TRANS Committee

National Capital Region Travel Trend Study Parts 2 and 3

National Capital Region

January 2011

HDR | iTRANS

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1. Introduction

1.1 Report objectives

The investigation of regional and inter-provincial travel trends in the National Capital Region (NCR) is divided into the following three components:

- firstly, identifying and describing key relationships between variables recorded in the 2005 TRANS National Capital Region household origin-destination (OD) survey, and thereby providing an understanding of significant transportation characteristics and patterns across the NCR (documented separately in the Part 1 report);
- secondly, using data from previous surveys in 1995 and 1986 in order to derive trends and to compare these trends with those in other cities; and
- thirdly, using the existing data and identified trends to extrapolate projected transportation patterns for future years for comparison with TRANS model forecasts.

This report, comprising Parts 2 and 3 of the three-step process, further examines the indicators selected in Part 1 by comparing their values in 1986 and 1995, where available, against the 2005 results (Part 2). Comparing the three years leads to a list of significant trends subsequently extrapolated in Part 3.
Data used are taken from the three NCR origin-destination surveys, with the exception of employment data (jobs by district of work) which were provided separately by the City of Ottawa or (for the 1996 Gatineau districts employment data) by the Ville de Gatineau from Statistics Canada.

1.2 Report structure

This report is divided into six chapters between the introduction and the conclusion, following and expanding on the structure of the Part 1 report, and organized as follows:

- Demographic structure, illustrating population, employment and household characteristics across the National Capital Region (described in Chapter 2);
- Transportation activity, illustrating how the demographic characteristics described previously influence the geographic attributes of trips, as well as the reasons for which they are made (described in Chapter 3);
- Modal shares , illustrating how the demographic, geographic and trip-based characteristics identified above help to define what method of travel will be chosen (described in Chapter 4);
- Public transit use, investigating the transit sub-component of the overall modal share in greater detail to determine what characteristics most appear to influence people in choosing to make a transit trip (described in Chapter 5);
- Identification of overall trends, based on a comparison and analysis of the four previous chapters, grouped into the categories of demographic shift, gender balance, trip rates and transit/non-motorized mode share (described in Chapter 6); and

- Extrapolation of major trends, based on those identified in the sixth part, to suggest future impacts of these trends and provide a comparison for modelled projections (described in Chapter 7).

1.3 Study area

Exhibit 1-1 depicts the study area. For the purposes of this report, four levels of aggregation are used, depending on the type of indicator. (For any given indicator, one or more may be used in order to show it more clearly).

Aggregation levels are:

- Overall (the National Capital Region as a whole).
- Provincial level (separation of the Ontario and Québec portions of the National Capital Region (NCR).
- Urban structural level (separation of city centre, urban, suburban, and rural elements of the Ontario and Québec portions of the NCR). In the exhibits that follow, "Ontario" and "Québec" are used to denote the respective sectors of the NCR.
- District level (breakdown of data to the level of the 26 districts of the NCR, which are shown in Exhibit 1-1).

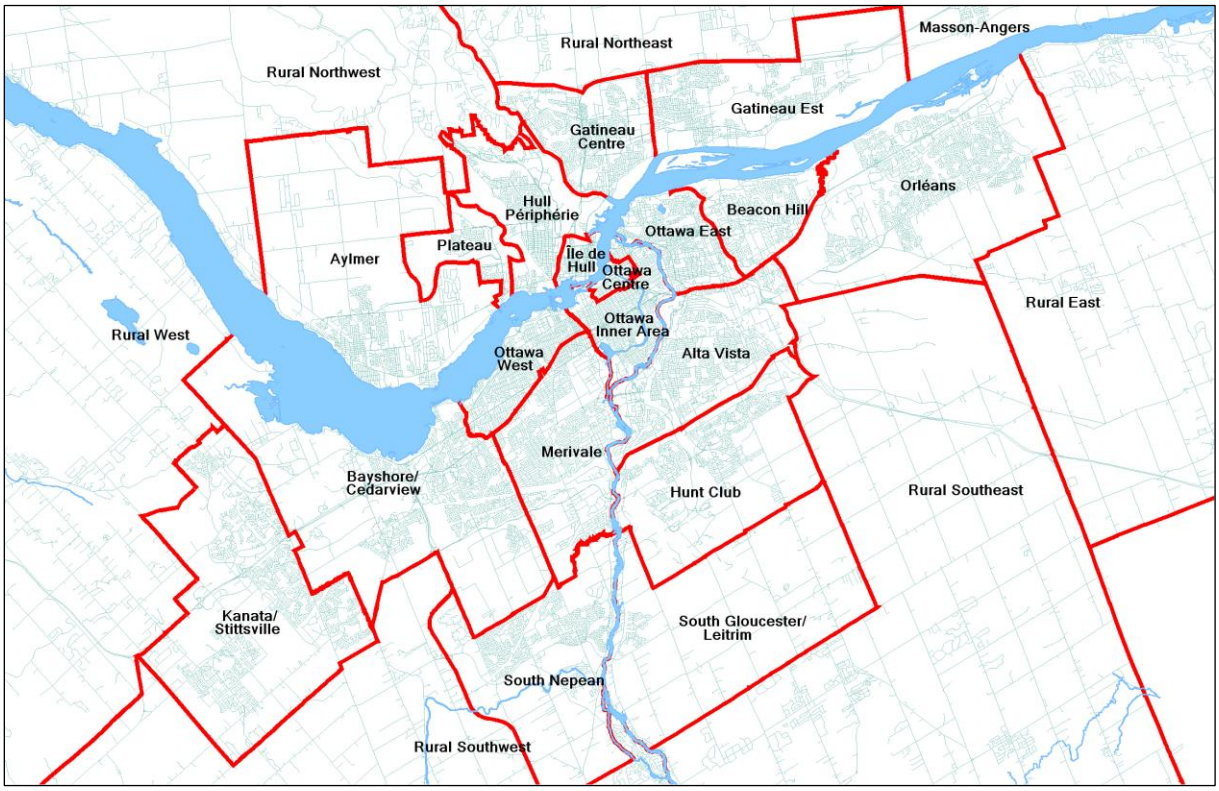


Exhibit 1-1: Geographical area (rural districts not shown in full)

The urban structural level separates the districts as follows:

- Central Ottawa (Ottawa Centre, Ottawa Inner Area);
- Central Gatineau (Île de Hull);
- Urban Ottawa (inside greenbelt), (Alta Vista, Bayshore/Cedarview, Beacon Hill, Hunt Club, Merivale, Ottawa East, Ottawa West);
- Suburban Ottawa (outside greenbelt), (Kanata/Stittsville, Orléans, South Gloucester/Leitrim, South Nepean);
- Urban Gatineau (Hull Périphérie);
- Suburban Gatineau (Aylmer, Gatineau Centre, Gatineau Est, Plateau)
- Rural Ontario (rural east, west, southeast and southwest); and
- Rural Québec (Masson-Angers, rural northeast and northwest).

2. Demographic Structure

This chapter looks at how population (all residents and all labour force participants) and employment, as well as household attributes, are distributed amongst the National Capital Region's districts, and what changes in these distribution patterns can be noted between 1986 and 2005. This gives an initial high-level identification of likely trip flow patterns (between areas of high population and nearby areas of high employment), which is investigated further in later chapters.

2.1 Population and employment distribution

Observed trends:

- *Population grows fastest in suburban areas, with Orléans the most populous district in 2005 (up from fifth in 1986).*
- *Jobs grow by 60% outside the central Ottawa districts, but only by 20% within them. Between 1996 and 2005, employment in Île de Hull decreases by 4%, while employment elsewhere in Gatineau goes up by 30%.*
- *Beacon Hill, Kanata/Stittsville and Bayshore/Cedarview are net generators of trips to work prior to 2005, but then become net attractors. While Bayshore and Kanata become net attractors, jobs in the adjacent Rural West have decreased by 24% between 1995 and 2005.*
- *Many districts have increased their number of jobs compared to number of resident employees without resulting in more intra-district work trips. Alta Vista has 19,000 more jobs in 2005 than in 1995, but fewer Alta Vista residents work in that district. Bayshore has a similar pattern.*
- *Only Kanata/Stittsville has a large increase in jobs (7,000) for local residents, and has become significantly more self-contained over time.*
- *On the Québec side, the population growth is in Plateau and the rural districts, with other districts showing slow or negative growth from 1986 to 2005.*
- *Female workforce participation has grown from 40% in 1986 to 45% in 2005, with Gatineau growing faster than Ottawa in this regard.*

The population of the National Capital Region (NCR) in 2005 was 1,150,579, including 865,695 residents of the 17 Ontario districts and 284,884 of the 9 Québec districts – a ratio of 75% - 25% between the two sides of the Ottawa River, compared with a ratio of 77%-23% in 1986 and 74%-26% in 1995.

The geographical distribution of residents at the district level is shown in Exhibit 2-1, with a comparable distribution of jobs (at the same scale) shown in Exhibit 2-2. The overall population has increased from 798,688 (1986) and 984,690 (1995). This is an overall annual rate of increase from 1986 to 2005 of 1.94% (1.83% in Ontario and 2.30% in Québec), although Ottawa has grown faster than Gatineau since 1995. The largest areas of population growth over the 19-year period are in suburban Ottawa outside the greenbelt (3.36% annual rate) and the rural Québec districts (3.43% annual rate), both of which nearly doubled their population from 1986 to 2005.

The most recent year (i.e. 2005) is shown at the top, with the most distant (1986) at the bottom and 1995 in the middle.

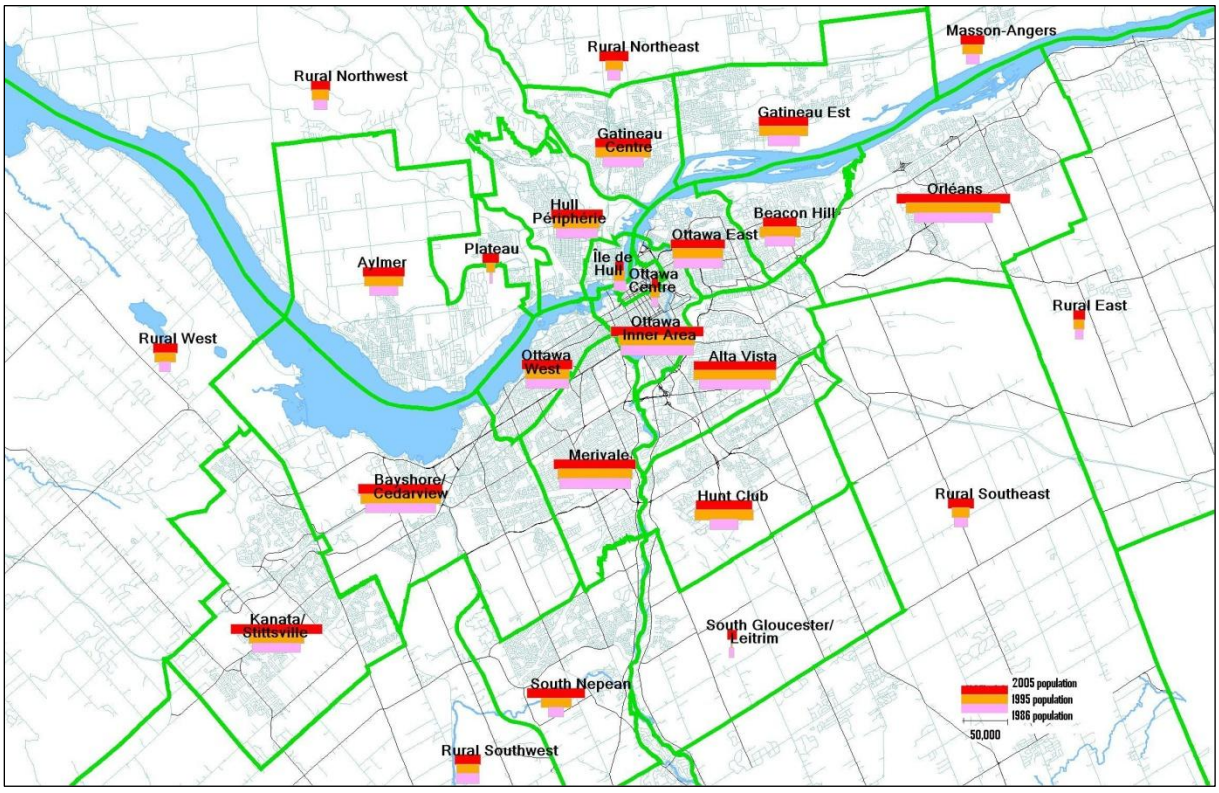


Exhibit 2-1: National Capital Region population totals, 1986-2005

Between 1986 and 2005, the number of jobs in the Ontario part of the NCR increased by 50%, from 343,246 to 514,093. This is an annual increase of 2.15%, faster than the corresponding population growth either in the Ontario part of the NCR (1.84%) or in the NCR as a whole (1.94%). Growth was substantially faster from 1995 to 2005 (2.49% annually) than from 1986 to 1995 (1.77%).
Between 1996 and 2005, jobs in the Québec part of the NCR (1986 job data are not available, and 1996 is used in place of 1995) increase by 20%, for an annual increase of 2.09%, which is lower than the equivalent recent trend for Ontario. While the Ontario

districts added 112,000 jobs (28% growth) between 1995 and 2005, the Québec districts added 17,400 (21% growth) between 1996 and 2005.

The most recent year (i.e. 2005) is shown at the top, with the most distant (1986) at the bottom and 1995 in the middle (1986 is shown where available, and 1996 is used for Gatineau districts to represent 1995).

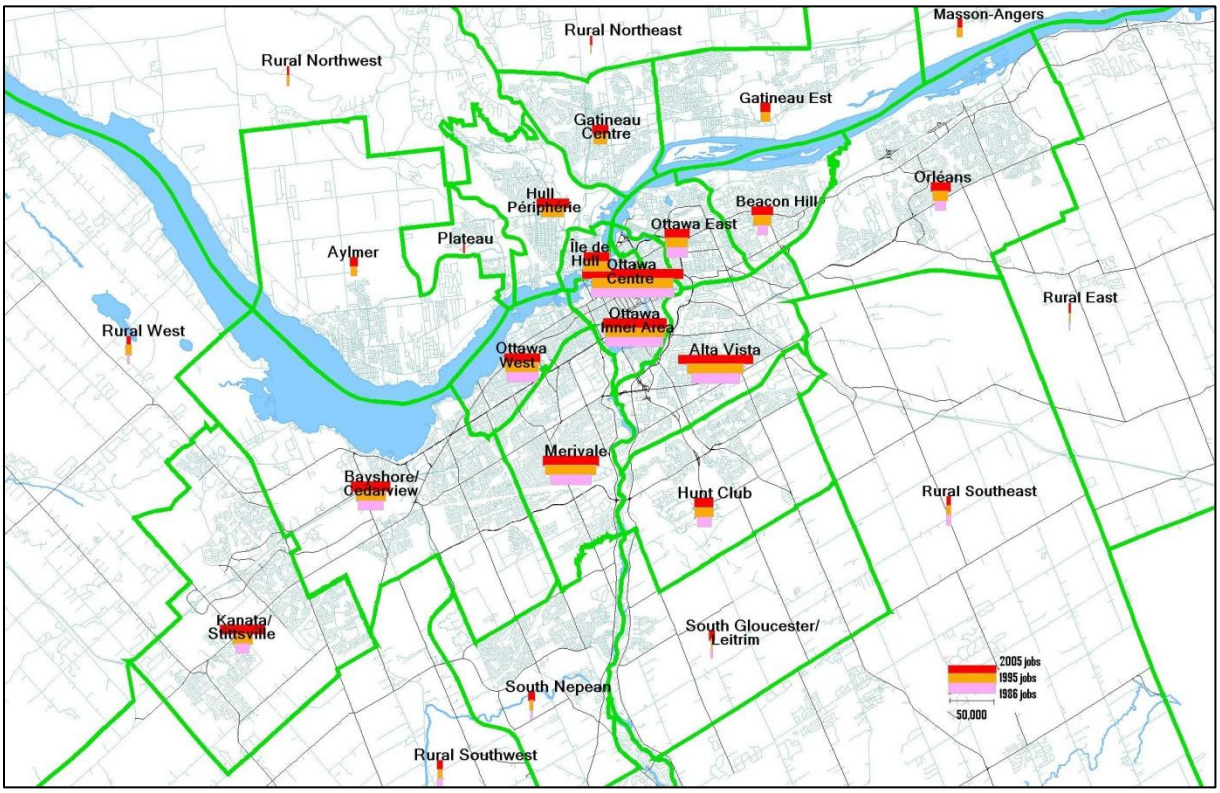


Exhibit 2-2: National Capital Region employment totals, 1986-2005

Exhibit 2-1 indicated that population on both sides of the Ottawa River is well-distributed among the east-west suburban districts, with Orléans and the Ottawa Inner Area having the highest number of residents and Kanata/Stittsville growing into one of the highest-populated districts. In contrast, Exhibit 2-2 shows a much more concentrated distribution of jobs compared with that of residents, with the focus on the central areas instead of the suburbs. Outside the central areas, however, Alta Vista has the highest concentration of jobs, with most of the remaining urban and suburban jobs located in west Ottawa.

Exhibit 2-3 provides a different look at the population (ranked by largest for 2005 first). This shows Orléans as the most populous district, having surpassed other districts such as Ottawa Inner Area, Bayshore and Alta Vista in recent years.

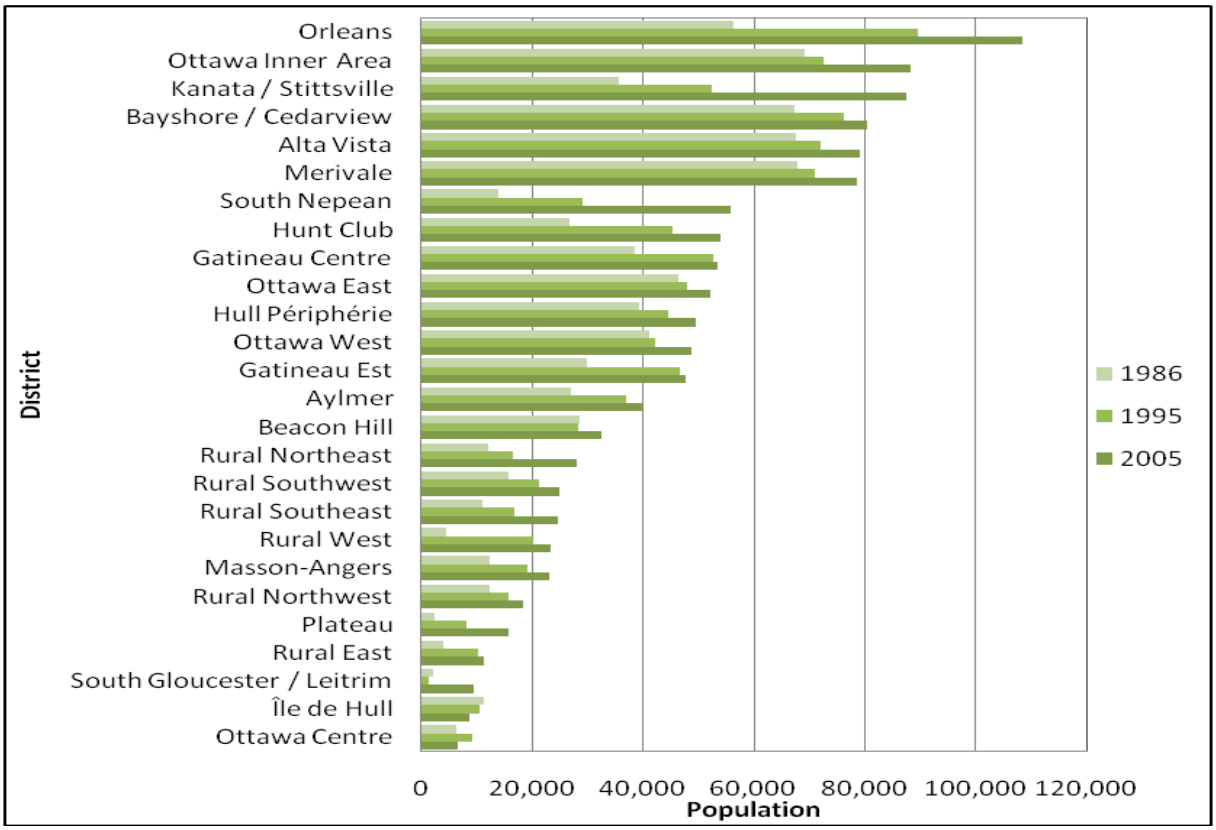


Exhibit 2-3: NCR population by district, 1986-2005

Exhibit 2-4 shows the distribution by age group, and how all age groups above 10 years old have shown an increase between 1995 and 2005. Exhibit 2-5 shows how the distribution of the population by age has remained reasonably constant over time, though with slight increases at the upper and lower ends.

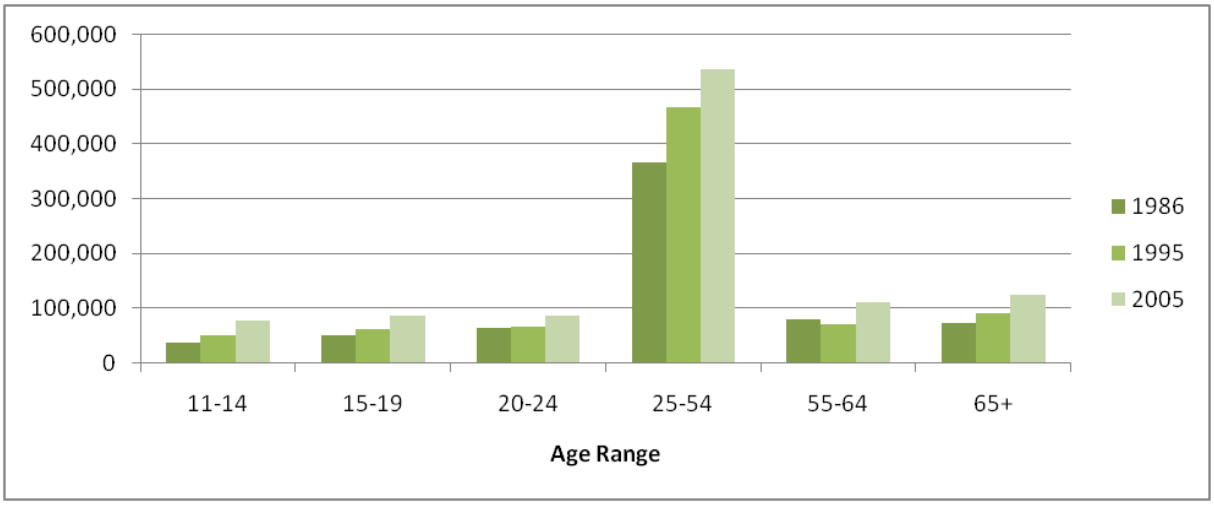


Exhibit 2-4: NCR population by age group, 1986-2005

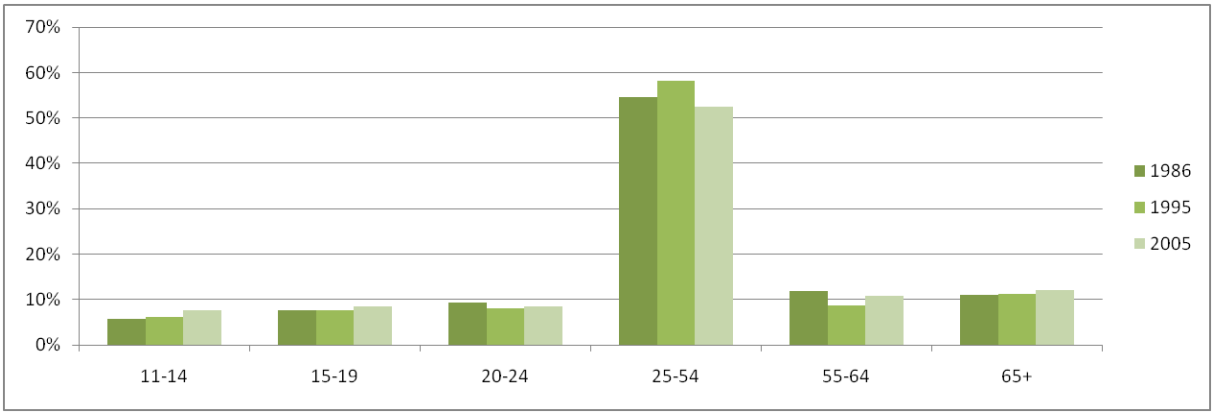


Exhibit 2-5: NCR population distribution by age group, 1986-2005

Considering the Ontario and Québec districts separately, as is done below in Exhibit 2-6, it can be seen that, grouping the ages into three categories for residents 11 and over, while Ontario districts are not showing any particular trend, the Québec districts are showing a gradual aging of the population. This is reflected by a decline in the "young" category comprised largely of students and young workers and a gradual increase in the "retiree" category of those 65 and over while the middle category representing the main part of the workforce remains in the 68-69% range. Due to this pattern, the trip rates for the older category are likely to become more significant for Québec districts over time.

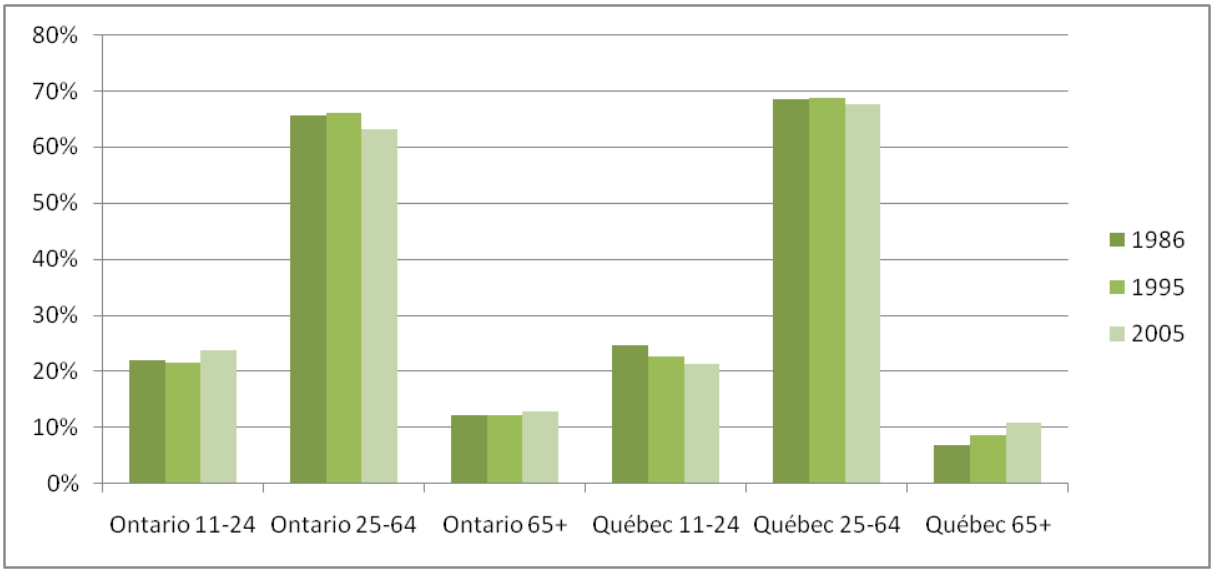


Exhibit 2-6: Ontario and Québec population distribution by age group, 1986-2005

As seen in Exhibit 2-7, Exhibit 2-8 and Exhibit 2-9, the population and employment is growing predominantly outside the three central districts. (In the population chart, "central area" includes the Île de Hull as well as the two Ottawa central districts, whereas the employment charts are separated, as for Gatineau there are employment data only for 1996 and 2005. For population, growth has been relatively constant over the two periods of 1986-1995 and 1995-2005, while for Ottawa employment, growth has accelerated since 1995. Though Île de Hull employment has decreased by 4% between 1996 and 2005, in the rest of Gatineau there has been a 30% increase, leading to a total increase in the Québec districts of over 17,000 jobs during this time period.

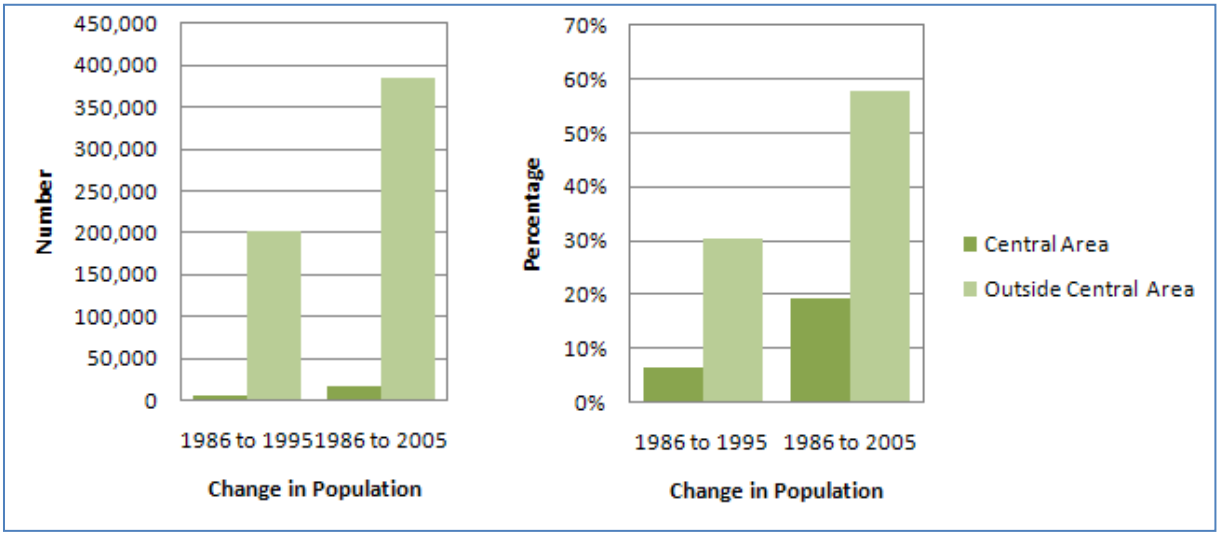


Exhibit 2-7: Relative change in Central Area population, 1986-2005

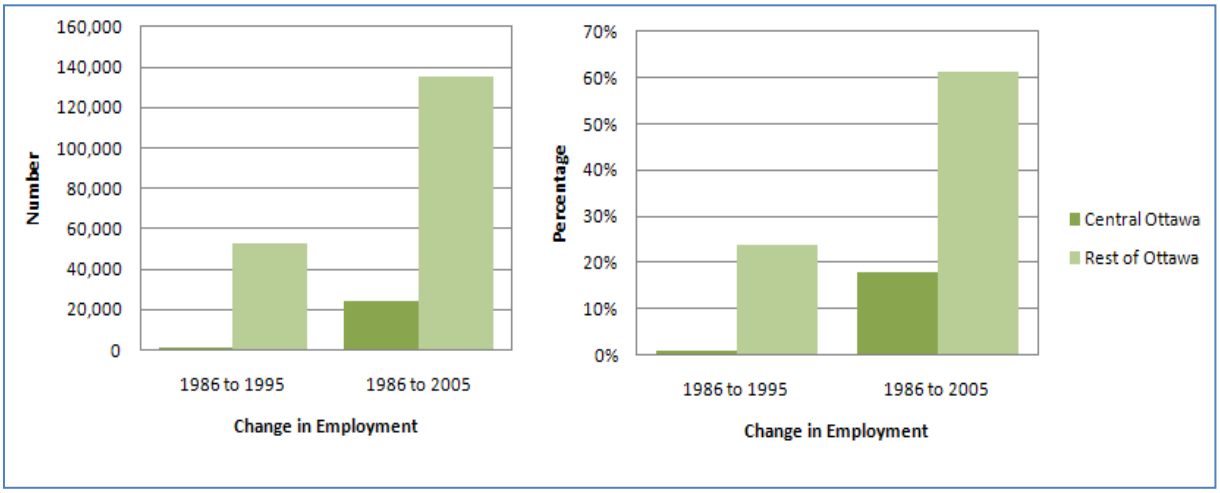


Exhibit 2-8: Relative change in Central Ottawa employment, 1986-2005

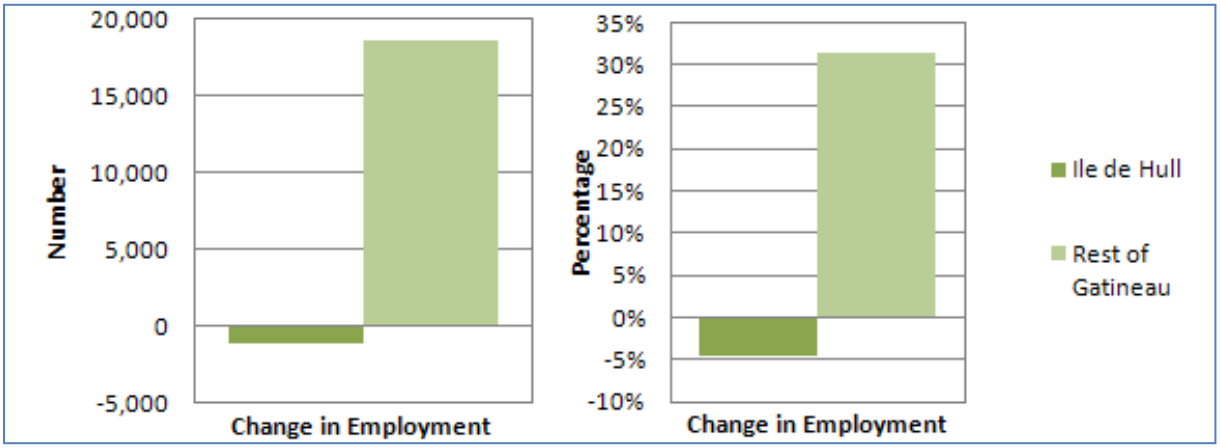


Exhibit 2-9: Relative change in Central Gatineau (Île de Hull) employment, 1996-2005

The central area population increases by 24,000 from 1986 to 2005, or 22,800 from 1995 to 2005, percentage changes of 18% and 17% respectively. This is similar to the 22% and 21% CBD population increases in Calgary and Vancouver from 1996 to 2006[1], and considerably more than the 4% in Montréal over the same period[2], though less than the 54% in CBD population growth experienced in Toronto between 1986 and 2006[3] (27% between 1996 and 2006)[4].

[1] Transportation Association of Canada, Urban Transportation Indicators Fourth Survey Final Report, TAC, December 2009, p.27
[2] For comparisons with 1986 and 1987, the Montréal urban area refers to the island of Montréal, and the Greater Toronto urban area includes the municipalities of Toronto, Pickering, Ajax, Oakville, Mississauga, Brampton, Newmarket, Aurora, Richmond Hill, Markham and Vaughan. Comparisons with 1996 are made to either the respective CMA or (if specified as such) the Existing Urban Area (EUA), i.e., the continually urbanized area around the city centre, but not rural areas or neighbouring municipalities with an intervening undeveloped sector. Full maps can be found in [Transportation Association of Canada, Urban Transportation Indicators Fourth Survey Final Report, TAC, December 2009, Appendix B].
[3] University of Toronto Data Management Group, Transportation Tomorrow Survey data, 1986-2006.
[4] Transportation Association of Canada, Urban Transportation Indicators Fourth Survey Final Report, TAC, December 2009, p.27

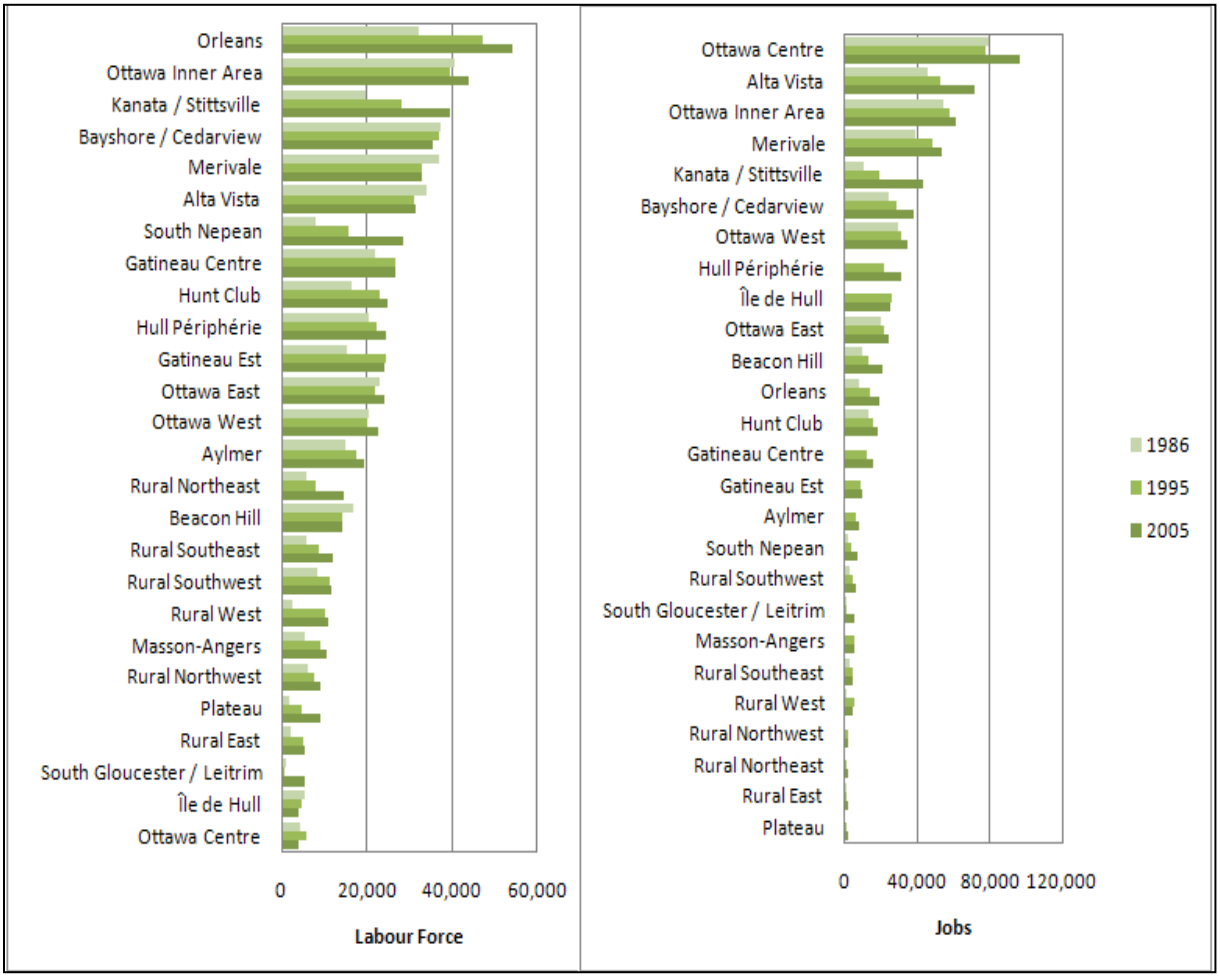


Exhibit 2-10: NCR employed labour force and jobs by district, 1986-2005[5]

Exhibit 2-10, above, compares labour force (including only employed residents) and jobs across all the districts. For Québec districts, 1986 jobs are unavailable, and 1996 jobs are used instead of 1995 jobs. Ottawa Centre and Alta Vista have both shown a substantial increase in jobs in recent years, such that Alta Vista has passed Ottawa Inner Area as the district with the second greatest number of jobs, while Orléans, Kanata/Stittsville and South Nepean have the greatest increases in labour force (as was the case with population). Exhibit 2-11 to Exhibit 2-16, on the following pages, illustrate for each district the changes in population, labour force and employment between the survey years, both in absolute and relative terms. We can see from these a general decrease in the labour force in urban areas such as Merivale, Alta Vista and Beacon Hill, while suburban districts like South Nepean and Plateau increase substantially.
In Gatineau, between 1996 and 2005, we can note a significant increase in jobs in Hull Périphérie (almost equal to the change in population and a much higher percentage), and

[5] 1996 job figures used for Québec districts in place of 1995 jobs

a very large rate of increase in both population and employment in Plateau, starting from a low number in 1996.

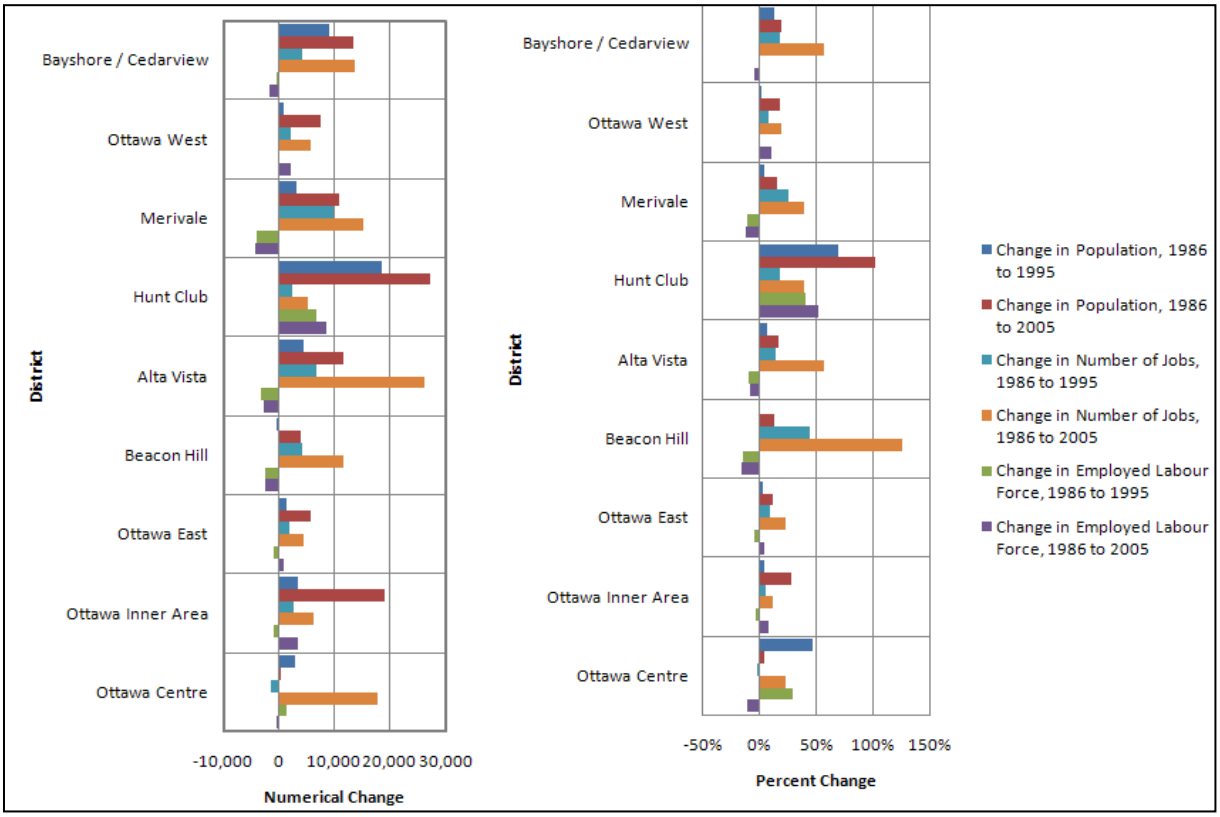


Exhibit 2-11: Central/Urban Ottawa change in population, ELF and jobs, 1986-2005

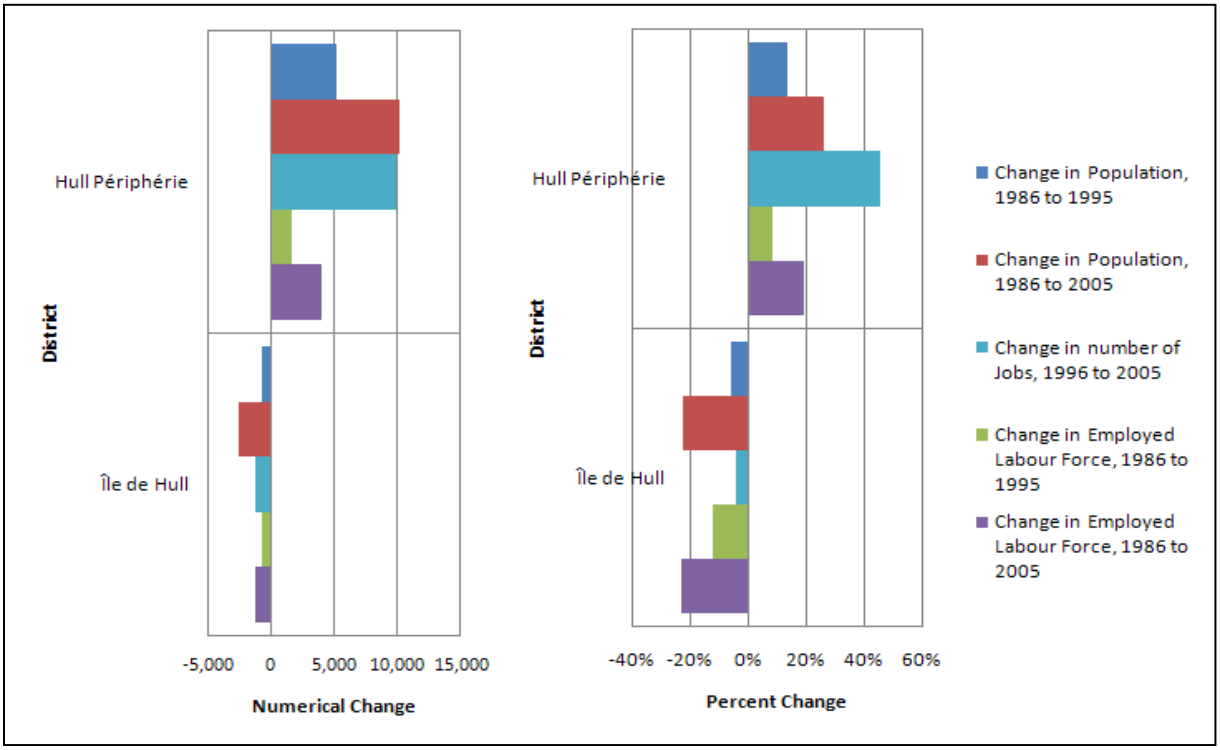


Exhibit 2-12: Central/Urban Gatineau change in population and ELF, 1986-2005

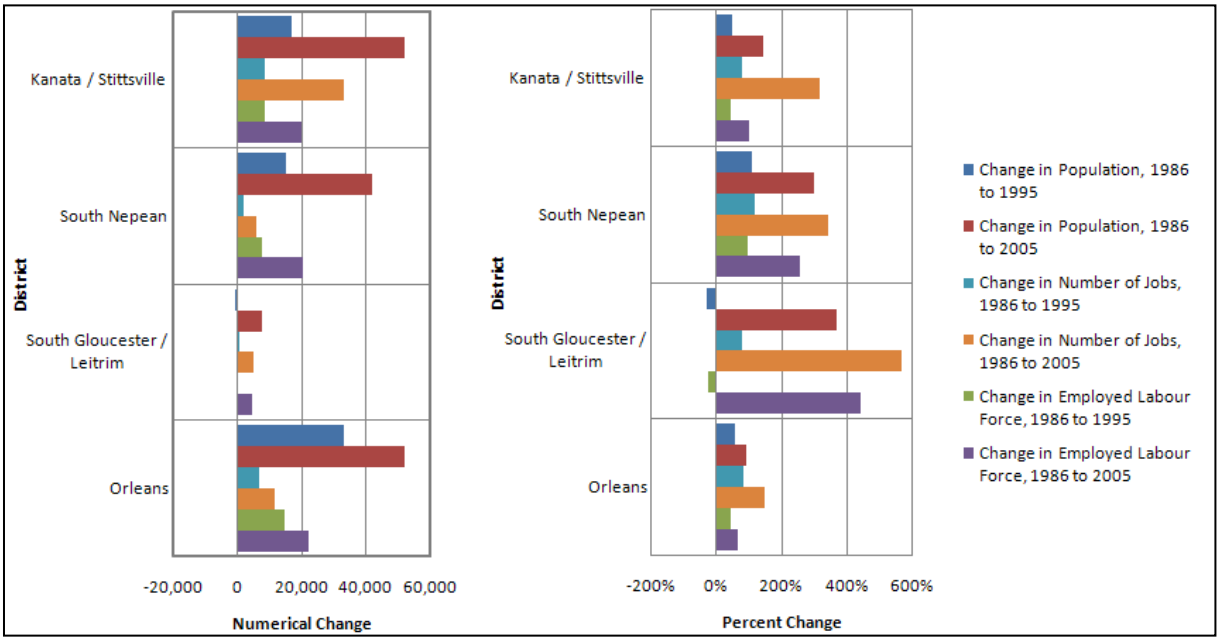


Exhibit 2-13: Suburban Ottawa change in population, ELF and jobs, 1986-2005

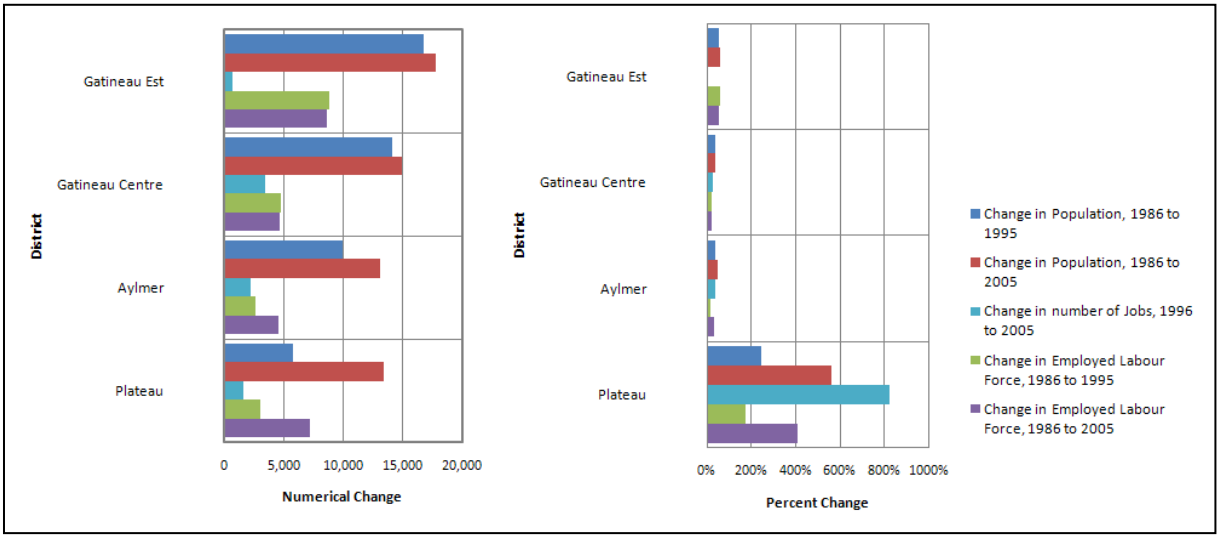


Exhibit 2-14: Suburban Gatineau change in population and ELF, 1986-2005

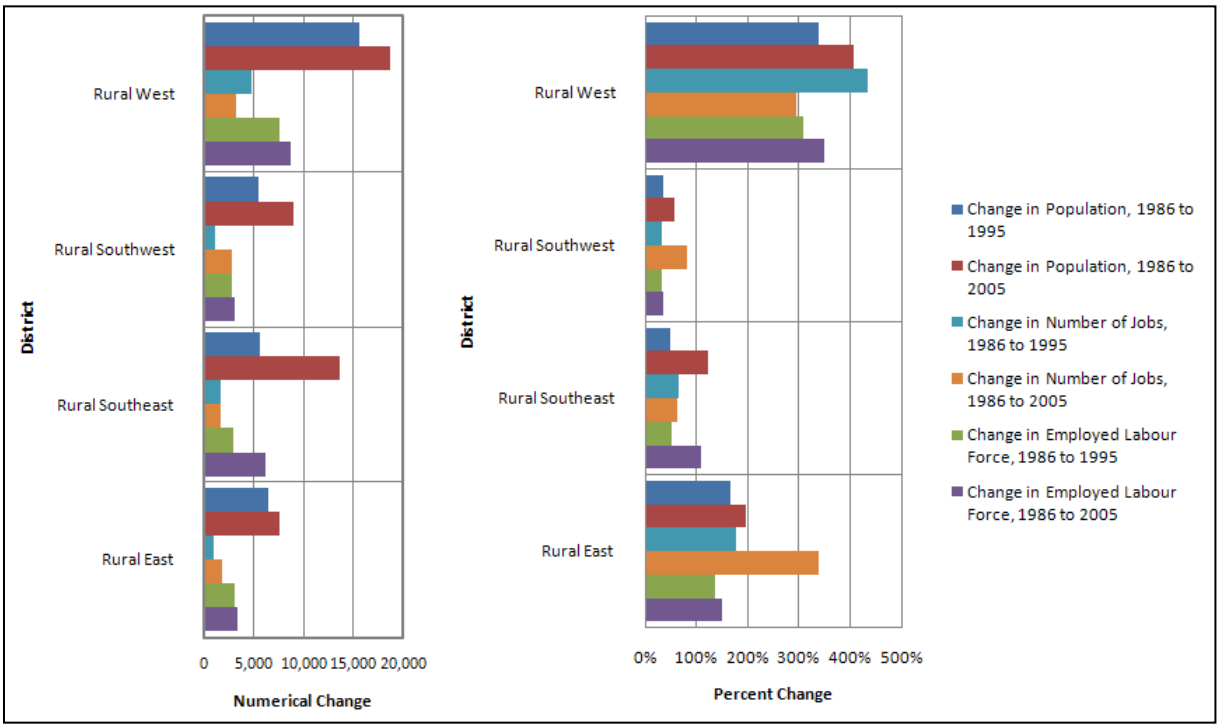


Exhibit 2-15: Rural Ontario districts change in population, ELF and jobs, 1986-2005

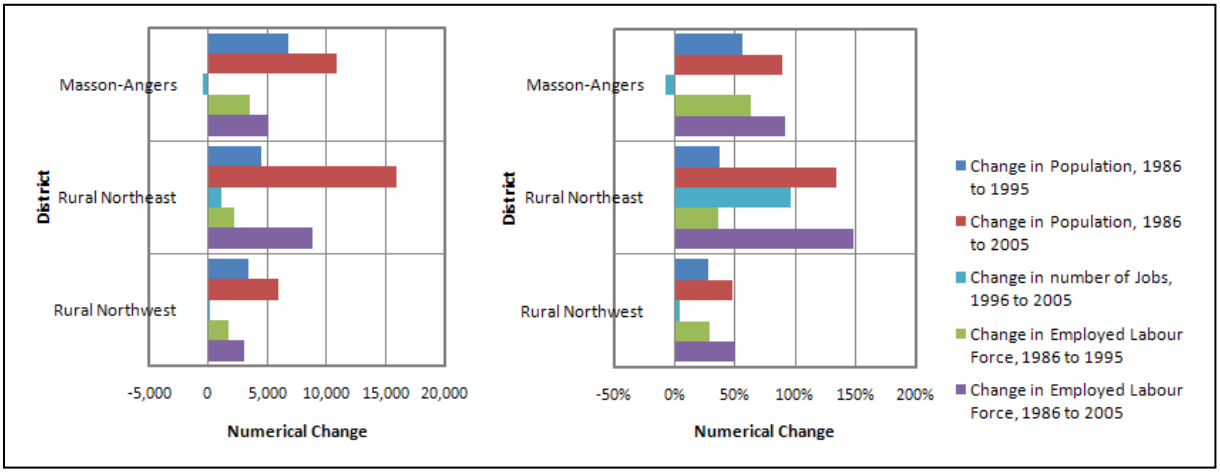


Exhibit 2-16: Rural Québec districts change in population and ELF, 1986-2005

Over the entire urban area (approximated by taking all non-"rural" districts), the population increases by 47% between 1986 and 2005, or 19% between 1996 and 2005. This growth rate is similar to that of the Greater Toronto urban area (43% between 1986 and 2006[6], or 19% between 1996 and 2006[7]) and considerably greater than that of Montréal (6% between 1987 and 2008)[8]. It is between those of Vancouver (15% between 1996 and 2006) and Calgary (32% between 1996 and 2006)[9].

Exhibit 2-17 compares the average number of workers per household at the district level. Although there is somewhat of a trend towards lower average numbers of workers as employment density increases (and, to some extent, population density), the overall ratios are much closer together than population or employment. The higher rates in the rural and newer suburban districts are consistent with expectations, and have shown a decrease over time as density increases. We should note also that the populations of the two downtown centres and of the rural districts are small; meaning that the significance of these 'extremities' may be distorted.

[6] University of Toronto Data Management Group, Transportation Tomorrow Survey data, 1986-2006.
[7] Transportation Association of Canada, Urban Transportation Indicators Fourth Survey Final Report, TAC, December 2009, p.27
[8] Secrétariat aux enquêtes Origine-Destination métropolitaines, Enquête Origine-Destination 2008 Faits Saillants, Agence métropolitaine de transport, 2008, p.14
[9] TAC, December 2009, p.27

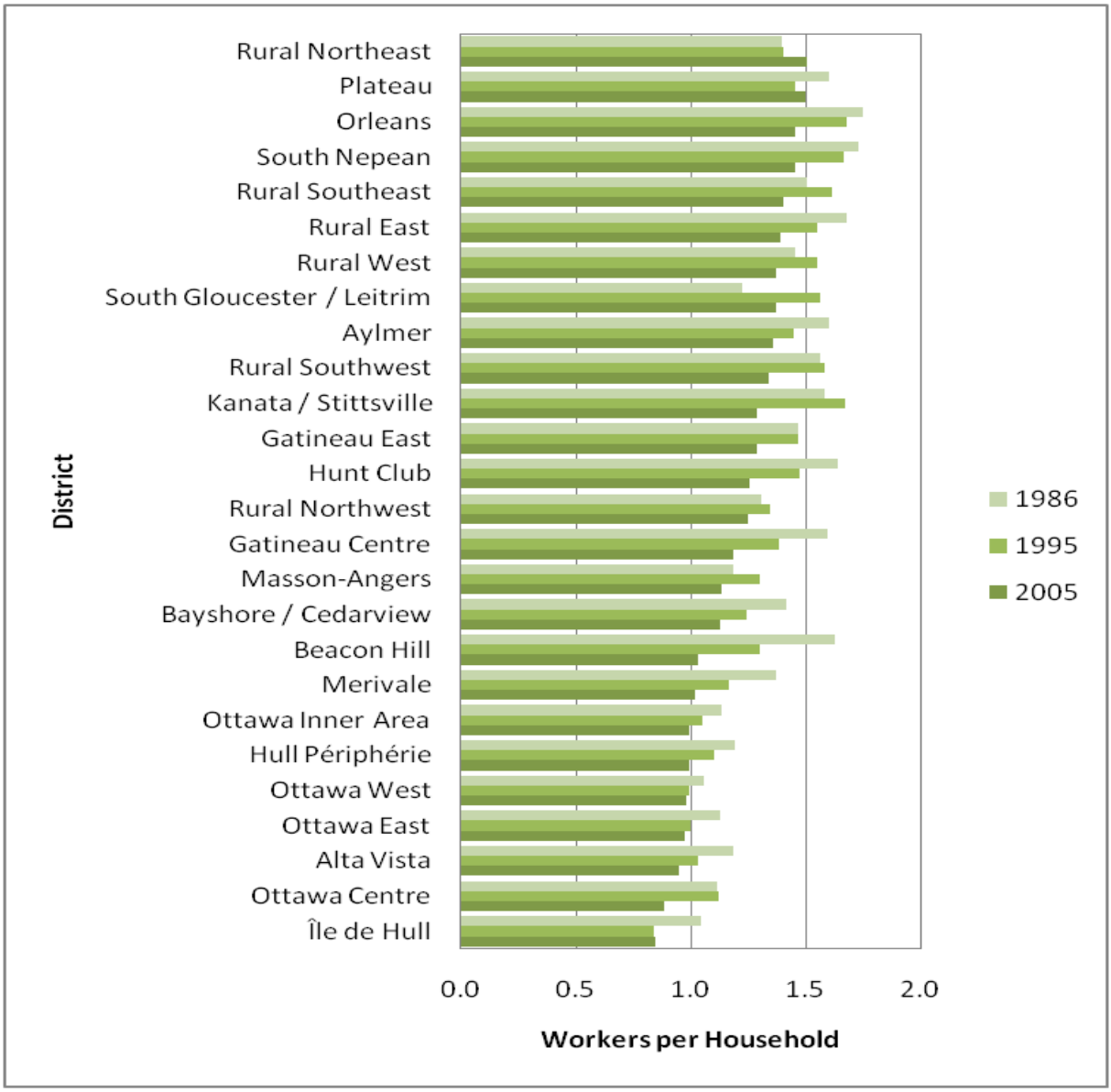


Exhibit 2-17: Workers per household, 1986-2005

In contrast to this relative similarity, the number of jobs per resident worker by district features a huge difference between downtown Ottawa, which has grown from 14 jobs per resident worker in 1995 to 24 in 2005, or Île de Hull, which has remained at around 6 jobs per worker, to rural areas with a small fraction of a job per worker. This pattern has remained largely constant over time. The full spread of district ratios is given in Exhibit 2-18, which expresses the comparison of jobs and workers presented in Exhibit 2-10 in terms of ratios.

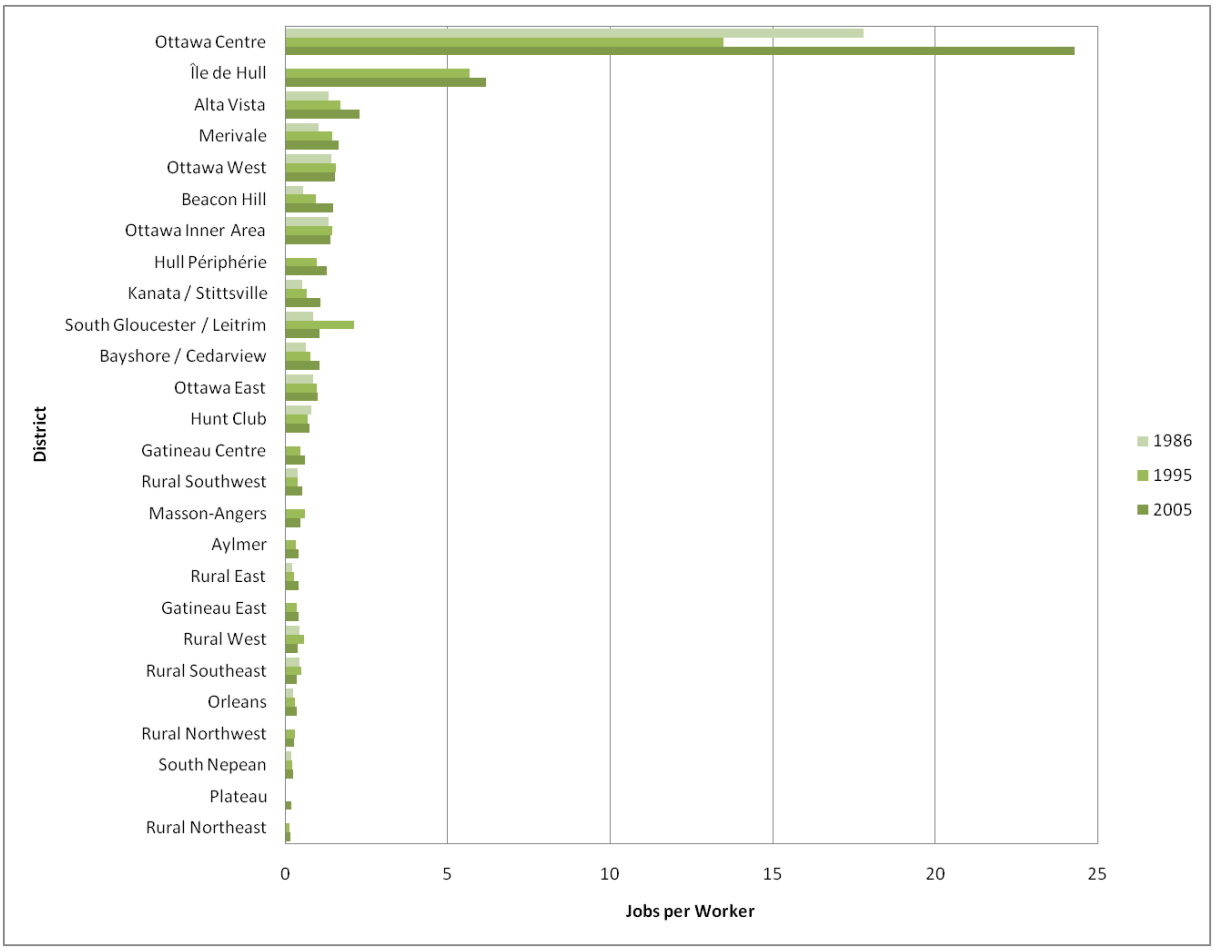


Exhibit 2-18: Jobs per resident worker by district, 1986-2005

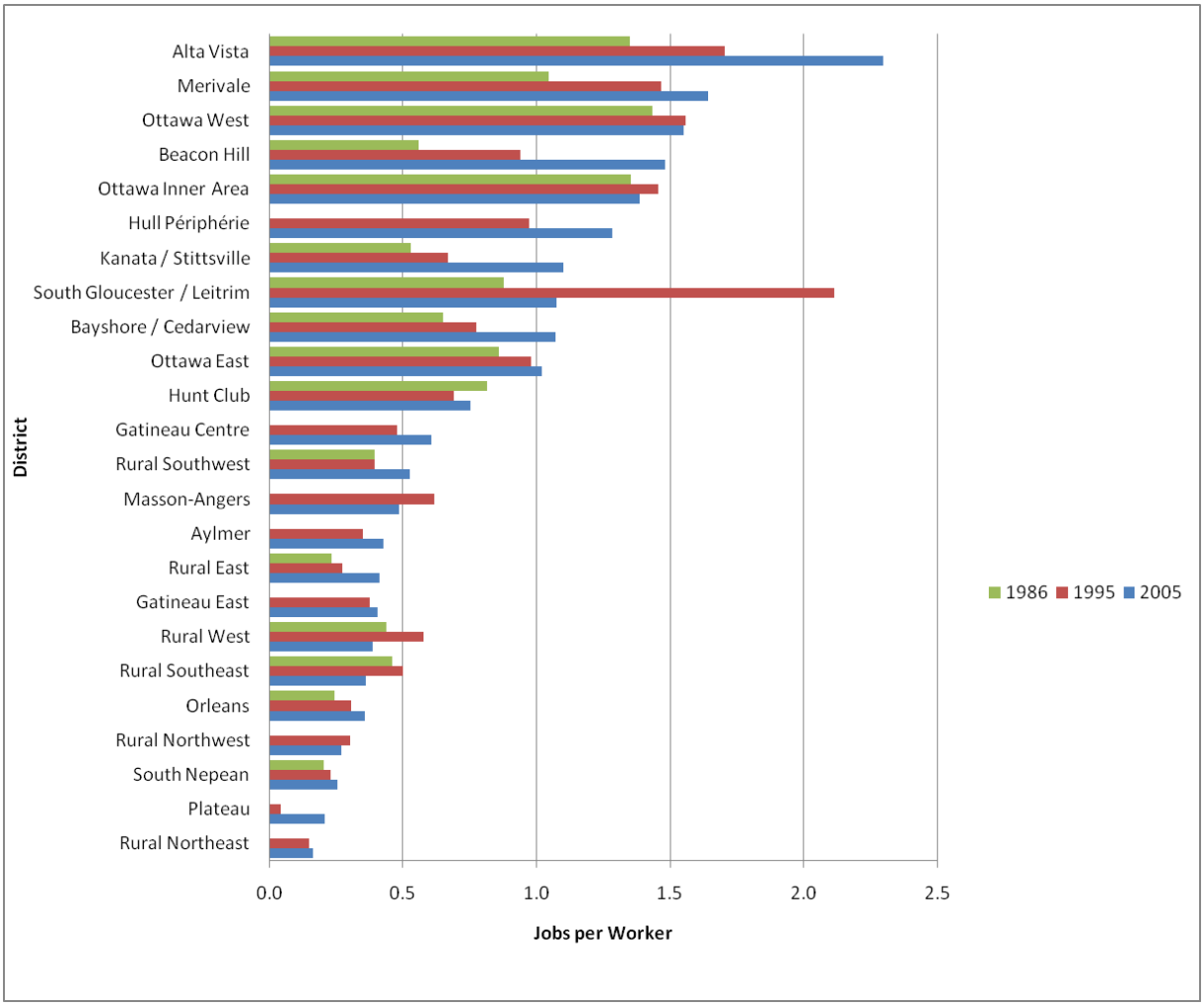


Exhibit 2-19: Jobs per resident worker by district (excluding downtown cores), 1986-2005

Employment data for the Québec districts are only available for 2005 and 1996, so job ratios for 1986 are just shown for Ontario districts, and 1996 is used to approximate 1995 in Gatineau.

Exhibit 2-19, above, excludes the two downtowns of Ottawa Centre and Île de Hull. This is because those two districts have such a high job to resident worker ratio that it is difficult to distinguish between the ratios of the remaining districts (as in Exhibit 2-18) when all are shown together. The ratio of jobs to workers in Alta Vista can now be seen to have grown significantly between 1995 and 2005. Even more dramatic changes are noticed in South Gloucester and in Plateau, but here the absolute numbers for 1995-1996 are quite small (only 700 jobs for South Gloucester, and 200 for Plateau) which accounts for the impact on the ratio.

In Exhibit 2-20, below, the number of jobs in each district is compared with the employed labour force in that district to calculate the surplus or deficit in jobs. Ottawa Centre has 95,000 more jobs than employed residents (an increase of 20,000 since 1995), and other central and urban areas such as Alta Vista and Île de Hull also have job surpluses, while the majority of districts have more employees than jobs (Orléans has a deficit that has been increasing over time, from around 25,000 in 1986 to 35,000 in 2005). Some districts have gone from being net generators of workers to being net generators of jobs (such as Beacon Hill and Kanata/Stittsville). Employment data are not available for the Québec districts before 1996, but from 1996 (used instead of 1995) to 2005, the most noticeable change is in Hull Périphérie, which gains 7,500 more jobs than workers.

The numbers in Exhibit 2-20 represent an estimate of the minimum necessary daily work movements to and from each district, based on the district's imbalance between jobs and resident workers. In Exhibit 2-22, these are compared with the actual number of externally-working residents to assess how self-contained each district is.

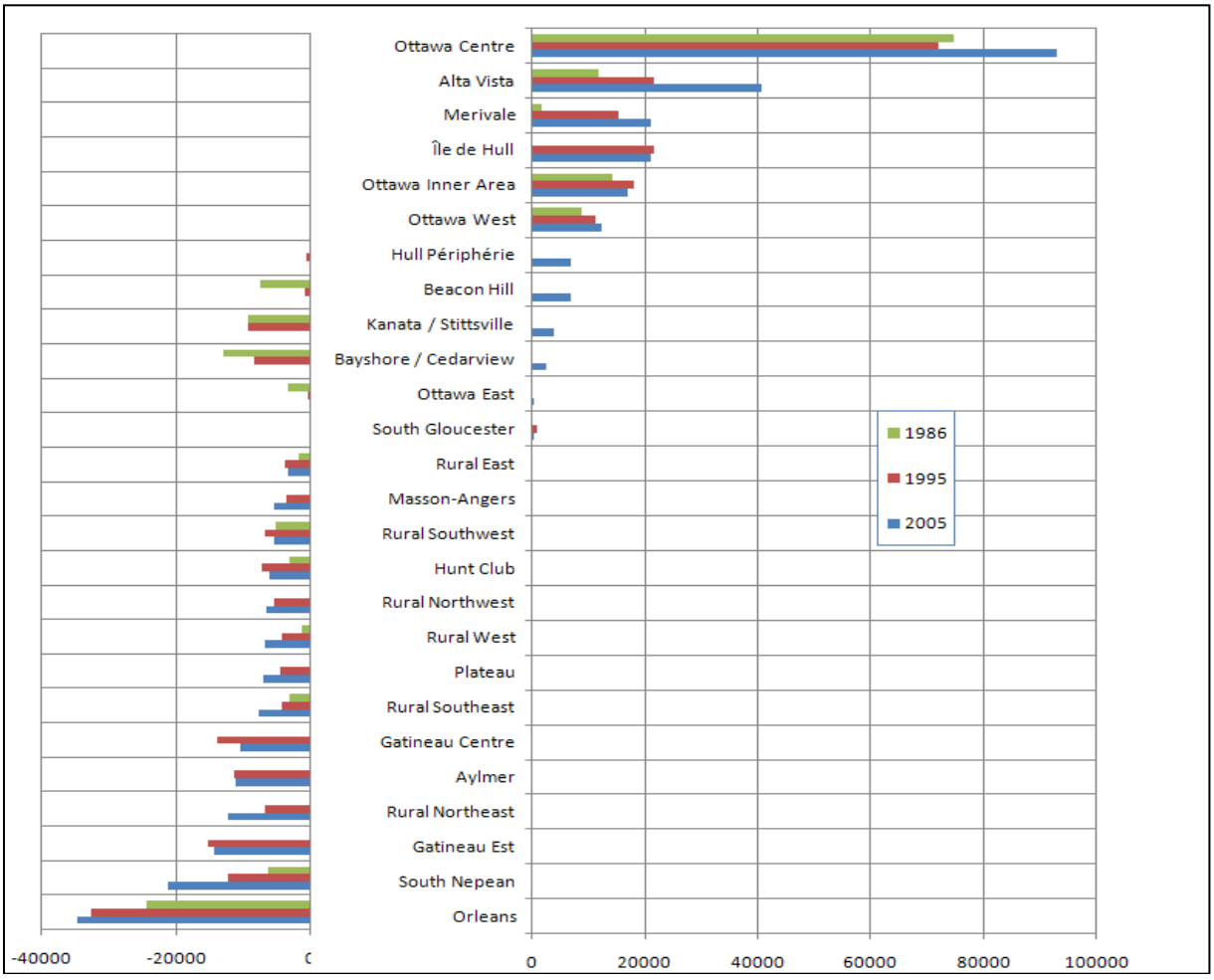


Exhibit 2-20: NCR job-labour force surplus by district, 1986-2005

Exhibit 2-22 shows how many additional work trips are required to and from each district beyond those resulting from the imbalance between workers and jobs, and what percentage of work trips made by residents of each district are made within the district. This is a measure of the self-containment of the district, or how efficient it is at providing jobs for its residents, and thus minimizing commuters' travel. Thus, for the sample "District X" depicted in Exhibit 2-21, there would need to be a minimum of 5 daily trips to work across the district boundary as there are 5 more resident workers than jobs. As there are in fact 15 cross-boundary trips to work, the surplus, such as is expressed for NCR districts on the left side of Exhibit 2-22, would be 15-5=10. Meanwhile, as there are 5 intra-district work trips, the intra-district percentage, such as is expressed for NCR districts on the right side of Exhibit 2-22, would be 33%, as 5 of the 15 workers who live in the district also work there.

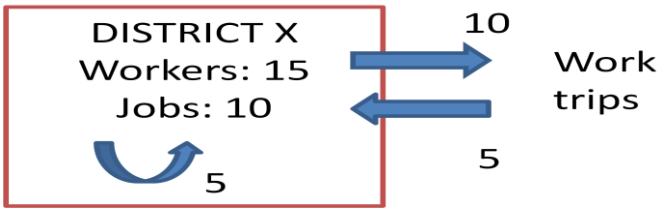


Exhibit 2-21: Method of calculating surplus daily work trips

Some areas, such as Ottawa East, have similar numbers of workers and jobs, but such a large percentage of the resident workers travel elsewhere to their jobs (fewer than 15% work in Ottawa East) that the actual number of work trips exceeds the minimum number of work trips by over 40,000. In general, only Kanata/Stittsville residents have significantly increased their percentage of intra-district work trips since 1986 (from 16% to 31%, which puts this district behind only Ottawa Centre in terms of the proportion of its residents who work in the same district). In Gatineau, only Plateau has increased in self-containment, due to the increase in jobs there from virtually none in 1996. 1986 job data were not available, and 1996 jobs (but not work trips) are used to represent 1995, for the Québec districts.

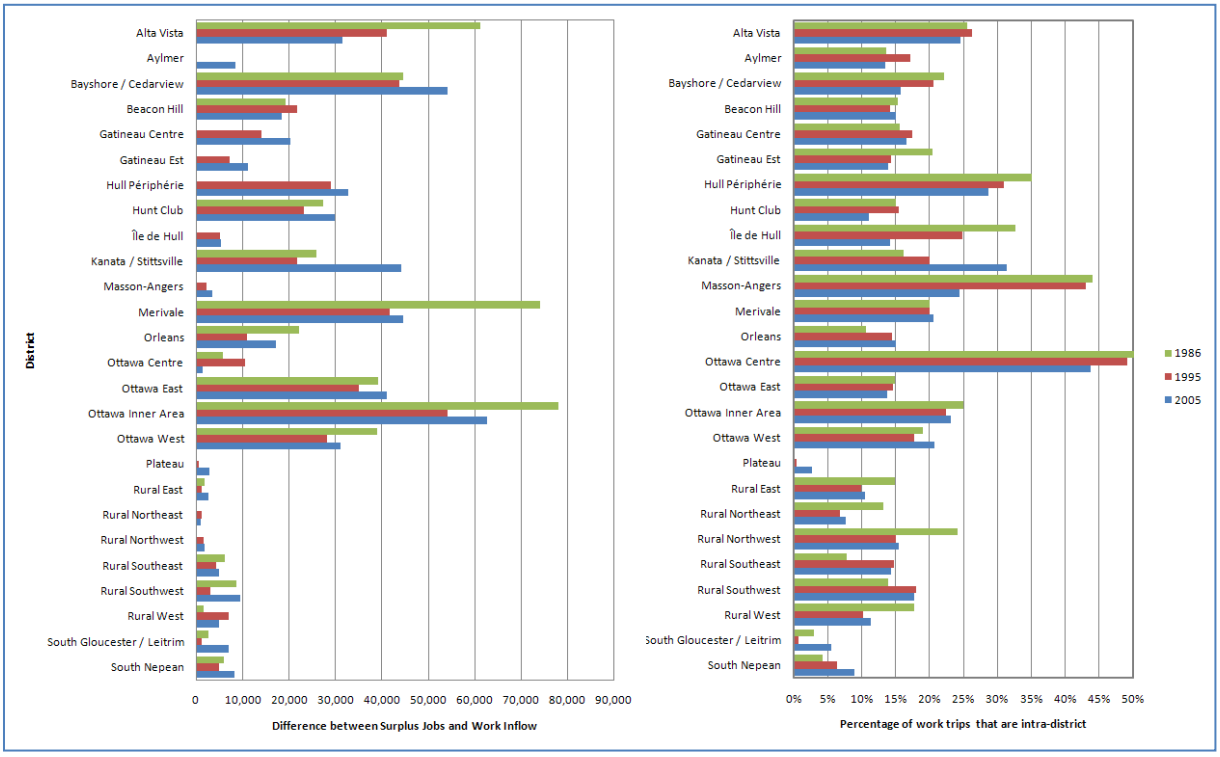


Exhibit 2-22: NCR extent of daily inter-district work travel, 1986-2005

The following series of exhibits (for the NCR overall and for Ontario and Québec separately) breaks the population down by age group and occupation status, comparing the three years. For 1986 and 1995 there were some people (particularly between the ages of 15 and 24) who were classified as both workers and students; in these cases anyone who identified themselves as a full-time worker and student was included in the full-time worker category only, and anyone who identified themselves as a student and part-time worker was included in the student category only. The 0-10 age group has definitions of a student that vary by survey, so is omitted from the comparison.

