

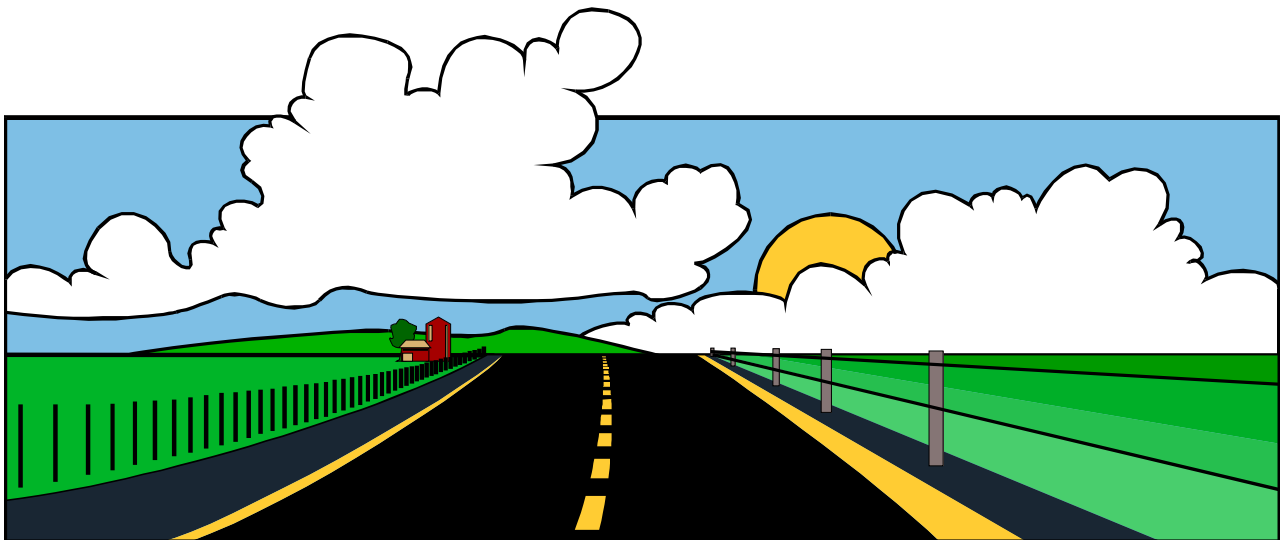
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# Canadian Vehicle Survey

*Quarter 2, 2000*



Transport  
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# Canadian Vehicle Survey

Quarter 2, 2000

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## Note of appreciation

*Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses and governments. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.*

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## Symbols

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  - ... figures not appropriate or not applicable.*
  - nil or zero*
  - amount too small to be expressed*
  - e estimated figures.*
  - p preliminary figures.*
  - r revised figures.*
  - x confidential to meet secrecy requirements of the Statistics Act.*
- 

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## **HIGHLIGHTS**

- Over 17.1 million vehicles were in-scope for the Canadian Vehicle Survey during this quarter.
- Between April 1 and June 30, 2000, these vehicles travelled an estimated 79.2 billion kilometres.
- Vehicles weighing less than 4 500 kilograms were driven an average of 4 360 kilometres while the largest of the trucks (trucks with gross weight 15 000 kilograms or more) were driven an average of 21 120 kilometres.

## 1. INTRODUCTION

Canadian transport activity statistics were inadequate due to the lack of any routine measurement of road vehicle activity. While road vehicles dominate passenger travel and freight traffic, no measures of total vehicle-kilometres or passenger-kilometres were available.

The Canadian Vehicle Survey (CVS) was developed at the request of Transport Canada to fill this data gap. The survey provides annual estimates of the amount of road travel, broken down by types of vehicles and characteristics, such as age and sex of driver, time of day and season. The results will be the prime source of road vehicle use information for researchers and interested members of the public.

Transport Canada plans to combine survey data with other data to use to improve road safety, monitor fuel consumption and deal with the impact of vehicle usage on the environment.

This document describes concepts, employed methods and discusses data quality. The reference period for all the information presented in this document is the second quarter of 2000.

## 2. SURVEY OVERVIEW

The CVS is a voluntary vehicle-based survey that provides annual estimates of road vehicle activity (vehicle-kilometres and passenger-kilometres) of vehicles registered in Canada. A quarterly sample of vehicles is drawn from vehicle registration lists provided by the provincial and territorial governments.

The provincial component of the survey consists of two stages. The first stage is a computer assisted telephone interview (CATI) with the registered owners of the sampled vehicles. This interview is used to collect some general information on the usage of the vehicle as well as to ask the respondent to complete a seven-day trip log. The trip log is then mailed out. If respondents cannot be contacted by phone, the trip log is mailed out with a short questionnaire to collect some of the information normally collected during the CATI.

The territorial component of the survey consists of two postcards. One is mailed to the respondents at the beginning of the quarter and the other is mailed at the end of the quarter. The first postcard asks respondents to record the odometer reading at the beginning of the first day of the quarter. All those returning the first postcards are mailed second postcards asking them to record the odometer reading at the beginning of the first day of the next quarter. These two odometer readings allow the calculation of the distance the vehicle was driven during the quarter.

Survey collection began on February 1, 1999. Only eight provincial / territorial vehicle registration lists were received in time to be included in the sample at that time, but over the remainder of 1999, the other lists were received. Starting October 1, 1999, vehicles from all provinces and territories were included in the survey.

The CVS provides annual and quarterly estimates of road activity for vehicles registered in Canada. The estimates are provided by type of vehicle and other variables, such as driver and vehicle characteristics, time of day and season.

Users who require additional information from Statistics Canada can obtain it from the Transportation Division upon request by phoning 613-951-2486, e-mailing [laroque@statcan.ca](mailto:laroque@statcan.ca), or faxing: 613-951-0579.



### 3. CONCEPTS AND DEFINITIONS

#### 3.1 THE POPULATION OF INTEREST

The *in-scope vehicles* for the CVS include all motor vehicles except motorcycles, off road vehicles (e.g., snowmobiles, dune buggies, amphibious vehicles) and special equipment (e.g., cranes, street cleaners, snowplows and backhoes) registered in Canada anytime during the survey reference period that have not been scrapped or salvaged.

The *population of interest* consists of vehicle-days composed from the in-scope vehicles and the days within the survey reference period.

#### 3.2 DEFINITIONS OF VARIABLES IN TABLES

Vehicle-kilometres is the distance traveled by vehicles on roads.

Passenger-kilometres is the sum of the distances traveled by individual passengers. Trucks with gross vehicle weight of 4.5 tonnes or more (see the *Vehicle type* definition below) and urban buses were not required to report passengers. Therefore, these passengers are not included in the estimates of passenger-kilometres. Also the number of passengers is calculated as the average of the number of passengers at the beginning of each trip and the number of passengers at the end of each trip (see the *Trip* definition below) plus the driver.

Fuel purchased is the amount of fuel purchased to operate vehicles. This includes purchases for the off-road operation of the vehicle. However, these purchases are considered negligible.

The number of vehicles on the registration lists is the average number of the registered vehicles in the registration lists at the beginning and at the end of the reference period.

The number of vehicles in scope is an estimate of the average number of vehicles registered during the quarter based on the lists from jurisdictions and the survey responses. This number slightly differs from the previous one because we incorporate into it all our findings from the survey. Note that this number includes vehicles used and not used on the roads during the reference period.

#### 3.3 DEFINITIONS OF VEHICLE CHARACTERISTICS

Vehicle type is the classification created for CVS based on the information available on the vehicle registration lists. There are four vehicle types. Buses are identified first. The remaining vehicles are then divided into three weight types: light vehicles with gross vehicle weights below 4.5 tonnes, trucks with gross vehicle weights of 4.5 tonnes or more and less than 15 tonnes, and trucks with gross vehicle weights of 15 tonnes or more.

The respondent determines vehicle body type. The respondent is asked to choose among: car, station wagon, van, sport utility vehicle, pick-up, straight truck, truck-tractor, bus and other. Missing or unusual responses are verified against registration lists, if possible.

Fuel type is derived based on the information available on the registration lists. All vehicles are divided into three classes: vehicles powered by gasoline, vehicles powered by diesel fuel and vehicles powered by other energy source.

Vehicle model year is derived based on the information available on the registration lists.

