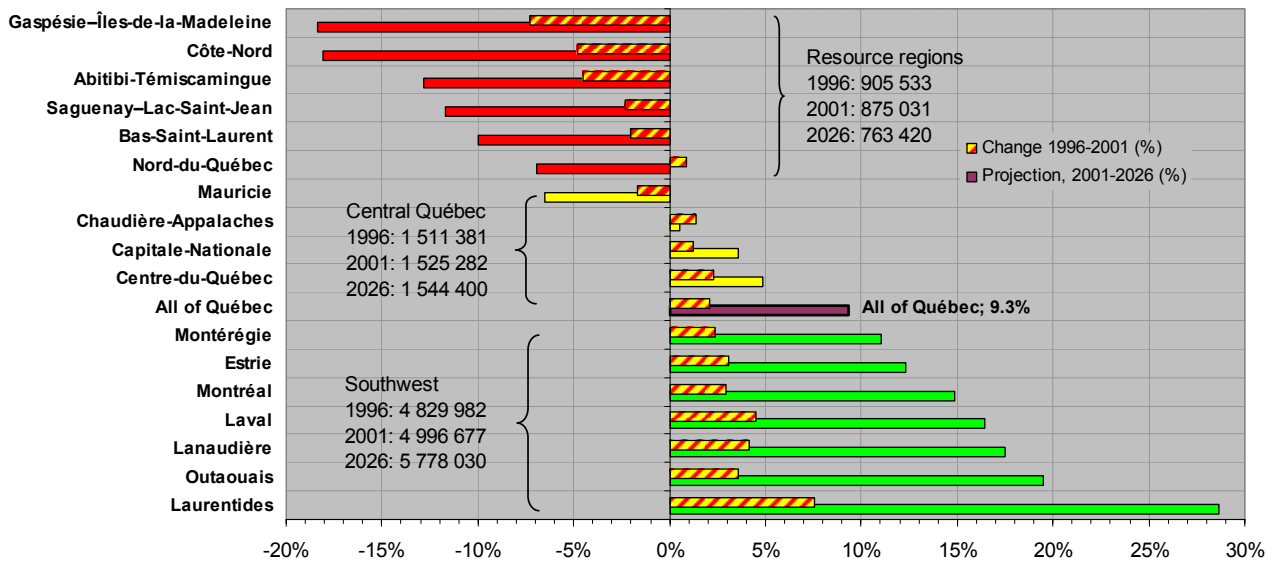
This state of affairs clearly shows the extent to which total population can be a misleading indicator, but it also illustrates how few benefits can be expected and the problems that can arise in adjusting to a context of negative growth.

In an ideal theoretical situation, we might expect differences in growth to shift resources from areas that are slowing down to those that are growing. However, in the realm of road transportation, we have seen that a shrinking population can very easily correspond to a very substantial increase in the number of drivers and vehicles.

4. OUTLOOK

According to the latest demographic projections that were published by the Institut de la Statistique du Québec, the province's population is expected to top the 8-million mark in 2021, and then continue to grow at a slower rate, reaching a peak of 8.11 million around 2031.

In regional terms, the outlook is especially favourable for southwestern Québec, which can expect relatively solid growth (16% over 25 years). The central regions should remain at their current levels, while the resource regions will continue to shrink (Figure 9).



Source: ISQ (5) and Statistics Canada (9)

Figure 9 – Large regional areas, population change, 1996-2001; and outlook, 2001-2026

Over the coming decades, the aging of the army of baby-boomers is clearly the most prominent and least uncertain aspect of the foreseeable demographic trend. 20 years from now, those who are now in their fifties will be in their seventies, and therefore, the weight of the 60-74 age group will be considerably more prominent in every region.

On the other hand, the aging of the population will not be felt with the same intensity everywhere. Benefiting from an influx of population from the rest of the province, from elsewhere in Canada, and from abroad, southwestern Québec (Figure 10) can be expected to maintain a relatively young profile, with 70% of its residents in 2026 still under the age of 50.

