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Program Evaluation
& Market Research

National Capital Region
Special Generator Survey

Transportation Terminals

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1. Introduction

1.1. Project Overview

The Special Generator Survey (SGS) project has the following objectives:

- collect comprehensive data on the travel patterns of non-permanent residents of the National Capital Region (NCR);
- collect data on the trips to and from 'special generators' in the NCR; and
- supplement data from the 2011 origin-destination survey, the household travel survey which is a core component of the region's transportation model.

Four types of special generators are included in the SGS: post-secondary institutions; transportation terminals (air, rail, intercity bus); major hotels; and major sporting, entertainment, and event venues.

The focus of this report is on the intercept surveys conducted with intercity travellers and local 'supporters' (local 'escorts' who pick up or drop off intercity travellers) at the four major intercity passenger transportation terminals, which include the following:

- Ottawa Macdonald-Cartier International Airport (also referred to as the Ottawa Airport), located 10 km south of downtown Ottawa;
- Ottawa Train Station, which serves VIA Rail trains between Ottawa and Toronto and Montréal, and is located on Terminal Avenue in Ottawa;
- Fallowfield Train Station, which also serves VIA Rail trains between Ottawa and Toronto and Montréal, and is located in the Ottawa neighbourhood of Barrhaven, in the southwest of urban Ottawa; and
- Greyhound Bus Station, also known as Ottawa Central Station or the Ottawa Bus Terminal, which serves mainly Greyhound intercity buses and is located in Centretown, Ottawa.

It may be noted that the two train stations are both located adjacent to Transitway stations. The airport and the bus station are both served directly by OC Transpo routes, and the bus station is located within a short walk of several other OC Transpo routes.

The SGS project was conducted by R.A. Malatest and Associates Ltd. (Malatest) in association with David Kriger Consultants Inc. and Resource Systems Group Inc.

In total, 2,449 intercity travellers and their local supporters were surveyed across all terminals. After geocoding, data cleaning, and data validation, the dataset includes 2,107 useable surveys.

1.2. Report Contents

The report presents key survey results after the completion of geocoding, data cleaning, and data validation. These results are based on survey data expanded to represent average intercity travel (the number of intercity passengers arriving and departing at each terminal). The remainder of the report is organized into two sections:

- Section 2: Methodology
- Section 3: Survey Results

1.3. Acknowledgements

The project team would like to acknowledge the support of the TRANS Committee, in particular the client project team leads, Ahmad Subhani, now with the Regional Municipality of York, and Jennifer M. Armstrong of the City of Ottawa. We would also like to acknowledge the management and administrative staff associated with the various special generators surveyed who provided access to the facilities surveyed. Finally, we would like to acknowledge the assistance of the thousands of members of the public, including both residents of the NCR and visitors to the region, who graciously agreed to answer questions about their travel habits.

2. Survey Methodology

2.1. Survey Content

Visitors to the transportation terminals were surveyed through intercept surveys conducted by trained interview staff. The survey questions were designed to gather the following types of information:

- age and gender;
- location of home residence;
- information about the local trip(s) taken to and/or from the special generator, including:
    - trip origin (if took a local trip to the special generator),[1]
    - trip destination (if took a local trip from the special generator),[2]
    - times of departure and arrival at the terminal,
    - mode of travel (including buses taken, and transit or shuttle bus boarding locations),
    - reason for using the selected mode of travel,
    - if not a transit user, reason for not using transit for the trip, and
    - the number of people travelling to or from the terminal together, and the number of those people who were either picked up or dropped off at the terminal,
        - at the airport: only asked for trips by private automobile, rental car, taxi or limousine,
        - at other terminals: asked of all survey respondents;
- where travellers in private automobiles parked;
- the purpose of local travel to/from the terminal;
- the purpose of the intercity travel;
- airport only: how many times per year the travellers use the terminal and the proportions of those trips that are for business and for pleasure.

Note that the surveys focused on the local travel characteristics, and not on the inter-city trip. This is because the surveys were conducted to support the modelling and analysis of local, urban trips, and so each terminal can be considered as an external entry or exit point to/from the NCR. In any event, the inter-city mode could be inferred from the venue.

It may be noted that different questions had differing levels of response from survey participants.

The project scope required that surveys were to be completed by arriving intercity travellers, departing intercity travellers, and local escorts who supported intercity travellers by picking them up or dropping them off at the generator. Thus, the term 'visitors' refers to travellers or to local escorts, as opposed to employees or workers making commercial deliveries to the terminal – i.e., only 'visitors' were candidates for the survey. Some individuals with business at the terminals (e.g., a business meeting with airport staff or with a traveller) were surveyed and have also been included as 'visitors'. Note that, for

[1] The local origin question was not asked of intercity travellers arriving at the terminal from another city, as they would not have had a local trip origin. The question was asked of intercity travellers departing the terminal to another city, as well as of any local escorts at the terminal to pick up or drop off an intercity traveller.

[2] The local destination question was not asked of intercity travellers departing the terminal for another city, as they would not have had a local destination. The question was asked of intercity travellers arriving at the terminal from another city, as well as of any local escorts at the terminal to pick up or drop off an intercity traveller.

the purposes of this survey, drivers of taxis, buses or other commercial vehicles were not considered to be local escorts, hence these individuals were not interviewed.

In the case of surveys completed by local escorts who were picking up or dropping off intercity travellers, the questions asked applied to the local escort (e.g., demographics, home location) or to the trip (previous local origin, next local destination), with the exception of the question asking for the main purpose of the intercity travel, which always pertains to the intercity traveller' reason for travelling between cities, and, at the airport, the question asking how frequently they used the airport. [3]

Different variations of the survey were developed for each venue:

- airport departures (administered with intercity travellers in the departures lounge, within the secure area just behind security),
- airport arrivals or curbside (administered with intercity travellers in the arrivals area or with local supporters picking up or dropping off intercity travellers outside the terminal at the pick-up/drop-off area),
- the two train stations, and
- the bus terminal.

Full survey questionnaires are included in the methodology report under a separate cover.

2.2. Limitations

Two related limitations should be noted regarding the specified survey design and its potential impact on the application of the findings.

First, it may be noted that the survey questions pertained to only one member of the travelling party, including age and gender demographics. As a result, any bias in the selection of the respondent from the travelling party might skew the results – for example, if the travelling party comprised more than one person. In future such surveys, it may be advisable to ask the demographics of all members of the travelling party, in order to provide complete and accurate demographics.

A second limitation of the survey design is that it was not fully optimized to handle the different respondent types (intercity travellers v. escorts/supporters). Survey respondents were asked to describe their own age, gender, home location, and frequency of use of the terminal. Since the project scope required surveys to be conducted with escorts/supporters at the airport curbside, this resulted in systematic selection bias with respect to who in the travelling party completed the survey – i.e., the results for these questions might be skewed towards escorts/supporters unless appropriate provisions are made for analysis. We have addressed this in part via data weighting and filtering questions to different subsets of respondents. However, it may be advisable in future such surveys to ensure that certain questions are asked with respect to the intercity travellers, regardless of whether the individual completing the survey is an intercity traveller or an escort/supporter.

[3] The survey instrument could have been completed either by an intercity traveller or a local escort driving such a traveller. Local escorts comprised 28% of surveys collected at the airport. The design of the survey instrument does not explicitly identify that this frequency-of-use question is only for travellers. When this was identified during the start of survey administration, survey staff was instructed to ask the question with respect to the traveller. The number of local escorts who may have been asked the question with respect to their own use of the airport is likely fairly low.