### 3.4 DEFINITIONS OF VEHICLE USAGE CHARACTERISTICS

The CVS definition of a *Trip* determines the trip characteristics. The definition of what delimits a trip depends on the *vehicle type*:

For *buses*, if any of the following events happened:

- a stop of more than 30 minutes
- a change of driver
- a change in the type of bus service
- all the passengers have been dropped off and another passenger trip begins (does not apply to scheduled urban buses)

For *light vehicle*, if any of the following events happened:

- a stop of more than 30 minutes
- a change of driver
- a change in the main trip purpose

For *vehicles (trucks) weighing 4.5 tonnes or more* if any of the following events happened:

- a stop of more than 30 minutes
- a change of driver
- a change of purpose or use
- a change in the truck configuration
- a change in the status of the load from loaded to unloaded or the reverse

For each trip the respondent provides the following information:

- Beginning and end times and dates of the trip that are used to determine the *time of day* and *day of week* the trip takes place.
- *Driver age group* and *driver sex*.
- The *trip purpose* determined by the respondent. If there were several purposes for the trip, the respondent is asked to indicate the main purpose of the trip. Multiple trip purposes are not allowed. The choice of purpose is specific to the vehicle type.
- If *dangerous goods* are carried (as defined by the Transportation of Dangerous Goods Act). Does not apply to buses.
- *Number of kilometres traveled on roads with posted speed limit of 80 km/h or more* (does not apply to trucks).
- *Age group (0 - 4, 5 - 14 and 15 years and over) of passengers and the number of passengers within each group* to calculate passenger-km (Applies to light vehicles and buses only with an exception of urban buses. Only light vehicles collect passenger age information. See 3.2).
- *Truck configuration* for vehicles (trucks) weighing 4.5 tonnes or more.
- Cost (for light vehicles and buses) or quantity (for trucks and buses) of *Fuel purchased*.

## 4. METHODS

CVS has been designed as a quarterly survey. The second quarter of 2000 is the second quarter the results for all Canadian provinces and territories are available. The survey design also allows the calculation of annual estimates based on the data collected during the four quarters.

### 4.1 SURVEY DESIGN

#### 4.1.1 Survey Population

The survey population was derived from the 13 jurisdiction vehicle registration lists (ten Provincial and three Territorial Governments) created three months before the reference period. The sample for this quarter was drawn from motor vehicles with valid registrations in any province or territory in January 2000. Motorcycles, off road vehicles (e.g., snowmobiles, dune buggies, amphibious vehicles) and special equipment (e.g., cranes, street cleaners, snowplows and backhoes) are excluded from the survey. This population differs from the population of interest; e.g., vehicles that were registered after January 2000 are not included.

The incoming lists underwent thorough preparation procedure:

- First, out-of-scope vehicles are removed (trailers, motorcycles, construction equipment, parade vehicles, etc.).
- Second, vehicles with expired registration are removed.
- Then, records with duplicate Vehicle Identification Numbers (VIN) within each list are removed leaving the one updated most recently.
- Next, records with duplicate Vehicle Identification Numbers (VIN) among all lists are removed leaving the one with the most recent update.
- Last, records with irregular data are verified.

The last set of processed lists, before the beginning of the reference period consisted of twelve lists provided in January 2000 to Statistics Canada for the CVS. A list created in December 1999 was used for Nova Scotia. This set of prepared vehicle lists and the set of days within the second quarter of 2000 constitute the survey population.

#### 4.1.2 Sample design

All vehicles from the survey population were stratified (grouped) into 104 strata. First, the vehicles were stratified into four vehicle types (buses, light vehicles, and two groups of trucks, see 3.3) and 13 jurisdictions (ten provinces and three territories). Then, for efficiency of estimates, they were further divided into two vehicle-age strata of newer and older vehicles.

Next, a sample of vehicles (first stage sample) was selected from the survey population. A sample from each stratum was selected. To minimize respondent burden, no vehicle is selected more than once during any consecutive four quarters for provinces (two consecutive quarters for territories) and the three characters of the postal code were used to spread the sample over all regions.

Subsequently, seven consecutive days starting within the quarter were randomly assigned (second stage) to each vehicle selected at the first stage. Within each stratum, the first reporting day was evenly spread over the quarter to ensure a uniform number of responses over time and for each day of the week. This step was not applied to the vehicles registered in the three territories since only odometer readings are collected (see 2.).

Since the sample was selected in two stages, the sampling weight (see 6. for definition) was also calculated in two steps. The first-stage sampling weight was calculated for each vehicle in the first-stage sample. Then the second-stage sampling weight was calculated for each vehicle-day selected from all days within the reference period.

Finally, these two weights were multiplied together to obtain the final weight for a vehicle-day. The weighted values are obtained by multiplying the final weights and the collected values. They were aggregated to produce the estimates.

### **4.1.3 Sample size**

A total of 4,010 vehicles out of 17,347,592 from the survey population were drawn for the ten provinces. Another 2,450 vehicles out of 45,588 were included in the sample for the three territories.

## **4.2 DATA COLLECTION AND PROCESSING**

### **4.2.1 Data Collection**

The data collection for the vehicles sampled in the ten provinces is different from the one for the vehicles sampled in the territories.

#### Provincial collection

The registered owners of the sampled vehicles were telephoned and interviewed (Computer Assisted Telephone Interview, or CATI). During the CATI interview the following information is collected about each sampled vehicle: vehicle type, fuel type used, distance driven last week, some information about anticipated vehicle usage during the following six weeks, current odometer reading, and passenger capacity for buses. Then the respondent was asked to complete a seven-day trip log. If the respondent agreed to complete a trip log, personal information such as name and address were obtained in order to mail out a trip log for the vehicle.

The log type depended on the type of vehicle. There were three types of logs: a bus log, a light vehicle log and a log for the two remaining vehicle types (trucks). In all cases, the respondents were requested to record information about all the trips made in the selected vehicle over the assigned seven-day period. The collected data included information about each trip: time and date of the beginning and the end, length, purpose, number and age group of passengers, sex and age group of the driver, fuel purchases, if dangerous goods were carried, number of kilometres traveled on roads with posted speed limit of 80km/h or more, and for trucks, their configuration.

If the respondent could not be contacted by phone, a trip log with a short additional questionnaire (to collect some of the information normally collected during the CATI) was mailed out.

To increase the number of responses, respondents were contacted a second time, either by phone or by mail. On the first or second day of the log, an attempt was made to phone each vehicle owner, who agreed during the CATI to fill out the log, to answer any questions the respondent might have. Later, an attempt was made to contact by phone or mail everyone who did not return logs. Some of the large fleets of vehicles with several vehicles in the sample had special arrangements to lower their response burden.

#### Territorial collection

The registered owners of the selected vehicles were mailed postcards and asked to provide two odometer readings, one at the beginning of the quarter and another at the beginning of the next quarter and information about the vehicle status (owned, sold, scrapped).

### **4.2.2 Edit and Imputation**

Once all necessary information for the survey was collected, a series of verifications took place to ensure that the records were consistent and that collection and capture of the data did not introduce errors. Reported data were examined for completeness and consistency using automated edits coupled with manual review. Outliers, i.e., respondents reporting extremely large values, were processed manually.

Missing values and data found in error were imputed by another automated system. The system imputed the data using different imputation rules depending on the vehicle, available information and the type of data to be imputed. For example, the data can be imputed based on other responses for the same vehicle or by using data from a similar vehicle. The imputed data were then again examined for completeness and consistency. At the end of this process, every vehicle had seven days of trips.

A complete description of the procedures applied to the survey data is available upon request from the Transportation Division of Statistics Canada.

#### **4.2.3 Estimation**

Since the survey population differs from the population of interest to assure that the estimates correspond (as closely as possible) to the population of interest several corrections were done. The sampling weights derived from the sample design were adjusted and improved using updated registration lists. This was possible because, during the passage of time since the sample was selected, a set of prepared vehicle lists was obtained for the beginning and for the end of the reference quarter. To improve the estimates for the vehicles registered in the ten provinces: all the days were further stratified into working days and holidays (or non-working days, including weekends). Second stage sampling weights were adjusted so that every day of vehicle activity within the same stratum contributed with equal weight to the total estimate. The final set of weights reflected as closely as possible the characteristics of the vehicle population during the reference period.

The following estimates of totals are available:

- vehicle counts by province and territory;
- vehicle-kilometres by province and territory;
- passenger-kilometres by province;
- fuel purchased, Canada level only;
- cross tabulations of vehicle-counts, vehicle-kilometers and passenger-kilometers by a number of variables (described in Concepts and Definitions), such as body type, truck configuration, driver characteristics, time of day, day of week, etc. by province.

## 5. DATA QUALITY

This section describes factors that affect the data quality and why they should be considered when using the CVS estimates.

### 5.1 SOURCES OF ERRORS

While considerable effort was made to ensure a high standard throughout all survey operations, the resulting estimates are inevitably subject to a certain degree of error. The total survey error is defined as the difference between the survey estimate and the true population value for which the survey estimate aims at. The total survey error consists of two types of errors: sampling and non-sampling errors.