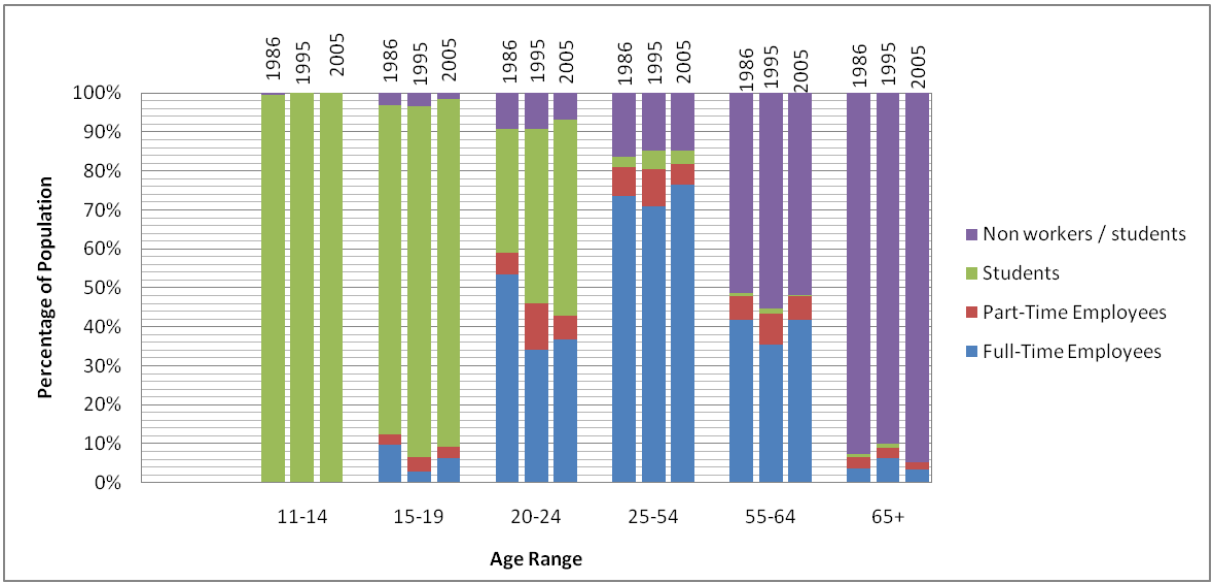


Exhibit 2-23: NCR population by age group and occupation status, 1986-2005

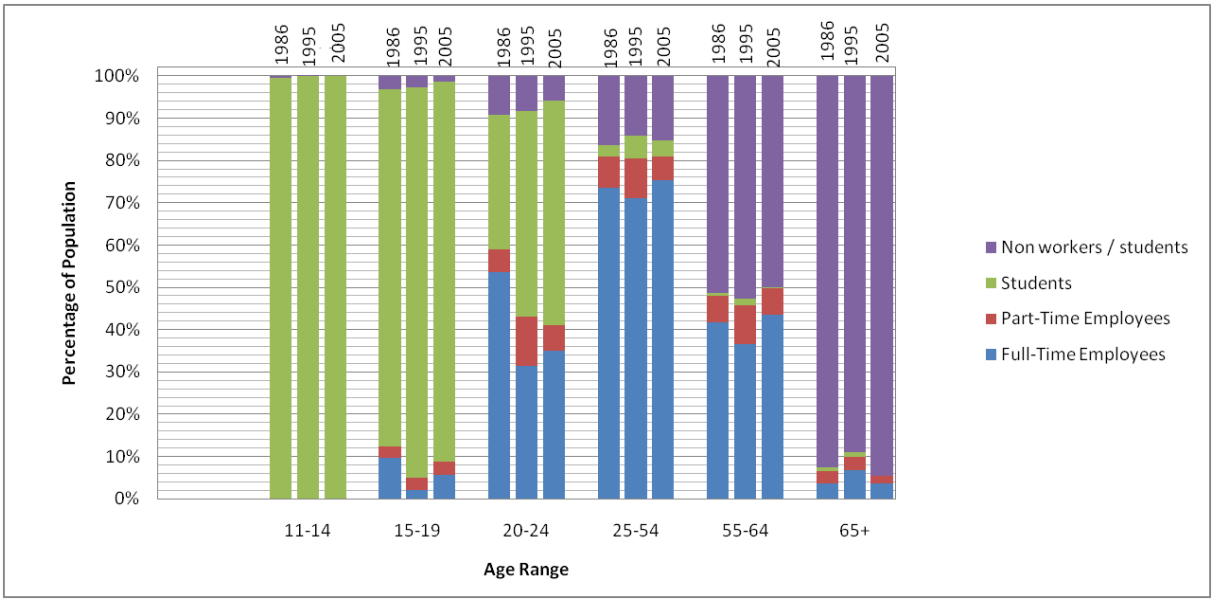


Exhibit 2-24: Ontario population by age group and occupation status, 1986-2005

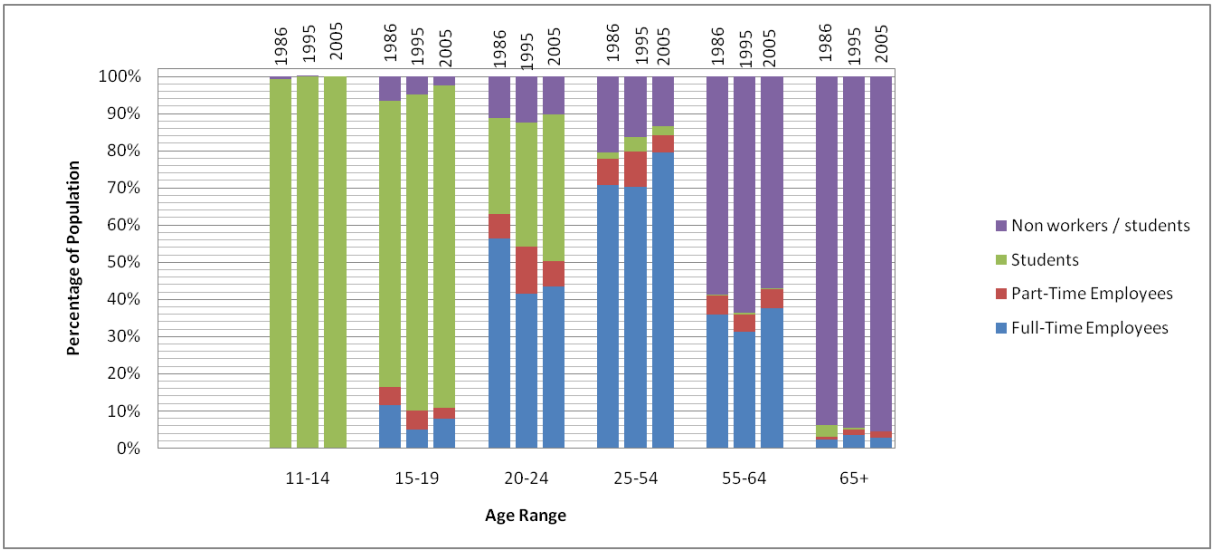


Exhibit 2-25: Québec population by age group and occupation status, 1986-2005

In Exhibit 2-23, Exhibit 2-24 and Exhibit 2-25, above, similar demographic patterns are shown for both Ontario and Québec. The near 100% of students in the lower age range and near 100% neither student nor employed in the highest age category are as expected for all three geographical breakdowns. Once allowing for the fact that many part-time working students were not classified as such in 2005, the distribution appears similar across the three survey years, although there is a substantial drop in full-time employment in the 20-24 category between 1986 and 1995 as workers are replaced by students, and an overall drop in part-time employment between 1995 and 2005 (with full-time employment gaining).

If we combine the age categories, and remove the part-time workers that make the total exceed 100%, we notice in Exhibit 2-26 an overall drop in full-time employment from 51% to 48% between 1986 and 1995, and subsequent partial recovery to 49% in 2005.

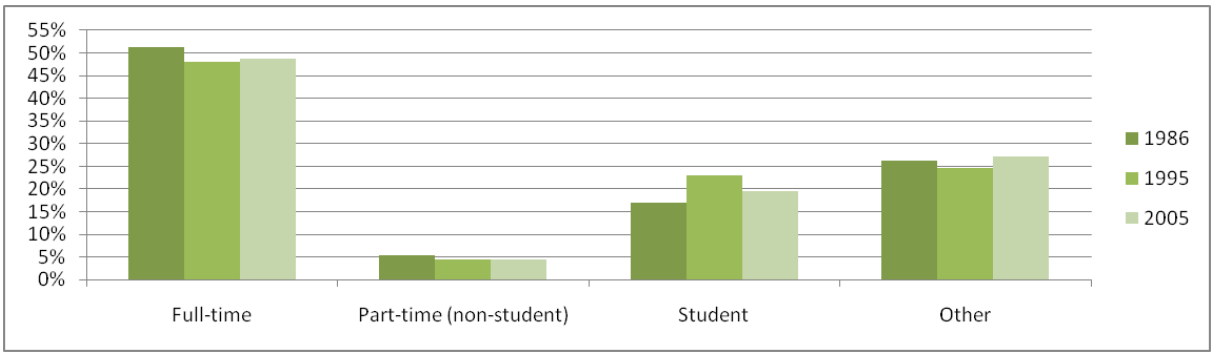


Exhibit 2-26: NCR employment status, 1986-2005

The exhibits below compare full-time employment proportions by gender (each age category adding up to 100%). The balances are similar across geographic areas and age groups, other than in categories where the sample size is very small, such as 15-19 and over 65. Between 1986 and 2005, the female share of the work force has increased from 40% to almost 45% across all age categories (although the 20-24 age category shows the opposite trend as female representation has dropped below 50% over the same time period). In 1986, women represented approximately the same share of the full-time work force in Québec (40.3%) and in Ontario (40.8%). By 2005, however, the Québec proportion had increased to 45.9%, while the Ontario equivalent had increased to only 44.5%, indicating that while female participation in the workforce is growing across the NCR, it is growing fastest in Gatineau.

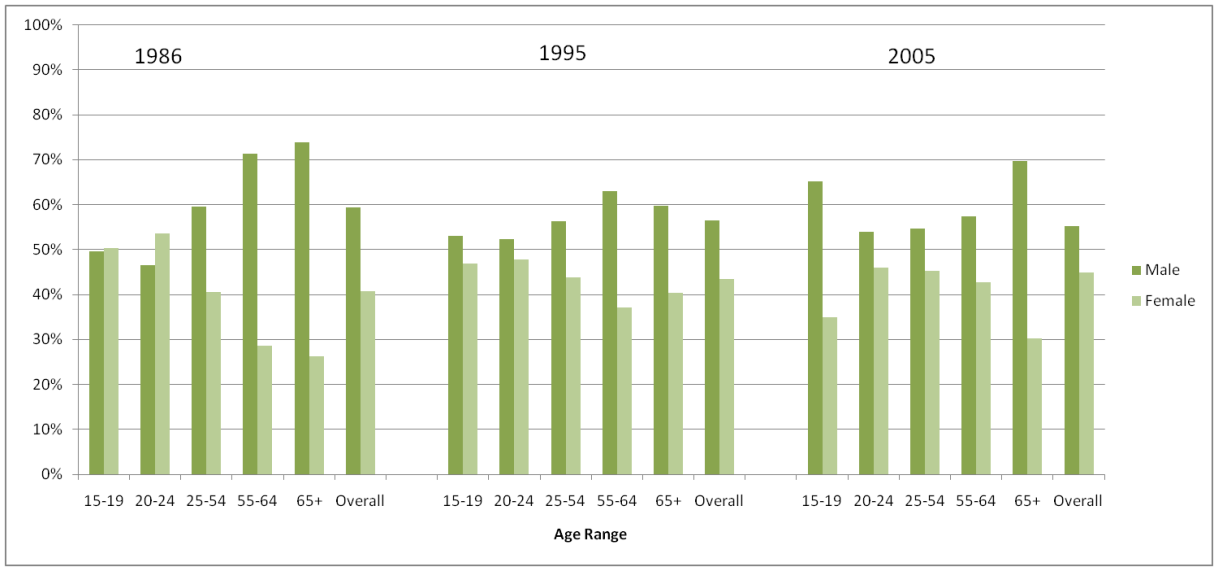


Exhibit 2-27: NCR full-time labour force activity by age and gender, 1986-2005

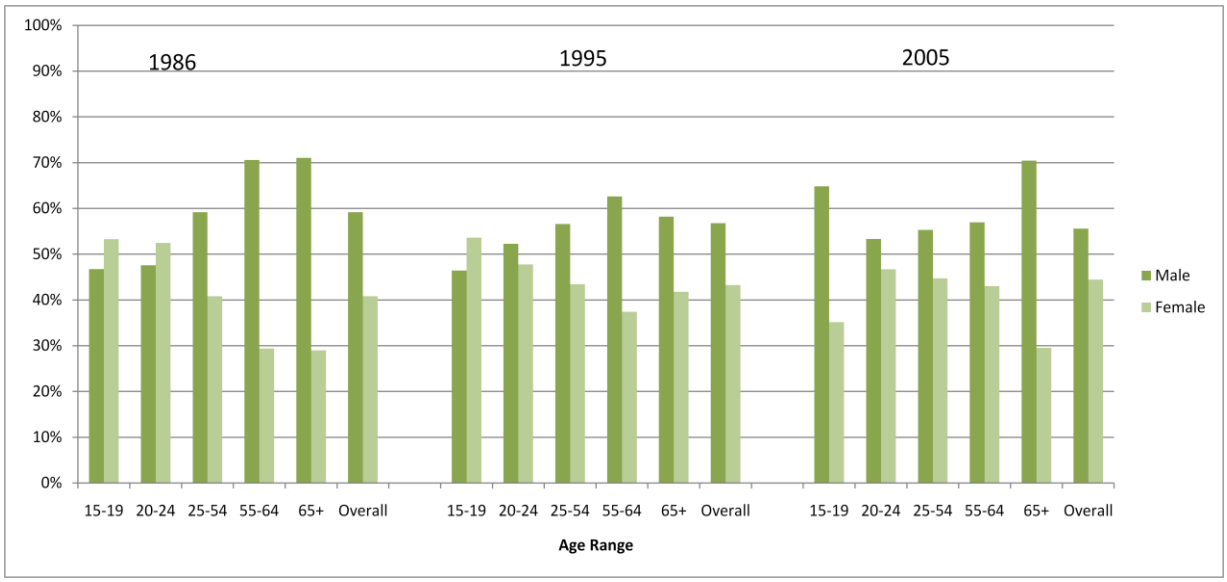


Exhibit 2-28: Ontario full-time labour force activity by age and gender, 1986-2005

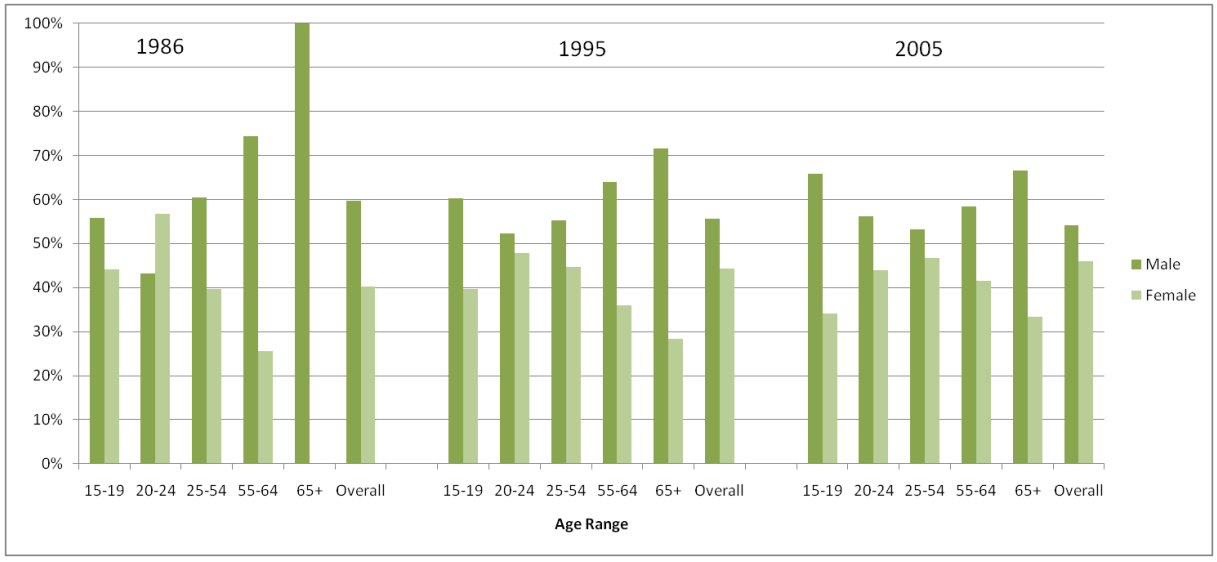


Exhibit 2-29: Québec full-time labour force activity by age and gender, 1986-2005

2.2 Urban densities

Observed trends:

- *The difference between urban and suburban densities is decreasing over time*
- *No district shows a decrease in density; the fastest growing district, percentagewise, is South Gloucester/Leitrim (more than a 500% density increase), while the slowest is Ottawa East (15%).*
- *Kanata/Stittsville, Orléans and South Nepean add over 145,000 residents, almost half the total NCR population increase.*
- *Alta Vista, Merivale and Bayshore/Cedarview add more jobs than residents.*
- *From 1995 to 2005, Ontario district density increases faster than Québec district density.*

To show urban densities, the five densest districts are separated from the remaining 21 due to the different magnitude of density for these central areas. The spread ranges from over 41,000 residents and jobs combined per square kilometre in Ottawa Centre in 2005 (by far the densest of the districts, and up by 20% compared with 1995) to fewer than 8 residents and jobs per square kilometre in the Rural West in 1986. For Québec districts, density can only be shown for 2005 and 1995 (using job numbers from 1996) as job figures are not available before that.

The highest absolute increase in density is found in Ottawa Centre (7,000 residents and jobs combined—Île de Hull, in contrast, shows a slight decline since 1995) but, percentagewise, this is low compared with some of the suburban districts such as South Nepean (increasing by four times) and Kanata/Stittsville (increasing by a factor of nearly three times) between 1986 and 2005. Although there are no Ontario districts that do not experience at least a 15% increase in density since 1986, the urban districts such as Ottawa Inner Area, Ottawa West and Ottawa East have much lower increases (15-20%) than the suburbs, and the only Gatineau districts to show large increases since 1995 are the low-density Plateau and Rural Northeast. Thus, the trend has been to reduce the disparities between urban and suburban density over time—in 1986 the density of Ottawa Inner Area was 26 times that of South Nepean, but in 2005 it was less than 8 times as dense.

From 1995 to 2005, the average density of districts in the Ontario part of the NCR increased by 25%, while the average density of districts in the Québec part increased by 15%.

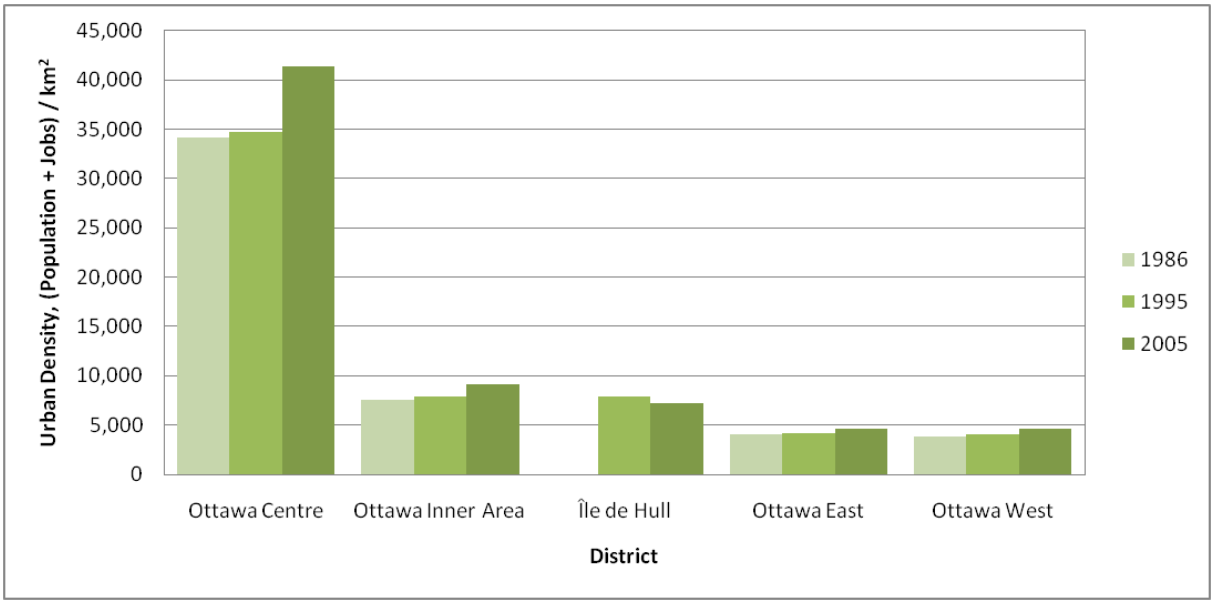


Exhibit 2-30: Urban density (population and jobs)/sq km (central districts), 1986-2005

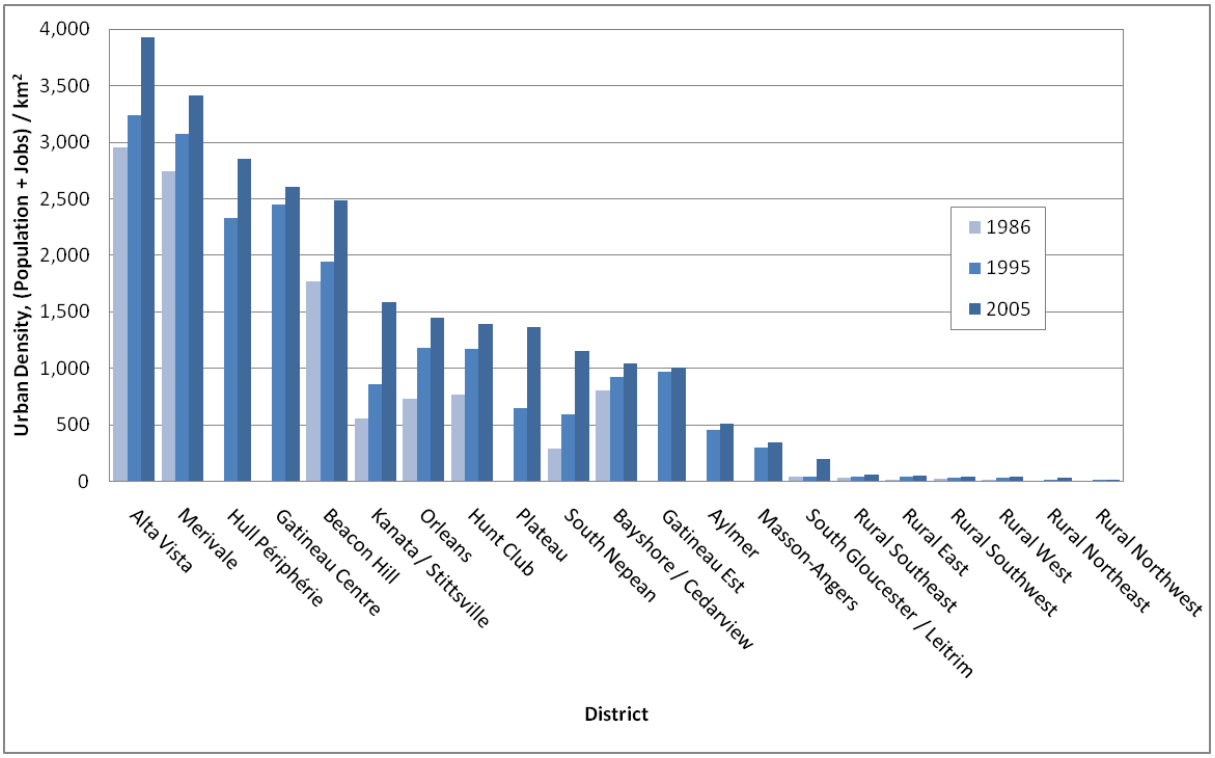


Exhibit 2-31: Urban density (population and jobs) / sq km (suburban/rural districts), 1986-2005

The density of the Ontario part of the NCR increases from an overall average of 314 people and jobs per square kilometre in 1986, through 383 in 1995 to 477 people and jobs per square kilometre in 2005. Excluding the rural districts, the equivalent numbers for 1986, 1995 and 2005 are 1,672, 1,951 and 2,422 people and jobs per square kilometre. Density increases in all districts.

Looking across Canada, the 2005 density approximates closely to other urban areas, such as Montréal (2,700 people and jobs per square kilometre), Vancouver (2,500) and Calgary (2,200). Only Toronto, at 4,000, is significantly denser (TAC, 2009, p. 28)[10].

2.3 Household characteristics

Observed trends:

- *Household size remains relatively constant, but average number of vehicles per household increases by 5%*
- *A larger percentage of households are inhabiting detached housing*
- *The number of two-vehicle households is increasing faster than the number of one-vehicle households*
- *The fastest-growing household size is the one-person household*
- *Average household sizes in Québec districts of the NCR have become smaller than those in Ontario districts.*

The survey examines households in several different ways; these include number of people comprising the household, number of vehicles available for household use, and type of structure that the household inhabits. Details of these attributes are displayed in Exhibit 2-32, Exhibit 2-33 and Exhibit 2-34, below. These are also displayed showing the percentage of all households that fall into each category in Exhibit 2-35, Exhibit 2-36 and Exhibit 2-37. Dwelling types are shown only for 1986 and 2005. This is because the 1995 survey aggregated the types to “house” and “apartment”, meaning that the 1995 results cannot be compared with the other years.

Household size has remained relatively constant in Ontario (averaging between 2.46 and 2.54 people) while in Québec there has been a decreasing trend from 2.63 in 1986 to 2.43 in 2005. Consequently, average household sizes in the Québec part of the NCR have become smaller than in the Ontario part. Both sectors reflect a trend of moves to detached housing, which has come to be preferred by a majority of households (55% in 2005, compared with 47% in 1986). There is also a rising overall trend in number of vehicles per household, (despite a drop from 1.34 to 1.27 from 1986 to 1995, the average subsequently increased to 1.41 by 2005).

[10] Density figures refer to the Existing Urban Area (EUA), as defined previously.

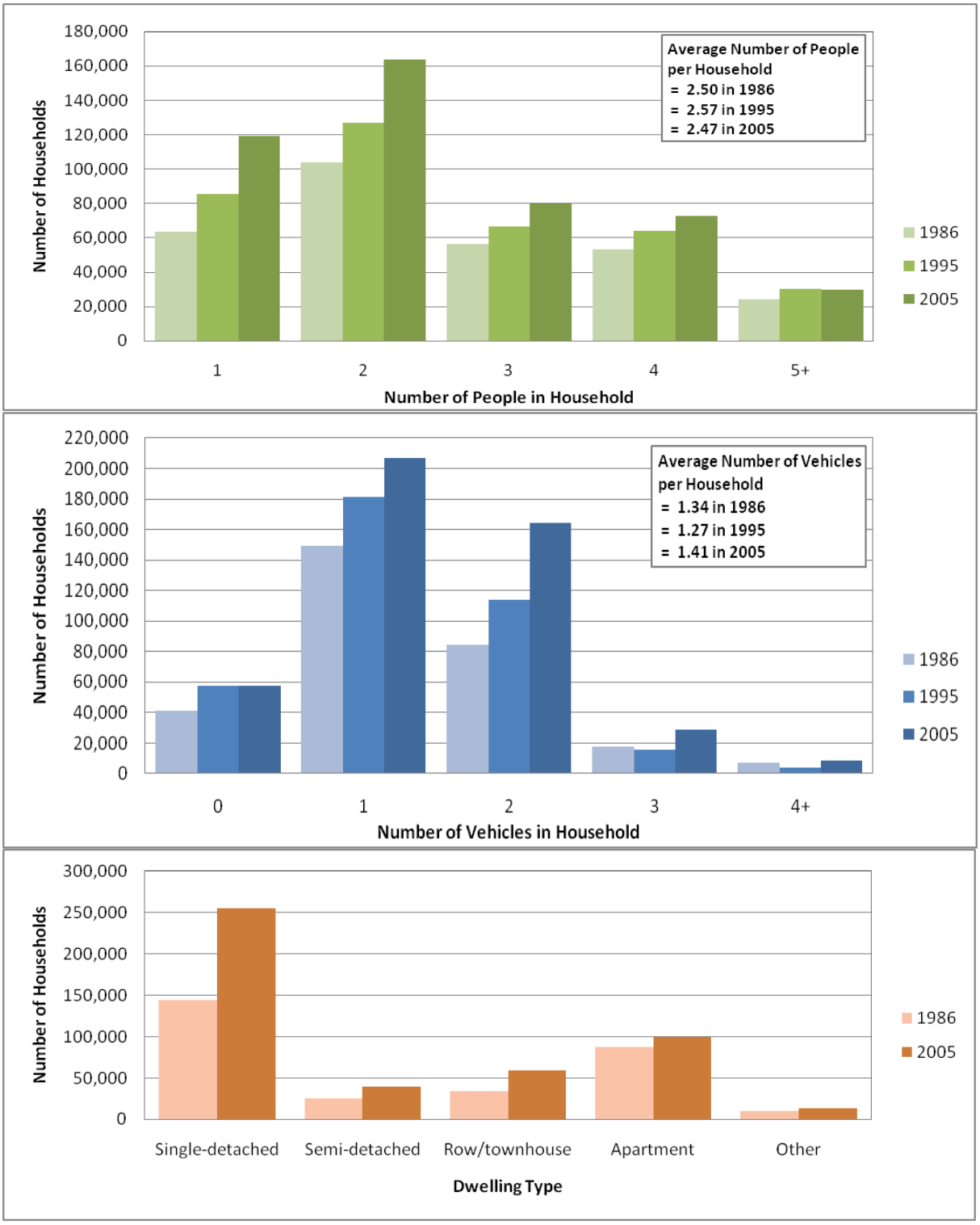


Exhibit 2-32: NCR household characteristics (absolute numbers), 1986-2005

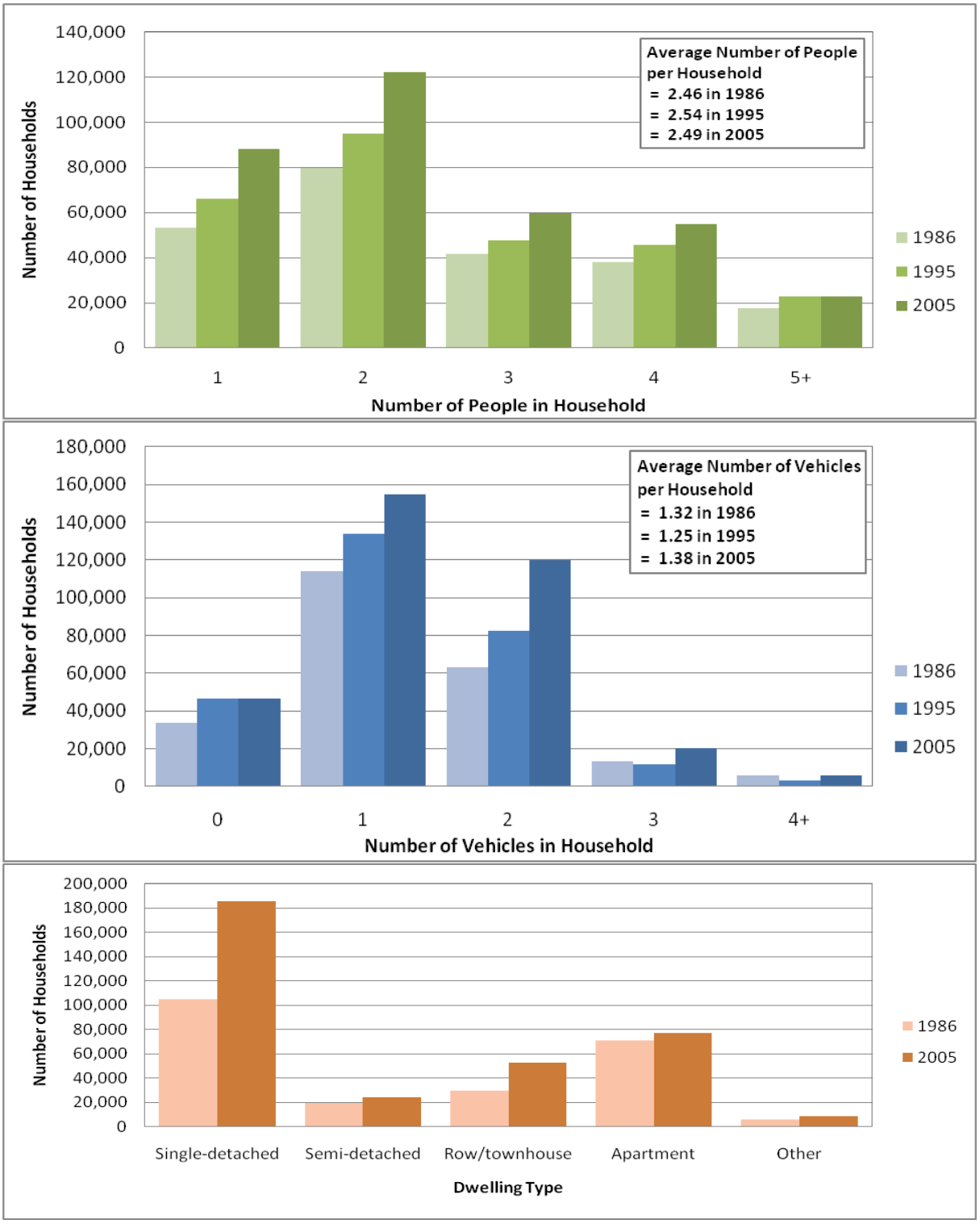


Exhibit 2-33: Ontario household characteristics (absolute numbers), 1986-2005

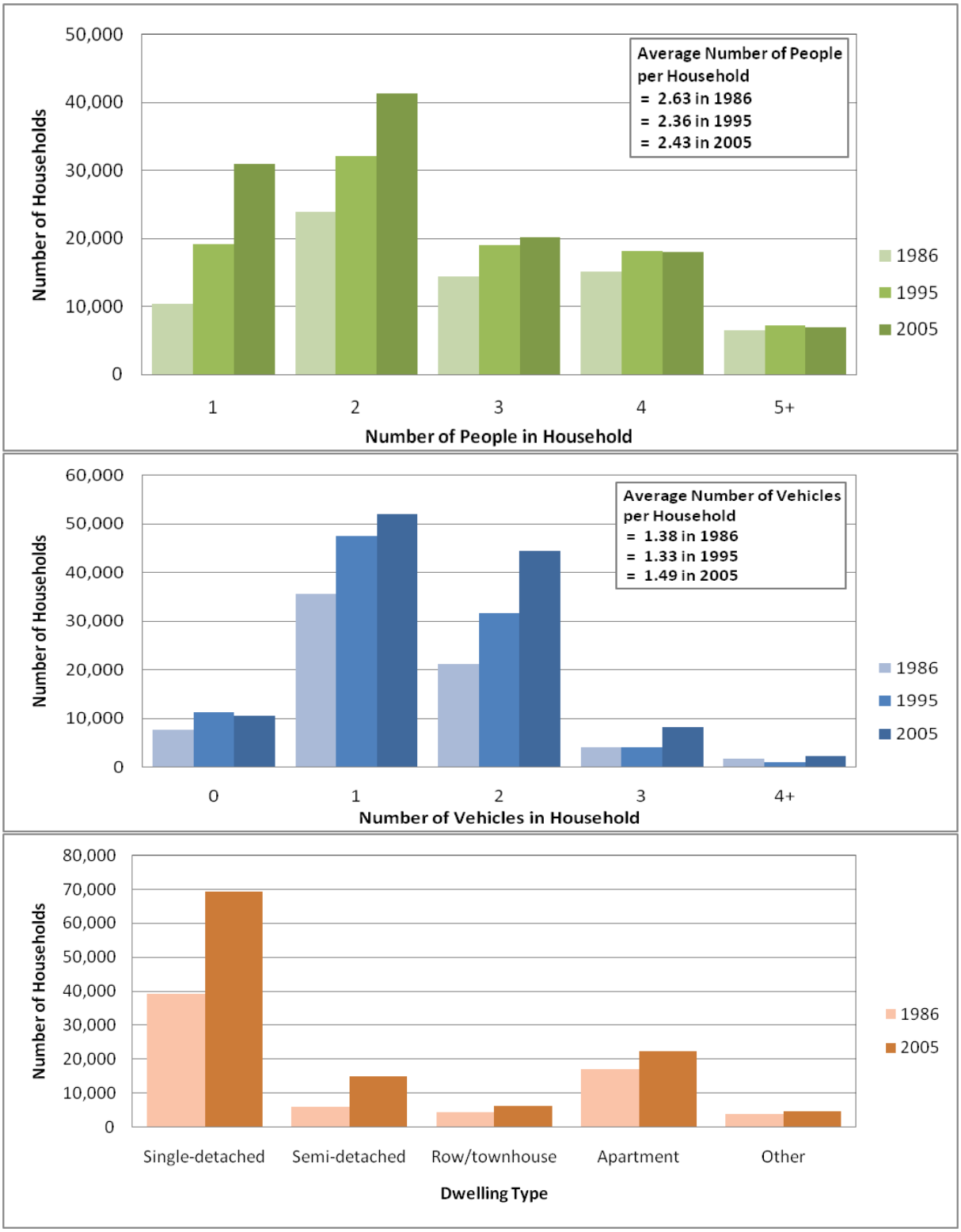


Exhibit 2-34: Québec household characteristics (absolute numbers), 1986-2005

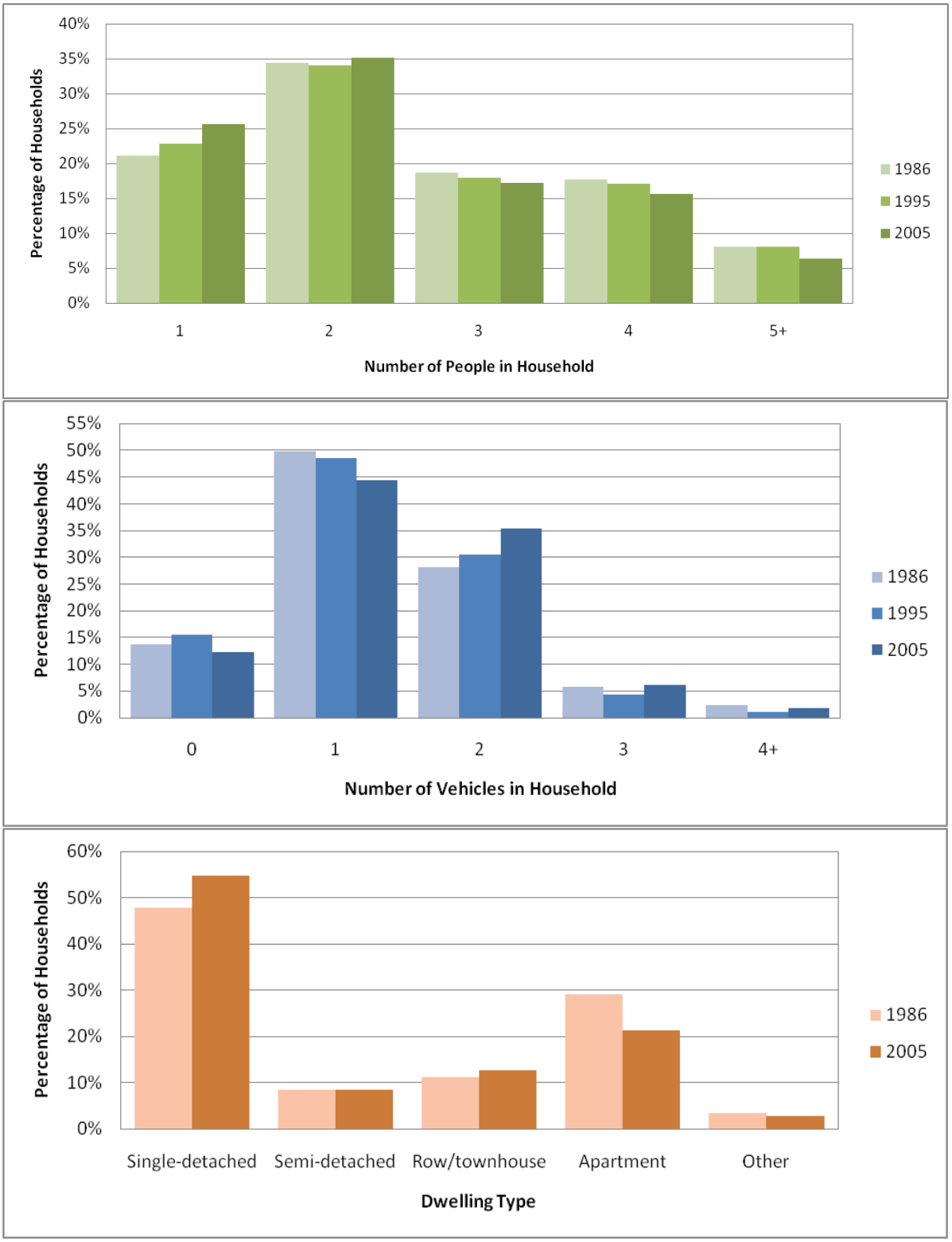
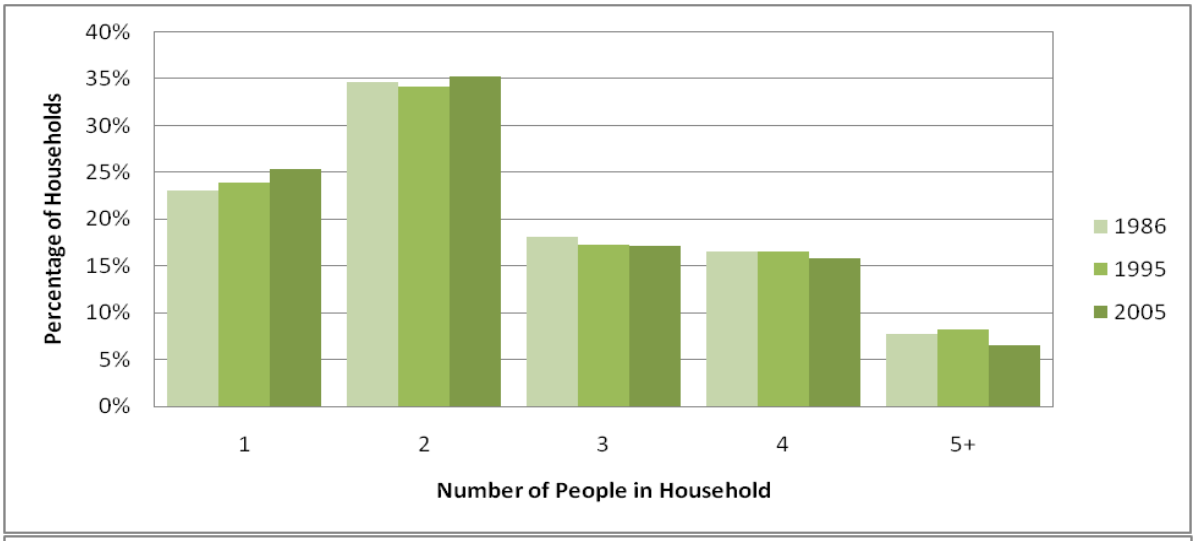
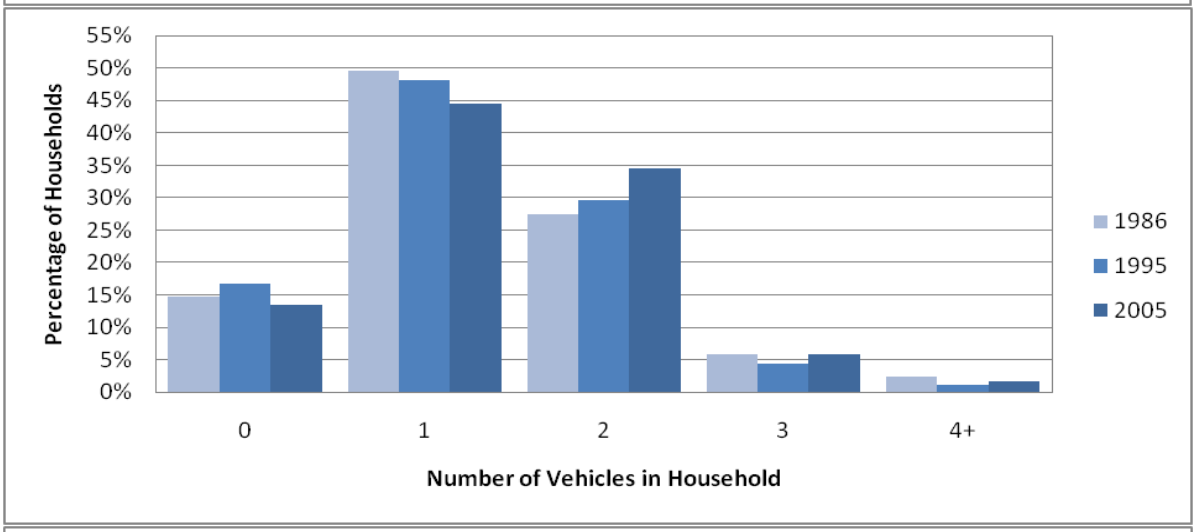


Exhibit 2-35: NCR household characteristics (percentage of households), 1986-2005





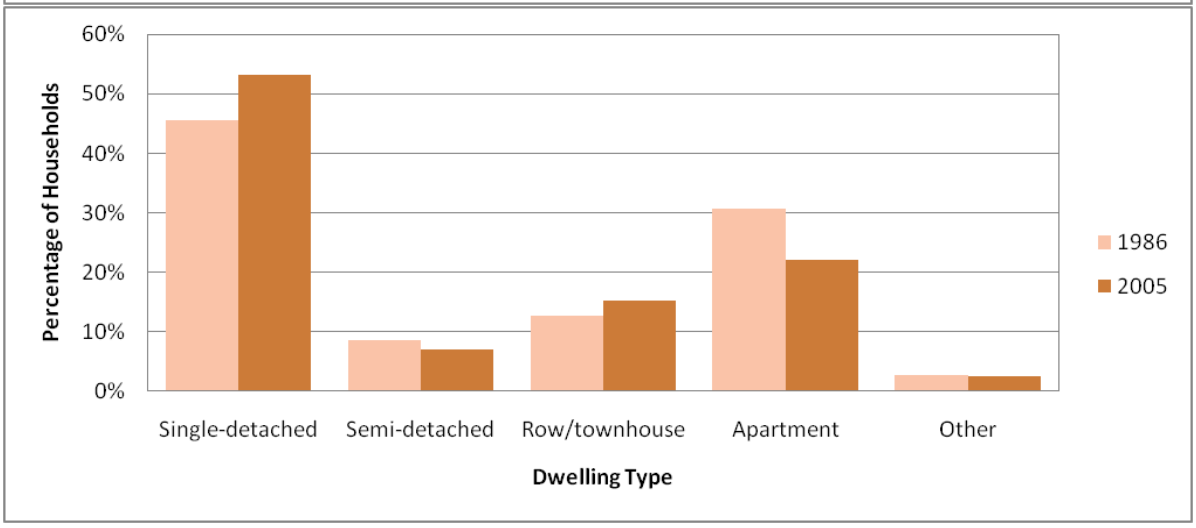


Exhibit 2-36: Ontario household characteristics (percentage of households), 1986-2005

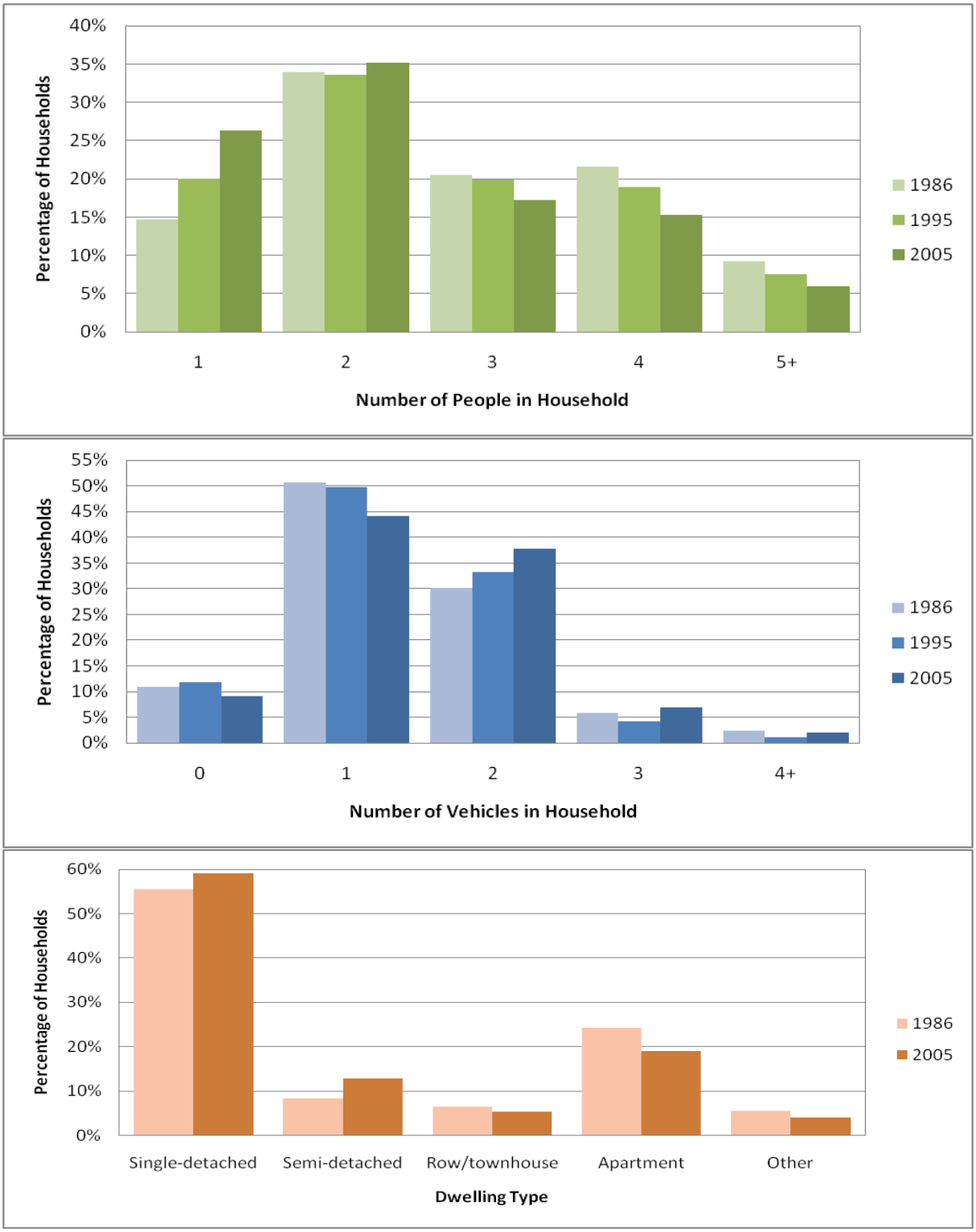


Exhibit 2-37: Québec household characteristics (percentage of households), 1986-2005

In Exhibit 2-38 and Exhibit 2-39, the variation across the districts is shown for average number of vehicles per household and average household sizes. The pattern follows the inverse of the urban density pattern shown in Exhibit 2-30 and Exhibit 2-31. There is, however, not much variation over time, other than occasionally in suburban districts.

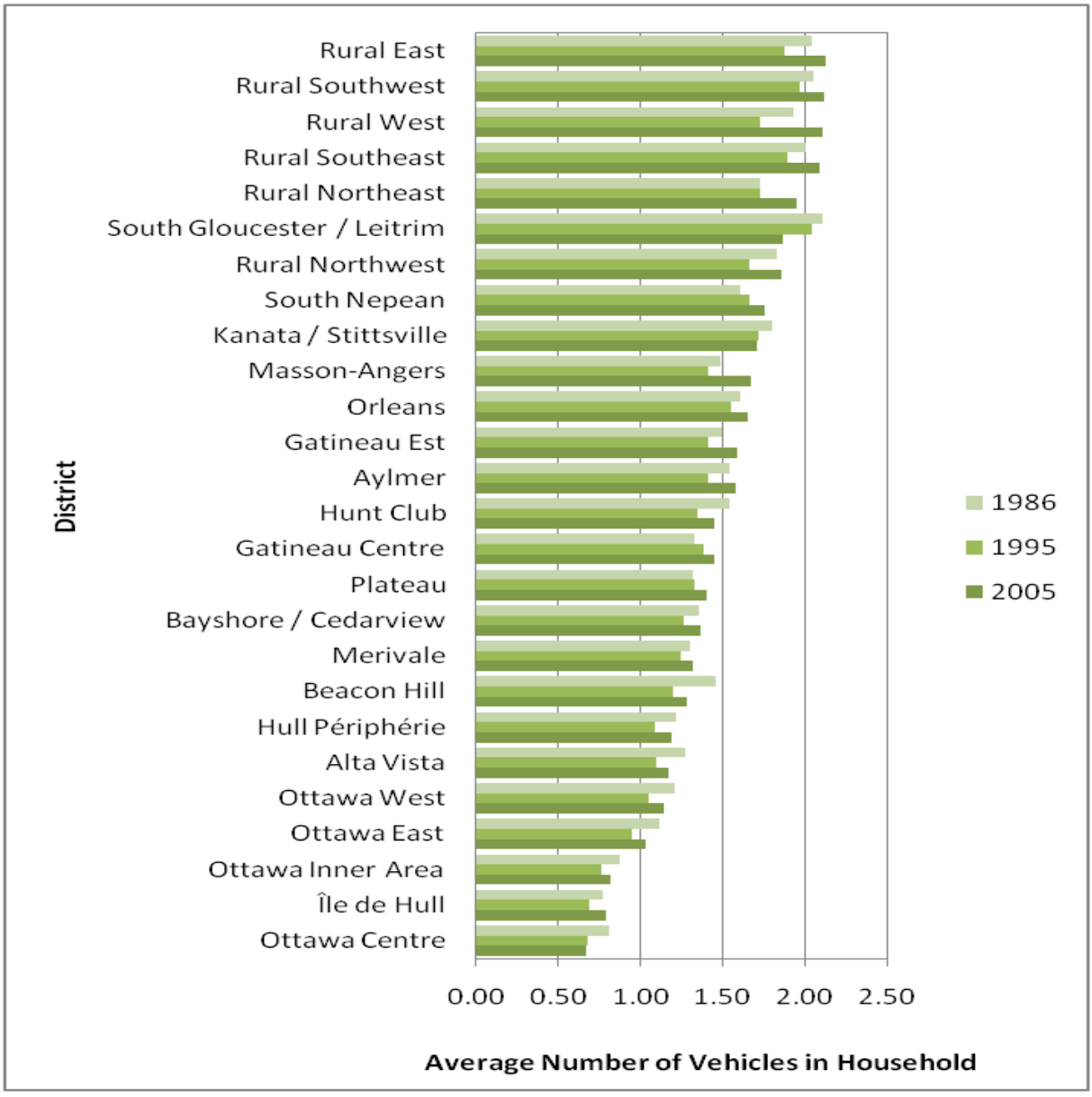


Exhibit 2-38: Average vehicles per household by district, 1986-2005

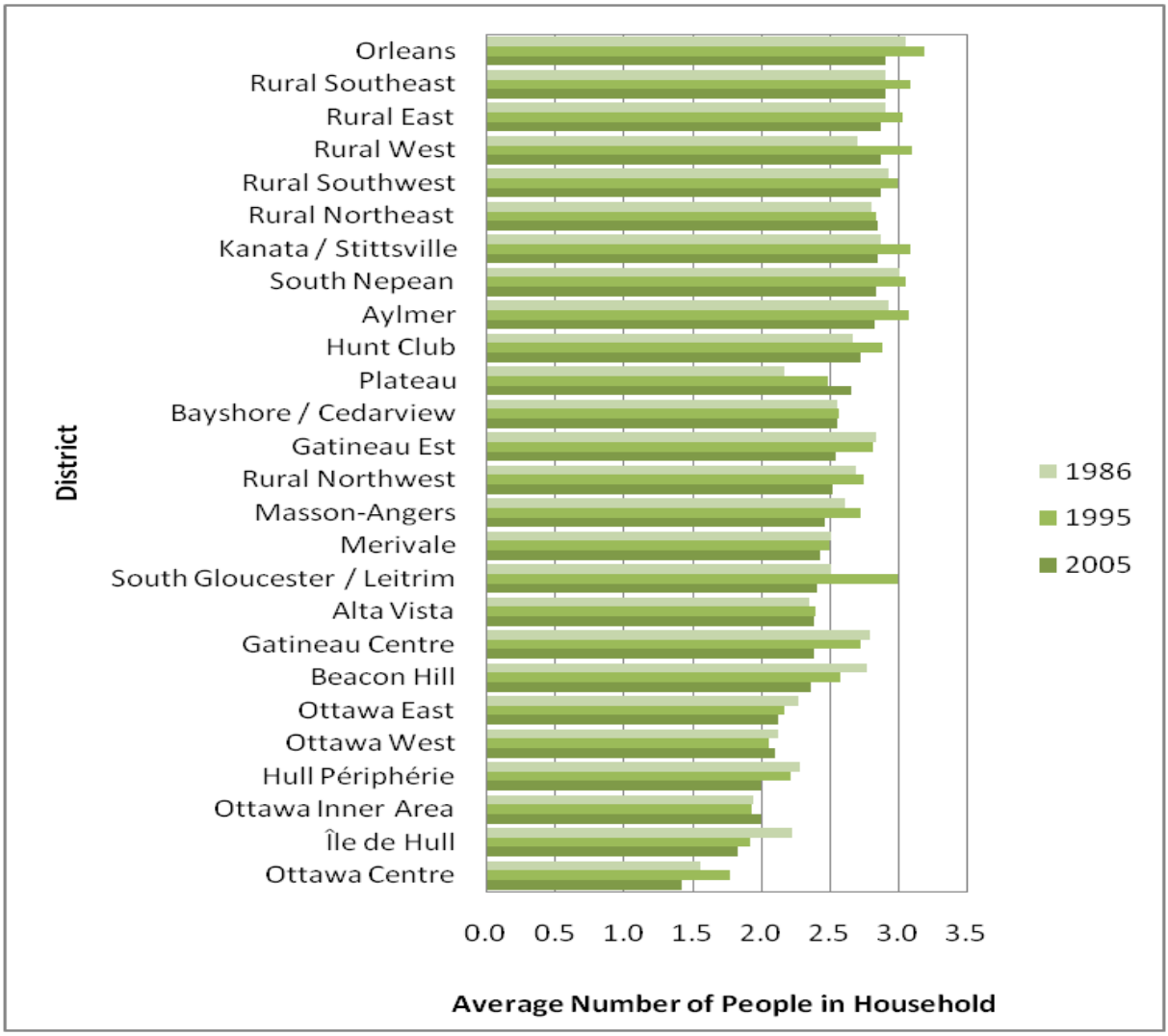


Exhibit 2-39: Average people per household by district, 1986-2005

2.4 Conclusion

This chapter has identified the following trends between 1986 and 2005:

- The areas of largest growth in terms of both population and employment are the suburbs, with central areas growing only by 18-19% and areas outside the centres growing by nearly 60% on average;
- The disparities in urban density between suburban and urban areas have been decreasing over time;
- Some districts outside the central areas have become net generators of jobs, such as Hull Périphérie, Beacon Hill and Kanata/Stittsville;
- Some districts have moved toward a much higher proportion of their labour force working within the district (Merivale), but others have gone in the opposite direction (Ottawa East);

- The female share of the workforce has increased over time from approximately 40% to approximately 45%;
- The proportion of households living in detached housing and the average number of vehicles per household have both increased, despite the average household size remaining approximately the same.

The next chapter focuses on linking the population, employment and household attributes through the analysis of trip patterns.

3. Transportation Activity

This chapter expands on the demographic information presented previously by looking at historical trip flow patterns in terms of origin and destination, variation by time period and how far the purposes of trips affect their distribution.

3.1 Trip distribution patterns

Observed trends:

- *No identifiable change can be seen in average (straight-line) trip lengths*
- *Trip rates per capita decline in all peak periods (for example, from 0.60 to 0.51 in the AM peak)*
- *23% of AM peak trips are destined to suburban areas in 2005, compared with 12% in 1986*
- *Intra-urban area trips show only a small increase*

The average straight-line length of a trip varies considerably depending on its point of origin or destination and the density of that origin or destination. Exhibit 3-1, below, indicates the extent of this disparity, from an average 2005 trip length of 14.7 km in the rural Ontario portion of the NCR to only 5.9 km in the urban Ontario proportion (downtown Ottawa). The distribution patterns by destination were found to be almost identical. Although it appears that the trips from rural areas appear to be increasing in length over time (though data were not available for 1986), while the shorter suburban or urban-origin trips do not show the same tendency (jobs are moving to the suburbs as well as residents), this is largely due to a sudden change in average trip length in the Rural West, which is likely affected by a small sample size, from 8.5 km in 1995 to 17.0 km in 2005, rather than an overall rural trend.

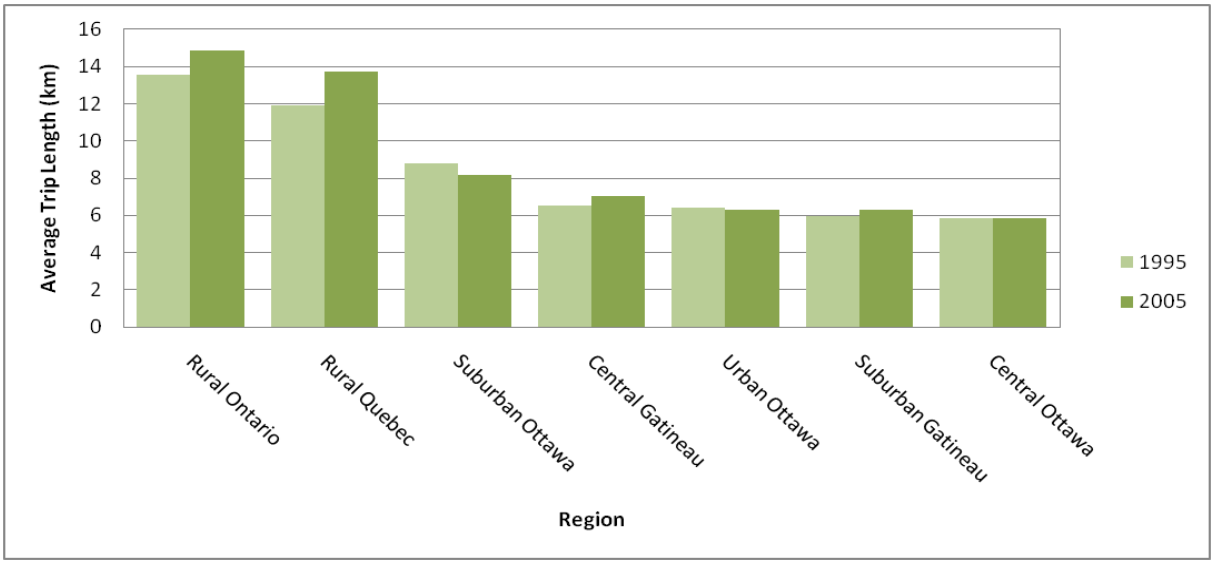


Exhibit 3-1: Changes in trip length distribution by origin district type, 1995-2005

Details of the trip flow numbers between aggregated districts (urban, rural, and so on), are given for each of the three years in Table 3-1 to Table 3-9, below. Also shown are trip rates (based on population of the origin district for AM and off-peak trips, and population of the destination district for PM trips) and the percentage of all trips that each OD pairing represents. Trip rates by purpose are shown in the next section. The tables are colour-coded so that the highest-volume flows appear darker for quick reference (we can note that these are mainly intra-area trips or those to or from Central Ottawa). Origin districts are shown in rows, and destination districts in columns.

The survey data indicate there is a significant drop in AM trip rates post-1986, despite the overall 18% increase in AM peak trips. There is a pattern of trip redistribution with the percentage destined to central and urban Ottawa decreasing over time (from 73% of trips in 1986 to just 62% in 2005) and more trips to suburban areas taking their place (up from 12% to 23% over the same time frame). Overall, the EUA has a per capita trip rate of 0.60 in the AM peak in 1986, dropping to 0.51 in 2005. This is within the same range as Toronto (0.51 in 1986, 0.48 in 2006[11]) and Montréal (0.55 in 1987, 0.58 in 2008[12]).

[11] University of Toronto Data Management Group, Transportation Tomorrow Survey data, 1986-2006.
[12] Secrétariat aux enquêtes Origine-Destination métropolitaines, Enquête Origine-Destination 2008 Faits Saillants, Agence métropolitaine de transport, 2008, p.20

Table 3-1: AM peak period trips between aggregated districts, 2005

AM PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	28810	1750	16970	850	2160	550	430	190	51720
Central Gatineau	1180	1020	1220	840	240	550	40	90	5160
Urban Ottawa	50920	4290	131240	2370	14180	1340	3600	420	208360
Urban Gatineau	4390	3920	2970	9480	330	3100	110	620	24920
Suburban Ottawa	24420	1970	46860	1580	56900	700	4130	220	136770
Suburban Gatineau	12570	6360	11410	12640	1750	31710	480	1930	78840
Rural Ontario	5280	390	12710	260	7710	260	11730	50	38380
Rural Quebec	2870	2400	3000	5030	530	8830	80	7880	30620
Total	130440	22090	226380	33040	83790	47030	20610	11400	574760

AM PEAK TRIP RATES (BY ORIGIN RESIDENTS)	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	0.30	0.02	0.18	0.01	0.02	0.01	0.00	0.00	0.55
Central Gatineau	0.13	0.12	0.14	0.10	0.03	0.06	0.00	0.01	0.59
Urban Ottawa	0.12	0.01	0.31	0.01	0.03	0.00	0.01	0.00	0.49
Urban Gatineau	0.09	0.08	0.06	0.19	0.01	0.06	0.00	0.01	0.50
Suburban Ottawa	0.09	0.01	0.18	0.01	0.22	0.00	0.02	0.00	0.52
Suburban Gatineau	0.08	0.04	0.07	0.08	0.01	0.20	0.00	0.01	0.50
Rural Ontario	0.06	0.00	0.15	0.00	0.09	0.00	0.14	0.00	0.46
Rural Quebec	0.04	0.03	0.04	0.07	0.01	0.13	0.00	0.11	0.44
Total	0.11	0.02	0.20	0.03	0.07	0.04	0.02	0.01	0.50

AM PEAK PERCENTAGES	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	5.0%	0.3%	3.0%	0.1%	0.4%	0.1%	0.1%	0.0%	9.0%
Central Gatineau	0.2%	0.2%	0.2%	0.1%	0.0%	0.1%	0.0%	0.0%	0.9%
Urban Ottawa	8.9%	0.7%	22.8%	0.4%	2.5%	0.2%	0.6%	0.1%	36.3%
Urban Gatineau	0.8%	0.7%	0.5%	1.6%	0.1%	0.5%	0.0%	0.1%	4.3%
Suburban Ottawa	4.2%	0.3%	8.2%	0.3%	9.9%	0.1%	0.7%	0.0%	23.8%
Suburban Gatineau	2.2%	1.1%	2.0%	2.2%	0.3%	5.5%	0.1%	0.3%	13.7%
Rural Ontario	0.9%	0.1%	2.2%	0.0%	1.3%	0.0%	2.0%	0.0%	6.7%
Rural Quebec	0.5%	0.4%	0.5%	0.9%	0.1%	1.5%	0.0%	1.4%	5.3%
Total	22.7%	3.8%	39.4%	5.7%	14.6%	8.2%	3.6%	2.0%	

Table 3-2: AM peak period trips between aggregated districts, 1995

AM PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	27180	2480	16570	690	1180	530	250	70	48960
Central Gatineau	1570	1480	1290	1340	30	500	0	100	6310
Urban Ottawa	50230	4880	126690	1690	7600	570	2560	220	194440
Urban Gatineau	3560	3720	2670	9130	280	2290	60	320	22010
Suburban Ottawa	19010	2010	35920	630	28270	160	3170	80	89260
Suburban Gatineau	11330	7140	9810	9890	650	31040	110	1200	71170
Rural Ontario	4210	400	11750	120	4800	60	11150	20	32500
Rural Quebec	2750	1740	2190	2460	200	3790	10	7620	20760
Total	119840	23830	206890	25950	43010	38940	17310	9630	485400

AM PEAK TRIP RATES (BY ORIGIN RESIDENTS)	Central Ottawa	Île de Hull	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	0.33	0.03	0.20	0.01	0.01	0.01	0.00	0.00	0.60
Île de Hull	0.15	0.14	0.12	0.13	0.00	0.05	0.00	0.01	0.59
Urban Ottawa	0.13	0.01	0.33	0.00	0.02	0.00	0.01	0.00	0.51
Urban Gatineau	0.08	0.08	0.06	0.20	0.01	0.05	0.00	0.01	0.49
Suburban Ottawa	0.11	0.01	0.21	0.00	0.16	0.00	0.02	0.00	0.52
Suburban Gatineau	0.08	0.05	0.07	0.07	0.00	0.21	0.00	0.01	0.49
Rural Ontario	0.06	0.01	0.17	0.00	0.07	0.00	0.16	0.00	0.48
Rural Quebec	0.05	0.03	0.04	0.05	0.00	0.07	0.00	0.15	0.40
Total	0.13	0.02	0.22	0.03	0.04	0.04	0.02	0.01	0.51

AM PEAK PERCENTAGES	Central Ottawa	Île de Hull	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	5.6%	0.5%	3.4%	0.1%	0.2%	0.1%	0.1%	0.0%	10.1%
Île de Hull	0.3%	0.3%	0.3%	0.3%	0.0%	0.1%	0.0%	0.0%	1.3%
Urban Ottawa	10.3%	1.0%	26.1%	0.3%	1.6%	0.1%	0.5%	0.0%	40.1%
Urban Gatineau	0.7%	0.8%	0.5%	1.9%	0.1%	0.5%	0.0%	0.1%	4.5%
Suburban Ottawa	3.9%	0.4%	7.4%	0.1%	5.8%	0.0%	0.7%	0.0%	18.4%
Suburban Gatineau	2.3%	1.5%	2.0%	2.0%	0.1%	6.4%	0.0%	0.2%	14.7%
Rural Ontario	0.9%	0.1%	2.4%	0.0%	1.0%	0.0%	2.3%	0.0%	6.7%
Rural Quebec	0.6%	0.4%	0.5%	0.5%	0.0%	0.8%	0.0%	1.6%	4.3%
Total	24.7%	4.9%	42.6%	5.3%	8.9%	8.0%	3.6%	2.0%	

Table 3-3: AM peak period trips between aggregated districts, 1986

AM PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	32480	3550	18320	870	960	410	170	100	56860
Central Gatineau	1340	2350	1380	1580	30	640	0	0	7330
Urban Ottawa	65000	7030	122160	1810	5900	930	1550	100	204490
Urban Gatineau	3920	3750	2910	8700	110	2280	0	210	21890
Suburban Ottawa	17520	2040	26930	740	16240	80	890	0	64440
Suburban Gatineau	10870	6070	6870	7140	300	18720	70	330	50360
Rural Ontario	4650	530	9200	210	3250	110	6430	20	24390
Rural Quebec	2490	1440	1910	2300	70	2200	0	6760	17160
Total	138270	26750	189680	23340	26870	25360	9120	7520	446910

AM PEAK TRIP RATES (BY ORIGIN RESIDENTS)	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	0.43	0.05	0.24	0.01	0.01	0.01	0.00	0.00	0.75
Central Gatineau	0.12	0.21	0.12	0.14	0.00	0.06	0.00	0.00	0.65
Urban Ottawa	0.19	0.02	0.35	0.01	0.02	0.00	0.00	0.00	0.59
Urban Gatineau	0.10	0.10	0.07	0.22	0.00	0.06	0.00	0.01	0.56
Suburban Ottawa	0.16	0.02	0.25	0.01	0.15	0.00	0.01	0.00	0.60
Suburban Gatineau	0.11	0.06	0.07	0.07	0.00	0.19	0.00	0.00	0.51
Rural Ontario	0.13	0.01	0.26	0.01	0.09	0.00	0.18	0.00	0.69
Rural Quebec	0.07	0.04	0.05	0.06	0.00	0.06	0.00	0.18	0.47
Total	0.18	0.04	0.25	0.03	0.04	0.03	0.01	0.01	0.60

AM PEAK PERCENTAGES	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	7.3%	0.8%	4.1%	0.2%	0.2%	0.1%	0.0%	0.0%	12.7%
Central Gatineau	0.3%	0.5%	0.3%	0.4%	0.0%	0.1%	0.0%	0.0%	1.6%
Urban Ottawa	14.5%	1.6%	27.3%	0.4%	1.3%	0.2%	0.3%	0.0%	45.8%
Urban Gatineau	0.9%	0.8%	0.7%	1.9%	0.0%	0.5%	0.0%	0.0%	4.9%
Suburban Ottawa	3.9%	0.5%	6.0%	0.2%	3.6%	0.0%	0.2%	0.0%	14.4%
Suburban Gatineau	2.4%	1.4%	1.5%	1.6%	0.1%	4.2%	0.0%	0.1%	11.3%
Rural Ontario	1.0%	0.1%	2.1%	0.0%	0.7%	0.0%	1.4%	0.0%	5.5%
Rural Quebec	0.6%	0.3%	0.4%	0.5%	0.0%	0.5%	0.0%	1.5%	3.8%
Total	30.9%	6.0%	42.4%	5.2%	6.0%	5.7%	2.0%	1.7%	

Table 3-4: PM peak period trips between aggregated districts, 2005

PM PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	40050	1430	49050	4430	21490	11800	4360	3290	135910
Central Gatineau	1810	1180	3740	3590	1910	5790	230	2160	20410
Urban Ottawa	23530	1090	159880	3530	46850	10780	12200	3440	261300
Urban Gatineau	1210	1520	2600	12420	1310	12760	190	4750	36760
Suburban Ottawa	3850	210	20030	680	60840	1900	7370	570	95440
Suburban Gatineau	1270	850	2380	4980	770	40620	330	8300	59490
Rural Ontario	880	30	5220	90	5630	620	9690	270	22420
Rural Quebec	430	110	800	820	260	3590	100	8950	15050
Total	73030	6410	243690	30550	139050	87860	34450	31730	646770

PM PEAK TRIP RATES (BY DEST RESIDENTS)	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	0.42	0.16	0.12	0.09	0.08	0.08	0.05	0.05	0.12
Central Gatineau	0.02	0.13	0.01	0.07	0.01	0.04	0.00	0.03	0.02
Urban Ottawa	0.25	0.12	0.38	0.07	0.18	0.07	0.14	0.05	0.23
Urban Gatineau	0.01	0.17	0.01	0.25	0.00	0.08	0.00	0.07	0.03
Suburban Ottawa	0.04	0.02	0.05	0.01	0.23	0.01	0.09	0.01	0.08
Suburban Gatineau	0.01	0.10	0.01	0.10	0.00	0.26	0.00	0.12	0.05
Rural Ontario	0.01	0.00	0.01	0.00	0.02	0.00	0.12	0.00	0.02
Rural Quebec	0.00	0.01	0.00	0.02	0.00	0.02	0.00	0.13	0.01
Total	0.77	0.73	0.57	0.62	0.53	0.56	0.41	0.46	0.56

PM PEAK PERCENTAGES	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	6.2%	0.2%	7.6%	0.7%	3.3%	1.8%	0.7%	0.5%	21.0%
Central Gatineau	0.3%	0.2%	0.6%	0.6%	0.3%	0.9%	0.0%	0.3%	3.2%
Urban Ottawa	3.6%	0.2%	24.7%	0.5%	7.2%	1.7%	1.9%	0.5%	40.4%
Urban Gatineau	0.2%	0.2%	0.4%	1.9%	0.2%	2.0%	0.0%	0.7%	5.7%
Suburban Ottawa	0.6%	0.0%	3.1%	0.1%	9.4%	0.3%	1.1%	0.1%	14.8%
Suburban Gatineau	0.2%	0.1%	0.4%	0.8%	0.1%	6.3%	0.1%	1.3%	9.2%
Rural Ontario	0.1%	0.0%	0.8%	0.0%	0.9%	0.1%	1.5%	0.0%	3.5%
Rural Quebec	0.1%	0.0%	0.1%	0.1%	0.0%	0.6%	0.0%	1.4%	2.3%
Total	11.3%	1.0%	37.7%	4.7%	21.5%	13.6%	5.3%	4.9%	

Table 3-5: PM peak period trips between aggregated districts, 1995

PM PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	40300	1320	47320	3440	16800	10570	3840	2510	126110
Central Gatineau	2660	1950	4370	4280	1580	6890	380	1680	23780
Urban Ottawa	22430	1710	155700	2780	31800	9070	11250	2130	236870
Urban Gatineau	990	1670	1600	13590	470	10390	140	2280	31130
Suburban Ottawa	1780	70	11590	260	35060	680	5430	330	55190
Suburban Gatineau	1030	1040	1380	3730	240	41840	90	3930	53280
Rural Ontario	510	20	3990	10	3900	200	11490	40	20170
Rural Quebec	340	80	220	600	80	2230	50	9750	13350
Total	70030	7860	226170	28690	89940	81870	32670	22640	559880

PM PEAK TRIP RATES (BY DEST RESIDENTS)	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	0.49	0.12	0.12	0.08	0.10	0.07	0.06	0.05	0.13
Central Gatineau	0.03	0.18	0.01	0.10	0.01	0.05	0.01	0.03	0.02
Urban Ottawa	0.27	0.16	0.41	0.06	0.18	0.06	0.16	0.04	0.25
Urban Gatineau	0.01	0.16	0.00	0.30	0.00	0.07	0.00	0.04	0.03
Suburban Ottawa	0.02	0.01	0.03	0.01	0.20	0.00	0.08	0.01	0.06
Suburban Gatineau	0.01	0.10	0.00	0.08	0.00	0.29	0.00	0.08	0.06
Rural Ontario	0.01	0.00	0.01	0.00	0.02	0.00	0.17	0.00	0.02
Rural Quebec	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.19	0.01
Total	0.86	0.74	0.59	0.64	0.52	0.57	0.48	0.44	0.59

PM PEAK PERCENTAGES	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	7.2%	0.2%	8.5%	0.6%	3.0%	1.9%	0.7%	0.4%	22.5%
Central Gatineau	0.5%	0.3%	0.8%	0.8%	0.3%	1.2%	0.1%	0.3%	4.2%
Urban Ottawa	4.0%	0.3%	27.8%	0.5%	5.7%	1.6%	2.0%	0.4%	42.3%
Urban Gatineau	0.2%	0.3%	0.3%	2.4%	0.1%	1.9%	0.0%	0.4%	5.6%
Suburban Ottawa	0.3%	0.0%	2.1%	0.0%	6.3%	0.1%	1.0%	0.1%	9.9%
Suburban Gatineau	0.2%	0.2%	0.2%	0.7%	0.0%	7.5%	0.0%	0.7%	9.5%
Rural Ontario	0.1%	0.0%	0.7%	0.0%	0.7%	0.0%	2.1%	0.0%	3.6%
Rural Quebec	0.1%	0.0%	0.0%	0.1%	0.0%	0.4%	0.0%	1.7%	2.4%
Total	12.5%	1.4%	40.4%	5.1%	16.1%	14.6%	5.8%	4.0%	

Table 3-6: PM peak period trips between aggregated districts, 1986

PM PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	42030	1700	65040	4500	14690	10770	3380	2100	144200
Central Gatineau	4170	2540	7080	4580	1630	5520	420	1160	27090
Urban Ottawa	25610	1380	158210	3090	23110	6370	9090	1480	228350
Urban Gatineau	1140	2280	1780	12250	710	6800	190	1950	27100
Suburban Ottawa	1750	50	9480	170	21230	170	3570	150	36580
Suburban Gatineau	1140	860	1730	2520	210	20170	20	1970	28610
Rural Ontario	290	0	2600	0	1510	50	5820	0	10270
Rural Quebec	180	130	530	490	40	870	0	5890	8130
Total	76310	8940	246430	27600	63130	50730	22480	14710	510330

PM PEAK TRIP RATES (BY DEST RESIDENTS)	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	0.56	0.15	0.19	0.11	0.14	0.11	0.10	0.06	0.19
Central Gatineau	0.06	0.23	0.02	0.12	0.02	0.06	0.01	0.03	0.04
Urban Ottawa	0.34	0.12	0.46	0.08	0.21	0.07	0.26	0.04	0.30
Urban Gatineau	0.02	0.20	0.01	0.31	0.01	0.07	0.01	0.05	0.04
Suburban Ottawa	0.02	0.00	0.03	0.00	0.20	0.00	0.10	0.00	0.05
Suburban Gatineau	0.02	0.08	0.00	0.06	0.00	0.21	0.00	0.05	0.04
Rural Ontario	0.00	0.00	0.01	0.00	0.01	0.00	0.16	0.00	0.01
Rural Quebec	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.16	0.01
Total	1.01	0.79	0.71	0.70	0.58	0.52	0.64	0.40	0.68

PM PEAK PERCENTAGES	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	8.2%	0.3%	12.7%	0.9%	2.9%	2.1%	0.7%	0.4%	28.3%
Central Gatineau	0.8%	0.5%	1.4%	0.9%	0.3%	1.1%	0.1%	0.2%	5.3%
Urban Ottawa	5.0%	0.3%	31.0%	0.6%	4.5%	1.2%	1.8%	0.3%	44.7%
Urban Gatineau	0.2%	0.4%	0.3%	2.4%	0.1%	1.3%	0.0%	0.4%	5.3%
Suburban Ottawa	0.3%	0.0%	1.9%	0.0%	4.2%	0.0%	0.7%	0.0%	7.2%
Suburban Gatineau	0.2%	0.2%	0.3%	0.5%	0.0%	4.0%	0.0%	0.4%	5.6%
Rural Ontario	0.1%	0.0%	0.5%	0.0%	0.3%	0.0%	1.1%	0.0%	2.0%
Rural Quebec	0.0%	0.0%	0.1%	0.1%	0.0%	0.2%	0.0%	1.2%	1.6%
Total	15.0%	1.8%	48.3%	5.4%	12.4%	9.9%	4.4%	2.9%	

As with the AM, PM peak trip rates also show a decrease between 1986 and 1995, although the 1995 and 2005 rates are closer. The PM, as a near-mirror image of the AM, shows the same trend where central and urban Ottawa become less of a focus point for attracting trips in the AM and producing them in the PM, and suburban Ottawa and Gatineau take on a greater role.