The treatment of the limitations is discussed further in Section 2.6.

2.3. Survey Sampling and Scheduling

Survey targets and sampling requirements differed for each of the generators. Exhibit 2-1 summarizes the sampling plan for each terminal. Survey targets were established based on the expected volume of flights, trains or buses at the respective terminal over the course of the day. The highest survey target (1,000 surveys) was allocated to the airport, which has the greatest volumes of all of the terminals. A target of 400 survey completions was set for Ottawa Train Station as it was considered to process a higher volume of passengers than Fallowfield Station or the Greyhound Bus Station. The latter two terminals had targets set at 300 as a minimum desirable sample size to be useful for analysis.

In general, the approach was to develop sampling plans and survey schedules that spread data collection across several weekdays and throughout terminal operating hours generally proportionate with the expected number of arrivals and departures throughout the day. At the airport, where there were three survey locations (departures lounge, arrivals area and the curbside pickup/dropoff area), separate sampling plans were developed for the arrival and curbside surveys (2/3 of the total airport sample), and for the departure surveys (1/3 of the total airport sample). At the same time, attempts also were made to also achieve a balance between surveys with departing and arriving intercity travellers and a balance between surveys with local escorts dropping off and local escorts picking up travellers. In practice, however, the curbside location captured mostly surveys with intercity arrivals and their escorts; Departing travellers proved unlikely to stop to agree to do the survey before checking in and going through security, and their escorts were often not able to stop to complete the survey. At the two train stations, given the relatively small number of trains, only the total number of trains was considered in estimating the daily activity profile, without distinction between arrivals and departures; moreover, some of the trains are through-trips and so they are both arriving and departing the station. Finally, data on the specific number of buses arriving at and departing from the bus terminal by time of day were not available, and so sampling targets for the course of the day were apportioned using the estimated arrivals and departures of the Ottawa Train Station as a proxy for the bus station.

Exhibit 2-1: Sampling Plan by Transportation Terminal

Terminal	Time	Number of weekly flights / daily trains / buses	Daily %	Targeted completions by time of day	Scheduled data collection hours	% of total scheduled hours
Airport Arrivals & Curbside	0:01-08:00	32	5%	86	14	8%
	08:01-16:00	255	43%	286	102	55%
	16:01-24:00	311	52%	295	69	37%
	Total	**598**	**100%**	**667**	**185**	**100%**
Airport Departures	0:01-08:00	95	16%	53	10	12%
	08:01-16:00	264	44%	147	41	50%
	16:01-24:00	242	40%	133	31	38%
	Total	**601**	**100%**	**333**	**82**	**100%**
Ottawa Train Station	05:00-09:00	5	19%	74	18	19%
	09:01-14:00	5	19%	74	19	19%
	14:01-19:00	11	41%	163	41	41%
	19:01-24:00	6	22%	89	22	22%
	Total	**27**	**100%**	**400**	**100**	**100%**
Fallowfield Train Station	05:00-09:00	5	19%	58	15	19%
	09:01-14:00	6	23%	69	17	23%
	14:01-19:00	9	35%	104	26	35%
	19:01-24:00	6	23%	69	17	23%
	Total	**26**	**100%**	**300**	**75**	**100%**
Greyhound Bus Station	05:00-09:00	Not provided	19%	56	14	19%
	09:01-14:00	Not provided	19%	56	14	19%
	14:01-19:00	Not provided	41%	122	30	41%
	19:01-24:00	Not provided	22%	67	17	22%
	Total	Not provided	**100%**	**300**	**75**	**100%**

2.4. Survey Administration

Survey teams were present at each terminal, in order first to identify eligible respondents, and then conduct the survey with them, with one exception: for security reasons, within the airport departures lounge, surveys were conducted by Airport Authority contract staff who had the necessary security clearances. For all other survey shifts, at least one Malatest supervisor was present during each data collection shift. Standard procedures for set-up and decamp ensured that all survey teams were prepared to carry out data collection at each terminal. Malatest provided training to all survey staff, including contract staff provided by the Airport Authority, to ensure that surveyors used a consistent approach when approaching potential survey respondents and completing the questionnaire with them, regardless of terminal.

To encourage survey participation, the following incentive strategy was used:

- Respondents were offered a chance to enter a draw for one of two tablet computers (Apple iPad); and
- The importance of the survey was stressed to all eligible respondents:
    - For local residents, participating in the study would ensure that their travel habits and experiences are considered by transportation planners when developing or improving travel infrastructure.
    - For non-residents, participating in the study would help to ensure they have an even better experience the next time they are in the NCR.

2.4.1. Macdonald-Cartier International Airport

Surveys at the arrival hall and curb of the airport terminal were completed with arriving passengers as well as with individuals dropping off, picking up or meeting the passengers. As noted, the survey completions from these two locations represent approximately two thirds of the 1,000 completions targeted for the airport overall. Airport Authority staff completed the remaining surveys with departing passengers at the airport gates. The distribution of arriving and departing flights was consistent from Monday to Friday. Accordingly, while ensuring that data were collected on each weekday, it was particularly important to schedule around the volume of arriving and departing flights which fluctuated throughout the day. Practicality and survey team safety also played a role in the distribution of survey hours (e.g., consideration of daylight hours for work near traffic for curbside interviews and/or times of day with very few people about). While data collection hours were aligned as closely as possible with the proportion of arrivals and departures, at the airport, it was not practical to allocate many survey hours during late nights and early mornings as few flights were scheduled at these times.

2.4.2. Train Stations (VIA Rail)

The volume of train arrivals and departures at both stations over the course of the day was consistent from Monday to Friday. Therefore, as with the airport data collection, surveying was planned to align with the distribution of arrivals and departures as much as possible, keeping practicality and safety in mind.

2.4.3. Greyhound Bus Station (Ottawa Central Station)

As the station administration noted that Wednesdays, Thursdays and Fridays were the busiest weekdays, scheduling was limited to these three days. Exact numbers of bus arrivals and departures

were not provided by time of day; however the estimated volume distribution over the course of a business day was very roughly estimated from talking to station staff.

Exhibit 2-2 outlines the survey schedule for all terminals. Note that all surveys were conducted in 2013.

Exhibit 2-2: Survey Schedule

Terminal	Date	Weekday	Shift Times	Survey Targets	Survey Completions
Airport Arrivals and Curbside	November 4	Monday	06:00-10:00	86	85
	November 5	Tuesday	09:00-16:00	100	182
	November 6	Wednesday	14:00-23:00	233	326
	November 8	Friday	11:00-16:00	100	148
	November 14	Thursday	17:00-21:00	148	69
				667	810
	Date	**Weekday**	**Shift Times**	**Survey Targets**	**Survey Completions**
Airport Departures	November 5	Tuesday	06:00-15:00	32	42
	November 6	Wednesday	05:00–15:00	32	43
	November 7	Thursday	10:00 – 14:00	-	36
	November 8	Friday	06:00-15:00	32	36
	November 11	Monday	11:00 – 15:00	32	20
	November 12	Tuesday	08:00 – 12:00	-	19
	November 13	Wednesday	11:00-23:00	19	44
	November 14	Thursday	06:00-15:00	32	32
	November 18	Monday	19:00 – 23:00	16	20
	November 19	Tuesday	15:00–24:00	36	46
	November 21	Thursday	15:00–24:00	48	51
	November 29	Friday	15:00 – 23:00	54	43
				333	432
Station	**Date**	**Weekday**	**Shift Times**	**Survey Targets**	**Survey Completions**
Fallowfield Train Station	November 5	Tuesday	19:00-23:00	25	25
	November 8	Friday	unknown	71	71
	November 13	Wednesday	07:00-11:00	27	27
	November 14	Thursday	14:00-19:00	52	52
	November 19	Tuesday	14:00-21:00	44	45
	November 20	Wednesday	19:00-23:00	29	29
	November 21	Thursday	14:00-19:00	52	59
				300	313
	Date	**Weekday**	**Shift Times**	**Survey Targets**	**Survey Completions**
Ottawa Train Station	November 4	Monday	09:00 – 14:00	74	121
	November 5	Tuesday	06:00 – 09:00	74	58
	November 13	Wednesday	14:00 – 19:00	163	162
	November 14	Thursday	19:00 – 22:00	89	200
				400	541
	Date	**Weekday**	**Shift Times**	**Survey Targets**	**Survey Completions**
Greyhound Bus Station	October 31	Thursday	08:00 – 14:00	111	169
	November 1	Friday	14:00 – 22:00	89	128
	November 6	Wednesday	14:00 – 19:00	100	56
				300	353