### 5.2 SAMPLING ERROR

When a sample is selected from a population, estimates based on the sample data may not be exactly the same as what would be obtained from a census of that population. The two results will likely differ since only data for sampled units are used. In the case of a census, there is no sampling error.

The difference between the estimates from a sample survey and a census conducted under the same conditions is referred to as the sampling error of a survey estimate. Factors such as the sample size, the sample design, the variability of the population characteristic under study and the estimation method affect the sampling error. If the population is very heterogeneous like the population of registered motor vehicles, a large sample size is needed to obtain reliable estimates.

The sampling error is measured by a statistical quantity called the standard error. This quantity reflects the expected variability of the survey estimate of a particular population characteristic if repeated sampling is carried out. The true value of the standard error is, of course, not known but can be estimated from the sample. The estimated standard error is used, in this publication, in terms of a relative measure called the coefficient of variation (or CV). This measure is simply the estimated standard error expressed as a percentage of the value of the survey estimate. Therefore, a smaller CV indicates better reliability of the estimate.

### 5.3 NON-SAMPLING ERRORS

The sampling error is only one component of the total survey error. All other errors arising from all phases of a survey are called non-sampling errors. As the sample size becomes closer to the population size, the sampling error component of the total survey error is expected to decrease. However, this is not necessarily true for the non-sampling error component. For example, this type of error can arise when a respondent provides incorrect information or does not answer certain questions, when a unit in the population of interest is omitted or covered more than once, when a unit that is out-of-scope for the survey is included by mistake or when errors occur in data processing, such as coding and capture errors.

Some non-sampling errors will cancel over a large number of observations, but systematically occurring errors (i.e. those that do not tend to cancel) will contribute to a bias in the estimates. For example, in the case of CVS, if individuals that use their vehicles more than an average person consistently tend not to respond to the survey, then the resulting estimate of the total vehicle-kilometres will be below the true population total. Any such biases are not reflected in the estimates of standard error.

The non-sampling error as a whole is only one part of the total survey error but its contribution may be important. To minimize the effect of this type of error, a quality assurance program is carried out for each survey. For instance,

follow-ups of nonrespondents are conducted to obtain information from the total nonrespondents or to complete partially unanswered questionnaires for questions that are deemed essential. Various quality assurance procedures are exercised at the data capture step. The data editing procedures identify some inconsistencies in the data structure and the imputation procedures correct the identified inconsistencies.

In general, non-sampling errors are difficult to quantify. Special studies must be conducted to estimate them. However, certain measures such as response and imputation rates are easily obtained and can be used as indicators of the non-sampling errors. Different types of non-sampling errors are discussed below.

### **5.3.1 Coverage errors**

Coverage errors arise when the survey population does not adequately cover the population of interest. As a result, certain units belonging to the population of interest are either excluded (undercoverage), or counted more than once (overcoverage). In addition, out of scope units may be present in the survey population (overcoverage).

The following sources of coverage errors for CVS were observed:

- Errors in the classification variables on the survey may result in either under- or overcoverage of the registered vehicles.
- The sample is drawn from the list created three months prior to the beginning of the reference period. Thus the vehicles registered after the list was created and before the end of the reference period cannot be drawn into the sample.
- A vehicle list from any jurisdiction that was not created on time or did not arrive at all results in even larger under coverage since an older list has to be used for sampling.
- A vehicle that has been scrapped or salvaged and remained on the list causes overcoverage.
- A vehicle that was registered and subsequently unregistered between two consecutive registration lists causes undercoverage.

Thus CVS is subject to some degree of under and over coverage. The estimation procedure is designed to compensate for the part of the under- and over coverage that has been determined. The rates of out-of-scope vehicles among all units sampled for the reference period is in the table in section 5.4.1.

Since we assume that respondent is right (unless we have hard evidence that is not) the corrections at the estimation stage are mostly based on the respondent statements.

### **5.3.2 Response errors**

Response errors occur when a respondent provides incorrect information due to a misinterpretation of the survey questions or lack of correct information, gives wrong information by mistake, or is reluctant to disclose the correct information. Large response errors are likely to be caught during editing. However, others may simply go through undetected.

Few response errors were discovered during editing of the data.

### **5.3.3 Nonresponse errors**

Nonresponse errors can occur when a respondent does not respond at all (total nonresponse) or responds only to some questions (partial nonresponse). These errors can have a serious effect if the nonrespondents are systematically different in survey characteristics from the respondents and/or the nonresponse rate is high. See the response rate table in section 5.4.1.

### 5.3.4 Processing errors

Apart from coverage, response and nonresponse errors described above, errors that occur during the processing of the data constitute another component of the non-sampling error. Processing errors can arise in data capture, coding, transcription, editing, imputation, outlier detection and treatment, and other types of data handling.

A coding error occurs when a field is coded erroneously because of a misinterpretation of the coding procedures or a bad judgment (e.g. errors in commodity coding). A data capture error occurs when the data are misinterpreted or keyed incorrectly.

Once data are coded and captured, they are subject to editing and imputation of missing or erroneous values. The quality of the data used in the estimation depends on the amount of imputation and the difference between the imputed and the true, but unknown, values. The imputation system could result in bias of the estimates. This can happen due to wrong assumptions or due to inability to impute. For example in the CVS it is impossible to detect missing or entered in error fuel purchases for vehicles that travel only a small distance during the reported week.

## 5.4 MEASURING QUALITY

This section presents some indicators of the data quality of the CVS estimates.

### 5.4.1 Response rates

The response rate is a function of the number of vehicles that responded to the survey. Several response rates are provided in the table below. This rate is defined as the number of vehicle-days for which respondents gave complete or partial (vehicle-kilometers only) answers to the survey divided by the total number of in-sample and in-scope vehicle-days.

PROVINCES	Vehicle-kilometres and trip characteristics reported			Only vehicle-kilometres reported (trip characteristics imputed)			Vehicles out of scope	Contact made but no data
	All	0km	Non 0km	All	0km	Non 0km		
Light vehicles	38%	13%	25%	35%	4%	31%	4%	3%
Trucks 4.5t – 15t	36%	23%	14%	21%	5%	15%	8%	8%
Trucks 15t or more	39%	25%	14%	24%	6%	18%	5%	14%
Buses	45%	24%	21%	1%	0%	1%	4%	37%

TERRITORIES	Vehicle-kilometres and trip characteristics reported			Vehicle-kilometres reported			Vehicles out of scope	Contact made but no data
	All	0km	Non 0km	All	0km	Non 0km		
Light vehicles	N/A	N/A	N/A	24%	1%	23%	10%	8%
Trucks 4.5t – 15t	N/A	N/A	N/A	22%	2%	20%	10%	5%
Trucks 15t or more	N/A	N/A	N/A	21%	2%	20%	9%	3%
Buses	N/A	N/A	N/A	25%	0%	25%	7%	4%

The low level of response may lead to biased results if the characteristics of interest of the nonrespondents are different than those of the respondents.

### 5.4.2 Relative imputation rates and percentage of vehicle days imputed

The relative imputation rate is defined as the proportion of the corresponding published estimate that is accounted for by imputed data. For example, if the total published estimate is 25 million, composed of 20 million from non-



imputed data and 5 million from imputed data, then the relative imputation rate is .2 (5 million divided by 25 million) or 20%. The lower the relative imputation rates are, the more reliable the published estimates are.

With the data collected during the CATI interview (past vehicle usage), the relative imputation rate of the data coming out of the imputation process was lower for vehicle-km, and much higher for other vehicle usage characteristics.

The relative imputation rates were calculated for each of the estimates and used to establish a quality indicator for each estimate. The relative imputation rates for estimates could be obtained from the Transportation Division of Statistics Canada upon request.

The relative imputation rate is usually directly linked to the response rates and the quality of estimates. A high imputation rate usually leads to the underestimation of sampling error and may also cause a bias.