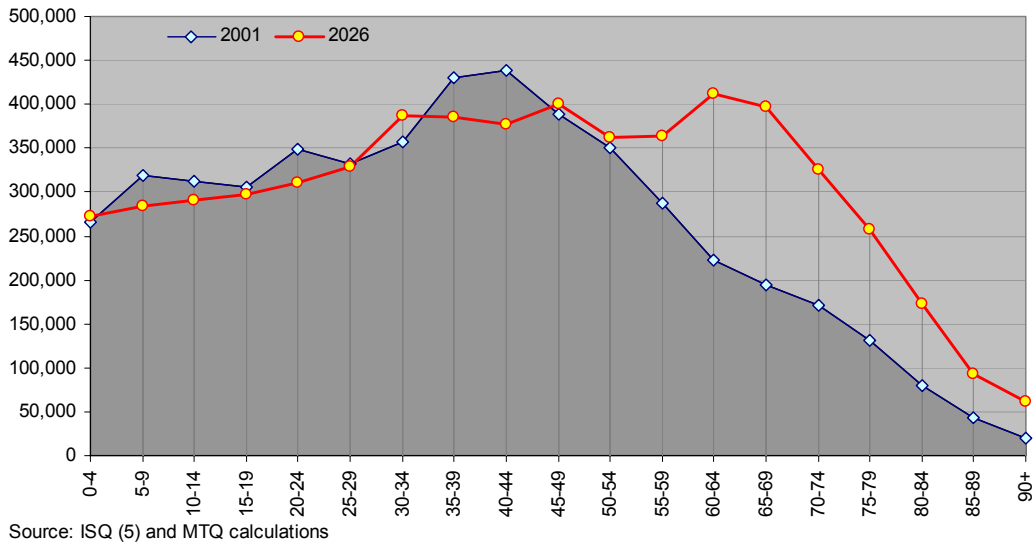


Figure 10 – Southwestern Québec, age structure of the population in 2001 and outlook for 2026

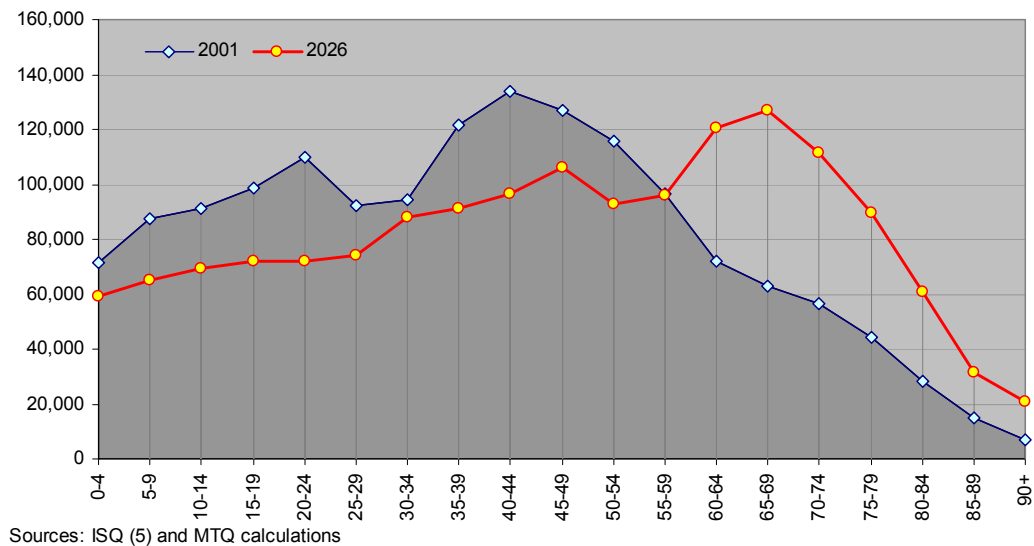


Figure 11 – Central Québec, age structure of the population in 2001 and outlook for 2026

As long as the current trends persist, the outlook for the regions in central Québec (Figure 11) is much less bright. With little appeal to immigrants, who clearly prefer the Montréal, Outaouais, or even Estrie regions, these regions can probably expect little in the way of a future influx of population from shrinking peripheral areas. In addition, the Québec City and Mauricie regions also have particularly low fertility rates compared to the rest of the province (TFR of 1.32 and 1.37 compared to 1.51 for Québec as a whole), and therefore, there does not appear to be any really positive factor that will offset the effect of the aging population.

Nevertheless, the bleakest outlook is in the resource regions, which appear to be caught in a twofold trend of aging and erosion that is melting off the army of baby-boomers as they age (Figure 12).