Table 3-7: Midday off-peak period trips between aggregated districts, 2005

MIDDAY OFF PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	70320	1100	44130	1980	9350	3960	2350	910	134100
Central Gatineau	1650	2090	1340	3150	580	2110	20	580	11510
Urban Ottawa	47370	1290	259700	2630	35100	5490	8900	2180	362660
Urban Gatineau	2150	2340	2340	21410	670	10420	160	2910	42400
Suburban Ottawa	10030	420	35140	600	93290	790	8890	560	149710
Suburban Gatineau	3510	1600	4610	10020	850	53940	160	6900	81580
Rural Ontario	2260	60	9440	90	8530	280	15240	140	36030
Rural Quebec	1060	350	1750	2510	360	5530	90	13150	24810
Total	138340	9250	358440	42380	148740	82510	35810	27330	842810

MIDDAY OFF-PEAK TRIP RATES (BY ORIGIN RESIDENTS)	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	0.74	0.01	0.47	0.02	0.10	0.04	0.02	0.01	1.41
Central Gatineau	0.19	0.24	0.15	0.36	0.07	0.24	0.00	0.07	1.32
Urban Ottawa	0.11	0.00	0.61	0.01	0.08	0.01	0.02	0.01	0.85
Urban Gatineau	0.04	0.05	0.05	0.43	0.01	0.21	0.00	0.06	0.86
Suburban Ottawa	0.04	0.00	0.13	0.00	0.36	0.00	0.03	0.00	0.57
Suburban Gatineau	0.02	0.01	0.03	0.06	0.01	0.34	0.00	0.04	0.52
Rural Ontario	0.03	0.00	0.11	0.00	0.10	0.00	0.18	0.00	0.43
Rural Quebec	0.02	0.01	0.03	0.04	0.01	0.08	0.00	0.19	0.36
Total	0.12	0.01	0.31	0.04	0.13	0.07	0.03	0.02	0.73

OFF-PEAK PERCENTAGES	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	8.3%	0.1%	5.2%	0.2%	1.1%	0.5%	0.3%	0.1%	15.9%
Central Gatineau	0.2%	0.2%	0.2%	0.4%	0.1%	0.3%	0.0%	0.1%	1.4%
Urban Ottawa	5.6%	0.2%	30.8%	0.3%	4.2%	0.7%	1.1%	0.3%	43.0%
Urban Gatineau	0.3%	0.3%	0.3%	2.5%	0.1%	1.2%	0.0%	0.3%	5.0%
Suburban Ottawa	1.2%	0.0%	4.2%	0.1%	11.1%	0.1%	1.1%	0.1%	17.8%
Suburban Gatineau	0.4%	0.2%	0.5%	1.2%	0.1%	6.4%	0.0%	0.8%	9.7%
Rural Ontario	0.3%	0.0%	1.1%	0.0%	1.0%	0.0%	1.8%	0.0%	4.3%
Rural Quebec	0.1%	0.0%	0.2%	0.3%	0.0%	0.7%	0.0%	1.6%	2.9%
Total	16.4%	1.1%	42.5%	5.0%	17.6%	9.8%	4.2%	3.2%	

Table 3-8: Midday off-peak period trips between aggregated districts, 1995

MIDDAY OFF PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	73400	1780	39330	1740	4750	2630	860	670	125150
Central Gatineau	1770	3730	1210	3530	190	2060	80	270	12850
Urban Ottawa	41450	1030	251310	1870	23310	3890	7220	940	331010
Urban Gatineau	2190	3060	2080	21830	260	7080	30	1400	37930
Suburban Ottawa	5610	140	20280	210	46300	240	5750	130	78660
Suburban Gatineau	3250	2010	3150	6600	200	56520	110	3920	75750
Rural Ontario	1210	10	7570	20	5990	70	18270	30	33160
Rural Quebec	740	180	800	1490	130	3270	30	12850	19490
Total	129610	11940	325720	37300	81130	75760	32350	20200	714010

MIDDAY OFF-PEAK TRIP RATES (BY ORIGIN RESIDENTS)	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	0.90	0.02	0.48	0.02	0.06	0.03	0.01	0.01	1.53
Central Gatineau	0.17	0.35	0.11	0.33	0.02	0.19	0.01	0.03	1.21
Urban Ottawa	0.11	0.00	0.66	0.00	0.06	0.01	0.02	0.00	0.86
Urban Gatineau	0.05	0.07	0.05	0.49	0.01	0.16	0.00	0.03	0.85
Suburban Ottawa	0.03	0.00	0.12	0.00	0.27	0.00	0.03	0.00	0.46
Suburban Gatineau	0.02	0.01	0.02	0.05	0.00	0.39	0.00	0.03	0.52
Rural Ontario	0.02	0.00	0.11	0.00	0.09	0.00	0.27	0.00	0.49
Rural Quebec	0.01	0.00	0.02	0.03	0.00	0.06	0.00	0.25	0.38
Total	0.14	0.01	0.34	0.04	0.08	0.08	0.03	0.02	0.75

OFF-PEAK PERCENTAGES	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	10.3%	0.2%	5.5%	0.2%	0.7%	0.4%	0.1%	0.1%	17.5%
Central Gatineau	0.2%	0.5%	0.2%	0.5%	0.0%	0.3%	0.0%	0.0%	1.8%
Urban Ottawa	5.8%	0.1%	35.2%	0.3%	3.3%	0.5%	1.0%	0.1%	46.4%
Urban Gatineau	0.3%	0.4%	0.3%	3.1%	0.0%	1.0%	0.0%	0.2%	5.3%
Suburban Ottawa	0.8%	0.0%	2.8%	0.0%	6.5%	0.0%	0.8%	0.0%	11.0%
Suburban Gatineau	0.5%	0.3%	0.4%	0.9%	0.0%	7.9%	0.0%	0.5%	10.6%
Rural Ontario	0.2%	0.0%	1.1%	0.0%	0.8%	0.0%	2.6%	0.0%	4.6%
Rural Quebec	0.1%	0.0%	0.1%	0.2%	0.0%	0.5%	0.0%	1.8%	2.7%
Total	18.2%	1.7%	45.6%	5.2%	11.4%	10.6%	4.5%	2.8%	

Table 3-9: Midday off-peak period trips between aggregated districts, 1986

MIDDAY OFF PEAK FLOWS	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	76760	3960	55420	2920	4510	3380	970	550	148460
Central Gatineau	3880	4650	1780	4240	270	2030	70	290	17200
Urban Ottawa	58220	2090	257350	1670	17620	4340	5920	490	347710
Urban Gatineau	3530	4350	2610	20010	120	4700	0	980	36310
Suburban Ottawa	3670	220	16040	130	23660	200	2630	70	46620
Suburban Gatineau	3330	1650	3540	5260	170	33210	90	1580	48830
Rural Ontario	1000	20	5790	20	2360	20	9010	50	18250
Rural Quebec	740	420	770	1270	110	1500	0	6090	10900
Total	151130	17360	343290	35510	48820	49380	18690	10090	674290

MIDDAY OFF-PEAK TRIP RATES (BY ORIGIN RESIDENTS)	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	1.02	0.05	0.73	0.04	0.06	0.04	0.01	0.01	1.97
Central Gatineau	0.34	0.41	0.16	0.38	0.02	0.18	0.01	0.03	1.53
Urban Ottawa	0.17	0.01	0.74	0.00	0.05	0.01	0.02	0.00	1.01
Urban Gatineau	0.09	0.11	0.07	0.51	0.00	0.12	0.00	0.03	0.92
Suburban Ottawa	0.03	0.00	0.15	0.00	0.22	0.00	0.02	0.00	0.43
Suburban Gatineau	0.03	0.02	0.04	0.05	0.00	0.34	0.00	0.02	0.50
Rural Ontario	0.03	0.00	0.16	0.00	0.07	0.00	0.25	0.00	0.52
Rural Quebec	0.02	0.01	0.02	0.03	0.00	0.04	0.00	0.17	0.30
Total	0.20	0.02	0.46	0.05	0.07	0.07	0.02	0.01	0.90

OFF-PEAK PERCENTAGES	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Total
Central Ottawa	11.4%	0.6%	8.2%	0.4%	0.7%	0.5%	0.1%	0.1%	22.0%
Central Gatineau	0.6%	0.7%	0.3%	0.6%	0.0%	0.3%	0.0%	0.0%	2.6%
Urban Ottawa	8.6%	0.3%	38.2%	0.2%	2.6%	0.6%	0.9%	0.1%	51.6%
Urban Gatineau	0.5%	0.6%	0.4%	3.0%	0.0%	0.7%	0.0%	0.1%	5.4%
Suburban Ottawa	0.5%	0.0%	2.4%	0.0%	3.5%	0.0%	0.4%	0.0%	6.9%
Suburban Gatineau	0.5%	0.2%	0.5%	0.8%	0.0%	4.9%	0.0%	0.2%	7.2%
Rural Ontario	0.1%	0.0%	0.9%	0.0%	0.3%	0.0%	1.3%	0.0%	2.7%
Rural Quebec	0.1%	0.1%	0.1%	0.2%	0.0%	0.2%	0.0%	0.9%	1.6%
Total	22.4%	2.6%	50.9%	5.3%	7.2%	7.3%	2.8%	1.5%	

In the midday inter-peak period (covering trips that start from 9:00 AM to 3:29 PM) there are more trips overall than in either individual peak, but only by around 20-30%, and the time period is twice as long. As with the peak periods, there is a large drop in trip rate from 1986 to 1995, and a small one from 1995 to 2005. There is also a similar (though not unidirectionally-focused) redistribution of trips towards suburban areas over time.

3.2 Work trip profiles

Observed trends:

- *Distance travelled to work shows no clear variation over time, though there is a slight increase for Ontario and a slight decrease in Québec to reduce the distance between provincial averages*
- *Non-motorized commutes increase from 7% to 9% of work trips*
- *For residents of the three central districts and Ottawa West, non-motorized commutes increase from 22% to 30% of work trips*

The average distance travelled to get to work by district is indicated in Exhibit 3-2 for 1995 and 2005 (distances for 1986 are unavailable).

The mean distance travelled to work is 9.3 km in 2005 (9.2 km in Ontario and 9.8 km in Québec) compared with 10.0 km in 1995 (8.6 km in Ontario and 10.8 km in Québec), so the difference between provinces is narrowing as well as the trip length decreasing overall. However, if we look just at the urban area as defined in Section 2.2, the mean distance is 8.0 km for both years, suggesting that the change in trip length is confined to rural areas. As work trip lengths are not available for the Rural East and Rural West districts, and these districts could be expected to raise the average trip length, the urban area comparison is likely a more accurate representation of the trend. The apparent variation in the rural south districts should be considered in combination with the understanding that these are small sample sizes due to the low district populations.

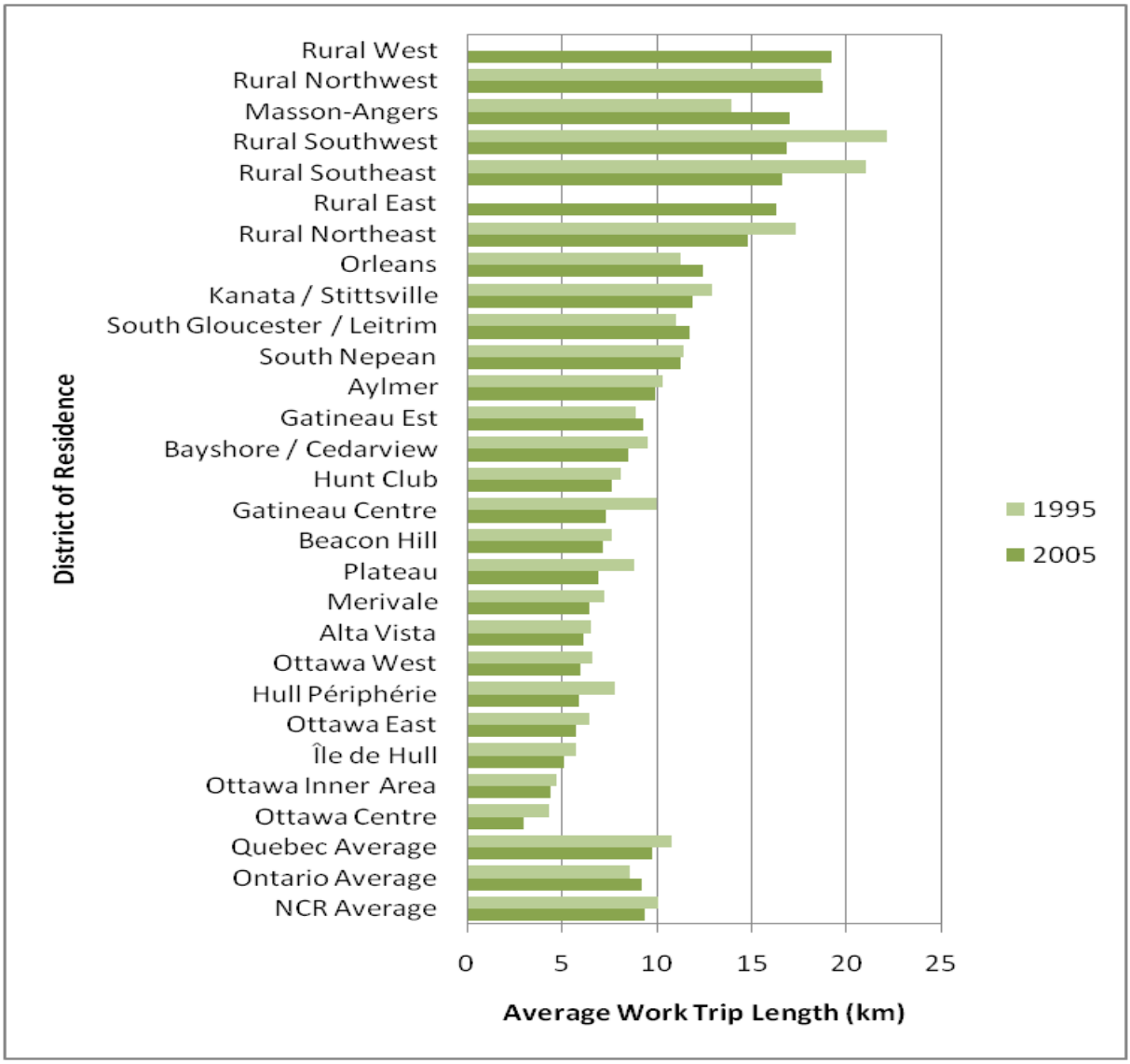


Exhibit 3-2: Average work trip length, 1995-2005

The following exhibits consider those who travel to work by non-motorized means (walking or cycling). This comparison is separated into two parts, Exhibit 3-3 to Exhibit 3-5 and Exhibit 3-6 to Exhibit 3-8, because of the great difference in percentage of non-motorized travellers between dense urban areas and much more spread out suburban and rural districts.

The overall percentages of people using non-motorized means (walking or cycling) to get to work go from 6.9% in 1986 to 6.4% in 1995 and 8.9% in 2005. For comparison, equivalent percentages in Toronto are 3.0% (1986)[13], 5.8% (1996)[14] and 6.0% (2006); in Montréal, 7.2% (1996) and 7.5% (2006); in Calgary, 5.5% (1996 and 2006); and in Vancouver, 7.5% (1996) and 8.0% (2006). Thus, none of these other Canadian cities exceed the Ottawa-Gatineau non-motorized commute percentage for 2005.

The average in the four densest districts is 21.9% in 1986, 27.7% in 1995 and 29.5% in 2005.

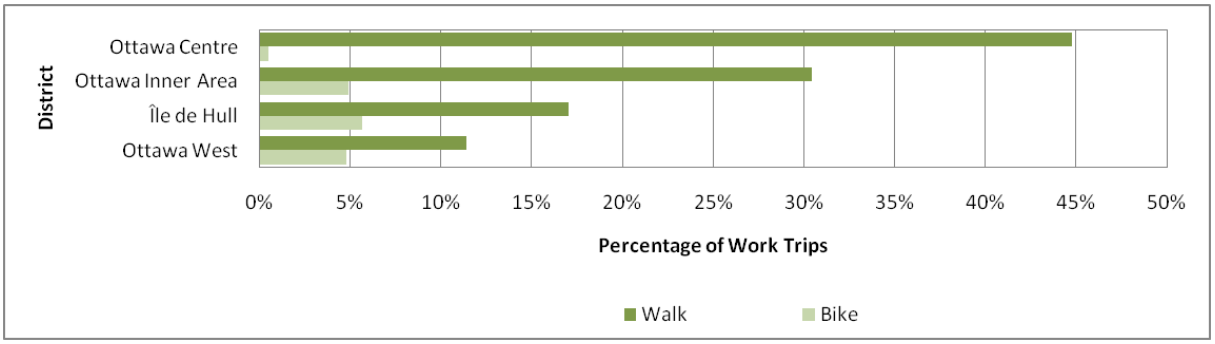


Exhibit 3-3: Percentage of non-motorized commuters (walk + bike) by place of residence in high-density areas, 2005

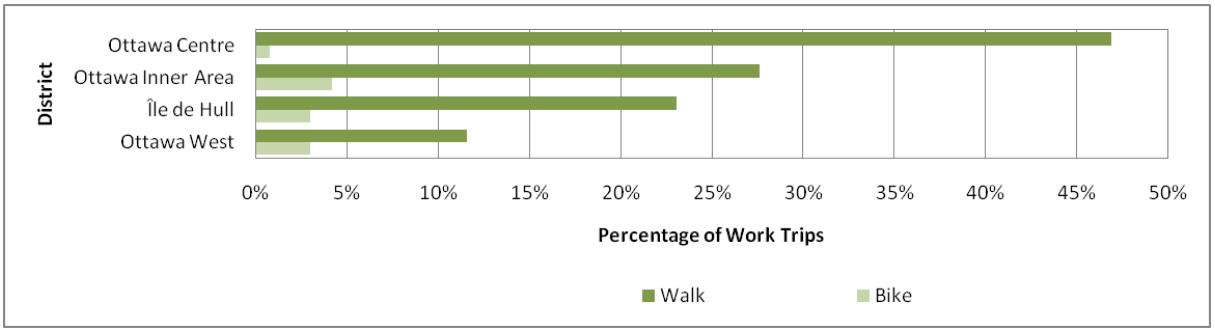


Exhibit 3-4: Percentage of non-motorized commuters (walk + bike) by place of residence in high-density areas, 1995

[13] University of Toronto Data Management Group, Transportation Tomorrow Survey data, 1986-2006.
[14] Transportation Association of Canada, Urban Transportation Indicators Fourth Survey Final Report, TAC, December 2009, p.44

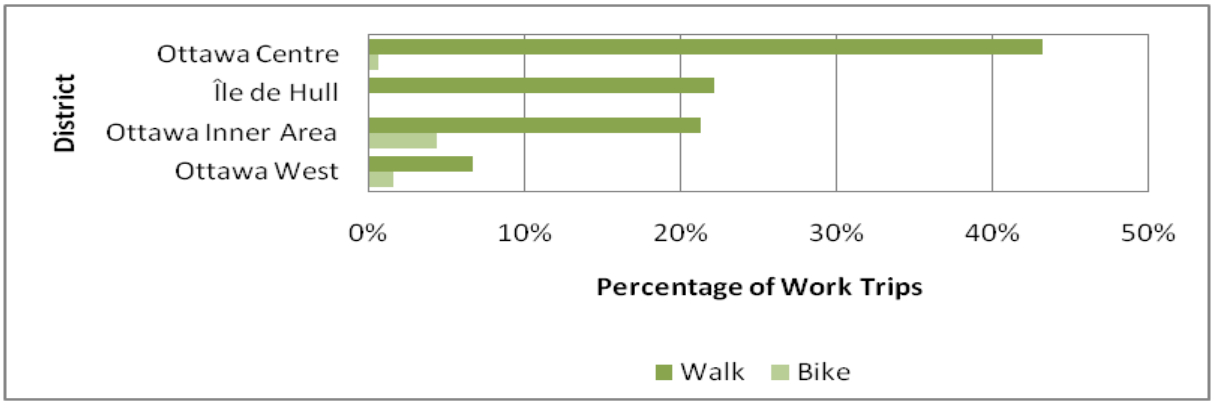


Exhibit 3-5: Percentage of non-motorized commuters (walk + bike) by place of residence in high-density areas, 1986

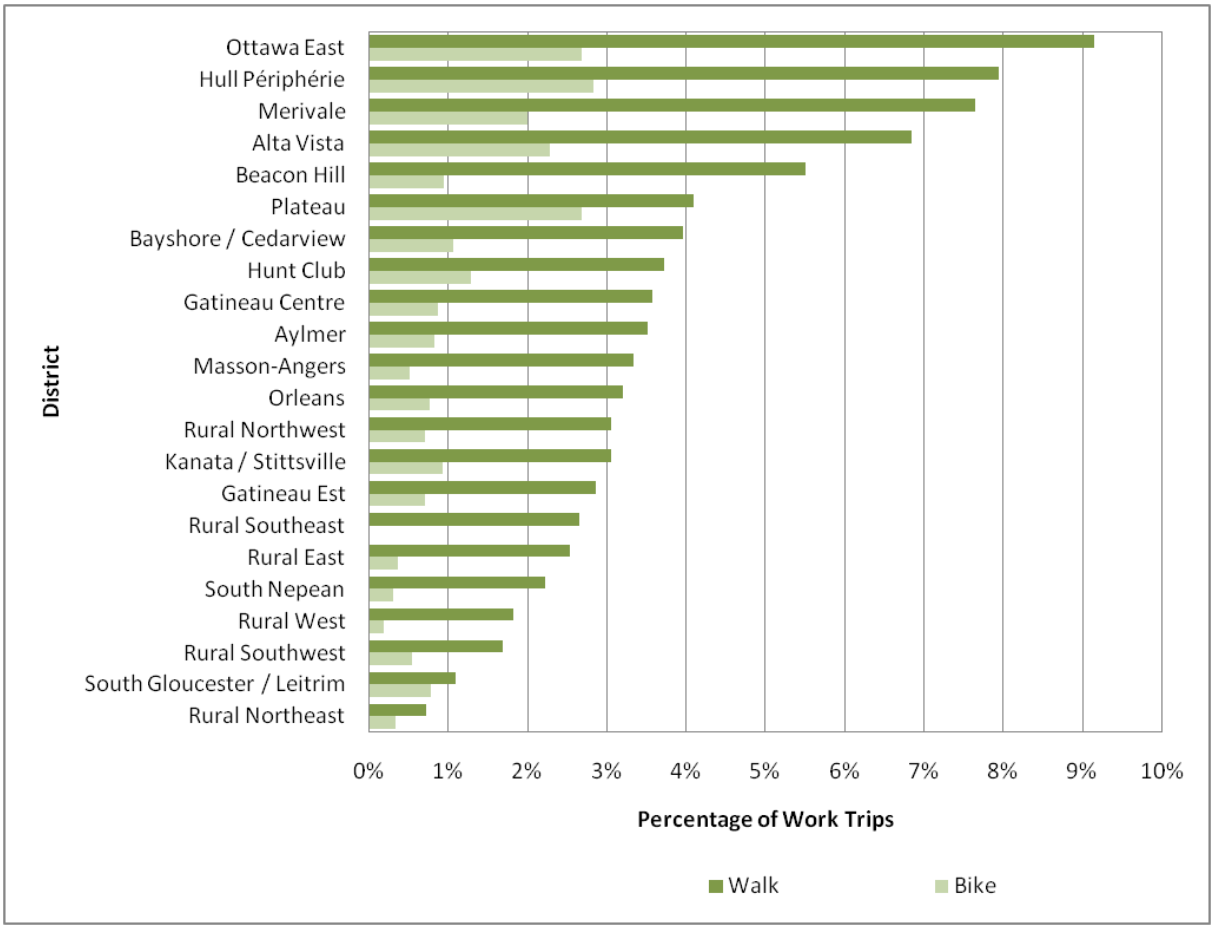


Exhibit 3-6: Percentage of non-motorized commuters (walk + bike) by place of residence in suburban and rural areas, 2005

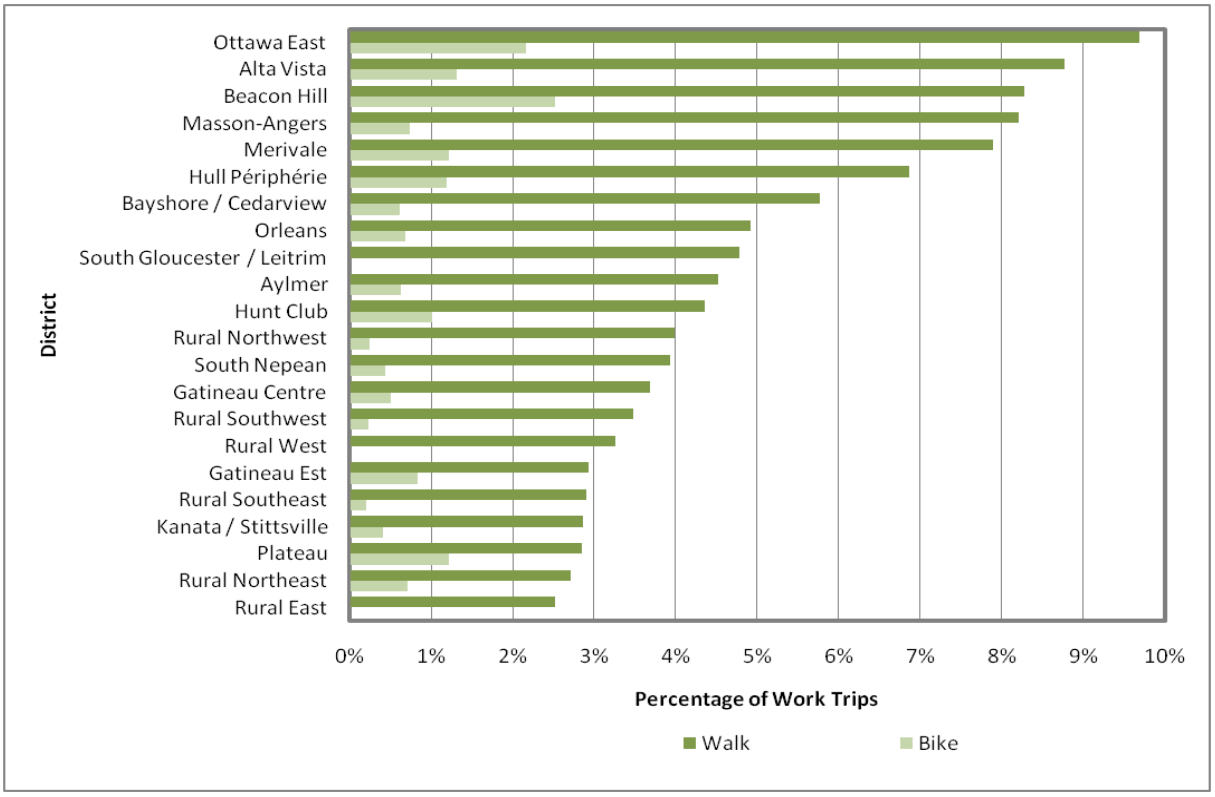


Exhibit 3-7: Percentage of non-motorized commuters (walk + bike) by place of residence in suburban and rural areas, 1995

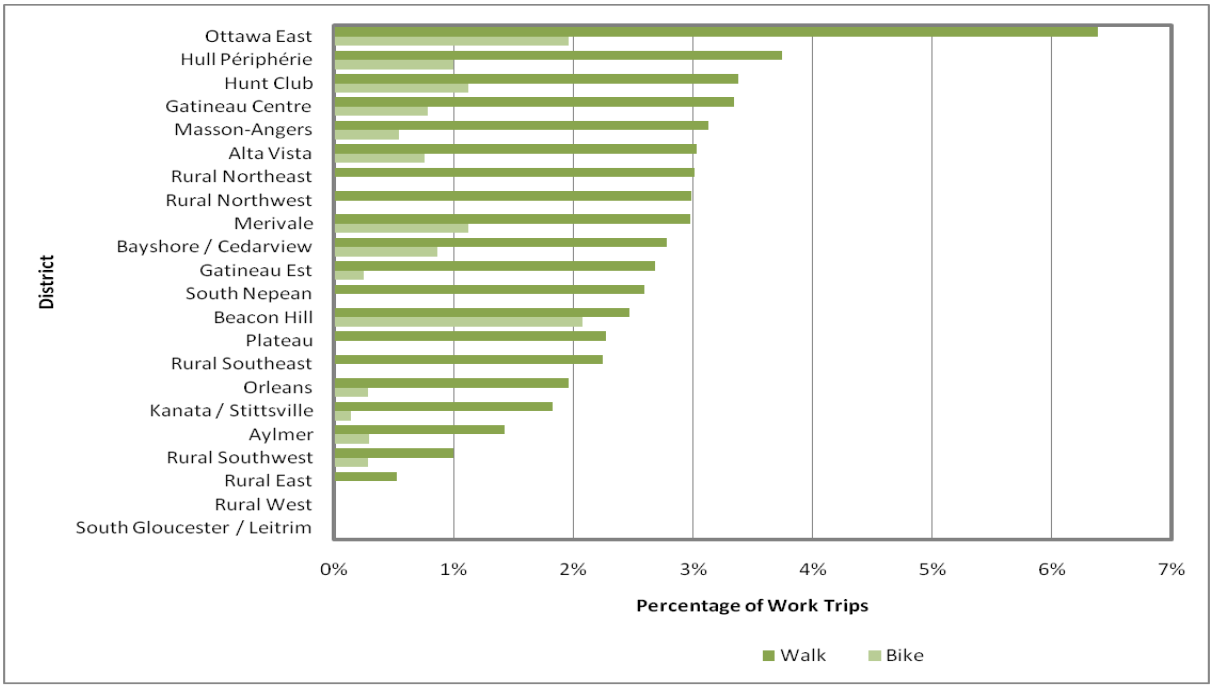


Exhibit 3-8: Percentage of non-motorized commuters (walk + bike) by place of residence in suburban and rural areas, 1986

3.3 Trips by purpose

Observed Trends:

- *All purposes of trips increase in number between 1986 and 2005, but work trips do not increase as fast as the population (the other purposes keep a reasonably constant trip rate)*
- *Work trips decline between 1986 and 1995 from 0.67/capita to 0.48/capita, and then to 0.47/capita by 2005.*

Exhibit 3-9 to Exhibit 3-12 show detailed breakdowns of trip purposes across the NCR for peak-period travel. Work and school trips dominate the AM peak, with most trips in the PM peak being to return home (presumably mainly from work and school). While overall there is a slight increase from 1986 to 2005, the trip rates (trips per resident over the age of 10) show a decrease over the same time period, reflecting how the increase in number of (especially) work trips have not kept pace with the increase in number of jobs.

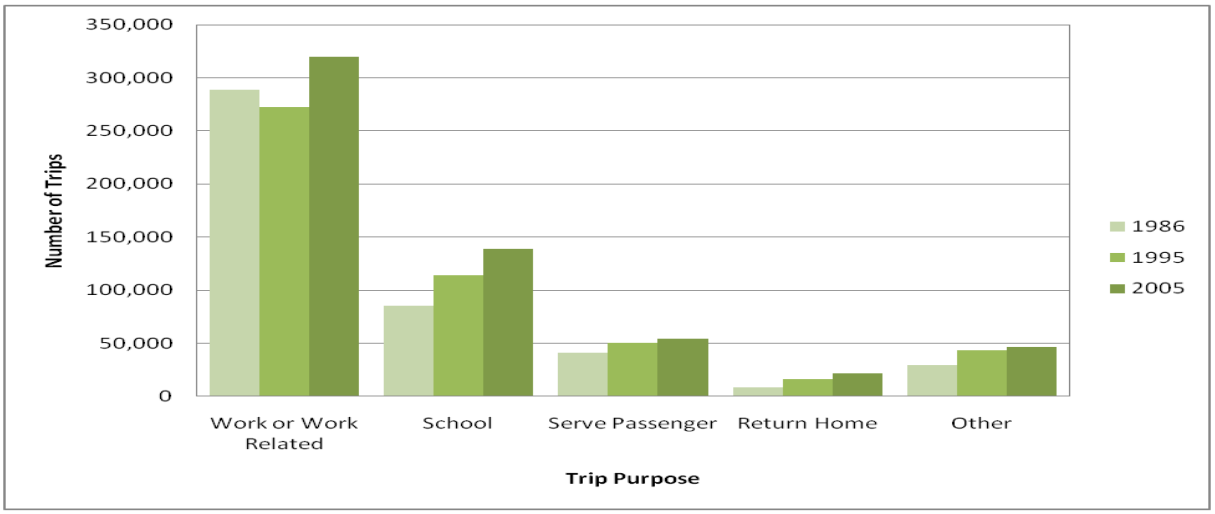


Exhibit 3-9: Trip breakdown by detailed destination purpose (AM peak periods, 1986-2005)

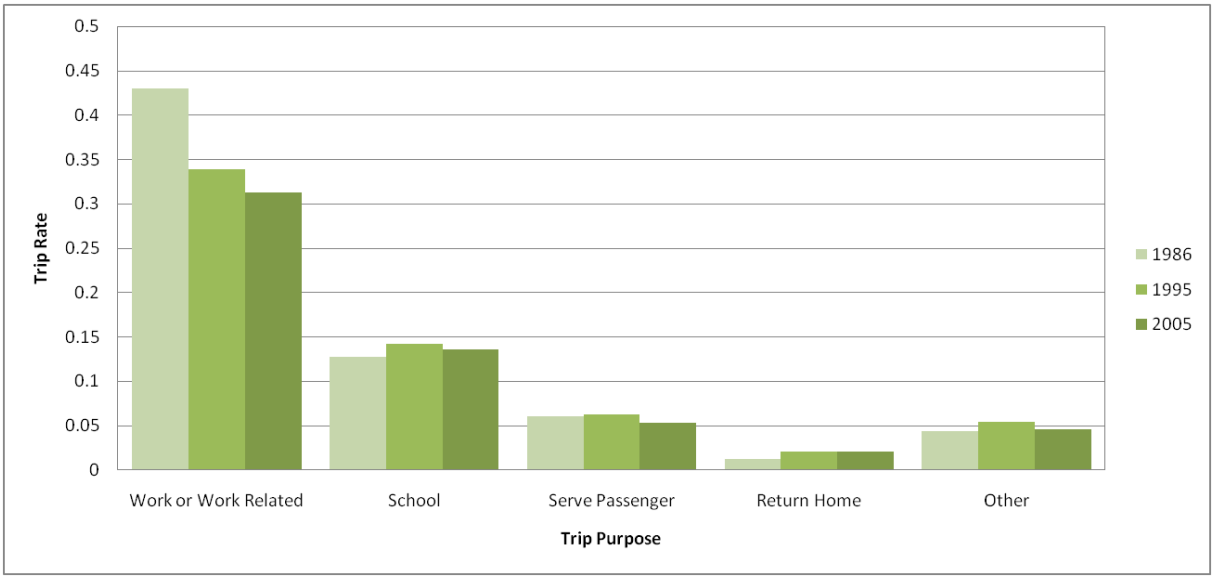


Exhibit 3-10: Trip rate breakdown by detailed destination purpose (AM peak periods, 1986-2005)

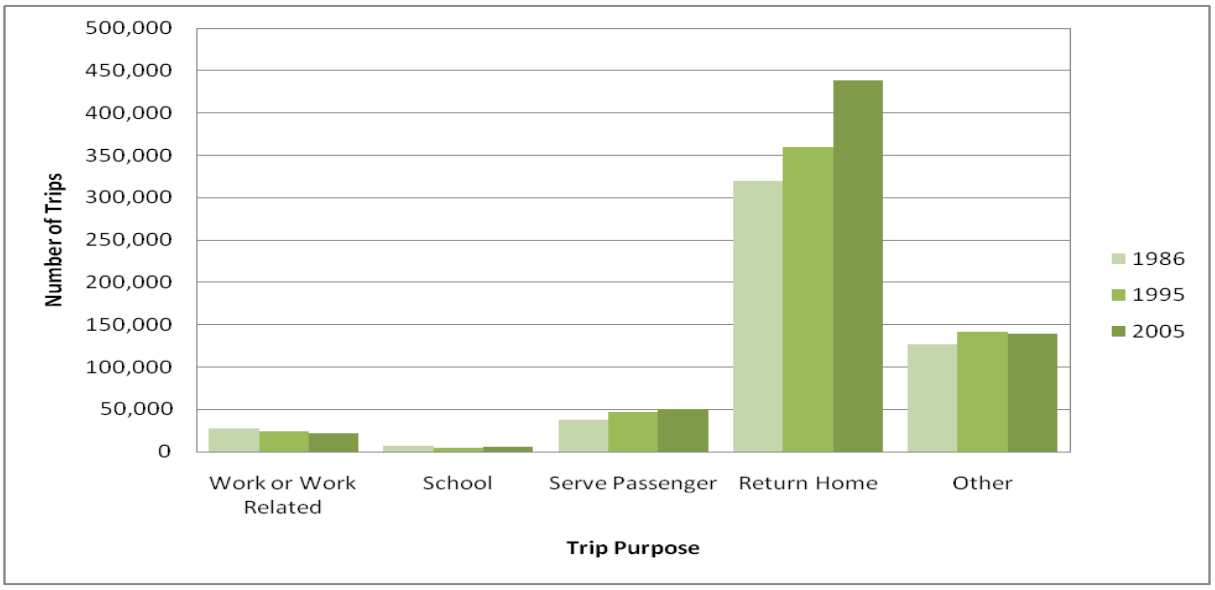


Exhibit 3-11: Trip breakdown by detailed destination purpose (PM peak periods, 1986-2005)

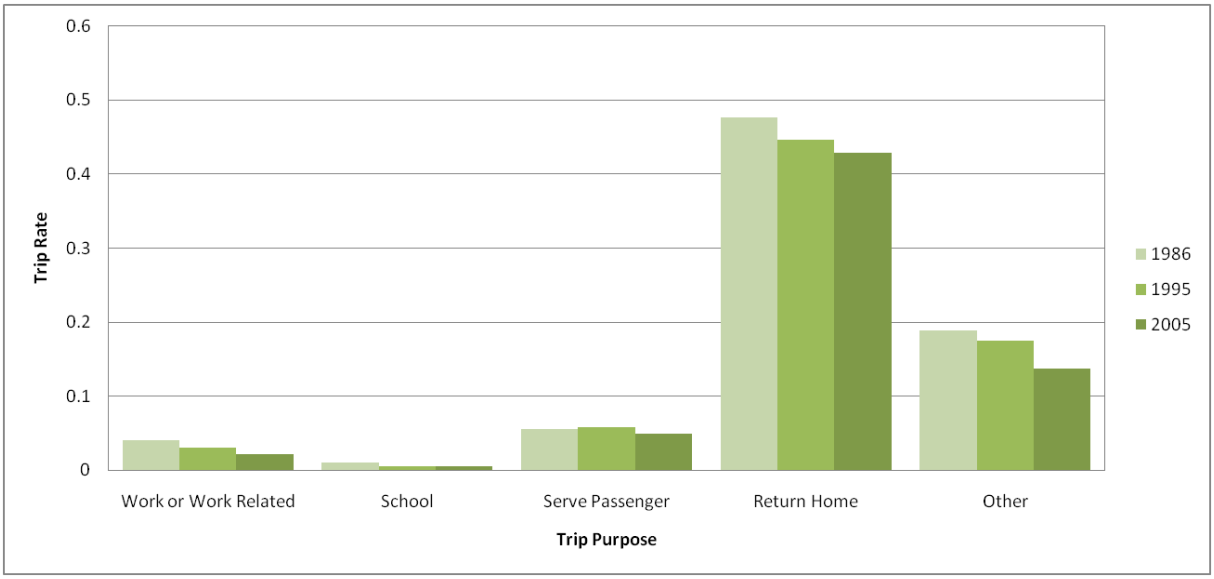


Exhibit 3-12: Trip rate breakdown by detailed destination purpose (PM peak periods, 1986-2005)

Table 3-10, below, shows how the overall trip rates in the main working-age categories (between 20 and 64) have declined steadily over time (other than the 55-64 category in Québec districts), while other age categories have declined less or increased.

Table 3-10: Trip rates by age group and region

	Age Group	1986	1995	2005
NCR	11-14	2.67	2.90	2.87
	15-19	2.95	3.13	2.98
	20-24	3.28	3.08	2.52
	25-54	3.51	3.36	2.96
	55-64	2.87	2.76	2.70
	65+	2.31	2.07	2.17
	Overall	3.19	3.09	2.79
Ontario	11-14	2.75	2.86	2.88
	15-19	3.09	3.14	3.06
	20-24	3.38	3.10	2.54
	25-54	3.66	3.40	3.02
	55-64	3.08	2.83	2.84
	65+	2.52	2.16	2.28
	Overall	3.33	3.12	2.86
Québec	11-14	2.47	2.94	2.85
	15-19	2.57	3.07	2.73
	20-24	2.95	3.02	2.44
	25-54	3.07	3.18	2.79
	55-64	2.13	2.49	2.35
	65+	1.12	0.82	1.77
	Overall	2.74	2.88	2.60

There is an evident decline in the work trip rate post-1986, both in the AM peak (when the bulk of trips to work occur), and over 24 hours, so the decrease is not due to peak-spreading. The decrease is also not due to a proportional reduction in the labour force, as trips per employed worker also decline. However, as seen in Table 3-11, Toronto (the extended urban area) also shows a decrease, though less pronounced and more linear, since 1986, so the trend is not unique to the NCR. The 2005 NCR trip rates are comparable, though slightly higher, to those found in Toronto in 2006.

Table 3-11: Comparison of work trip rates, 1986-2006[15]

NCR	Trips to work		Work trips per capita		Work trips per worker	
Year	AM Peak	All day	AM Peak	All day	AM Peak	All day
1986	288,652	501,882	0.38	0.67	0.71	1.23
1995	272,367	459,913	0.28	0.48	0.57	0.96
2005	319,753	542,372	0.28	0.47	0.59	1.00
Toronto	Trips to work		Work trips per capita		Work trips per worker	
Year	AM Peak	All day	AM Peak	All day	AM Peak	All day
1986	972,388	1,533,676	0.31	0.49	0.55	0.87
1996	984,774	1,749,725	0.26	0.46	0.52	0.93
2006	1,115,023	2,002,219	0.24	0.44	0.49	0.88

3.4 Conclusion

This chapter has identified the following trends between 1986 and 2005:

- Average trip lengths by district (1995-2005) do not show any significant change, except for possibly in rural areas, where the low overall numbers make it difficult to assess. Work trips are also of similar length between 1995 and 2005.
- While the overall numbers of most types of trips increase, the corresponding trip rates decrease, i.e. the numbers of trips do not grow as fast as the population. This is noticed for all three time periods.
- Work trips decrease from 1986 to 1995, although afterwards they climb again and surpass the 1986 number by 2005.
- There is a decrease over time in trips to and from central and urban areas (in all time periods) in favour of an increase in trips to and from suburban Ottawa and Gatineau.
- There is a small increase in the percentage of non-motorized commuters (7% to 9%) between 1986 and 2005, a trend that is more visible in the four highest density districts (which show a 21% to 29% increase).
- The work trip rate declines abruptly from 1986 to 1995, and then stabilizes (at a level more comparable with other cities) from 1995 to 2005, suggesting a more reliable trend for future extrapolation is the one observed during this later period.

[15] Toronto numbers are taken from the TTS, using the definition of the Greater Toronto urban area described in Section 2.1.

4. Modal Shares

This chapter, following on from the isolation of trip characteristics such as purposes and times, breaks trips down further into the possible modes that can be used to complete the trip. It looks at different demographic characteristics, such as occupation and possession of a driver's licence, to assess the impact of these on what mode is chosen to travel, as well as how purpose and location influence the choice of mode.

4.1 Mode availability

Observed trends:

- *Rate of driver's licence possession remains near-constant by occupation status and location*
- *The average number of vehicles per worker in a one-person household climbs from 1.1 to 1.6 between 1986 and 2005, a 45% increase. There is a 20% increase for two-person households.*

The mode chosen to make trips is to some extent determined by household or personal attributes. Without a driver's licence or an available vehicle, the auto-drive mode is not an option, while possessing a transit pass makes choosing transit very likely. Exhibit 4-1, Exhibit 4-2 and Exhibit 4-3 describe how licence possession varies between occupation groups and years, for the NCR, Ontario and Québec, respectively. Students age 10 or younger are excluded as they are counted differently in each survey.

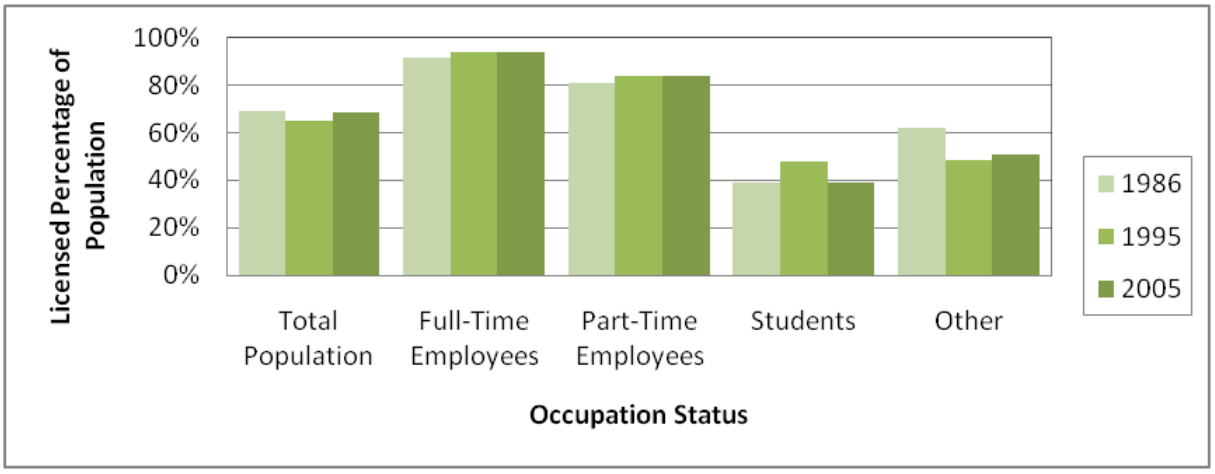


Exhibit 4-1: NCR driver's licence holders by occupation status, 1986-2005

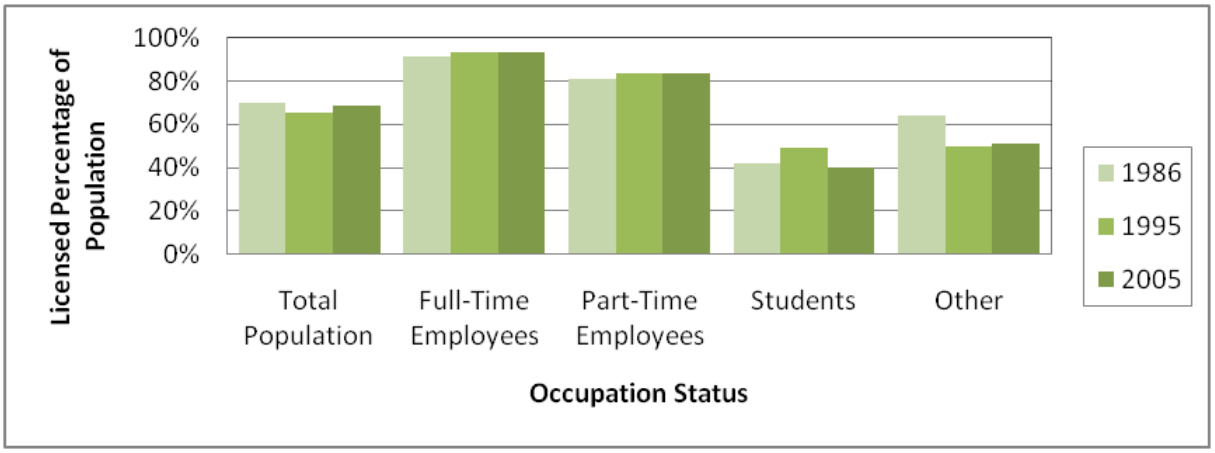


Exhibit 4-2: Ontario driver's licence holders by occupation status, 1986-2005

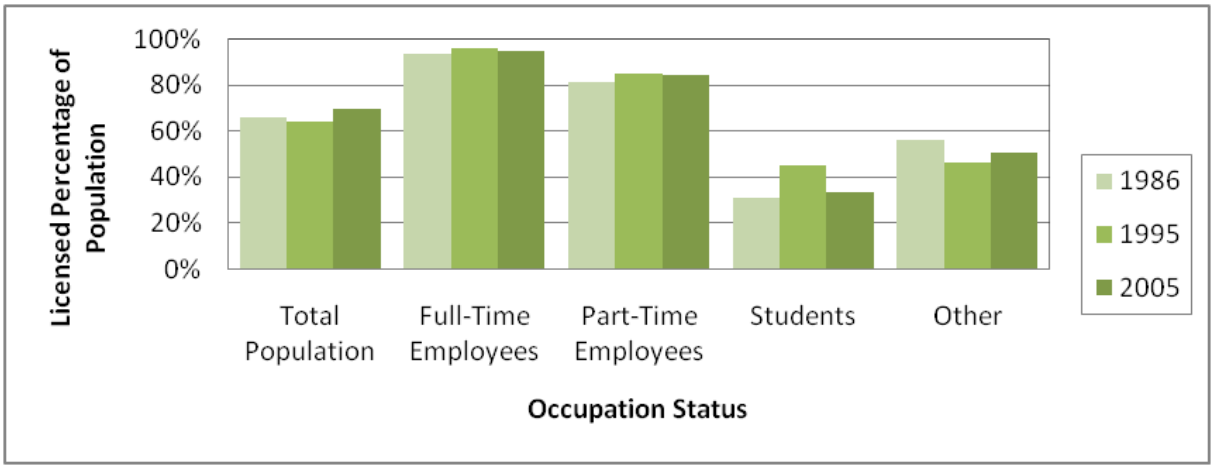


Exhibit 4-3: Québec driver's licence holders by occupation status, 1986-2005

In Exhibit 4-4, below, the percentages of the population with transit passes are shown for each region and occupation type. These are shown only for 2005 as data are unavailable for earlier years.

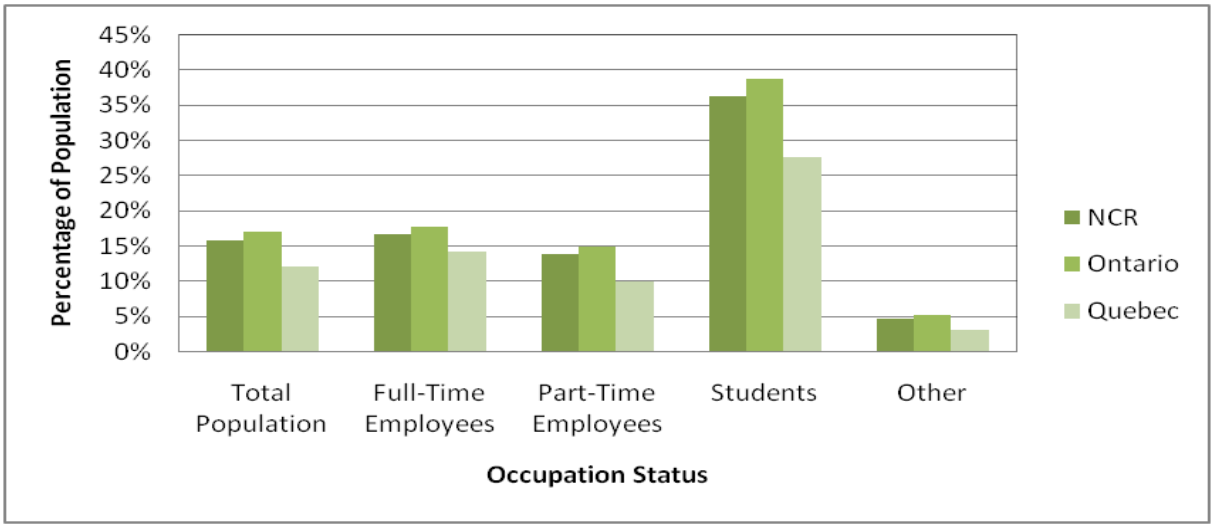


Exhibit 4-4: Transit pass holders by occupation status, 2005

In Exhibit 4-5, Exhibit 4-6 and Exhibit 4-7, we can see that the number of vehicles per number of workers (car sufficiency) at a household level has increased over time, with similar trends visible for both Ontario and Québec (apart from 5 or more-person households, but there are a comparatively low number of these). In the ensuing series of exhibits (Exhibit 4-8, Exhibit 4-9 and Exhibit 4-10), the percentage changes are shown directly to indicate the effect of time and there we see that, with the cited exception of large households in Québec, all the trends are positive over time. The changes are much more prominent from 1995 to 2005 than from 1986 to 1995, despite there being only one additional year in the later period, and are especially noted for one-person households (note that the ratios are aggregated over all households of the same size, and many one-person households will have a car but no workers).

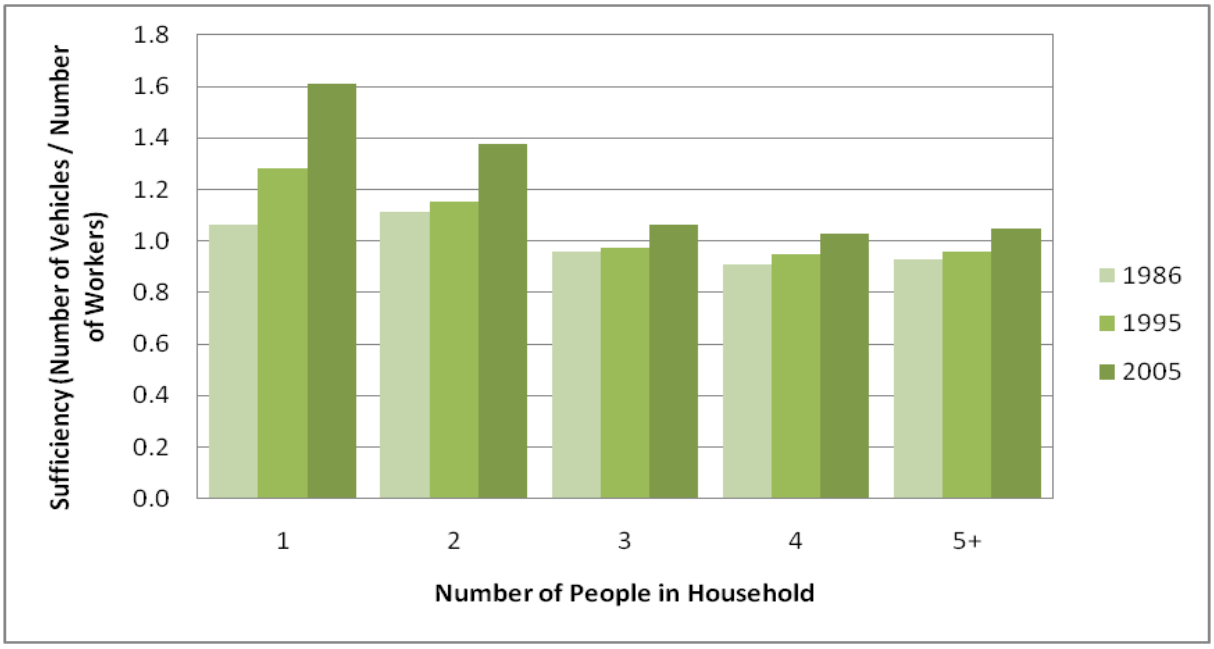


Exhibit 4-5: NCR vehicle sufficiency per worker, 1986-2005

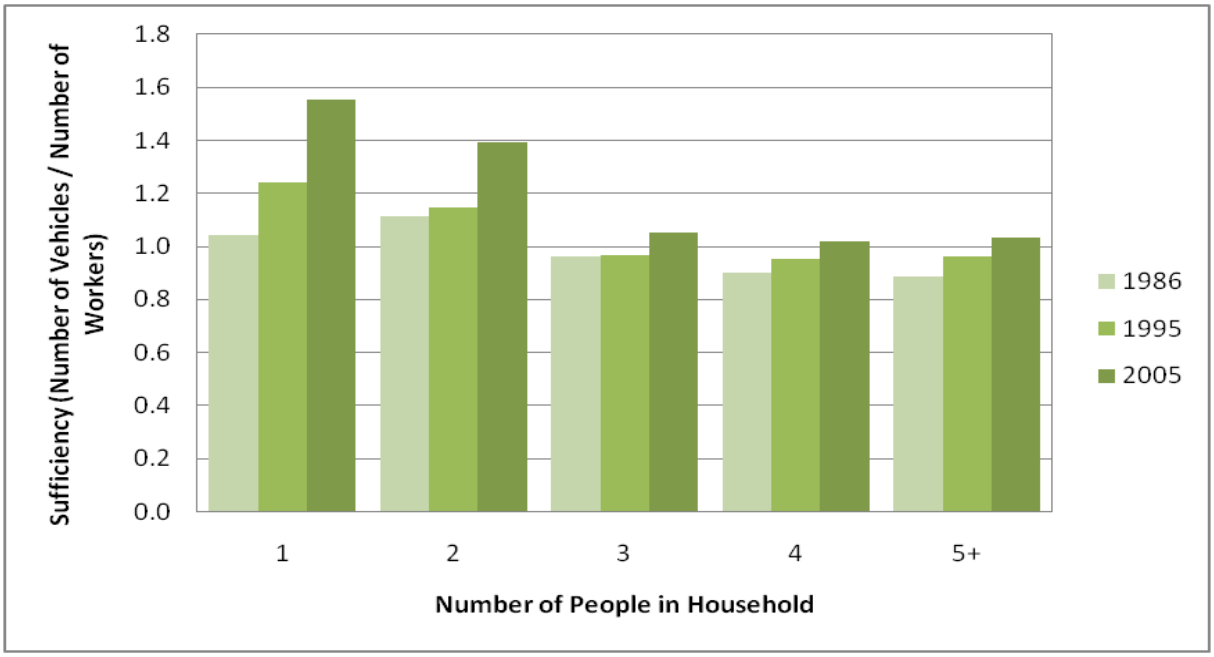


Exhibit 4-6: Ontario vehicle sufficiency per worker, 1986-2005

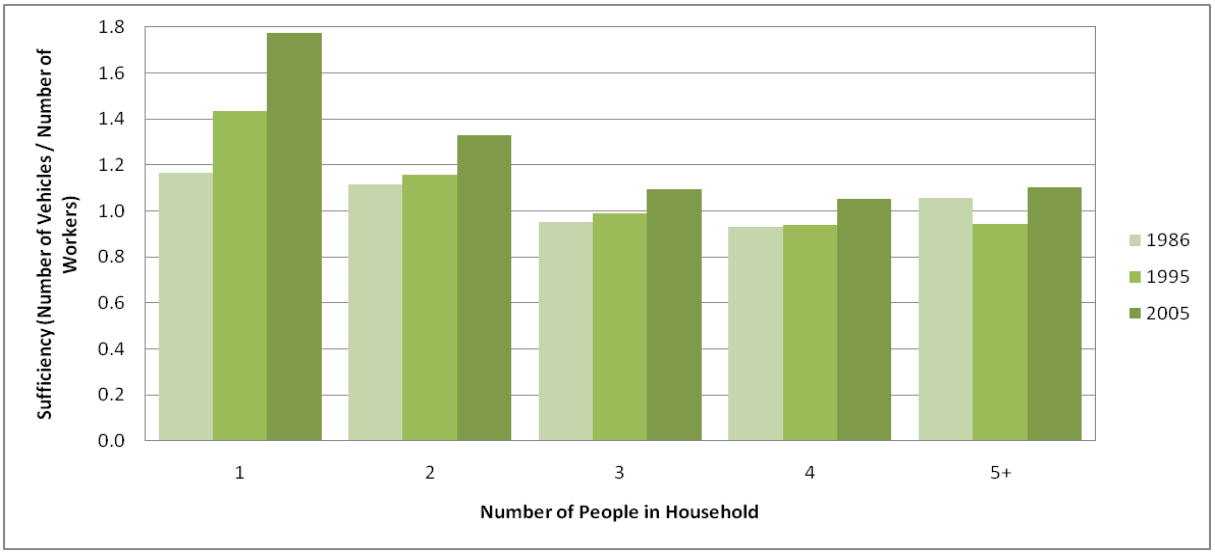


Exhibit 4-7: Québec vehicle sufficiency per worker, 1986-2005

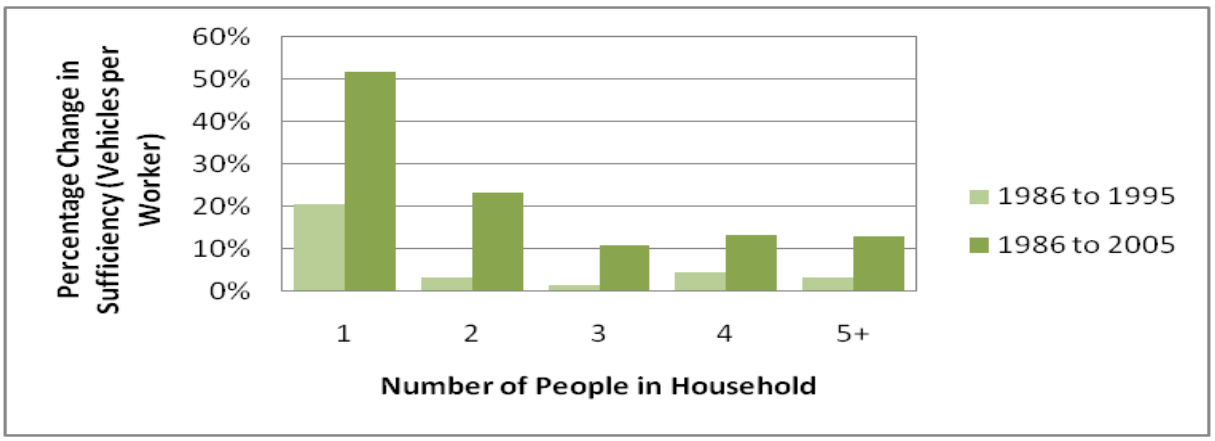


Exhibit 4-8: NCR change in vehicle sufficiency per worker by district, 1986-2005

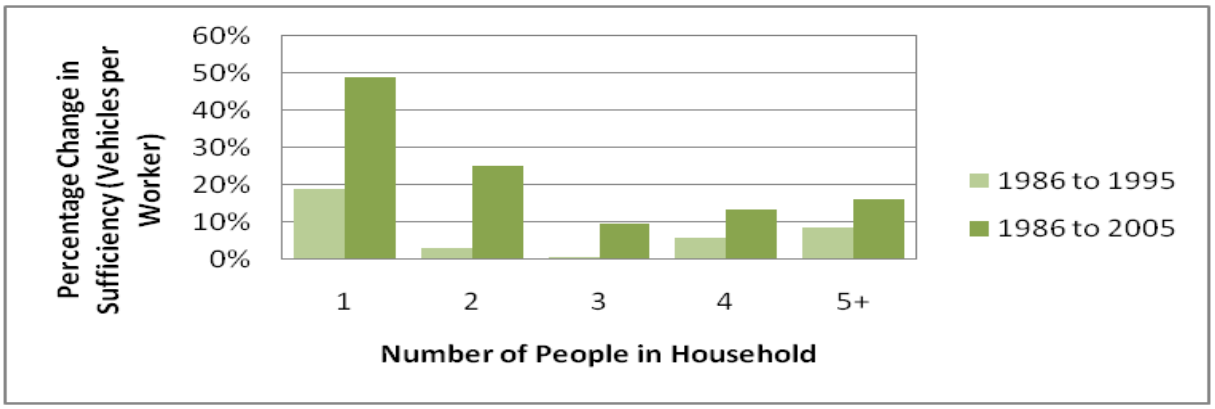


Exhibit 4-9: Ontario change in vehicle sufficiency per worker by district, 1986-2005

Exhibit 4-10: Québec change in vehicle sufficiency per worker by district, 1986-2005

4.2 Mode choice overview

Observed trends:

- *Transit mode share from 1986 to 2005 decreases from 18% to 15%, although the 1995 to 2005 trend is positive (13% to 15%) and there is an increase in Gatineau*
- *Walk mode share increases from 7% to 11%.*
- *Auto mode share remains almost the same*
- *Overall numbers of trips increase by similar percentages in all three time periods*

A general look at mode shares and how they are affected by the purpose of the trip in the NCR is presented in Exhibit 4-11 to Exhibit 4-15, with influence of time period instead of purpose shown subsequently in Exhibit 4-16 and Exhibit 4-17. Trip purposes are displayed separately for clarity.

In the 1986 survey, school buses were included in a bus category, so in the comparisons with other years done below they are included with transit. However, this only affects school and return home trips. "Other" trips include shopping, leisure and medical trips, as well as any that do not fall into any of the other described categories.

There is a marked increase in auto drive trips for work and return-home purposes between 1995 and 2005, but this only maintains the auto mode share due to the overall greater number of trips, while the transit mode share increases despite this being less evident from the absolute numbers of trips. Non-motorized, auto passenger and other modes show smaller increases, although there is no mode that decreases in absolute number of trips between 1995 and 2005. 1986 appears to have a greater overall number of transit trips (remembering that this is including school buses) than 1995 with 397,000 compared with 321,000 in 1995, but the numbers increase again to 434,000 in 2005. Transit mode share decreases from 18% to 13% before recovering to 15%. The difference

is mainly assumed by walk trips, which increase from 7% in 1986 to 11% in the later years.

The overall number of work trips goes from 502,000 in 1986 to 542,000 in 2005. This, an increase of 8.0%, is comparable with the increases in Toronto from 1986 to 2006 (6.4%[16]) or in Montréal from 1987 to 2008 (8.5%[17]).

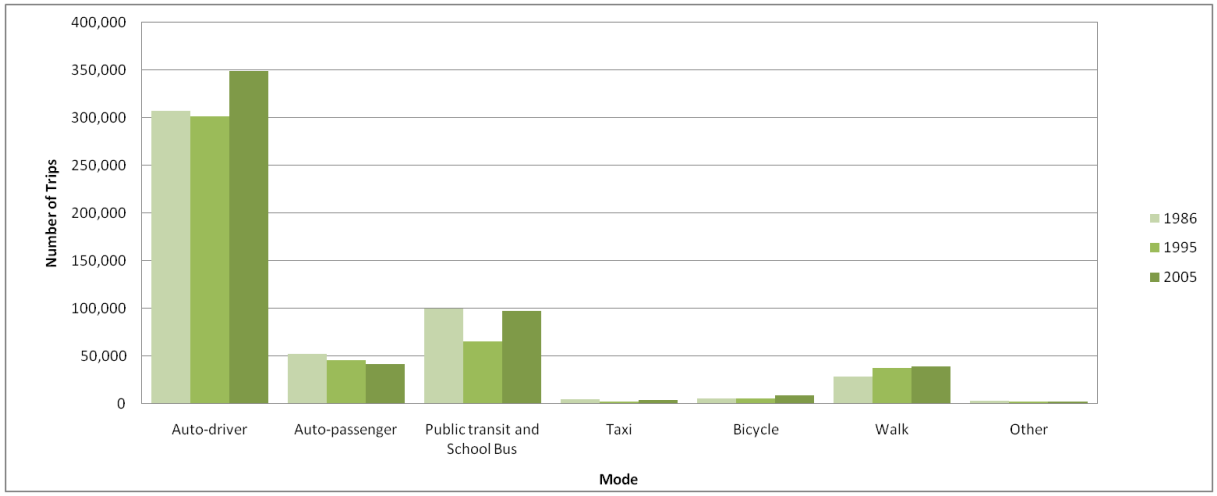


Exhibit 4-11: Work trip breakdown by mode, 1986-2005

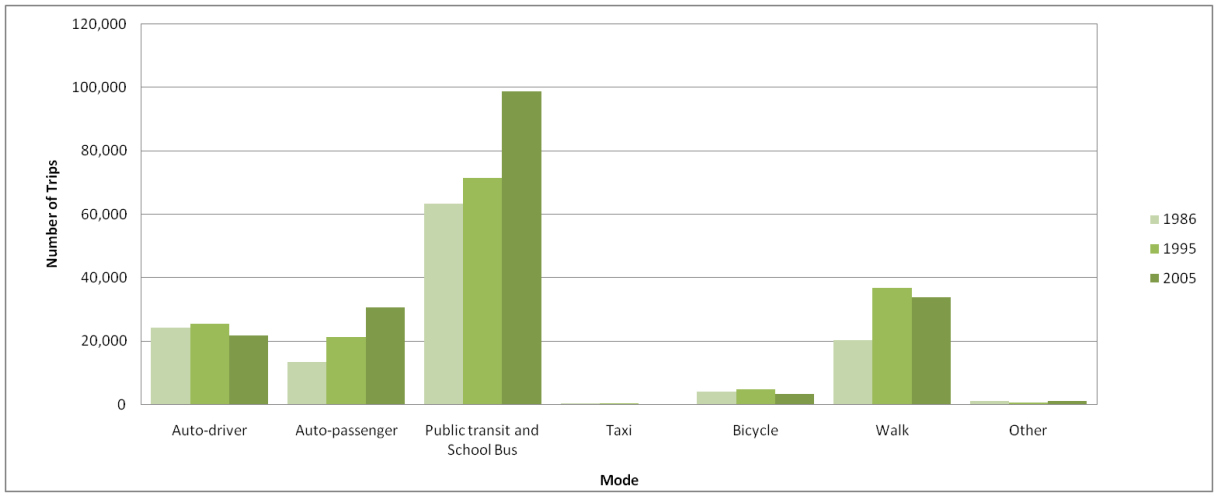


Exhibit 4-12: School trip breakdown by mode, 1986-2005

[16] University of Toronto Data Management Group, Transportation Tomorrow Survey data, 1986-2006.
[17] Secrétariat aux enquêtes Origine-Destination métropolitaines, Enquête Origine-Destination 2008 Faits Saillants, Agence métropolitaine de transport, 2008, p.19

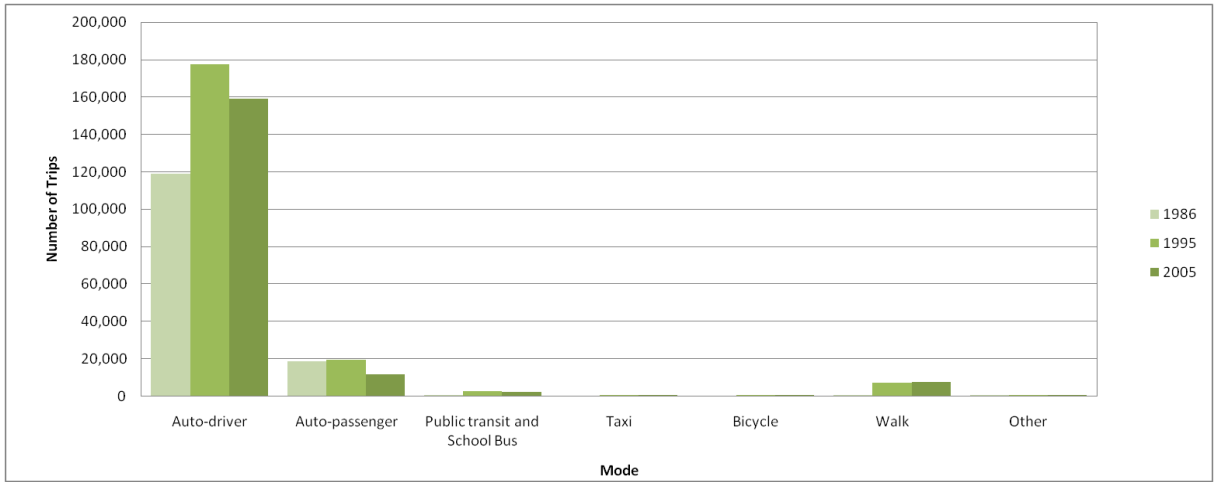


Exhibit 4-13: Serve passenger trip breakdown by mode, 1986-2005

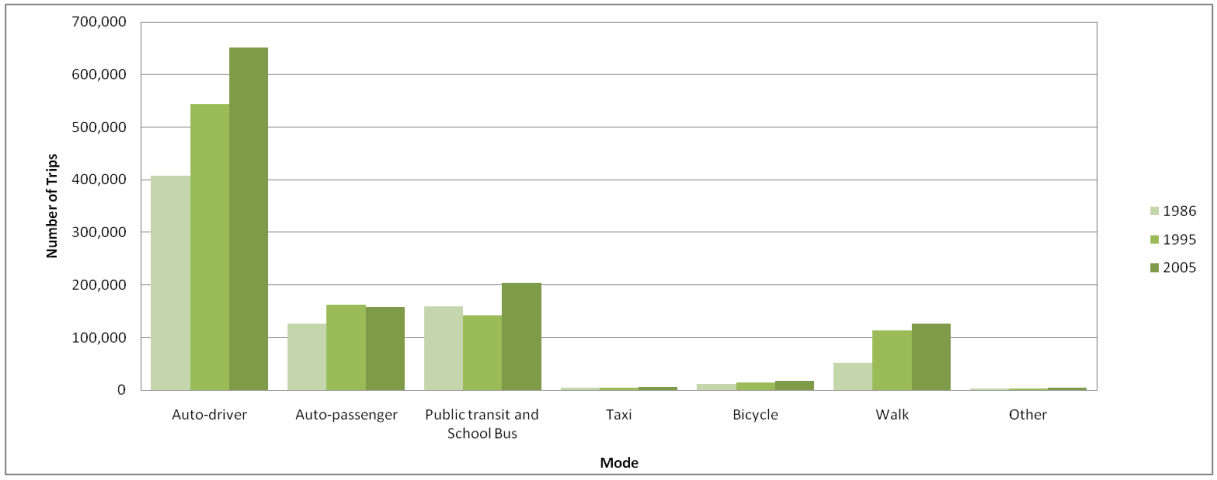


Exhibit 4-14: Return home trip breakdown by mode, 1986-2005

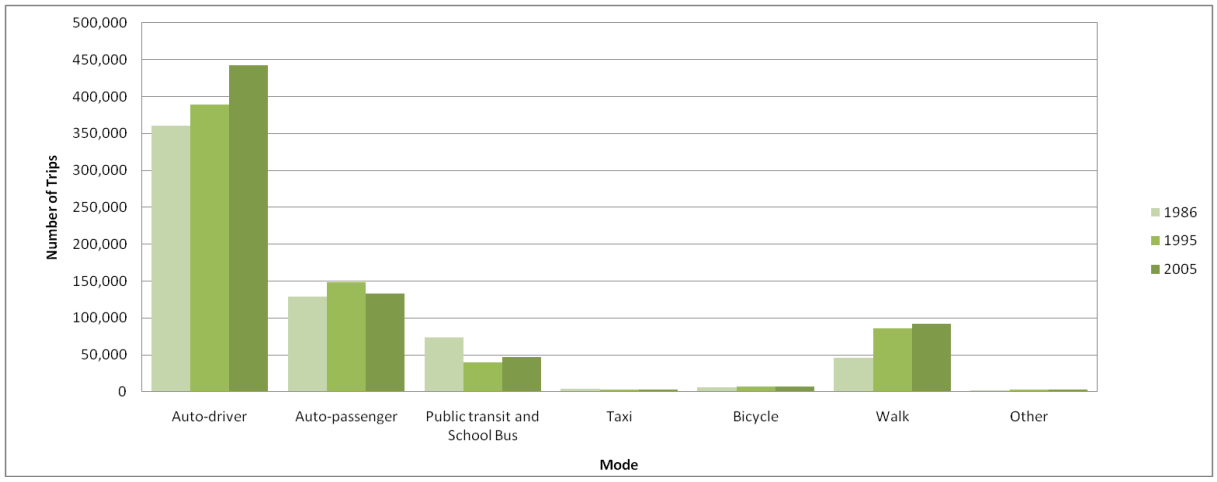


Exhibit 4-15: Other trip breakdown by mode, 1986-2005

In Exhibit 4-16, below, the total number of trips increases for all time periods, by a consistent amount for each, thus maintaining a similar daily time profile.

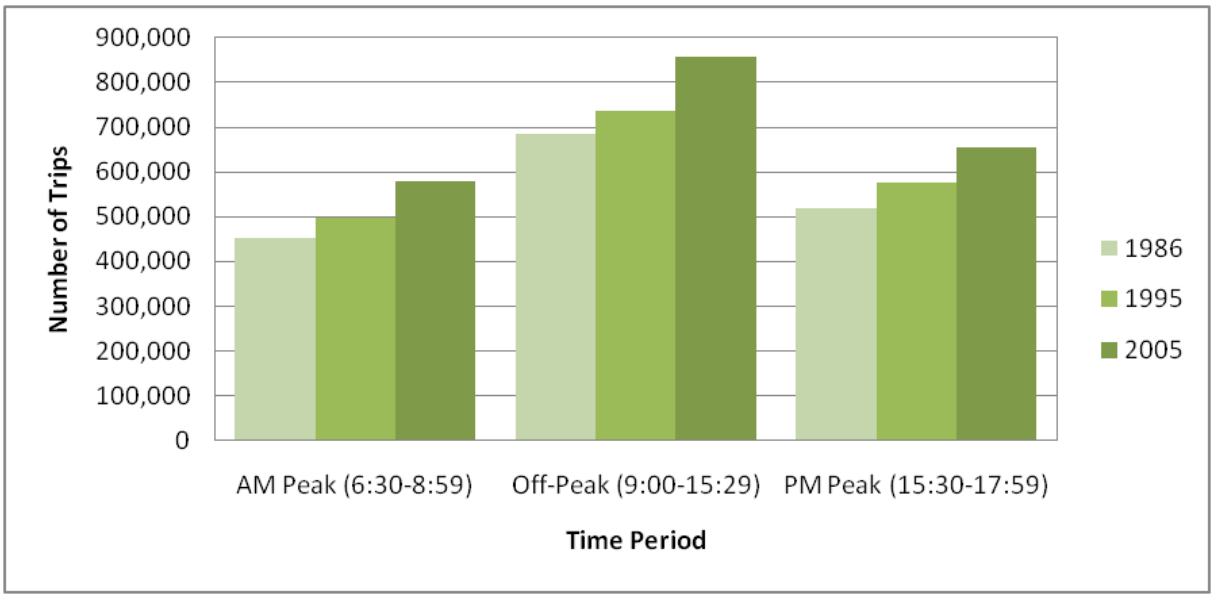


Exhibit 4-16: Trip breakdown by time of day, 1986-2005

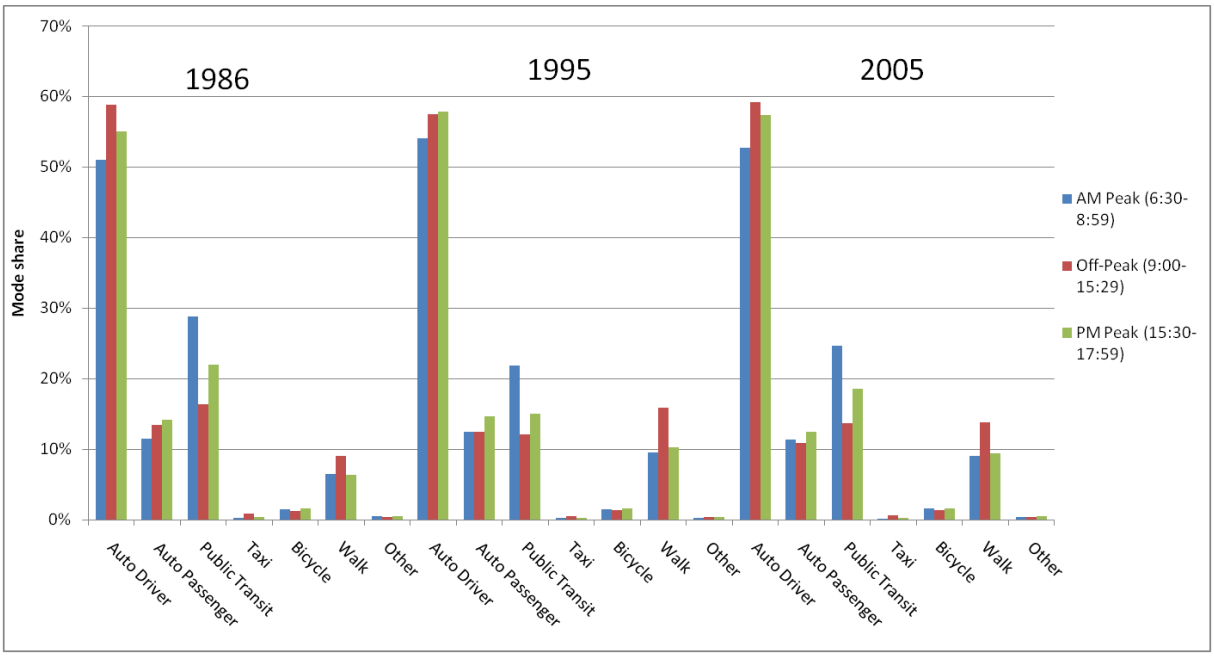


Exhibit 4-17: Trip breakdown by mode and time period, 1986-2005

Examining the modes in detail as shown above (Exhibit 4-17) shows that we have in effect four modes (auto-drive, auto passenger, public transit/ school bus and walking),

with others having minimal influence. The distribution between times of day by mode does not show any major variations from 1986 to 2005.