The percentage of vehicle-days imputed (reported) is defined as the proportion of vehicle-days that are imputed (reported) to total number of vehicle days:

PROVINCES	Vehicle days reported			Vehicle days imputed		
	All	0km	Non 0km	All	0km	Non 0km
Light vehicles	52%	18%	34%	48%	6%	42%
Trucks 4.5t – 15t	64%	40%	24%	36%	10%	27%
Trucks 15t or more	62%	39%	23%	38%	9%	29%
Buses	99%	52%	47%	1%	0%	1%

TERRITORIES	Vehicle km reported			Vehicle km imputed		
	All	0km	Non 0km	All	0km	Non 0km
Light vehicles	100%	3%	97%	N/A	N/A	N/A
Trucks 4.5t – 15t	100%	8%	92%	N/A	N/A	N/A
Trucks 15t or more	100%	9%	91%	N/A	N/A	N/A
Buses	100%	0%	100%	N/A	N/A	N/A

#### 5.4.3 Coefficient of variation

As a measure of the sampling error of the estimates, the estimated coefficients of variation (CV) were calculated. CV's for estimates may be obtained from the Transportation Division of Statistics Canada upon request. Note that the calculated CV estimates compensate partially for the fact that some of the data were imputed.

#### 5.4.4 Quality indicator

The CV and the relative imputation rate should be considered simultaneously to make an assessment of the reliability of an estimate. To assist the user in evaluating the potential effect of nonresponse, imputation and sampling error, an all-embracing quality indicator accompanies every estimate. The quality indicator takes into account simultaneously the CV and the relative imputation rate.

Quality Indicator	C.V. equivalent	Explanation of estimate quality
<b>A</b>	Less than 5 %	Excellent
<b>B</b>	5 % to 10 %	Very good
<b>C</b>	10 % to 15 %	Good
<b>D</b>	15 % to 20 %	Acceptable
<b>E</b>	20 % to 35 %	Use with caution
<b>...</b>	35 % or more	Figures not appropriate or not applicable
<b>--</b>	N / A	Amount too small to be expressed
<b>N</b>	N / A	Administrative data

### 5.5 NOTES FOR HISTORICAL COMPARISON

In the second quarter of 2000 the quarterly sample size was reduced by approximately 20%: from about 5000 to about 4000 vehicles. As a result, there are less estimates of publishable quality and the quality of some published estimates may be lower compared to previous quarters.

There were no new conceptual changes introduced in the second quarter of 2000. However, the following changes were made in the first quarter of 2000 to improve the quality of the survey by diminishing non-sampling errors.

- The changes that affect comparability with 1999 results:
  - The trip purpose choices (for all types) were changed. The purpose is now based on the destination of the trip. Thus the results from 2000 and 1999 are not comparable for this item.
  - Passenger-kilometers were not collected for trucks in 2000.
- The changes that may affect comparability with the 1999 results:
  - A new log was developed for survey year 2000 for all trucks. In 1999 trucks with gross vehicle weights of 4.5 tonnes or more and less than 15 tonnes had a different log than trucks with gross vehicle weights of 15 tonnes or more.
  - The fuel purchased question was attached to each trip for the 2000 survey year for trucks. Previously it was recorded separately from the trips.

## 6. GLOSSARY

*Population of interest:* the collection of all units (e.g., vehicle-days) for which the information is required.

*Survey Population:* the collection of all units (e.g., vehicle-days) for which the information can be realistically provided to the survey. The survey population may differ from the population of interest due to the operational difficulty of identifying all the units that belong to the population of interest. A list of all units in the survey population with their classification information (e.g., geographical, vehicle characteristics, date) is used for sample design, selection and estimation.

*Stratification:* a non-overlapping partition of the survey population into relatively homogeneous groups with respect to certain characteristics such as geographical classification, size, etc. These groups are called strata and are used for sample allocation and selection.

*Sampling weight:* a raising factor is attached to each sampled unit (vehicle-day) to obtain estimates for the population from a sample. The basic concept of the sampling weight can be explained by using the representation rate. For example, if 2 units are selected out of 10 population units at random, then each selected unit represents 5 units in the population including itself, and is given the sampling weight of 5. A survey with a complex sample design like CVS requires a more complicated way of calculating the sampling weight. However, the sampling weight is still equal to the number of units in the registration lists the sampled unit represents.

*Editing:* the application of checks that identify missing, invalid or inconsistent entries or that point to data records that are potentially in error. Some of these checks involve logical relationships that follow directly from the concepts and definitions. Others are more empirical in nature or are obtained as a result of the application of statistical tests or procedures.

*Imputation:* the process used to resolve problems of missing, invalid or inconsistent responses identified during editing. This is done by changing some of the responses or missing values on the record being edited to ensure that a plausible, internally coherent record is created. Some problems are eliminated earlier through contact with the respondent or through manual study of the questionnaire. It is generally impossible to resolve all problems at these early stages due to concerns of response burden, cost and timeliness. Imputation is then used to handle remaining edit failures, since it is desirable to produce a complete and consistent file containing imputed data. Although, imputation can improve the quality of the final data by correcting for missing, invalid or inconsistent responses, some methods of imputation do not preserve the relationships between variables or can actually distort underlying distributions.

Jurisdiction: Canada

Number of vehicles on the registration lists by vehicle type and jurisdiction

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Jurisdiction:										
Newfoundland	239,710	N	4,009	N	2,783	N	1,255	N	247,757	N
Prince Edward Island	72,103	N	2,037	N	2,525	N	66	N	76,731	N
Nova Scotia	511,616	N	9,939	N	7,318	N	1,823	N	530,696	N
New Brunswick	430,266	N	9,824	N	4,306	N	2,589	N	446,985	N
Quebec	3,769,358	N	47,235	N	29,827	N	15,840	N	3,862,260	N
Ontario	6,290,860	N	79,380	N	100,771	N	26,728	N	6,497,739	N
Manitoba	582,284	N	9,817	N	10,942	N	3,525	N	606,568	N
Saskatchewan	616,999	N	50,840	N	24,645	N	3,914	N	696,398	N
Alberta	1,914,274	N	109,779	N	62,841	N	11,757	N	2,098,651	N
British Columbia	2,221,216	N	60,449	N	13,643	N	8,549	N	2,303,857	N
Yukon Territory	22,317	N	1,319	N	987	N	264	N	24,887	N
Northwest Territories	17,747	N	564	N	770	N	72	N	19,153	N
Nunavut	2,141	N	217	N	108	N	14	N	2,480	N
Canada total	16,690,891	N	385,409	N	261,466	N	76,396	N	17,414,162	N

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A - EXCELLENT, B - VERY GOOD, C - GOOD, D - ACCEPTABLE, E - USE WITH CAUTION, ... - FIGURES NOT APPROPRIATE OR NOT APPLICABLE.  
- DUE TO ROUNDING THE NUMBERS MAY NOT ADD UP AND DIFFER SLIGHTLY AMONG THE TABLES.

Jurisdiction: Canada

Number of vehicles in scope by vehicle type and jurisdiction

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Jurisdiction:										
Newfoundland	235,003	A	3,397	C	2,779	B	1,255	A	242,434	A
Prince Edward Island	72,116	A	1,714	C	2,525	A	53	E	76,408	A
Nova Scotia	505,062	A	7,444	B	7,245	A	1,700	B	521,452	A
New Brunswick	410,493	A	7,771	B	4,070	A	2,362	D	424,697	A
Quebec	3,707,734	A	39,975	B	29,074	A	15,840	A	3,792,622	A
Ontario	6,164,423	A	76,249	A	92,391	A	26,729	A	6,359,792	A
Manitoba	578,757	A	7,966	B	10,379	A	3,612	B	600,713	A
Saskatchewan	619,619	A	48,391	A	21,735	B	3,706	B	693,451	A
Alberta	1,928,287	A	85,284	B	60,778	A	11,424	A	2,085,773	A
British Columbia	2,225,131	A	47,944	B	14,124	A	8,549	A	2,295,748	A
Yukon Territory	21,613	A	1,212	A	1,070	A	264	A	24,159	A
Northwest Territories	17,548	A	600	A	1,001	A	72	A	19,222	A
Nunavut	2,583	A	217	A	162	A	--	--	2,962	A
Canada total	16,488,370	A	328,165	A	247,332	A	75,567	A	17,139,434	A

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Jurisdiction: Canada

Passenger-km ('000 000) by vehicle type and jurisdiction

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Jurisdiction:										
Newfoundland	2 593.7	D		--		--	27.1	E	2 620.9	D
Prince Edward Island		...		--		--		--		...
Nova Scotia		...		--		--	160.4	E		...
New Brunswick		...		--		--		...		...
Quebec		...		--		--	2 114.2	E		...
Ontario	39 974.6	C		--		--		...	44 861.1	C
Manitoba	4 501.7	E		--		--	520.9	E	5 022.6	E
Saskatchewan	4 665.9	D		--		--	247.0	D	4 912.9	C
Alberta		...		--		--	1 019.7	D		...
British Columbia	11 469.2	C		--		--		...	12 091.3	C
All provinces	121 935.4	B		--		--	9 643.5	D	131 578.9	B

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- ALL PASSENGER-KM ESTIMATES EXCLUDE BUS URBAN TRANSIT.
- FOR THE REFERENCE YEAR 2000 ALL TRUCKS ARE EXCLUDED FROM PASSENGER-KM ESTIMATES.