Of note, it was typically easier to obtain survey completions with travellers who were about to depart on intercity travel (as many had time to wait before their scheduled departure) than with intercity arrivals (some of whom may have been keen to get to their local destination). The only survey location with a greater number of survey completions for intercity arrivals compared to intercity departures was the airport, due to the conduct of curbside surveys with local supporters who were there to pick up or drop off intercity travellers. For these curbside surveys, the majority of survey completions were with local supporters who were there to pick up intercity travellers, whereas those who were there to drop off intercity travellers were much less likely to stay long enough to complete the survey interview.

2.4.4. Summary of Survey Completions

Exhibit 2-3 summarizes the number of surveys collected at each terminal, and the number of usable (valid) surveys after data cleaning and data validation.

Exhibit 2-3: Valid Surveys by Generator

Special Generator	Target	Surveys	Unusable Surveys	Valid Surveys (n)
Macdonald-Cartier International Airport	1,000	1,242	192	1,050
Fallowfield Train Station	300	313	25	288
Ottawa Train Station	400	541	56	485
Greyhound Bus Station	300	353	69	284
Grand Total	**2,000**	**2,449**	**342**	**2,107**

2.5. Data Processing

In order to be considered as valid and useable, each completed survey had to include reasonably good information on, at minimum, the location of the origin/destination of the local trip to/from the special generator as well as the mode of travel, and also pass various tests of trip logic. A total of 342 surveys were thus removed from the final dataset due to missing information (e.g., location description was too vague or could not be geocoded) or failures of trip logic.

In addition to basic data cleaning and standard tests of trip logic, certain special treatments of the data were undertaken to facilitate data weighting and analysis, which are described as follows:

Imputation of unknown party size. Intercept surveys were conducted at each special generator with one individual in a travelling party. While the survey gathered the demographic details and trip characteristics associated with the individual respondent, each survey may be considered to represent the entire travelling party (with the exception of the age/gender demographics). Therefore it was important to know the size of the travelling party, including both the number of intercity travellers in the party, as well as the number of 'escorts' or 'supporters' in the travelling party who may have picked up or dropped off the intercity traveller(s) at the transportation terminal.

For the rail and bus terminals, in instances where the number of intercity travellers and/or number of escorts/supporters was not known due to refusal or provision of poor information, imputation may have

been undertaken to fill in the unknown party size with the average for the direction of intercity travel in question (arriving in the NCR or departing the NCR) for cases with the same mode of travel.

For the airport survey instruments, the number of persons travelling together locally was not asked for certain modes such as urban transit and the airport shuttle, but was asked for other modes such as auto driver and auto passengers. In this case, the travelling party size ascribed was the average travelling party size for the given direction of intercity travel computed across all other modes (based on cases for which travelling party size was known).

Imputation of unknown trips for local escorts/supporters. Each trip to or from the NCR made by an intercity traveller via the terminal may generate either a one-way local trip to the terminal, or a one-way local trip from the terminal, or in the case where the intercity traveller is brought to or from the terminal by a local supporter, the intercity travel would thus generate both a local trip to and a local trip from the terminal.

In instances where a supporter was surveyed, his/her survey includes information on both the trip to and the trip from the terminal. In instances where an intercity traveller was surveyed, *and that intercity traveller was picked up or dropped off by one or more supporters*, the intercity traveller was not asked about the trip by the supporter(s) before being picked up or after being dropped off, since they would not necessarily know anything about the supporter's local trip, as they did not share it with them. In order to provide a better representation of the volume of trips and the modes of travel to/from the terminal, in such instances, the 'missing' trip's mode of travel and trip end other than the terminal were imputed with the known information for the shared trip.

For a missing supporter's trip to the terminal, the origin was presumed to be the destination of the known trip from the terminal. For a missing supporter's trip to the terminal, the destination was presumed to be the origin of the known trip from the terminal. It should be noted that this is a reasonable though crude imputation method. Given the small sample sizes for some generators, it was nevertheless considered preferable to randomly ascribing the origins or destinations for the 'missing' trips. Missing trip times were also imputed using travel durations obtained from Google's Map Directions API, using trip origins, destinations, and primary mode of travel as inputs to the API.

There are two exceptions to this method:

- When an intercity traveller *departing the NCR* was served by a taxi, no attempt was made to impute the trip from the generator by the taxi driver. Taxis that bring passengers to the airport are generally not allowed to pick-up passengers there, with the latter privilege reserved exclusively for a contracted fleet.[4] Taxis with passenger pick-up privileges could pick up an intercity traveller who has just arrived in the NCR (and who also had a chance of being surveyed). Therefore, this subsequent trip by the taxi driver would be represented by the surveys of intercity travellers arriving in the NCR (and would not need to be imputed as part of the survey records for intercity travellers departing the NCR). Trips of empty taxis that do not include intercity travellers are not represented in the survey results.
- When an intercity traveller *arriving in the NCR* was served by a taxi, no attempt was made to impute the trip to the generator by the taxi driver. As discussed above, it is not necessarily the case that the taxi driver would have been serving a passenger departing the NCR before picking

[4] At the time of the surveys.

up the intercity arrival: a proportion of trips to the terminal would likely be in empty taxis dispatched to the terminal to handle the arrivals of incoming trains or buses. However, there was no basis with which to know what the proportion of full-to-empty taxis is, and no basis to impute the previous origins for empty-taxi trips.

Calculation of different types of party members. As each survey may represent a travelling party with multiple people and different compositions of intercity travellers and escorts/supporters in the trip to and the trip from the terminal, the survey answers were used to compute the number of each type of traveller who travelled locally to and/or from the terminal, including the following:

- arrive party size travelling to the terminal (total individuals involved in a local trip to the terminal, including escorts/supporters and intercity travellers but excluding taxi drivers);
- number of intercity travellers dropped off;
- number of intercity travellers involved (whether picked up or dropped off);
- number of escorts/supporters involved, if applicable;
- number of intercity travellers picked up; and
- depart party size travelling from the terminal (total individuals involved in a local trip from the terminal, including escorts/supporters and intercity travellers but excluding taxi drivers).

These variables can be used in conjunction with the base data weights for different analytical purposes.