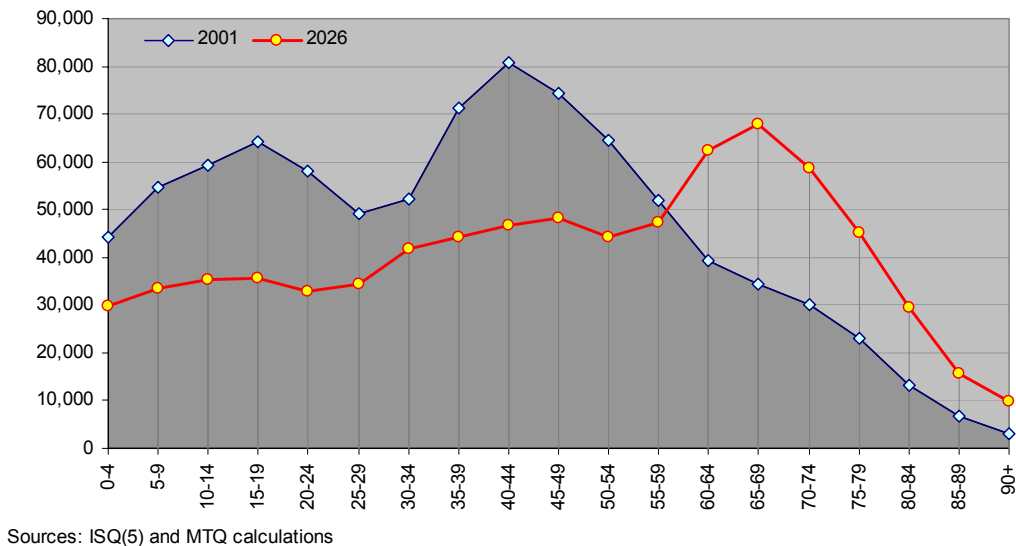


Figure 12 – Resource regions, age structure of the population in 2001 and outlook for 2026

For decades, these regions were marked by substantial losses due to migrating young adults, and they are now also starting to lose their elderly population, as retirees choose to be closer to large centres, and to their children.

Will this departure trend be amplified by recent economic difficulties? That seems plausible. Can we expect a turnaround leading to renewed growth in these regions? That would definitely be overly optimistic. Although there is probably no reason to expect the creation of negative growth spirals that would in turn undermine the economic and demographic foundations of these regions, one must take into consideration the fact that the technological advances and productivity gains that might enable the large companies in these regions to stay in business generally mean less demand for labour.

5. CONCLUSIONS: MORE PEOPLE WHERE THERE ARE MANY, FEWER PEOPLE WHERE THERE ARE FEW, AND OLDER PEOPLE EVERYWHERE

One consequence that immediately comes to mind in terms of associating an aging population with transportation issues is the risk of having many more elderly drivers on our roads in the relatively near future. In fact, one can classify this possibility among the most probable events, but it is by no means certain that we must worry and overly fear this trend as a factor that will make roads less safe.

According to studies that were conducted by the Société de l'assurance automobile du Québec (SAAQ), which keeps very close tabs on this problem, very old drivers (aged 75 and over) are more accident prone than the average, but are far less accident prone than the youngest age group (Table 2). Although they perform better than drivers between the ages of 16 and 19, their score is worse than that of 20-to-24-year-olds only in terms of fatal accidents per 100 million kilometres driven. However, knowing that limiting travel is one of the main strategies that older drivers employ in adapting to diminished abilities, one can consider this additional hazard to be an essentially theoretical risk. Therefore, the risks associated with limitations due to age are not as great as those associated with youth and inexperience.

Table 2 – Rate of fatal and serious injuries per 100,000 licensed drivers and per 100,000,000 kilometres driven by age, 2003

Age	Number of accidents		Licensed drivers	Kilometers driven	Accident rates per 100,000 licensed drivers		Accident rates per 100 million kilometre	
	Fatal	Serious			Fatal	Serious	Fatal	Serious
16-19	60	657	133,902	9,870	44.80	490.66	4.54	49.72
20-24	94	957	349,768	14,082	26.87	273.61	1.91	19.43
25-44	308	2,880	1,865,285	15,239	16.51	154.40	1.09	10.14
45-64	252	1,855	1,735,863	15,304	14.51	106.86	0.95	6.99
65-74	62	383	393,054	11,064	15.77	87.44	1.43	8.80
75 and +	37	217	170,044	9,345	21.76	127.61	2.33	13.66

Source: Bordeleau 2006

While we should continue to monitor the situation closely, there is no cause for alarm with respect to the impact of aging on road safety.

For many, the automobile is the preferred means of extending their years of mobility, and therefore, their self-reliance. This is an extremely positive factor that we must preserve, especially in light of the fact that there is no simple alternative on either an individual or collective basis that would allow elderly people who have minor disabilities to get around.

Furthermore, taking into account the different prospects of aging, it appears quite likely that travelling to work, and therefore, rush-hour traffic, is bound to decline in many regions in the coming decades. After so many years of struggling with the problems of unemployment, the prospect of a smaller available workforce might seem incongruous, but this is what appears likely to happen in all of the resource regions in the near future, and in central Québec over the slightly longer term.

It should be understood that the outlook of a reduction in traffic only applies to areas that currently have few or no traffic problems. In southwestern Québec, with its strong growth prospects, the effects of aging will take on a different form. Essentially, the slots in the active population that are being left by aging baby-boomers are likely to be filled by the younger generation (Figure 10). Therefore, there is no reason to fear or hope for a reduction in activity in this respect. However, with baby-boomers bound to form large cohorts of young pensioners in the coming decades, one can expect this to result in additional activities and travel, in what will undoubtedly be considerable numbers.

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