Jurisdiction: Canada

Vehicle-km ('000 000) by vehicle type and jurisdiction

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Jurisdiction:										
Newfoundland	1 492.7	B	11.0	E	41.7	E		...	1 549.4	B
Prince Edward Island	347.1	C	5.7	E	17.3	E		--	370.1	C
Nova Scotia	2 336.4	B	51.5	E	106.0	D	9.4	D	2 503.4	B
New Brunswick	2 395.6	B	35.1	E	16.3	E		...	2 459.2	B
Quebec	17 487.2	B	268.0	D	922.8	B	117.8	C	18 795.8	B
Ontario	24 232.2	B	442.8	C	2 185.4	C	235.8	C	27 096.3	B
Manitoba	2 730.5	B	40.8	E	243.2	C	26.9	C	3 041.4	B
Saskatchewan	2 695.4	B	67.3	E	304.8	E	27.9	D	3 095.4	B
Alberta	10 838.1	C	332.2	D	1 255.2	C	89.1	C	12 514.6	C
British Columbia	7 198.0	B	220.5	D	109.1	C	33.4	E	7 561.1	B
Yukon Territory	85.6	B	4.2	C	14.7	D		...	106.9	B
Northwest Territories	48.9	B	1.4	E	7.7	E		...	58.1	B
Nunavut	4.5	C		--		--		--	4.6	C
Canada total	71 892.1	A	1 480.7	B	5 224.4	B	559.3	B	79 156.4	A

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Jurisdiction: Canada

Number of vehicles on the registration lists by vehicle type and fuel type

Fuel type	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Gasoline	16,307,909	N	214,945	N	47,500	N	20,755	N	16,591,109	N
Diesel	313,338	N	159,139	N	212,989	N	50,980	N	736,446	N
Other	56,257	N	10,549	N	729	N	4,545	N	72,080	N
Unknown	13,402	N	792	N	258	N	126	N	14,578	N
Total	16,690,906	N	385,425	N	261,476	N	76,406	N	17,414,213	N

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and vehicle model year

Vehicle model year	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
1998 and later		...		--		--		...	29 572.7	D
1995 - 1997	29 370.8	D		--		--	2 268.6	E	31 639.3	C
1991 - 1994	33 222.9	E		--		--	2 147.5	E	35 370.4	D
1987 - 1990	23 749.2	D		--		--	1 179.1	E	24 928.3	D
1986 and earlier	9 874.0	E		--		--	194.2	E	10 068.2	E
Total	121 935.4	B		--		--	9 643.5	D	131 578.9	B

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- FOR THE REFERENCE YEAR 2000 ALL TRUCKS ARE EXCLUDED FROM PASSENGER-KM ESTIMATES.

Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and vehicle model year

Vehicle model year	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
1998 and later	15 099.0	B	289.4	C	2 442.1	C	136.3	E	17 966.8	B
1995 - 1997	16 779.5	B	466.5	D	1 532.0	C	123.9	D	18 902.0	B
1991 - 1994	19 393.8	B	325.6	D	675.2	E	162.1	C	20 556.7	B
1987 - 1990	14 487.6	B	243.5	E	375.8	D	72.2	D	15 179.0	B
1986 and earlier	5 993.2	C	150.1	E	...	...	62.1	E	6 382.3	C
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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- DUE TO ROUNDING THE NUMBERS MAY NOT ADD UP AND DIFFER SLIGHTLY AMONG THE TABLES.

Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and vehicle body type

Vehicle body type	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Car	...		--		--		--			...
Station wagon	...		--		--		--			...
Van	...		--		--		...			...
Sport utility vehicle	...		--		--		--			...
Pickup	17 326.3	E	--		--		--		17 326.3	E
Straight truck	...		--		--		...			...
Tractor trailer	--		--		--		...			...
Bus	...		--		--		9 327.9	D	9 389.2	D
Other	...		--		--		--			...
Total	121 935.4	B	--		--		9 643.5	D	131 578.9	B

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- ALL PASSENGER-KM ESTIMATES EXCLUDE BUS URBAN TRANSIT.
- FOR THE REFERENCE YEAR 2000 ALL TRUCKS ARE EXCLUDED FROM PASSENGER-KM ESTIMATES.

Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and vehicle body type

Vehicle body type	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Car	42 295.5	B		--		--		--	42 295.5	B
Station wagon	1 347.1	E		--		--		--	1 347.1	E
Van	11 167.6	C		...		...	54.9	E	11 265.2	C
Sport utility vehicle	4 927.1	C		...		--		--	4 935.9	C
Pickup	11 133.0	C	425.3	D		...		--	11 562.8	C
Straight truck		...	755.8	C	846.6	D		...	1 939.5	C
Tractor trailer		--		...	4 173.7	B		...	4 181.6	B
Bus		...		--		--	493.8	B	548.2	C
Other		...	249.2	D		...		--		...
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Number of vehicles in scope by vehicle type and vehicle body type

Vehicle body type	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Car	10,324,017	A		--		--		--	10,324,017	A
Station wagon	422,147	D		--		--		--	422,147	D
Van	2,058,782	B	9,047	E		...	8,375	D	2,078,347	B
Sport utility vehicle	1,082,455	B		...		--		--	1,083,417	B
Pickup	2,366,669	B	80,337	B		...		--	2,449,272	B
Straight truck		...	184,586	B	91,119	B		...	382,303	C
Tractor trailer		--		...	136,351	B		...	137,344	B
Bus		...		--		--	63,933	A	95,980	E
Other		...	47,780	C	12,658	E		...	120,199	E
Total	16,449,698	A	323,625	A	244,538	A	75,165	A	17,093,025	A

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A - EXCELLENT, B - VERY GOOD, C - GOOD, D - ACCEPTABLE, E - USE WITH CAUTION, ... - FIGURES NOT APPROPRIATE OR NOT APPLICABLE.  
- DUE TO ROUNDING THE NUMBERS MAY NOT ADD UP AND DIFFER SLIGHTLY AMONG THE TABLES.

Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and fuel type

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Fuel type										
Gasoline	118 468.2	B		--		--		...	121 450.1	B
Diesel		...		--		--	6 317.1	C	9 205.2	D
Other	579.0	A		--		--	344.6	A	923.6	A
Total	121 935.4	B		--		--	9 643.5	D	131 578.9	B

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- FOR THE REFERENCE YEAR 2000 ALL TRUCKS ARE EXCLUDED FROM PASSENGER-KM ESTIMATES.

Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and fuel type

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Fuel type										
Gasoline	69 377.3	A	307.9	D	...		133.4	E	69 860.6	A
Diesel	2 003.9	E	1 120.9	B	5 157.3	B	408.1	B	8 690.2	B
Other	372.0	A	46.2	A	...		15.1	A	435.9	A
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and day of week

Day of the week	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Sunday	16 334.9	B		--		--	582.9	E	16 917.8	B
Monday	16 109.2	C		--		--	1 321.3	C	17 430.5	C
Tuesday		...		--		--	2 243.6	E		...
Wednesday	15 605.7	B		--		--	2 033.4	E	17 639.1	B
Thursday		...		--		--	1 858.9	E	22 628.3	D
Friday	18 493.0	B		--		--	1 404.4	D	19 897.3	B
Saturday	17 800.2	C		--		--		...	17 999.2	C
Total	121 935.4	B		--		--	9 643.5	D	131 578.9	B

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Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and day of week

Day of the week	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Sunday	9 317.7	B	64.0	E	329.4	E	29.8	D	9 740.9	B
Monday	9 600.5	B	220.8	C	802.0	C	95.0	B	10 718.3	B
Tuesday	9 950.3	B	267.3	B	976.8	B	113.8	C	11 308.2	A
Wednesday	9 974.9	A	237.8	C	942.2	B	109.9	B	11 264.9	A
Thursday	11 599.5	B	304.0	C	932.4	B	95.6	B	12 931.4	B
Friday	11 191.2	B	254.7	B	849.4	C	91.8	B	12 387.1	A
Saturday	10 119.1	B	126.4	E	369.6	E	20.8	E	10 635.8	B
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and driver age group