It may be noted that, for trips shared with a taxi driver, the taxi driver is *not* counted as a supporter when computing the size of the local travelling party arriving at or departing the terminal. Unlike other supporter trips, taxi driver trips to or from the terminal without an intercity traveller as a passenger are not counted as additional local trips generated by the intercity traveller. For supporters, we assume a 'solo'[5] local trip to (or from) the terminal before (or after) the intercity travellers have been picked up (or dropped off), and we impute some limited trip details for this trip – but for taxi drivers, we assume that if they dropped off an intercity traveller at the terminal, they may then pick up a different intercity traveller before leaving the terminal (i.e., the taxi's trip to and the taxi's trip from the terminal are generated by different intercity travellers, both of whom have the potential to be captured in the survey). This may not always be the case for pick-ups, where the taxi may arrive at the terminal empty in order to service a wave of intercity travellers from incoming flights, trains or buses or for drop-offs where certain taxis are not allowed to pick up passengers (e.g., at the airport); however, there is no basis with which to impute anything about such empty-taxi trips and, again, taxi pick-ups and drop-offs at the terminal must be handled separately in any event, as they are for different intercity travellers.

Treatment of private automobile trips. The survey asked respondents to identify if they were a car driver or a car passenger. Since surveys are considered to represent the entire travelling party, which may be more than one person—and are weighted proportionate to the number of people in the travelling party—this can lead to some challenges in analysing the data: while interviewers made efforts to approach individuals at random, there is no guarantee that the survey represents a random selection among the drivers and passengers (particularly since individuals under the age of 16 were never approached to participate in the survey). Also, at airport curbside, interviewers were most likely to complete the survey with auto drivers who were there to pick up the arriving intercity travellers who would then be their passengers, than with those passengers themselves. Analysis of the data as they

[5] By 'solo trip', we mean that the local supporters were travelling without intercity travellers. In many cases, there is only one local supporter, but in some cases, more than one local supporter travelled together on the 'solo' trip.

were captured may be undertaken by grouping the responses of "auto driver" and "auto passenger" simply as "private auto" (otherwise, to use the original responses as-is would provide a skewed picture of the proportions of auto driver and auto passenger trips).

However, it is also useful to be able to estimate the numbers of auto drivers and auto passengers separately. To facilitate this kind of analysis, the data deliverable has been set up with tables that, by linking to the main survey response table, may be used to 'split' the records and the data weights to create one version of the record representing the auto driver and a second version of the record representing the auto passengers. Other methods to estimate this information may be possible (e.g., by undertaking calculations with the base weight and party size), however, this method is relatively simple to execute in a relational database.

Imputation of Depart Times and Next Destination Arrival Times. Terminal departure times were estimated from the actual survey intercept time plus an offset for wait times (whether local escorts/supporters' wait times for intercity travellers they were picking up, or the intercity travellers' wait times for intercity travel). Next destination arrival times were imputed from the departure time plus estimated trip durations obtained from Google's Map Directions API using the travel mode, time of travel, origin location and destination location.

2.6. Data Weighting

The transportation terminals survey dataset comprises 2,107 surveys obtained for four key transportation terminals in the National Capital Region. These represent approximately 17,125 intercity trips made to and from the NCR by air, rail, or intercity bus, as well as the associated local travel to and from the terminals.

Section 2.2 noted certain limitations to the data, as a function of the survey design. To address these, two different sets of expansion weights were developed:

- The first set of weights is for use in analysing certain questions for which it may be of interest to analyse only surveys completed with intercity travellers. These weights may be used for analysing certain data (age, gender, home location, frequency of use of airport) for the subset of surveys completed with intercity travellers.
- The second set of weights is for use in analysing questions applicable to all surveys, including surveys completed with escorts, supporters and those with business at the airport. This second set of weights may be used to analyse any questions that represent the entire travelling party, including the characteristics of trips to and from the terminal.

The derivation of these weights is described below. The two sets are referred to as "Version 1" and "Version 2" weights, respectively.

2.6.1. Version 1 Base Weights (Surveys Completed Directly with Intercity Travellers)

The survey data were weighted against average daily weekday arrivals and departures sourced for each terminal, using the total number of intercity travellers (i.e., excluding any escorts/supporters on local trips) represented by each survey as the basis for developing the expansion weights.[6]

[6] i.e., the basis of weighting is the number of travellers represented by each survey, and not the number of surveys completed.

The average weekday arrivals and departures control data were based on information provided by terminal authorities as follows:

- **Ottawa International Airport:** total monthly volume of traveller arrivals and departures for October and November 2013, apportioned to weekday vs. weekend travel according to the number of flights arriving and departing on weekdays vs. weekends, and averaged to daily traveller volumes based on the number of weekdays during this period.
- **Both train stations:** total monthly volume of traveller arrivals and departures for October and November 2013, apportioned to weekdays based on the understanding that 81% of travel is on weekdays, and averaged to daily traveller volumes based on the number of weekdays during this period.
- **Greyhound Bus Station:** total monthly weekday volume of traveller arrivals and departures for October and November 2013, averaged to daily traveller volumes based on the number of weekdays during this period.

It may be noted that surveys were generally not conducted with travellers who were only at the terminal to transfer planes or to transfer buses. Transfers are less likely at the VIA rail train stations, as through-trips on the Montréal-Toronto corridor would not usually require passengers to leave the train. If any surveys with intercity-transfer travellers were identified in the data review, they were removed. As neither the airport authority nor the bus terminal contacts were able to provide information on the number or percentages of travelers who transferred at either terminal, it was not possible to adjust the arrival/departure totals when developing the data weights. Depending on the proportion of travellers transferring rather than having the NCR as their actual origin or final destination, the weighted data may somewhat over-represent intercity travelers with local travel.

The initial data expansion was conducted on only those survey interviews completed with intercity travellers. The development of these weights is presented in the first few columns of the table in Exhibit 2-4.

This initial base weight was retained for use in analysing survey questions which may benefit from the analysis of only those surveys completed by intercity travellers. This weight may be useful for analysis of questions such as age, gender, home location and frequency of use of airport, to better understand the characteristics of just intercity travellers alone, without the confounding influence of the answers to the same questions provided by local escorts/supporters.

It may be noted that since Version 2 of the weighting scheme described in the next section was developed to address the sampling bias introduced by surveying escorts who were at the terminals to pick up or drop off intercity travellers (as noted in Section 2.2), filtering to just intercity travellers with the Version 2 weights would yield results biased to the results of intercity travellers who were not accompanied by local escorts/supporters. **Users of the data are reminded that care should be exercised in selecting which weight to employ when analysing different questions.**

2.6.2. Version 2 Base Weights (All Surveys)

As has been noted, at the airport, there were three distinct survey locations: departures lounge, arrivals lounge and curbside. While both arriving and departing travellers and their escorts/supporters could have been surveyed curbside, in practice, most of the surveys completed curbside were with escorts of arriving travellers who had more time to participate while waiting, while very few were completed with escorts of departing travellers, and very few were completed with intercity travellers without

escorts/supporters, with the latter two groups less likely to spare the time to participate. As a result, the proportions of surveyed travelling parties with and without escorts/supporters are unbalanced and are biased towards trips involving escorts. While the surveys completed at other terminals were completed at various locations throughout the terminal, nevertheless similar biases may exist if escorts/supporters were either more or less available to survey than the intercity travellers themselves.