The mode shares for each of the three time periods are shown directly from Exhibit 4-18 to Exhibit 4-26. It should be noted that in 1986, school bus numbers are included as part of public transit, which is why the school bus share is shown as 0% for this year. However, there is still a markedly larger transit share for 1986 than for the other years, even when this is taken into account, for all time periods.

The overall transit mode share is 18% for 1986, 13% for 1995 and 15% for 2005. A decrease for a similar timeframe was also noticed in Montréal (25% in 1987 to 21% in 2008)[18] and in Toronto (25% in 1986 to 19% in 2006)[19]. Calgary (9% in 1996, 8% in 2006)[20] and Vancouver (11% in 1996, 10% in 2006) also have shown decreases over a more recent span. Meanwhile, the non-motorized mode share has climbed in the NCR from 8% in 1986 to 12% in 2005, and this trend is also seen in other cities, including Calgary (11% to 16% from 1996 to 2006), and Vancouver (12% to 13% from 1996 to 2006). However, Montréal (13% to 11% from 1987 to 2008) and Toronto (10% to 9% from 1986 to 2006) do not follow the same pattern.

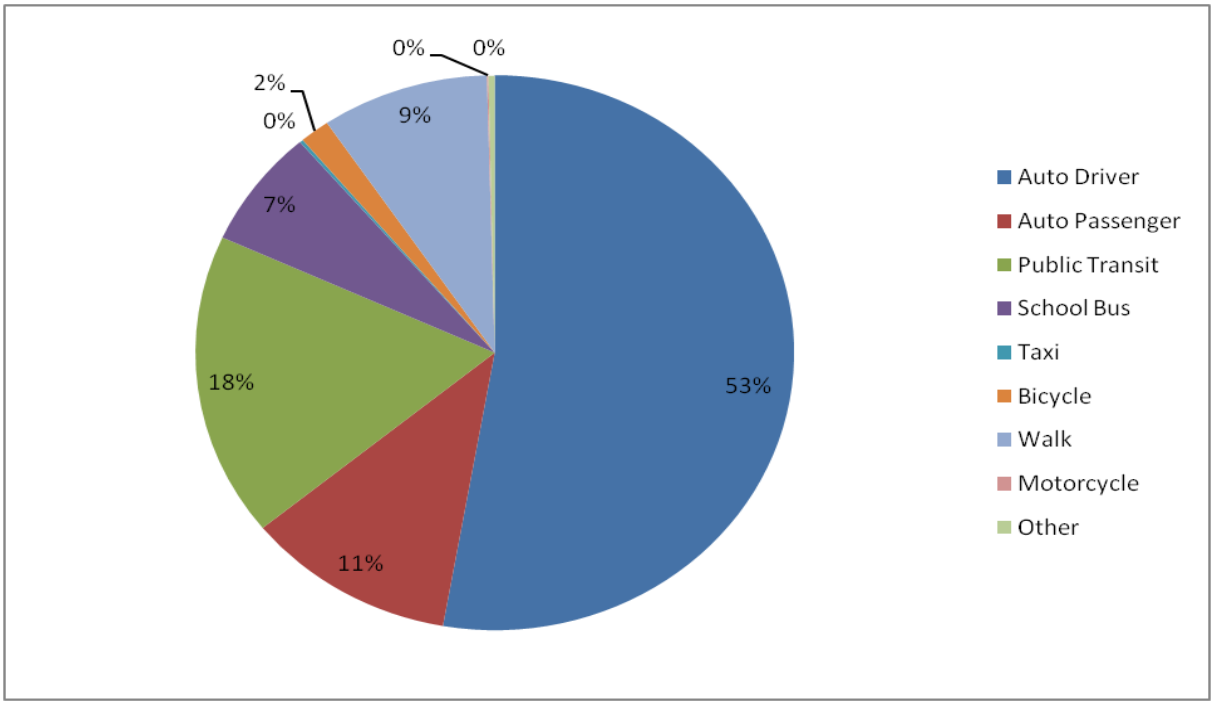


Exhibit 4-18: 2005 mode share (AM peak period)

[18] Secrétariat aux enquêtes Origine-Destination métropolitaines, Enquête Origine-Destination 2008 Faits Saillants, Agence métropolitaine de transport, 2008, p.20
[19] University of Toronto Data Management Group, Transportation Tomorrow Survey data, 1986-2006.
[20] Transportation Association of Canada, Urban Transportation Indicators Fourth Survey Final Report, TAC, December 2009, p.33

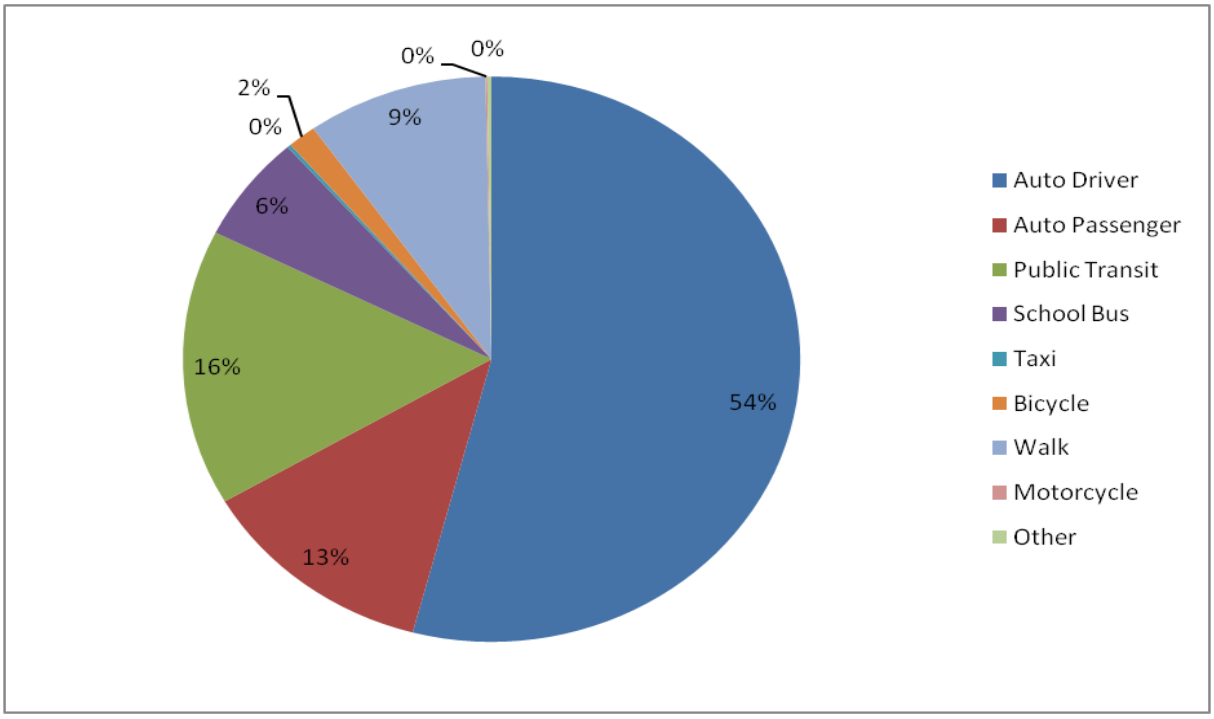


Exhibit 4-19: 1995 mode share (AM peak period)

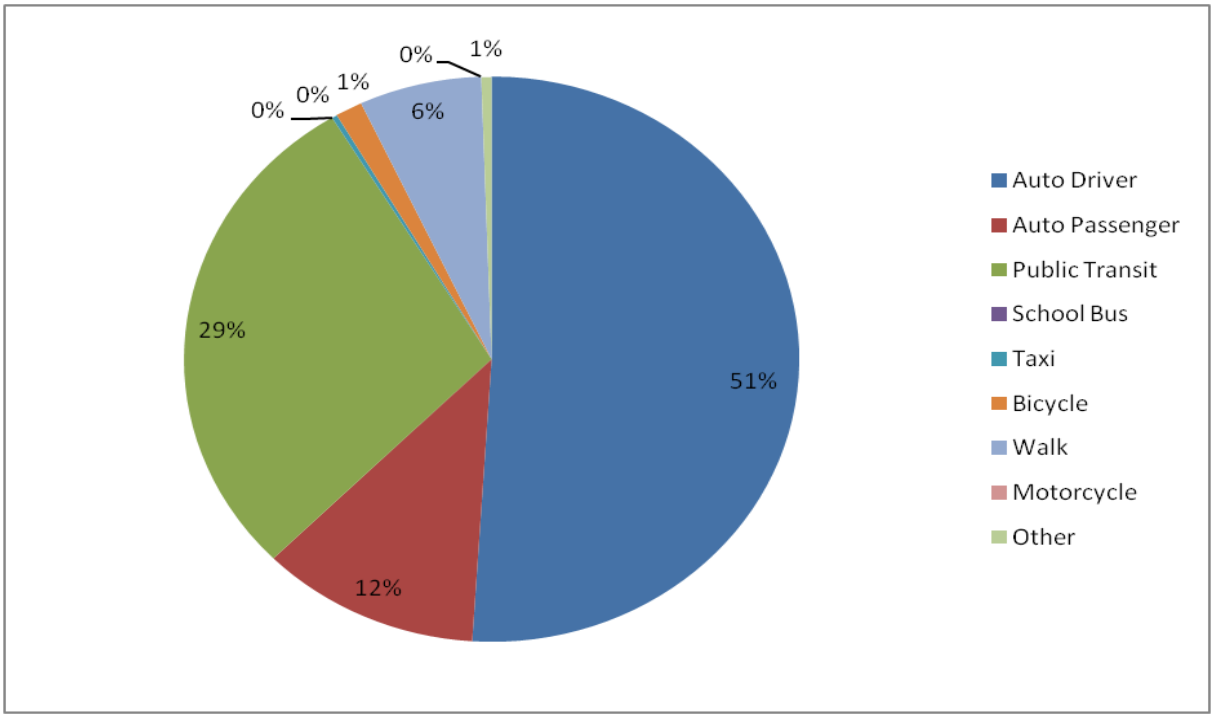


Exhibit 4-20: 1986 mode share (AM peak period)

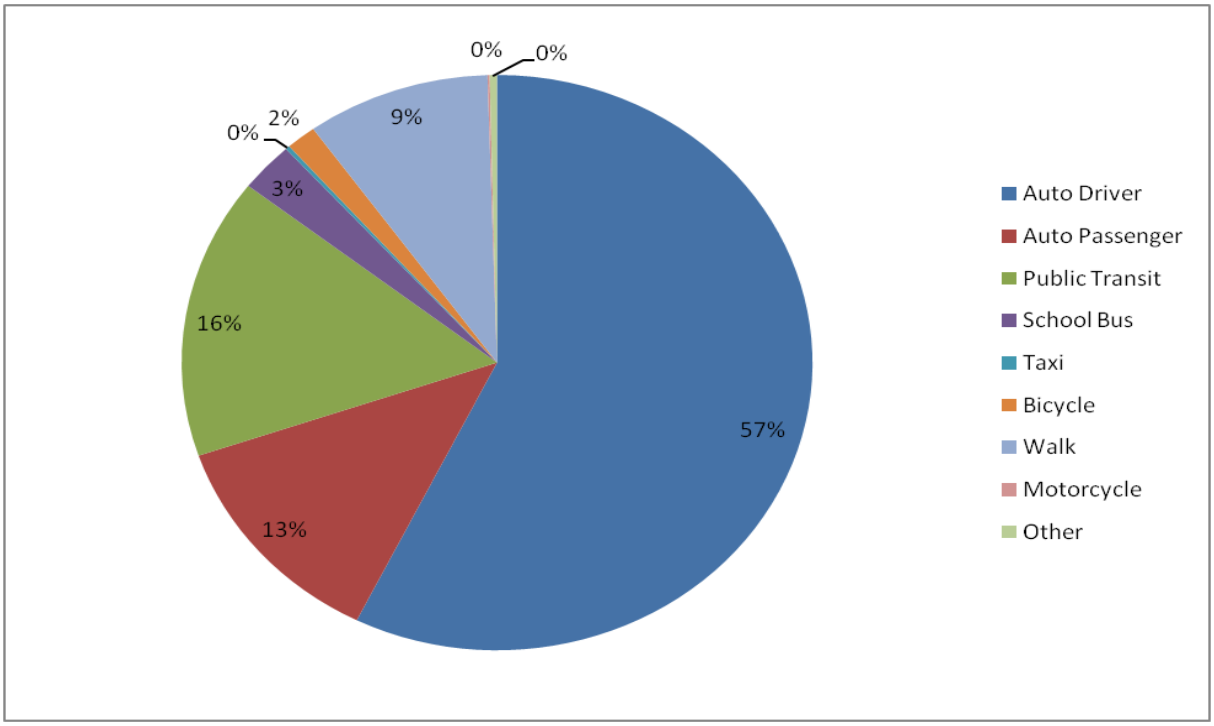


Exhibit 4-21: 2005 mode share (PM peak period)

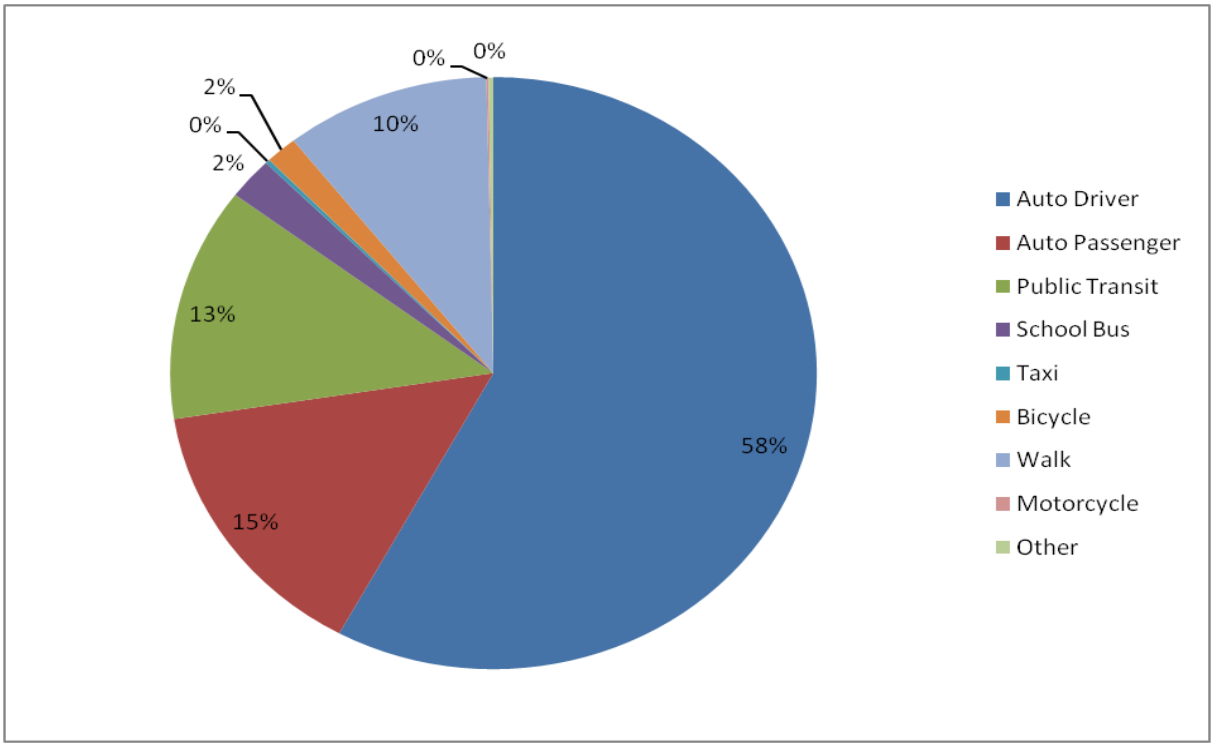


Exhibit 4-22: 1995 mode share (PM peak period)

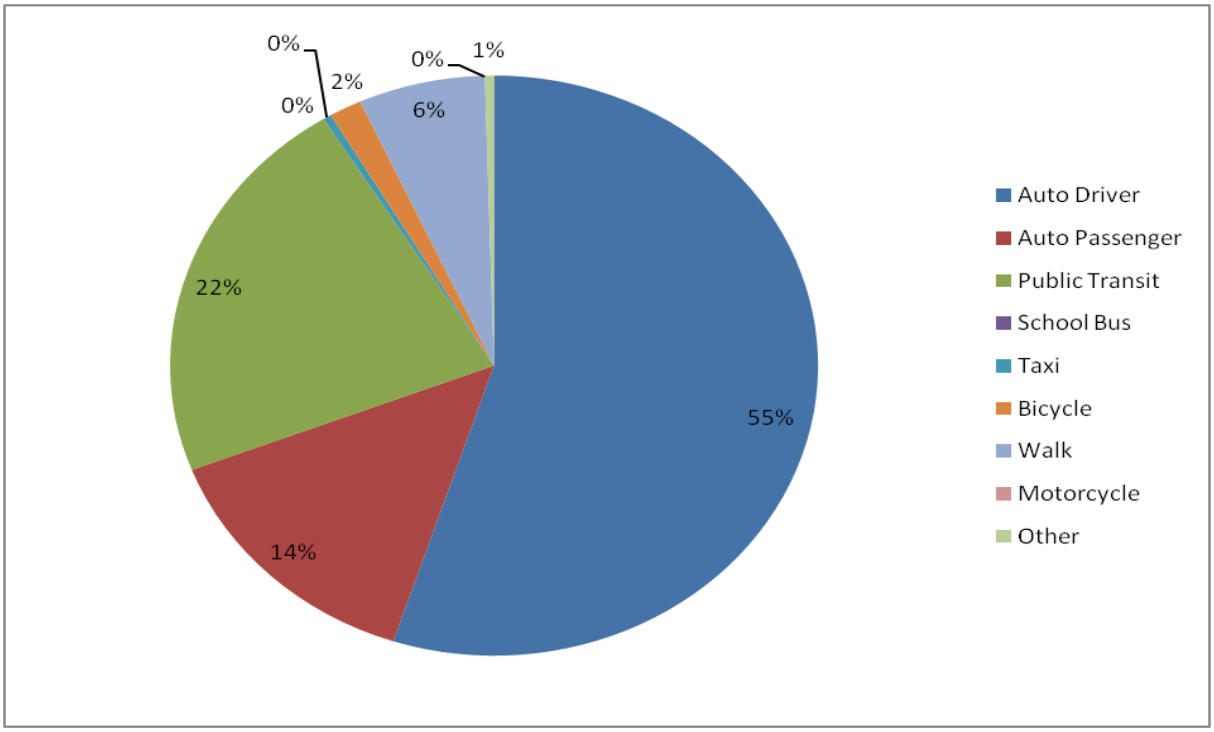


Exhibit 4-23: 1986 mode share (PM peak period)

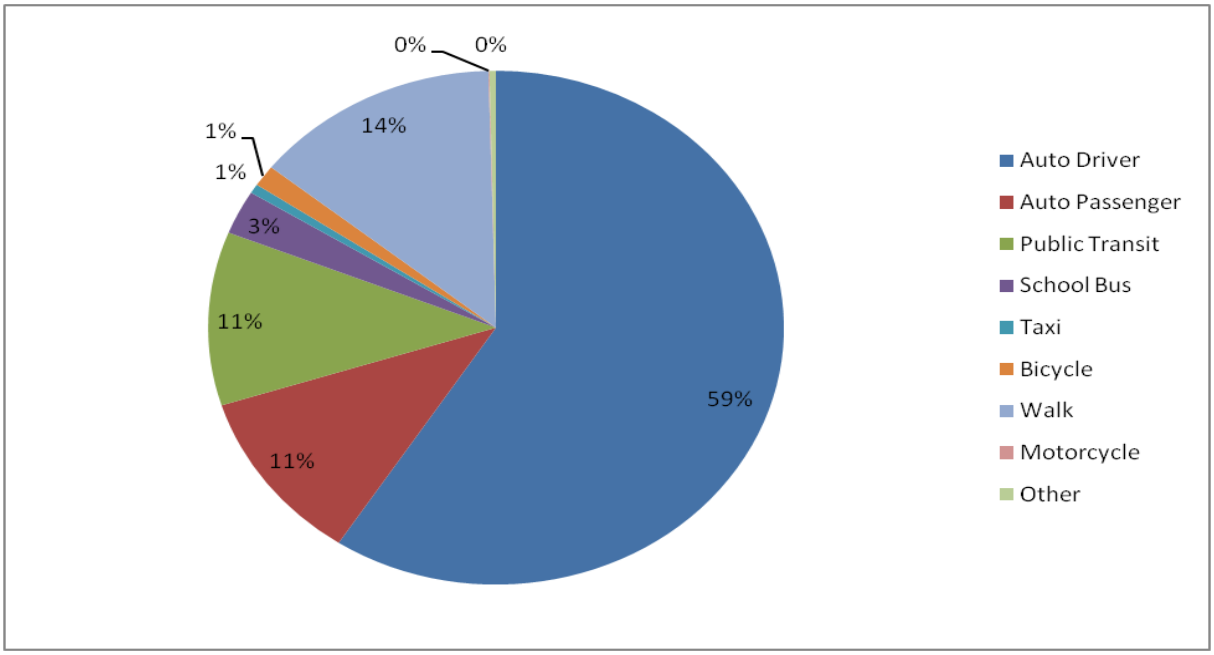


Exhibit 4-24: 2005 mode share (midday off-peak period)

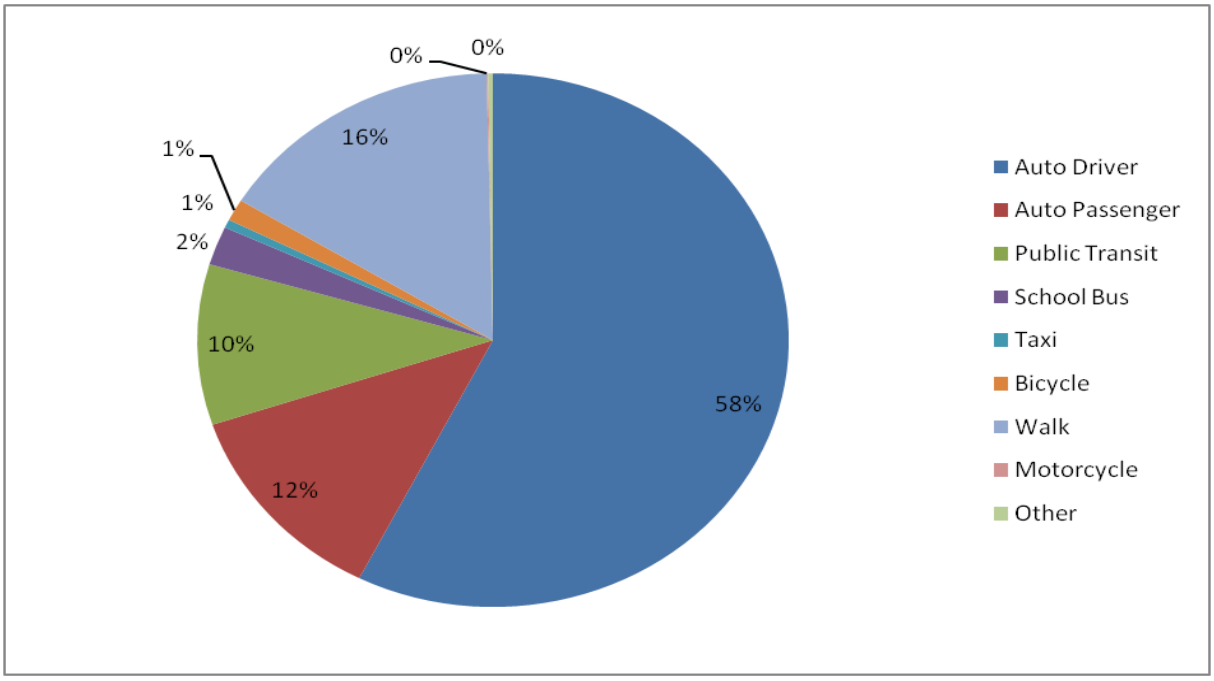


Exhibit 4-25: 1995 mode share (midday off-peak period)

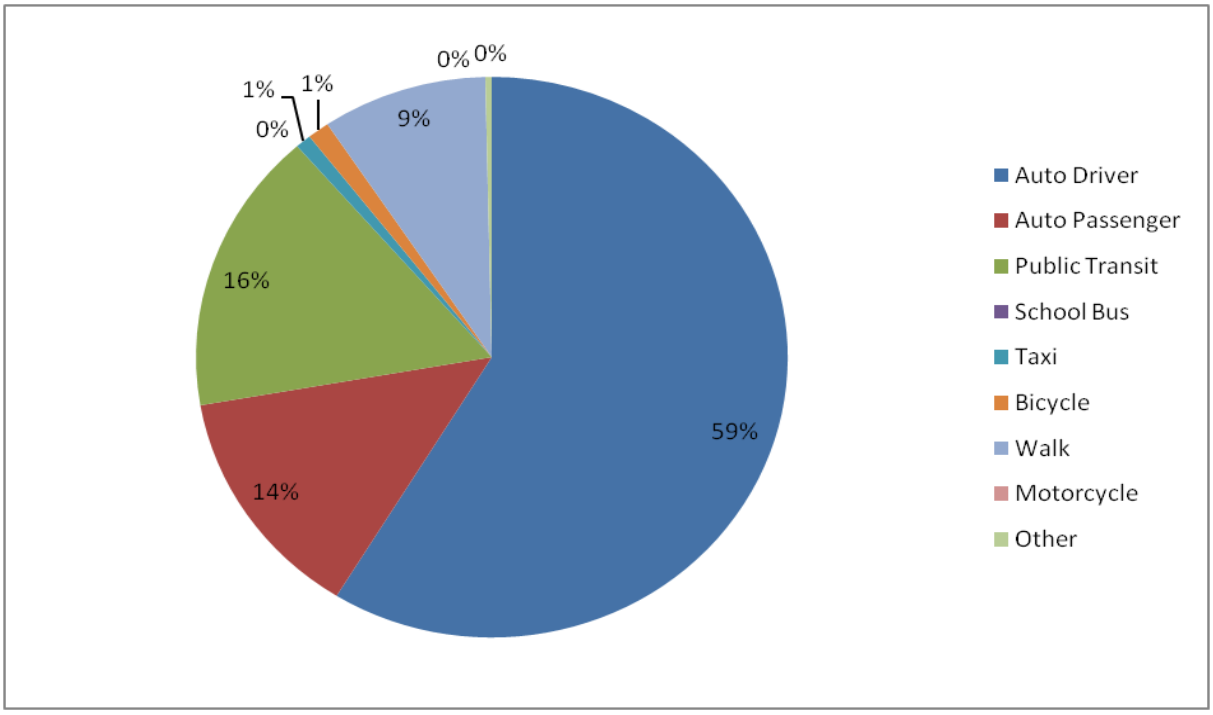


Exhibit 4-26: 1986 mode share (midday off-peak period)

The following series of exhibits present the varying influence of occupation status on mode choice over time, both in absolute numbers of trips and overall percentages of trips.

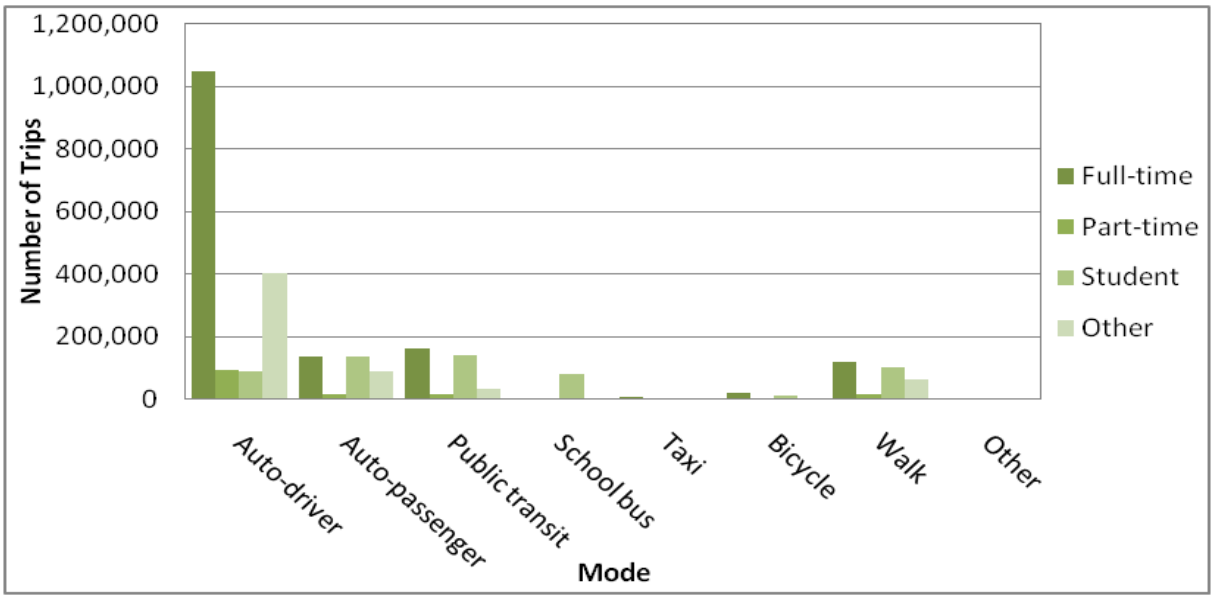


Exhibit 4-27: Trip breakdown by mode and occupation status (absolute numbers), 2005

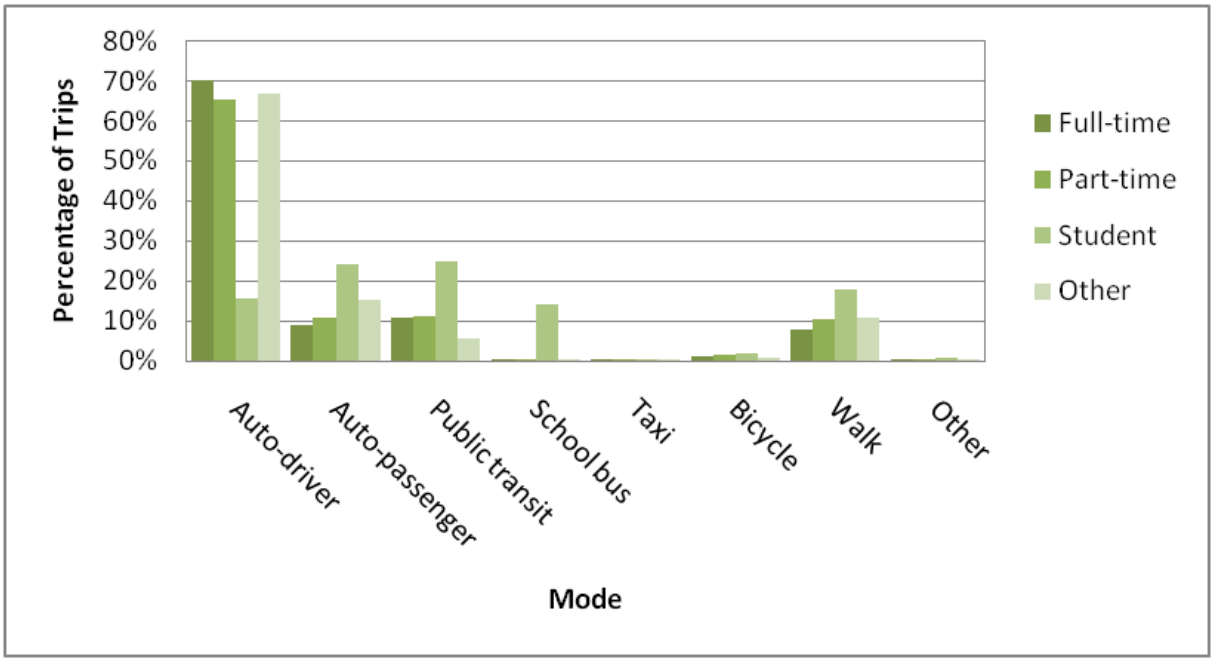


Exhibit 4-28: Trip breakdown by mode and occupation status (percentages), 2005

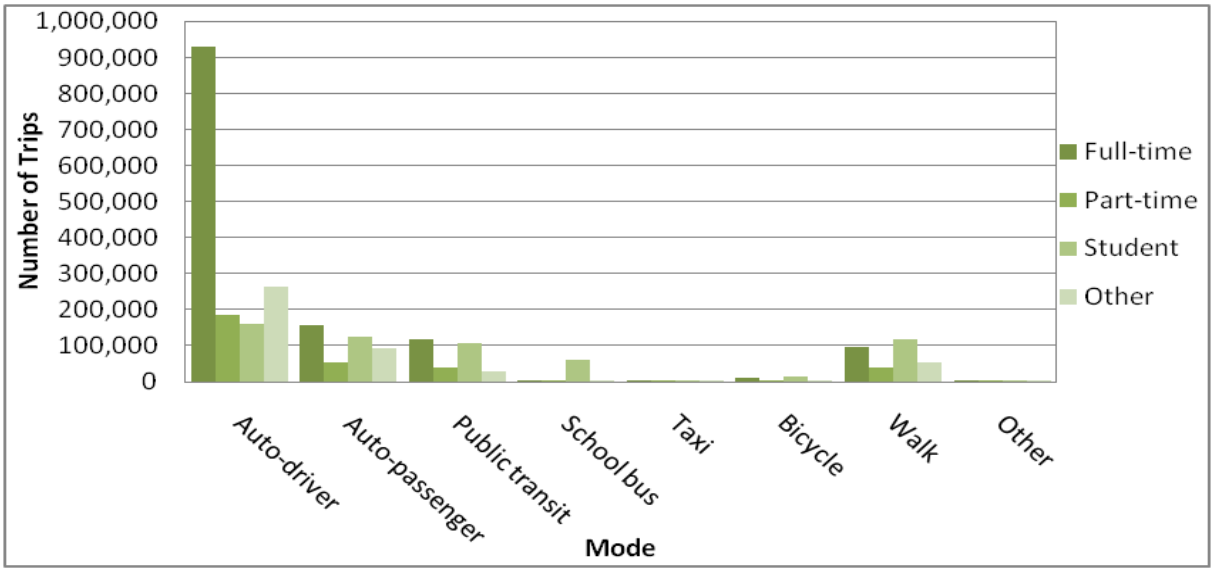


Exhibit 4-29: Trip breakdown by mode and occupation status (absolute numbers), 1995

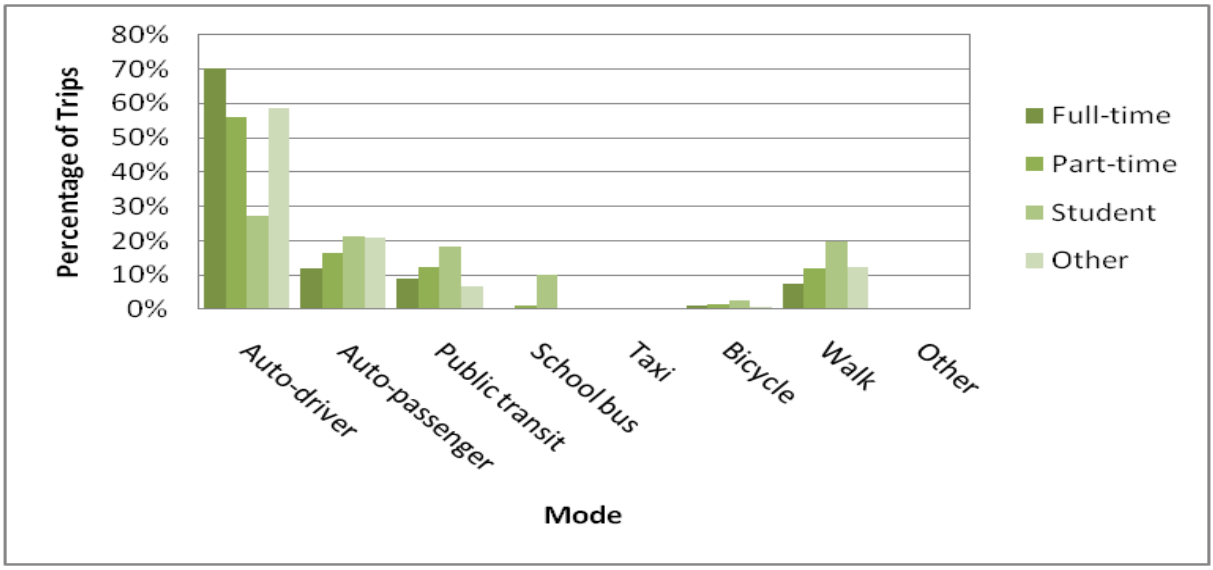


Exhibit 4-30: Trip breakdown by mode and occupation status (percentages), 1995

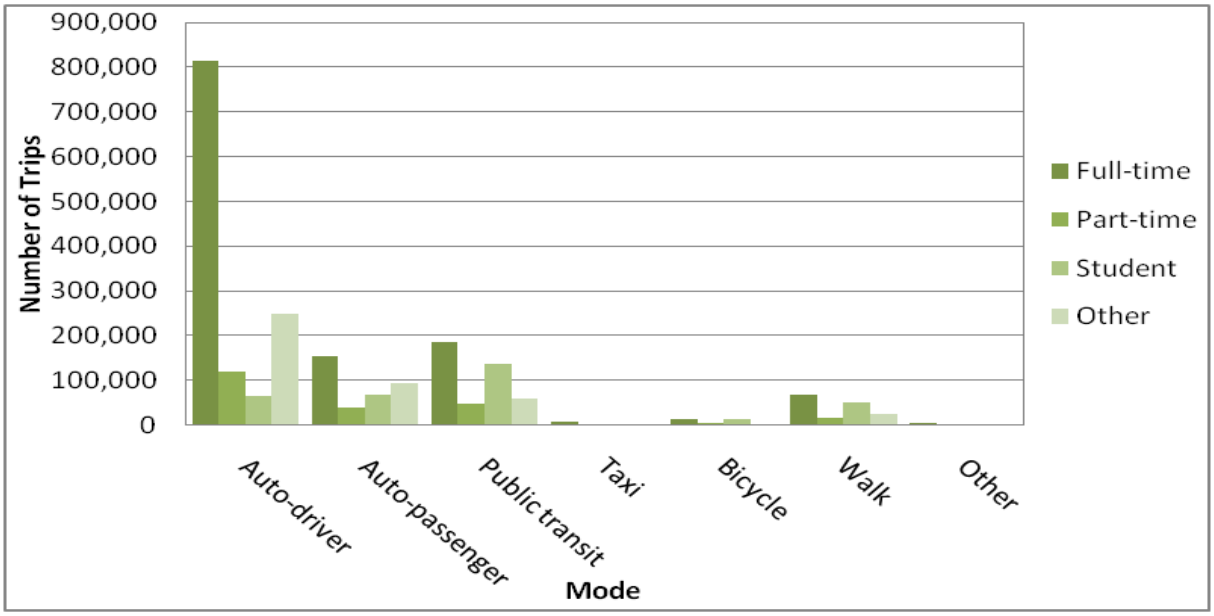


Exhibit 4-31: Trip breakdown by mode and occupation status (absolute numbers), 1986

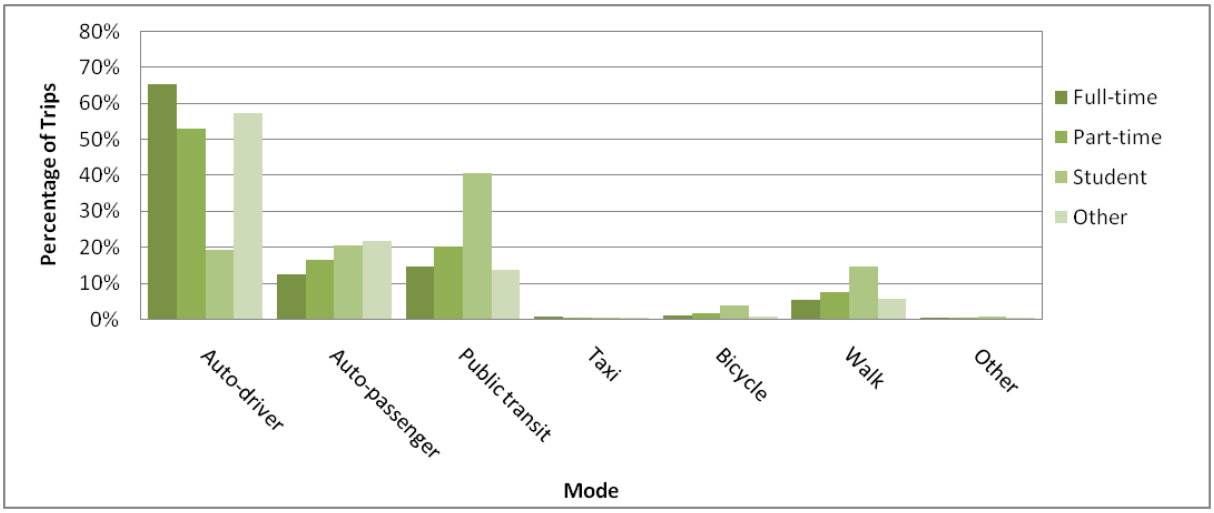


Exhibit 4-32: Trip breakdown by mode and occupation status (percentages), 1986

We can see from Exhibit 4-33, below, that there is an increasing trend in the percentage of driver's licence holders who opt to drive, up from 57% in 1986 to 63% in 2005. However, the number of licensed drivers who opt to take transit also increases, at least from 1995 to 2005. The number of overall trip-makers without licences varies from 16% of trips in 1986 to 19% in 1995 and 10% in 2005 (this does not include trips made by people under 11 years of age). Transit pass holder relationships were also reported in Part 1, but these data are not available for the earlier years.

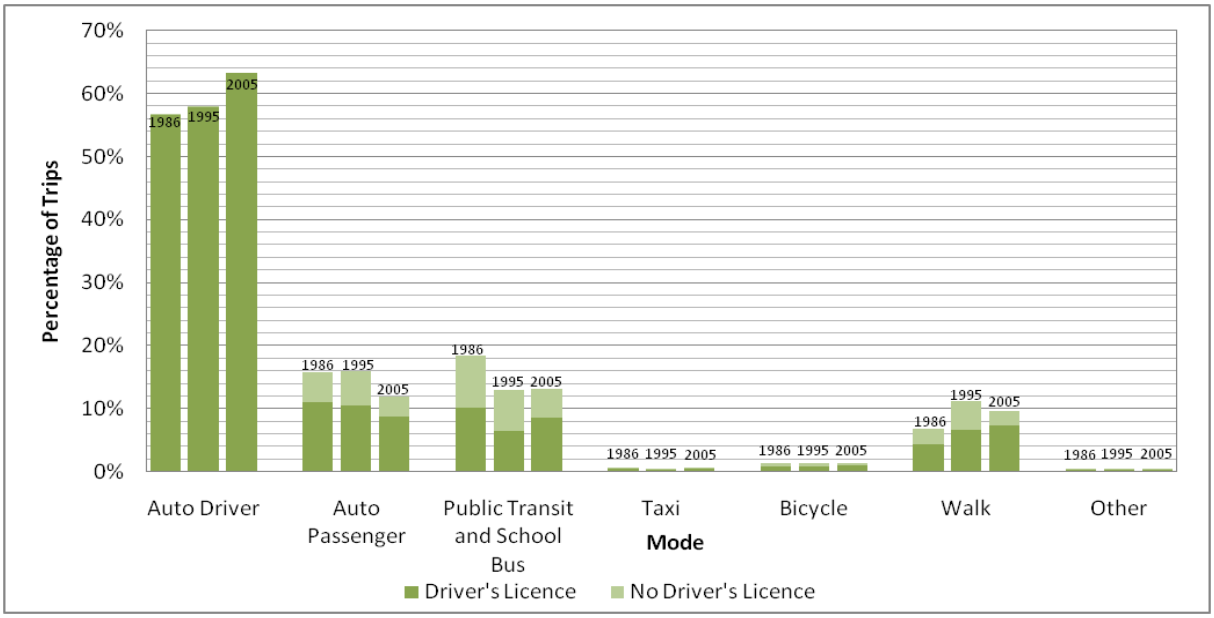


Exhibit 4-33: Trip breakdown by mode and licence status, 1986-2005

Exhibit 4-34, below, illustrates the number of daily trips made per resident of the NCR, by mode. As before, an overall decline in trip rate for motorized modes can be seen, possibly in connection with the decrease in the percentage of full-time workers.

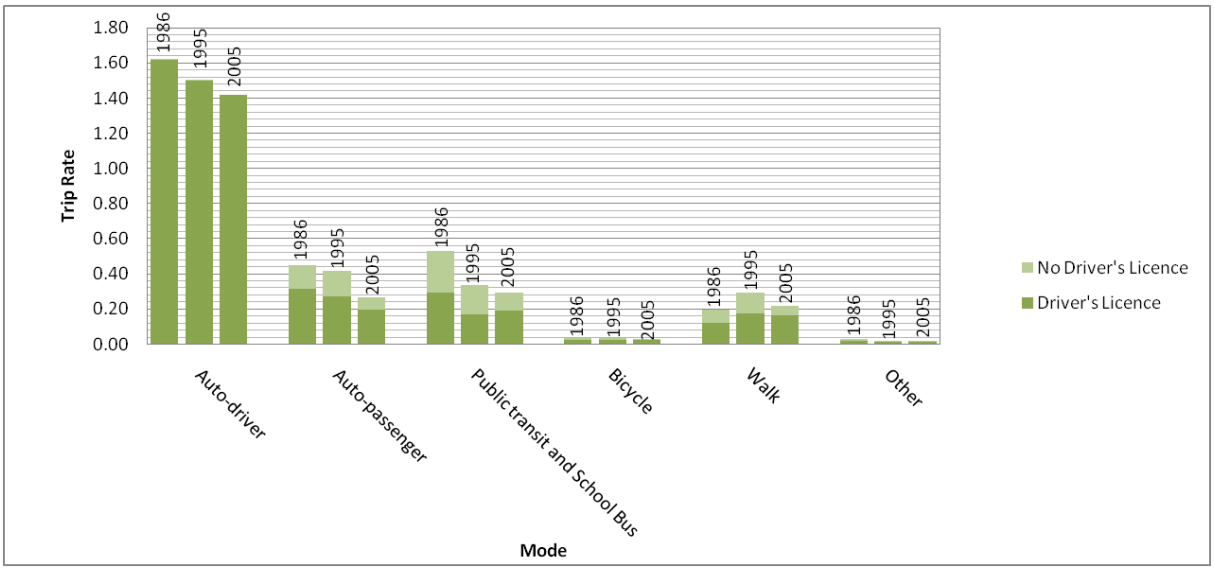


Exhibit 4-34: Modal trip rate trends by licence status, 1986-2005

From Exhibit 4-35, it can be seen that there is a notable increase in male auto passenger mode share in 1995 at the expense of drive mode share, but the 1986 pattern is resumed in 2005. Other modes are relatively constant.

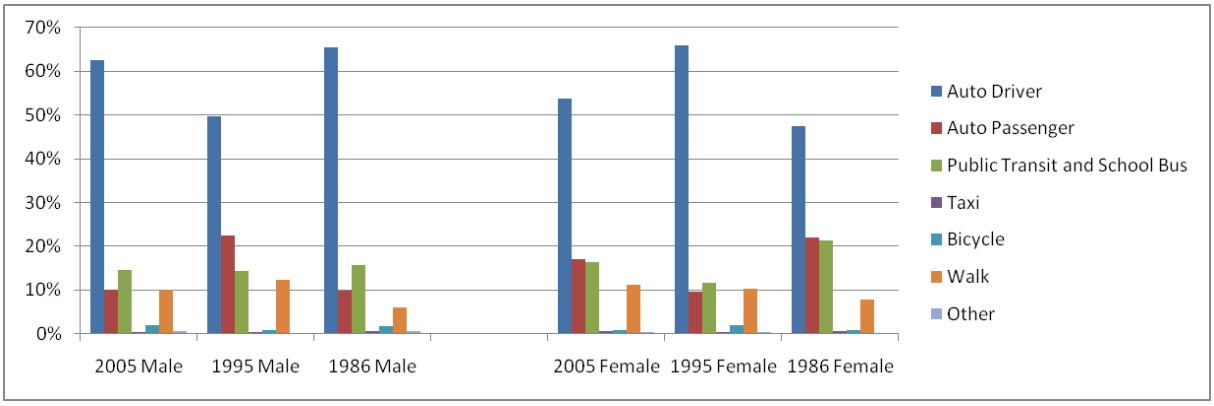


Exhibit 4-35: Trip breakdown by mode and gender, 1986-2005

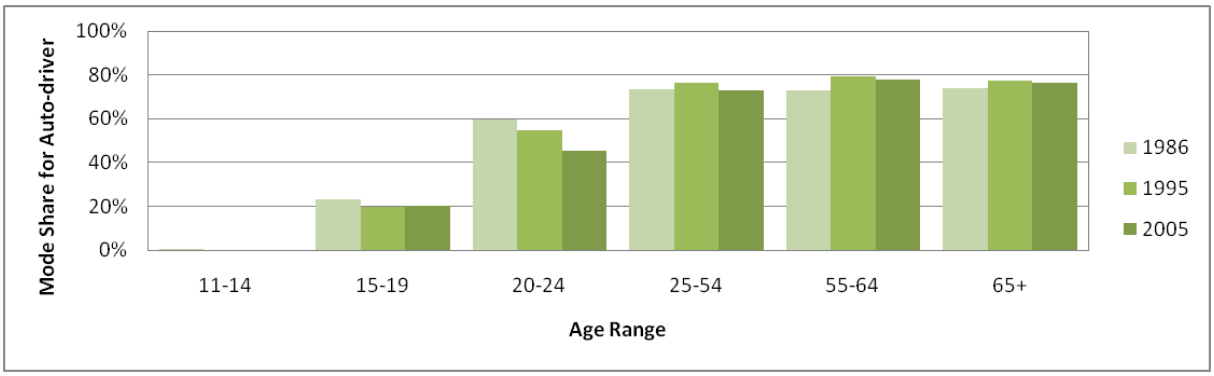


Exhibit 4-36: Male auto driver mode share by age group, 1986-2005

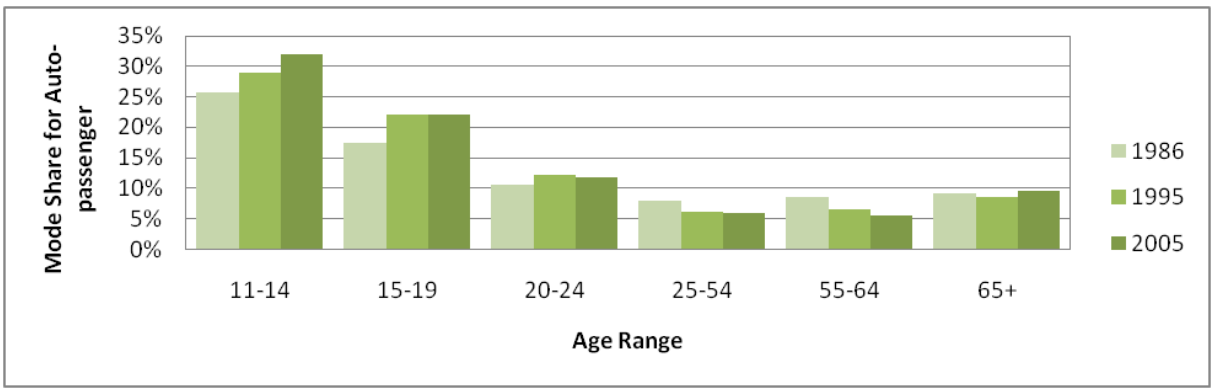


Exhibit 4-37: Male auto passenger mode share by age group, 1986-2005

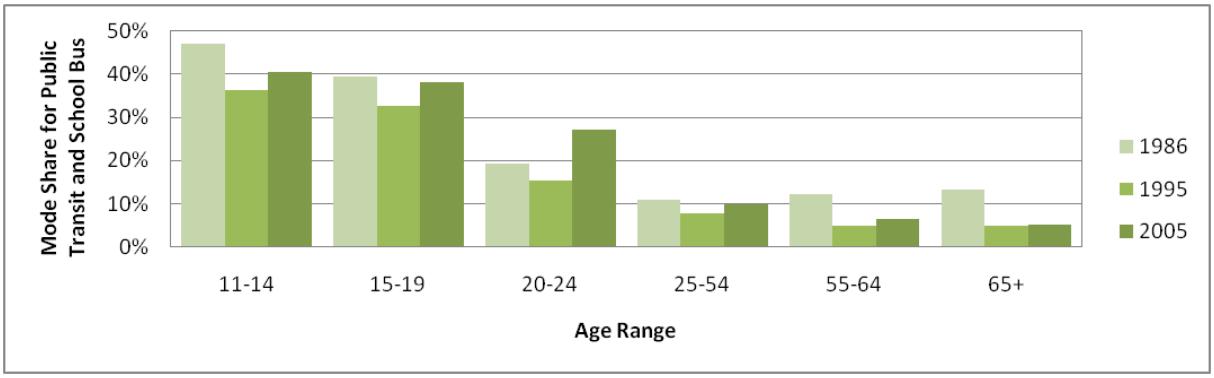


Exhibit 4-38: Male transit / school bus mode share by age group, 1986-2005

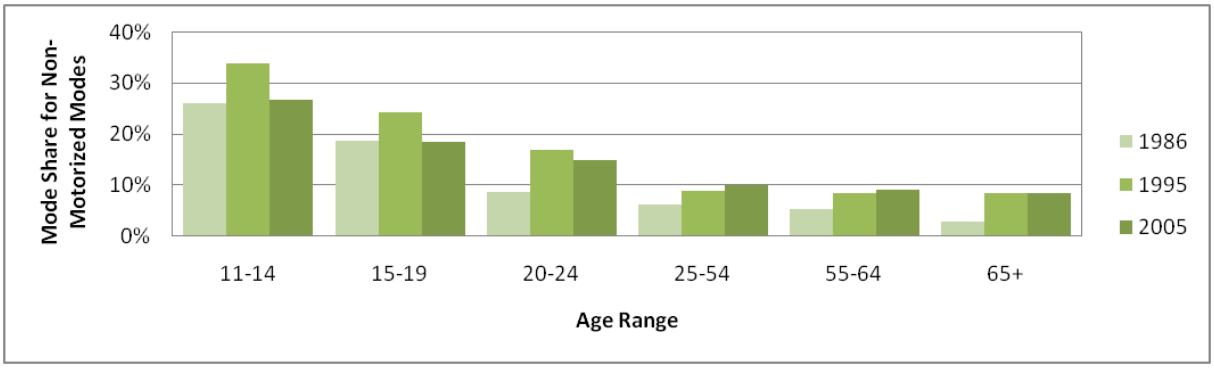


Exhibit 4-39: Male non-motorized mode share by age group, 1986-2005

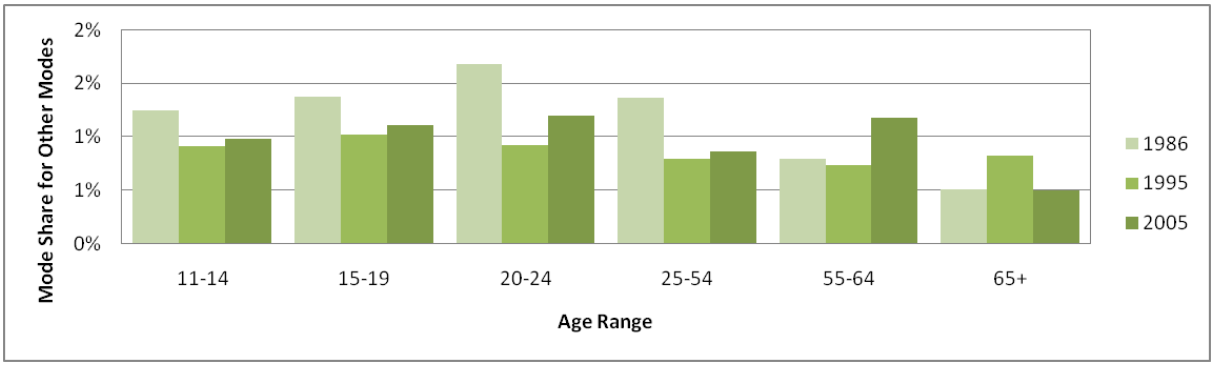


Exhibit 4-40: Male 'other' mode share by age group, 1986-2005

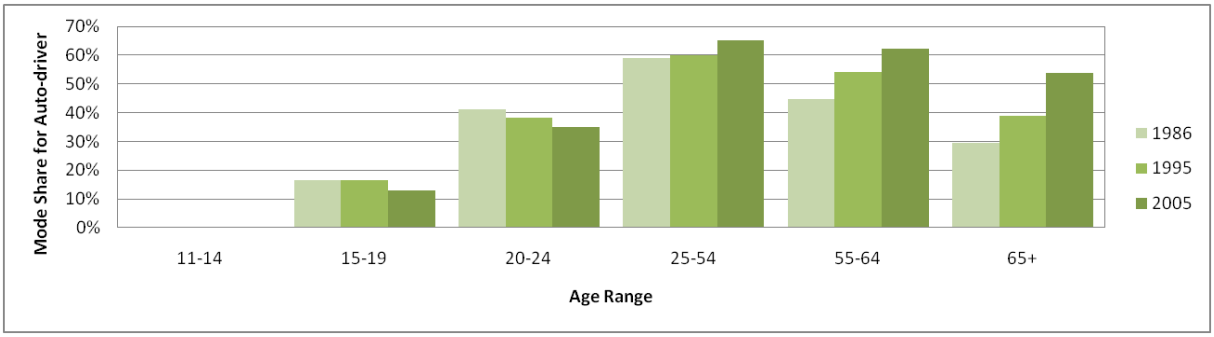


Exhibit 4-41: Female auto driver mode share by age group, 1986-2005

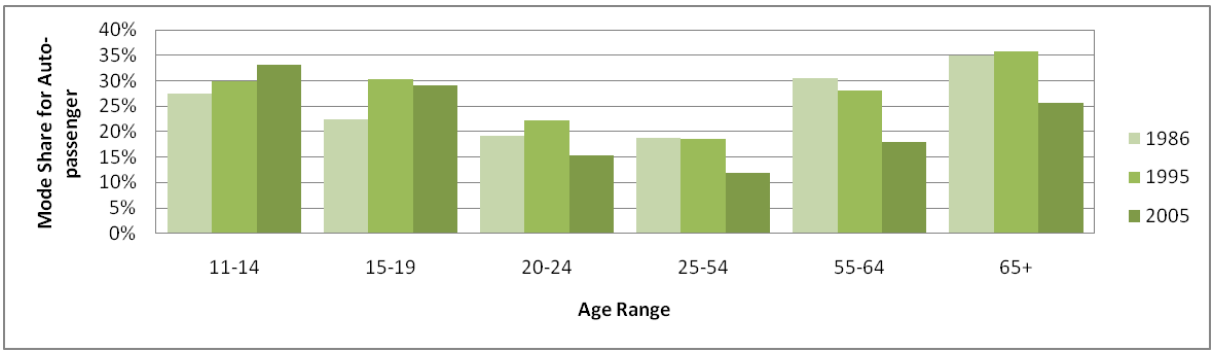


Exhibit 4-42: Female auto passenger mode share by age group, 1986-2005

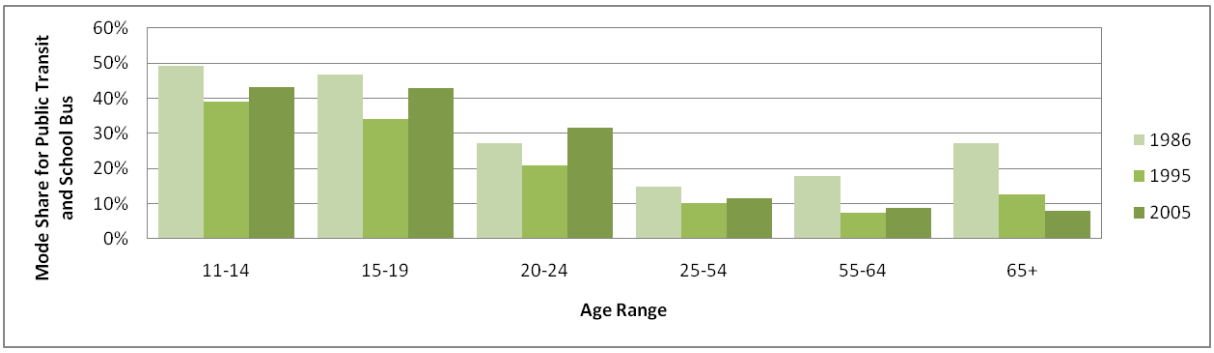


Exhibit 4-43: Female transit / school bus mode share by age group, 1986-2005

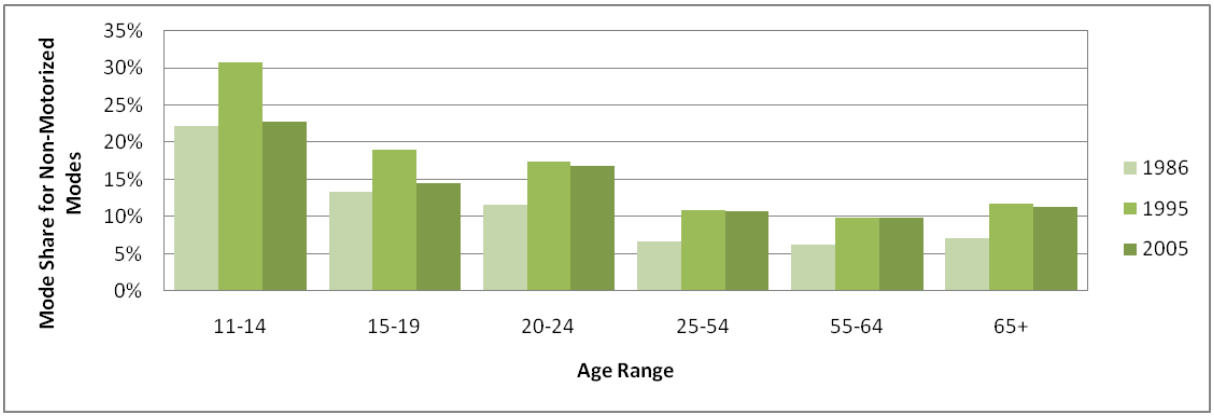


Exhibit 4-44: Female non-motorized mode share by age group, 1986-2005

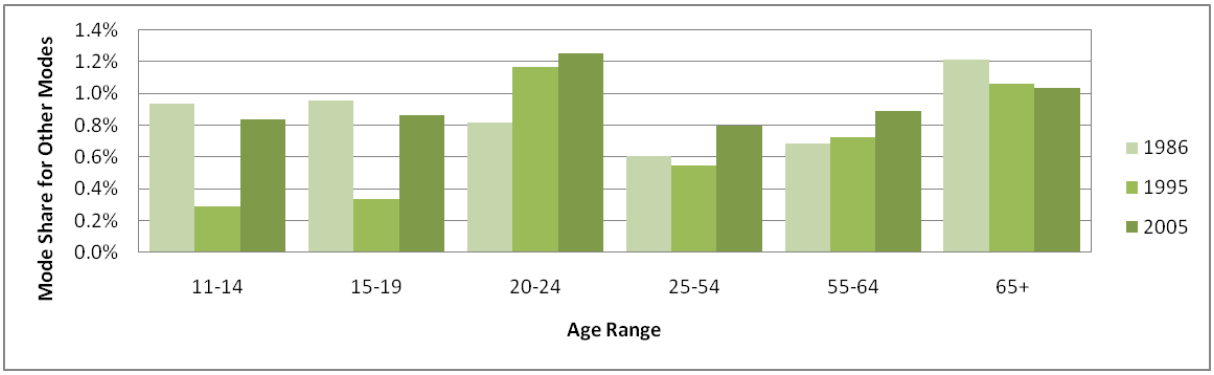


Exhibit 4-45: Female 'other' mode share by age group, 1986-2005

From the above exhibits we can note an increase in the auto drive mode share for women 25 and over, while auto passenger and transit show a corresponding decline. Meanwhile, the male auto drive mode share for men 25 and over has remained essentially the same, meaning that the difference between the genders is narrowing in this regard.

4.3 Mode choice by location

Observed trends:

- *For trips to and from the Ottawa CBD, the auto drive mode share was higher than the transit mode share in 1995, but lower in 1986 and 2005.*
- *The auto mode share has generally increased to over 50%, while transit mode share has decreased to below 25% for trips that end in Ontario. Transit within Gatineau; however, shows indications of an increased share.*

The following charts, from Exhibit 4-46 to Exhibit 4-50, describe the variation of mode share over time. The drop in transit (and school bus) mode share from 1986 to 1995, while drive and passenger shares increase, is particularly noticeable in Ontario, where the transit mode shares are higher initially than in Québec. In 1986 there is a noticeable difference between origin transit mode shares in Ontario (31%) and Québec (23%), with destinations (30% and 27%) much more similar, but by 2005 transit mode share in Ontario by origin has decreased to 27% while the Québec equivalent has risen to 25%. Québec transit shares do decrease between 1986 and 1995, which may be partly due to the removal of provincial public transportation funding in Québec in 1992. The differences between origin and destination mode shares are now minimal for the AM peak period for both Ontario and Québec districts.

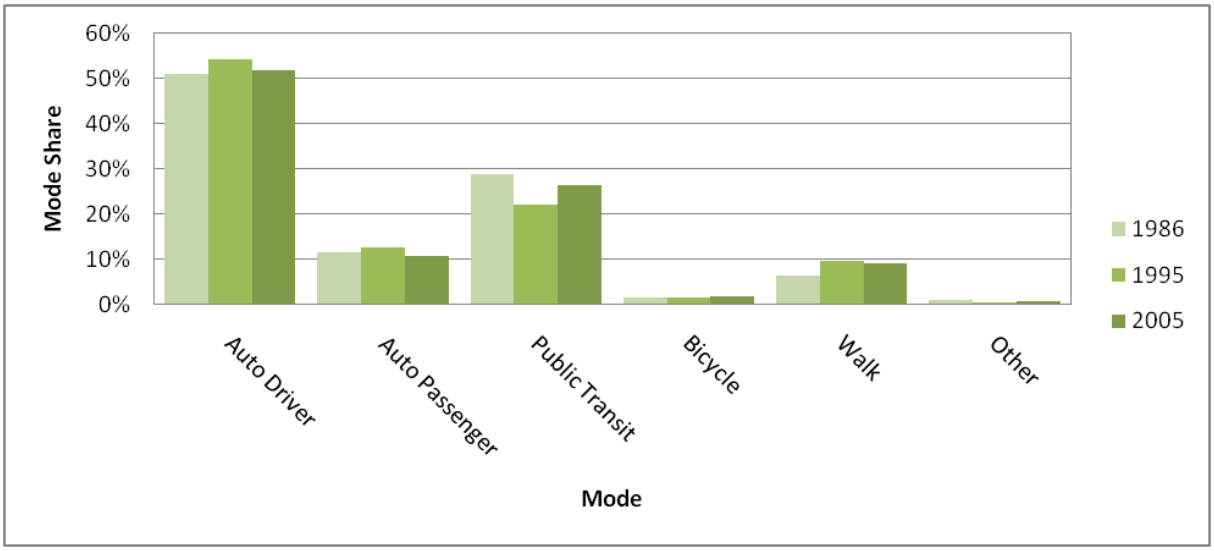


Exhibit 4-46: AM peak period mode shares (NCR), 1986-2005

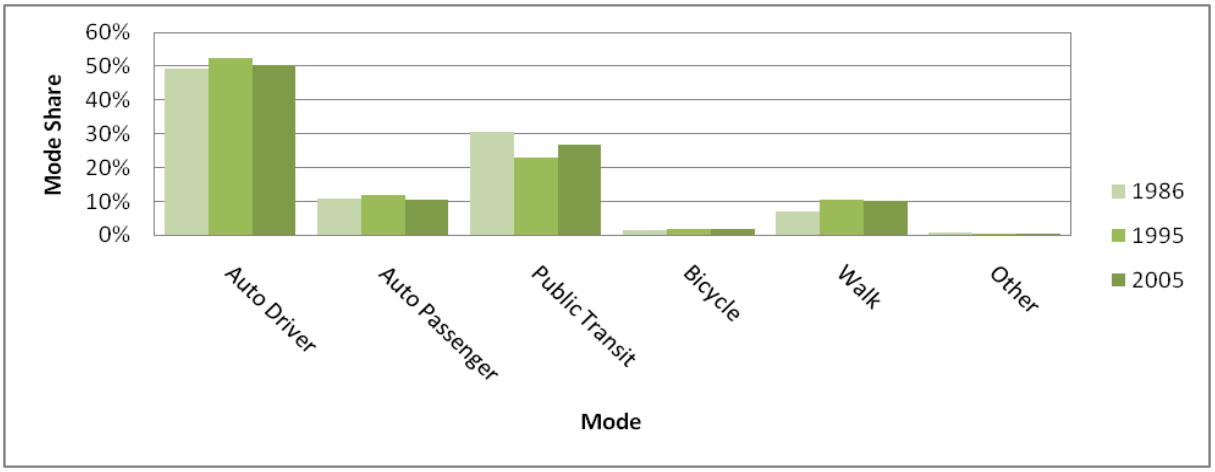


Exhibit 4-47: AM peak period origin mode shares (Ontario), 1986-2005

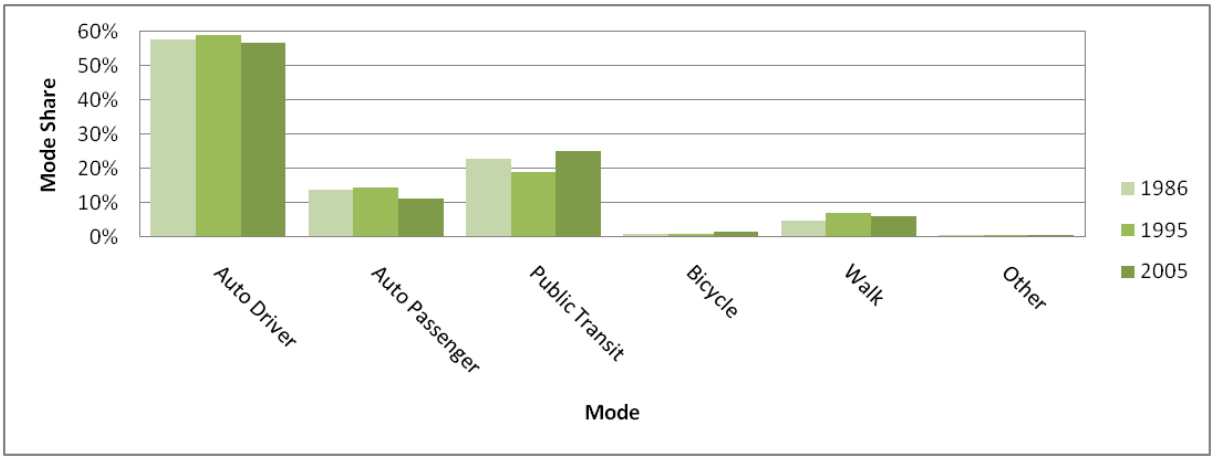


Exhibit 4-48: AM peak period origin mode shares (Québec), 1986-2005

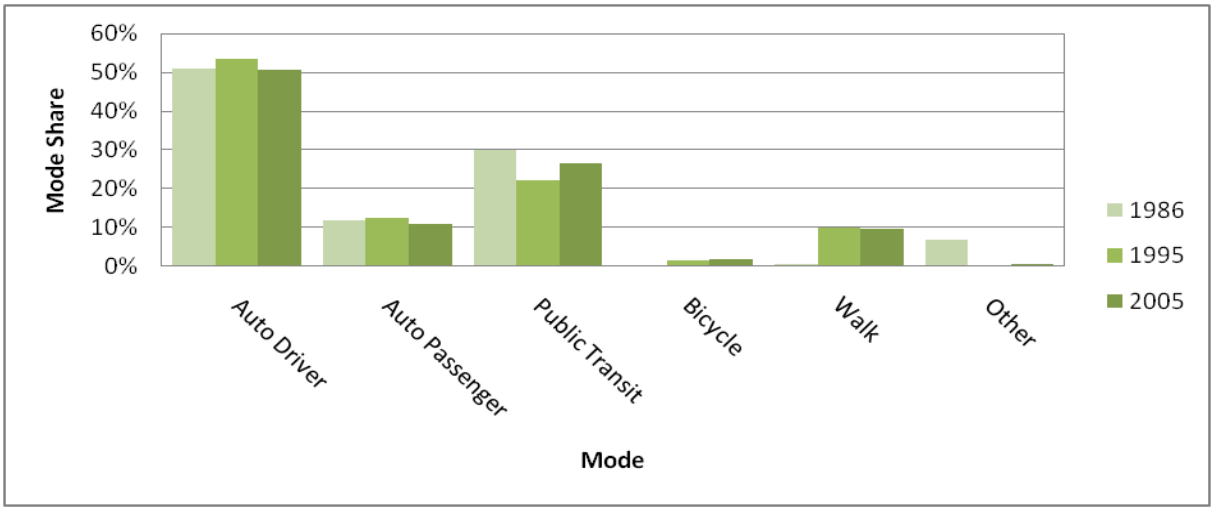


Exhibit 4-49: AM peak period destination mode shares (Ontario), 1986-2005

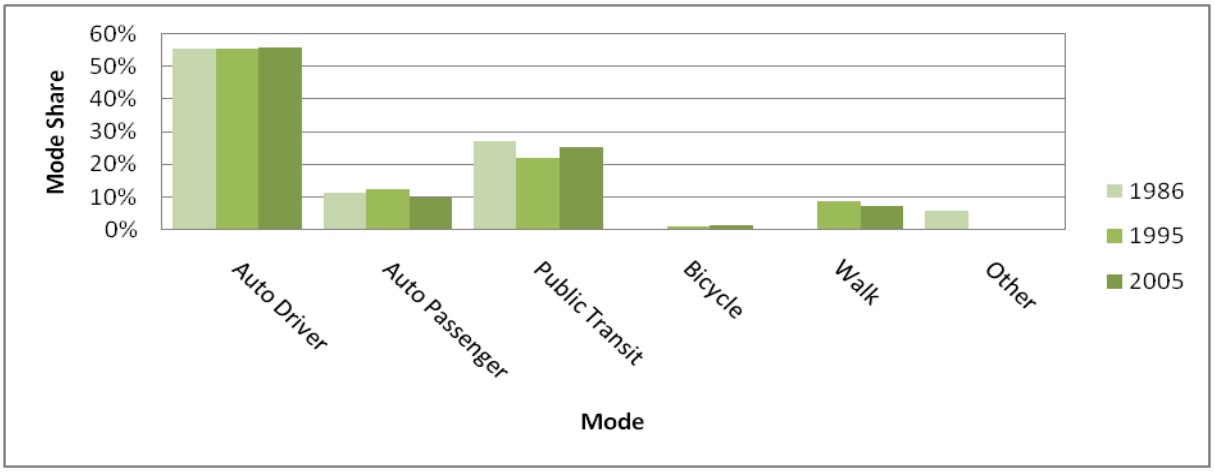


Exhibit 4-50: AM peak period destination mode shares (Québec), 1986-2005

For AM peak period trips originating in or destined to the high-density CBD (Ottawa Centre), as shown in Exhibit 4-51, auto drive and public transit have similar shares. Transit, with a mode share of 40%, exceeds the 35% share of driving in 2006. This is a reversal of the situation in 1995, though it is a lower number than the 45% transit share of 1986. Walking is in third place in 2006 with 13%, up from 7% in 1986 (non-motorized in total is 15% if cycling is included). Auto passenger, at 8%, has decreased from 12% in the earlier years.

Comparing with other cities between 1996 and 2006[21], transit mode shares to the Ottawa CBD (39% and 43%) are not dissimilar to those to other CBDs, such as Vancouver (38% and 30%), Toronto (47% and 52%) and Montréal (50% and 47%). The non-motorized mode share to Ottawa (12% and 13%) exceeds Toronto (5% and 8%) and Montréal (7% and 12%) although there appears to have been a huge increase in Vancouver over the same time (7% to 25%).

[21] Transportation Association of Canada, Urban Transportation Indicators Fourth Survey Final Report, TAC, December 2009, p.35

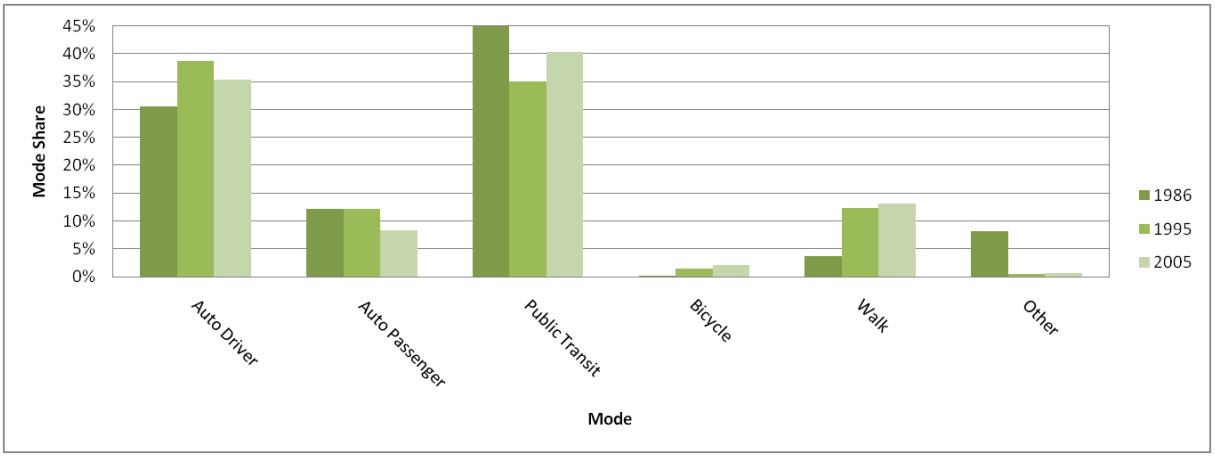


Exhibit 4-51: AM peak period origin + destination mode shares (Ottawa Centre), 1986-2005

In the following charts (Exhibit 4-52 and Exhibit 4-53), we expand on the trip flow data presented in Section 3.1 to see how the AM mode share varies by origin and destination district type. Here, the modes are aggregated so that "auto" includes drive, passenger, taxi, motorcycle and 'other,' "non-motor" includes walk and cycle, and "transit" includes public transit. For this comparison, the school bus mode is omitted (so 1986 must be left out as it does not distinguish school bus from public transit) as it would make an auto against transit comparison difficult, especially in rural areas where there are considerably more school bus users than public transit users.

From these charts, we notice an increase in transit and non-motorized mode shares originating in urban and central areas in both Ottawa and Gatineau, and a corresponding decrease in auto mode shares. The same can be seen for destinations except for urban and suburban Ottawa districts, which retain almost the same mode shares. For work trips (Exhibit 4-54), transit mode share specifically for work trips is similar in 1986 and 2005 for Ontario residents (with a drop in 1995) while it has increased for Québec residents so that now both Ottawa and Gatineau have similar work transit mode shares for similar district types. These are in the 16%-21%, apart from in rural areas where transit service can be expected to be lower.