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Driver age										
Under 20 years		...		--		--		...		...
20 - 24 years	5 367.6	E		--		--		...	5 373.1	E
25 - 34 years	17 845.5	C		--		--	918.2	E	18 763.7	C
35 - 44 years	35 727.9	D		--		--	1 531.2	E	37 259.1	D
45 - 54 years		...		--		--	3 049.0	E	34 524.1	C
55 - 64 years		...		--		--		...	18 893.7	D
65 - 74 years	10 137.1	E		--		--		...	11 203.5	E
75 - 84 years	2 010.6	E		--		--		--	2 010.6	E
85 years and over		...		--		--		--		...
Total	121 935.4	B		--		--	9 643.5	D	131 578.9	B

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Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and driver age group

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Driver age										
Under 20 years		...		...		--		--		...
20 - 24 years	3 304.4	E		...		...		...	3 413.8	E
25 - 34 years	11 203.9	C	405.7	D	1 264.9	E	54.8	E	12 929.3	C
35 - 44 years	18 606.5	C	474.6	D	1 984.5	D	138.7	C	21 204.3	B
45 - 54 years	19 822.6	C	309.1	E	1 302.9	D	209.7	C	21 644.3	B
55 - 64 years	9 655.2	D	162.8	E		...	125.1	E	10 451.5	C
65 - 74 years	6 054.5	E		...		...	25.0	E	6 214.7	E
75 - 84 years	1 111.5	E		...		--		--	1 112.7	E
85 years and over		...		--		...		--		...
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Vehicles up to 4.5t: Passenger-km ('000 000) by vehicle type and trip purpose (specific to vehicle type)

	Vehicle type	
	Vehicles up to 4.5t	
Trip purpose		
To go home	36 224.4	C
To go to work or school	14 157.6	A
To do shopping or errands	24 479.3	B
To go to a recreational or social activity	20 272.2	C
To go somewhere else		...
(Job) picking up or delivering goods		...
(Job) to or from service call		...
(Job) other work purpose	2 776.3	E
Total	121 935.4	B

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Jurisdiction: All provinces

Vehicles up to 4.5t: Vehicle-km ('000 000) by vehicle type and trip purpose (specific to vehicle type)

	Vehicle type	
	Vehicles up to 4.5t	
Trip purpose		
To go home	20 998.9	B
To go to work or school	11 175.3	A
To do shopping or errands	14 224.7	A
To go to a recreational or social activity	9 946.3	C
To go somewhere else		...
(Job) picking up or delivering goods		...
(Job) to or from service call		...
(Job) other work purpose	2 157.1	E
Total	71 753.1	A

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Jurisdiction: All provinces

Trucks 4.5t or more: Vehicle-km ('000 000) by vehicle type and trip purpose (specific to vehicle type)

	Vehicle type			
	Trucks 4.5t - 15t		Trucks 15t or more	
Trip purpose				
Driving to or from service call	88.1	E	...	...
Carrying goods or equipment	827.5	C	4 040.9	B
Empty	...	...	711.0	E
Other work purpose	84.1	E	...	...
Non-work purpose	424.6	D	...	...
Total	1 475.1	B	5 201.9	B

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Jurisdiction: All provinces

Buses: Passenger-km ('000 000) by vehicle type and trip purpose (specific to vehicle type)

	Vehicle type	
	Buses	
Trip purpose		
Scheduled intercity		...
School	5 734.8	C
Charter		...
Other		...
Total	9 643.5	D

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Jurisdiction: All provinces

Buses: Vehicle-km ('000 000) by vehicle type and trip purpose (specific to vehicle type)

	Vehicle type	
	Buses	
Trip purpose		
Scheduled urban	144.9	D
Scheduled intercity		...
School	257.7	B
Charter		...
Other	65.9	E
Total	556.7	B

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and driver sex

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Driver sex										
Male	85 740.1	B	--	--	6 872.9	E	92 613.0	B		
Female	36 195.3	B	--	--	2 770.7	C	38 965.9	B		
Total	121 935.4	B	--	--	9 643.5	D	131 578.9	B		

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Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and driver sex

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Driver sex										
Male	48 715.4	B	1 452.8	B	5 175.2	B	379.0	C	55 722.4	A
Female	23 037.7	B	...	...	...	...	177.6	B	23 264.3	B
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and time of day

Time of day	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
00:00 - 05:59	2 966.8	E	--	--	--	--	...	3 635.9	E	
06:00 - 11:59	35 135.9	B	--	--	--	--	4 432.3	C	39 568.2	A
12:00 - 17:59	55 661.2	B	--	--	--	--	3 860.2	C	59 521.5	B
18:00 - 23:59	28 171.4	C	--	--	--	--	...	28 853.2	C	
Total	121 935.4	B	--	--	--	--	9 643.5	D	131 578.9	B

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Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and time of day

Time of day	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
00:00 - 05:59	1 850.7	E	...	...	511.3	E	...	...	2 429.3	D
06:00 - 11:59	22 448.6	A	647.1	B	1 889.8	A	240.2	B	25 225.7	A
12:00 - 17:59	32 360.7	A	666.2	B	1 869.7	B	233.1	B	35 129.7	A
18:00 - 23:59	15 093.1	B	120.1	E	931.1	D	57.8	D	16 202.1	B
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and carrying dangerous goods

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Carrying dangerous goods										
Yes		...		--		--		--		...
No	121 880.1	B		--		--	9 643.5	D	131 523.6	B
Total	121 935.4	B		--		--	9 643.5	D	131 578.9	B

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Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and carrying dangerous goods

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Carrying dangerous goods										
Yes		...		...		...		--	420.2	E
No	71 703.9	A	1 366.6	B	4 939.3	B	556.7	B	78 566.5	A
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and day type

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Day type										
Non-working days	38 440.9	B	--	--	--	--	822.8	E	39 263.7	B
Working days		...	--	--	--	--	8 820.7	D	92 315.2	B
Total	121 935.4	B	--	--	--	--	9 643.5	D	131 578.9	B

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Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and day type

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Day type										
Non-working days	21 733.5	B	233.0	D	805.5	E	60.1	D	22 832.1	A
Working days	50 019.7	A	1 242.0	B	4 396.4	B	496.6	B	56 154.7	A
Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and road type

Road type	Vehicle type			
	Vehicles up to 4.5t		Buses	
Road with posted maximum speed of 80km/h or more	71 648.6	C	5 722.3	E
Other roads	50 286.8	A	3 921.3	C
<b>Total</b>	<b>121 935.4</b>	<b>B</b>	<b>9 643.5</b>	<b>D</b>

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Jurisdiction: All provinces

Vehicle-km ('000 000) by vehicle type and road type

Road type	Vehicle type			
	Vehicles up to 4.5t		Buses	
Road with posted maximum speed of 80km/h or more	39 893.7	B	213.9	C
Other roads	31 859.4	A	342.7	B
<b>Total</b>	<b>71 753.1</b>	<b>A</b>	<b>556.7</b>	<b>B</b>

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Jurisdiction: All provinces

Passenger-km ('000 000) by vehicle type and passenger age group

	Vehicle type	
	Vehicles up to 4.5t	
Passenger age		
Under 5 years		...
5-14 years	9 560.8	E
15 years and over	108 527.2	B
Total	121 935.4	B

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## Vehicles up to 4.5t: Passenger-km ('000 000) by vehicle type, vehicle group and trip purpose

Jurisdiction: All provinces

		Vehicle type	
		Vehicles up to 4.5t	
Vehicle group	Trip purpose		
Car and Station wagon	To go home		...
	To go to work or school	7 981.4	B
	To do shopping or errands	16 299.3	B
	To go to a recreational or social activity	12 972.6	E
	To go somewhere else		...
	(Job) picking up or delivering goods		...
	(Job) to or from service call		...
	(Job) other work purpose		...
	Total		...
Other below 4.5t	To go home	14 028.6	E
	To go to work or school		...
	To do shopping or errands		...
	To go to a recreational or social activity	7 299.5	E
	To go somewhere else		...
	(Job) picking up or delivering goods		...
	(Job) to or from service call		...
	(Job) other work purpose		...
	Total		...