Therefore, the initial expansion was conducted on only surveys completed directly with intercity travellers as described in the preceding section. Then, for each terminal and travel direction, the weighted data were used to establish the natural incidence of *travelling parties* involving escorts/supporters. Using this incidence, the weights for all survey interviews that involved escorts/supporters (both those completed with escorts/supporters and those completed with intercity travellers) were calculated. After this, an adjustment factor was applied to all weights to ensure that the total volumes of intercity travellers still matched the estimated daily average intercity arrivals and departures.

This approach ensured that the weighted dataset including all surveys reflects the natural incidence of surveys with local escorts/supporters (even though the survey administration method created bias towards intercity travel including supporters).

A small number of surveys were with individuals who had business at the generator that did not involve intercity travel (either as a traveller themself or picking up/dropping off a traveller), thus the reference data on estimated daily arrivals or departures does not apply to them. In the absence of specific reference data that could be used to weight these individuals, the base data expansion weight applied to these survey records was simply an average of the weights of all surveys involving intercity arrivals and departures. This approach assumes that the overall likelihood of surveying such individuals with business at the generator would be roughly the same as the likelihood of surveying intercity travellers or their escorts/supporters.

The initial base weighting calculations are summarized in Exhibit 2-4. Key points to note:

- For the rail and bus terminals, the values of the arrival weights are higher than the values of the departure weights, again reflecting the fact that arriving travellers wanted to get to their final destination without delay (and so were less likely to stop to participate in a survey) while departing travellers tended to be waiting for their onward trip and so had time for the survey.
- For the airport, the arriving and departing weights are almost identical, which also reflects the unique security and other dynamics associated with air travel (including the fact that a number of arrivals had time for the survey while waiting for their baggage and/or their local transport).
- The Version 1 arrival weights range from 7.0 at Fallowfield station and 11.6 at the airport, to 27.4 at the Ottawa train station and 29.8 at the bus terminal.
- The Version 1 departure weights range from 1.1 at Fallowfield station, 3.1 at the Ottawa train station and just under 5 at the bus terminal, to 12.7 at the airport.
- The version 2 weights drop significantly for intercity arrivals who had a local escort. For example, the version 2 weight for escorted intercity arrivals at the bus station is 4.4, compared with the version 1 weight of 29.8. This reflects the fact that Version 2 weights include all surveys which involved a local supporter (including interviews conducted with local supporters and those with business at the terminal, as well as those conducted directly with an intercity traveller), whereas the Version 1 weights include only surveys for which the interview was conducted directly with

an intercity traveller. The differences between Version 1 and Version 2 of the weights are small for departing travellers who did not have a local escort as well as for arriving traveller who did not have a local escort. The only reason for differences in Version 1 and Version 2 weights for these cases is that the scaling factors applied to weights for the other surveys which included escorts were based on the natural incidence of *travelling parties* including escorts, rather than the total volume of travellers associated with those parties. This required a final recalibration of all weights so that weighted counts matched the total average daily volumes at each terminal.

Exhibit 2-4: Transportation Terminals – Calculation of Base Weights

			Version 1 Weights			Version 2 Weights			
Special Generator/ Direction of Intercity Travel/ Survey Respondent Type	**Intercity traveller had local escort for pick-up or drop-off?**	**Est. Avg. Daily Arr. Or Dep.**	**Surveys**	**Intercity travellers rep. by surveys**	**Version 1 Initial Base Weight for surveys with intercity travellers only**	**Total surveys that include escorts**	**Scaling factor for surveys with escorts**	**Version 2 Prelim. Base Weight (all surveys)**	**Version 2 Initial Base Weight for All Surveys recal.'d to match avg. daily Arr. or Dep.**
Airport									
Arrivals									
Intercity Arrival to NCR	No	5,926	259	361	11.6398			11.6398	11.5654
Intercity Arrival to NCR	Yes		111	148	11.6398	404	0.2748	3.1981	3.1776
Serve Passenger Arr. To NCR	Yes		293	403				3.1981	3.1776
Departures									
Intercity Departure from NCR	No	5,952	213	276	12.6520			12.6520	12.6217
Intercity Departure from NCR	Yes		150	194	12.6520	158	0.9494	12.0114	11.9826
Serve Passenger Dep. NCR	Yes		8	12				12.0114	11.9826
Other									
No Intercity Travellers*	No		16	0	12.1411			12.1411	12.1411
Ottawa Train Station									
Arrivals									
Intercity Arrival to NCR	No	1,314	20	28	27.3797			27.3797	26.5571
Intercity Arrival to NCR	Yes		19	20	27.3797	69	0.2754	7.5393	7.3128
Serve Passenger Arr. To NCR	Yes		50	58				7.5393	7.3128
Departures									
Intercity Departure from NCR	No	1,351	274	318	3.0861			3.0861	3.0917
Intercity Departure from NCR	Yes		108	120	3.0861	118	0.9153	2.8246	2.8296
Serve Passenger Dep. NCR	Yes		10	10				2.8246	2.8296
Other									
No Intercity Travellers*	No		4	0	5.3366			5.3366	5.3366
Fallowfield Train Station									
Arrivals									
Intercity Arrival to NCR	No	265	6	8	6.9707			6.9707	6.4149
Intercity Arrival to NCR	Yes		28	30	6.9707	58	0.4828	3.3652	3.0968
Serve Passenger Arr. To NCR	Yes		30	39				3.3652	3.0968

Special Generator/ Direction of Intercity Travel/ Survey Respondent Type	Intercity traveller had local escort for pick-up or drop-off?	Est. Avg. Daily Arr. Or Dep.	Version 1 Weights: Surveys	Version 1 Weights: Intercity travellers rep. by surveys	Version 1 Initial Base Weight for surveys with intercity travellers only	Version 2 Weights: Total surveys that include escorts	Version 2 Weights: Scaling factor for surveys with escorts	Version 2 Prelim. Base Weight (all surveys)	Version 2 Initial Base Weight for All Surveys recal.'d to match avg. daily Arr. or Dep.
Departures									
Intercity Departure from NCR	No	268	115	138	1.0834			1.0834	1.0817
Intercity Departure from NCR	Yes		98	109	1.0834	100	0.9800	1.0617	1.0601
Serve Passenger Dep. NCR	Yes		2	3				1.0617	1.0601
Other									
No Intercity Travellers*	No		9	0	1.8938			1.8938	1.8938
Greyhound Bus Station									
Arrivals									
Intercity Arrival to NCR	No	1,015	16	20	29.8483			29.8483	28.0614
Intercity Arrival to NCR	Yes		13	14	29.8483	82	0.1585	4.7320	4.4488
Serve Passenger Arr. To NCR	Yes		69	88				4.7320	4.4488
Departures									
Intercity Departure from NCR	No	1,035	115	146	4.9834			4.9834	4.9863
Intercity Departure from NCR	Yes		55	62	4.9834	67	0.8209	4.0909	4.0933
Serve Passenger Dep. NCR	Yes		12	13				4.0909	4.0933
Other									
No Intercity Travellers*	No		4	0	8.6070			8.6070	8.6070

*For surveys that did not involve intercity travellers, the base weight was assigned as the average of the weights for all surveys involving intercity travellers. E.g., for the Airport, the weight for surveys with intercity arrivals was approximately 11.64, the weight for surveys with intercity departures was approximately 12.65, and the average of the weights of the individual surveys for both arrivals and departures was 12.14. In the absence of reference information on the daily number of visitors that had business at the airport that did not involve intercity travellers, the average weight of 12.14 for all other surveys was used.

2.6.3. Time-of-Day Adjustments

Final weighting adjustments were made to both Version 1 and Version 2 weights to better represent trip volumes by time of day.