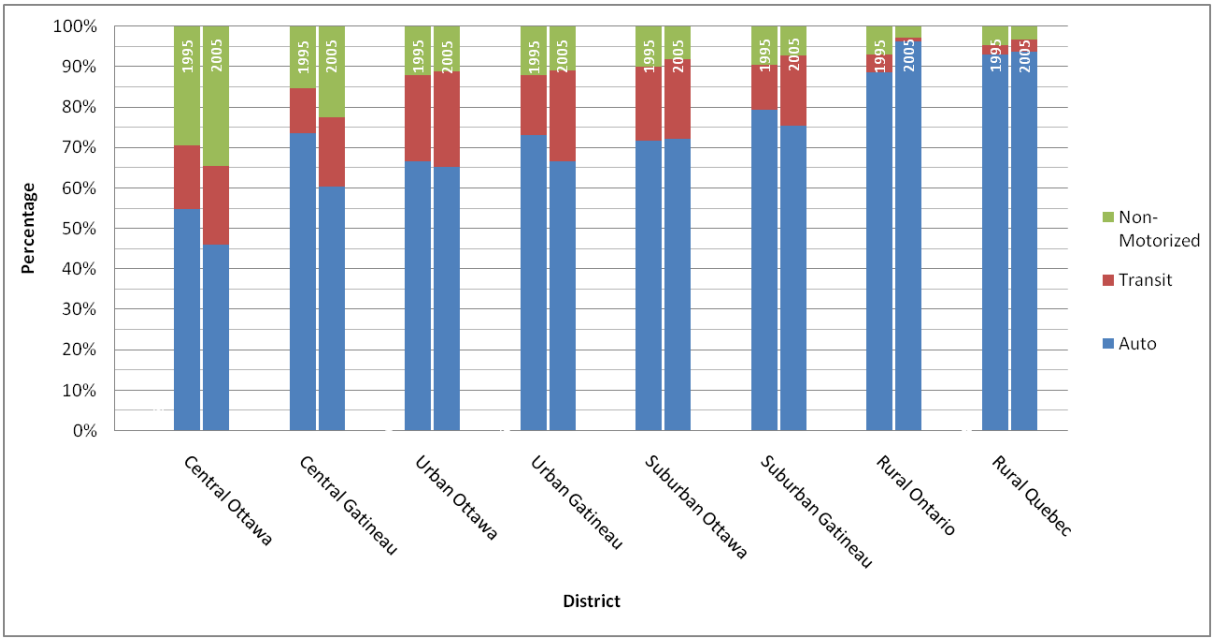


Exhibit 4-52: AM peak period origin mode shares by district type, 1995-2005

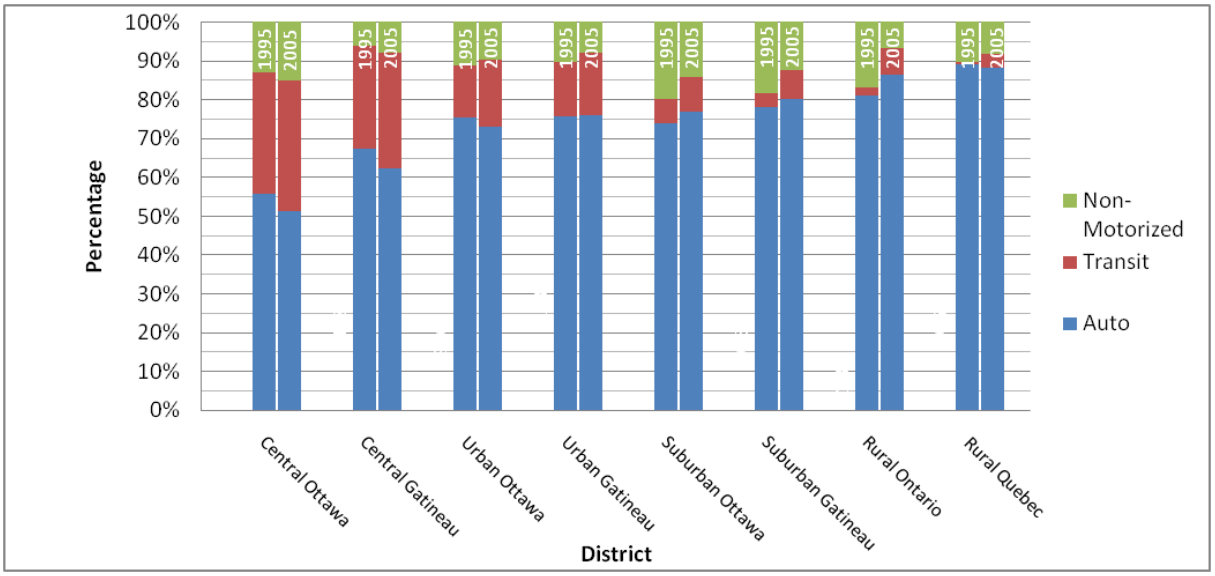


Exhibit 4-53: AM peak period destination mode shares by district type, 1995-2005

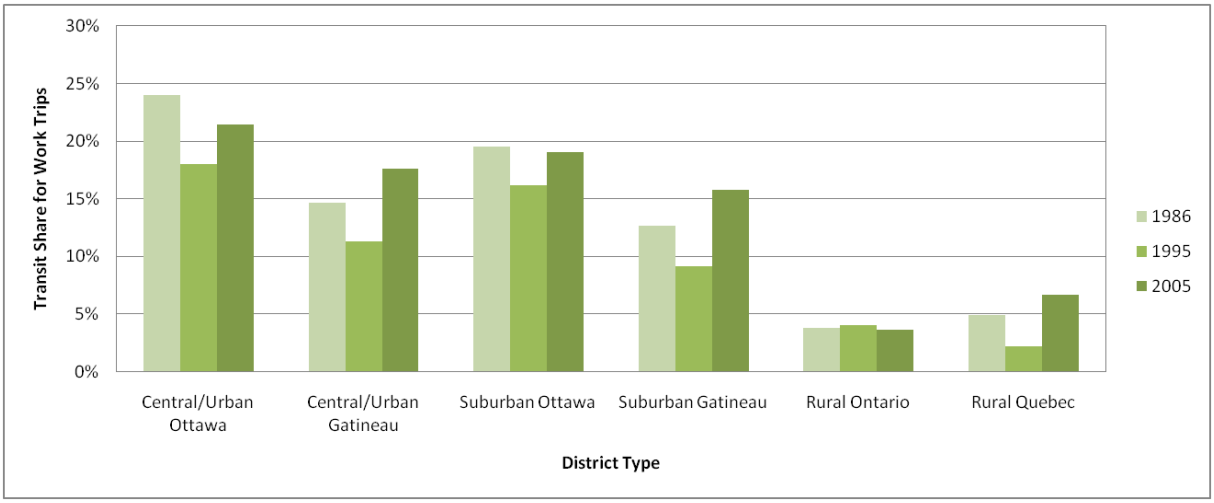


Exhibit 4-54: Transit work trip mode share by district type, 1986-2005

4.4 Ridesharing patterns

Observed trends:
- *Average auto occupancy decreases for three-person, one-vehicle households from 1.5 to 1.4*
- *Small decreases are also noted in the average PM peak and off-peak auto occupancies, the AM peak is less affected*

The following analysis investigates how the popularity of ridesharing, i.e., the popularity of the auto passenger mode, is influenced by geographic, personal and household attributes, as well as the types of trips that are being made by auto passengers.

Exhibit 4-55 tabulates the auto passenger share for all trips by district of residence and survey year. The exhibit shows that over most of the districts the mode share taken up by auto passengers, indicating the amount of ridesharing that occurs, is relatively constant between 10% and 15%. There are, however, some rural areas where there has been a large decrease over time, from more than 20% down to the more usual 10-15%, but in these cases the overall number of trips is not very high, which may account for greater fluctuations. Gatineau Centre and the Rural Northwest show a substantial increase from 5% to 15% (Gatineau Centre goes from being the district with the lowest percentage in 1986 to having the highest in 2005). In summary, the auto passenger mode percentage fluctuates greatly among the districts in 1986, but by 2005 has become much less variable.

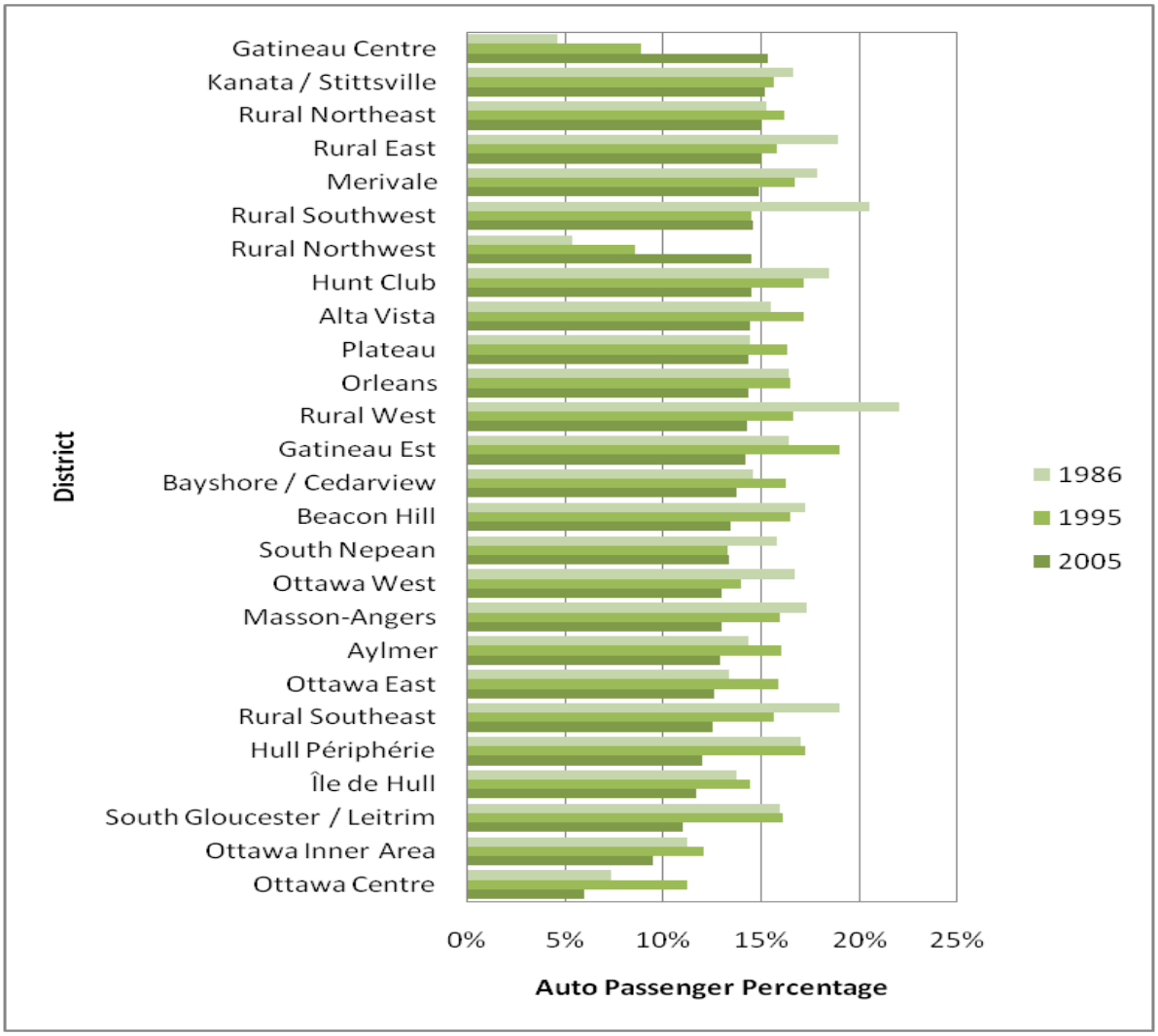


Exhibit 4-55: Choice of auto passenger mode by geographic location of residence, 1986-2005

The next three charts (Exhibit 4-56 to Exhibit 4-58) indicate for the NCR and its Ontario and Québec parts how the increasing number of vehicles per household member influences vehicle occupancy. There are no significant differences between the survey years (numbers for four-person one-vehicle households are low which may explain the fluctuation there), apart from a slight drop in occupancy in Ontario for three-person households, which is not reflected in Québec.

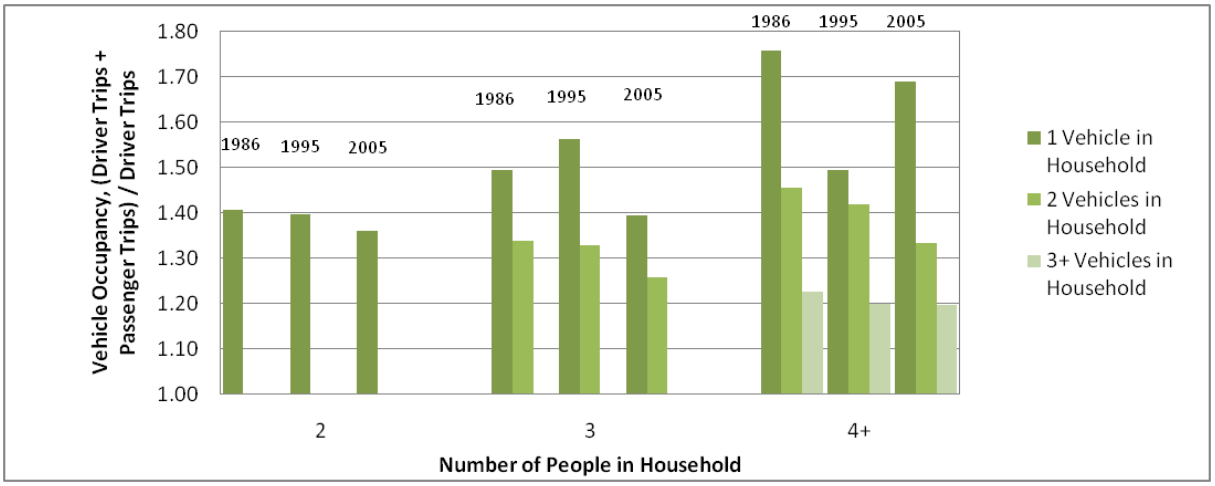


Exhibit 4-56: Ridesharing patterns by household size (NCR), 1986-2005

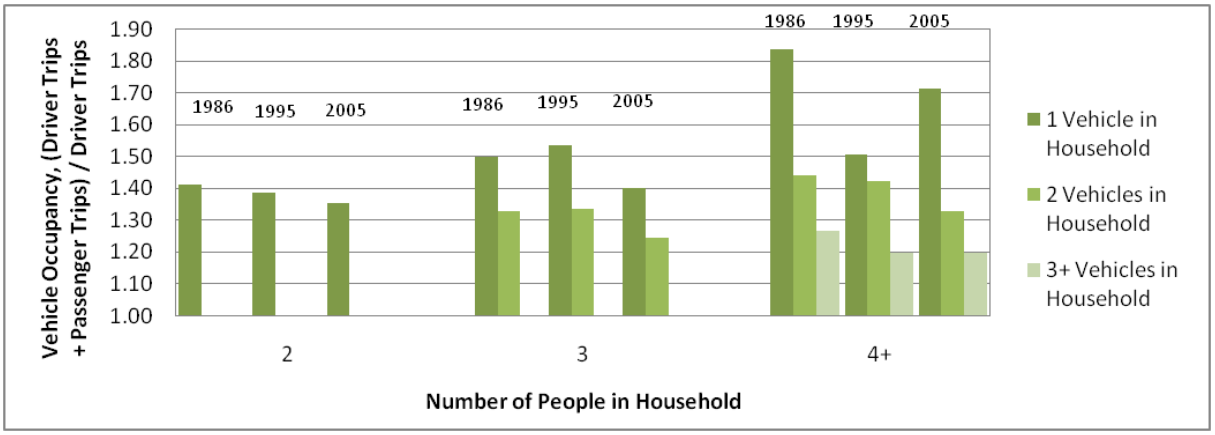


Exhibit 4-57: Ridesharing patterns by household size (Ontario), 1986-2005

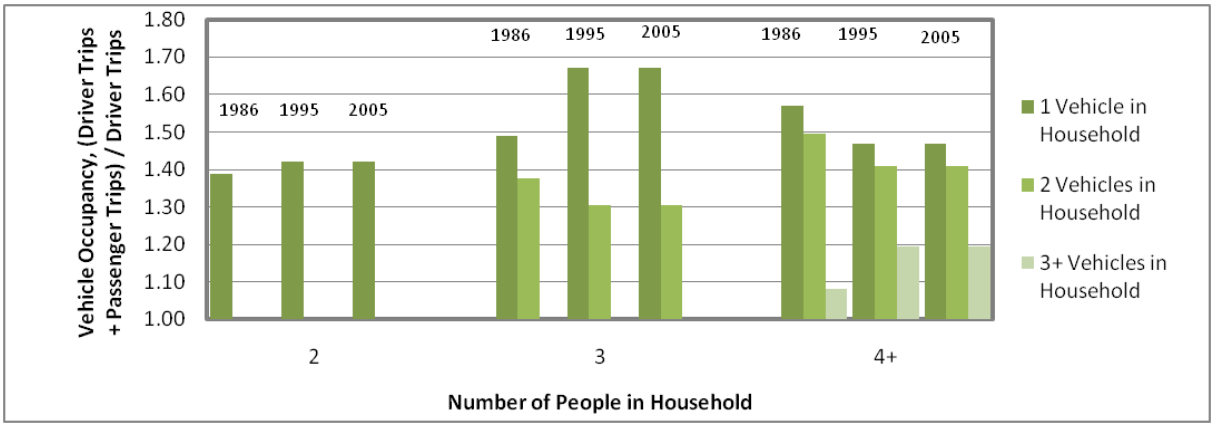


Exhibit 4-58: Ridesharing patterns by household size (Québec), 1986-2005

Exhibit 4-59 compares ridesharing statistics, in the form of auto occupancy estimates, over the course of the day. Based on a comparison of occupancies between years (1986 occupancies are not available) there appears to be a slight trend towards lower auto occupancy from 1995 to 2005, as this is reflected in all time periods, although less in the AM peak than later on in the day. The off-peak has fewer school trips, which may help to explain the lower overall average occupancy.

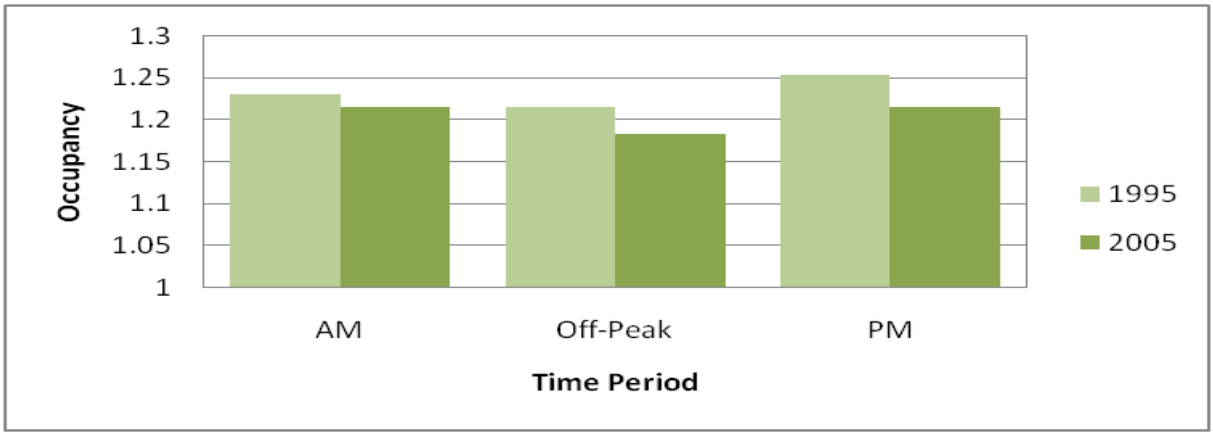


Exhibit 4-59: Ridesharing patterns by time period, 1995-2005

4.5 Conclusion

This chapter has identified the following trends between 1986 and 2005:

- Many characteristics, such as properties of driver's licence holders, and auto occupancy/ridesharing patterns, remain essentially unchanged;
- The number of household vehicles per worker has increased for all household sizes, but especially for one-person households (by 50%) and two-person households (by 20%);
- Transit mode share has decreased over time (a pattern also noticed in other Canadian cities) from 18% to 15%, though as it was 13% in 1995, the latest trend shows an increase. Meanwhile, the walk mode share has increased from 7% to 11%, and the auto share has virtually stayed the same;
- The overall drop in transit from 1986 to 1995 can be noticed especially in trips destined to Ontario districts, but there is a recovery post-1995, especially in Gatineau;
- An increase in transit and non-motorized travel has occurred primarily in central and urban districts, except for trips destined to urban Ottawa. Over time, Gatineau has almost caught up to Ottawa in terms of non-auto mode share for similar district types, and in transit work trip mode share.

5. Public Transit

This chapter focuses more closely on the specifics of transit users; their age range, gender balance, household characteristics and why they use transit, in order to understand some of the motivating factors behind transit use in the NCR over time.

5.1 Demographic characteristics of transit users

Observed trends:

- *There is a proportional increase in transit use in the 25-54 age group in 1995, resulting in over 50% of all transit users falling into this category. However, transit use reverts back to the previous proportion in 2005, driven by a decrease in Ontario.*
- *The proportion of transit users in the 15-24 age categories increases over time in Ontario and overall, but decreases in Québec.*

The following charts, Exhibit 5-1 to Exhibit 5-3, indicate how the overall transit mode share (15% in 1986, 10% in 1995 and 13% in 2005) is distributed amongst age groups.

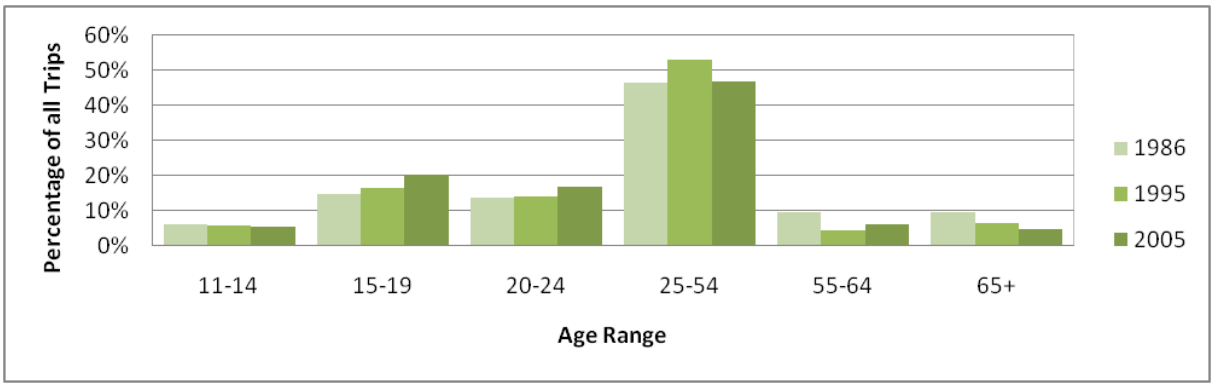


Exhibit 5-1: NCR transit user percentages by age group, 1986-2005

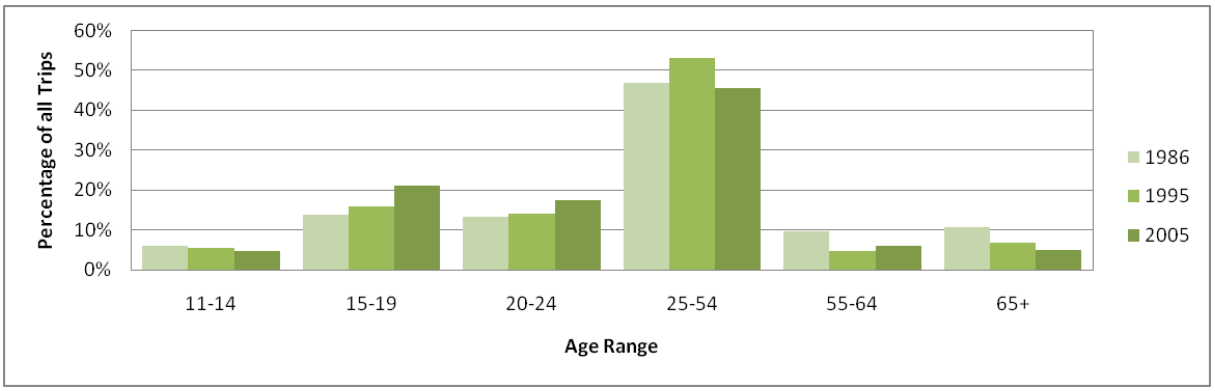


Exhibit 5-2: Ontario transit user percentages by age group, 1986-2005

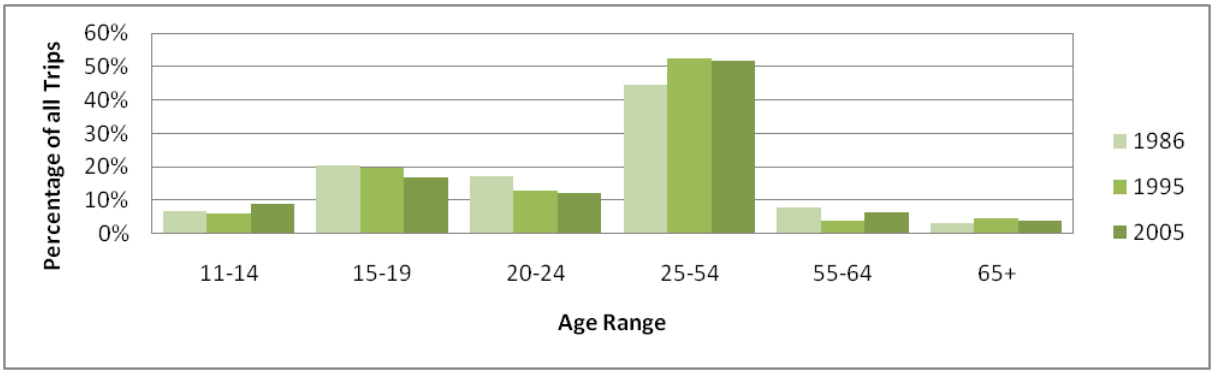


Exhibit 5-3: Québec transit user percentages by age group, 1986-2005

Exhibit 5-4 to Exhibit 5-6 show, for each age group, how transit mode share split by gender varies across the years. The female transit share remains consistently above the male share over time. A general trend for the female share to increase with age is particularly noticeable in 1995 and for Gatineau.

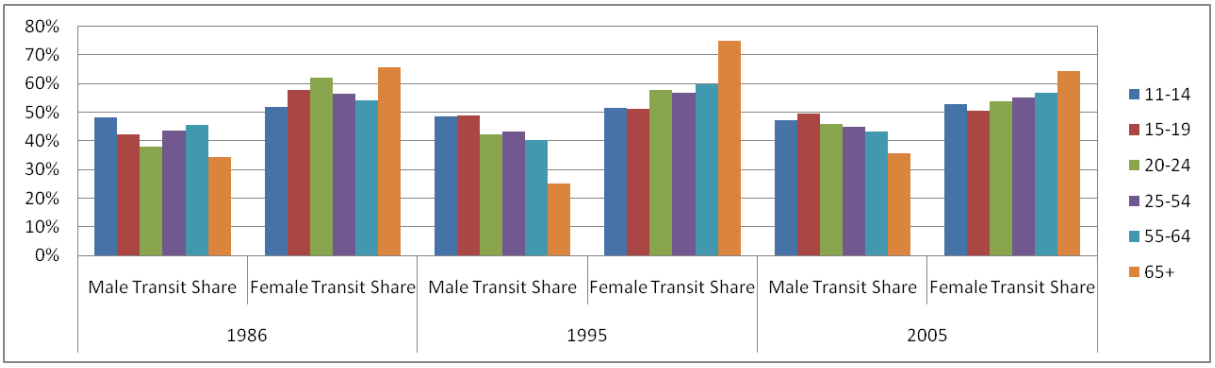


Exhibit 5-4: NCR transit mode share by gender, 1986-2005

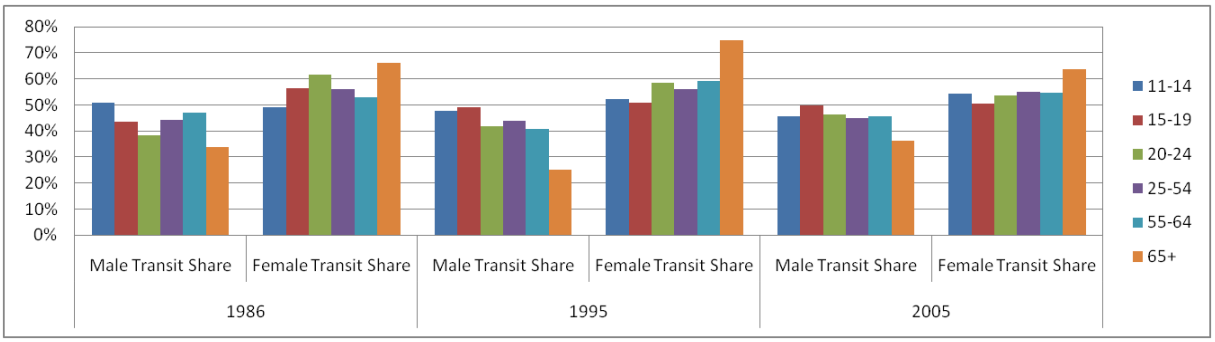


Exhibit 5-5: Ontario transit mode share by gender, 1986-2005

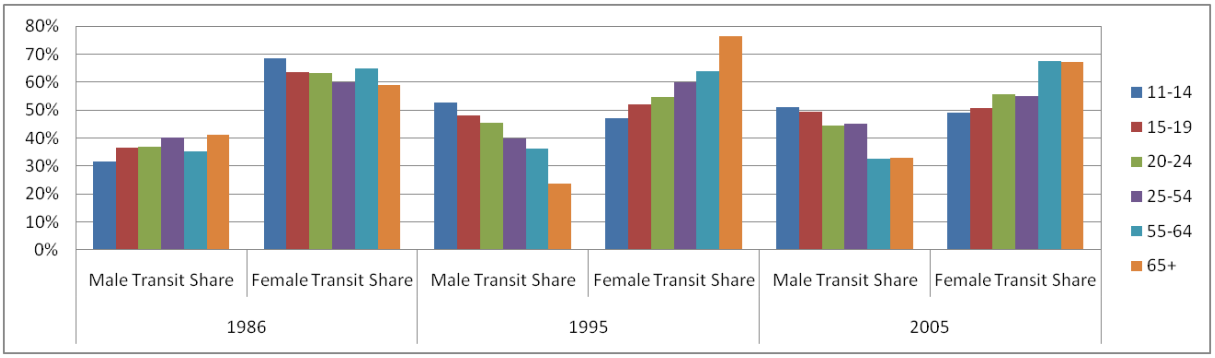


Exhibit 5-6: Québec transit mode share by gender, 1986-2005

5.2 Household characteristics of transit users

Observed trends:

- *The transit mode share in 0-vehicle households has decreased from 58% in 1986 to 44% in 2005, though it has increased from 38% in 1995.*
- *The transit mode share in multiple-worker households is consistently marginally lower than that for one-worker households, a comparison that does not vary between the years.*

As seen in Exhibit 5-7, transit mode share is very slightly lower for households with multiple workers than for one-worker households. This tendency is the same for all years.

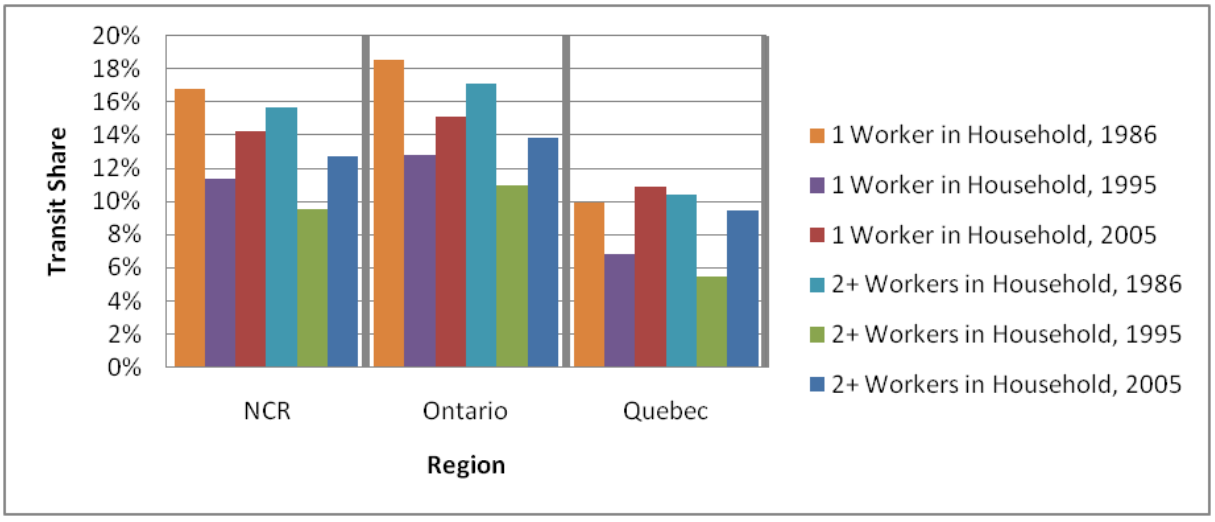


Exhibit 5-7: Transit mode share by household number of workers, 1986-2005

Living in a no-vehicle household makes it much more likely that a person will take transit, as the mode share is much higher for these households, as shown in Exhibit 5-8,

but this percentage has decreased to some degree over time, from 50%-60% in 1985 to 40% -45% in 2005.

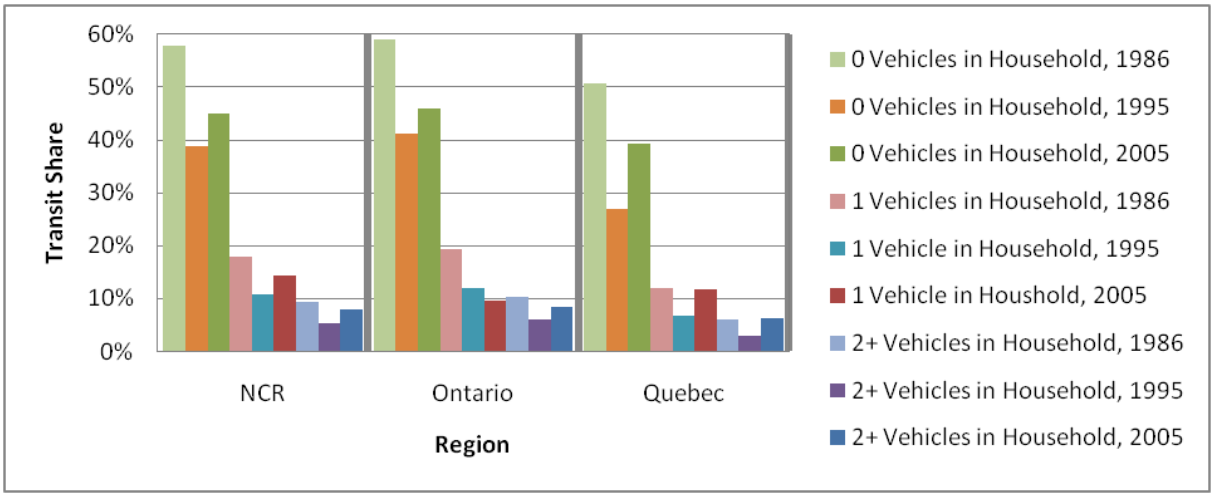


Exhibit 5-8: Transit mode share by household number of vehicles, 1986-2005

Exhibit 5-9 shows a similar pattern for each number of workers per household for each region, with a decrease in transit mode share with the corresponding increase in number of household vehicles, reflected across all years. There appears to be a substantial jump in transit share for zero-vehicle households between 3 workers and more than 3 workers for 1995 and 2005 (but not 1986, or in Québec), but we should note that this applies to a very low sample size, hence the variability.

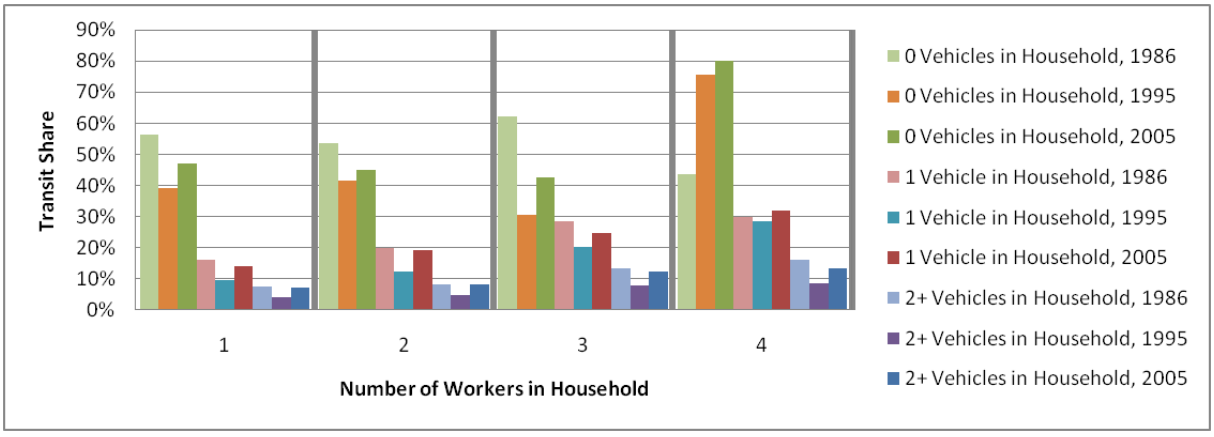


Exhibit 5-9: Transit mode share by worker/vehicle sufficiency (NCR), 1986-2005

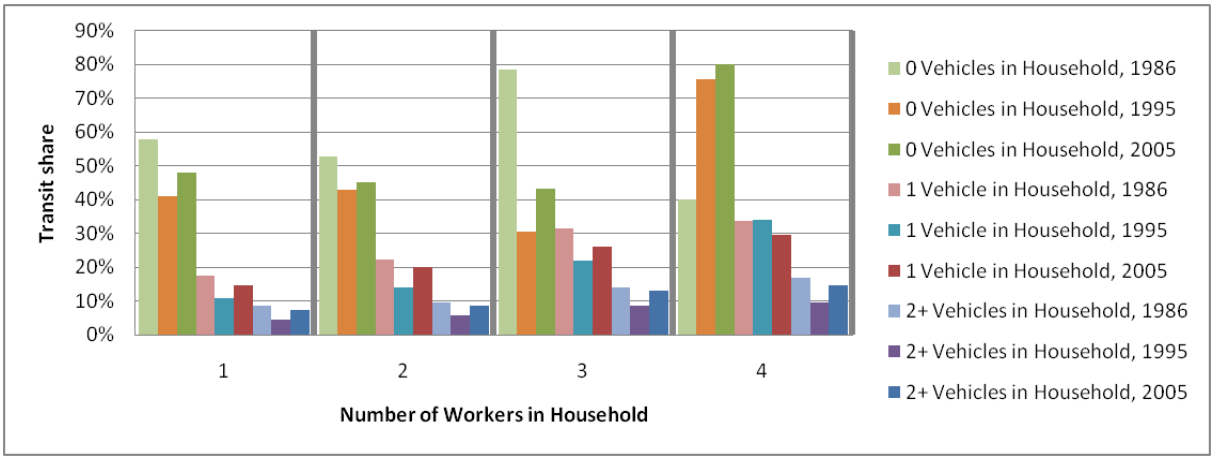


Exhibit 5-10: Transit mode share by worker/vehicle sufficiency (Ontario), 1986-2005

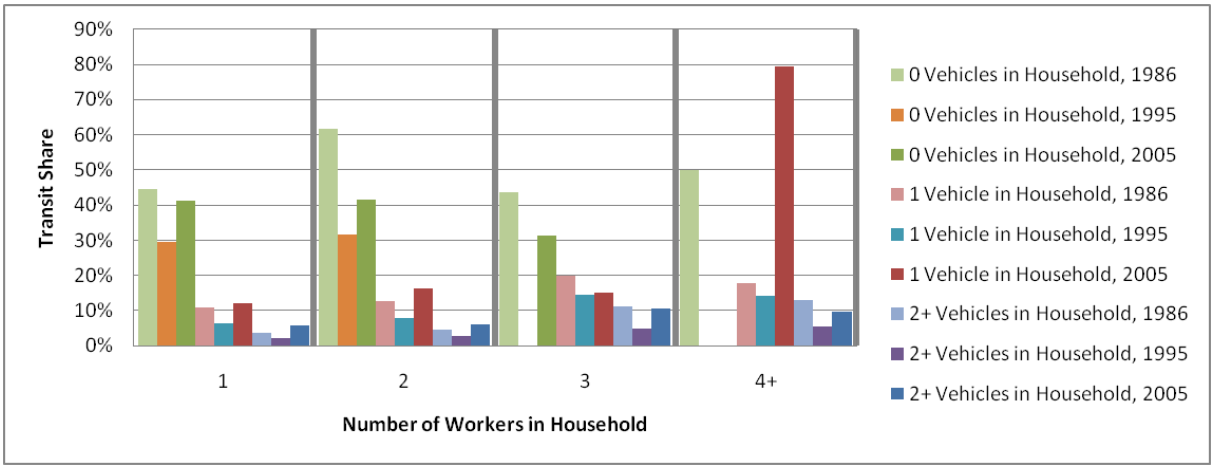


Exhibit 5-11: Transit mode share by worker/vehicle sufficiency (Québec), 1986-2005

The charts from Exhibit 5-12 to Exhibit 5-14 cross-compare the variation in transit trips with household workers and available vehicles. The highest numbers of transit trips are made by people from 2-worker, 1-vehicle households, a number that is almost the same in 1986 and 2005, despite an intervening year drop. However, there are almost as many transit trips taken by people from one-vehicle, one-worker households.

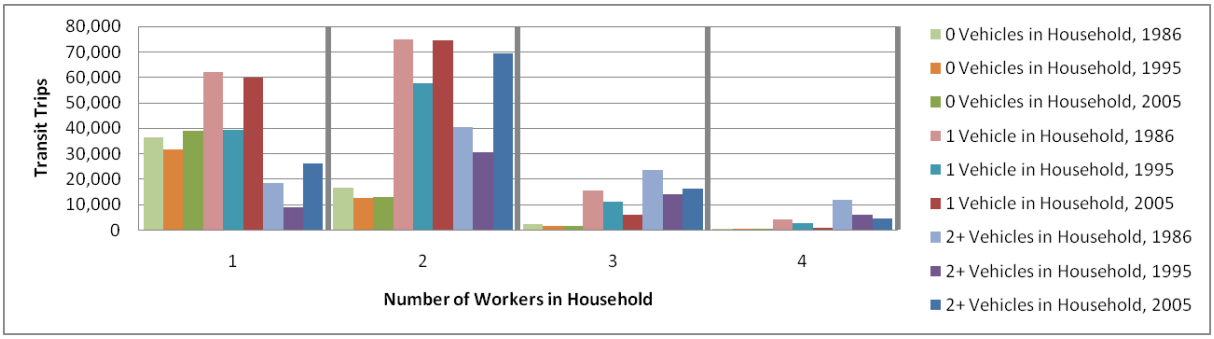


Exhibit 5-12: NCR transit trip trends by vehicle availability, 1986-2005

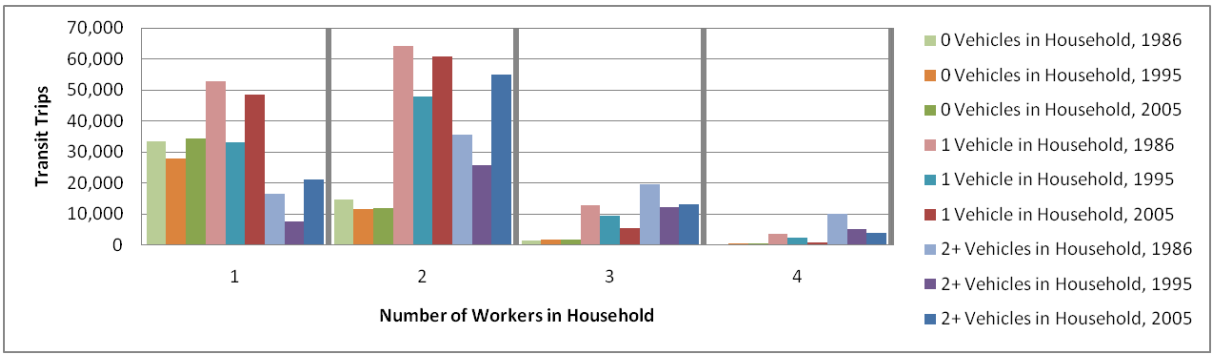


Exhibit 5-13: Ontario transit trip trends by vehicle availability, 1986-2005

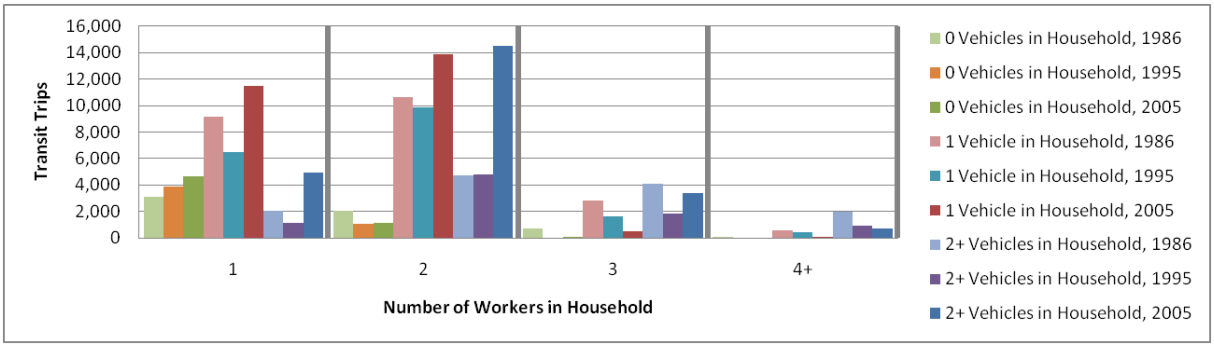


Exhibit 5-14: Québec transit trip trends by vehicle availability, 1986-2005

5.3 Transit trip purposes

Observed trends:

- *Transit mode share declines almost equally (by around 4%) across all purposes between 1986 and 2005*
- *Since 1995, mode share has been rebounding, particularly for work and school trips*
- *Mode share lost between 1986 and 1995 for non work or non-school trips does not appear to be recovering to the same extent as work and school trips*

Exhibit 5-15, below, focuses in on the areas that were shaded for transit in Exhibit 5-4, indicating what actual percentage of each purpose corresponds to transit trips, and how this varies over the years (so, for example, almost 20% of trips to work are made by transit in 1986, dropping to 14% in 1995). Exhibit 5-16 and Exhibit 5-17 show the percentage changes from 1986, in absolute (mode share percentage point change) and relative (change in mode share / old mode share) terms. Compared with 1986, all purposes have a decreased mode share in 2005, although all also increase from 1995 to 2005, indicating a possible ongoing upward trend.

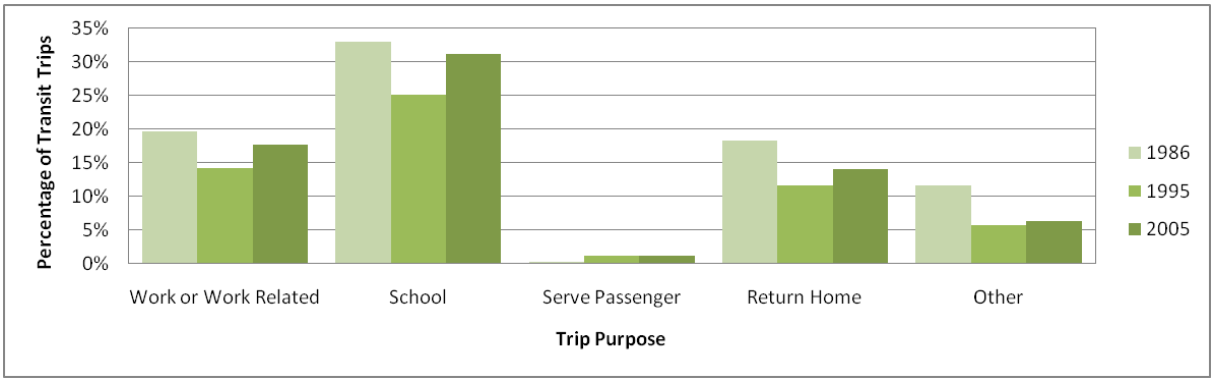


Exhibit 5-15: Transit mode share by trip purpose, 1986-2005

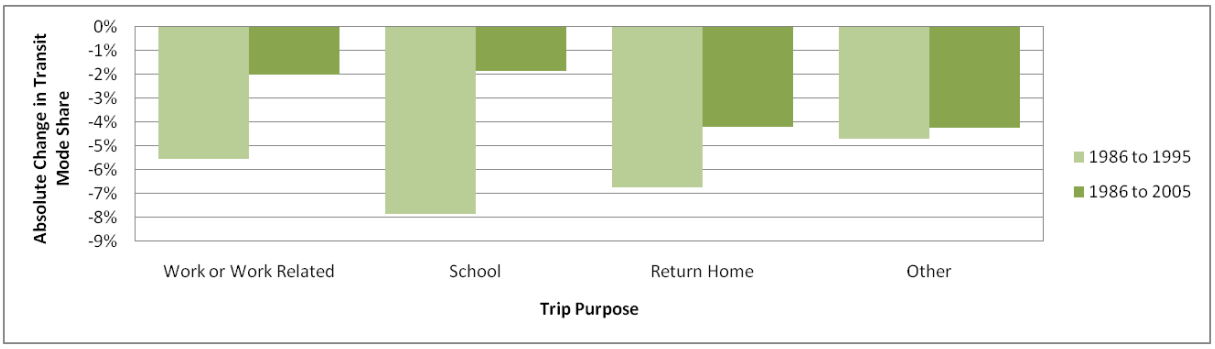


Exhibit 5-16: Absolute (percentage point) change in transit shares by purpose, 1986-2005

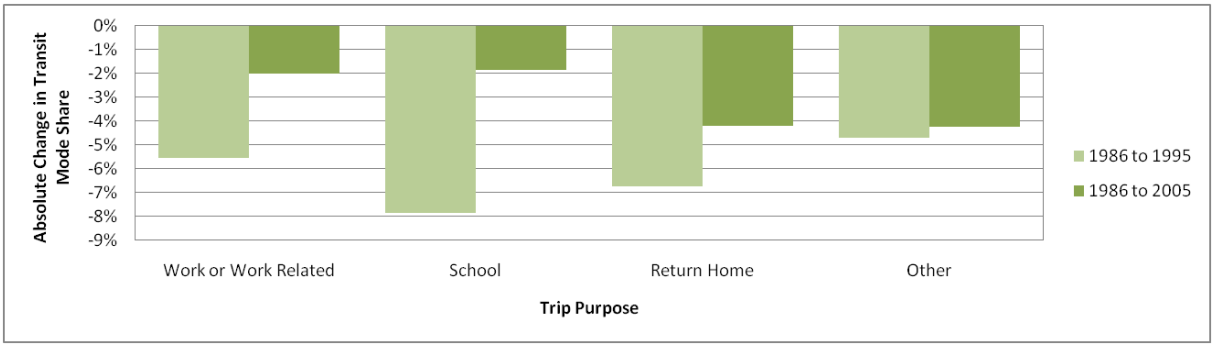


Exhibit 5-17: Relative change in transit shares by purpose, 1986-2005

5.4 Transit trips to work

Observed trends:

- *Transit work trip mode share variation follows a repeated pattern (decline followed by partial recovery) that appears independent of household or age properties, or age group*
- *As South Nepean increases its employment density to more than 100 jobs per square km, transit mode share increases from 5% to 14%. Similarly Beacon Hill, Hull Périphérie and Kanata/Stittsville, all with large increases in employment density, double or more than double their transit mode share.*

The following series of exhibits display the variation over time of the transit mode share to work. The usual pattern indicates a drop of around 5% from 1986 to 1995, and then a recovery of most of the mode share by 2005. Exceptions to this, other than in cases with very low samples (such as the non-working age categories, are noticed in Québec where in many cases the transit mode share in 2005 exceeds that in 1986.

Overall, the transit mode share to work (as was seen in Exhibit 5-15) is 20% in 1986, 14% in 1995 and 16% in 2005. This is lower than Montréal, Vancouver, and Toronto, all of which are 22% in both 1996 and 2006, though similar to Calgary (13% in 1996 and 16% in 2006)[22].

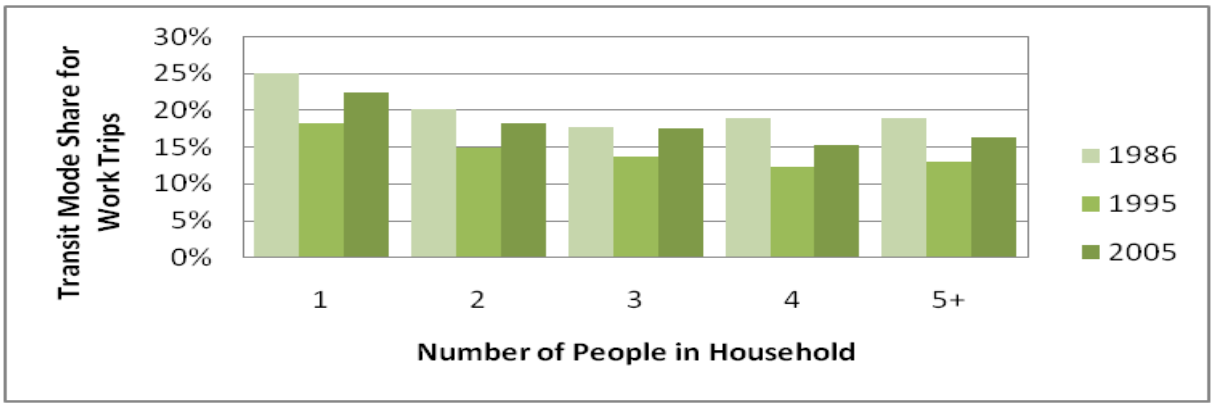


Exhibit 5-18: NCR work trip transit mode share by household size, 1986-2005

[22] Transportation Association of Canada, Urban Transportation Indicators Fourth Survey Final Report, TAC, December 2009, p.44

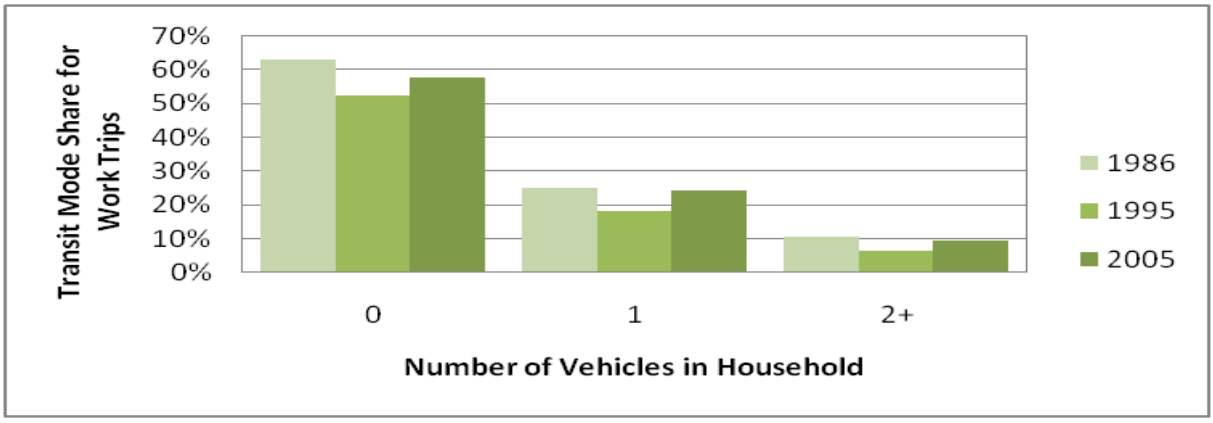


Exhibit 5-19: NCR work trip transit mode share by vehicle availability, 1986-2005

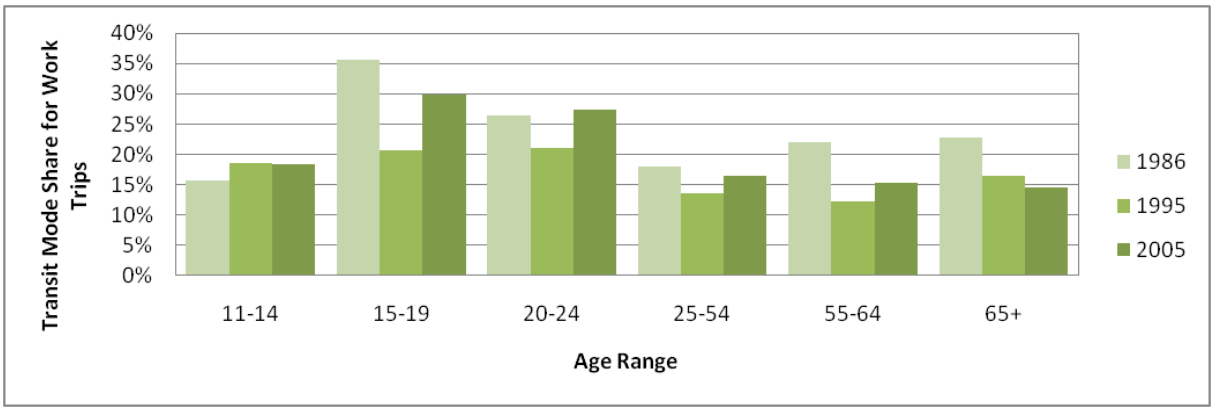


Exhibit 5-20: NCR work trip transit mode share by age, 1986-2005

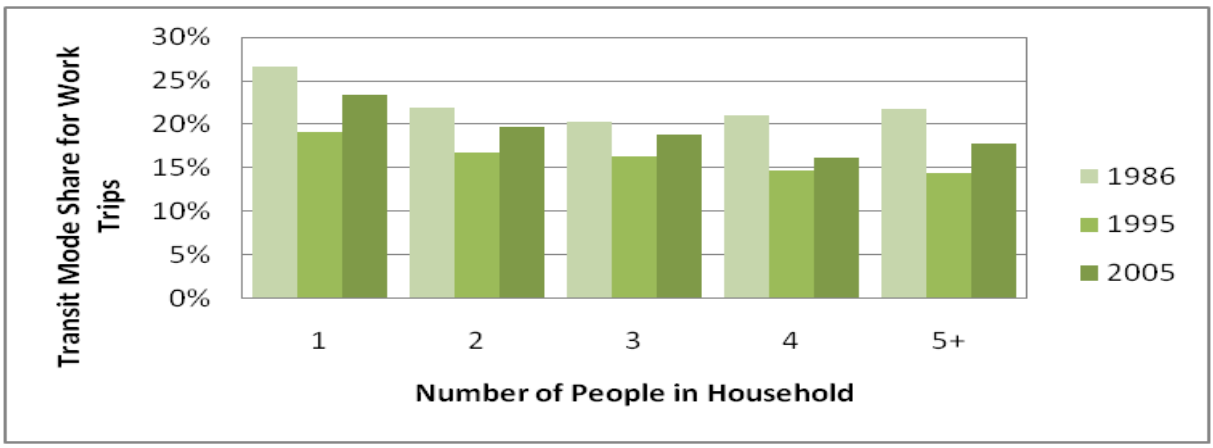


Exhibit 5-21: Ontario work trip transit mode share by household size, 1986-2005

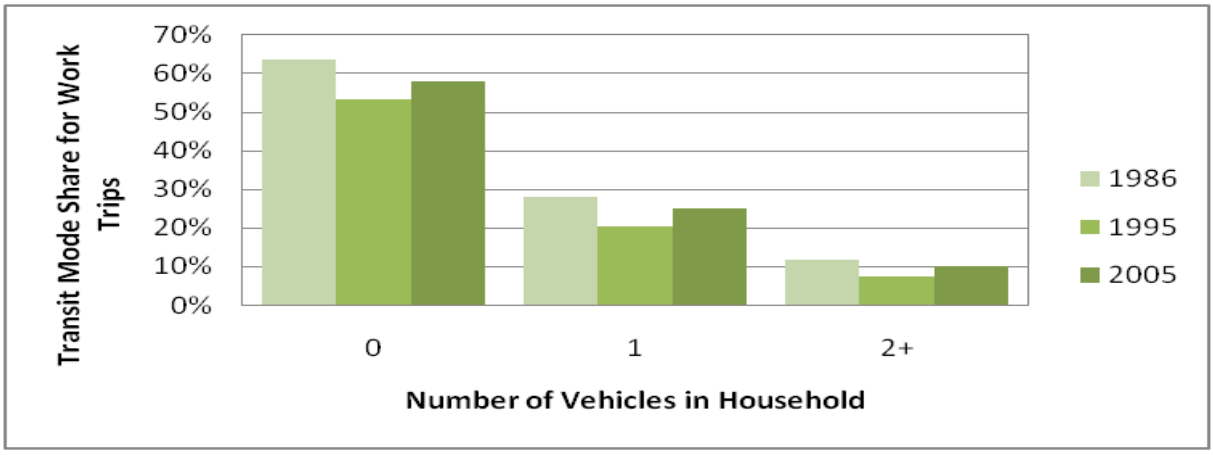


Exhibit 5-22: Ontario work trip transit mode share by vehicle availability, 1986-2005

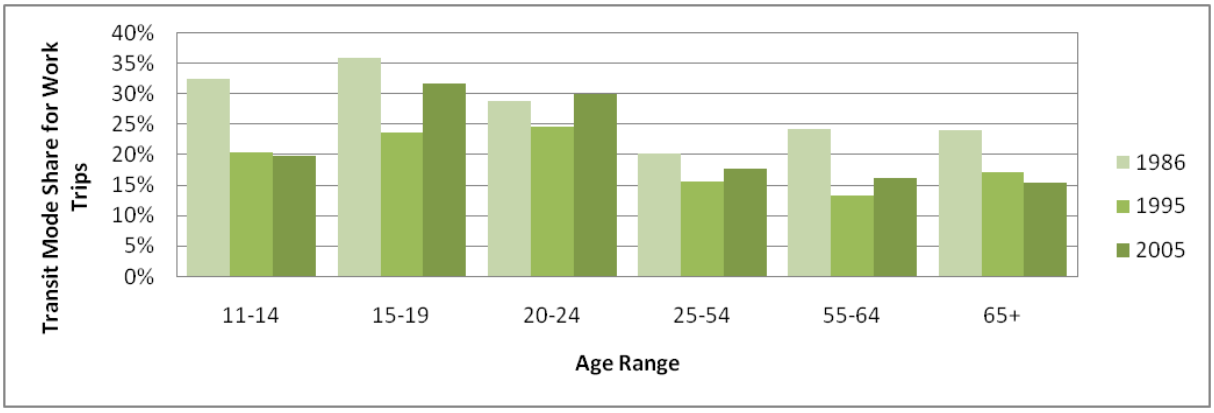


Exhibit 5-23: Ontario work trip transit mode share by age, 1986-2005

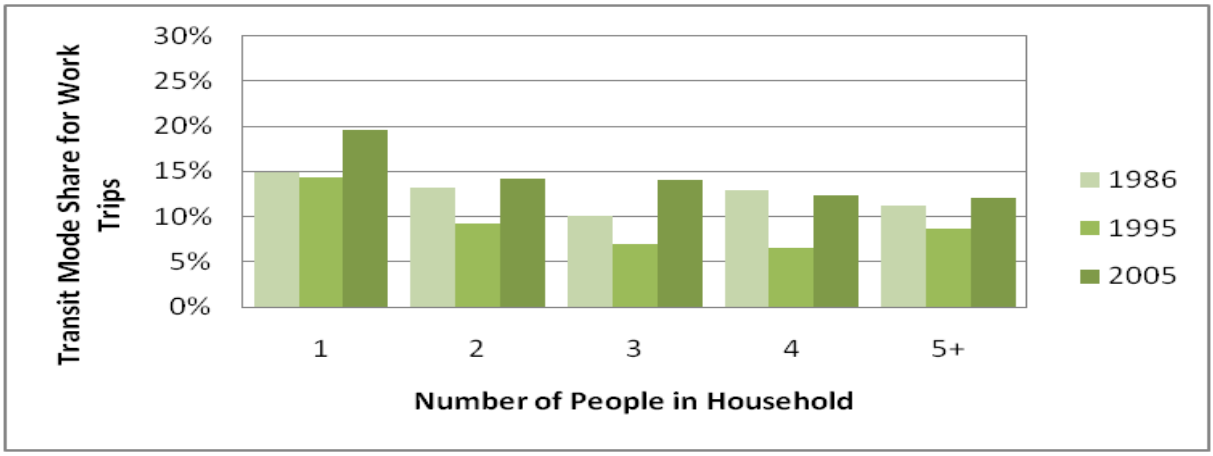


Exhibit 5-24: Québec work trip transit mode share by household size, 1986-2005

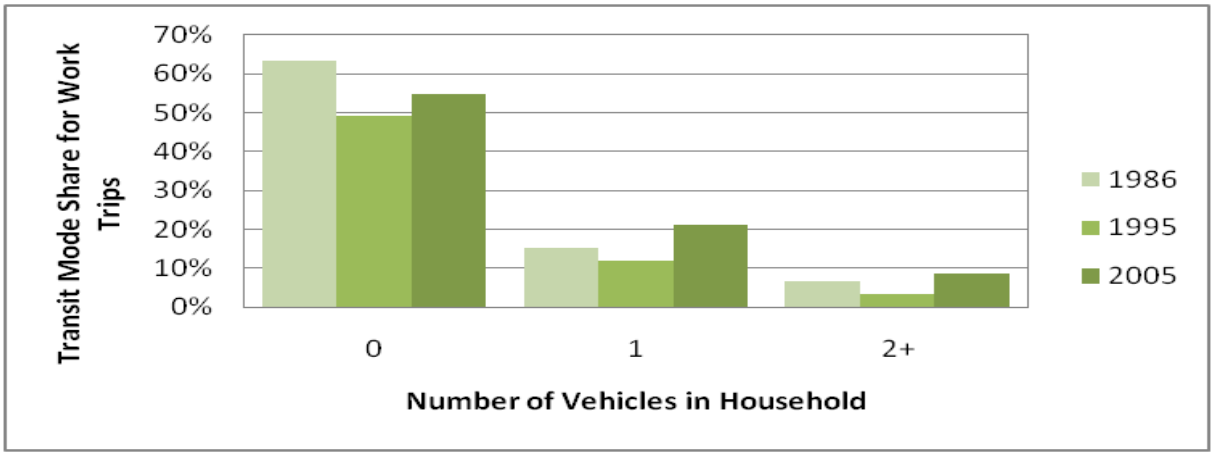


Exhibit 5-25: Québec work trip transit mode share by vehicle availability, 1986-2005

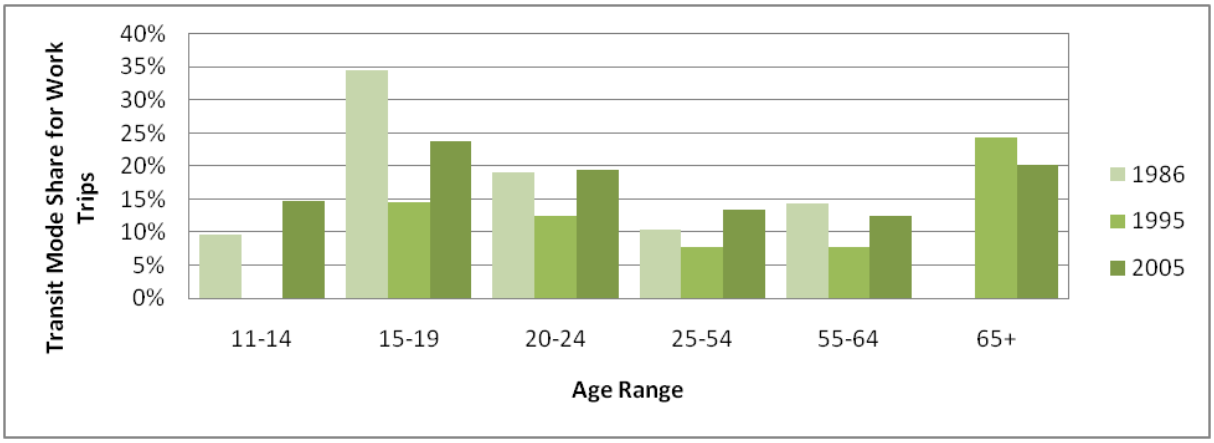


Exhibit 5-26: Québec work trip transit mode share by age, 1986-2005

The next chart, Exhibit 5-27, compares the employment density of each district with the transit mode share of trips made by people who work in the district (in the AM peak period). We can note for most suburban districts that undergo density growth, such as Orléans, Aylmer, Gatineau Est and South Nepean, and for the urban district of Hull Périphérie, there is a corresponding increase in transit mode share over time, although this does not apply for the urban district of Merivale, where transit mode share remains similar despite density growth.

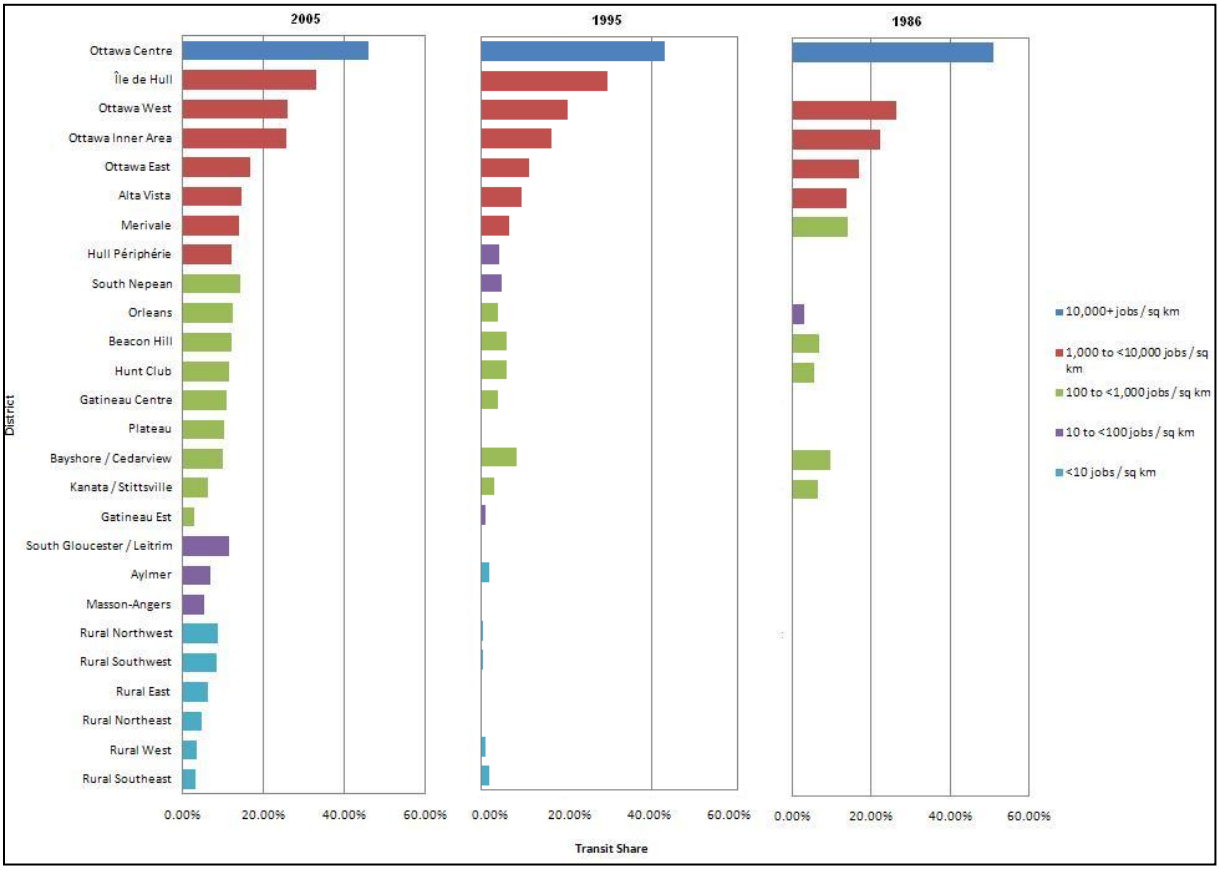


Exhibit 5-27: Transit mode share by employment density, 1986-2005

The AM peak transit ridership, overall, decreases from 0.17 transit trips per capita in 1986 to 0.12 transit trips per capita in 2005 (with 0.11 in 1995). However, Toronto and Montréal also show decreases over this time, with Montréal going from 0.14 transit trips per capita in 1987 to 0.12 in 2008[23], and Toronto going from 0.13 transit trips per capita in 1986 to 0.09 in 2006[24].

5.5 Conclusion

This chapter has identified the following trends for transit between 1986 and 2005:

- The gender split is consistent through the years, with the female share on transit greater than the male for age categories 25 and over;
- The transit mode share variation by number of household vehicles is consistent across the years;
- All purposes (work, school, return home and other) decrease their transit mode share between 1986 and 2005 by 3.5% to 4.5%;

[23] Secrétariat aux enquêtes Origine-Destination métropolitaines, Enquête Origine-Destination 2008 Faits Saillants, Agence métropolitaine de transport, 2008, p.22
[24] University of Toronto Data Management Group, Transportation Tomorrow Survey data, 1986-2006.

- Transit mode share to work decreases from 20% to 15% between 1986 and 1995, but increases to 16% by 2005;
- The number of transit trips per capita in the AM peak drops from 0.17 to 0.12 between 1986 and 2005, in line with the trends noticed in other large Canadian cities;
- There is an increase in transit mode share in Ottawa and Gatineau suburban areas from 1995 to 2005, in parallel to density growth in those areas, though the correlation is less well defined for urban areas.

6. Identification of Trends

From the survey analyses we can identify the following major demographic and trip-making trends within the National Capital Region between 1986 and 2005:

6.1 Demographic patterns

The fastest growing residential areas are the suburban and rural districts, while in the central areas population has increased only slightly in 20 years (population has more than doubled outside the Ottawa greenbelt, but increased by only 20% inside it). Additionally, the areas where jobs are concentrated (in the Ontario part of the NCR) have spread out over time, as the percentage of jobs located in central Ottawa has decreased from 39% to 31%. Jobs in suburban areas have increased markedly, such as in Kanata/Stittsville, which had two resident workers for every job in 1986, but more jobs than workers in 2005, despite a large increase in population. Accompanying this widening of the employment area are changes in the commuting patterns with some districts retaining a much larger percentage of their resident workforce to work in that district than others.

6.2 Transit, ridesharing and non-motorized mode share

From 1986 to 2005, transit mode share shows an overall decrease from 18% to 15%, though more recently it increases from 13% in 1995. There is also a drop in transit trips per capita, with a decrease for trips in the AM peak of 0.17 to 0.12 between 1986 and 2005. Decreases are seen to be reasonably consistent (percentagewise) across all purposes. However, transit mode share does not decrease for any individual district type, the drop in overall mode share results instead from a large proportion of trips shifting to district types with lower transit usage. Meanwhile, non-motorized travel has increased (changing from 8% to 12% of all trips) over the whole NCR, but the increase only applies to central districts, which already had a significant non-motorized share. Non-motorized commuting in the four densest (central) districts increases from a 21% mode share to 29%. The drop in transit use can be most noticed for trips that finish in Ontario (not necessarily interprovincial trips, though), and it does not apply to trips starting in Gatineau, which have grown in number over time. Vehicle occupancy patterns are largely unchanged, as is the overall auto mode share.

6.3 Gender balance

Over time the female percentage of the work force in the NCR increases from 40% in 1986 to nearly 46% in 2005, significantly increasing the evenness of the distribution. Female participation in the workforce is growing faster in Gatineau than in Ottawa. The mode distribution does not change notably over time, with the female transit share remaining consistently higher for both Ottawa and Gatineau, though there is a large increase in the auto driver mode share for women, particularly those over the age of 55.

6.4 Trip distribution patterns

Work trips decrease from 1986 to 1995, but then increase to the highest level of the three by 2005. Work trip rates decrease notably from 1986 to 1995, but then stabilize at around 0.28 work trips per capita (0.58 per worker) in each AM peak period. There is no discernible change in average trip lengths (for work trips or for all trips) between 1995 and 2005 (with data not available for 1986), but there are changes in trip patterns as the proportion of trips to and from suburban districts increases. In 1986, 85% of AM peak trips in the NCR were destined to one of the central or urban districts. By 2005, this proportion had dropped to 72%.

6.5 Time of day variation

The daily profile remains similar from 1986 to 2005, with an increase in trips but decrease in trip rates noted for all three time periods. Trips are growing at a similar rate in all time periods, as off-peak trips increased by 25% from 1986 to 2005, while the AM and PM peaks grew by 28% and 27%, respectively.

6.6 Impact of urban density

Urban density was only considered for the 1995 to 2005 period, due to the unavailability of Québec employment data for 1986, but within this time there has been an increase in suburban area density alongside an increase in transit mode share. Since 1995, Ottawa density has been increasing slightly faster than that of Gatineau, but the rates are quite similar. As the number of jobs (and, the corresponding employment density) has increased in Orléans, Hull Périphérie, Gatineau Est, Aylmer and South Nepean, so has the percentage of transit trips. Looking at the NCR as a whole, with the growth of suburban areas the number of vehicles per household and percentage of households inhabiting detached housing have also increased from 1986 to 2005.

6.7 Major trends

Based on these conclusions, we can identify the following significant trends:

- Shift of both population and employment to suburbs and less dense areas;
- Adjustment in gender-based workforce and mode share distribution;
- Decrease in trip rates per capita (especially for work trips);
- Increase in suburban transit mode share and CBD non-motorized mode share.

The following chapter will extrapolate these to 2031, using both the 1986-2005 and 1995-2005 trends where available, and examine them in closer detail.

7. Extrapolation of Trends

The following significant trends were identified by analysing survey results from 1986 to 2005, as has been described in the preceding chapters. In this chapter, forming Part 3 of our study, we extrapolate to 2031 to suggest the impacts of continuing the trends. In the exhibits that follow, a continuation of the 1986-2005 trend is shown in blue, and a continuation of the 1995-2005 trend is shown in red. The space between them as they diverge over time represents a range of possibility for the value of the indicator in a particular year. Thus, we take into account all the details provided by the surveys.

These extrapolations are intended to show where trends are heading, not to provide detailed projections such as are carried out by the TRANS model, nor to critique methods used to develop existing model inputs or the current model structure. However, they can be used to confirm directionality of model projections, and so comparisons with selected model results are also included. It also is important to note that, in accordance with the mandate of this project, the extrapolation that follows is intended to provide insight as to how the future development of the TRANS model or of inputs might be complemented or enhanced.

Trends are extrapolated linearly—for the purposes of this analysis changes in proportions are assumed to be constant over time, although overall population and employment numbers are assumed to grow in accordance with the growth rates seen over the past 10 or 19 years. As will be seen, the realization of these extrapolations would result, in a few cases, in extreme and clearly unrealistic situations: it is essential to keep in mind that the purpose of these extrapolations is to indicate the direction in which the trends are pointing. It is clear that, in actuality, several unforeseen events could influence extrapolated outcomes over the next 20+ years.

7.1 Shift to suburbs

A shift (in both residents and jobs) is occurring from central and urban districts towards suburban and less dense areas. This may lead to changes (as described below) in demographic properties and travel behaviour, as suburban trips increase faster than radial trips to and from the central areas. In terms of future model development, as TRANS considers its next generation of models, these changes may require adjustments to modelling parameters, or expansion of the modelling focus to consider suburban trips, to deal with the implications of these trends. Models focused only on forecasting trips to and from city centres will not capture the whole picture in light of these evolving trends.

7.1.1 Suburban residential growth proportionate to centre

In 1986, 63% of NCR residents lived in central or urban districts, but in 2005 only 50% did. The population of suburban and rural areas more than doubled while that of central and urban areas increased by a comparatively low 23%. This trend of increasing suburban growth, if continued, will lead to two-thirds of NCR residents living in suburban and

rural districts by 2031. The comparable number from the TRANS model is 57%, indicating a shift in the same direction.

From 1986 to 2005, there has been a progressive shift of population from urban areas to suburban and rural areas, although the shift is steeper between 1986 and 1995. For the NCR as a whole, the suburban/rural proportion of residents approaches 50% between 2005 and 2010 (Exhibit 7-1), and for just the Ontario districts, it approaches 50% in the vicinity of 2021 (Exhibit 7-2). In Gatineau, where there are fewer central and urban districts, the majority of residents have lived in suburban and rural areas since 1986 (Exhibit 7-3), and the urban and suburban trends appear to continue to diverge. These proportions are assuming that districts keep their definitions over time—i.e., that a suburban district does not become redefined as an urban one owing to an increase in density.