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Vehicles up to 4.5t: Vehicle-km ('000 000) by vehicle type, vehicle group and trip purpose

Jurisdiction: All provinces

		Vehicle type	
		Vehicles up to 4.5t	
Vehicle group	Trip purpose		
Car and Station wagon	To go home	13 160.2	C
	To go to work or school	6 295.3	B
	To do shopping or errands	9 641.0	B
	To go to a recreational or social activity	6 667.3	D
	To go somewhere else		...
	(Job) picking up or delivering goods		...
	(Job) to or from service call		...
	(Job) other work purpose		...
	Total	43 642.6	A
Other below 4.5t	To go home	7 838.7	D
	To go to work or school	4 880.1	C
	To do shopping or errands	4 583.8	C
	To go to a recreational or social activity	3 279.0	E
	To go somewhere else		...
	(Job) picking up or delivering goods		...
	(Job) to or from service call		...
	(Job) other work purpose		...
	Total	28 110.5	B

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Passenger-km ('000 000) by vehicle type, day type and time of day

Jurisdiction: All provinces

		Vehicle type								
		Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total
Day type	Time of day									
Non-working days	00:00 - 05:59	...		--		--			...	...
	06:00 - 11:59	11 036.4	C		--		--		...	11 198.5 C
	12:00 - 17:59	17 663.3	B		--		--		...	18 025.9 B
	18:00 - 23:59	8 562.5	C		--		--		...	8 831.0 C
	Total	38 440.9	B		--		--	822.8	E	39 263.7 B
Working days	00:00 - 05:59		...		--		--		...	...
	06:00 - 11:59	24 099.5	B		--		--	4 270.2	C	28 369.7 B
	12:00 - 17:59		...		--		--	3 497.6	C	41 495.5 B
	18:00 - 23:59		...		--		--		...	...
	Total		...		--		--	8 820.7	D	92 315.2 B
Total	00:00 - 05:59	2 966.8	E		--		--		...	3 635.9 E
	06:00 - 11:59	35 135.9	B		--		--	4 432.3	C	39 568.2 A
	12:00 - 17:59	55 661.2	B		--		--	3 860.2	C	59 521.5 B
	18:00 - 23:59	28 171.4	C		--		--		...	28 853.2 C
	Total	121 935.4	B		--		--	9 643.5	D	131 578.9 B

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Vehicle-km ('000 000) by vehicle type, day type and time of day

Jurisdiction: All provinces

		Vehicle type									
		Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Day type	Time of day										
Non-working days	00:00 - 05:59	696.7	E	...	...	...	...	...	...	776.3	E
	06:00 - 11:59	6 605.5	B	104.1	E	257.5	D	15.5	D	6 982.5	B
	12:00 - 17:59	9 922.9	B	89.7	E	296.1	E	27.1	D	10 335.9	A
	18:00 - 23:59	4 508.3	B	...	...	183.6	E	15.5	E	4 737.3	B
	Total	21 733.5	B	233.0	D	805.5	E	60.1	D	22 832.1	A
Working days	00:00 - 05:59	1 154.0	D	...	...	443.1	D	...	...	1 653.0	C
	06:00 - 11:59	15 843.2	A	543.0	B	1 632.3	B	224.7	B	18 243.2	A
	12:00 - 17:59	22 437.7	A	576.4	B	1 573.6	B	206.0	B	24 793.8	A
	18:00 - 23:59	10 584.8	B	90.2	E	747.5	D	42.3	D	11 464.7	B
	Total	50 019.7	A	1 242.0	B	4 396.4	B	496.6	B	56 154.7	A
Total	00:00 - 05:59	1 850.7	E	...	...	511.3	E	...	...	2 429.3	D
	06:00 - 11:59	22 448.6	A	647.1	B	1 889.8	A	240.2	B	25 225.7	A
	12:00 - 17:59	32 360.7	A	666.2	B	1 869.7	B	233.1	B	35 129.7	A
	18:00 - 23:59	15 093.1	B	120.1	E	931.1	D	57.8	D	16 202.1	B
	Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Passenger-km ('000 000) by vehicle type, driver age group and driver sex

Jurisdiction: All provinces

		Vehicle type									
		Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Driver age group	Driver sex										
Under 25 years	Male	5 257.5	E	--	--	--	...			5 263.2	E
	Female	3 517.4	E	--	--	--	--			3 517.4	E
	Total	8 774.9	E	--	--	--	...			8 780.6	E
25 - 55 years	Male		...	--	--	--		3 284.1	E	60 380.2	C
	Female		...	--	--	--		2 214.4	C	30 166.8	C
	Total	85 048.5	B	--	--	--		5 498.4	C	90 547.0	B
55 years and over	Male		...	--	--	--			...	26 969.7	D
	Female	4 725.4	D	--	--	--			...	5 281.7	D
	Total		...	--	--	--			...	32 251.3	C
Total	Male	85 740.1	B	--	--	--		6 872.9	E	92 613.0	B
	Female	36 195.3	B	--	--	--		2 770.7	C	38 965.9	B
	Total	121 935.4	B	--	--	--		9 643.5	D	131 578.9	B

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Vehicle-km ('000 000) by vehicle type, driver age group and driver sex

Jurisdiction: All provinces

		Vehicle type									
		Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Driver age group	Driver sex										
Under 25 years	Male	2 880.0	E	...	...	...	...	...	...	3 009.8	E
	Female	2 342.4	E	...	...	..	..	..	..	2 342.7	E
	Total	5 222.4	D	...	...	...	...	...	...	5 352.5	D
25 - 55 years	Male	32 318.7	B	1 168.5	B	4 525.6	B	246.2	C	38 259.0	B
	Female	17 314.2	B	...	...	...	...	157.0	C	17 518.8	B
	Total	49 632.9	B	1 189.4	B	4 552.3	B	403.2	B	55 777.8	A
55 years and over	Male	13 516.7	C	220.4	E	...	...	129.4	E	14 453.7	C
	Female	3 381.1	D	...	...	..	..	20.6	E	3 402.8	C
	Total	16 897.8	C	221.5	E	...	...	150.1	E	17 856.5	B
Total	Male	48 715.4	B	1 452.8	B	5 175.2	B	379.0	C	55 722.4	A
	Female	23 037.7	B	...	...	...	...	177.6	B	23 264.3	B
	Total	71 753.1	A	1 475.1	B	5 201.9	B	556.7	B	78 986.7	A

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Jurisdiction: All provinces

Fuel ('000 000 litres) purchased by vehicle type and fuel type

	Vehicle type									
	Vehicles up to 4.5t		Trucks 4.5t - 15t		Trucks 15t or more		Buses		Total	
Fuel type										
Gasoline	7 959.7	A	65.9	E	...		38.9	E	8 080.9	A
Diesel		...	295.8	D	2 188.1	B	110.4	B	2 850.7	B

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Vehicle type: Vehicles up to 4.5t

Vehicle model year	Jurisdiction													TOTAL
	Newfound-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatche-wan	Alberta	British Columbia	Yukon Territory	Northwest Territor-ies	Nunavut	
1980 or earlier	3,052	1,943	14,455	9,009	57,561	149,801	31,761	59,153	144,371	146,126	2,242	1,149	76	620,699
1981	914	575	3,134	2,549	14,069	33,676	7,455	14,387	36,626	42,835	570	304	21	157,115
1982	675	336	2,466	1,752	8,316	25,776	6,714	12,497	28,624	28,258	352	276	22	116,064
1983	1,063	776	3,937	3,655	15,528	42,934	8,591	14,202	31,262	34,911	419	258	21	157,557
1984	2,337	1,581	8,504	7,839	45,894	91,015	15,589	21,027	50,761	57,783	680	445	47	303,502
1985	3,609	2,156	11,925	10,911	74,536	141,483	20,377	24,262	65,260	72,951	766	551	78	428,865
1986	5,485	2,866	17,143	14,975	113,503	214,241	28,043	31,536	88,133	103,510	1,087	672	77	621,271
1987	7,838	3,842	21,677	19,109	159,101	264,001	26,873	27,103	77,390	104,726	1,134	586	97	713,477
1988	14,663	5,610	30,688	27,602	229,499	374,706	32,924	32,581	100,101	124,042	1,362	886	138	974,802
1989	17,131	5,806	32,946	29,326	238,716	403,459	32,874	32,444	105,531	135,625	1,352	940	130	1,036,280
1990	16,145	5,908	33,573	29,067	247,040	402,128	35,422	33,563	110,274	146,607	1,366	982	146	1,062,221
1991	16,509	5,123	32,174	28,060	252,796	388,051	36,522	34,452	109,547	141,378	1,219	916	161	1,046,908
1992	17,052	5,659	34,784	30,573	282,124	415,609	36,974	34,648	105,769	142,097	1,182	819	130	1,107,420
1993	17,677	5,247	33,476	27,137	253,583	390,934	33,263	31,525	96,527	130,634	1,147	849	134	1,022,133
1994	17,662	5,083	34,141	27,234	239,673	388,320	32,237	33,292	100,925	123,859	1,130	978	148	1,004,682
1995	16,411	5,014	34,481	27,836	254,559	413,210	34,871	35,222	106,564	126,365	1,165	1,036	151	1,056,885
1996	12,419	3,815	28,408	22,351	202,884	340,569	30,049	29,025	89,721	99,717	882	856	112	860,808
1997	16,850	3,765	33,845	27,017	255,050	429,934	38,129	37,087	121,763	127,245	1,262	1,321	146	1,093,414
1998	21,152	3,000	39,198	32,441	309,874	499,723	40,313	37,289	139,678	129,676	1,167	1,404	141	1,255,056
1999	20,564	2,375	35,583	29,877	298,916	497,626	33,226	25,585	117,902	117,378	1,173	1,520	132	1,181,857
2000	10,425	1,596	24,675	21,633	212,259	377,282	19,818	15,628	84,842	83,855	641	976	34	853,664
2001	69	32	407	308	3,857	6,387	264	494	2,708	1,642	24	28	1	16,221
Unknown	16	0	0	11	26	0	0	1	0	1	0	0	0	55
TOTAL	239,718	72,108	511,620	430,272	3,769,364	6,290,865	582,289	617,003	1,914,279	2,221,221	22,322	17,752	2,143	16,690,956