While efforts were made to schedule survey shifts, and set shift targets, to obtain a representative sample of surveys throughout the operational day for each terminal, the surveys collected may not necessarily reflect the distribution of arriving or departing intercity travellers by time of day. Therefore adjustment factors to reflect time of day were applied. Reference data on traveller volumes by time of day were not available. However, schedule information was available on the number of flights and trains arriving and departing the airport and the train stations. This information was not available for the bus terminal. The number of arriving/departing flights/trains may not necessarily represent the distribution of total travellers across the operational day. However, with the assumption that transport operators will endeavour to set schedules to maximize the number of travellers on each flight/train, then it can serve as a reasonable proxy that is preferable to no time-of-day adjustment at all. It may be noted that this approach also assumes that the capacity of the planes and trains is generally similar throughout the day, which may not or may not be the case.

The weighting adjustments for the airport and train stations for each version of the initial base weights are detailed in Exhibit 2-5 and Exhibit 2-6. These weighting adjustments were applied to the initial base weights to arrive at the final base weight for each survey case, with a final calibration to ensure that the sum of weights matched the total volume of arrivals and departures at each terminal (i.e., to address the lack of early morning surveys at Fallowfield Train Station). As not all generators were surveyed on every day of the week, no attempt was made to make further adjustments to the weights by day of week.

Exhibit 2-5: Transportation Terminals – Time-of-Day Calibrations, Version 1 Base Weights – Only Surveys Completed Directly with Intercity Travellers (for analysis of selected questions)

	Arrivals				Departures			
Intercept Time Period	% of Arrivals	Sum of Initial Base Arrival Weights	% of Base Weights	Version 1 Base Weight Adjust. Factor	% of Depart.	Sum of Initial Base Depart Weights	% of Base Weights	Version 1 Base Weight Adjust. Factor
Airport								
Early / AM Peak: 05:00 to 9:29	13.2%	777	13.1%	1.008	31.4%	1,207	20.3%	1.550
Interpeak: 9:30 to 15:29	39.1%	3,523	59.4%	0.657	43.4%	2,295	38.6%	1.126
PM Peak: 15:30-18:29	10.3%	405	6.8%	1.516	13.1%	895	15.0%	0.874
Evening / late night: 18:30-02:59	37.4%	1,222	20.6%	1.811	12.0%	1,555	26.1%	0.459
Ottawa Train Station								
Early / AM Peak: 05:00 to 9:29	7.1%	110	8.3%	0.857	27.3%	120	8.9%	3.062
Interpeak: 9:30 to 15:29	32.1%	383	29.2%	1.102	40.9%	428	31.7%	1.293
PM Peak: 15:30-18:29	14.3%	274	20.8%	0.686	27.3%	732	54.2%	0.503
Evening / late night: 18:30-02:59	46.4%	548	41.7%	1.114	4.5%	71	5.3%	0.865
Fallowfield Train Station								
Early / AM Peak: 05:00 to 9:29	8.3%	n/a	0.0%	n/a	25.8%	61	22.7%	1.138
Interpeak: 9:30 to 15:29	25.0%	42	15.8%	1.583	41.9%	104	38.9%	1.079
PM Peak: 15:30-18:29	20.8%	132	50.0%	0.417	22.6%	88	32.8%	0.689
Evening / late night: 18:30-02:59	45.8%	91	34.2%	1.340	9.7%	15	5.7%	1.707

Exhibit 2-6: Transportation Terminals – Time-of-Day Calibrations, Version 2 Base Weights – All Surveys

	Arrivals				Departures			
Intercept Time Period	% of Arrivals	Sum of Initial Base Depart. Weights	% of Base Weights	Version 2 Base Weight Adjust. Factor	% of Depart.	Sum of Initial Base Arrival Weights	% of Base Weights	Version 2 Base Weight Adjust. Factor
Airport								
Early / AM Peak: 05:00 to 9:29	13.2%	743	12.5%	1.054	31.4%	1,202	20.2%	1.557
Interpeak: 9:30 to 15:29	39.1%	3,356	56.6%	0.690	43.4%	2,310	38.8%	1.119
PM Peak: 15:30-18:29	10.3%	552	9.3%	1.112	13.1%	878	14.8%	0.890
Evening / late night: 18:30-02:59	37.4%	1,276	21.5%	1.735	12.0%	1,561	26.2%	0.457
Ottawa Train Station								
Early / AM Peak: 05:00 to 9:29	7.1%	106	8.1%	0.884	27.3%	120	8.9%	3.076
Interpeak: 9:30 to 15:29	32.1%	399	30.4%	1.058	40.9%	443	32.8%	1.249
PM Peak: 15:30-18:29	14.3%	277	21.1%	0.677	27.3%	720	53.2%	0.512
Evening / late night: 18:30-02:59	46.4%	532	40.5%	1.148	4.5%	69	5.1%	0.886
Fallowfield Train Station								

	Arrivals				Departures			
Intercept Time Period	% of Arrivals	Sum of Initial Base Depart. Weights	% of Base Weights	Version 2 Base Weight Adjust. Factor	% of Depart.	Sum of Initial Base Arrival Weights	% of Base Weights	Version 2 Base Weight Adjust. Factor
Early / AM Peak: 05:00 to 9:29	8.3%	n/a	0.0%	n/a	25.8%	60	22.3%	1.155
Interpeak: 9:30 to 15:29	25.0%	50	18.8%	1.331	41.9%	103	38.4%	1.091
PM Peak: 15:30-18:29	20.8%	116	43.7%	0.476	22.6%	90	33.6%	0.671
Evening / late night: 18:30-02:59	45.8%	99	37.5%	1.223	9.7%	15	5.6%	1.727

2.6.4. Use of the Base Data Weights

Each survey represents a travelling party that may be composed of different numbers of people arriving locally to the terminal, departing on intercity travel from the terminal, arriving from intercity travel to the terminal, and/or departing locally from the terminal. For analysis of the data, the base weight for each survey case may be combined with the appropriate party size for the direction and type of travel to obtain the total person-trips represented.

The party sizes for different sets of travellers and types and directions of travel are stored in the survey dataset in the following set of variables:

Intercity Travellers Involved:	# of intercity travellers represented by the survey (occasionally zero)
Supporters Involved:	# of local escorts/supporters represented by the survey (if any)
Arrive Party Size:	# arriving at terminal via local means (intercity travellers + escorts/supporters)
Intercity Travellers Dropped Off:	# of intercity travellers arriving locally at the terminal for intercity departure
Intercity Travellers Picked Up:	# of intercity travellers departing locally from the terminal after intercity arrival
Depart Party Size:	# departing terminal via local means (intercity travellers + escorts/supporters)

When using either Version 1 or Version 2 base weights, calculations should take into consideration which version of the base weight is most appropriate to use for the question of interest, and which party size multiplier (persons arriving, intercity travellers, supporters, persons departing, etc.) is most appropriate to use for the type (local, intercity) and direction of travel (departing, arriving).