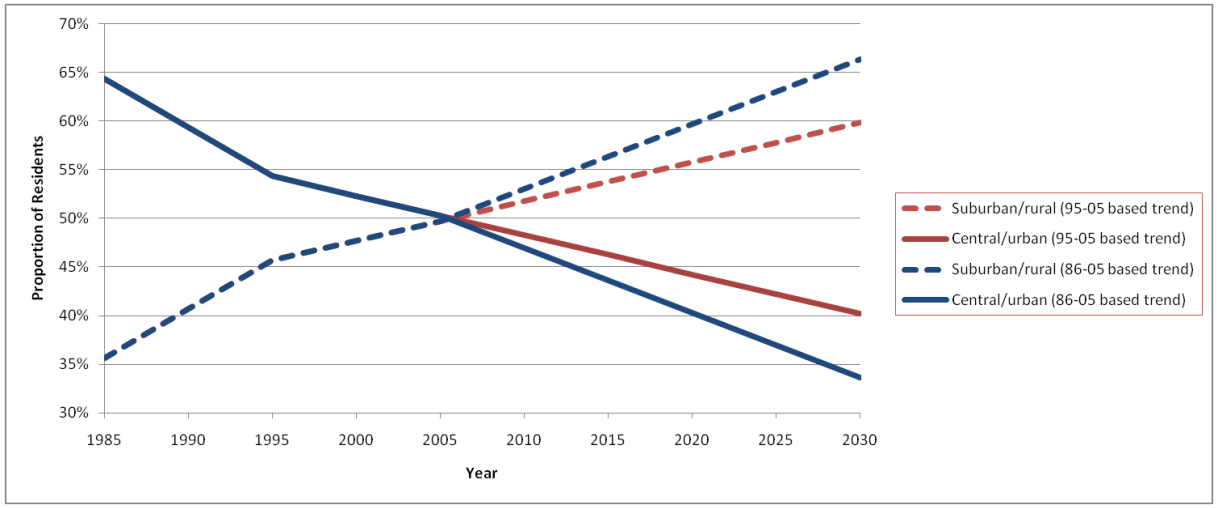


Exhibit 7-1: Urban-suburban resident trend (NCR)

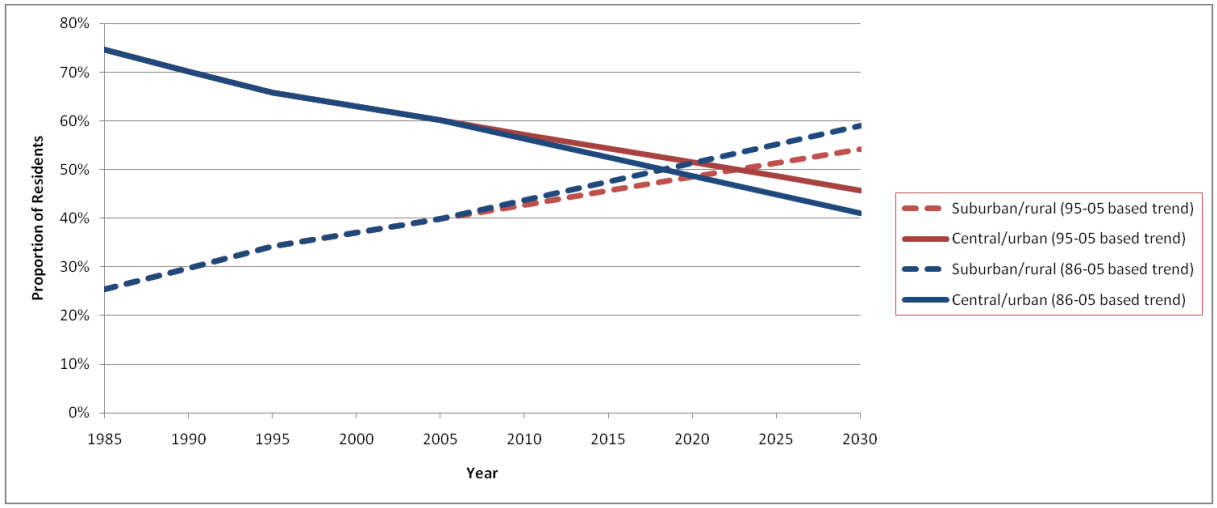


Exhibit 7-2: Urban-suburban resident trend (Ontario)

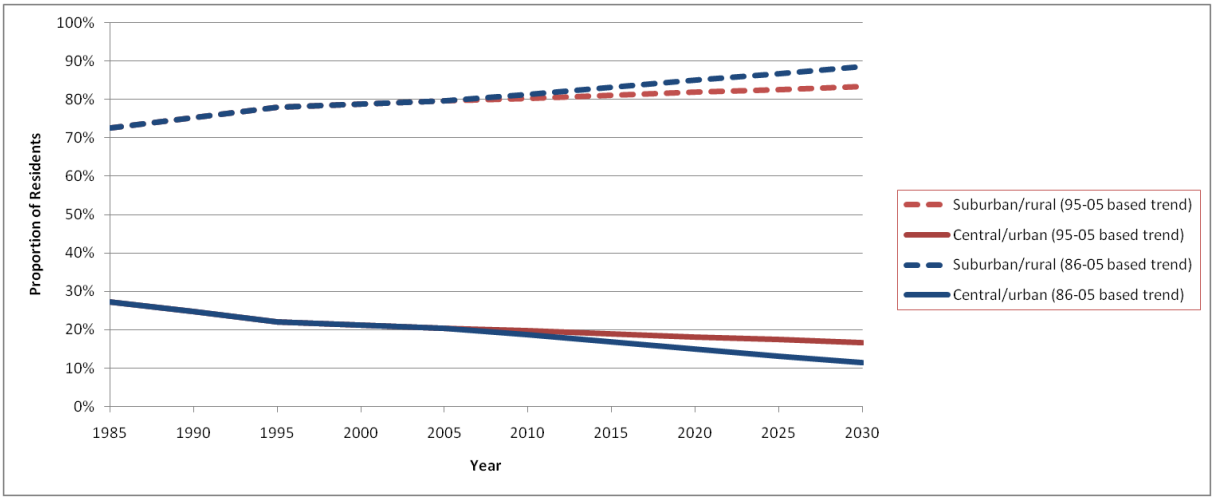


Exhibit 7-3: Urban-suburban resident trend (Québec)

7.1.2 Suburban employment growth proportionate to centre

In 1986, 92% of jobs were located in central or urban districts, but by 2005 this proportion had dropped to 79%. At this rate of decrease, less than two-thirds of jobs will be in the central or urban areas by 2031. Between 1995 and 2005 the number of jobs in central Ottawa still increased by 22,700, but this 14% increase is much lower than the 22% increase in jobs in Ottawa as a whole. Jobs in central Gatineau decreased by 1,200, a 5% decline compared with a 17% increase for all of Gatineau.

The next series of exhibits show the same patterns for jobs as were previously shown for residents. For Ontario districts (Exhibit 7-5), trends are shown based on both the 1986-2005 and 1995-2005 changes, as 1986 job data are available, but for the NCR and Québec exhibits (Exhibit 7-4 and Exhibit 7-5), only the 1995-2005 trend is used as 1986 jobs are not available for Québec. However, we can see from Exhibit 7-5 that the 1986-2005 and 1995-2005 rates of convergence of central/urban and suburban/rural jobs are very similar, as the trend lines are almost overlaid. Overall, the movement of jobs away from central and urban areas is slower than the corresponding movement of residents, but it is still noticeable, especially in Ontario where almost a third of jobs may be in suburban or rural areas by 2031. In the Gatineau districts, only two of which are central or urban, the situation is different, as suburban and rural jobs already represent a majority and their proportion is actually declining very slightly over time. Forecasts from the TRANS model indicate that 68% of jobs will be in central and urban areas in 2031, which is consistent with the survey-based findings.

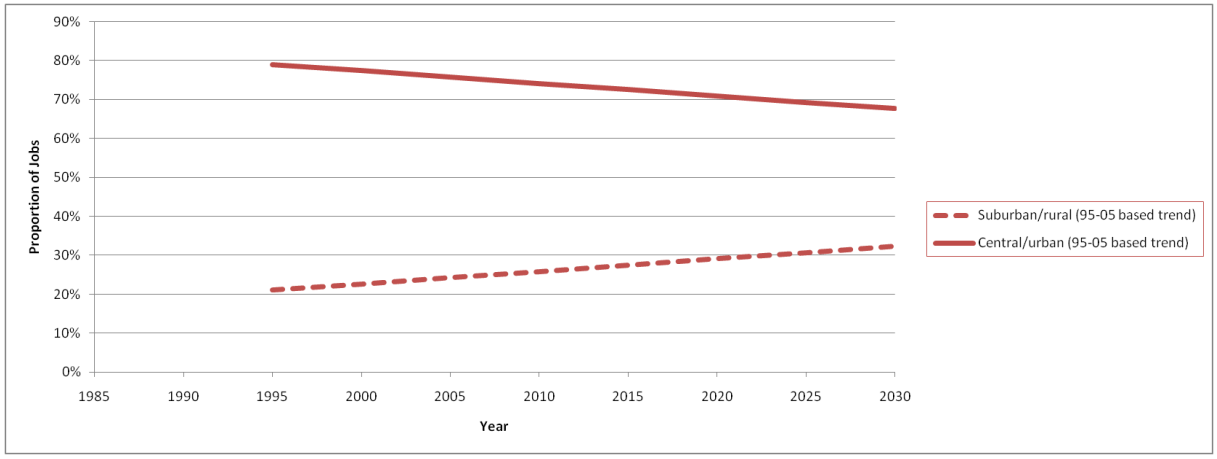


Exhibit 7-4: Urban-suburban employment trend (NCR)

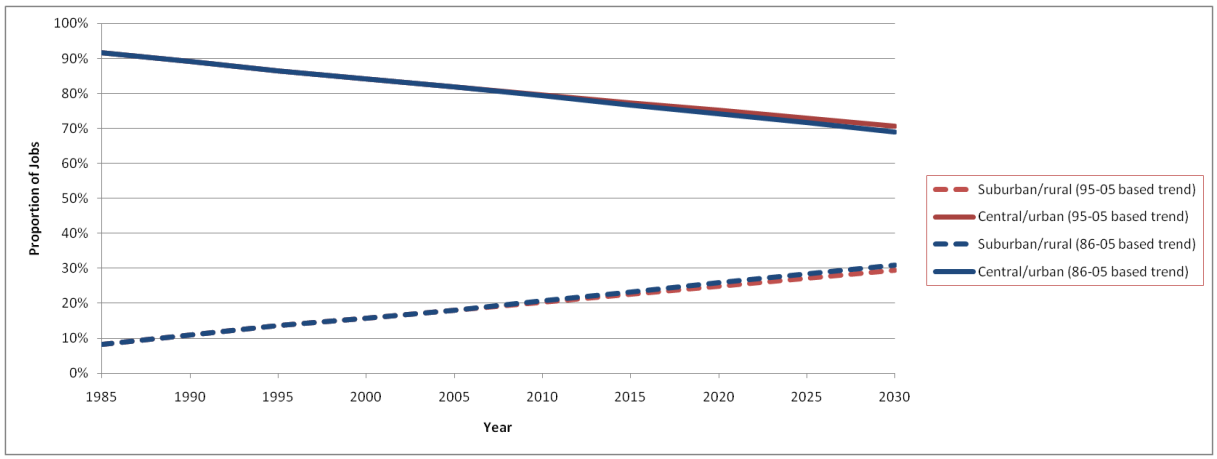


Exhibit 7-5: Urban-suburban employment trend (Ontario)

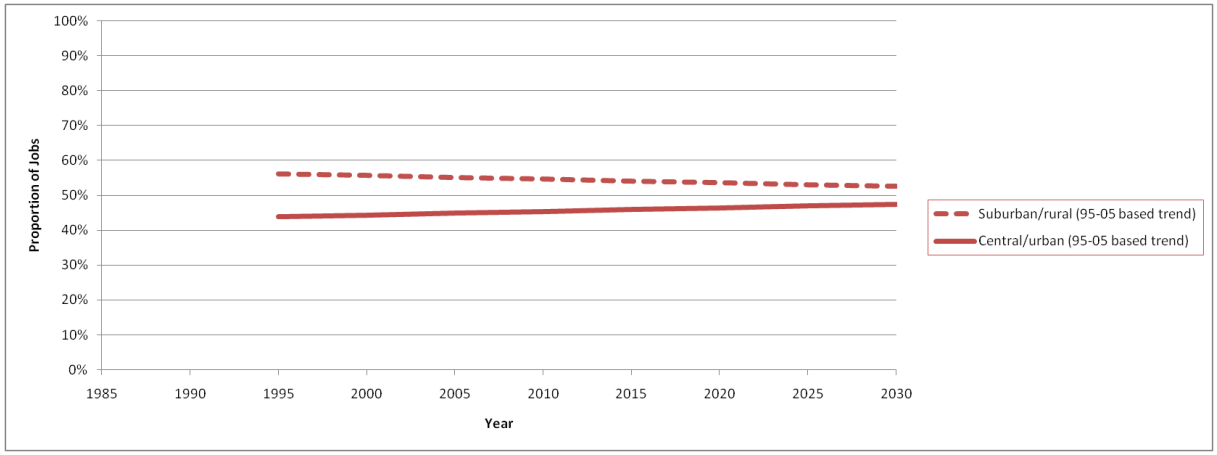


Exhibit 7-6: Urban-suburban employment trend (Québec)

7.1.3 Variation in commute patterns

The proportion of people travelling in the AM peak to suburban and rural areas has increased from 15% in 1986 to 28% in 2005, a trend that, if continued, would see over 40% of AM peak trips made to the suburban and rural districts by 2031. Meanwhile, half of all AM peak trips originate in the suburban or rural districts in 2005, up from 35% in 1986. This has implications for mode share calculations, as suburban and rural trips need to be given more attention. One implication is that, in future model development, TRANS may need to develop mode share functions that apply separately to trips destined to the downtowns; to elsewhere on the rapid transit system; to suburban town centres (key nodes); and to the suburbs generally.

Exhibit 7-7 to Exhibit 7-10 show the anticipated change in the distribution of peak-period trips between suburban/rural and central/urban areas. As could be expected, these are similar in appearance to the population and employment trends. Only the AM peak period is shown (the PM peak features what is largely a reverse of the AM trip flows, as was seen in Section 3.1), and the 1986-2005 and 1995-2005 trends are very similar.

In Ottawa, suburban and rural areas are attracting an increasingly higher proportion of AM peak trips, to the extent that if the present trend continues their proportion will reach 40% by 2031. The TRANS model produces similar results, with 36% of AM peak trips destined to suburban and rural districts in 2031. Suburban and rural districts already represent more than half of the AM peak destinations in Gatineau, and the suburban/rural proportion appears to be increasing at a similar rate. If trends continue, more than half of AM peak trips will begin in suburban and rural areas in the Ontario districts by 2021. In the Québec districts, where suburban and rural areas already form the great majority of origin points, the growth is slower as there is less room for expansion.

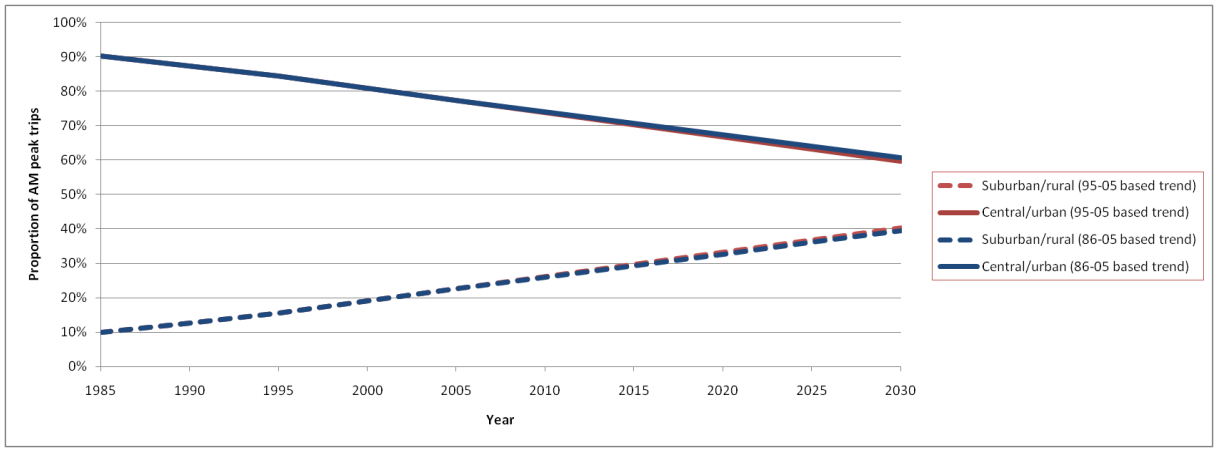


Exhibit 7-7: AM peak trips to suburban/rural areas (Ontario)

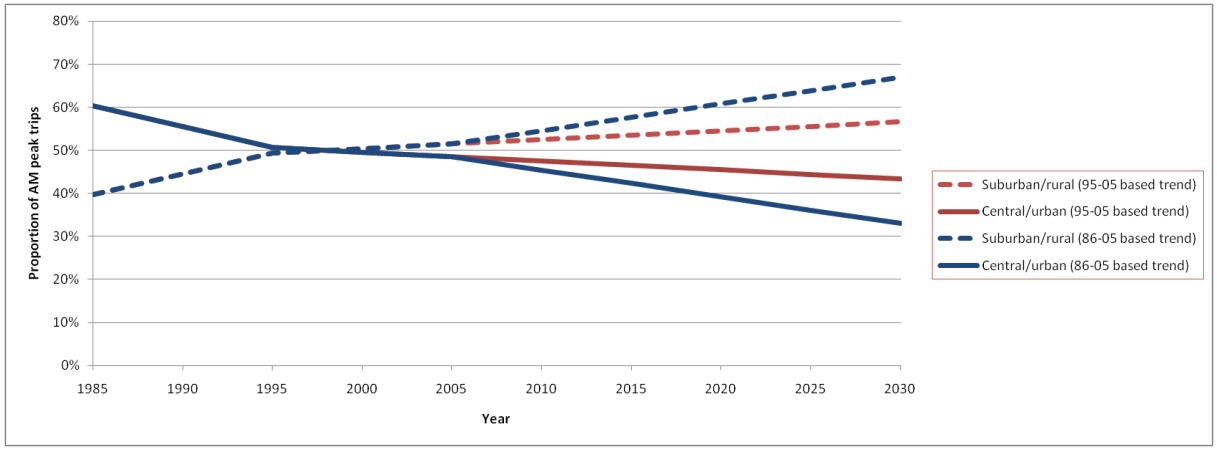


Exhibit 7-8: AM peak trips to suburban/rural areas (Québec)

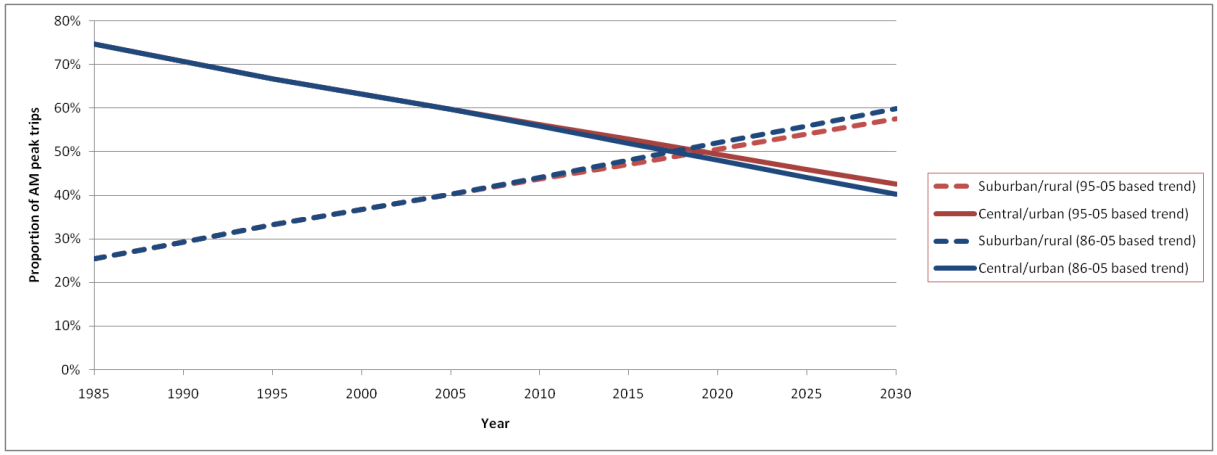


Exhibit 7-9: AM peak trips from suburban/rural areas (Ontario)

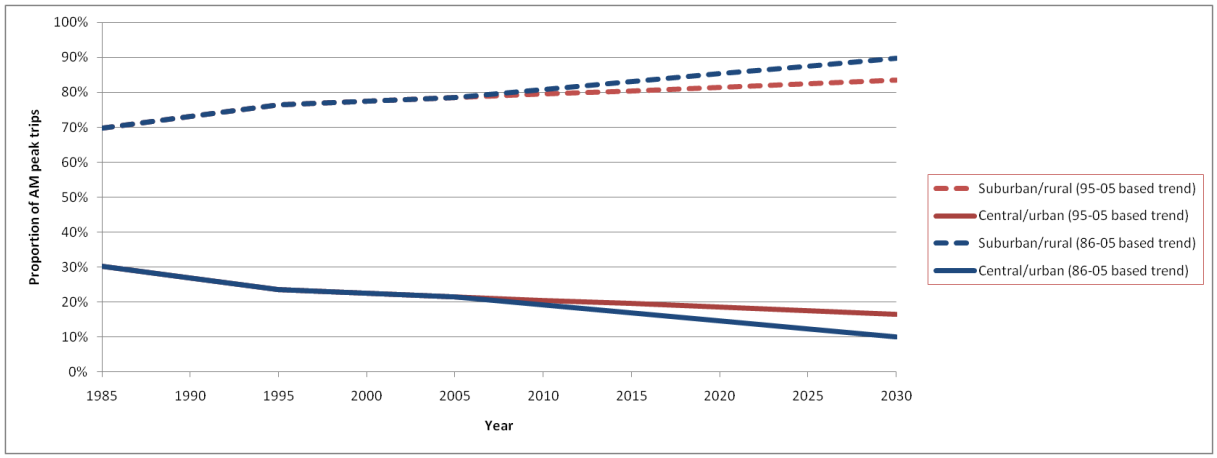


Exhibit 7-10: AM peak trips from suburban/rural areas (Québec)

Exhibit 7-11 shows a predicted gradual decline in the proportion of AM peak trips headed to the CBDs of Ottawa (Ottawa Centre) and Gatineau (Île de Hull). The 1986-2005 and 1995-2005 trends are reasonably similar, leading to there not being much variation in the decrease. By 2031, the trend indicates that 10% or fewer of AM peak-period trips will be to downtown cores.

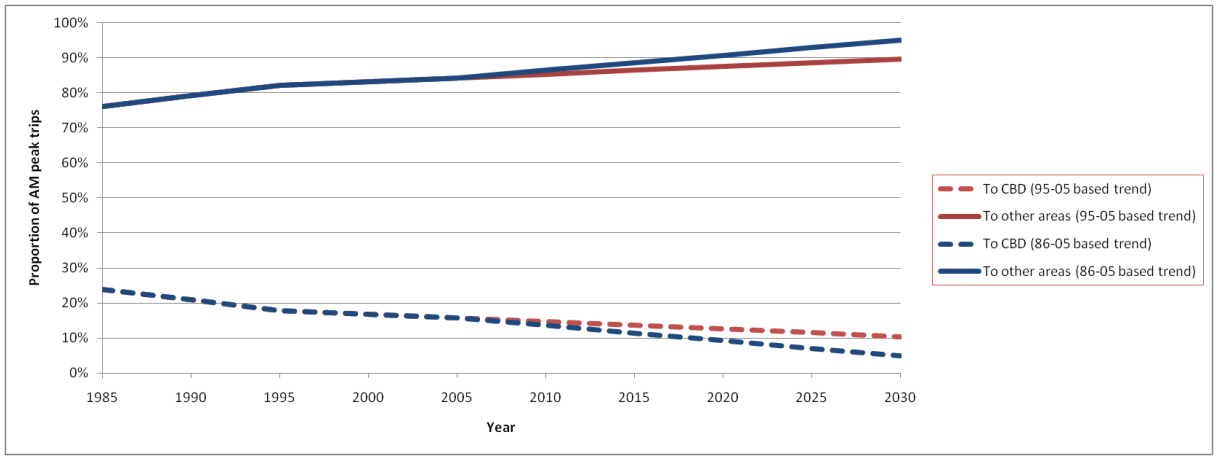


Exhibit 7-11: AM Peak trip proportions to CBD (Ottawa Centre and Île de Hull)

7.1.4 Increase in vehicles per household

Between 1986 and 2005 the average number of household vehicles has increased from 1.33 to 1.41 (or from 1.27 to 1.41 between 1995 and 2005). Gatineau has grown slightly faster than Ottawa over this time. Based on the slower 1986-2005 growth rates, a continuing trend would see 1.53 vehicles per household by 2031 (1.47 in Ontario and 1.74 in Québec), which should be noted for forecasting auto ownership, which influences mode share at the household level.

In contrast, the TRANS model predicts a decline to 1.38 vehicles per household by 2031. However, survey trends indicate a difficulty in establishing a long-term pattern—after a decrease from 1986 to 1995, the average number of vehicles in a household has increased pronouncedly from 1995 to 2005, with a slightly faster increase in the less dense Gatineau districts compared with the Ottawa districts. This means that, depending on whether the short-term (1995-2005) or long-term (1986-2005, with the drop and subsequent recovery) trend is extrapolated, there is a large variation in the future number of vehicles per household, which could remain in the 1.4 to 1.6 range or climb towards 1.9, as seen in Exhibit 7-12. In summary, it is a difficult trend to project; nonetheless, the general upward trend still contrasts with the downward trend predicted by the model.

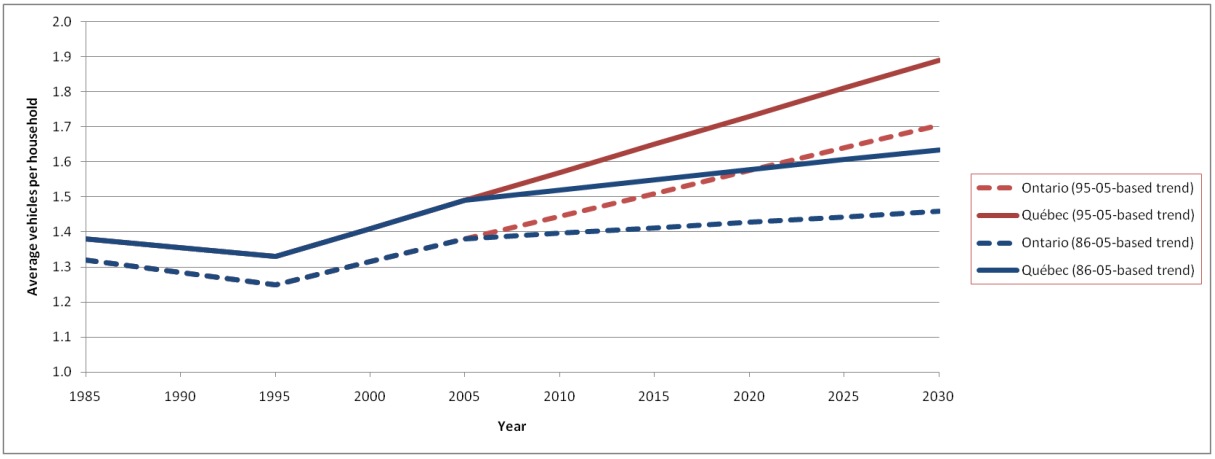


Exhibit 7-12: Average vehicles per household

While the average number of vehicles per household has increased, the percentage of zero-car households has decreased from 16% in 1995 to 12% in 2005, which is consistent with the fact that the central districts are comprised of 35 to 40% zero-car households, and the proportion of residents living in these areas is decreasing (12.9% of NCR households were in the central districts in 1995, but only 11.5% in 2005). Additionally, with most new jobs not being located downtown, those who do live downtown are more likely to have to commute out of the central districts, a travel pattern that may not be recognized well by transit models that are calibrated according to today's focus on work trips *to* the downtown areas. In a related finding, the average number of vehicles per worker, which indicates the level of accessibility people have to vehicles for work trips, also increases from 1.00 (Ottawa) and 1.02 (Gatineau) in 1986 to 1.20 (Ottawa) and 1.24 (Gatineau) in 2005.

As seen in Exhibit 7-13, the proportion of households without a car is decreasing in both Ottawa and Gatineau, especially steeply if the 1995-2005 trend is followed. The 1986-2005 trend looks more reasonable, as otherwise there will be virtually no zero-car households by 2031. This trend is based only on the change in proportions over recent years though, and does not take into account the implications of future actions such as improved suburban transit service, transit-oriented development and higher densities.

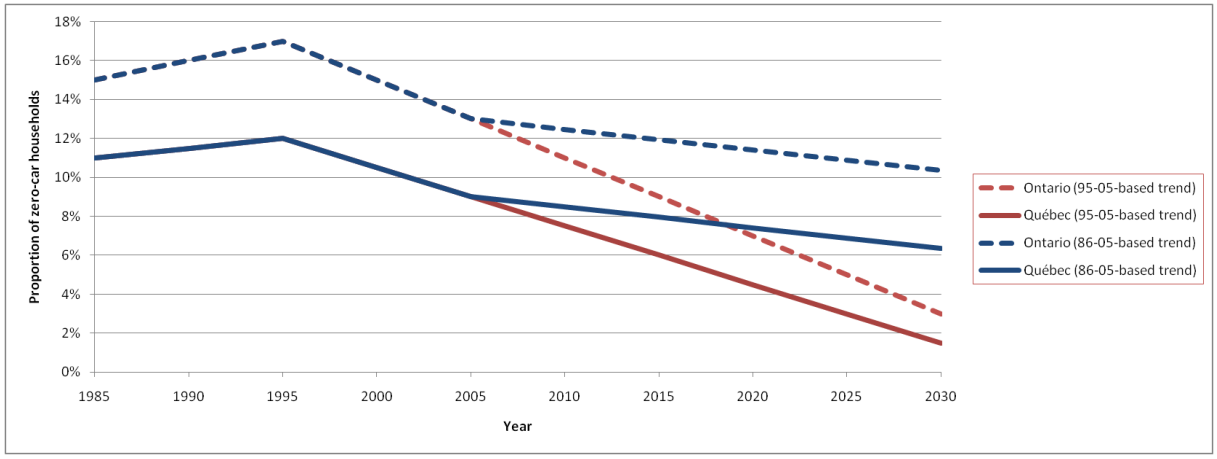


Exhibit 7-13: Proportion of zero-car households

7.1.5 Increase in proportion of residents living in detached housing

The percentage of NCR residents in detached housing climbs from 48% in 1986 to 55% in 2005. Were this trend to continue it would reach 64% by 2031 (a proportion similar to that of comparable US cities *today*). The TRANS model also predicts an (even faster) increase, to 69% by 2031. This is likely connected to the trend of faster population increases in less dense areas, and the growth in number of cars per household, which if it continues is likely to reduce the probability of choosing transit. Ottawa (historically having a lower percentage of its inhabitants living in detached houses) is showing signs that it will equal Gatineau at around the 65% mark by 2031.

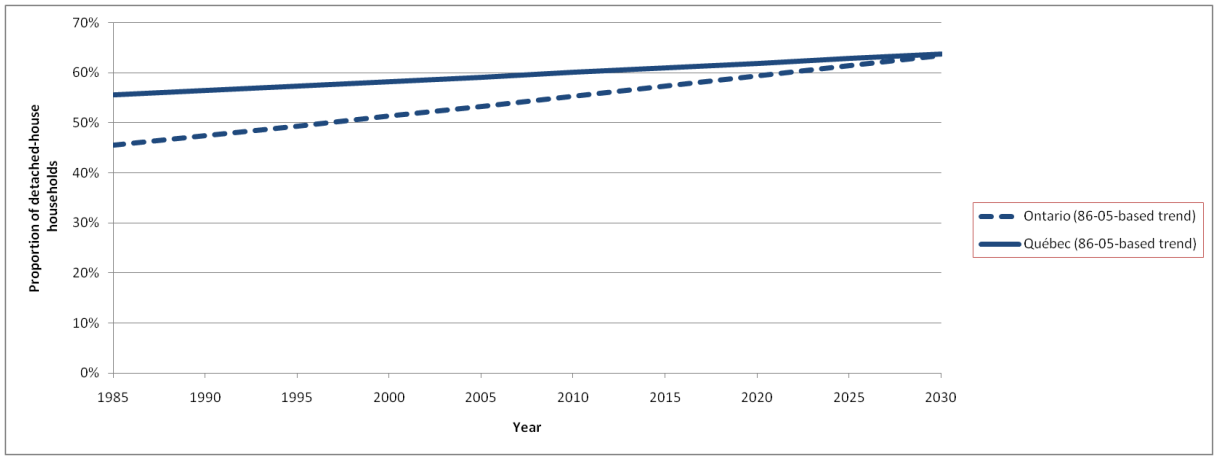


Exhibit 7-14: Proportion of detached-house households

7.2 Gender balance

Gender balance varies over the years between surveys, both in terms of work force participation and mode share distribution, as women's trip-making patterns come to resemble more closely those of men. This may require the adjustment of separate trip rates for trip forecasting over the long term, as overall the percentage of all trips (by those above the age of 10) made by females increases from 49.2% in 1986 to 50.7% in 2005. The overall trip rate per resident above the age of 10 is 11% higher for males than females in 1986, but only 4% higher in 2005.

7.2.1 Increase in female full-time work force representation

Between 1986 and 2005 the female proportion of the full-time work force grows from 41% to 45%. Based on continuing the increase from 1986 to 2005 it may approach equality (50%) by 2031, while based on the slower increase from 1995 to 2005 it may reach 48%. Exhibit 7-15 shows the approach of female work force participation to 50% over time (the Gatineau long-term trend indicates that 50% will be reached by 2021, so it is capped at that level as extending it beyond 50% would require additional assumptions about work patterns that cannot be inferred from the available surveys).

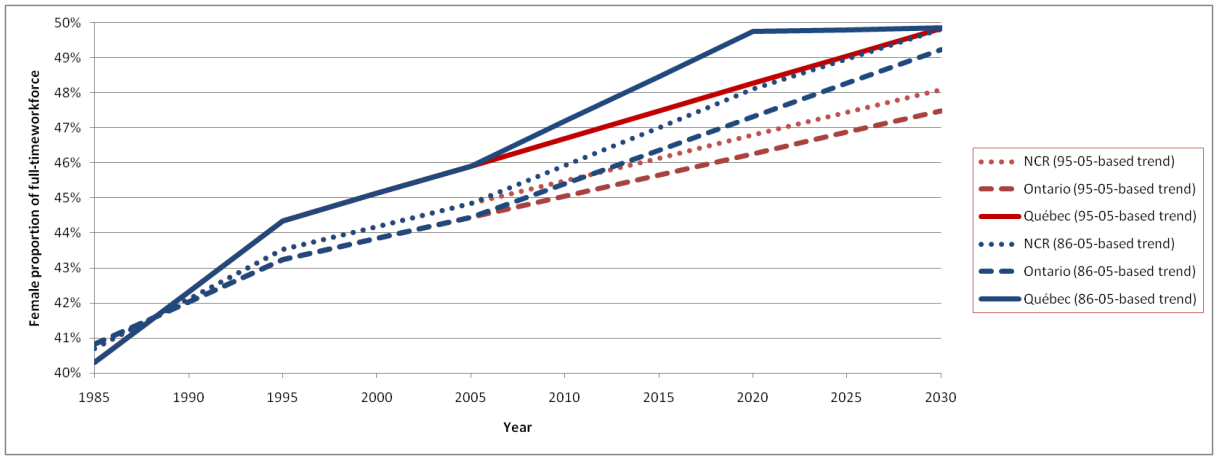


Exhibit 7-15: Female representation in full-time workforce

7.2.2 Adjustment in mode shares by age group

Between 1986 and 2005, there have been notable fluctuations in the transit and auto drive mode shares, as shown in Exhibit 7-16 to Exhibit 7-21, but the overall trend indicates that male (solid-line) and female (dashed-line) mode share patterns are moving closer together.

In 1986, almost as many women age 65 and over take transit (27% mode share) as drive (29% mode share), but in 2005 many more drive (54%) than take transit (8%). The male trend is less dramatic as men over age 65 were more likely to drive than take transit in all

three survey years, and the mode share distribution in that category has remained almost unchanged since 1995, after a large drop in transit between 1986 and 1995.

Some of the extrapolated trend lines cross and then diverge in the future (such as in Exhibit 7-18), which is unlikely to be the case in reality, but the exhibit only reflects what would happen if existing trends were maintained. If the decline in transit mode share by women in the 55-64 (Exhibit 7-17) and over 65 (Exhibit 7-18) age groups continues, then transit mode share will reach zero by 2031. This is an extreme case, and one not likely to occur in reality, but the trends do indicate, as seen in Exhibit 7-20 and Exhibit 7-21, that driving is becoming much more frequent among women over age 55, whereas in the past there was a great disparity between male and female auto drive mode shares.

Because of the difference in trend directions between 1986, 1995 and 2005, there is a substantial difference in forecasted future mode shares depending on whether the 1986-2005 or the 1995-2005 trend is followed. This applies particularly to the 55 and over age group, as changes in the main working-age group (25-54) are much less pronounced, and male and female auto and transit mode shares are close together.

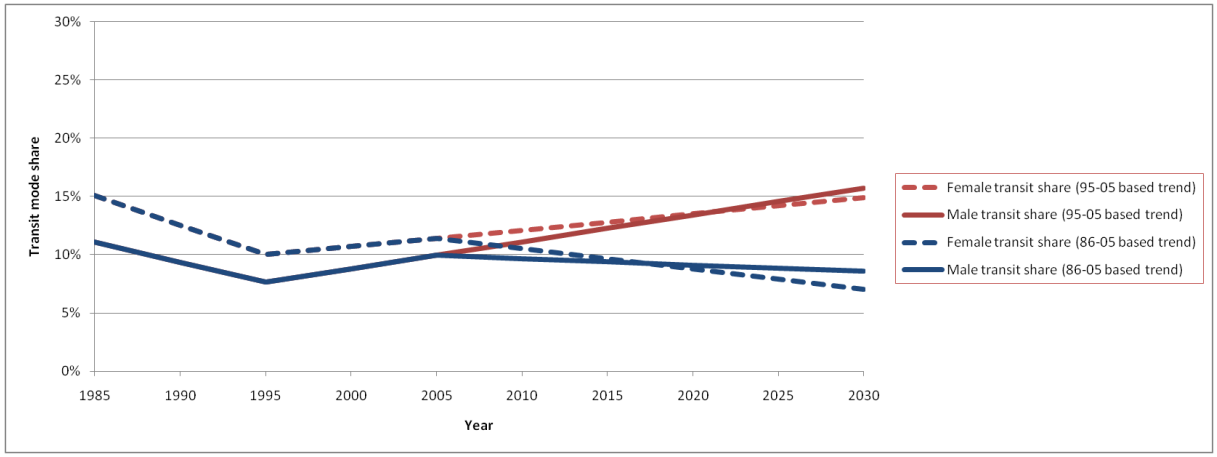


Exhibit 7-16: Transit mode shares (ages 25-54)

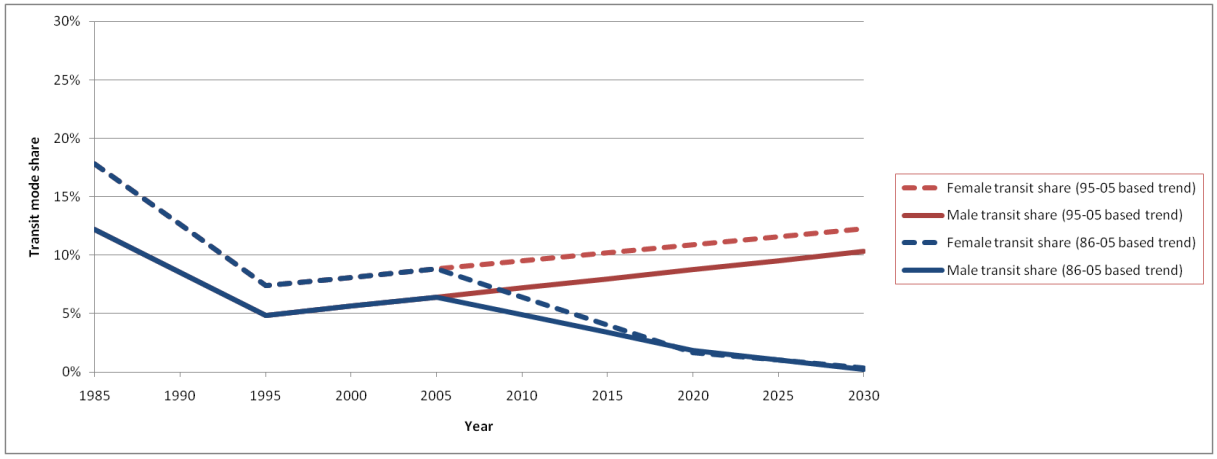


Exhibit 7-17: Transit mode shares (ages 55-64)

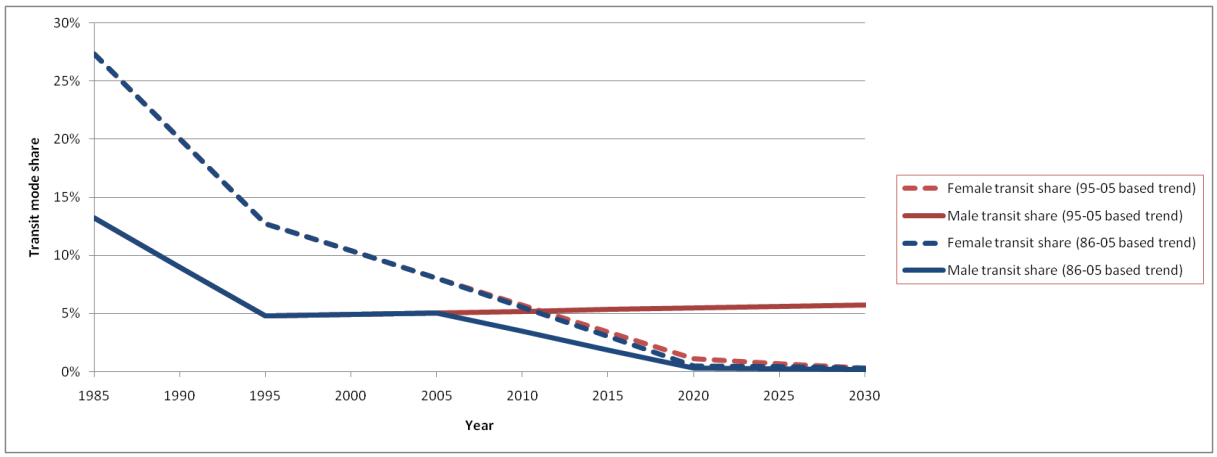


Exhibit 7-18: Transit mode shares (ages 65+)

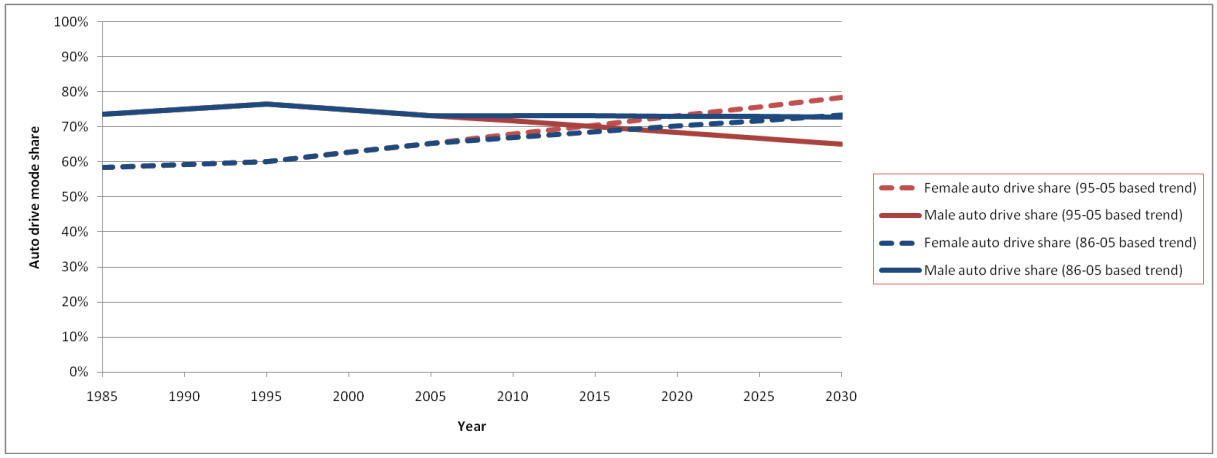


Exhibit 7-19: Auto drive mode shares (ages 25-54)

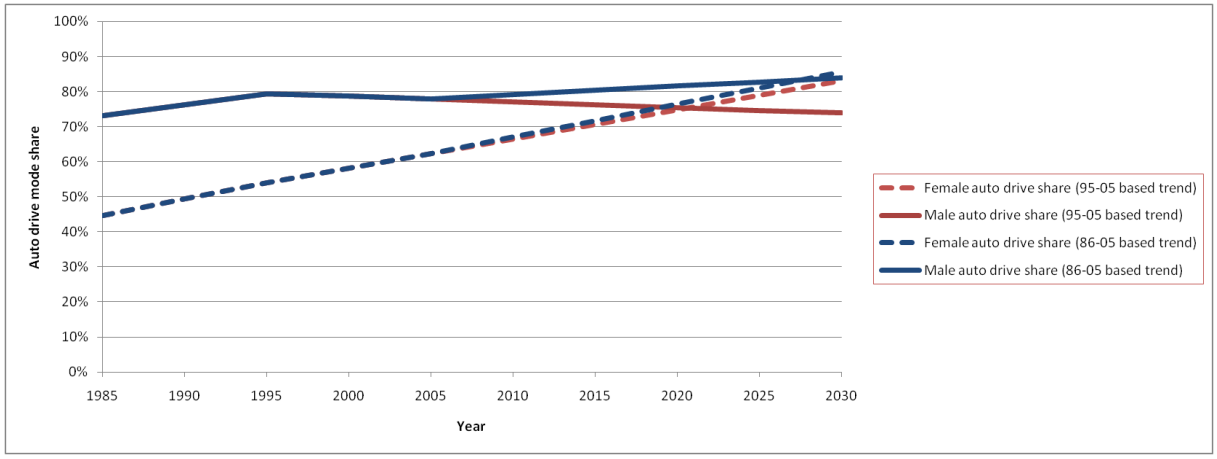


Exhibit 7-20: Auto drive mode shares (ages 55-64)

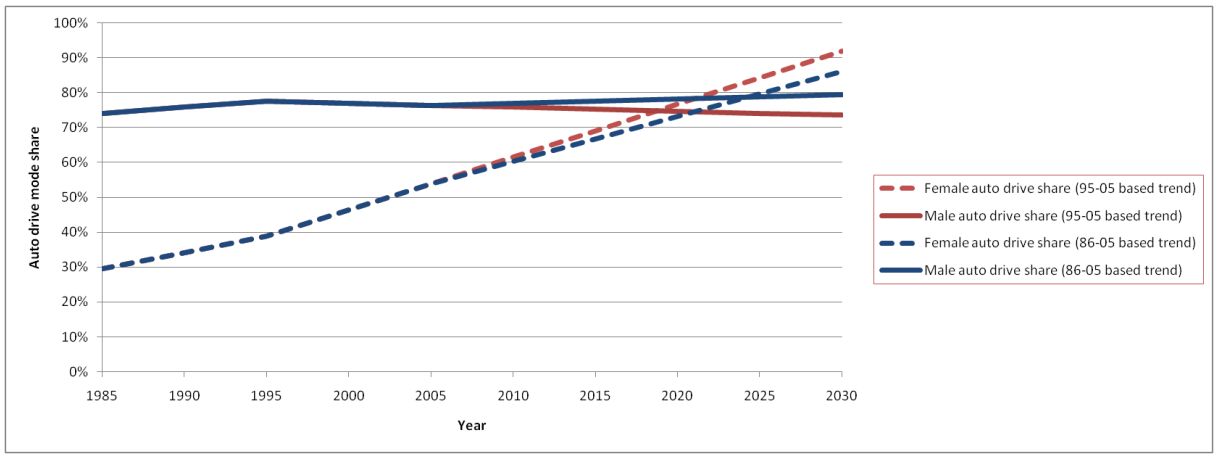


Exhibit 7-21: Auto drive mode shares (ages 65+)

7.2.3 Trip rate variability by gender

Historically, the daily trip rate for males has been higher than for females, but this difference has been lessening over time, to the extent that the rates are on a trend to converge in the near future, even as both male and female rates decline overall, as seen in Exhibit 7-22. Trip rate trends are investigated further in the next section.

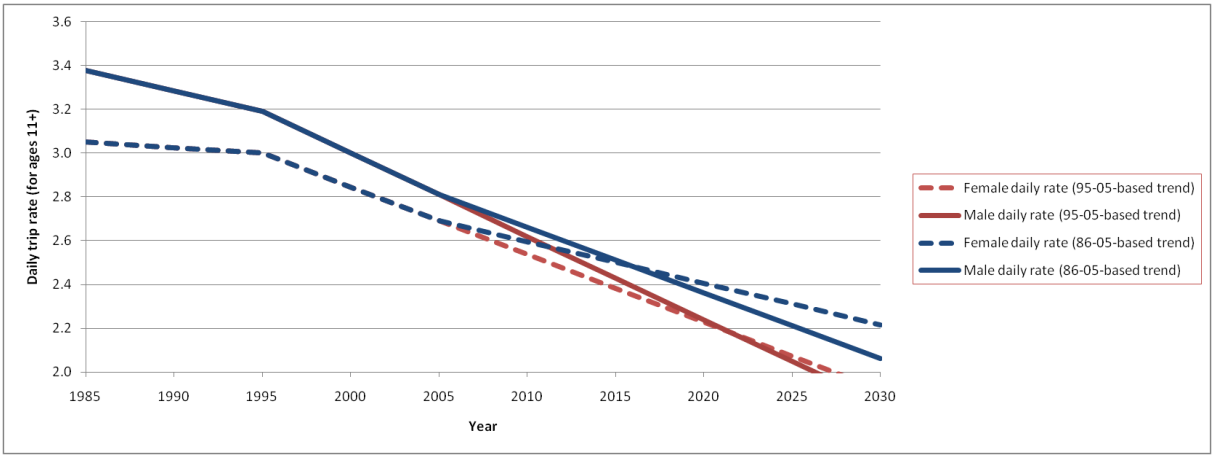


Exhibit 7-22: Daily trips/capita (ages 11 and up)

7.3 Trip rates

While the overall numbers of trips are increasing, the increases are not matching the growth in population. This suggests that a decrease in trip rates for future year modelling may lead to a more accurate portrayal of travel patterns. The observed trends indicate a sharp decline in trips between 1986 and 1995, followed by a levelling off between 1995 and 2005. This is the case for both work and non-work trips (although non-work trips have a shallower decline) except in the Québec districts, where there is an increase in the non-work trip rate between 1986 and 1995, but still a decline between 1995 and 2005.

Over time, as was seen in Exhibit 2-5, there is a small decrease in the proportion of people in the primary working-age (20-54) age group and a small increase in the proportion of people in the 55+ age categories, reflecting a general aging of the population. This is particularly noticeable in Gatineau where, if the age split trend from 1995 to 2005 continues into the future, by 2031 people over age 65 will represent 17% of the population, and people under 25 will represent 18%.

7.3.1 Decline in work trip rates

From 1986 to 1995 the number of daily trips to work per NCR resident decreases from 0.67 to 0.48, and from 1995 to 2005 there is a further decline to 0.47. A continuation of this to 2031 would result in a rate of 0.26 work trips/capita if the 1986-2005 trend is followed, and 0.43 work trips/capita if the 1995-2005 trend is followed. Work trips per employed worker decline comparably from 1.23 (1986) to 1.00 (2005). Thus, the decline is not due to a reduction in the labour force proportion. As the trip rates for 1986 seem particularly high (based both on comparing with other years and with the 1986-2006 TTS trip rates for Toronto), it may be preferable just to use the 1995-2005 NCR trend for

extrapolation. Working at home rates do not change appreciably between 1996 and 2006 (based on census data), increasing from 6.4% to 6.5% of the workforce.[25]

The 1986-2005 work trips trend (seen in Exhibit 7-23) is influenced by a decline from a very high initial rate in 1986 which suggests that each worker makes an average of more than one work trip per day. Due to this, the 1995-2005 trend, showing a gradual decline, may be more probable for forecasting, as using this, the work trip per capita rates remain above the 0.40 mark up to 2031. These rates are also similar to the 0.41 used in the TRANS model for 2031.

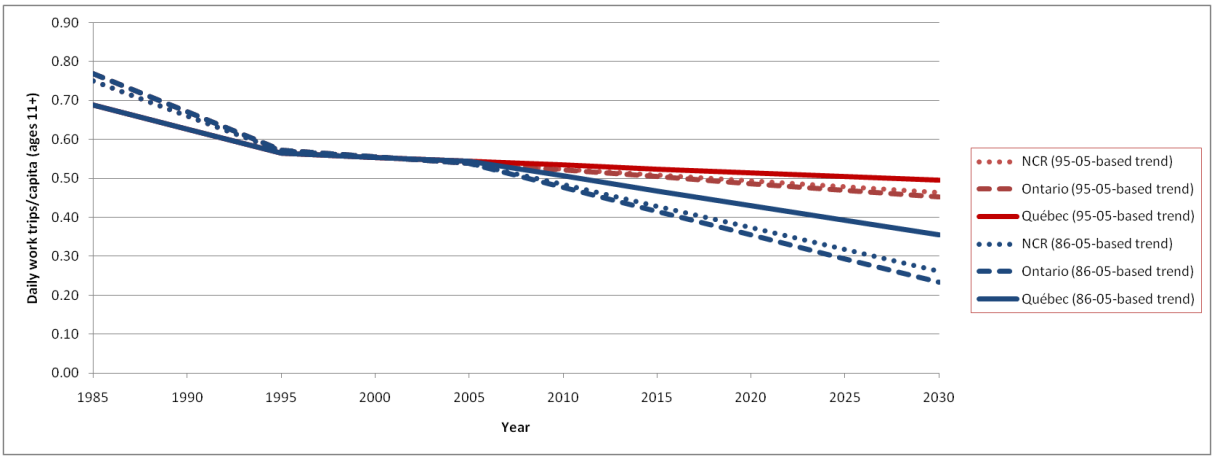


Exhibit 7-23: Daily work trips/capita (ages 11 and up)

7.3.2 Decline in non-work trip rates

From 1986 to 1995 the number of daily trips to a location other than work per NCR resident (including trips *from* work) decreases from 2.20 to 2.12, and from 1995 to 2005 there is a further decline to 1.97. This is a much more consistent decline than for work trips, with the decline from 1986 to 1995 less than that for work trips despite the inclusion of the return trips from work in this category. This means that were the return component of work trips to be excluded (if it could be identified separately from other homebound trips), non-work-related travel would likely remain the same or even show a slight increase over time.

A continuation of the trends to 2031 would result in a rate of 1.52 non-work trips/capita if the 1986-2005 trend is followed, and 1.58 non-work trips/capita if the 1995-2005 trend is followed. The rate used by the TRANS model is 1.58, matching that from the extrapolation of the 1995-2005 trend. The percentage of people over age 65 who work full or part-time increases from 6% to 9% from 1986 to 1995, but then decreases to 5% by 2005, so it is difficult to identify a trend in this case.

[25] Note that the 2005OD survey showed an approximate 10% work-at-home rate, compared with the 6% rate in the 1995 survey. Further investigation revealed that the 2005 question included workers who were telecommuting, in addition to people who normally work at home.

The non-work trip rate (shown in Exhibit 7-24) either decreases slowly over time or remains near-constant, depending in which trend is used (the short-term trend indicates the decrease and the long-term trend the remaining constant, the opposite of the situation with work trips). However, the spread of options is smaller than for work trips.

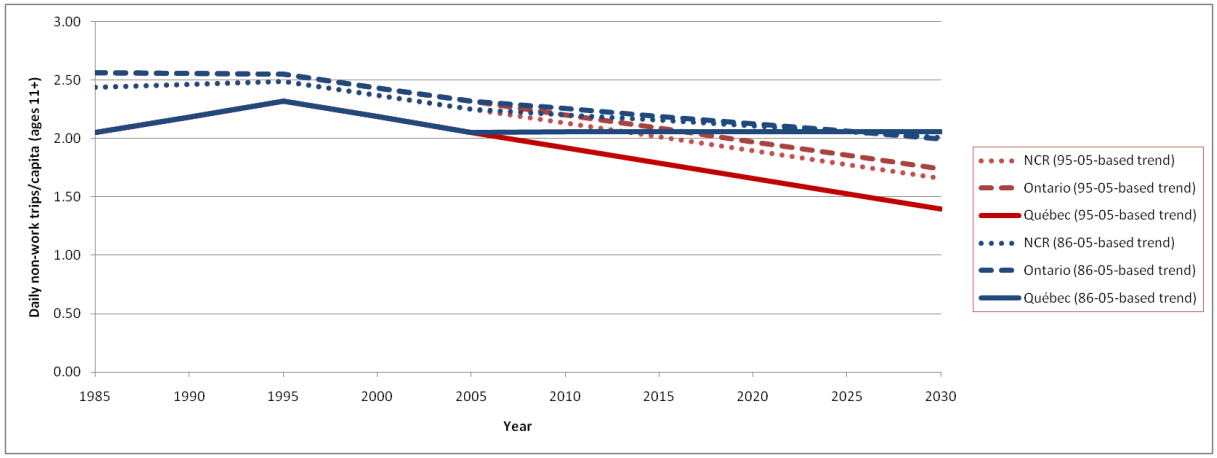


Exhibit 7-24: Daily non-work trips/capita (ages 11 and up)

7.3.3 Variation in trip rates by age and region

Separating daily trip rates into three age groups (student/recent workforce entry, main workforce and retirees) as is done in Exhibit 7-25 to Exhibit 7-28, shows that trip rates as a whole are forecast to decline in the pre-retirement period, so the overall decline does not result from an increase in the proportion of retirees as the population ages. However, the recent trend shows a tendency, especially in Gatineau, for people over the age of 65 to make more trips. Thus, if the number of retirees does increase over time, this may increase the overall trip rate. The result of combining the two trends of i) change in trip rate by age and ii) change in the distribution of the population by age group, is seen below in Exhibit 7-25 and Exhibit 7-26, which display potential distribution of trips amongst age groups in 2031 compared with the 2005 split. In Ottawa, both the oldest and youngest age groups increase their share of the overall number of trips by following either the 1986-2005 or the 1995-2005 trends. However, in Gatineau, if the trend since 1995 is followed, there is a huge increase in the proportion of trips made by retirement-age people, and the trip distribution diverges appreciably from that of Ottawa. If the 1986-2005 trend is followed, Ottawa and Gatineau remain similar in trip distribution by age into the future.

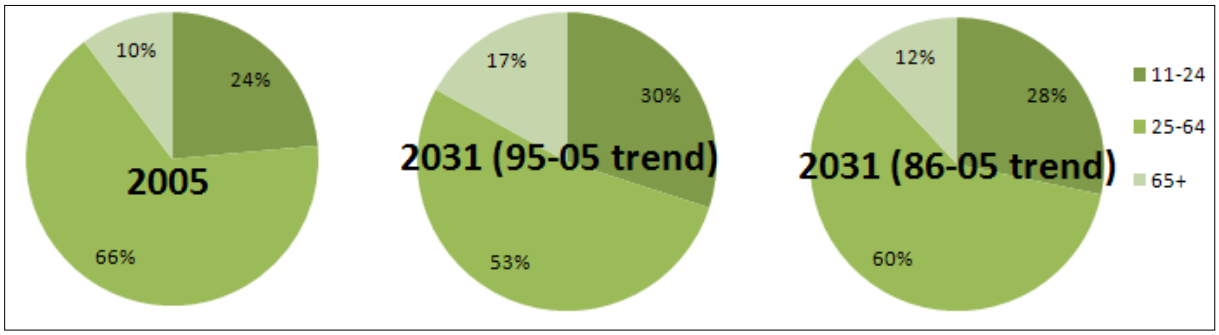


Exhibit 7-25: Distribution of trips by age grouping (Ontario districts)

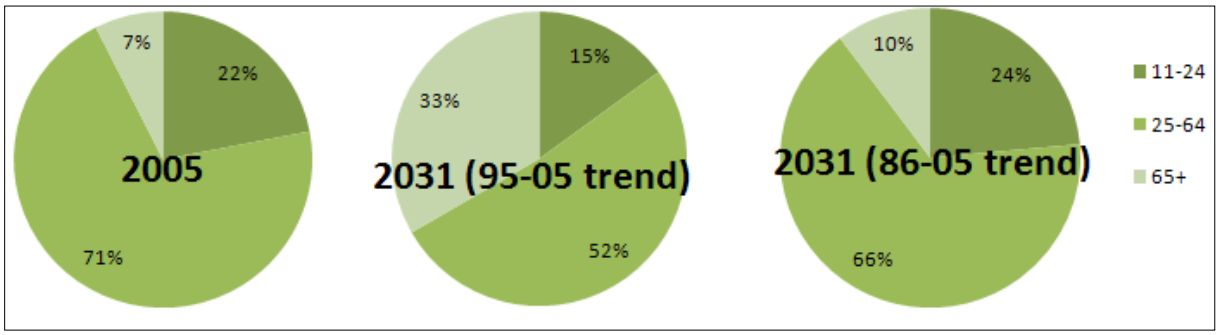


Exhibit 7-26: Distribution of trips by age grouping (Québec districts)

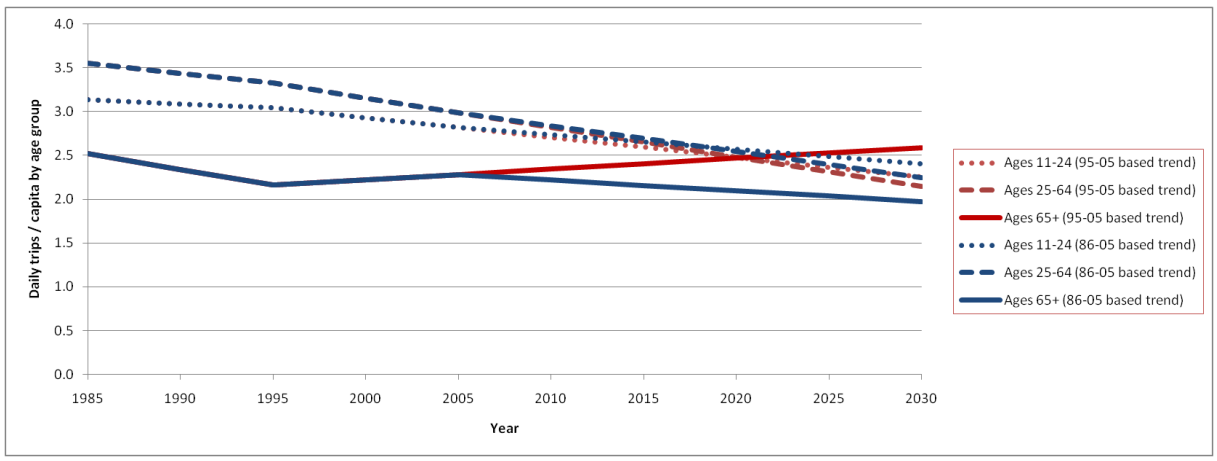


Exhibit 7-27: Daily trip rates by age group (Ontario districts)

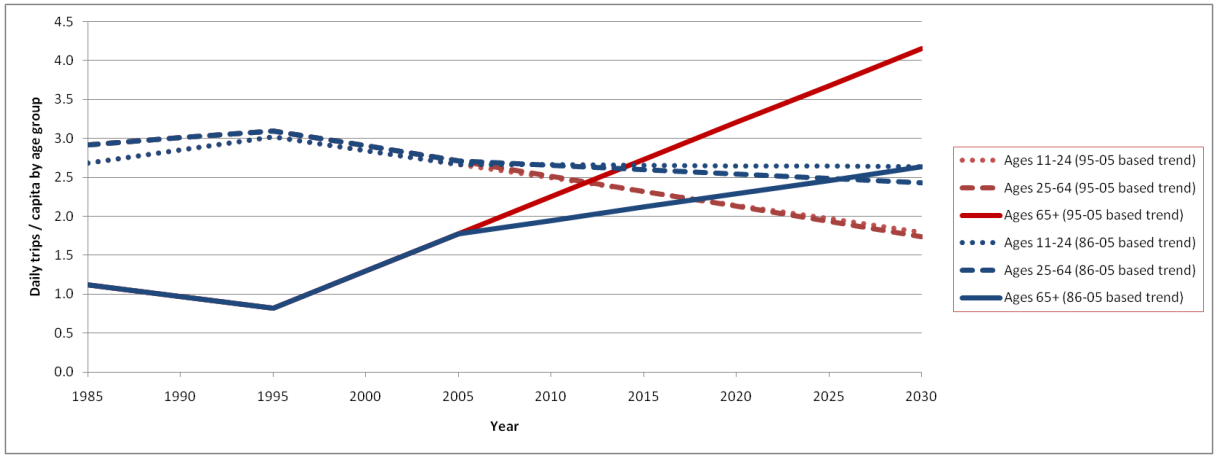


Exhibit 7-28: Daily trip rates by age group (Québec districts)

7.4 Transit and non-motorized mode share

There is some indication of increasing transit mode shares in some areas (particularly in Gatineau) and of increasing non-motorized travel in some areas (particularly urban districts and short-distance travel to the CBD). Adjustments may need to be made to the mode share parameters in the model in order to account for these changes.

7.4.1 Increase in non-motorized share to CBD

The walk and cycle proportion of trips to Ottawa Centre in the AM peak period has increased from 8% to 14% between 1986 and 2005, while the auto drive and transit shares have remained similar (with driving decreasing, then increasing, and transit increasing, then decreasing). If the 1995-2005 trend continues, the non-motorized mode share to the district of Ottawa Centre will increase to 18% by 2031, while the corresponding transit mode share will increase from 43% to 54%. The non-motorized increase is specifically for trips to downtown, as overall in the NCR the non-motorized share in the AM peak period remains almost constant.

As seen below in Exhibit 7-29, the non-motorized share for AM peak trips to the CBD shows an increasing trend since 1995, with Ottawa maintaining a greater share than Gatineau but with both growing at a similar rate.

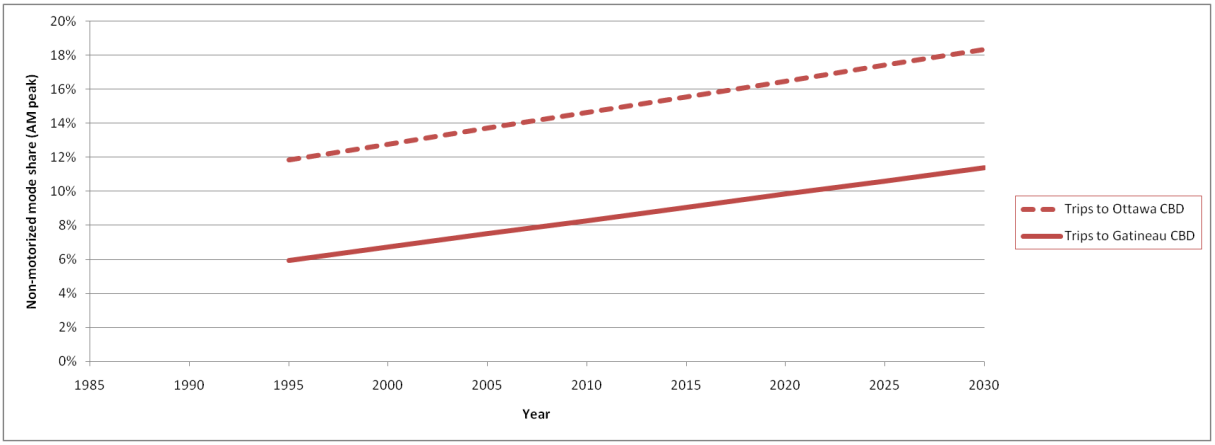


Exhibit 7-29: AM peak non-motorized mode share to CBD

7.4.2 Adjustment in work trip mode share distribution

Over both the long-term (1986-2005) and the short-term (1995-2005) periods, transit mode share has either increased or stayed the same for Ottawa and Gatineau and for all area types, despite a decline between 1986 and 1995. For each of the six district groupings (rural Ontario, rural Québec, suburban Gatineau, suburban Ottawa, central/urban Gatineau and central/urban Ottawa), the proportion of transit trips made by residents to work in the AM peak period increases between 1986 and 2005. Therefore, the overall decline in transit mode share during this period comes from purpose and/or geographical adjustments (as rural mode shares remain consistently lower than suburban mode shares, and central/urban are higher than either) rather than shifts away from transit by residents of particular areas. The ways in which these trends translate into forecasts when they are extrapolated are shown in Exhibit 7-30 to Exhibit 7-32.

Between 1995 and 2005, the proportion of suburban Gatineau residents who took transit to work increases from 9% to 19%; and for central/urban Gatineau residents the increase is from 11% to 21%. By comparison, suburban Ottawa increases from 16% to 21%, and central/urban Ottawa from 18% to 24%. If the 1986-2005 trend (shown in blue) is extrapolated, there is a gradual increase in Gatineau transit mode share over time, reaching 25-30% by 2031, while the Ottawa transit share remains almost constant at around 25%. However, it should be noted that the rapid observed increase in Gatineau's transit share since 1995 reflects the significant improvements in the transit level of service, which in turn has led to equalization in transit use characteristics between Gatineau and Ottawa. If the 1995-2005 (red) trend is extrapolated, the increase is greater for both Ottawa and Gatineau, with Gatineau still growing faster—if the 1995-2005 growth in mode share could continue to 2031, transit mode share in Gatineau would exceed 45% in central and urban districts, although in practice this is unlikely to be attainable without higher-order transit. Due to low numbers of transit users in rural areas, the rural districts are aggregated across both provinces.

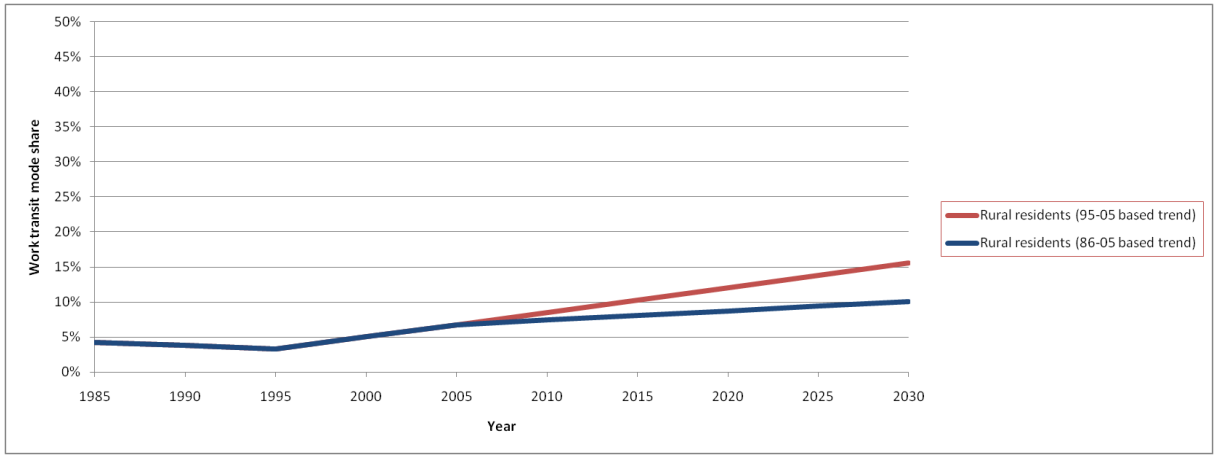


Exhibit 7-30: Work trip transit mode share (rural residents)

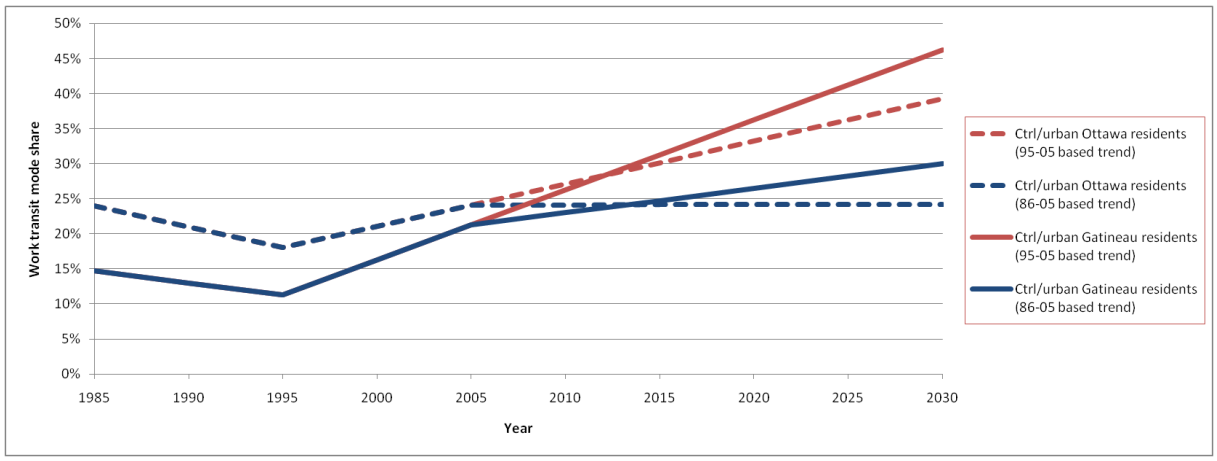


Exhibit 7-31: Work trip transit mode share (central/urban residents)

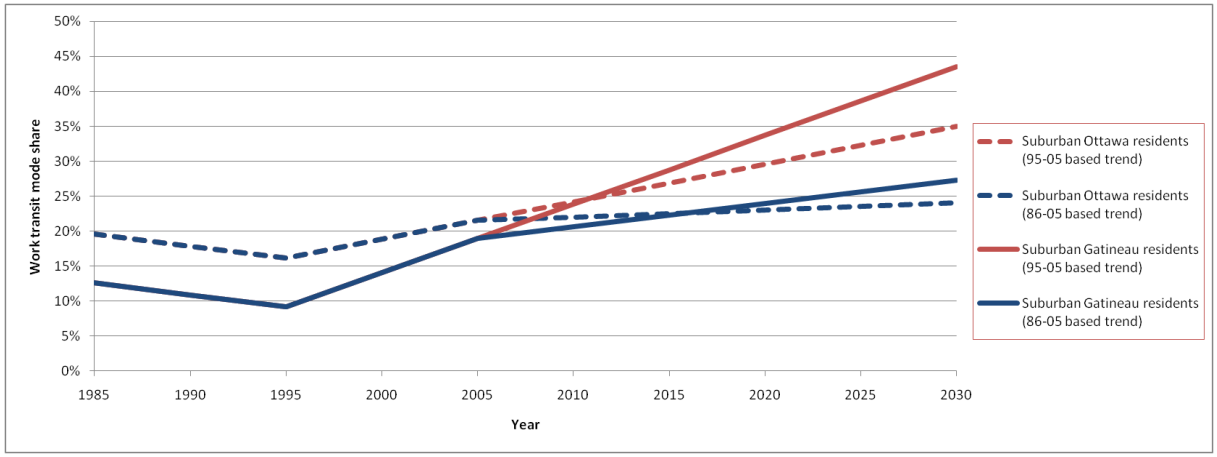


Exhibit 7-32: Work trip transit mode share (suburban residents)

7.5 Analysis

Upon considering the trends described in this chapter, the most significant issue that comes to light is a demographic and economic shift towards suburbs in both Ottawa and Gatineau that is causing a change in travel patterns as radial travel (to/from central cores) is gradually replaced by localized and circumferential travel. Although the number of jobs in the central districts is still increasing, the increase is proportionally low compared with the rate of employment growth in urban and suburban areas. The long-term estimates resulting from extrapolating these shifts are comparable with the projections produced by the TRANS model.

This change has consequences for transit mode share, as trips that do not involve travel to the downtowns use transit less. Accordingly, despite the increase over time in transit mode share in individual districts, with commuting by transit gaining an increased share in rural and suburban as well as urban areas, the overall regional transit share has declined. Extensive transit improvements have helped to stop this decline in recent years, especially in Gatineau – one important trend is that transit behaviour and many other characteristics are starting to resemble each other on both sides of the Ottawa River. However, even as the proportion of people living in the central districts decreases, the number of cars per worker is increasing throughout the region (although this trend appears to be very unstable). As both people and jobs move to the suburban areas they will form new travel patterns and create new areas of capacity constraint that model projections will need to account for.

Other trends include a reduction in the differences between male and female travel patterns, and an overall decrease in the number of trips per capita for both work and non-work purposes. The trip rates change by different degrees for different age groups; people of retirement age have historically been making fewer trips on average than those of other ages, but there are indications that this difference is narrowing. This means that, especially in Gatineau (where the older age group is growing faster with respect to the whole population), the number of trips made by people over 65 may come to rival the number made by those people under 25. As these two demographics will have very different trip purposes and travel patterns, these changes present another challenge for the model to address.

While it is possible that some of these trends may be linked, analysis of the TRANS survey results does not enable us to identify causal relationships between trends over time as each survey effectively represents a snapshot of a single moment. For investigating these relationships it is interesting to look at panel surveys, which monitor the same respondents over time and are thus able to link the development of their demographic and trip-making characteristics, providing for dynamic travel behaviour analysis. In North America, the most comprehensive study has been the Puget Sound Transportation Panel (PSTP)[26] in the Seattle area, which surveyed 20,000 personal travel diaries in 10 “waves”

[26] Goulias, K., L. Blain et al, Catching the Next Big Wave, TRB 07-1699, 2007, pp 9-18

from 1989 to 2002, although eventually it was discontinued due to costs of maintenance and difficulties in replacing people who drop out over time.

The PSTP indicates that:

- Most changes in mode (i.e., from transit use to driving) occur immediately after a change in occupation or place of employment[27] (which may remove transit as a viable mode). When making relocation decisions, people are also likely to take their estimate of the importance of transit into account as a considering factor.
- People in households that increase car ownership increase the average number of trips made. This leads to the question of whether an increase in ownership causes the increase in trips, or the increase in trips causes the demand for more car purchases. A German mobility panel survey[28], still ongoing, has shown indications that those who make higher numbers of trips are the most likely category to increase their vehicle ownership. Nonetheless, the trends observed in the NCR are for an overall increase in vehicle ownership rates while at the same time a decline in the number of trips. The shift in job locations towards suburban areas that are less well served by transit may be showing an influence here. Also, the trend of ownership increase in the NCR is unstable, with the trend possibly showing a decrease depending on which survey period is extrapolated.
- It is difficult to determine whether variations in land use characteristics, gender, employment and occupation type are significant in changing trip rate. Findings do not identify any definite correlation between these.
- Trip rates are gradually decreasing over time. However, the number of trips increases with an increase in the age of children (ages 6-17) in the household, but decreases with an increase in the number of adults (18 and over). This is important to view in light of the situation in the NCR with both an increase in the average age of the population and a declining trip rate. However, there are a variety of other potential causes for declining trip rates, such as economic fluctuations and increase in fuel prices, and, as was noted before, trip rates among over-65s in the NCR are actually increasing, so it is difficult to establish a clear link with age profile and trip rates. Nonetheless, the declining trip rate appears to be a consistent phenomenon, as it is also observed in the Greater Toronto Area from the TTS.

7.6 Conclusions

This chapter has extrapolated and suggested ways to interpret the four leading influences that appear to drive changes in travel patterns: these being a shift to suburban living and working, the increase in gender balance (both in terms of working and mode share), the decline in trip rates for all trip types and the changes in mode shares. The final chapter ties together the components of the study, and describes how model development and calibration could be influenced by the study findings.

[27] Perk, V, J. Flynn and J. Volinski, Transit Ridership, Reliability, and Retention. NCTR-776-07, 2008, p. *x*
[28] Zumkeller, D., Mobility Panel Surveys: the German Experience. Universitat Karlsruhe, 2007.