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Vehicle type: Trucks 4.5t - 15t

Vehicle model year	Jurisdiction													TOTAL
	Newfound-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatche-wan	Alberta	British Columbia	Yukon Territory	Northwest Territor-ies	Nunavut	
1980 or earlier	502	857	2,083	688	7,129	5,002	1,962	31,464	32,671	9,560	412	66	36	92,432
1981	93	105	229	136	1,035	1,089	271	1,581	3,787	2,012	52	21	1	10,412
1982	54	56	180	84	643	746	216	1,012	1,976	828	34	11	2	5,842
1983	76	52	172	73	458	716	151	792	1,436	620	16	10	2	4,574
1984	136	78	279	134	1,310	1,265	252	799	2,024	1,067	41	24	3	7,412
1985	178	87	360	210	1,905	2,134	365	822	2,707	1,451	52	24	9	10,304
1986	197	98	410	270	2,100	2,855	460	982	3,269	1,989	40	26	9	12,705
1987	202	88	478	271	2,695	3,362	396	754	2,106	1,853	34	14	16	12,269
1988	319	96	587	368	3,406	4,908	466	862	3,985	2,744	59	25	15	17,840
1989	243	101	563	311	2,605	4,372	446	737	3,769	2,976	57	32	13	16,225
1990	248	70	556	319	2,717	4,703	541	832	4,092	3,365	62	39	14	17,558
1991	217	49	355	303	1,886	3,030	446	672	3,941	2,468	41	28	8	13,444
1992	177	29	335	380	1,598	3,051	388	670	3,508	2,504	43	28	5	12,716
1993	190	40	373	553	1,738	3,734	422	999	3,902	2,959	30	19	6	14,965
1994	202	42	368	602	2,132	4,490	410	951	4,820	3,198	47	19	8	17,289
1995	257	56	547	699	2,805	5,621	567	1,131	5,283	3,850	48	43	25	20,932
1996	141	26	332	602	1,789	4,123	413	738	4,021	2,771	36	21	10	15,023
1997	172	31	402	728	1,944	5,477	481	1,060	6,321	3,738	48	36	16	20,454
1998	128	20	496	1,039	2,456	5,690	423	1,130	5,947	3,191	50	28	10	20,608
1999	199	41	554	1,344	3,147	8,323	518	1,786	6,042	4,579	87	35	9	26,664
2000	77	20	269	647	1,609	4,479	214	1,031	3,775	2,550	32	17	0	14,720
2001	4	1	14	68	130	215	15	38	402	181	2	0	0	1,070
Unknown	4	0	0	1	3	0	0	0	0	0	0	0	0	8
TOTAL	4,016	2,043	9,942	9,830	47,240	79,385	9,823	50,843	109,784	60,454	1,323	566	217	385,466

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Vehicle type: Trucks 15t or more

Vehicle model year	Jurisdiction													TOTAL
	Newfound-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatche-wan	Alberta	British Columbia	Yukon Territory	Northwest Territor-ies	Nunavut	
1980 or earlier	242	701	749	440	524	3,690	1,051	6,889	13,547	2,093	167	105	7	30,205
1981	42	116	133	93	112	802	163	735	2,309	465	33	28	2	5,033
1982	29	62	90	53	79	599	113	405	1,110	178	14	15	0	2,747
1983	25	42	40	26	48	416	63	152	333	53	5	5	5	1,213
1984	94	137	157	173	250	1,356	235	533	983	269	12	21	2	4,222
1985	122	149	249	198	440	2,190	328	719	1,674	346	31	22	0	6,468
1986	125	185	250	219	517	3,015	397	796	1,919	478	25	17	0	7,943
1987	158	203	340	314	824	4,096	442	800	1,678	537	20	13	3	9,428
1988	221	175	395	289	1,067	4,417	464	898	2,331	640	34	22	1	10,954
1989	205	118	356	231	843	4,611	424	729	2,170	566	34	33	2	10,322
1990	131	104	244	251	850	4,281	383	746	2,347	940	36	27	3	10,343
1991	129	58	159	145	484	2,678	223	512	1,794	529	24	28	9	6,772
1992	94	35	173	109	652	2,690	297	466	1,534	689	40	29	7	6,815
1993	94	45	259	182	1,141	4,026	453	662	2,023	644	28	20	1	9,578
1994	152	62	378	191	2,044	5,768	673	832	3,068	771	37	48	6	14,030
1995	176	93	564	299	2,952	9,393	797	984	3,757	839	46	63	12	19,975
1996	138	53	445	189	2,104	6,666	740	743	2,915	768	73	40	8	14,882
1997	121	24	336	178	2,198	6,521	701	819	3,443	824	73	53	2	15,293
1998	183	51	643	215	4,092	10,722	1,016	1,818	5,229	754	93	50	11	24,877
1999	168	65	689	286	4,325	11,777	1,086	2,708	4,585	713	84	69	23	26,578
2000	125	49	635	205	3,958	10,324	853	1,651	3,726	506	75	63	4	22,174
2001	10	3	39	25	319	737	44	54	369	45	8	3	0	1,656
Unknown	3	0	1	0	9	0	0	0	0	0	0	0	0	13
TOTAL	2,787	2,530	7,324	4,311	29,832	100,775	10,946	24,651	62,844	13,647	992	774	108	261,521

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Vehicle type: Buses

Vehicle model year	Jurisdiction													TOTAL
	Newfound-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatche-wan	Alberta	British Columbia	Yukon Territory	Northwest Territor-ies	Nunavut	
1980 or earlier	26	19	67	384	206	619	186	350	1,785	545	16	10	4	4,217
1981	5	2	16	115	166	354	70	77	258	144	12	0	2	1,221
1982	13	0	16	122	80	158	53	126	414	241	9	1	1	1,234
1983	3	2	27	91	110	297	65	101	165	209	20	0	0	1,090
1984	7	2	32	139	192	215	90	165	264	162	3	3	0	1,274
1985	17	2	60	109	211	445	267	228	352	158	3	1	4	1,857
1986	134	4	75	124	247	561	181	228	402	218	6	2	0	2,182
1987	205	5	105	131	415	999	191	378	456	265	4	7	0	3,161
1988	181	1	139	162	773	1,496	272	241	565	382	17	2	1	4,232
1989	145	1	114	118	1,039	1,951	186	262	679	511	10	3	0	5,019
1990	89	0	143	186	1,169	2,258	130	280	680	499	18	2	0	5,454
1991	84	1	134	77	1,177	1,989	195	211	594	586	17	1	1	5,067
1992	82	3	80	83	1,139	1,923	183	168	596	490	6	0	0	4,753
1993	42	0	103	96	961	1,539	182	177	571	407	7	2	0	4,087
1994	24	0	55	37	1,468	1,316	269	108	417	447	15	1	0	4,157
1995	28	1	185	159	926	1,871	175	125	540	579	17	0	1	4,607
1996	19	2	81	20	1,172	1,929	175	147	450	635	20	0	0	4,650
1997	46	0	105	123	1,155	1,578	156	135	712	415	23	3	0	4,451
1998	34	0	191	185	1,090	1,991	193	169	718	742	16	2	0	5,331
1999	58	14	94	89	1,392	2,347	226	203	774	587	9	28	0	5,821
2000	16	8	5	40	710	875	83	41	369	329	20	4	0	2,500
2001	0	0	0	0	48	22	2	0	1	1	0	0	0	74
Unknown	0	0	0	2	0	0	0	0	0	0	0	0	0	2
TOTAL	1,258	67	1,827	2,592	15,846	26,733	3,530	3,920	11,762	8,552	268	72	14	76,441

- DUE TO ROUNDING THE NUMBERS MAY NOT ADD UP TO THE TOTALS AND DIFFER SLIGHTLY AMONG TABLES.

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