For convenience in the analysis of the data, a few variables with variations of Version 2 of the expansion weights have been developed using the Version 2 base weight multiplied by the number of travellers of interest as follows:

Weight Intercity Travellers (excludes any supporters who might have taken the intercity traveller to/from the terminal):

= Base Weight x Intercity Travellers Involved

Weight Person Trips To Terminal (including supporters):

= Base Weight x Arrive Party Size

Weight Person Trips From Terminal (including supporters):

= Base Weight x Depart Party Size

For example, for a survey that involved a local supporter driving to the airport to pick up two intercity travellers arriving on an inbound flight, with the survey intercept conducted during the interpeak period from 9:30 a.m. to 3:30 p.m., the Version 2 weights to use for analysing trip data might be as follows:

Base Weight Version 2 = 2.1928

Weight Intercity Travellers = 2.1928 x 2 intercity travellers = 4.3857

Weight Person Trips To Terminal = 2.1928 x 1 supporter = 2.1928

Weight Person Trips From Terminal = 2.1928 x (1 supporter + 2 intercity travellers) = 6.5786

In other words, once weighted, the given survey completion represents the equivalent of approximately 4.4 intercity travellers, 2.2 local person-trips to the terminal, and 6.6 local person-trips from the terminal.

If, for example, a survey was conducted for a party of two intercity arrivals who did not have a local supporter, and who left the airport via taxi during the same time frame as the above example, the weights would be as follows:

Base Weight Version 2 = 7.9813

Weight Intercity Travellers = 7.9813 x 2 intercity travellers = 15.9626

Weight Person Trips To Terminal = 7.9813 x no supporters = none

Weight Person Trips From Terminal = 7.9813 x 2 intercity travellers = 15.9626

In other words, once weighted, the given survey completion represents approximately 16.0 intercity travellers, no local person trips to the terminal, and approximately 16.0 local person-trips from the terminal (excluding the taxi driver).

It may be noted that the above examples show weights for analysis of local trip data, which is of greatest interest in this research. If, however, intercity travellers' demographics were to be analysed, in order to restrict the analysis to just those surveys completed directly with intercity travellers (i.e., excluding interviews conducted with supporters at curbside, whose demographics would not necessarily reflect those of the travellers they are picking up or dropping off), while retaining an appropriate balance of travelling parties both with and without the involvement of local supporters, Version 1 of the weights would need to be employed, with the appropriate factor for the number of travellers in the travelling party. For example, a survey representing two intercity travellers would need to be weighted as follows:

Weight Intercity Travellers Demographics = Base Weight Version 1 x 2 intercity travellers

= 7.6527 x 2 = 15.3054

In other words, once weighted, the survey completion would represent approximately 15.3 intercity travellers. In the two earlier examples, this same weight would be applied equally to the survey that represented two intercity travellers and a local supporter as to the survey that represented two intercity travellers with no local supporter. This weight should not be used for the analysis of local trips, however, as the sample size is smaller than when surveys with supporters are included.

2.7. Presentation of the Survey Results

Most of the survey results are presented as percentage distributions by special generator, expanded according to the total size of the traveller population arriving from and departing on trips involving the transportation terminals.

The following general approach has been taken in presenting the results:

- The survey results are usually presented overall and by terminal.
- Certain results are presented for only intercity travellers, whereas others are presented for all persons covered by the survey (including escorts/supporters and those with business at the terminals).
- The survey results are typically presented for person-trips, with the persons represented by those trips being all intercity travellers and their supporters (while taxi drivers, limousine drivers, and bus drivers are not included in the person-trip counts).
- Selected results are presented as vehicle-trips, which may include more than one person.
- Selected results are presented for intercity travellers who live in the NCR and who live outside the NCR.

In interpreting the results, readers should be aware that the data are based on the following sample sizes, with expanded numbers of persons as follows:

Exhibit 2-7: Sample Sizes, Expanded Weights, and Estimated Sampling Errors

	Macdonald-Cartier International Airport	Ottawa Train Station	Fallowfield Train Station	Greyhound Bus Station	Survey Total
V1 Base Weights: weights for surveys completed directly with intercity travellers; used for analysing selected questions					
Expanded Weights					
Intercity travellers	11,878	2,666	532	2,049	17,125
Survey sample size (n)	n=733	n=421	n=247	n=199	n=1,600
Sampling error**	±3.5%	±4.4%	±4.6%	±6.6%	±2.3%
V2 Base Weights: weights for all surveys; used for most analysis, including trip characteristics					
Expanded Weights					
Travelling parties	9,035	2,215	463	1,696	13,409
Intercity travellers	11,878	2,666	532	2,049	17,125
Escorts / supporters / business at terminal	4,424	964	354	787	6,529
Total persons represented*	16,302	3,630	887	2,836	23,655
Survey sample size (n)	n=1,050	n=485	n= 288	n=284	n=2,107
Sampling error**	±2.8%	±3.9%	±3.6%	±5.3%	±2.0%

* Includes intercity travellers, escorts, and those with business at the terminal, but not terminal workers.
** Estimated sampling error at a 95% confidence level (19 times out of 20) based on number of travelling parties surveyed (estimates only, not adjusted for the effects of over-/under-sampling and data weighting).

3. Survey Results

3.1. Understanding the Survey Data

3.1.1. Types of Travellers Represented

In interpreting the survey results, it is important to understand that each survey represents an entire travelling party. The surveys collected represent the travel of:

- intercity travellers arriving in the NCR (including both residents and non-residents of the NCR);
- intercity travellers leaving the NCR (including both residents and non-residents of the NCR);
- local escorts who picked up and dropped off intercity travellers at the terminals; that is, people who accompanied the travellers on the local trip to or from the terminal (only private automobile escorts and escorts who were fellow passengers on transit or other modes, i.e., excluding taxi drivers and bus drivers);
- supporters who travelled to the terminal to meet or see off an intercity traveller, but who were not accompanied by intercity travellers in their local travel to/from the terminal (i.e., did not pick them up or drop them off), for example, someone who went to the airport to visit an intercity traveller who was on a layover between flights, or family members who drove to the airport to see off an intercity traveller who was escorted in a separate vehicle; and
- the occasional individual who has business at the terminal (with no associated intercity travel by themselves or anyone else).

Certain questions, e.g. those that provide a profile of intercity travellers, are analysed with a subset of the dataset that includes only surveys completed directly with the intercity traveller. Readers are referred to the discussion of the survey design and data weighting in Sections 2.1 and 2.6 of this report for an explanation of the rationale for this approach.

Most other questions, e.g., those that represent the entire travelling party regardless of whether the survey was completed with an intercity traveller or a supporter, are analysed using the full dataset.

It may be noted that there is overlap between the travel represented by this Transportation Terminals Survey and the travel represented by the 2011 NCR Household Origin-Destination Survey, namely that the trips of local residents undertaking intercity travel via the terminals and the trips of local escorts picking up or dropping off intercity travellers are represented in both surveys. However, as with the other Special Generator Surveys, the Transportation Terminals Survey provides greater numbers and more detail on SGS activity than does the 2011 NCR survey. It may also be noted that the Transportation Terminals Survey does not capture terminal workers' commute trips to and from the terminals surveyed.

3.1.2. Types of Trips Represented

'Local trips' refer to trips made using local transportation options (i.e., excluding air, rail, and intercity bus), with one of the trip ends being one of the transportation terminals surveyed. In most cases, these trips are within the NCR, but sometimes they have an origin or destination further afield (e.g., an individual who drives from a location outside the NCR in order to use the airport).