8. Conclusions

Part 2 of this study (Chapters 2 to 6) has identified significant patterns that have developed in the National Capital Region between 1986 and 2005. Many of these appear to be driven by one or more key region-wide trends, such as the increasing influence of the suburbs for both population and employment growth, which may help to produce a variety of findings in categories as diverse as a reduction in transit mode share, a lowering of housing density and a decline in the proportion of trips destined to downtown. A decline in rates both for work and non-work trips is another significant trend, and it is interesting to see how the trip rates vary by age category over time. The decline in rates is not unique to the NCR—data for Toronto also show the number of work trips per capita and per worker declining between 1986 and 2006.

Part 3 of the study (Chapter 7) classifies these key trends and extrapolates them to medium-term (2021) and long-term (2031) horizons, based on the patterns observed from surveys. This indicates how trend continuations may affect travel behaviour and modelling parameters in the future.

In some cases, the trend from 1986 to 2005 indicates a different outcome, if it is continued, than the trend from 1995 to 2005 for the same indicator. For example, overall transit mode shares decrease slightly between 1986 and 2005, but increase substantially between 1995 and 2005 (with an overall pattern resembling a 'V'). In these cases, the potential divergence of alternative trends has been shown.

Overall, there is a demographic and economic shift towards suburbs in both Ottawa and Gatineau. Traditional travel patterns to and from the central districts are losing ground to trips that involve only suburban and rural areas, whether within suburban areas, circumferentially, or between newly developed localized suburban hubs.

Differences are also reduced between male and female travel patterns, with female auto use growing faster in the older age categories. The decrease in the number of trips per capita suggests a lower overall activity rate, with potential implications for future trip generation models.

Historically, people over 65 travel less than those in younger age groups, but this gap is narrowing, and trips made by over 65s may equal those made by under 25s (especially in Gatineau where the proportion of the population over 65 is growing faster). As these two demographics will have very different trip purposes and travel patterns, these changes present another challenge for the model to address.

Calibration of the steps of a model is necessarily driven by today's patterns (especially transit share, which focuses on the central core), while future patterns may be different. With the growing significance of suburb-to-suburb and other non core-focused travel, and multiple activity centres away from the CBD, screenlines and travel times may need to be

calibrated in both directions to be able to deal with the increasing influence of counter-peak flows. Data may be sparse in currently dormant directions, suggesting the need for larger survey samples in suburban areas, or workplace surveys to gain a better sense of home-work patterns.

Another data collection approach that has been tried in other locations is the panel survey, where a consistent group of respondents is surveyed over a period of time. Panel surveys, while encountering significant problems in respondent attrition, have indicated a decline in trip rates over time, a link between change in jobs and change in modes, and some variability in trip rates with household age profiles.

In summary, the directions indicated by these key trends analysed in this report, if they are extrapolated to continue in the future, can, while not of themselves providing detailed projections, be compared against those projections made by the TRANS model. The additional information (beyond what was available at the time of model calibration) that is provided by the analysis of the 2005 survey and its relationship to previous surveys can assist in identifying where model parameters could be adjusted or where there may be trends that are not accounted for by the existing variables, such as changes in trip rates by age category. It also can help to identify where additional calibration or data collection methods would be useful. Overall, the survey trend analysis serves as an independent confirmation of the projections made by the TRANS model, while highlighting some areas for future investigation.

Appendix A
Origin-Destination Flows by District

Table A-1: Origin-Destination Flows

TRIPS	DEST	Alta Vista			Aylmer			Bayshore / Cedarview			Beacon Hill			Gatineau Centre			Gatineau Est			Hull Périphérie		
ORIGIN		1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005
Alta Vista	AM	13185	13647	13602	29	28	49	624	1045	975	1457	1712	1858	90	103	190	44	0	90	303	260	427
	MD	34342	31720	28534	245	129	387	1756	2486	2152	1771	1999	2381	621	368	489	354	268	342	275	398	620
	PM	18299	15863	17871	440	800	632	2273	1953	2429	2292	1830	2224	778	778	963	326	638	690	769	588	745
Aylmer	AM	566	787	678	4570	6022	5904	121	358	374	41	219	291	167	322	715	181	167	296	1800	2990	3418
	MD	167	109	256	7067	12820	10489	167	232	210	0	47	71	67	354	720	285	44	458	880	1497	1759
	PM	231	260	189	4357	8614	7036	69	132	124	0	41	41	196	254	444	292	84	436	435	882	786
Bayshore / Cedarview	AM	2471	2071	2729	100	25	33	11067	11359	11352	181	212	532	82	21	132	0	45	59	194	322	378
	MD	1373	2373	1861	175	223	222	28275	31588	22676	160	435	498	73	86	203	43	70	94	118	369	291
	PM	690	1397	1264	346	340	409	15977	17626	12417	65	233	284	52	146	169	0	240	109	237	384	373
Beacon Hill	AM	1844	1702	1953	0	0	14	97	418	252	4331	5030	4371	0	0	41	0	21	13	283	203	333
	MD	2062	2679	2646	23	84	90	126	338	482	7484	8771	9939	280	206	166	44	42	153	27	106	270
	PM	1422	1353	1943	41	193	286	128	204	546	4872	5363	4643	91	303	409	44	159	262	75	241	406
Gatineau Centre	AM	741	664	847	137	103	327	58	222	283	436	419	457	4401	9838	7735	1130	1449	2070	2807	3560	4179
	MD	338	334	389	136	364	670	31	92	135	85	132	108	8353	20640	16256	2960	4958	5707	2395	2698	4074
	PM	90	38	213	188	325	932	45	0	22	0	65	17	6530	14066	12075	2342	5755	5738	1266	1656	2258
Gatineau Est	AM	448	613	671	281	134	364	43	156	73	0	112	410	1828	4286	4711	5813	7849	6971	2230	2297	3198
	MD	101	266	222	348	172	285	50	123	156	87	42	70	3769	5140	6113	9569	11280	9190	1411	1536	2122
	PM	87	87	191	176	191	307	0	23	30	0	44	66	1885	3331	3163	3985	8009	6307	611	951	902
Hull Périphérie	AM	900	700	567	639	621	515	38	300	317	148	230	475	1187	1074	1585	437	426	651	8699	9128	9477
	MD	700	488	502	914	1836	1809	342	495	262	23	172	342	2632	3066	4025	885	1465	2255	20008	21828	21409
	PM	274	193	555	2098	2369	3045	203	321	338	276	202	290	2818	4255	4633	1418	2475	2626	12251	13586	12420
Hunt Club	AM	4411	6626	7473	0	27	54	212	602	794	443	406	758	0	44	106	48	38	27	234	131	292
	MD	3624	4655	5339	76	65	117	164	668	902	149	367	353	89	61	31	43	105	174	187	175	183
	PM	1554	3284	2850	43	58	353	565	838	792	190	217	261	136	127	83	43	227	49	114	123	150
Île de Hull	AM	213	259	325	41	92	142	188	147	69	137	206	117	109	216	232	396	159	171	1585	1342	836
	MD	193	164	308	526	439	342	302	248	191	371	110	158	900	1028	848	503	404	575	4237	3530	3147
	PM	1312	950	474	1629	1575	1028	1408	915	711	942	362	323	2128	2817	2224	1508	1834	1457	4580	4282	3594
Kanata / Stittsville	AM	372	1041	2088	32	5	109	4102	4021	4337	32	253	321	0	24	92	0	22	56	185	108	341
	MD	277	326	1597	75	19	120	3501	3877	5648	86	48	274	0	38	52	91	5	70	14	33	112
	PM	173	268	767	43	129	266	1969	2376	3442	0	164	254	0	121	335	0	67	203	124	129	222
Masson-Angers	AM	557	161	225	49	19	84	0	0	0	51	58	138	250	452	889	247	451	610	566	610	1327
	MD	0	24	90	82	19	170	0	23	17	0	24	66	192	502	940	334	250	578	349	313	703
	PM	0	0	33	0	19	191	0	21	16	0	24	29	196	365	358	174	423	681	277	84	194
Merivale	AM	3475	2990	3396	169	85	121	2721	3489	2668	167	339	461	0	0	39	33	0	0	153	282	245
	MD	3588	3344	4080	570	223	500	8399	11448	8299	222	379	678	80	62	395	293	66	48	89	218	408
	PM	3043	2615	3089	538	450	712	6514	7554	5367	683	507	750	212	373	463	139	208	277	465	352	555
Orléans	AM	3742	5148	5348	0	20	52	199	886	1073	4157	4237	5098	0	65	125	0	0	73	519	434	833
	MD	1509	2141	3950	0	150	81	87	529	779	1772	2157	2642	0	26	138	33	0	92	81	180	315
	PM	891	922	1637	23	84	77	106	306	521	873	1480	1592	0	87	335	59	64	260	43	129	300
Ottawa Centre	AM	1118	1111	809	83	17	35	444	186	212	188	251	219	89	68	136	46	45	46	348	243	289
	MD	4224	2979	2906	337	330	687	2057	1826	1382	1457	1011	981	666	622	758	349	233	585	1540	738	939
	PM	7869	4554	4262	2083	1970	1895	5905	3758	2871	3553	2026	2021	2667	2931	2854	1277	1837	2064	2358	1833	2664
Ottawa East	AM	3716	2753	2751	43	26	29	181	367	451	649	1521	2361	186	21	70	0	23	88	377	308	415
	MD	6376	4273	4235	181	159	162	516	574	796	2911	3385	3773	339	466	254	272	223	82	525	178	522
	PM	3970	2419	3176	190	336	233	489	586	660	2991	2243	2130	784	653	672	204	347	518	673	553	632
Ottawa Inner Area	AM	4091	4181	3968	41	64	80	1208	1391	1350	671	765	878	47	218	107	39	64	87	519	447	564
	MD	10738	6684	7704	609	503	628	2698	4167	3413	1832	1448	1929	898	567	531	336	295	337	1376	1004	1040
	PM	6806	5232	6433	1139	976	1333	3756	4410	2797	2014	1309	1924	2104	1360	1104	1190	925	1132	2140	1605	1765
Ottawa West	AM	1527	1373	1857	0	62	78	1443	2147	2076	285	142	317	85	5	50	27	0	35	265	187	279
	MD	2640	1587	2045	252	423	358	10207	10097	6853	376	229	464	167	296	197	115	85	339	449	428	340
	PM	1617	1364	1183	893	716	879	7267	4826	4567	390	242	493	612	779	636	304	416	425	757	542	670
Plateau	AM	154	176	615	70	214	216	0	78	176	0	82	295	51	234	370	0	39	230	306	1043	1846
	MD	0	59	216	251	117	487	0	39	33	0	6	108	51	140	573	0	79	332	575	871	2060
	PM	0	0	96	41	217	571	0	0	19	0	39	16	88	143	270	0	80	242	203	240	1031
Rural East	AM	404	440	628	0	0	17	16	108	151	278	306	271	0	6	17	16	0	17	48	38	64
	MD	63	159	278	0	0	37	0	54	58	32	126	162	0	0	0	0	6	0	0	6	14
	PM	105	229	200	0	0	0	0	51	0	48	32	96	0	6	49	0	0	18	0	6	0
Rural Northeast	AM	74	167	218	27	60	260	0	55	44	20	121	150	737	984	2992	540	1178	2113	842	637	2148
	MD	0	36	211	0	65	75	0	33	11	20	6	82	339	1046	1832	251	595	603	294	420	829
	PM	63	6	50	0	0	146	102	0	26	0	0	15	77	436	765	177	464	666	61	140	298
Rural Northwest	AM	222	198	348	163	442	1028	39	138	63	21	75	91	139	134	253	0	49	242	887	1209	1557
	MD	153	110	79	218	418	528	26	32	149	0	14	18	64	195	358	0	130	142	631	757	975
	PM	0	11	61	42	207	225	21	32	29	0	4	14	169	224	122	39	73	223	156	377	330
Rural Southeast	AM	651	912	1463	79	6	0	138	326	453	99	202	238	0	0	84	0	6	17	59	35	68
	MD	342	495	949	0	0	18	33	188	185	33	124	197	0	18	0	0	0	33	0	17	23
	PM	212	255	442	0	0	18	16	112	75	0	86	19	0	82	29	0	42	33	0	6	17
Rural Southwest	AM	357	625	676	16	34	0	745	997	769	65	93	232	0	5	39	0	0	67	64	19	109
	MD	319	338	642	16	0	14	1194	924	1074	0	23	32	0	0	88	0	0	55	16	0	32
	PM	245	201	193	49	0	111	635	314	722	0	0	32	0	4	92	0	0	67	0	0	49
Rural West	AM	229	582	415	0	0	0	1147	1473	923	0	45	67	0	0	0	0	0	0	38	27	16
	MD	195	118	208	0	21	0	676	1633	586	19	0	38	0	22	16	0	0	15	0	0	23
	PM	0	89	72	0	23	18	70	765	232	0	0	60	0	0	41	0	23	54	0	0	28
South Gloucester / Leitrim	AM	284	107	803	0	0	12	77	20	266	186	30	126	44	0	0	0	0	0	0	0	45
	MD	420	237	507	0	0	55	63	5	155	32	40	16	0	0	0	0	0	0	0	0	17
	PM	144	105	81	0	21	71	60	44	135	94	20	0	47	21	74	0	23	52	0	0	7
South Nepean	AM	492	966	2234	0	0	13	1302	2819	2654	31	180	332	0	25	48	0	0	35	33	91	357
	MD	293	470	1113	0	0	17	785	2065	2344	0	0	125	0	0	18	0	0	30	36	0	153
	PM	294	90	483	0	44	25	814	1046	1328	0	23	87	0	17	40	0	0	52	0	4	154
TOTALS	AM	46247	49998	56683	6571	8109	9534	26211	33108	32156	14074	17248	20865	9490	18145	20757	8995	12031	14062	23343	25952	33043
	MD	74037	66169	70868	12103	18581	18347	61454	73783	58947	18924	21094	25508	19580	34948	35002	16760	20603	22290	35512	37301	42380
	PM	49389	41786	47810	14358	19659	20796	48389	48215	40214	19283	16556	17680	21572	33683	32400	13521	24415	24638	27596	28693	30552

TRIPS	DEST	Hunt Club			Île de Hull			Kanata / Stittsville			Masson-Angers			Merivale			Orléans			Ottawa Centre		
ORIGIN		1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005
Alta Vista	AM	1218	1943	1707	1336	817	564	107	366	883	0	45	15	2962	2295	2130	872	533	1118	7429	4622	4915
	MD	4472	6225	7707	216	112	298	489	302	1683	17	25	140	4379	3747	4840	1687	2582	3761	5430	3413	2977
	PM	4092	5563	6106	286	346	285	317	1025	2322	83	97	289	3580	3315	3624	2996	4669	6019	1399	1563	1353
Aylmer	AM	119	62	302	1552	1900	1136	43	129	301	0	19	123	710	423	919	66	125	76	2542	1900	2126
	MD	48	21	88	514	540	268	39	42	188	0	19	107	667	251	526	0	68	54	634	547	668
	PM	43	112	97	298	47	184	107	5	133	15	42	199	67	26	216	0	41	108	41	129	85
Bayshore / Cedarview	AM	289	537	588	1252	938	681	1213	1531	2591	0	21	16	5914	6602	5012	75	23	229	6227	4032	3441
	MD	342	754	946	253	67	155	3541	3867	5041	0	0	50	7352	9701	8473	137	437	786	2308	1565	1419
	PM	265	725	993	131	115	71	3594	3976	4922	17	0	15	4154	6078	4527	103	925	1155	539	608	605
Beacon Hill	AM	126	227	170	1128	419	326	66	71	228	0	19	0	792	678	776	869	656	1058	3705	2405	2459
	MD	241	423	355	116	114	111	53	119	243	0	47	78	341	285	548	2667	3538	2990	1719	704	1034
	PM	547	595	645	63	247	76	16	258	345	51	100	189	486	297	551	2917	2972	4827	616	461	372
Gatineau Centre	AM	227	223	68	1928	2585	2179	0	163	280	17	149	193	298	286	527	99	41	290	2432	2826	3179
	MD	16	0	136	705	927	679	0	0	35	315	327	992	0	193	195	41	43	165	749	603	326
	PM	0	67	62	328	401	329	0	45	119	228	636	886	0	22	48	20	22	120	272	300	263
Gatineau Est	AM	0	183	72	2072	2047	1774	43	67	190	125	343	420	173	204	239	0	0	222	1472	2074	2060
	MD	84	22	62	234	401	396	0	0	21	344	403	480	119	0	114	58	42	144	609	225	304
	PM	48	41	27	233	485	230	0	22	87	213	484	812	98	0	0	87	23	43	203	45	193
Hull Périphérie	AM	153	121	187	3754	3717	3920	76	125	111	49	84	121	396	377	413	38	151	204	2294	1885	2654
	MD	111	210	151	4353	3061	2341	0	22	177	315	248	872	263	153	349	121	219	344	2169	992	1070
	PM	220	63	335	2278	1672	1521	259	65	350	439	514	1135	85	258	227	418	323	698	616	431	608
Hunt Club	AM	2071	4407	4648	254	558	698	34	196	548	0	0	0	1129	2179	3184	95	327	427	2285	2835	3180
	MD	3611	8175	9802	0	47	77	0	207	713	0	27	37	1233	1674	2377	192	699	881	1120	1087	1152
	PM	2818	6509	7229	47	154	46	135	308	491	16	19	40	492	1221	1400	315	1096	930	280	575	320
Île de Hull	AM	0	45	21	2349	1475	1020	0	5	112	0	0	28	208	197	224	16	26	81	825	796	636
	MD	68	65	97	4646	3731	2085	48	29	241	133	81	206	192	268	236	176	137	240	2699	985	731
	PM	131	408	579	2535	1948	1179	405	355	413	277	599	560	1263	483	550	964	1068	1007	1822	1296	638
Kanata / Stittsville	AM	74	251	545	505	509	343	5862	10316	21748	0	0	0	1741	2274	3383	72	69	344	2618	2549	3202
	MD	77	187	732	0	48	254	8429	14008	37286	35	0	15	1092	1257	3073	154	75	572	469	637	1054
	PM	68	312	468	32	21	154	7428	10463	24137	0	0	45	703	752	1751	103	394	634	94	154	191
Masson-Angers	AM	32	19	37	470	493	678	0	23	32	2921	4406	3705	50	26	66	34	19	75	469	307	182
	MD	0	23	14	128	0	144	0	0	0	3389	7489	6903	34	0	75	32	0	104	132	88	90
	PM	0	0	0	17	0	56	0	0	15	3202	5482	4089	0	0	54	0	29	79	0	39	15
Merivale	AM	648	913	805	1309	666	678	506	779	1522	0	0	15	12231	11605	12274	87	223	349	7587	4191	3952
	MD	952	1936	2501	489	224	238	916	984	2830	17	0	0	34514	27730	31521	453	981	1364	4520	1962	2662
	PM	1126	1868	2419	26	296	163	1409	1735	3503	84	0	158	18272	14743	17044	814	1394	2344	1430	1211	535
Orléans	AM	438	988	685	1226	1230	1160	103	350	679	0	50	59	847	1608	2808	8307	15567	21781	7259	7332	7731
	MD	122	577	507	153	44	93	61	65	573	15	0	87	228	895	1350	12042	27822	37927	921	859	1446
	PM	48	423	662	16	49	51	94	45	510	51	62	79	347	344	590	11578	20314	22449	184	283	413
Ottawa Centre	AM	276	291	44	879	921	327	123	118	166	0	19	0	458	842	346	0	225	133	4792	3264	2191
	MD	788	1004	1141	2732	783	544	444	458	992	66	42	117	3616	1627	1878	1343	1021	2043	20611	18940	14982
	PM	2384	2684	3026	1136	659	810	2290	2413	3088	448	364	337	7348	3732	3733	6429	6338	6815	7416	5261	4529
Ottawa East	AM	119	598	345	735	633	642	150	215	342	0	0	50	1286	1107	1439	220	605	490	6116	3871	4146
	MD	525	813	1048	591	210	190	46	127	500	15	92	70	1442	1288	1625	1554	1770	2591	4235	2585	2428
	PM	495	683	707	220	336	164	272	470	741	102	100	179	1266	616	969	2480	2406	3173	1166	827	544
Ottawa Inner Area	AM	959	675	1033	2668	1562	1420	591	417	1115	17	21	82	3353	2151	3163	216	313	494	11429	8848	10092
	MD	1740	2215	3260	1226	1000	553	670	737	1975	0	63	158	6744	5040	6463	1259	1955	2566	17212	12275	10404
	PM	2264	2261	3713	565	661	618	852	1570	2435	83	162	216	4249	5067	5307	2784	3781	3977	5911	5203	4469
Ottawa West	AM	63	416	378	1020	845	698	646	331	1009	0	0	30	3282	2865	2959	27	147	220	4471	3150	3253
	MD	538	522	756	430	256	221	852	653	1358	17	19	28	9194	5335	7825	221	394	820	4304	1723	1744
	PM	396	735	912	611	214	285	1072	1044	1489	34	165	134	6640	3933	4434	924	1052	1253	1562	920	1030
Plateau	AM	0	78	139	514	605	1272	0	59	75	0	0	14	0	197	178	0	0	102	257	469	1090
	MD	0	20	0	196	140	257	0	0	69	0	0	69	0	39	174	0	0	56	0	117	240
	PM	0	0	0	0	109	109	0	0	0	0	0	65	0	0	11	0	20	23	0	0	14
Rural East	AM	48	102	67	151	57	62	32	32	82	0	13	15	63	159	226	745	1283	1762	547	344	390
	MD	0	38	47	16	0	0	0	6	35	0	0	0	32	32	77	458	1218	1553	0	25	71
	PM	0	26	65	0	6	10	0	6	18	0	0	0	0	6	42	164	570	1101	0	19	17
Rural Northeast	AM	42	6	73	349	630	1129	0	0	91	1116	476	384	74	78	276	20	64	93	470	715	925
	MD	0	0	40	123	106	184	0	0	69	84	526	492	88	21	162	0	44	62	88	93	122
	PM	0	0	25	95	43	53	0	0	18	66	246	330	39	0	29	0	5	0	19	18	63
Rural Northwest	AM	52	53	71	623	615	595	0	29	79	68	13	62	98	209	212	19	35	11	763	782	739
	MD	0	17	71	171	70	24	19	9	84	0	4	57	128	56	128	60	55	10	240	185	200
	PM	0	10	29	21	41	0	19	31	0	0	10	39	0	52	102	0	14	81	81	114	14
Rural Southeast	AM	272	549	607	59	81	91	39	116	213	0	0	0	454	632	778	59	78	291	823	594	1070
	MD	316	804	1168	0	0	17	20	39	136	0	0	0	299	329	431	36	228	275	39	47	306
	PM	192	469	574	0	0	0	0	21	123	0	0	35	76	156	277	0	148	273	0	26	89
Rural Southwest	AM	151	214	363	258	149	111	526	382	1430	0	0	0	1608	1164	1444	49	33	81	1227	705	667
	MD	16	205	213	0	7	31	771	250	2104	0	0	0	805	689	967	36	63	162	195	63	171
	PM	81	67	317	0	12	17	389	217	1077	0	0	35	428	233	641	35	27	310	17	73	49
Rural West	AM	57	111	109	57	109	123	1221	2196	2897	0	0	0	478	979	785	0	44	55	322	717	604
	MD	0	69	52	0	0	14	492	3217	2334	0	0	16	210	435	376	0	90	66	38	54	200
	PM	92	43	0	0	0	0	555	2185	1350	0	0	0	19	262	279	0	106	34	0	43	69
South Gloucester / Leitrim	AM	307	111	494	76	21	115	0	0	161	0	0	10	144	50	418	225	6	93	296	44	541
	MD	227	262	598	0	23	38	0	10	73	0	0	0	386	73	291	56	133	165	47	0	114
	PM	64	119	299	0	0	0	0	24	99	0	0	21	234	110	144	16	61	279	0	5	72
South Nepean	AM	277	550	643	228	247	348	163	392	1733	0	0	22	2498	4193	4105	0	22	175	1599	1662	3007
	MD	101	298	458	67	26	33	316	165	865	0	0	0	1221	1507	3079	0	71	328	126	383	466
	PM	41	149	367	0	0	0	128	199	689	0	0	0	502	436	1899	35	78	202	75	44	118
TOTALS	AM	8019	13674	14200	26755	23829	22089	11544	18406	38616	4312	5680	5364	41246	43380	48284	12210	20616	30252	80255	62917	68432
	MD	14396	24885	31950	17358	11937	9245	17207	25316	59628	4760	9412	10974	74581	62626	77154	22784	43685	60030	70614	50159	46382
	PM	15414	23932	29658	8937	7864	6412	19341	26483	48474	5410	9081	9888	50348	42142	48448	33182	47876	57935	23741	19647	16668

TRIPS	DEST	Ottawa East			Ottawa Inner Area			Ottawa West			Plateau			Rural East			Rural Northeast			Rural Northwest		
ORIGIN		1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005
Alta Vista	AM	2773	1861	1933	6311	5339	5451	1758	1445	1174	0	0	27	0	13	56	0	6	26	19	9	11
	MD	7397	4486	5273	9806	7128	8607	1535	1561	2082	0	20	217	206	233	271	46	66	175	39	68	242
	PM	4425	3474	3131	5988	5054	4992	1701	1678	1470	51	176	462	269	423	649	67	186	232	233	238	295
Aylmer	AM	182	339	310	1146	1143	1359	774	1014	910	0	99	494	0	0	18	0	19	84	23	130	186
	MD	299	174	64	365	498	741	293	238	309	216	99	487	0	0	0	0	65	185	90	423	806
	PM	41	83	156	118	176	280	43	86	218	91	240	448	0	0	0	0	39	296	230	545	780
Bayshore / Cedarview	AM	556	541	828	4160	3709	2865	6266	4498	4021	0	0	0	0	6	21	0	0	26	0	21	29
	MD	413	505	799	2941	3840	4014	8894	8296	6832	0	0	84	0	122	87	51	0	45	0	78	116
	PM	300	507	750	1729	1915	1855	3218	4284	3260	0	59	120	16	57	116	0	66	93	133	129	56
Beacon Hill	AM	1926	1657	1467	2618	1753	2070	423	272	534	0	0	0	0	0	19	0	0	15	0	0	12
	MD	3532	3589	4313	1426	1348	1945	165	258	454	0	45	82	32	147	154	0	27	111	0	26	0
	PM	2021	2078	2529	1093	832	1010	544	181	421	0	23	156	230	271	205	0	142	182	19	52	47
Gatineau Centre	AM	612	687	554	1813	1532	1131	712	833	558	88	82	164	0	0	30	118	73	349	45	150	76
	MD	541	294	375	711	675	528	78	126	216	0	138	596	0	0	18	257	1200	1853	39	221	322
	PM	277	109	178	317	252	241	78	0	65	0	178	601	0	6	0	663	1150	2955	60	214	265
Gatineau Est	AM	168	635	365	1053	1093	1066	185	373	443	0	24	209	0	0	0	0	276	249	0	18	173
	MD	173	174	155	206	340	423	200	65	72	0	56	337	0	19	0	516	1129	1599	21	126	176
	PM	382	67	142	129	86	90	110	23	60	0	37	365	0	0	18	474	711	1531	21	53	148
Hull Périphérie	AM	542	388	506	1625	1677	1731	735	552	508	20	164	348	0	21	0	87	62	166	76	171	334
	MD	616	161	483	1364	1195	1075	555	398	253	274	717	2332	0	6	55	131	470	1212	537	678	825
	PM	429	397	546	524	557	605	293	166	313	469	1287	2453	63	32	73	621	607	2029	893	1157	1587
Hunt Club	AM	557	964	658	2780	2749	3785	758	659	900	0	0	0	0	26	66	0	0	0	0	0	0
	MD	556	1117	938	1710	1993	3764	493	275	962	0	39	0	0	38	42	27	0	15	19	19	70
	PM	241	569	673	1027	812	1448	435	457	649	0	78	133	48	70	82	69	45	51	45	58	89
Île de Hull	AM	304	219	97	516	774	542	331	221	363	93	29	0	0	0	0	0	33	59	0	69	0
	MD	295	194	192	1184	788	918	355	159	156	103	190	345	16	19	0	61	92	290	92	97	86
	PM	912	517	495	2347	1360	1175	1113	734	609	257	668	1078	103	70	46	410	546	1127	475	530	474
Kanata / Stittsville	AM	273	426	731	1020	1787	2618	1181	1252	1319	0	0	25	0	0	0	0	0	0	0	0	0
	MD	78	164	551	564	795	2306	935	497	1147	0	0	54	16	6	62	0	0	112	0	5	48
	PM	245	172	419	739	603	1249	644	316	1085	0	0	42	0	32	54	0	43	92	0	37	96
Masson-Angers	AM	84	158	56	112	181	239	49	126	74	0	0	41	0	0	0	66	118	203	0	0	62
	MD	34	96	100	85	83	77	17	0	0	17	0	0	0	0	0	59	450	532	26	28	38
	PM	0	39	75	0	79	94	0	0	14	0	0	35	0	6	15	42	688	407	47	8	24
Merivale	AM	956	584	1054	4227	4732	4609	6305	4332	4085	0	0	0	0	0	19	0	0	0	0	10	47
	MD	1707	1210	1777	7587	6123	7121	8962	4316	7526	0	20	98	0	126	84	0	21	119	58	128	215
	PM	1339	1157	1451	3567	3025	3993	4658	3056	3451	0	202	180	95	121	115	0	118	254	103	157	233
Orléans	AM	2202	2481	3366	3518	4405	4735	880	1217	1472	0	0	48	91	287	600	0	10	16	0	23	56
	MD	2049	1852	2320	1099	2328	3145	191	450	663	0	0	37	539	1246	2094	0	66	82	21	32	172
	PM	738	1295	1144	464	503	1114	138	197	207	0	0	53	738	1337	1515	20	70	112	81	81	11
Ottawa Centre	AM	530	437	297	2372	2382	1357	728	734	505	0	39	12	32	6	0	20	6	0	21	13	0
	MD	4291	2328	2705	14369	9779	9022	4298	1568	1832	103	0	250	16	32	41	70	96	137	212	168	70
	PM	6189	3725	3859	12332	10821	10855	4860	2754	2903	206	312	977	484	312	405	541	603	1020	591	632	734
Ottawa East	AM	5457	5369	5811	3803	3861	3891	981	891	848	0	0	0	0	0	32	0	23	0	45	0	30
	MD	17639	19501	16538	6313	4288	4218	1089	451	1043	0	20	62	184	76	167	20	76	163	39	39	169
	PM	8570	9538	8242	2661	2285	2415	784	670	539	0	66	112	478	229	406	61	119	365	226	99	209
Ottawa Inner Area	AM	1892	1705	1907	13889	12687	15170	2405	1846	2236	60	20	50	0	0	37	38	0	89	0	8	21
	MD	6104	4308	4737	24567	32404	35912	4833	3121	3797	85	78	185	36	64	141	47	90	249	152	207	176
	PM	4308	3705	3246	16368	19019	20194	3531	2107	2960	103	256	445	246	268	289	135	361	448	299	392	535
Ottawa West	AM	698	561	528	3282	2978	2901	6127	6732	8005	0	0	0	0	0	19	0	20	42	39	50	56
	MD	1228	831	972	4806	3689	4285	18078	12908	20877	0	39	146	0	19	33	0	38	121	130	140	216
	PM	978	924	941	2555	2338	3054	9074	7730	11876	103	176	394	63	64	133	47	97	225	86	139	105
Plateau	AM	0	117	154	154	293	563	103	273	498	0	176	937	0	0	0	0	0	31	0	20	27
	MD	0	39	41	51	240	279	0	20	114	139	117	1238	0	0	0	0	0	98	0	8	210
	PM	17	0	28	60	39	104	0	20	43	0	318	1684	0	0	0	47	31	153	21	21	207
Rural East	AM	278	159	317	293	331	380	48	83	86	0	0	0	559	803	642	0	0	0	0	0	0
	MD	246	102	111	118	83	233	0	12	60	0	0	0	535	892	785	0	6	0	0	6	27
	PM	79	25	34	32	13	113	16	20	0	0	0	0	539	820	885	0	0	0	0	0	14
Rural Northeast	AM	61	84	265	243	284	288	106	164	199	27	12	179	0	0	0	1091	728	1367	88	39	176
	MD	41	18	77	42	51	266	53	57	55	0	0	76	0	6	0	396	1585	1573	61	30	404
	PM	105	0	34	58	49	54	80	0	49	0	0	41	0	6	16	947	995	1822	39	75	96
Rural Northwest	AM	158	131	180	429	485	495	115	159	211	21	12	137	0	0	0	38	22	63	1371	1817	1858
	MD	19	60	129	152	238	305	158	153	175	0	49	226	0	6	14	82	83	368	1989	2656	2785
	PM	45	14	92	21	39	186	71	4	19	0	21	140	0	0	0	168	56	114	1380	2190	2028
Rural Southeast	AM	193	169	564	533	531	851	178	174	133	0	0	0	20	12	26	0	0	0	0	0	0
	MD	39	166	292	99	188	411	79	51	75	0	0	0	20	18	0	0	0	0	0	9	26
	PM	0	113	184	93	85	219	39	54	57	0	0	0	16	83	19	0	21	23	0	0	0
Rural Southwest	AM	178	121	157	634	547	765	469	306	259	0	0	0	0	0	0	0	5	18	0	7	14
	MD	83	81	177	334	425	454	458	95	571	0	0	0	0	13	0	0	0	22	45	0	0
	PM	0	99	295	128	147	197	155	75	108	0	20	70	0	13	38	0	0	47	0	8	83
Rural West	AM	76	222	158	272	443	555	516	495	366	0	0	0	0	0	18	0	0	0	19	0	0
	MD	87	20	82	172	326	412	210	258	327	0	0	0	0	0	0	0	0	0	0	4	52
	PM	0	26	83	19	108	129	96	183	117	0	0	21	0	0	0	0	0	14	0	8	14
South Gloucester / Leitrim	AM	134	22	72	435	66	454	134	41	192	0	0	8	28	6	34	0	0	0	0	0	6
	MD	28	0	109	190	50	309	0	23	57	0	0	0	28	11	0	0	0	0	0	5	11
	PM	45	0	109	100	27	154	0	22	47	0	0	14	32	51	19	0	0	51	0	0	11
South Nepean	AM	157	116	576	778	1161	2132	665	632	1376	0	0	0	0	0	0	0	0	27	0	0	28
	MD	31	91	214	256	552	1189	446	249	836	0	0	24	0	0	19	0	0	14	0	20	21
	PM	0	33	44	100	159	539	240	63	464	0	0	0	0	13	54	0	0	43	0	35	11
TOTALS	AM	20947	20156	22911	58016	56923	62003	32933	29324	31277	309	656	2679	730	1180	1635	1457	1400	2831	1746	2554	3201
	MD	47527	41561	43522	80518	79447	91961	52376	35605	50493	936	1625	6876	1628	3100	4067	1762	5563	9075	3572	5222	7284
	PM	31689	28665	28879	52568	50380	56361	31921	24878	31004	1279	4117	10022	3420	4283	5151	4313	6696	13687	4984	6860	8151

TRIPS	DEST	Rural Southeast			Rural Southwest			Rural West			South Gloucester / Leitrim			South Nepean			TOTALS		
ORIGIN		1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005	1986	1995	2005
Alta Vista	AM	113	88	186	246	230	228	0	24	73	34	37	91	39	139	331	40946	36605	38110
	MD	270	486	951	274	312	541	175	131	254	436	225	402	241	419	1061	76481	68909	76387
	PM	612	819	1246	385	578	665	210	475	309	470	140	628	263	887	1771	52604	53155	61404
Aylmer	AM	20	0	18	49	0	112	0	23	20	0	0	64	0	44	27	14672	18233	20261
	MD	59	6	0	31	12	26	0	21	0	0	0	27	33	0	16	11920	18127	18524
	PM	0	0	0	16	0	28	0	41	34	0	0	45	0	39	17	6689	11915	12379
Bayshore / Cedarview	AM	0	26	58	301	160	418	108	444	148	30	90	126	132	460	820	40617	37696	37131
	MD	36	213	175	1137	808	858	720	1684	521	94	0	111	1373	2252	2084	59810	69332	58440
	PM	165	210	403	1133	1054	1042	784	1735	859	33	25	195	1301	2887	2956	34981	45722	39016
Beacon Hill	AM	0	67	17	0	0	51	0	24	0	0	0	8	0	23	30	18208	15646	16214
	MD	0	157	224	0	0	34	19	22	0	231	30	77	0	49	70	20588	23153	26570
	PM	158	221	114	32	127	313	0	51	67	62	63	56	64	248	385	15591	17036	20981
Gatineau Centre	AM	0	42	0	0	0	111	0	0	20	47	21	66	0	0	0	18146	25950	25672
	MD	0	0	0	0	0	42	0	23	0	0	0	13	0	0	18	17750	33988	33848
	PM	0	0	89	0	28	39	0	0	16	0	0	0	0	25	62	12705	25361	27594
Gatineau Est	AM	0	24	0	0	0	51	0	0	41	0	0	15	0	0	25	15935	22809	24011
	MD	0	0	39	0	0	15	0	24	0	0	0	0	0	0	33	17900	21586	22527
	PM	0	12	33	0	0	70	0	0	0	0	0	0	0	0	16	8743	14724	14830
Hull Périphérie	AM	0	0	33	0	0	27	0	40	49	0	0	0	0	0	14	21893	22014	24916
	MD	0	17	37	0	11	52	0	0	15	0	23	0	0	0	153	36314	37933	42399
	PM	39	12	21	64	11	55	19	87	38	0	0	26	33	85	230	27101	31125	36758
Hunt Club	AM	54	727	724	43	119	359	45	40	22	72	190	228	138	108	182	15664	23959	29111
	MD	310	488	770	111	97	321	38	46	19	269	174	531	0	274	394	14022	22570	29965
	PM	522	742	743	187	196	328	0	183	196	301	50	427	196	389	653	9816	18404	20467
Île de Hull	AM	0	0	0	0	0	43	0	0	0	16	0	0	0	0	45	7327	6309	5163
	MD	54	12	0	0	27	16	0	22	0	0	0	54	47	26	50	17200	12847	11514
	PM	99	84	52	194	119	40	19	103	87	28	0	117	228	155	367	27091	23779	20406
Kanata / Stittsville	AM	20	26	117	224	145	1056	264	1922	799	0	5	42	16	162	690	18595	27166	44305
	MD	0	86	92	785	238	1918	645	3052	2458	0	0	113	324	275	701	17648	25675	60423
	PM	59	82	201	670	473	1261	1345	2517	2665	0	5	157	158	264	1562	14597	19894	41752
Masson-Angers	AM	0	0	17	0	0	17	0	0	0	0	0	0	0	0	0	6006	7627	8757
	MD	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	4910	9417	10642
	PM	0	0	18	0	0	0	0	0	0	17	0	10	0	0	22	3971	7306	6524
Merivale	AM	56	68	123	324	142	286	117	133	120	199	107	74	240	322	805	41509	35992	37745
	MD	371	226	647	1021	577	946	298	454	463	178	137	436	1537	2707	3096	76820	65602	78051
	PM	474	597	590	1413	1113	1616	548	722	454	212	70	361	1738	2937	3491	48903	46582	53565
Orléans	AM	36	218	228	35	17	236	0	43	47	16	79	236	35	10	310	33608	46705	58856
	MD	79	119	343	80	44	204	0	135	47	231	91	103	0	54	373	21313	41866	59561
	PM	20	102	160	16	32	84	38	22	109	128	10	107	17	7	197	16712	28250	34291
Ottawa Centre	AM	39	17	0	0	5	34	0	20	0	0	0	17	0	22	64	12587	11283	7241
	MD	59	41	388	246	99	414	70	182	163	47	5	94	96	188	485	64106	46099	45538
	PM	408	466	943	921	591	428	268	596	514	200	18	382	1446	1890	2675	81608	63081	66666
Ottawa East	AM	0	31	81	16	0	200	50	0	93	45	44	69	0	26	65	24174	22291	24738
	MD	83	205	207	74	115	97	0	7	78	138	20	94	31	75	325	45137	41014	41438
	PM	138	127	427	146	105	182	19	123	183	190	0	82	131	163	550	28707	26101	28210
Ottawa Inner Area	AM	0	46	112	46	52	148	56	106	103	0	0	109	35	84	64	44269	37672	44477
	MD	59	137	395	387	167	503	95	140	306	252	71	194	401	314	1005	84358	79054	88563
	PM	380	471	786	486	467	615	191	670	382	301	79	368	385	714	1752	62589	63032	69245
Ottawa West	AM	0	77	43	62	25	64	19	89	77	0	0	17	0	53	318	23371	22253	25309
	MD	20	12	179	339	138	495	206	283	281	44	23	52	240	265	804	54853	40432	51809
	PM	185	178	162	441	278	378	344	382	216	134	20	233	656	593	1553	37745	29870	37661
Plateau	AM	0	0	0	0	20	58	0	0	0	0	0	0	0	0	13	1610	4174	8898
	MD	0	0	0	0	0	0	0	0	21	0	0	0	0	0	11	1263	2051	6684
	PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	477	1278	4687
Rural East	AM	16	57	15	0	6	0	0	6	0	16	38	0	0	6	34	3556	4379	5241
	MD	20	12	26	16	32	36	0	6	0	56	18	20	0	0	0	1592	2841	3631
	PM	20	12	0	0	0	12	0	0	0	0	0	28	0	0	0	1002	1849	2700
Rural Northeast	AM	0	0	0	0	0	0	0	0	0	0	0	14	0	0	51	5927	6482	13435
	MD	0	0	12	0	0	0	0	6	0	0	0	0	0	0	0	1879	4744	7238
	PM	0	0	11	0	5	0	0	0	0	0	0	0	0	0	16	1928	2487	4624
Rural Northwest	AM	0	5	0	0	4	51	0	0	0	0	0	53	0	31	27	5225	6648	8425
	MD	0	9	0	0	0	29	0	0	38	0	5	16	0	20	17	4111	5331	6926
	PM	0	0	0	0	7	35	0	22	0	0	0	6	0	5	11	2232	3559	3900
Rural Southeast	AM	1065	3086	3501	625	381	266	0	23	0	217	125	247	56	41	161	5620	8077	11124
	MD	1196	3656	3875	312	700	930	0	12	92	123	67	217	0	53	343	2986	7210	10000
	PM	881	2627	2365	278	412	558	19	12	33	28	5	161	0	79	235	1850	4893	5857
Rural Southwest	AM	278	523	689	2631	3293	3479	32	269	84	82	75	88	146	233	305	9515	9800	11849
	MD	550	437	507	4960	6186	5789	54	594	126	49	111	331	259	455	746	10159	10959	14310
	PM	460	398	440	2476	3618	3031	101	348	135	105	30	249	201	380	503	5503	6285	8906
Rural West	AM	0	27	43	38	467	93	1167	2192	2871	0	22	16	57	93	49	5697	10245	10163
	MD	0	50	37	16	313	147	1337	5348	2890	0	0	43	57	173	160	3509	12153	8093
	PM	0	17	39	80	374	132	946	2757	2000	38	0	15	0	129	157	1915	7142	4958
South Gloucester / Leitrim	AM	20	20	138	0	20	314	0	0	8	90	10	330	44	30	80	2524	603	4719
	MD	143	22	177	36	70	286	0	0	13	244	10	479	0	10	97	1901	984	3568
	PM	178	84	297	82	80	183	0	0	0	157	10	543	0	35	119	1253	859	2881
South Nepean	AM	0	55	183	146	302	238	31	111	132	0	25	134	1313	1230	8364	9713	14782	28894
	MD	36	79	245	238	444	863	0	197	66	44	5	102	1758	3509	13534	5754	10131	26157
	PM	20	94	183	283	326	451	95	186	128	20	20	84	1371	3127	9066	4016	6187	16510
TOTALS	AM	1716	5230	6327	4785	5387	7939	1888	5510	4707	863	867	2044	2251	3119	12876	446914	485400	574765
	MD	3345	6474	9326	10063	10390	14561	3658	12389	7852	2437	1015	3508	6397	11118	25576	674288	714010	842806
	PM	4816	7355	9326	9301	9995	11545	4947	11034	8428	2424	544	4277	8186	15037	28368	510328	559876	646773

Appendix B
Tables of Trip-based Indicators

Table B–1: Trips by purpose and occupation (daily where not specified)

Trip-based values														
	In 1986, school buses are counted with public transit								If no values for school bus, it is classified with public transit					
									If no values for motorcycle, it is classified with "other"					
Indicator	**Year**	**Auto-driver**	**Auto-passenger**	**Public transit**	**School bus**	**Taxi**	**Bicycle**	**Walk**	**Motorcycle**	**Other**		**All modes**	**Transit**	**Occupancy**
Trips to work/work related	1986	307242	52131	100263		4459	5817	28774		3196		501882	100263	
Trips to work/work related	1995	301117	45659	65530		2369	5753	37510		1976		459913	65530	
Trips to work/work related	2005	348729	41442	97571		4184	9133	39130	540	1643		542372	97571	
Trips to school	1986	24248	13367	63385		291	4027	20271		1047		126636	63385	
Trips to school	1995	25379	21365	71381		304	4882	36779		566		160656	71381	
Trips to school	2005	21673	30687	98658		246	3388	33726	64	986		189428	98658	
Trips to serve a passenger	1986	118840	18694	29		0	0	43		26		137631	29	
Trips to serve a passenger	1995	177507	19591	2605		92	324	7001		113		207232	2605	
Trips to serve a passenger	2005	159142	11611	2064		68	524	7503	0	62		180974	2064	
Trips to return home	1986	406987	126634	159094		4250	11671	51691		2746		763073	159094	
Trips to return home	1995	543078	161578	141617		4566	14845	113358		2792		981833	141617	
Trips to return home	2005	651342	158413	203550		5512	16832	125983	1027	4063		1166721	203550	
Trips for other purposes	1986	360166	129422	74014		3573	5985	45623		1729		620512	74014	
Trips for other purposes	1995	388994	148559	39723		2709	7176	85619		2471		675251	39723	
Trips for other purposes	2005	442799	132590	46996		2837	7363	92237	487	2779		728087	46996	
Trips for all purposes	1986	1217484	340247	396784		12573	27500	146401		8743		2149733	396784	
Trips for all purposes	1995	1436074	396752	320856		10040	32981	280267		7917		2484885	320856	
Trips for all purposes	2005	1623685	374743	448839		12847	37239	298579	2119	9533		2807584	448839	
Trips by full-time workers	1986	813929	155211	184252		7925	11845	67841		5198		1246201	184252	
Trips by full-time workers	1995	931528	157174	118203	355	5476	12400	97329		4008		1326473	118203	
Trips by full-time workers	2005	1041656	133515	170960	1126	8824	18799	118339		4523		1497743	170960	
Trips by part-time workers	1986	120678	37908	46314		1197	3510	17475		1191		228272	46314	
Trips by part-time workers	1995	184619	54106	40729	4170	1123	4982	38736		1078		329544	40729	
Trips by part-time workers	2005	93031	15139	16319	347	294	2058	15036		394		142618	16319	
Trips by students	1986	65682	69095	137785		1498	12774	49333		2488		338654	137785	
Trips by students	1995	160457	125507	108463	60199	2210	15861	116185		2101		590982	108463	
Trips by students	2005	87876	134931	143898	80875	2003	11125	100752		3822		565282	143898	
Trips by non worker-students	1986	248652	94881	59025		2522	2965	24537		436		433018	59025	
Trips by non worker-students	1995	262622	94350	29307	110	2267	3594	55356		1448		449055	29307	
Trips by non worker-students	2005	401137	91157	35243	72	1725	5258	64452		2913		601956	35243	
Number of work trips	1995	300645	45560	64853	606	2369	5753	37397	537	1439		459160	64853	
Number of work trips	2005	348729	41442	95718	1853	4184	9133	39130	540	1643		542372	95718	
Sum of work trip lengths (km)	1995	3403812	459454	573511	5071	10655	26407	44486	4340	78932		4606668	573511	
Sum of work trip lengths (km)	2005	3618107	379451	909715	13873	19808	50410	49270	5195	14981		5060810	909715	
Average work trip length (km)	1995	11.3	10.1	8.8	8.4	4.5	4.6	1.2	8.1	54.9		10.0	8.8	
Average work trip length (km)	2005	10.4	9.2	9.5	7.5	4.7	5.5	1.3	9.6	9.1		9.3	8.9	
AM peak work/work related trips	1986											288652		
AM peak work/work related trips	1995											272367		
AM peak work/work related trips	2005											319753		
AM peak school trips	1986											85561		
AM peak school trips	1995											113967		
AM peak school trips	2005											139254		
AM peak serve passenger trips	1986											40768		
AM peak serve passenger trips	1995											50471		
AM peak serve passenger trips	2005											53922		
AM peak return home trips	1986											8439		
AM peak return home trips	1995											16492		
AM peak return home trips	2005											21341		
AM peak other trips	1986											29083		
AM peak other trips	1995											43446		
AM peak other trips	2005											46452		
PM peak work/work related trips	1986											27485		
PM peak work/work related trips	1995											24251		
PM peak work/work related trips	2005											21961		
PM peak school trips	1986											6817		
PM peak school trips	1995											4718		
PM peak school trips	2005											5567		
PM peak serve passenger trips	1986											37178		
PM peak serve passenger trips	1995											46732		
PM peak serve passenger trips	2005											49996		
PM peak return home trips	1986											319558		
PM peak return home trips	1995											359321		
PM peak return home trips	2005											438088		
PM peak other trips	1986											126425		
PM peak other trips	1995											141055		
PM peak other trips	2005											139668		

Table B-2: Trips by time period, gender, length and licence status (daily where not specified)

Trip-based values									If no values for school bus, it is classified with public transit					
	In 1986, school buses are counted with public transit								If no values for motorcycle, it is classified with "other"					
Indicator	**Year**	**Auto-driver**	**Auto-passenger**	**Public transit**	**School bus**	**Taxi**	**Bicycle**	**Walk**	**Motorcycle**	**Other**		**All modes**	**Transit**	**Occupancy**
AM Peak (6:30-8:59) trips	1986	230802	52192	130281	0	1276	6433	29085	0	2432		452503	130281	1.23
AM Peak (6:30-8:59) trips	1995	268656	62064	78302	30389	985	7460	47063	446	1113		496477	78302	1.23
AM Peak (6:30-8:59) trips	2005	306415	65821	102930	40115	1093	9421	52485	440	1982		580701	102930	1.21
Off-Peak (9:00-15:29) trips	1986	402576	92187	111719	0	5884	8177	61837	0	2390		684772	111719	1.23
Off-Peak (9:00-15:29) trips	1995	423235	91321	71630	17323	3672	9754	117061	582	1916		736494	71630	1.22
Off-Peak (9:00-15:29) trips	2005	506834	93397	93477	23763	4997	11483	118530	499	3126		856106	93477	1.18
PM Peak (15:30-17:59) trips	1986	284831	72983	113996	0	2125	8409	32789	0	2330		517462	113996	1.26
PM Peak (15:30-17:59) trips	1995	333322	84132	73611	13150	1345	9122	59017	612	1383		575694	73611	1.25
PM Peak (15:30-17:59) trips	2005	375717	81401	103376	18286	1463	10132	61733	719	2453		655281	103376	1.22
Trips by driver's licence holders	1986	1214338	236849	219211		8268	17637	91325		6960		1794588	219211	
Trips by driver's licence holders	1995	1435679	258412	155691	5795	5974	20545	166007	2030	3612		2053745	155691	
Trips by driver's licence holders	2005	1631629	226814	213027	6526	9554	26632	188507	2026	5388		2310104	213027	
Trips by non-licence holders	1986		101901	176957		4260	9728	54873		1783		349502	176957	
Trips by non-licence holders	1995		138277	103972	55289	4066	12385	114079	271	2004		430343	103972	
Trips by non-licence holders	2005		79193	107055	9953	2888	6061	59250		2830		267230	107055	
Trips by transit passholders	2005	87418	61411	289767	3988	3068	3201	40576	164	1828		491421	289767	
Trips by non-passholders	2005	1534697	312716	76136	78212	9778	33819	257555	1954	7626		2312494	76136	
Male trips	1986	713085	107276	170606		6741	19615	64805		6846		1088974	170606	
Male trips	1995	819799	118411	111685	31775	4961	24095	127282	1964	3336		1243309	111685	
Male trips	2005	866026	136674	167157	40610	5852	26658	138523	1713	4927		1388140	167157	
Female trips	1986	502638	232020	225663		5786	7676	81342		1897		1057023	225663	
Female trips	1995	615816	278141	147999	29295	5079	8885	152879	337	2280		1240711	147999	
Female trips	2005	761029	238069	199263	41809	6995	10582	160055	405	4606		1422813	199263	
Trips by males ages 11-14	1986	46	13127	24060	0	75	4005	9276	0	562		51150	24060	
Trips by males ages 11-14	1995	0	21950	7138	20443	368	4638	21004	0	324		75865	7138	
Trips by males ages 11-14	2005	0	28124	9246	26385	244	3171	20416		623		88210	9246	
Trips by females ages 11-14	1986	63	13670	24552	0	150	857	10185	0	316		49792	24552	
Trips by females ages 11-14	1995	4	20221	7603	18689	61	1592	19196	0	135		67501	7603	
Trips by females ages 11-14	2005	0	28122	10103	26526	73	527	18784	39	595		84769	10103	
Trips by males ages 15-19	1986	16765	12563	28524	0	211	3600	9992	0	783		72439	28524	
Trips by males ages 15-19	1995	19358	21357	20840	10974	391	3561	20071	227	368		97147	20840	
Trips by males ages 15-19	2005	25866	28201	35971	12576	424	3479	20013	88	896		127514	35971	
Trips by females ages 15-19	1986	12692	17349	36143	0	451	368	9918	0	286		77209	36143	
Trips by females ages 15-19	1995	15205	27855	21808	9558	144	568	16879	0	166		92183	21808	
Trips by females ages 15-19	2005	14838	33472	36196	13119	398	396	16215	77	520		115231	36196	
Trips by males ages 20-24	1986	57597	10293	18657	0	516	2362	5928	0	1100		96453	18657	
Trips by males ages 20-24	1995	55350	12296	15323	57	444	2935	14092	139	350		100985	15323	
Trips by males ages 20-24	2005	43436	11326	25914	71	562	2364	11844	157	434		96110	25914	
Trips by females ages 20-24	1986	45550	21292	30075	0	598	2301	10605	0	305		110726	30075	
Trips by females ages 20-24	1995	38572	22448	21019	137	939	1122	16408	0	241		100886	21019	
Trips by females ages 20-24	2005	33091	14555	29720	80	671	842	15071	0	511		94539	29720	
Trips by males ages 25-54	1986	480833	52249	71769	0	4837	8048	31806	0	4073		653616	71769	
Trips by males ages 25-54	1995	597753	48699	59493	134	2943	11461	57995	1493	1755		781726	59493	
Trips by males ages 25-54	2005	519290	42135	70177	289	3419	13650	57476	1054	1634		709124	70177	
Trips by females ages 25-54	1986	372275	118395	92696	0	3170	3793	38486	0	646		629461	92696	
Trips by females ages 25-54	1995	472046	145509	78033	756	2637	4770	80253	337	1293		785632	78033	
Trips by females ages 25-54	2005	485826	88103	84096	738	4291	6910	72517	174	1478		744133	84096	
Trips by males ages 55-64	1986	91809	10744	15348	0	661	1225	5372	0	328		125487	15348	
Trips by males ages 55-64	1995	78267	6520	4706	92	321	1210	7003	105	297		98521	4706	
Trips by males ages 55-64	2005	110660	7821	9109	29	666	1461	11393	224	784		142146	9109	
Trips by females ages 55-64	1986	45368	31084	18129	0	417	153	6135	0	278		101565	18129	
Trips by females ages 55-64	1995	51448	26625	6975	82	610	596	8706	0	81		95124	6975	
Trips by females ages 55-64	2005	84862	24504	11883	99	638	656	12823	15	559		136039	11883	
Trips by males ages 65+	1986	65281	8127	11658	0	442	280	2270	0	0		88058	11658	
Trips by males ages 65+	1995	69071	7589	4186	75	493	291	7118	0	241		89065	4186	
Trips by males ages 65+	2005	86611	10885	5733		152	926	8646		410		113365	5733	
Trips by females ages 65+	1986	24125	28553	22365	0	927	116	5712	0	66		81864	22365	
Trips by females ages 65+	1995	38542	35483	12561	73	689	237	11437	0	363		99385	12561	
Trips by females ages 65+	2005	61085	28989	9143	0	407	481	12364	65	699		113235	9143	
Trips under 5km (AM peak)	1995	104955	28044											1.27
Trips under 5km (AM peak)	2005	106716	29472											1.28
Trips under 5km (MD off-peak)	1995	241424	52674											1.22
Trips under 5km (MD off-peak)	2005	259647	48348											1.19
Trips under 5km (PM peak)	1995	156113	40828											1.26
Trips under 5km (PM peak)	2005	158073	36380											1.23
Trips 5-10km (AM peak)	1995	75094	16861											1.22
Trips 5-10km (AM peak)	2005	79372	16600											1.21
Trips 5-10km (MD off-peak)	1995	94637	20710											1.22
Trips 5-10km (MD off-peak)	2005	112687	21374											1.19
Trips 5-10km (PM peak)	1995	85011	21589											1.25
Trips 5-10km (PM peak)	2005	91995	19791											1.22
Trips over 10km (AM peak)	1995	88578	17153											1.19
Trips over 10km (AM peak)	2005	115831	18989											1.16
Trips over 10km (MD off-peak)	1995	87094	17887											1.21
Trips over 10km (MD off-peak)	2005	124872	20880											1.17
Trips over 10km (PM peak)	1995	92153	21714											1.24
Trips over 10km (PM peak)	2005	119689	23340											1.20

Appendix C
Tables of Region-based Indicators

Table C-1: Region-based daily trips

		All trips			Transit trips		
Indicator (trips by home region of trip-maker)	**Year**	Ontario	Québec	NCR	Ontario	Québec	NCR
Work trips age 11-14	1986	158	431	590	51	41	93
Work trips age 11-14	1995	219	21	240	45	0	45
Work trips age 11-14	2005	1937	667	2603	383	98	481
Work trips age 15-19	1986	9366	3388	12754	3368	1167	4535
Work trips age 15-19	1995	5459	2467	7946	1292	357	1649
Work trips age 15-19	2005	13823	4076	17899	4380	965	5345
Work trips age 20-24	1986	37717	11447	49164	10836	2170	13007
Work trips age 20-24	1995	21896	9409	31305	5390	1178	6568
Work trips age 20-24	2005	30391	9357	39748	9104	1811	10915
Work trips age 25-54	1986	294406	86090	380683	59421	8891	68312
Work trips age 25-54	1995	283581	98104	381878	44207	7583	51790
Work trips age 25-54	2005	313773	108679	422503	55256	14635	69892
Work trips age 55-64	1986	40438	6422	48778	9806	921	10726
Work trips age 55-64	1995	23937	5857	29807	3199	449	3648
Work trips age 55-64	2005	40889	11613	52503	6607	1455	8062
Work trips age 65+	1986	6275	0	6600	1508	0	1508
Work trips age 65+	1995	5736	252	6320	984	61	1046
Work trips age 65+	2005	5985	532	7053	917	107	1024
0-vehicle household work trips	1986	24861	3199	28338	15849	2031	17880
0-vehicle household work trips	1995	23201	3314	26726	12340	1631	13972
0-vehicle household work trips	2005	28024	4211	32285	16251	2305	18556
1-person household work trips	1986	45504	6109	52157	12120	912	13032
1-person household work trips	1995	39328	9239	48684	7543	1323	8866
1-person household work trips	2005	46980	14855	61904	11012	2908	13920
1-vehicle household work trips	1986	163616	48483	212743	45682	7414	53095
1-vehicle household work trips	1995	144858	49014	193977	29660	5890	35550
1-vehicle household work trips	2005	149586	44155	193741	37605	9328	46934
2+-vehicle household work trips	1986	200150	56647	258304	23460	3746	27205
2+-vehicle household work trips	1995	172773	63783	236797	13116	2107	15223
2+-vehicle household work trips	2005	229188	86558	316282	22790	7439	30229
2-person household work trips	1986	120748	30396	151381	26463	4010	30473
2-person household work trips	1995	107660	35021	142873	18049	3237	21286
2-person household work trips	2005	123004	43640	166991	24189	6204	30393
3-person household work trips	1986	86692	25770	113877	17533	2582	20116
3-person household work trips	1995	71901	27836	99737	11780	1927	13707
3-person household work trips	2005	93680	31442	125205	17571	4412	21983
4+-person household work trips	1986	45560	15311	61057	9893	1716	11609
4+-person household work trips	1995	39686	11939	51624	5714	1026	6740
4+-person household work trips	2005	42579	13165	55794	7552	1597	9149
4-person household work trips	1986	90123	30744	120912	18981	3970	22950
4-person household work trips	1995	82258	32076	114581	12031	2116	14147
4-person household work trips	2005	100555	31823	132415	16322	3951	20273
0-vehicle household trips	1986	123790	17640	141431	72988	8934	81922
0-vehicle household trips	1995	166979	32590	199568	68892	8808	77700
0-vehicle household trips	2005	170621	24729	195350	78216	9723	87939
1-vehicle household trips	1986	764170	204565	968784	148509	24432	172941
1-vehicle household trips	1995	846073	284721	1133736	102082	19083	121566
1-vehicle household trips	2005	849457	239930	1089386	129063	28308	157371
1-worker household trips	1986	554918	144132	699050	102742	14318	117060
1-worker household trips	1995	535793	167610	703403	68675	11452	80127
1-worker household trips	2005	686349	193166	879515	103961	20998	124959
2+-vehicle household trips	1986	781837	210393	1029308	81492	12574	96940
2+-vehicle household trips	1995	851641	295429	1153592	51652	8764	60506
2+-vehicle household trips	2005	1140490	382411	1522901	97155	23955	121110
2+-worker household trips	1986	949069	266655.9	1215725	162670	27771	190442
2+-worker household trips	1995	1065244	374183.8	1439428	116693	20508	137202
2+-worker household trips	2005	1106607	364260.3	1470868	152885	34344	187229
1-worker 0-vehicle household trips	1986	57734	6945	64679	33410	3097	36508
1-worker 0-vehicle household trips	1995	68201	13179	81380	27924	3886	31810
1-worker 0-vehicle household trips	2005	71664	11287	82951	34329	4643	38972
1-worker 1-vehicle household trips	1986	299228	83455	382684	52812	9191	62003
1-worker 1-vehicle household trips	1995	301795	103047	404843	33038	6455	39493
1-worker 1-vehicle household trips	2005	330570	95203	425773	48445	11448	59893
1-worker 2+-vehicle household trips	1986	194426	53484	247910	16519	2030	18549
1-worker 2+-vehicle household trips	1995	165797	51384	217180	7713	1111	8824
1-worker 2+-vehicle household trips	2005	284115	86676	370791	21188	4907	26095
2-worker 0-vehicle household trips	1986	27592	3325	30917	14540	2048	16589
2-worker 0-vehicle household trips	1995	26847	3339	30186	11525	1058	12582
2-worker 0-vehicle household trips	2005	25980	2814	28793	11755	1171	12927
2-worker 1-vehicle household trips	1986	289580	83903	373482	64312	10612	74924
2-worker 1-vehicle household trips	1995	341987	123990	465977	47857	9857	57714
2-worker 1-vehicle household trips	2005	300292	84815	385107	60709	13867	74577
2-worker 2+-vehicle household trips	1986	374960	106572	481532	35730	4745	40475
2-worker 2+-vehicle household trips	1995	444920	178831	623751	25621	4795	30416
2-worker 2+-vehicle household trips	2005	625618	233164	858782	54992	14477	69469
3-worker 0-vehicle household trips	1986	1909	1694	3602	1495	740	2234
3-worker 0-vehicle household trips	1995	5399	0	5399	1657	0	1657
3-worker 0-vehicle household trips	2005	3842	248	4091	1659	78	1737
3-worker 1-vehicle household trips	1986	40808	14167	54975	12891	2803	15694
3-worker 1-vehicle household trips	1995	43669	11209	54878	9580	1616	11197
3-worker 1-vehicle household trips	2005	20794	3261	24055	5444	487	5931
3-worker 2+-vehicle household trips	1986	139173	36480	175652	19678	4095	23773
3-worker 2+-vehicle household trips	1995	141304	36369	177673	12319	1816	14136
3-worker 2+-vehicle household trips	2005	99094	32454	131548	13038	3425	16462
4+-worker 0-vehicle household trips	1986	302	166	468	121	83	204
4+-worker 0-vehicle household trips	1995	713	0	713	540	0	540
4+-worker 0-vehicle household trips	2005	493	0	493	394	0	394
4+-worker 1-vehicle household trips	1986	11069	3362	14431	3724	602	4326
4+-worker 1-vehicle household trips	1995	7242	2855	10096	2470	405	2875
4+-worker 1-vehicle household trips	2005	3011	147	3158	894	117	1011
4+-worker 2+-vehicle household trips	1986	59653	15435	75088	10046	1990	12036
4+-worker 2+-vehicle household trips	1995	53162	17592	70754	5124	961	6085
4+-worker 2+-vehicle household trips	2005	27484	7357	34841	3999	722	4721

Table C-2: Driver and passenger daily trips by household type and region

Indicator (trips by home region of trip-maker)	Year	Ontario	Québec	NCR
2-person 1-vehicle hhld drivers	1986	131764	46923	178687
2-person 1-vehicle hhld drivers	1995	170003	67167	237170
2-person 1-vehicle hhld drivers	2005	135604	42347	177950
2-person 1-vehicle hhld psgrs	1986	54437	18246	72683
2-person 1-vehicle hhld psgrs	1995	65873	28281	94154
2-person 1-vehicle hhld psgrs	2005	48028	16040	64068
3-person 1-vehicle hhld drivers	1986	14210	6003	20213
3-person 1-vehicle hhld drivers	1995	17002	4437	21439
3-person 1-vehicle hhld drivers	2005	8386	1405	9790
3-person 1-vehicle hhld psgrs	1986	7069	2942	10011
3-person 1-vehicle hhld psgrs	1995	9093	2976	12069
3-person 1-vehicle hhld psgrs	2005	3356	504	3860
3-person 2-vehicle hhld drivers	1986	46658	13088	59745
3-person 2-vehicle hhld drivers	1995	48590	13631	62220
3-person 2-vehicle hhld drivers	2005	29475	7347	36822
3-person 2-vehicle hhld psgrs	1986	15285	4939	20225
3-person 2-vehicle hhld psgrs	1995	16243	4145	20389
3-person 2-vehicle hhld psgrs	2005	7241	2207	9447
4+-person 1-vehicle hhld drivers	1986	3267	1417	4684
4+-person 1-vehicle hhld drivers	1995	2302	1214	3516
4+-person 1-vehicle hhld drivers	2005	931	30	961
4+-person 1-vehicle hhld psgrs	1986	2736	807	3543
4+-person 1-vehicle hhld psgrs	1995	1167	568	1735
4+-person 1-vehicle hhld psgrs	2005	663	0	663
4+-person 2-vehicle hhld drivers	1986	9747	3631	13378
4+-person 2-vehicle hhld drivers	1995	12175	3671	15846
4+-person 2-vehicle hhld drivers	2005	4932	1068	6000
4+-person 2-vehicle hhld psgrs	1986	4295	1796	6091
4+-person 2-vehicle hhld psgrs	1995	5135	1501	6636
4+-person 2-vehicle hhld psgrs	2005	1624	380	2004
4+-person 3+-vehicle hhld drivers	1986	22462	6315	28778
4+-person 3+-vehicle hhld drivers	1995	20913	8243	29156
4+-person 3+-vehicle hhld drivers	2005	12434	3612	16046
4+-person 3+vehicle hhld psgrs	1986	6027	507	6533
4+-person 3+vehicle hhld psgrs	1995	4166	1608	5774
4+-person 3+vehicle hhld psgrs	2005	2139	1008	3146

Appendix D
Tables of District-based Indicators

Table D-1: District demographics

Indicator	Year	Alta Vista	Aylmer	Bayshore / Cedarview	Beacon Hill	Gatineau Centre	Gatineau Est	Hull Périphérie	Hunt Club	Ile de Hull	Kanata / Stittsville	Masson-Angers	Merivale	Orleans	Ottawa Centre	Ottawa East	Ottawa Inner Area	Ottawa West	Plateau	Rural East	Rural Northeast	Rural Northwest	Rural Southeast	Rural Southwest	Rural West	South Gloucester / Leitrim	South Nepean	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Ontario	Québec	NCR
Area (sq km)	**ALL**	38	96	113	22	27	57	28	52	5	83	82	39	89	3	16	16	18	13	288	1029	1241	509	729	744	79	55	19	5	299	28	305	193	2270	2353	2893	2578	5471
Population	**1986**	67649	27074	67240	28689	38588	29897	39305	26756	11262	35715	12261	67823	56413	6200	46433	69292	41146	2386	3836	11943	12357	11104	15829	4590	2028	14026	75492	11262	345736	39305	108182	97945	35359	36561	564769	185073	749842
Population	**1995**	72054	37008	76289	28385	52734	46706	44549	45232	10616	52372	19090	70895	89669	9117	47898	72594	42075	8203	10205	16425	15821	16660	21275	20177	1413	29095	81711	10616	382828	44549	172549	144651	68317	51336	705405	251152	956557
Population	**2005**	79170	40216	80520	32514	53526	47742	49472	53934	8742	87482	23185	78550	108487	6443	52152	88368	48733	15790	11362	27928	18283	24766	24773	23278	9442	55721	94811	8742	425573	49472	261132	157274	84179	69396	865695	284884	1150579
Population 11-14	**1986**	2448	2179	3501	2003	1843	2383	1532	1179	638	2559	801	2522	4319	36	1638	1811	1230	49	333	718	857	895	874	164	107	1221	1847	638	14521	1532	8206	6454	2266	2376	26840	11000	37840
Population 11-14	**1995**	3433	2951	3334	1564	2686	2609	1607	2801	285	3789	1256	3407	6071	172	2013	1806	1624	234	586	973	844	1152	1188	1349	25	1716	1978	285	18176	1607	11601	8480	4275	3073	36030	13445	49475
Population 11-14	**2005**	4476	3243	5877	1682	3249	3637	2610	4405	304	7152	1761	4707	9323	23	3527	3200	2510	936	947	2323	1274	1959	1888	1929	361	4447	3223	304	27184	2610	21283	11065	6723	5358	58413	19337	77750
Population 15-19	**1986**	4590	1980	4680	3442	2515	2464	3286	1802	758	2929	594	3957	4889	198	2488	2759	1475	0	317	812	1142	708	1123	401	175	1187	2957	758	22434	3286	9180	6959	2549	2548	37120	13551	50671
Population 15-19	**1995**	3941	2979	4834	2362	3458	3582	2842	3273	410	3444	1111	3982	6798	495	2546	3523	1728	312	656	938	1014	1274	1795	1561	101	1738	4018	410	22666	2842	12081	10331	5286	3063	44051	16646	60697
Population 15-19	**2005**	6649	3544	5886	2361	4158	3320	2752	5353	341	6158	1662	6055	11155	230	3833	3776	2518	889	1084	1966	886	1893	2329	1805	283	5002	4006	341	32655	2752	22598	11911	7111	4514	66370	19518	85888
Population 20-24	**1986**	6270	1578	5778	2502	3746	2213	4341	2465	1029	1635	991	6618	3069	722	5149	6973	3718	291	234	314	872	759	997	182	137	669	7695	1029	32500	4341	5510	7828	2172	2177	47877	15375	63252
Population 20-24	**1995**	4878	1651	4981	1759	3466	2958	4227	2823	1197	2389	1214	5707	5201	1290	3139	10364	2280	488	522	880	653	703	937	686	85	1065	11654	1197	25567	4227	8740	8563	2848	2747	48809	16734	65543
Population 20-24	**2005**	7094	2515	6074	2597	3509	2976	4044	4250	779	4596	1454	8931	7307	547	3785	11665	2745	673	724	1351	852	1326	1323	1140	428	3555	12212	779	35476	4044	15886	9673	4513	3657	68087	18153	86240
Population 25-54	**1986**	28917	14674	31031	13650	20475	15424	17686	15067	4960	20139	5737	29582	32325	3661	19540	36155	15342	1413	2121	6815	6020	5580	8094	2513	916	8088	39816	4960	153129	17686	61468	51986	18308	18572	272721	93204	365925
Population 25-54	**1995**	31455	17474	35310	13460	26810	24313	21464	22838	4700	27309	9208	30865	45091	5024	23310	37863	19662	4707	5000	8462	8109	8193	10150	10036	576	15711	42887	4700	176900	21464	88687	73304	33379	25779	341853	125247	467100
Population 25-54	**2005**	32693	18796	35333	13698	25546	23735	23724	24780	4290	41239	10734	31939	51307	3696	23991	44991	21928	8914	5695	14478	8742	11482	10802	10908	5221	28214	48687	4290	184362	23724	125981	76991	38887	33954	397917	138959	536876
Population 55-64	**1986**	10627	1898	8126	3157	3229	2948	4139	1831	1652	2177	1239	9890	2320	993	5550	6085	6807	440	256	674	1336	815	1501	401	426	616	7078	1652	45988	4139	5539	8515	2973	3249	61578	17555	79133
Population 55-64	**1995**	6503	2226	7104	2782	3718	2385	3595	2568	1057	2807	1100	7361	4863	801	3679	4459	3861	430	866	1157	1262	984	1752	1181	220	1572	5260	1057	33858	3595	9462	8759	4783	3519	53363	16930	70293
Population 55-64	**2005**	7266	4146	7723	3976	6292	4394	5335	4205	1022	7040	2357	7565	10045	908	5125	8408	5160	1153	913	2481	2380	2447	3134	2611	913	3351	9316	1022	41020	5335	21349	15985	9105	7218	80790	29560	110350
Population 65+	**1986**	9974	1039	7676	1696	1726	1344	3149	1311	1309	1457	1150	9555	1111	405	7365	9501	9581	95	226	621	592	560	1359	382	118	268	9906	1309	47158	3149	2954	4204	2527	2363	62545	11025	73570
Population 65+	**1995**	11589	2284	8809	2848	2792	2313	5128	2507	1887	2617	1443	9971	3744	759	7152	8590	8198	293	720	760	1121	1182	1859	1259	110	1075	9349	1887	51074	5128	7546	7682	5020	3324	72989	18021	91010
Population 65+	**2005**	13022	3395	11359	4699	5365	3772	6854	4043	1270	7058	2230	11617	6039	984	7943	10145	9574	805	732	1809	1754	2389	2460	1884	631	2668	11129	1270	62257	6854	16396	13337	7465	5793	97247	27254	124501
Full-Time Labour Force	**1986**	27933	12528	30789	13460	19045	13055	17044	14153	4307	16702	4868	30809	27769	4179	19725	34707	17540	1511	1895	5399	5263	4999	7183	2149	794	6717	38886	4307	154409	17044	51981	46139	16226	15530	261503	83020	344523
Full-Time Labour Force	**1995**	24465	14326	29482	11735	21629	19765	17580	18436	3520	23588	7465	25837	38324	4516	18535	30517	16273	4238	4293	6800	6448	7118	8814	8157	635	13119	35033	3520	144762	17580	75665	59958	28382	20712	283843	101770	385612
Full-Time Labour Force	**2005**	28209	17744	31796	12982	24915	22982	22615	22820	3683	36878	9849	29793	49493	3912	21745	40174	20121	8528	5017	13433	8150	10820	10531	10207	5009	26208	44086	3683	167466	22615	117589	74169	36574	31432	365715	131899	497614
Labour Force	**1986**	34091	14802	37197	16794	22009	15437	20558	16444	5281	19668	5563	37121	32332	4449	23128	40492	20472	1753	2212	5940	5999	5755	8462	2477	991	8062	44940	5281	185247	20558	61054	54001	18905	17502	310146	97343	407489
Labour Force	**1995**	30912	17418	36785	14332	26731	24313	22247	23102	4639	28256	9089	33091	47095	5759	22078	39444	20240	4785	5217	8116	7768	8696	11226	10089	735	15810	45203	4639	180540	22247	91896	73246	35228	24973	352867	125105	477972
Labour Force	**2005**	31369	19306	35429	14219	26650	24103	24528	24880	4062	39650	10643	32873	54255	3995	23988	43997	22635	8920	5501	14737	9037	11963	11564	11105	5370	28517	47992	4062	185393	24528	127792	78978	40133	34418	401309	141986	543295
Part-Time Labour Force	**1986**	6159	2274	6407	3334	2964	2382	3514	2291	974	2966	695	6312	4563	269	3403	5785	2931	242	317	541	736	756	1279	328	198	1345	6054	974	30838	3514	9072	7862	2679	1972	48644	14322	62966
Part-Time Labour Force	**1995**	6448	3092	7303	2598	5101	4548	4667	4666	1119	4668	1624	7254	8772	1243	3543	8927	3967	547	924	1316	1320	1578	2412	1932	100	2691	10170	1119	35778	4667	16231	13288	6846	4261	69024	23335	92359
Part-Time Labour Force	**2005**	3159	1562	3634	1237	1735	1121	1913	2060	378	2771	794	3081	4762	83	2244	3823	2513	392	484	1305	888	1143	1033	898	360	2309	3906	378	17927	1913	10203	4810	3558	2986	35594	10087	45681
Employment	**1986**	45986	0	24169	9361	0	0	0	13428	0	10435	0	38789	7860	79203	19876	54722	29329	0	517	0	0	2643	3325	1088	869	1646	133925	0	180938	0	20810	0	7573	0	343246	0	343246
Employment (1996 in Gatineau)	**1995**	52638	6085	28456	13491	12775	9115	21599	15934	26287	18867	5625	48503	14468	77732	21649	57477	31547	199	1436	1225	2340	4355	4407	5809	1555	3611	135209	26287	212218	21599	38501	28174	16007	9190	401935	85250	487185
Employment	**2005**	72041	8243	37895	21052	16213	9774	31470	18737	25123	43598	5162	53941	19439	96977	24443	60946	35074	1838	2263	2405	2425	4312	6063	4301	5771	7240	157923	25123	263183	31470	76048	36068	16939	9992	514093	102653	616746
Female workers 15-19	**1986**	313	172	159	230	138	81	143	69	92	90	30	99	216	0	182	157	57	0	15	19	20	38	30	18	0	89	157	92	1109	143	395	391	101	69	1762	695	2457
Female workers 15-19	**1995**	75	44	63	25	21	83	62	0	23	26	39	42	73	0	69	62	0	0	13	24	36	17	14	0	0	0	62	23	274	62	99	148	44	99	479	332	811
Female workers 15-19	**2005**	124	98	102	88	98	92	118	58	17	396	35	52	122	0	44	29	24	10	37	66	0	20	0	0	18	216	29	17	492	118	752	298	57	101	1330	534	1864
Female workers 20-24	**1986**	1487	512	1595	474	1212	825	1223	800	266	627	345	1906	834	36	1397	1985	1257	98	45	206	229	263	252	55	84	120	2021	266	8916	1223	1665	2647	615	780	13217	4916	18133
Female workers 20-24	**1995**	770	261	851	424	823	616	626	491	175	482	316	667	837	129	544	1226	370	98	76	263	133	111	138	70	25	119	1355	175	4117	626	1463	1798	395	712	7330	3311	10641
Female workers 20-24	**2005**	1014	355	1107	268	659	588	758	650	157	807	319	1287	1263	110	867	1633	558	109	103	333	187	269	281	268	62	555	1743	157	5751	758	2687	1711	921	839	11102	3465	14567
Female workers 25-54	**1986**	8243	4285	8921	4275	6060	3874	5462	4638	1224	4830	1267	9227	8705	1753	6480	13092	5662	680	559	1650	1663	1319	2072	692	215	2036	14845	1224	47446	5462	15786	14899	4642	4580	82719	26165	108884
Female workers 25-54	**1995**	8972	5481	10642	4631	8628	8060	6775	6812	1055	8674	2773	9310	14694	1472	7037	11832	6030	1680	1561	2519	2420	2505	3143	2970	245	4981	13304	1055	53434	6775	28594	23849	10179	7712	105511	39391	144902
Female workers 25-54	**2005**	10327	7273	11710	4732	9965	9113	8729	9392	1172	12914	3873	9927	19413	1263	8011	13978	7503	3662	1937	4935	2967	3635	3736	3496	1843	10164	15241	1172	61602	8729	44334	30013	12804	11775	133981	51689	185670
Female workers 55-64	**1986**	1307	85	1087	463	348	164	343	354	212	260	79	1211	221	74	563	1160	678	196	15	70	111	139	123	18	0	182	1234	212	5663	343	663	793	295	260	7855	1608	9463
Female workers 55-64	**1995**	870	287	1002	334	370	200	451	476	109	319	135	1264	618	97	521	720	453	156	102	80	111	122	166	126	10	116	817	109	4920	451	1063	1013	516	326	7316	1899	9215
Female workers 55-64	**2005**	1216	650	1515	987	1068	651	1024	758	154	1305	201	1284	1809	219	1094	1793	957	272	64	246	345	354	545	383	218	616	2012	154	7811	1024	3948	2641	1346	792	15117	4611	19728
Female workers 65+	**1986**	36	0	181	67	0	0	0	0	0	0	0	128	0	0	41	163	69	0	0	0	0	0	15	18	0	0	163	0	522	0	0	0	33	0	718	0	718
Female workers 65+	**1995**	155	70	174	94	41	24	0	170	0	92	0	220	218	38	228	334	104	20	38	6	16	52	57	22	0	69	372	0	1145	0	379	155	169	22	2065	177	2242
Female workers 65+	**2005**	123	17	14	97	39	52	49	45	0	56	14	86	86	40	79	78	135	0	0	47	43	34	34	25	27	54	118	0	579	49	223	108	93	104	1013	261	1274
Male workers 15-19	**1986**	103	62	158	232	124	115	290	32	0	71	32	0	230	36	209	117	98	0	60	116	139	75	107	0	0	18	153	0	832	290	319	301	242	287	1546	878	2424
Male workers 15-19	**1995**	26	19	21	0	103	173	44	27	42	59	19	0	69	0	45	70	0	20	6	51	31	47	26	0	20	0	70	42	119	44	148	315	79	101	416	502	918
Male workers 15-19	**2005**	140	140	160	120	244	232	44	113	0	322	79	294	403	0	161	27	21	41	63	184	66	161	163	111	6	188	27	0	1009	44	919	657	498	329	2453	1030	3483
Male workers 20-24	**1986**	1168	609	1553	607	1079	431	839	725	183	385	219	1720	938	217	1168	1315	1384	0	68	19	359	327	253	73	27	62	1532	183	8325	839	1412	2119	721	597	11990	3738	15728
Male workers 20-24	**1995**	729	310	923	368	765	574	767	445	336	702	297	645	894	210	452	1236	431	176	115	244	152	194	207	218	10	239	1446	336	3993	767	1845	1825	734	693	8018	3621	11639
Male workers 20-24	**2005**	1045	571	1229	519	666	892	1004	753	94	837	431	1745	1460	85	777	1532	588	189	88	349	240	341	325	360	168	819	1617	94	6656	1004	3284	2318	1114	1020	12671	4436	17107
Male workers 25-54	**1986**	12215	6391	13901	5699	8796	6603	7643	6876	2029	9639	2462	13326	15546	1689	7833	14293	6013	489	996	3093	2365	2595	3899	1147	423	3859	15982	2029	65863	7643	29467	22279	8637	7920	119949	39871	159820
Male workers 25-54	**1995**	11204	7106	14056	5097	10126	9494	8107	9295	1647	12126	3604	11892	19093	2141	8698	13800	8033	2012	2128	3338	3243	3773	4466	4319	230	7148	15941	1647	68275	8107	38597	28738	14686	10185	137499	48677	186176
Male workers 25-54	**2005**	12481	7669	13923	5291	10705	10262	9675	9963	1955	18298	4474	13134	22045	1866	9089	18514	8863	3923	2514	6624	3584	5341	4644	4821	2334	12503	20380	1955	72744	9675	55180	32559	17320	14682	165624	58871	224495
Male workers 55-64	**1986**	2839	326	2748	1258	1192	961	956	519	242	769	418	2876	1047	227	1520	1819	2138	49	121	161	377	150	386	109	46	279	2046	242	13898	956	2141	2528	766	956	18851	4682	23533
Male workers 55-64	**1995**	1165	593	1606	672	711	519	623	557	112	899	262	1441	1491	316	783	877	729	59	204	236	265	227	489	365	75	353	1193	112	6953	623	2818	1882	1285	763	12249	3380	15629
Male workers 55-64	**2005**	1609	938	1824	829	1364	965	1146	1071	104	1760	392	1700	2680	266	1518	2198	1190	284	210	610	683	558	722	634	311	930	2464	104	9741	1146	5681	3551	2124	1685	20010	6486	26496
Male workers 65+	**1986**	188	47	193	125	41	0	73	66	59	15	0	204	0	111	146	421	186	0	0	40	0	56	30	18	0	0	532	59	1108	73	15	88	104	40	1759	260	2019
Male workers 65+	**1995**	496	134	145	90	41	23	105	143	21	205	19	355	337	113	158	316	123	20	51	39	42	70	99	67	20	91	429	21	1510	105	653	218	287	100	2879	444	3323
Male workers 65+	**2005**	130	34	212	52	108	135	67	17	31	184	32	283	213	63	104	392	282	39	0	39	36	108	79	109	23	163	455	31	1080	67	583	316	296	107	2414	521	2935

Indicator	Year	Alta Vista	Aylmer	Bayshore / Cedarview	Beacon Hill	Gatineau Centre	Gatineau Est	Hull Périphérie	Hunt Club	Ile de Hull	Kanata / Stittsville	Masson-Angers	Merivale	Orleans	Ottawa Centre	Ottawa East	Ottawa Inner Area	Ottawa West	Plateau	Rural East	Rural Northeast	Rural Northwest	Rural Southeast	Rural Southwest	Rural West	South Gloucester / Leitrim	South Nepean	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Ontario	Québec	NCR
Students resident	**1986**	11041	4392	10182	6645	5437	5143	6041	3856	1565	6519	1572	9180	10201	850	5871	10022	3781	242	651	1492	1851	1659	2230	564	351	3132	10872	1565	50556	6041	20203	15214	5104	4915	86735	27735	114470
Students resident	**1995**	14047	7630	14386	5913	9031	8458	8481	9828	1683	9580	2905	14286	18582	2399	8244	19068	6839	1465	1585	2567	2427	2806	3679	3583	196	5293	21467	1683	73543	8481	33651	26584	11653	7899	140314	44647	184961
Students resident	**2005**	16235	7296	14338	5536	8452	7284	7478	11354	1143	13901	3633	15710	22156	672	9110	17608	6382	1953	2044	3926	2147	3450	4101	3566	770	10011	18280	1143	78664	7478	46838	24985	13162	9706	156944	43312	200256
Students 11-14	**1986**	2448	2179	3501	2003	1843	2383	1499	1179	638	2559	785	2522	4319	36	1595	1774	1230	49	333	718	857	895	874	164	107	1180	1810	638	14478	1499	8165	6454	2266	2360	26719	10951	37670
Students 11-14	**1995**	3433	2951	3334	1564	2686	2609	1607	2801	285	3779	1256	3407	6071	172	2013	1806	1624	234	573	973	840	1152	1188	1349	25	1716	1978	285	18176	1607	11591	8480	4262	3069	36007	13441	49448
Students 11-14	**2005**	3731	2678	4550	1336	2737	2898	2168	3441	235	5519	1450	3680	7657	0	2926	2505	1887	718	719	1797	937	1337	1371	1512	254	3598	2505	235	21551	2168	17028	9031	4939	4184	46023	15618	61641
Students 15-19	**1986**	4075	1680	4033	3116	2079	1987	2494	1557	423	2768	485	3656	4457	161	1996	2396	1314	0	227	612	884	557	1031	364	175	1156	2557	423	19747	2494	8556	5746	2179	1981	33039	10644	43683
Students 15-19	**1995**	3628	2564	4602	2270	3160	3151	2569	3120	258	3250	894	3830	6515	495	2253	3112	1684	273	605	812	873	1152	1714	1458	101	1694	3607	258	21387	2569	11560	9148	4929	2579	41483	14554	56037
Students 15-19	**2005**	6160	3074	5375	2106	3612	2897	2466	4920	269	5220	1437	5404	9977	230	3468	3648	2402	800	918	1575	784	1589	2057	1593	254	4369	3878	269	29835	2466	19820	10383	6157	3796	59690	16914	76604
Students 20-24	**1986**	3200	296	1707	1236	1038	435	1559	757	330	444	157	2142	1037	614	1586	3241	690	144	91	70	55	94	278	18	27	426	3855	330	11318	1559	1934	1913	481	282	17588	4084	21672
Students 20-24	**1995**	2969	769	2611	925	1174	974	2223	1525	572	1083	255	3654	2930	967	1352	7249	1072	215	197	235	220	258	442	314	25	640	8216	572	14108	2223	4678	3132	1211	710	28213	6637	34850
Students 20-24	**2005**	4352	1079	2837	1596	1577	1113	1842	2425	322	2374	338	4994	3448	315	1505	7525	1267	301	343	345	281	460	498	306	153	1733	7840	322	18976	1842	7708	4070	1607	964	36131	7198	43329
Students 25-54	**1986**	1175	157	748	228	379	256	456	363	115	662	129	813	338	39	694	2611	298	49	0	73	55	75	31	18	42	370	2650	115	4319	456	1412	841	124	257	8505	1669	10174
Students 25-54	**1995**	3579	1304	3408	1040	1911	1701	2061	2322	547	1361	500	3259	2816	727	2532	6604	2332	723	197	535	472	215	294	462	40	1199	7331	547	18472	2061	5416	5639	1168	1507	32387	9754	42141
Students 25-54	**2005**	1939	453	1576	497	526	376	1001	554	317	789	408	1577	1074	128	1211	3888	812	135	64	209	125	64	175	156	109	312	4016	317	8166	1001	2284	1490	459	742	14925	3550	18475
Students 55-64	**1986**	108	40	135	31	0	0	0	0	0	68	0	0	15	0	0	0	78	0	0	0	0	38	0	0	0	0	0	0	352	0	83	40	38	0	473	40	513
Students 55-64	**1995**	279	21	286	0	62	23	21	20	21	75	0	136	72	38	72	139	62	0	13	0	13	23	7	0	0	44	177	21	855	21	191	106	43	13	1266	161	1427
Students 55-64	**2005**	35	12	0	0	0	0	0	14	0	0	0	54	0	0	0	43	15	0	0	0	20	0	0	0	0	0	43	0	118	0	0	12	0	20	161	32	193
Students 65+	**1986**	35	40	58	31	98	82	33	0	59	18	16	47	35	0	0	0	171	0	0	19	0	0	0	0	0	0	0	59	342	33	53	220	16	35	411	347	758
Students 65+	**1995**	159	21	145	114	38	0	0	40	0	32	0	0	178	0	22	158	65	20	0	12	9	6	34	0	5	0	158	0	545	0	215	79	40	21	958	100	1058
Students 65+	**2005**	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	17	0	17
Non worker/students resident	**1986**	22735	5773	17958	5510	9190	7375	11804	4897	4284	6364	4089	20610	8857	1280	16564	18811	16248	438	906	2951	3672	2372	4023	1166	666	1989	20091	4284	104521	11804	17876	22776	8466	10712	150954	49576	200529
Non worker/students resident	**1995**	26229	10209	24200	8200	15411	13426	14428	11342	4552	12672	6141	23449	20961	1593	17073	18662	14708	2012	2886	4965	4932	4398	5673	5465	481	6856	20255	4552	125203	14428	40970	41058	18422	16038	204850	76075	280925
Non worker/students resident	**2005**	31567	13614	30753	12760	18424	16356	17467	17700	3537	33931	8909	29966	32077	1775	19054	26764	19716	4917	3817	9265	7098	9353	9108	8607	3302	17192	28539	3537	161516	17467	86502	53311	30885	25272	307442	99587	407029

Table D-2: District household properties

Indicator	Year	Alta Vista	Aylmer	Bayshore / Cedarview	Beacon Hill	Gatineau Centre	Gatineau Est	Hull Périphérie	Hunt Club	Île de Hull	Kanata / Stittsville	Masson-Angers	Merivale	Orleans	Ottawa Centre	Ottawa East	Ottawa Inner Area	Ottawa West	Plateau	Rural East	Rural Northeast	Rural Northwest	Rural Southeast	Rural Southwest	Rural West	South Gloucester / Leitrim	South Nepean	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Ontario	Québec	NCR
Licensed drivers resident	**1986**	48505	18104	47497	20274	25800	19830	25601	19701	6044	25407	8069	48557	38217	4756	30939	45880	29107	2046	2868	8173	8388	7698	11727	3388	1650	9705	50636	6044	244580	25601	74979	65780	25680	24630	395875	122056	517931
Licensed drivers resident	**1995**	45488	21858	48427	18727	33928	30083	29643	28039	5645	34884	12148	46662	57848	6345	29276	48974	28390	5703	7064	10748	10711	11236	14894	13005	1010	19150	55319	5645	245007	29643	112892	91572	46200	33607	459418	160468	619885
Licensed drivers resident	**2005**	52663	27319	53405	22311	37371	32918	34484	35853	5395	58701	16205	54412	74163	5078	33232	63475	34086	11218	8126	20043	13257	17691	18120	16795	7126	38118	68553	5395	285963	34484	178108	108826	60732	49505	593356	198211	791567
Licensed drivers working	**1986**	30200	13537	34283	15062	19891	14450	18528	15279	4162	18798	5436	32799	30270	3522	19749	33122	18121	1655	2166	5855	5781	5605	8154	2386	972	7522	36644	4162	165494	18528	57562	49532	18311	17073	278010	89296	367306
Licensed drivers working	**1995**	27878	16011	33304	12870	25186	23067	20342	21238	3846	27065	8685	29877	44923	4828	19038	33589	18355	4629	5141	7838	7538	8463	10941	9731	699	15289	38417	3846	162560	20342	87976	68892	34276	24061	323229	117141	440370
Licensed drivers working	**2005**	28092	17989	32237	12945	25030	22960	22109	23476	3311	38323	10237	30229	51710	3337	20660	39337	20511	8626	5277	14413	8816	11721	11355	10847	5286	27328	42674	3311	168150	22109	122646	74605	39201	33466	372671	133490	506161
Licensed FT workers	**1986**	25182	11834	29118	12354	17394	12492	15674	13499	3527	16048	4790	27830	26508	3450	17125	28923	15665	1462	1850	5355	5118	4868	7030	2094	794	6363	32373	3527	140773	15674	49712	43182	15842	15263	238701	77646	316347
Licensed FT workers	**1995**	22755	13601	27327	10944	20746	19084	16521	17361	2992	23007	7303	23742	36816	3795	16562	26683	14936	4179	4242	6618	6325	7031	8719	8024	615	12864	30478	2992	133627	16521	73302	57610	28016	20246	265422	97369	362791
Licensed FT workers	**2005**	25585	16642	29191	11924	23562	22024	20612	21815	3115	35741	9520	27692	47694	3285	19102	36300	18370	8261	4895	13241	7999	10653	10344	10039	4926	25246	39585	3115	153679	20612	113607	70488	35931	30760	342801	124975	467776
Licensed PT workers	**1986**	5018	1702	5165	2708	2497	1958	2854	1780	635	2751	646	4969	3761	72	2624	4199	2457	193	317	500	663	737	1124	291	179	1159	4270	635	24720	2854	7850	6350	2469	1810	39309	11649	50959
Licensed PT workers	**1995**	5122	2410	5977	1926	4440	3983	3821	3877	854	4058	1382	6135	8107	1033	2476	6906	3419	449	898	1220	1214	1432	2222	1707	85	2425	7939	854	28933	3821	14675	11282	6260	3815	57807	19772	77579
Licensed PT workers	**2005**	2507	1347	3046	1021	1468	936	1496	1661	195	2582	717	2538	4015	53	1557	3036	2141	365	382	1172	817	1069	1012	808	360	2081	3089	195	14471	1496	9039	4117	3270	2706	29870	8515	38384
Licensed students	**1986**	5200	1153	3884	2651	1965	1061	2619	1756	445	2246	413	3998	3168	578	2942	5744	1362	144	226	342	484	450	754	109	164	1158	6321	445	21793	2619	6736	4324	1540	1240	36390	8627	45017
Licensed students	**1995**	6585	2569	6755	2722	3999	3737	4902	4209	940	3928	871	7581	8671	1635	3575	12914	3746	977	720	1020	999	1056	1587	1328	140	2220	14549	940	35172	4902	14959	11281	4690	2891	69371	20014	89385
Licensed students	**2005**	7030	2457	4503	2339	2688	2149	3055	4111	544	4705	1294	7658	7521	510	2720	10707	2401	580	818	978	627	1307	1543	1129	380	3842	11217	544	30763	3055	16448	7873	4797	2900	63224	14372	77596
Licensed non-worker/students	**1986**	15259	3970	11156	3712	4770	4654	5650	3405	1708	5234	2315	13606	6106	838	9447	8979	10186	342	626	2187	2291	1793	3155	947	598	1467	9817	1708	66772	5650	13405	13736	6521	6793	96515	27886	124402
Licensed non-worker/students	**1995**	14055	4785	11861	4471	7335	5629	7034	5075	1447	6095	2996	12882	9134	689	8118	7987	8247	723	1586	2468	2674	2296	3274	2659	265	3089	8676	1447	64708	7034	18584	18472	9815	8138	101783	35090	136873
Licensed non-worker/students	**2005**	17542	6874	16665	7026	9653	7809	9321	8266	1541	15674	4674	16525	14932	1231	9852	13432	11174	2012	2031	4652	3814	4663	5221	4819	1460	6948	14663	1541	87050	9321	39014	26348	16734	13140	157461	50349	207810
Transit pass holders	**2005**	17807	6434	13858	7075	6715	5165	8516	11499	1609	10047	1187	13396	25067	1550	11810	14564	8362	3266	951	1261	526	1109	696	712	548	7953	16115	1609	83806	8516	43615	21581	3467	2974	147003	34681	181684
All households	**1986**	28729	9251	26353	10343	13797	10531	17229	10030	5051	12450	4695	27063	18489	3995	20475	35786	19399	1098	1320	4254	4592	3824	5413	1702	809	4670	39781	5051	142392	17229	36418	34677	12259	13541	230850	70498	301348
All households	**1995**	30038	12049	29700	11041	19337	16626	20165	15709	5535	16946	7000	28386	28088	5150	22134	37607	20458	3300	3375	5783	5772	5394	7111	6515	471	9521	42757	5535	157466	20165	55026	51312	22395	18555	277644	95567	373211
All households	**2005**	33200	14252	31474	13776	22500	18763	24749	19841	4793	30762	9405	32296	37281	4535	24599	44209	23177	5947	3955	9791	7250	8533	8644	8105	3920	19645	48744	4793	178363	24749	91608	61462	29237	26446	347952	117450	465402
0-vehicle households	**1986**	4064	395	2908	647	1493	678	2641	458	1729	172	388	3517	290	1624	4000	12232	3568	42	58	120	158	71	56	18	0	115	13856	1729	19162	2641	577	2608	203	666	33798	7644	41442
0-vehicle households	**1995**	6181	1056	4009	1330	1721	1341	3855	1312	2374	327	474	4171	997	2088	5700	15172	4473	176	115	143	219	128	152	188	5	166	17260	2374	27176	3855	1495	4294	583	836	46514	11359	57873
0-vehicle households	**2005**	5768	958	3447	1532	2144	1142	3992	1482	1684	869	350	4358	829	1811	6199	15390	4497	159	17	55	105	107	91	47	0	340	17201	1684	27283	3992	2038	4403	262	510	46784	10589	57373
1-vehicle households	**1986**	15213	4442	13780	5543	7417	5238	9544	4827	2803	4769	2308	14546	9110	1684	11468	17340	10060	660	321	1585	1635	935	1513	435	305	2062	19024	2803	75437	9544	16246	17757	3204	5528	113911	35632	149543
1-vehicle households	**1995**	15882	5662	15491	6571	9678	8518	11368	8410	2585	6173	3489	14893	12747	2625	12333	16957	11495	1992	943	1975	2211	1386	1702	2321	135	3830	19582	2585	85075	11368	22885	25850	6352	7675	133894	47478	181372
1-vehicle households	**2005**	17771	5917	15516	7574	10165	7852	13546	9339	2475	10743	3678	16070	15221	2430	12425	22324	12311	3450	703	2712	2139	1731	1566	1573	1117	6584	24754	2475	91006	13546	33665	27384	5573	8529	154998	51934	206932
2-vehicle households	**1986**	7502	3655	7494	3195	3811	3489	4094	3873	462	5456	1451	6672	7068	504	3957	5095	4360	395	539	2066	1868	1952	2281	961	249	2121	5599	462	37053	4094	14894	11350	5733	5385	63279	21291	84570
2-vehicle households	**1995**	7117	4711	8786	2768	6932	5618	4341	5241	509	8752	2743	7680	12523	435	3643	4838	3706	1035	1739	3065	2743	3050	3844	3273	165	4748	5273	509	38941	4341	26188	18296	11906	8551	82308	31697	114005
2-vehicle households	**2005**	8055	5840	10489	4018	8478	7767	6044	7753	602	16245	4283	9670	17800	294	5082	5882	5299	2123	2240	5290	3986	4549	4906	4539	2348	10669	6176	602	50366	6044	47062	24208	16234	13559	119838	44413	164251
3-vehicle households	**1986**	1529	351	1663	633	992	928	640	610	58	1335	371	1376	1585	182	682	655	1055	0	248	283	544	514	938	145	116	156	837	58	7548	640	3192	2271	1845	1198	13422	4167	17589
3-vehicle households	**1995**	637	534	1112	320	880	840	471	678	66	1289	235	1379	1554	0	454	519	592	59	408	465	489	604	1067	512	165	616	519	66	5172	471	3624	2313	2591	1189	11906	4039	15945
3-vehicle households	**2005**	1396	1194	1572	535	1429	1628	927	1110	32	2336	913	1635	2812	0	706	510	794	202	751	1160	732	1576	1353	1331	318	1587	510	32	7748	927	7053	4453	5011	2805	20322	8217	28539
4+vehicle households	**1986**	421	354	462	326	84	198	349	261	0	648	149	676	437	0	369	399	355	0	125	200	320	292	494	108	137	162	399	0	2870	349	1384	636	1019	669	5672	1654	7326
4+vehicle households	**1995**	220	86	300	50	125	308	132	68	0	404	58	264	268	0	6	121	192	39	172	113	111	228	348	219	0	161	121	0	1100	132	833	558	967	282	3021	972	3993
4+vehicle households	**2005**	210	343	450	118	283	373	238	155	0	569	182	561	619	0	188	102	276	12	243	575	288	569	727	615	138	463	102	0	1958	238	1789	1011	2154	1045	6003	2294	8297
1-person households	**1986**	7100	530	5467	1341	1858	1316	3266	1300	1572	790	628	5837	563	2191	5800	15647	5802	177	117	453	581	451	397	54	127	311	17838	1572	32647	3266	1791	3881	1019	1662	53295	10381	63676
1-person households	**1995**	8033	1468	6858	1910	3295	2286	6238	2222	2411	1462	1355	6432	1824	2460	7397	16500	8094	586	306	646	874	588	730	669	66	662	18960	2411	40946	6238	4014	7635	2293	2875	66213	19159	85372
1-person households	**2005**	9997	2855	7742	3132	5483	3820	9652	3750	2642	3665	1947	8617	3762	3115	8928	20309	9452	1542	296	1381	1574	1016	1043	950	544	1827	23424	2642	51618	9652	9798	13700	3305	4902	88145	30896	119041
2-person households	**1986**	10838	3220	9178	2819	4574	3033	6378	3357	1630	3597	1599	10847	4715	1499	8009	11147	8469	614	335	1397	1498	1069	1893	616	234	1278	12646	1630	53517	6378	9824	11441	3913	4494	79900	23943	103843
2-person households	**1995**	11215	3456	10260	4301	6418	5189	7547	4975	2004	5279	2009	10533	7738	2006	8237	12973	7021	1289	1115	2090	2050	1518	2345	2074	135	3139	14979	2004	56542	7547	16291	16352	7052	6149	94864	32052	126916
2-person households	**2005**	12745	4968	11801	5522	8305	6626	8378	7063	1233	10632	3368	11683	12910	1143	8666	14618	7432	2035	1407	3667	2768	3042	3513	3050	1550	5640	15761	1233	64912	8378	30732	21934	11012	9803	122417	41348	163765
3-person households	**1986**	5091	1893	5490	2432	3108	2207	3606	2310	1046	3086	927	4665	4272	223	3416	4493	2452	88	335	726	842	654	1302	344	142	1000	4716	1046	25856	3606	8500	7296	2635	2495	41707	14443	56150
3-person households	**1995**	4792	2530	5188	2421	3730	4012	3235	3032	594	3773	1540	5222	6425	392	3535	4072	2632	898	713	1271	1221	1085	1456	1095	99	1881	4464	594	26822	3235	12178	11170	4349	4032	47813	19031	66844
3-person households	**2005**	4614	2671	5544	2223	4201	3478	3307	3624	456	6154	1861	6060	7792	205	3861	5073	3290	1082	736	1840	1324	1631	1620	1651	771	4885	5278	456	29216	3307	19602	11432	5638	5025	59734	20220	79954
4-person households	**1986**	3687	2537	4776	2504	3397	2843	2384	2044	449	3405	1068	3977	6237	41	2115	2925	1780	219	299	1135	1177	1008	1160	471	123	1636	2966	449	20883	2384	11401	8996	2938	3380	38188	15209	53397
4-person households	**1995**	3712	2730	4645	1773	4318	3973	2474	3917	348	4089	1560	4172	8488	81	1819	2841	1750	312	815	1243	1132	1476	1695	1645	80	2867	2922	348	21788	2474	15524	11333	5631	3935	45865	18090	63955
4-person households	**2005**	4001	2574	4576	1971	3312	3609	2390	3472	361	7499	1747	3950	9451	48	2218	3173	2310	961	1052	2094	967	1859	1531	1632	743	5394	3221	361	22498	2390	23087	10456	6074	4808	54880	18015	72895
5+person households	**1986**	2013	1071	1442	1247	860	1132	1595	1019	354	1572	473	1737	2702	41	1135	1574	896	0	234	543	494	642	661	217	183	445	1615	354	9489	1595	4902	3063	1754	1510	17760	6522	24282
5+person households	**1995**	2286	1865	2749	636	1576	1166	671	1563	178	2343	536	2027	3613	211	1146	1221	961	215	426	533	495	727	885	1032	91	972	1432	178	11368	671	7019	4822	3070	1564	22889	7235	30124
5+person households	**2005**	1843	1184	1811	928	1199	1230	1022	1932	101	2812	482	1986	3366	24	926	1036	693	327	464	809	617	985	937	822	312	1899	1060	101	10119	1022	8389	3940	3208	1908	22776	6971	29747
1-person hhld workers/vehicle	**1986**	1.21	1.21	1.06	1.68	1.17	1.26	0.99	1.19	0.74	2.35	1.59	0.88	1.21	0.51	1.12	0.83	1.35	0.90	1.62	2.23	2.30	1.99	2.85	0.99	1.83	1.44	0.67	0.74	1.21	0.99	1.71	1.14	1.86	2.04	1.36	1.23	1.30
1-person hhld workers/vehicle	**1995**	1.72	1.81	1.44	1.58	1.45	1.69	1.25	1.30	0.91	1.64	1.85	1.38	1.43	0.56	1.11	0.78	1.44	1.18	2.89	2.26	2.18	2.87	2.13	2.96	1.87	1.52	0.67	0.91	1.42	1.25	1.62	1.53	2.71	2.10	1.61	1.45	1.53
1-person hhld workers/vehicle	**2005**	1.95	1.75	1.87	1.82	1.73	1.78	1.66	1.55	1.15	2.00	2.94	1.85	1.85	0.85	1.51	0.93	1.73	1.37	3.97	2.07	2.72	2.74	2.93	2.83	1.79	1.89	0.89	1.15	1.75	1.66	1.88	1.66	3.12	2.58	1.91	1.76	1.84
2-person hhld workers/vehicle	**1986**	1.40	1.09	1.13	0.98	0.97	1.03	1.27	1.00	0.97	1.26	1.41	1.13	1.01	0.84	1.10	0.76	1.35	0.71	1.41	1.13	1.41	1.50	1.52	1.64	6.12	0.89	0.80	0.97	1.16	1.27	2.32	0.95	1.52	1.32	1.45	1.13	1.29
2-person hhld workers/vehicle	**1995**	1.27	1.25	1.20	1.13	1.11	1.05	1.09	1.07	0.92	1.20	1.35	1.31	1.15	0.66	1.07	0.77	1.24	0.96	1.61	1.54	1.53	1.60	1.77	1.42	1.51	1.18	0.72	0.92	1.19	1.09	1.26	1.09	1.60	1.47	1.19	1.14	1.17
2-person hhld workers/vehicle	**2005**	1.38	1.39	1.48	1.49	1.33	1.34	1.23	1.42	0.90	1.71	1.67	1.56	1.47	0.72	1.18	0.81	1.18	0.89	2.15	1.49	1.53	1.92	2.08	2.04	1.47	1.37	0.76	0.90	1.38	1.23	1.51	1.24	2.05	1.57	1.43	1.23	1.33
3-person hhld workers/vehicle	**1986**	0.98	0.98	0.93	0.95	0.82	1.02	0.98	0.90	0.65	1.10	1.24	0.95	0.92	1.27	0.95	0.82	0.95	0.90	1.02	0.90	1.24	1.36	1.12	1.26	1.87	1.02	1.04	0.65	0.94	0.98	1.23	0.93	1.19	1.12	1.10	0.92	1.01
3-person hhld workers/vehicle	**1995**	0.97	1.01	0.98	0.93	0.98	0.99	0.90	0.89	0.73	1.08	0.98	1.04	0.91	0.70	0.85	0.73	1.01	0.97	1.29	1.15	1.20	1.18	1.32	1.00	1.24	1.01	0.72	0.73	0.95	0.90	1.06	0.99	1.20	1.11	0.98	0.93	0.96
3-person hhld workers/vehicle	**2005**	1.11	1.00	0.94	0.98	1.10	1.19	0.97	0.99	0.75	1.19	1.27	1.05	1.03	0.54	0.88	0.74	1.02	0.87	1.40	1.16	1.30	1.33	1.44	1.46	1.21	1.14	0.64	0.75	1.00	0.97	1.14	1.04	1.41	1.24	1.05	1.00	1.02
4-person hhld workers/vehicle	**1986**	0.89	0.82	0.79	0.85	0.68	1.00	0.93	0.92	0.46	1.07	1.10	0.80	0.87	2.26	0.87	0.81	0.91	1.19	1.15	1.47	1.51	1.25	1.26	1.15	1.44	0.87	1.54	0.46	0.86	0.93	1.06	0.92	1.20	1.36	1.17	0.92	1.04
4-person hhld workers/vehicle	**1995**	0.92	0.86	0.96	0.96	0.93	0.90	0.86	0.86	0.75	1.06	0.99	0.91	0.89	0.42	0.90	0.81	0.81	0.73	1.19	1.18	1.23	1.13	1.22	1.10	1.29	1.03	0.62	0.75	0.90	0.86	1.07	0.86	1.16	1.14	0.94	0.90	0.92
4-person hhld workers/vehicle	**2005**	0.90	1.00	0.98	1.03	1.00	1.06	1.03	1.00	0.71	1.10	1.16	1.05	0.95	0.24	0.84	0.73	0.91	0.85	1.33	1.16	1.36	1.27	1.24	1.17	1.28	1.14	0.49	0.71	0.96	1.03	1.12	0.98	1.25	1.23	0.95	0.99	0.97
5+person hhld workers/vehicle	**1986**	0.72	1.03	0.99	0.74	0.82	1.05	0.94	0.84	0.71	1.15	1.39	0.79	0.92	0.38	0.87	0.59	0.92	0.00	1.46	1.38	1.99	1.09	1.36	1.55	1.44	0.90	0.48	0.71	0.84	0.94	1.10	0.73	1.37	1.59	0.95	0.99	0.97
5+person hhld workers/vehicle	**1995**	0.88	0.90	0.93	0.74	0.92	0.87	0.98	0.87	1.00	1.06	1.00	1.07	0.90	0.71	1.02	0.74	0.93	0.75	1.29	1.17	1.14	1.12	1.15	1.27	1.85	0.88	0.73	1.00	0.92	0.98	1.17	0.86	1.21	1.10	1.01	0.99	1.00
5+person hhld workers/vehicle	**2005**	0.92	1.07	1.00	1.04	1.19	1.03	0.99	0.96	1.39	1.14	1.36	1.03	0.97	0.63	0.77	0.78	0.85	0.91	1.20	1.12	1.28	1.28	1.30	1.34	1.35	1.06	0.70	1.39	0.94	0.99	1.13	1.05	1.28	1.25	1.01	1.17	1.09
Apartment households	**1986**	9867	908	7306	2301	3073	1585	7485	1344	2652	331	534	8176	549	3456	9057	20394	7533	439	29	170	220	142	98	18	0	86	23850	2652	45584	7485	966	6005	287	924	70687	17066	87753
Apartment households	**2005**	9738	1379	6868	2866	5105	2495	8361	2353	2671	1249	803	7235	1106	3588	9996	23785	7410	884	31	335	186	218	187	31	7	359	27373	2671	46466	8361	2721	9863	467	1324	77027	22219	99246
Row/townhouse households	**1986**	4178	869	4976	2249	1063	571	738	4039	531	1804	176	2651	2723	41	2813	2772	536	442	66	87	25	26	57	0	0	505	2813	531	21442	738	5032	2945	149	288	29436	4502	33938
Row/townhouse households	**2005**	3967	931	6007	3249	1934	591	1547	6226	103	6274	485	3675	6369	323	3597	4960	1705	454	82	120	55	291	116	161	655	5277	5283	103	28426	1547	18575	3910	650	660	52934	6220	59154
Semi-detached households	**1986**	1322	658	2155	990	1147	565	2249	890	469	871	450	2381	1820	141	1981	4234	1657	175	29	99	54	71	99	18	26	967	4375	469	11376	2249	3684	2545	217	603	19652	5866	25518
Semi-detached households	**2005**	1824	1818	2392	1416	2290	3389	3124	1383	534	2588	1699	2513	2324	195	1979	3178	1758	1867	47	96	156	285	210	95	297	1789	3373	534	13265	3124	6998	9364	637	1951	24273	14973	39246
Separate entrance households	**1995**	12144	1633	9282	3480	5768	4282	11367	2979	3989	956	1648	9280	1832	4766	12027	24474	9610	1211	159	347	285	270	293	256	16	277	29240	3989	58802	11367	3081	12894	978	2280	92101	30530	122631
Shared entrance households	**1995**	17894	10417	20417	7561	13548	12342	8799	12731	1546	15991	5352	19106	26257	382	10108	13133	10849	2090	3217	5437	5487	5125	6819	6259	455	9243	13515	1546	98666	8799	51946	38397	21420	16276	185547	65018	250565
Single-detached households	**1986**	12779	6742	11295	4732	7220	7127	6040	3668	958	9021	3231	13263	12601	141	6175	7345	9168	42	1078	3679	4193	3462	5062	1613	701	2916	7486	958	61080	6040	25239	21131	11215	11103	105020	39232	144252
Single-detached households	**2005**	16759	9696	15446	5824	12281	11539	10682	9256	1208	20126	6105	18230	26851	259	8135	11265	11645	2463	3667	8840	6618	7441	7846	7589	2827	12117	11524	1208	85295	10682	61921	35979	26543	21563	185283	69432	254715
Other dwelling type households	**1986**	583	75	619	72	1293	683	794	90	442	422	304	590	796	215	490	1041	504	0	117	221	99	124	100	54	82	194	1256	442	2948	794	1494	2051	395	624	6093	3911	10004
Other dwelling type households	**2005**	913	427	761	421	889	748	1035	622	277	524	313	641	630	170	893	1021	659	279	128	403	234	297	283	229	134	101	1191	277	4910	1035	1389	2343	937	950	8427	4605	13032

Table D-3: Daily trips by district of origin, destination or residence (as specified)

Indicator	Year	Alta Vista	Aylmer	Bayshore / Cedarview	Beacon Hill	Gatineau Centre	Gatineau Est	Hull Périphérie	Hunt Club	Ile de Hull	Kanata / Stittsville	Masson-Angers	Merivale	Orleans	Ottawa Centre	Ottawa East	Ottawa Inner Area	Ottawa West	Plateau	Rural East	Rural Northeast	Rural Northwest	Rural Southeast	Rural Southwest	Rural West	South Gloucester / Leitrim	South Nepean	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Ontario	Québec	NCR
Average trip length (origin)	**1995**	6	7	7	6	5	7	6	7	7	10	8	6	8	6	6	5	6	7	15	14	15	16	17	9	12	9											
Average trip length (origin)	**2005**	6	7	7	6	6	7	6	7	7	9	12	6	8	7	6	5	5	6	14	14	16	14	15	17	11	8											
Average trip length (destination)	**1995**	6	6	7	6	5	7	6	7	6	10	9	7	8	6	6	5	6	6	15	14	16	16	16	9	11	9											
Average trip length (destination)	**2005**	6	7	7	6	6	7	6	7	7	9	12	6	8	7	6	5	5	6	14	14	16	14	14	17	11	8											
Originating trips	**1995**	209038	67191	212656	76496	121484	82895	125798	91033	55682	104875	34212	201799	168907	160019	124272	256432	120122	10252	13166	20472	21691	28111	37589	41792	3428	46136	416451	55682	1035416	125798	323346	281822	120658	76376	1895871	539678	2435549
Originating trips	**2005**	228741	68759	179484	83701	118476	83084	138166	108370	46482	202809	35633	227244	212837	155823	129447	283461	149138	28505	16591	33747	26514	36898	47487	31372	15182	98968	439285	46482	1106126	138166	529796	298824	132348	95893	2207555	579365	2786919
Destination trips	**1995**	209631	66786	212762	76461	121318	82844	125857	90698	55593	104779	34170	202008	168640	160536	124263	256767	119864	10179	13208	20444	21877	28013	37389	41759	3357	45934	417303	55593	1035687	125857	322710	281128	120369	76491	1896069	539069	2435138
Destination trips	**2005**	229212	68698	179122	83647	118533	82624	138705	107805	46402	202896	35573	227660	212803	156033	129807	283880	149384	28690	16462	33727	26473	36958	47555	31327	15232	98589	439912	46402	1106637	138705	529521	298545	132301	95773	2208372	579425	2787797
Female transit trips (by res)	**1986**	27453	6408	25308	10735	8016	6888	9653	9485	3680	9999	1873	25894	21220	1870	18996	30585	15236	565	858	2323	2029	2355	3159	555	280	4548	32455	3680	133109	9653	36047	21877	6927	6225	208538	41435	249973
Female transit trips (by res)	**1995**	15467	4170	16153	7284	4213	2992	6311	8211	1434	4853	556	13389	15254	2911	11254	16795	9880	918	331	223	415	105	391	1246	11	2997	19706	1434	81637	6311	23114	12293	2073	1194	126530	21231	147762
Female transit trips (by res)	**2005**	21142	5704	15956	8431	6092	5011	9478	12900	1722	9770	1144	14734	24644	1566	14900	19241	11634	3109	663	1265	596	714	410	442	480	7517	20806	1722	99696	9478	42411	19916	2229	3004	165142	34121	199263
Male trips (by res)	**1986**	106312	41963	109952	47338	51553	41257	59001	45422	11720	63532	13601	113809	95070	10976	63187	102703	60540	3135	5913	15674	15206	18451	28927	6951	3790	26102	113679	11720	546560	59001	188494	137908	60242	44481	908975	253110	1162086
Male trips (by res)	**1995**	90768	47011	100184	40544	65777	63642	60610	59666	13205	69749	21080	95734	117053	14065	61107	104213	55918	10234	12670	18497	19373	20876	27747	28992	1929	40712	118278	13205	503921	60610	229444	186664	90284	58950	941928	319429	1261357
Male trips (by res)	**2005**	91528	46265	93659	37378	60739	54782	60044	62826	11421	107126	22460	93863	134426	10720	61488	123297	65192	18702	14914	31545	20236	29121	30440	26618	10859	65136	134018	11421	505934	60044	317547	180489	101092	74241	1058591	326195	1384786
Female trips (by res)	**1986**	102353	36391	108428	45929	48580	38438	48003	42820	13091	61361	12733	107813	89832	10080	64276	116323	65642	4665	5676	14327	14719	16236	24828	6281	2642	22604	126403	13091	537262	48003	176438	128074	53021	41779	893123	230947	1124070
Female trips (by res)	**1995**	93420	44806	100748	38195	67051	57069	58247	58782	11499	67201	20020	95937	120963	12218	64378	109328	64585	11152	12218	17513	18156	19833	27447	27277	1821	36036	121546	11499	516045	58247	226022	180078	86775	55688	950387	305512	1255899
Female trips (by res)	**2005**	98780	46263	98807	41177	60735	54628	59420	68294	9278	108442	22873	100771	141386	9136	65113	121101	72009	20485	13449	26440	20754	27938	30722	26403	10650	67798	130237	9278	544951	59420	328277	182110	98511	70067	1101977	320876	1422852
Male transit trips (by res)	**1986**	19486	6278	21996	10884	5452	4399	7234	7209	1651	9486	1205	20784	22727	1705	9546	17822	9931	257	954	3219	2117	2415	3335	651	505	5113	19527	1651	99836	7234	37830	16386	7355	6541	164548	31812	196360
Male transit trips (by res)	**1995**	11045	3066	11047	5087	2791	2349	4801	6873	1284	4600	188	9965	13255	1733	8378	12160	6507	684	280	132	179	76	213	1156	11	3854	13893	1284	58903	4801	21720	8889	1725	499	96242	15473	111715
Male transit trips (by res)	**2005**	15881	5328	13543	6433	5459	3945	7064	11391	1339	9975	709	11689	22098	1495	10886	17753	7633	2682	812	1005	334	708	680	449	592	7274	19248	1339	77456	7064	39940	17414	2649	2048	139292	27865	167157
Auto-drive trips (by res)	**1986**	113229	46363	120847	46161	57529	47508	60457	48902	8846	73642	15987	117648	95357	6184	64379	83002	67078	5333	7300	17894	18342	21181	33345	8636	4430	27856	89186	8846	578243	60457	201284	156733	70463	52224	939176	278259	1217435
Auto-drive trips (by res)	**1995**	100089	52136	116832	42493	83513	75737	68172	68075	10564	88546	26170	108533	135342	7762	62403	77535	64425	14667	17505	25823	25894	28398	38810	36426	2946	50869	85297	10564	562850	68172	277704	226053	121139	77887	1046990	382677	1429667
Auto-drive trips (by res)	**2005**	101079	58088	112674	45401	76865	70201	71385	73870	9580	138356	31360	112771	159459	6333	62307	84320	71360	24365	19208	38840	29087	42003	43464	38755	16686	85884	90653	9580	579461	71385	400385	229519	143430	99287	1213929	409771	1623700
Auto-passenger trips (by res)	**1986**	31286	10267	30291	15403	15730	12022	17100	15077	3088	18850	4164	38186	27413	1546	16259	23898	20520	1079	2096	3826	5635	5782	10098	2643	964	7024	25444	3088	167021	17100	54252	39099	20619	13624	267336	72911	340247
Auto-passenger trips (by res)	**1995**	31260	14375	32264	12791	22373	22482	20285	19844	3557	21042	6388	31536	38335	2939	19653	25651	16676	3418	3847	5741	6702	6276	7863	9157	602	9965	28590	3557	164025	20285	69943	62647	27144	18831	289701	105320	395022
Auto-passenger trips (by res)	**2005**	27066	11779	26242	10323	18582	15337	14241	18652	2409	32070	5815	28798	38767	1185	15729	23122	17739	5599	4163	8435	5823	6895	8879	7462	2322	17310	24308	2409	144550	14241	90468	51297	27399	20072	286725	88018	374743
Bicycle trips (by res)	**1986**	2021	1396	1890	1569	1147	261	814	598	372	430	64	3510	780	114	1686	8525	1523	0	0	82	39	217	267	0	0	195	8639	372	12798	814	1405	2804	484	185	23326	4175	27500
Bicycle trips (by res)	**1995**	1808	1018	1590	1151	1142	1389	1149	824	608	793	332	2759	2437	323	1645	8831	3223	176	51	100	199	215	296	316	10	583	9154	608	13000	1149	3823	3724	879	631	26855	6112	32968
Bicycle trips (by res)	**2005**	2477	896	1649	420	855	688	1875	1125	850	1196	430	3234	2239	166	3171	9128	4302	776	33	207	317	136	222	68	107	675	9294	850	16377	1875	4217	3214	459	954	30347	6893	37239
Motorcycle trips (by res)	**1986**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Motorcycle trips (by res)	**1995**	86	0	209	43	160	100	192	42	43	260	77	158	149	0	100	421	44	0	0	43	19	35	0	122	0	0	421	43	680	192	409	260	156	139	1667	634	2301
Motorcycle trips (by res)	**2005**	34	58	97	0	79	125	22	43	0	215	80	164	347	0	79	173	173	27	16	100	53	19	37	0	38	141	173	0	590	22	741	288	73	232	1577	542	2119
Public transit trips (by res)	**1986**	44251	10158	43573	20004	12453	10030	15479	14068	4961	15402	2191	42966	35743	3574	27345	46135	24340	822	1446	2663	2753	2700	4258	651	529	8288	49710	4961	216547	15479	59962	33463	9055	7607	335273	61511	396784
Public transit trips (by res)	**1995**	26459	7236	27200	12325	7003	5341	11066	15131	2718	9453	744	23354	28464	4644	19586	28913	16427	1601	612	355	589	180	603	2403	21	6852	33556	2718	140482	11066	44790	21182	3798	1689	222626	36655	259281
Public transit trips (by res)	**2005**	37023	11032	29499	14864	11551	8956	16542	24291	3061	19746	1853	26422	46742	3060	25786	36994	19267	5791	1475	2270	930	1422	1090	890	1072	14791	40054	3061	177152	16542	82350	37330	4878	5053	304434	61986	366420
School bus trips (by res)	**1986**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
School bus trips (by res)	**1995**	1882	4607	2166	881	3669	5359	1238	3633	178	5014	2224	1666	7264	0	447	524	539	391	1561	2438	2045	3480	3839	2206	92	3141	524	178	11215	1238	15510	14025	11085	6708	38334	22148	60482
School bus trips (by res)	**2005**	2560	3072	4571	737	3290	5820	675	3722	79	7416	2517	3060	6656	0	1992	1408	739	141	2524	7329	3200	4733	5494	4461	514	5709	1408	79	17381	675	20296	12324	17211	13045	56297	26123	82419
Taxi trips (by res)	**1986**	715	174	479	470	475	169	513	280	198	227	48	1127	942	702	888	4050	789	0	111	0	62	0	32	0	88	33	4752	198	4749	513	1289	818	143	110	10933	1640	12573
Taxi trips (by res)	**1995**	851	327	453	213	346	244	521	462	463	232	61	1018	418	264	944	2400	343	39	19	51	58	17	63	87	0	144	2664	463	4285	521	794	956	186	171	7928	2111	10040
Taxi trips (by res)	**2005**	928	353	717	126	301	251	880	538	184	248	105	867	736	418	780	3772	891	288	58	25	80	0	81	63	25	132	4191	184	4846	880	1141	1192	202	210	10381	2466	12847
Walk trips (by res)	**1986**	9212	2901	10242	5428	4682	2903	5858	2454	4936	3638	1238	9919	5658	8936	10381	46764	7515	257	95	501	481	411	954	19	20	997	55699	4936	55152	5858	10314	10743	1480	2220	122644	23757	146401
Walk trips (by res)	**1995**	18956	9640	16933	7440	11188	7268	14700	7592	6484	8468	3992	19661	19723	10238	18790	67412	16917	508	688	690	1352	1239	2589	4124	59	3441	77650	6484	106288	14700	31691	28603	8639	6034	224268	55821	280089
Walk trips (by res)	**2005**	18159	6886	16172	6567	9483	7787	13565	8533	4439	15272	3070	18744	20110	8625	16395	84254	22459	2059	852	479	1371	1511	1771	1088	719	8209	92879	4439	107029	13565	44309	26215	5223	4920	249440	49139	298579
"Other" mode trips (by res)	**1986**	1182	258	513	407	140	413	322	261	66	847	292	385	968	0	707	450	725	0	32	61	208	99	260	19	0	130	450	66	4179	322	1945	811	410	561	6983	1760	8743
"Other" mode trips (by res)	**1995**	282	110	305	179	227	155	62	146	43	344	84	308	530	0	275	701	647	78	96	215	67	180	242	154	0	161	701	43	2144	62	1035	570	672	366	4552	1041	5593
"Other" mode trips (by res)	**2005**	983	365	844	119	430	245	279	347	99	1052	105	574	757	68	362	1226	271	141	34	301	130	339	122	234	24	84	1294	99	3500	279	1916	1181	728	536	7438	2095	9533
Work trips (by res)	**1986**	41642	18167	46539	20561	23254	17384	24959	20124	5891	27231	5844	47461	40957	6384	27155	52974	24746	2257	2992	6857	6654	6880	11301	2872	1574	10040	59358	5891	228228	24959	79802	61061	24045	19355	391433	111266	502699
Work trips (by res)	**1995**	29842	16401	35256	13497	25792	21736	21169	21453	3746	28101	7897	31511	45570	5597	22174	38018	19832	4804	5045	7743	7457	8426	10785	9342	830	16065	43614	3746	173565	21169	90566	68733	33598	23097	341343	116744	458087
Work trips (by res)	**2005**	31213	18694	35551	14442	25241	23244	24284	26020	3999	40134	9532	34378	52308	4662	24657	45494	23274	9046	5601	13126	8360	12633	12503	11348	4849	27779	50156	3999	189535	24284	125070	76225	42085	31018	406846	135526	542372
Intra-district work trips	**1986**	10542	2450	10053	3093	3520	3537	8681	2979	1904	4277	2461	9309	4249	3486	3972	13046	4607	0	444	833	1582	521	1522	460	44	417	16532	1904	44555	8681	8987	9507	2948	4875	73022	24967	97989
Intra-district work trips	**1995**	7730	2776	7130	1892	4395	3078	6438	3300	926	5404	3158	6269	6475	2729	3201	8479	3465	20	471	515	1085	1165	1812	928	5	1009	11208	926	32986	6438	12892	10270	4377	4757	61463	22390	83854
Intra-district work trips	**2005**	7634	2490	5550	2160	4152	3202	6906	2845	557	12423	2274	7008	7745	2028	3350	10431	4806	238	570	990	1252	1780	2150	1230	267	2437	12459	557	33352	6906	22873	10081	5731	4517	74415	22060	96476
Total work trip length (by res)	**1995**	194343	94584	336285	102607	206272	104866	164613	146283	19353	232962	110281	227254	223671	24040	142362	179555	130250	41958	0	133343	138800	172416	143500	0	5457	134168	203594	19353	1279384	164613	596258	447680	315916	382424	2395153	1014069	3409222
Total work trip length (by res)	**2005**	191620	185024	300715	103469	185189	215747	143493	197777	20433	477676	162466	220624	650899	13874	141089	198941	139246	62291	91465	194372	156645	209538	210837	218195	56892	312294	212815	20433	1294541	143493	1497761	648250	730035	513482	3735152	1325659	5060810
Transit work trips (by res)	**1986**	11000	2442	10971	5236	2988	1919	3332	3265	1200	3546	555	12386	10125	1074	6825	11967	6260	360	262	234	162	107	522	19	0	1947	13042	1200	55942	3332	15618	7709	910	950	85511	13190	98702
Transit work trips (by res)	**1995**	5692	2189	6374	2792	2210	1491	2254	3529	566	2930	220	5396	9674	1038	4307	6221	3798	410	223	142	147	76	271	773	11	2013	7259	566	31888	2254	14627	6300	1343	509	55117	9628	64745
Transit work trips (by res)	**2005**	8184	3077	7163	3447	3997	3204	4135	4929	846	5498	785	6495	12903	748	6351	9066	4947	1744	354	965	320	401	422	352	385	5001	9814	846	41515	4135	23787	12021	1530	2071	76646	19072	95718
Bicycle work trips (by res)	**1986**	317	54	402	428	181	44	248	225	0	38	32	532	115	38	534	2288	379	0	0	0	0	0	32	0	0	0	2326	0	2817	248	153	279	32	32	5327	559	5887
Bicycle work trips (by res)	**1995**	393	102	215	340	132	180	252	217	112	116	58	382	310	43	480	1593	586	59	0	55	18	17	25	0	0	69	1636	112	2613	252	495	473	42	131	4786	967	5753
Bicycle work trips (by res)	**2005**	714	154	377	136	219	163	688	335	227	376	49	686	400	22	663	2233	1109	243	21	44	59	0	69	21	38	86	2255	227	4020	688	899	780	111	152	7286	1847	9133
Walk work trips (by res)	**1986**	1264	260	1293	508	778	467	935	680	1306	497	183	1412	805	2761	1733	11285	1642	51	16	207	199	155	113	0	0	261	14046	1306	8533	935	1562	1556	283	588	24425	4385	28810
Walk work trips (by res)	**1995**	2616	741	2036	1118	952	637	1454	934	863	803	649	2489	2245	2625	2149	10487	2296	137	127	210	298	244	375	305	40	631	13112	863	13638	1454	3718	2466	1051	1156	31520	5939	37460
Walk work trips (by res)	**2005**	2138	658	1410	796	903	664	1929	970	682	1226	318	2631	1672	2086	2255	13855	2653	370	142	95	256	335	210	206	53	618	15941	682	12853	1929	3568	2595	893	669	33255	5875	39130

Table D-4: Daily trips by age, gender and district of residence

Indicator	Year	Alta Vista	Aylmer	Bayshore / Cedarview	Beacon Hill	Gatineau Centre	Gatineau Est	Hull Périphérie	Hunt Club	Île de Hull	Kanata / Stittsville	Masson-Angers	Merivale	Orleans	Ottawa Centre	Ottawa East	Ottawa Inner Area	Ottawa West	Plateau	Rural East	Rural Northeast	Rural Northwest	Rural Southeast	Rural Southwest	Rural West	South Gloucester / Leitrim	South Nepean	Central Ottawa	Central Gatineau	Urban Ottawa	Urban Gatineau	Suburban Ottawa	Suburban Gatineau	Rural Ontario	Rural Quebec	Ontario	Québec	NCR
Female transit trips (by res) age 11-14	**1986**	1093	479	924	747	331	78	878	755	124	379	16	443	1508	0	1119	862	755	0	0	83	170	20	16	0	0	355	862	124	5838	878	2242	888	35	269	8978	2159	11138
Female transit trips (by res) age 11-14	**1995**	732	208	1212	448	221	74	360	712	0	402	23	484	776	113	708	321	312	117	6	0	55	0	0	142	0	178	434	0	4607	360	1356	620	148	78	6545	1058	7603
Female transit trips (by res) age 11-14	**2005**	1248	659	1161	440	159	97	1172	832	0	356	39	579	1577	0	520	390	478	484	44	0	40	82	0	0	9	89	390	0	5259	1172	2031	1399	126	79	7807	2651	10458
Female transit trips (by res) age 15-19	**1986**	3760	636	3261	1822	1566	1139	1819	1323	379	1893	134	3259	2342	0	2021	1861	1020	0	32	155	152	0	33	19	0	777	1861	379	16467	1819	5012	3342	84	441	23423	5981	29404
Female transit trips (by res) age 15-19	**1995**	2401	1102	2334	1256	659	491	1113	1753	109	673	65	2226	2431	280	1448	1421	1142	156	32	12	59	12	14	124	11	444	1700	109	12558	1113	3559	2408	181	135	17998	3765	21764
Female transit trips (by res) age 15-19	**2005**	3897	1192	2994	1729	797	703	1537	3928	81	2228	102	2600	7017	288	2572	1437	1519	469	182	262	191	127	62	28	78	1603	1724	81	19239	1537	10926	3161	400	555	32289	5334	37623
Female transit trips (by res) age 20-24	**1986**	4596	1149	2916	1578	1021	333	1428	1405	370	458	200	3648	876	0	3401	3431	1678	308	127	20	145	20	144	19	0	554	3431	370	19221	1428	1888	2811	310	365	24850	4973	29823
Female transit trips (by res) age 20-24	**1995**	2397	334	2119	1005	608	217	886	1203	264	430	77	2108	2438	474	1380	3655	966	117	0	78	9	0	27	92	0	133	4129	264	11178	886	3002	1277	120	165	18428	2591	21019
Female transit trips (by res) age 20-24	**2005**	4278	574	2267	2071	654	596	1648	2113	383	1719	170	3614	3650	68	1953	4134	1153	103	106	76	13	129	46	80	54	1282	4201	383	17450	1648	6706	1928	361	260	28717	4218	32936
Female transit trips (by res) age 25-54	**1986**	10445	1655	10415	4132	2724	1947	3308	3583	1718	2607	470	9586	7197	1444	7930	13530	5977	257	174	221	60	118	523	0	40	1553	14974	1718	52067	3308	11398	6583	815	751	79254	12361	91614
Female transit trips (by res) age 25-54	**1995**	7294	2311	8052	3886	2337	2095	2909	3863	718	2874	391	6453	8350	1630	5679	8946	5461	430	287	121	260	76	322	889	0	2132	10576	718	40688	2909	13355	7172	1573	773	66192	11573	77765
Female transit trips (by res) age 25-54	**2005**	8600	2722	7672	3204	3482	3069	3963	5425	870	4688	725	5795	11091	647	7785	10483	5548	1651	330	802	319	360	249	239	269	4062	11129	870	44030	3963	20110	10924	1178	1846	76446	17604	94050
Female transit trips (by res) age 55-64	**1986**	2205	356	1801	932	278	216	845	537	584	55	34	2551	275	158	1861	3044	2094	0	0	42	0	0	33	0	0	0	3202	584	11981	845	330	850	33	76	15546	2356	17902
Female transit trips (by res) age 55-64	**1995**	924	123	994	177	199	70	381	427	64	293	0	986	544	188	376	635	364	78	0	12	13	12	27	0	0	89	823	64	4247	381	926	470	39	25	6035	940	6975
Female transit trips (by res) age 55-64	**2005**	1583	425	799	669	658	309	523	422	257	743	75	932	1107	291	959	1420	706	287	0	125	33	16	53	96	70	297	1711	257	6070	523	2217	1678	165	233	10163	2691	12854
Female transit trips (by res) age 65+	**1986**	3386	0	2631	426	142	209	311	93	135	120	98	3197	288	191	1813	5649	3256	0	0	0	0	0	48	0	0	0	5840	135	14804	311	408	352	48	98	21099	896	21995
Female transit trips (by res) age 65+	**1995**	1667	92	1442	512	188	47	662	253	279	180	0	1133	714	226	1642	1817	1636	20	6	0	18	6	0	0	0	22	2043	279	8284	662	917	346	12	18	11256	1305	12561
Female transit trips (by res) age 65+	**2005**	1536	133	1062	319	341	237	635	180	131	36	32	1213	201	273	1110	1378	2229	114	0	0	0	0	0	0	0	184	1651	131	7648	635	421	824	0	32	9720	1623	11343
Female trips (by res) age 11-14	**1986**	2466	2301	4781	2316	2137	2766	2518	1604	689	3567	944	3486	7331	0	2324	2332	1273	0	461	812	1205	1792	861	134	144	1548	2332	689	18250	2518	12591	7204	3248	2960	36421	13372	49792
Female trips (by res) age 11-14	**1995**	4367	3785	4871	2141	4570	3687	2011	3620	220	4958	1556	4144	8395	269	2782	2122	2724	352	612	1104	1006	1653	1744	1900	40	2191	2391	220	24649	2011	15584	12394	5908	3666	48531	18291	66822
Female trips (by res) age 11-14	**2005**	5684	3497	6874	1930	3496	4104	2750	5133	415	9267	1374	4547	9840	0	2642	3593	4143	832	889	3401	1681	1966	2125	2200	370	4256	3593	415	30953	2750	23733	11929	7180	6456	65459	21550	87008
Female trips (by res) age 15-19	**1986**	7516	2255	7002	5040	4621	3914	4508	2848	835	5823	709	7443	8352	509	3425	4290	1530	0	302	1069	888	648	1268	479	40	1896	4800	835	34803	4508	16111	10790	2696	2666	58410	18799	77209
Female trips (by res) age 15-19	**1995**	7062	4307	6988	3713	5434	5619	4639	4816	579	4756	1059	6729	11558	882	3364	5017	3354	566	1006	1059	1380	1822	2571	1677	215	2030	5900	579	36026	4639	18559	15927	7076	3498	67560	24642	92202
Female trips (by res) age 15-19	**2005**	8767	4102	7718	3529	4443	4349	3255	7163	491	9960	1715	8734	17534	881	4244	5460	3566	1188	1717	2631	2081	3261	3769	3036	408	6771	6341	491	43722	3255	34673	14082	11784	6428	96519	24256	120775
Female trips (by res) age 20-24	**1986**	10118	2338	10088	3637	5675	3409	8017	4762	1483	3930	1528	11755	4908	114	9066	16523	5991	668	397	608	885	967	1749	268	396	1445	16638	1483	55417	8017	10679	12089	3381	3021	86115	24611	110726
Female trips (by res) age 20-24	**1995**	7346	2118	7773	2882	5673	3907	5925	4435	1449	3899	1978	8499	8939	2249	5301	17449	3611	703	535	1538	835	872	1146	876	129	670	19698	1449	39846	5925	13638	12401	3429	4351	76611	24126	100736
Female trips (by res) age 20-24	**2005**	8295	2323	7457	3600	4587	3516	5643	5242	948	6140	1459	11033	9266	1035	4915	17164	3014	635	927	1583	1031	1639	1248	1300	283	4122	18199	948	43557	5643	19811	11062	5115	4073	86682	21726	108407
Female trips (by res) age 25-54	**1986**	49616	23388	56301	27071	28612	23142	26139	25881	6558	37044	7304	52676	56288	7576	32405	67888	32582	3072	3754	9761	8739	9446	14095	4194	1374	14554	75464	6558	276533	26139	109260	78214	31489	25805	492746	136716	629461
Female trips (by res) age 25-54	**1995**	51530	27619	57846	22501	42230	38800	34905	38460	6245	46725	12623	53505	79891	6831	40040	67416	36738	8320	8287	12292	12546	12768	17511	19215	1007	27340	74247	6245	300620	34905	154964	116969	57782	37462	587612	195581	783193
Female trips (by res) age 25-54	**2005**	49709	28723	51411	21026	36716	34719	34499	41850	5318	65719	14029	50345	84981	4683	36394	68021	39467	14683	8311	15565	11715	15979	17351	15791	7819	45735	72703	5318	290203	34499	204253	114841	57432	41309	624591	195966	820557
Male transit trips (by res) age 11-14	**1986**	17098	2276	12028	3666	2484	1435	3946	2212	1349	2702	712	15004	2901	1148	5709	8155	9773	925	64	725	1560	1342	2267	402	516	1166	9304	1349	65491	3946	7284	7120	4075	2996	86153	15412	101565
Male transit trips (by res) age 11-14	**1995**	8629	3239	10978	3985	4444	2482	4865	3288	1261	2976	1145	10979	6262	807	4795	7211	5892	840	815	1030	1347	1123	2308	1580	310	2283	8019	1261	48546	4865	11831	11005	5826	3523	74221	20654	94876
Male transit trips (by res) age 11-14	**2005**	10426	4691	11993	5778	6889	4402	6722	5286	1314	10384	2298	11294	13239	1501	7045	12952	8768	1911	1021	2272	2317	2888	3959	2631	1100	4127	14453	1314	60588	6722	28850	17893	10499	6887	114391	32816	147207
Male transit trips (by res) age 15-19	**1986**	11604	898	10979	1863	572	495	1527	1512	447	1799	425	11630	771	732	8172	12396	12280	0	349	160	342	335	2091	326	60	98	13128	447	58040	1527	2728	1965	3101	927	76998	4866	81864
Male transit trips (by res) age 15-19	**1995**	13371	2124	10697	2518	2913	1539	5308	3188	1698	2687	1200	11162	3767	1179	7472	9241	11602	234	745	298	786	1187	1851	1601	111	895	10419	1698	60010	5308	7460	6810	5384	2284	83273	16100	99374
Male transit trips (by res) age 15-19	**2005**	15899	2927	13354	5312	4604	3539	6551	3621	792	6973	1998	14818	6526	1037	9874	13911	13051	1235	583	987	1929	2204	2270	1444	670	2788	14948	792	75929	6551	16957	12304	6501	4915	114335	24562	138897
Male transit trips (by res) age 20-24	**1986**	2246	0	1812	1554	332	0	216	666	103	386	0	1437	909	415	1743	2104	2103	0	0	0	808	0	231	1045	228	0	2520	103	11561	216	1523	332	1276	808	16879	1459	18338
Male transit trips (by res) age 20-24	**1995**	1683	288	1540	495	324	404	673	747	393	477	0	1652	1404	522	881	2416	739	59	25	0	9	0	16	168	0	408	2938	393	7736	673	2289	1075	210	9	13172	2151	15323
Male transit trips (by res) age 20-24	**2005**	3071	769	2175	1154	607	648	883	2296	277	1720	31	2527	3444	190	1525	3440	1192	133	215	0	13	116	42	20	83	1533	3630	277	13940	883	6780	2157	392	45	24743	3362	28105
Male transit trips (by res) age 25-54	**1986**	7101	41	8630	3475	1169	268	1877	2458	51	792	0	7485	10761	940	3342	9734	2808	0	214	196	2272	155	3564	1617	1523	277	10674	51	35298	1877	13353	1479	5550	2469	64875	5876	70752
Male transit trips (by res) age 25-54	**1995**	6091	1615	4976	2358	1790	1281	1802	3394	373	2401	123	5098	8499	899	4504	6842	3873	527	147	115	62	70	183	597	11	1775	7741	373	30294	1802	12685	5213	996	300	51716	7688	59404
Male transit trips (by res) age 25-54	**2005**	6786	2101	6326	2786	3238	2248	3282	3612	833	4382	522	4398	9144	865	4766	9796	3935	1474	373	598	149	212	429	251	440	3719	10661	833	32610	3282	17685	9062	1266	1270	62222	14447	76669
Male transit trips (by res) age 55-64	**1986**	2597	83	1813	1293	215	0	191	151	103	255	0	3000	878	228	877	964	1188	0	32	0	0	0	441	424	293	33	1192	103	10918	191	1459	298	897	0	14465	592	15058
Male transit trips (by res) age 55-64	**1995**	259	123	621	220	93	68	168	127	64	186	19	381	705	75	229	498	537	0	25	0	0	0	14	45	0	250	573	64	2374	168	1140	284	84	19	4171	535	4706
Male transit trips (by res) age 55-64	**2005**	872	210	879	509	344	117	371	537	112	559	0	606	1394	17	1011	847	718	100	24	23	24	46	45	86	0	324	865	112	5132	371	2276	771	201	47	8474	1300	9774
Male transit trips (by res) age 65+	**1986**	1784	0	1597	370	0	80	0	332	0	0	0	2228	249	122	817	1483	1725	0	0	0	142	0	140	400	0	0	1604	0	8853	0	249	80	541	142	11247	222	11469
Male transit trips (by res) age 65+	**1995**	778	0	396	43	0	0	252	178	151	187	0	445	172	0	685	479	369	0	0	0	0	6	0	0	0	44	479	151	2895	252	403	0	6	0	3782	404	4186
Male transit trips (by res) age 65+	**2005**	763	53	664	101	339	60	248	68	0	192	94	288	236	367	673	1230	689	0	0	0	0	34	33	0	0	161	1597	0	3246	248	589	452	67	94	5498	794	6292
Male trips (by res) age 11-14	**1986**	3757	3250	5639	2700	2164	3450	1232	1710	1035	3967	792	4120	4630	0	1783	2137	1842	103	365	856	955	842	1762	153	80	1825	2137	1035	21553	1232	10502	8967	3123	2603	37315	13836	51150
Male trips (by res) age 11-14	**1995**	5338	4896	3872	2389	3773	4490	3008	4257	1012	5817	1692	5524	9391	75	2484	3042	2412	195	860	969	1243	1699	1690	2343	30	3135	3117	1012	26276	3008	18373	13354	6593	3904	54359	21278	75637
Male trips (by res) age 11-14	**2005**	4521	3530	5303	1914	3645	5659	2878	4345	157	9677	1489	5597	11833	0	3332	4310	3501	1078	1305	2959	1566	2339	2288	1790	319	4796	4310	157	28512	2878	26625	13913	7722	6014	67169	22962	90131
Male trips (by res) age 15-19	**1986**	5878	2303	8239	5388	2746	2269	5311	2306	558	3991	730	6396	6734	114	3860	3881	2180	0	604	663	1436	1398	2504	574	416	1963	3995	558	34246	5311	13104	7317	5080	2829	56425	16014	72439
Male trips (by res) age 15-19	**1995**	5156	5382	7726	4075	4892	6375	4475	5471	624	5958	1818	5621	11015	431	3931	5430	2379	469	841	1099	1313	2098	3063	3621	220	3583	5860	624	34361	4475	20776	17117	9621	4230	70619	26446	97065
Male trips (by res) age 15-19	**2005**	8958	4905	9278	4079	5775	4682	3828	8534	293	12114	1937	8475	17327	112	4636	6464	5304	1242	2358	4587	1803	3702	4299	3132	547	6922	6575	293	49265	3828	36910	16603	13492	8326	106242	29051	135293
Male trips (by res) age 20-24	**1986**	8446	2728	9192	4593	4536	2993	7391	3419	1042	2304	866	11390	5993	1365	7078	11132	6425	103	143	161	864	1358	1415	191	56	1269	12497	1042	50542	7391	9623	10360	3108	1891	75769	20684	96453
Male trips (by res) age 20-24	**1995**	6927	2646	7361	2687	5098	4295	7414	3930	2157	3619	1617	9339	7200	2179	4027	16498	3851	898	771	1312	1007	1017	1741	1489	35	1836	18677	2157	38123	7414	12690	12938	5018	3936	74508	26444	100952
Male trips (by res) age 20-24	**2005**	8507	3496	7407	3439	3790	4074	5408	5527	1019	5187	1587	11064	8939	1132	4543	14799	3890	1226	781	1126	840	1863	1908	1409	848	5113	15931	1019	44376	5408	20088	12586	5961	3553	86356	22566	108921
Male trips (by res) age 25-54	**1986**	51127	25555	56512	24993	32072	24232	32402	29271	7080	41053	8025	56832	62549	7247	32485	63956	25429	2004	3770	9201	8762	10526	16014	3983	2469	16067	71203	7080	276648	32402	122138	83864	34293	25988	504283	149333	653616
Male trips (by res) age 25-54	**1995**	50458	28102	58771	22753	43099	41201	36221	38487	7878	45989	13280	53438	73893	9275	37670	66949	34534	7324	8147	12710	12873	13046	16361	17415	1136	27476	76223	7878	296112	36221	148494	119726	54969	38862	575798	202688	778486
Male trips (by res) age 25-54	**2005**	46653	25617	48234	17677	34639	31200	35139	34187	7966	60934	13038	44615	74160	6432	33230	72541	35423	13387	8456	18545	11669	16296	15253	15132	7022	40266	78972	7966	260018	35139	182382	104843	55137	43252	576509	191200	767709
Male trips (by res) age 55-64	**1986**	17791	2809	15204	6038	5108	4534	4706	3355	794	3956	1553	16627	4605	1364	6861	9280	11294	514	571	556	1425	1125	2705	632	420	1663	10644	794	77168	4706	10644	12965	5032	3534	103488	21999	125487
Male trips (by res) age 55-64	**1995**	8573	2779	11096	4945	5460	3109	4235	2945	835	3968	1187	9462	8735	1572	5146	5788	5448	664	1191	1555	1690	1310	2129	1764	359	2125	7360	835	47614	4235	15187	12011	6394	4432	76555	21513	98068
Male trips (by res) age 55-64	**2005**	9426	5220	10533	4558	7709	5755	6841	5686	1064	10988	2735	10737	14721	1647	7049	13231	7916	1235	1299	2832	3211	2867	4175	3624	1288	4920	14878	1064	55907	6841	31916	19919	11966	8778	114666	36602	151268
Male trips (by res) age 65+	**1986**	15826	1290	10062	1709	1373	544	2502	2366	472	2376	346	14031	1338	886	7562	8612	11627	103	254	456	421	533	2310	536	60	415	9498	472	63184	2502	4188	3309	3633	1223	80503	7506	88009
Male trips (by res) age 65+	**1995**	12956	2416	10059	2997	2027	2571	4423	2845	698	2978	938	10696	3824	533	6965	6342	6563	332	580	512	904	1462	2215	1516	140	1701	6875	698	53080	4423	8643	7346	5772	2353	74370	14820	89190
Male trips (by res) age 65+	**2005**	13462	3497	12905	5711	5181	3413	5950	4546	922	8226	1675	13375	7446	1398	8699	11953	9158	533	715	1496	1147	2053	2516	1530	835	3120	13351	922	67857	5950	19626	12624	6815	4318	107648	23815	131463

Appendix E
Tables of Extrapolations

Table E-1: Suburban shift extrapolations

	Surveyed values			Surveyed growth			Forecast from 95-05 growth		Forecast from 86-05 growth	
Indicator	**1986**	**1995**	**2005**	**1986-1995**	**1995-2005**	**1986-2005**	**2021**	**2031**	**2021**	**2031**
Suburban/rural resident proportion	37.1%	45.7%	49.7%	9%	4%	13%	56%	60%	60%	67%
Central/urban resident proportion	62.9%	54.3%	50.3%	-9%	-4%	-13%	44%	40%	40%	33%
Suburban/rural resident proportion (ON)	25.4%	34.1%	39.9%	9%	6%	14%	49%	55%	52%	60%
Central/urban resident proportion (ON)	74.6%	65.9%	60.1%	-9%	-6%	-14%	51%	45%	48%	40%
Suburban/rural resident proportion (QC)	72.7%	78.0%	79.6%	5%	2%	7%	82%	84%	85%	89%
Central/urban resident proportion (QC)	27.3%	22.0%	20.4%	-5%	-2%	-7%	18%	16%	15%	11%
Suburban/rural job proportion		21.0%	24.3%		3%		29%	33%		
Central/urban job proportion		79.0%	75.7%		-3%		71%	67%		
Suburban/rural job proportion (ON)	8.3%	13.6%	18.1%	5%	5%	10%	25%	30%	26%	32%
Central/urban job proportion (ON)	91.7%	86.4%	81.9%	-5%	-5%	-10%	75%	70%	74%	68%
Suburban/rural job proportion (QC)		56.2%	55.1%		-1%		53%	52%		
Central/urban job proportion (QC)		43.8%	44.9%		1%		47%	48%		
To suburban/rural percentage (AM) ON	9.9%	15.6%	22.6%	6%	7%	13%	34%	41%	33%	40%
To suburban/rural percentage (AM) QC	39.6%	49.4%	51.5%	10%	2%	12%	55%	57%	61%	68%
From suburban/rural percentage (AM) ON	25.4%	33.3%	40.2%	8%	7%	15%	51%	58%	53%	61%
From suburban/rural percentage (AM) QC	69.8%	76.4%	78.4%	7%	2%	9%	82%	84%	86%	90%
To CBD percentage (AM)	23.9%	17.9%	15.7%	-6%	-2%	-8%	12%	10%	9%	5%
Average vehicles per household (ON)	1.32	1.25	1.38	-7%	13%	6%	1.59	1.72	1.43	1.46
Average vehicles per household (QC)	1.38	1.33	1.49	-5%	16%	11%	1.75	1.91	1.58	1.64
Zero car household proportion (ON)	15.0%	17.0%	13.0%	2%	-4%	-2%	7%	3%	11%	10%
Zero car household proportion (QC)	11.0%	12.0%	9.0%	1%	-3%	-2%	4%	1%	7%	6%
Detached-house proportion (ON)	45.5%		53.3%			8%			60%	64%
Detached-house proportion (QC)	55.6%		59.1%			4%			62%	64%

Table E-2: Gender balance extrapolations

	Surveyed values			Surveyed growth			Forecast from 95-05 growth		Forecast from 86-05 growth	
Indicator	**1986**	**1995**	**2005**	**1986-1995**	**1995-2005**	**1986-2005**	**2021**	**2031**	**2021**	**2031**
Female workforce percentage	40.7%	43.5%	44.8%	3%	1%	4%	47%	48%	48%	50%
Female workforce percentage (ON)	40.8%	43.2%	44.5%	2%	1%	4%	46%	48%	48%	49%
Female workforce percentage (QC)	40.3%	44.3%	45.9%	4%	2%	6%	48%	50%	50%	50%
Female transit use percentage (25-54)	14.7%	10.0%	11.4%	-5%	1%	-3%	14%	15%	9%	7%
Male transit use percentage (25-54)	11.0%	7.6%	9.9%	-3%	2%	-1%	14%	16%	9%	9%
Female transit use percentage (55-64)	17.9%	7.4%	8.8%	-10%	1%	-9%	11%	12%	1%	0%
Male transit use percentage (55-64)	12.2%	4.9%	6.4%	-7%	2%	-6%	9%	10%	2%	0%
Female transit use percentage (65+)	27.3%	12.7%	8.1%	-15%	-5%	-19%	1%	0%	0%	0%
Male transit use percentage (65+)	13.2%	4.8%	5.1%	-8%	0%	-8%	6%	6%	0%	0%
Female auto drive percentage (25-54)	59.1%	60.1%	65.3%	1%	5%	6%	74%	79%	70%	74%
Male auto drive percentage (25-54)	73.6%	76.5%	73.2%	3%	-3%	0%	68%	65%	73%	73%
Female auto drive percentage (55-64)	44.7%	54.1%	62.4%	9%	8%	18%	76%	84%	77%	87%
Male auto drive percentage (55-64)	73.2%	79.4%	77.9%	6%	-2%	5%	75%	74%	82%	84%
Female auto drive percentage (65+)	29.5%	38.8%	54.0%	9%	15%	24%	78%	93%	75%	87%
Male auto drive percentage (65+)	74.1%	77.6%	76.4%	3%	-1%	2%	75%	73%	78%	80%
Female daily trip rate (ages 10+)	3.05	3.00	2.69	-5%	-31%	-36%	2.20	1.89	2.39	2.20
Male daily trip rate (ages 10+)	3.38	3.19	2.81	-19%	-38%	-57%	2.20	1.82	2.33	2.03

Table E-3: Trip rate extrapolations

	Surveyed values			Surveyed growth			Forecast from 95-05 growth		Forecast from 86-05 growth	
Indicator	**1986**	**1995**	**2005**	**1986-1995**	**1995-2005**	**1986-2005**	**2021**	**2031**	**2021**	**2031**
Daily work trips/capita 10+	0.75	0.57	0.54	-18%	-3%	-21%	0.49	0.46	0.36	0.25
Daily work trips/capita 10+ (ON)	0.77	0.57	0.54	-20%	-3%	-23%	0.48	0.45	0.34	0.22
Daily work trips/capita 10+ (QC)	0.69	0.56	0.54	-12%	-2%	-14%	0.51	0.49	0.42	0.35
Daily non-work trips/capita 10+	2.44	2.49	2.25	5%	-24%	-19%	1.87	1.64	2.10	2.00
Daily non-work trips/capita 10+ (ON)	2.56	2.55	2.32	-1%	-23%	-24%	1.95	1.72	2.11	1.99
Daily non-work trips/capita 10+ (QC)	2.05	2.32	2.05	27%	-26%	0%	1.63	1.37	2.06	2.06
Daily trip rate ages 11-24 (ON)	3.13	3.04	2.82	-9%	-23%	-32%	2.46	2.23	2.55	2.38
Daily trip rate ages 25-64 (ON)	3.55	3.33	2.99	-22%	-34%	-56%	2.45	2.11	2.51	2.22
Daily trip rate ages 65+ (ON)	2.52	2.16	2.28	-36%	12%	-24%	2.48	2.60	2.08	1.96
Daily trip rate ages 11-24 (QC)	2.69	3.02	2.67	33%	-35%	-2%	2.11	1.76	2.65	2.64
Daily trip rate ages 25-64 (QC)	2.92	3.10	2.71	18%	-39%	-21%	2.09	1.70	2.53	2.42
Daily trip rate ages 65+ (QC)	1.12	0.82	1.77	-30%	95%	65%	3.30	4.25	2.32	2.67

Table E-4: Transit share extrapolations

	Surveyed values			Surveyed growth			Forecast from 95-05 growth		Forecast from 86-05 growth	
Indicator	**1986**	**1995**	**2005**	**1986-1995**	**1995-2005**	**1986-2005**	**2021**	**2031**	**2021**	**2031**
AM peak non-motorized % to Ottawa CBD		11.8%	13.7%		2%		17%	19%		
AM peak non-motorized % to Gatineau CBD		6.0%	7.5%		2%		10%	12%		
Rural work transit mode share	4.3%	3.3%	6.8%	-1%	4%	2%	12%	16%	9%	10%
Ctrl/Urban Ottawa work transit share	24.0%	18.0%	24.1%	-6%	6%	0%	34%	40%	24%	24%
Ctrl/Urban Gatineau work transit share	14.7%	11.3%	21.3%	-3%	10%	7%	37%	47%	27%	30%
Suburban Ottawa work transit share	19.6%	16.2%	21.5%	-3%	5%	2%	30%	35%	23%	24%
Suburban Gatineau work transit share	12.6%	9.2%	19.0%	-3%	10%	6%	35%	44%	24%	28%