'Intercity trips' refer to trips made using intercity travel modes, including air, rail, and intercity bus, with one of the trip ends being one of the transportation terminals surveyed. For virtually all of these trips, one of the intercity trip ends is outside the NCR. The rare exception would be someone who uses an

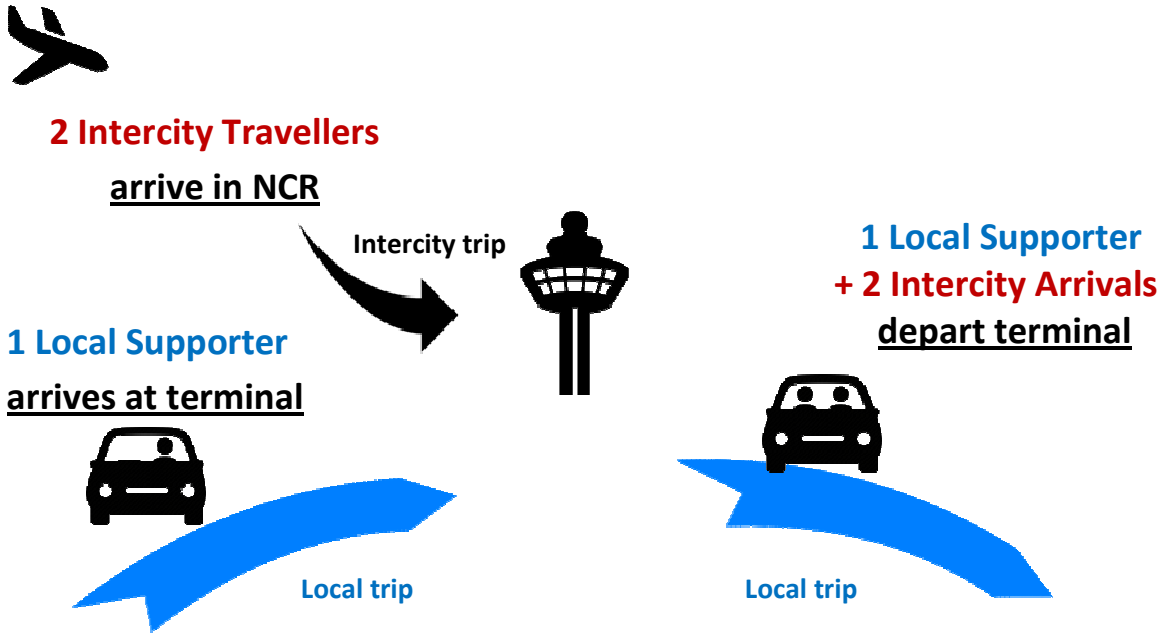
intercity bus to travel to/from a destination within the NCR (i.e., some intercity bus services have stops within the NCR). Intercity transfers at the local terminal are not represented: if surveys were identified during data review as having been completed with respondents who did not make a local trip (i.e., who simply were waiting to transfer to a different train, bus, or flight to continue their intercity journey to an external final destination), they were removed.

A single survey could represent multiple intercity and local trips, including:

- either
    - intercity trip(s) *to* the NCR made by one or more intercity travellers, or
    - intercity trip(s) *from* the NCR made by one or more intercity travellers;
- and either
    - one-way local trip(s) *from* the terminal made by one or more intercity travellers *arriving* in the NCR, or
    - one-way local trip(s) *to* the terminal made by one or more intercity travellers *departing* the NCR;
- and/or if applicable, local trips *both to and from* the terminal made by a local escort or supporters who picked up or dropped off intercity travellers or as made by individuals with business at the terminal.

An example of the complex set of trips represented by a single survey is illustrated in Exhibit 3-1. The diagram considers two intercity travellers who are met at the airport by a local supporter. In this case, there are two local trips: one made by the local supporter alone to the airport, and one made by that individual, who is now escorting the two travellers from the airport. Both local trips are made by automobile.

Exhibit 3-1: Example of Local and Intercity Trips Captured by a Single Survey



3.2. Traveller Demographics

3.2.1. Intercity Travellers

Exhibit 3-2 outlines the demographics of the intercity travellers surveyed at each special generator, including both NCR residents and non-residents. This excludes surveys completed with local escorts and those with business at the generator but no associated intercity travel. 2011 Census distributions for the Ottawa-Gatineau Census Metropolitan Area are included for reference.

It may be noted that the survey only asked for the age and gender of the survey respondent but did not ask for the ages and genders of others in the travelling party. Also, respondents under 16 years of age were not approached to participate in the survey, so the results cannot represent the demographics of children who travelled. Therefore, these results should be interpreted with caution. For future such surveys, it may be advisable to gather basic demographics of all persons in the travelling party, in order to provide a more accurate and complete picture of traveller demographics.

Exhibit 3-2: Demographics –Intercity Travellers *

Age / Sex	16-24	25-34	35-44	45-54	55-64	65-74	75+	Sex Total
2011 Census – Ottawa Gatineau CMA								
Male	8.4%	7.9%	8.3%	9.7%	7.3%	4.0%	2.7%	**48.2%**
Female	8.3%	8.3%	8.8%	10.1%	7.6%	4.5%	4.2%	**51.8%**
Age Group Total	**16.7%**	**16.2%**	**17.1%**	**19.8%**	**14.9%**	**8.4%**	**6.9%**	**100.0%**
Survey Average								
Male	6.1%	8.0%	9.3%	10.1%	9.4%	3.5%	0.5%	**46.9%**
Female	9.8%	12.4%	9.2%	10.0%	6.8%	3.8%	1.1%	**53.1%**
Age Group Total	**15.8%**	**20.4%**	**18.6%**	**20.2%**	**16.3%**	**7.2%**	**1.5%**	**100.0%**
Ottawa Airport								
Male	3.4%	8.0%	9.7%	12.0%	11.8%	4.0%	0.3%	**49.2%**
Female	3.6%	11.5%	10.6%	12.9%	7.1%	3.7%	1.3%	**50.8%**
Age Group Total	**7.0%**	**19.5%**	**20.3%**	**24.8%**	**19.0%**	**7.7%**	**1.7%**	**100.0%**
Ottawa Train Station								
Male	8.6%	6.9%	9.7%	6.9%	6.5%	2.5%	0.8%	**41.9%**
Female	18.0%	16.2%	8.8%	3.6%	7.2%	3.5%	0.8%	**58.1%**
Age Group Total	**26.6%**	**23.0%**	**18.5%**	**10.5%**	**13.7%**	**6.1%**	**1.6%**	**100.0%**
Fallowfield Train Station								
Male	10.9%	7.1%	6.0%	5.3%	4.3%	3.1%	1.1%	**37.8%**
Female	16.3%	13.7%	5.7%	6.9%	9.7%	9.1%	0.8%	**62.2%**
Age Group Total	**27.2%**	**20.8%**	**11.7%**	**12.2%**	**14.0%**	**12.2%**	**1.9%**	**100.0%**
Greyhound Bus Station								
Male	16.8%	10.0%	7.6%	5.1%	0.7%	2.0%	0.5%	**42.6%**
Female	33.0%	12.2%	2.7%	2.7%	3.7%	2.9%	0.2%	**57.4%**
Age Group Total	**49.7%**	**22.2%**	**10.3%**	**7.8%**	**4.4%**	**4.9%**	**0.7%**	**100.0%**

*Member of intercity travelling party surveyed. Excludes surveys with escorts/supporters, and those with business at the terminal with no intercity travellers involved.
n=1,582 (surveys completed directly with intercity travellers only). Excludes a small # of cases with unknown age or gender.

Looking at age distributions, the results suggest that:

- older seniors (75+ years of age) are less likely to make intercity trips than younger age cohorts, regardless of mode of travel;
- younger people make up a large proportion of travellers using intercity buses, with half (50%) of those surveyed being 16 to 24 years of age, and another one-fifth (22%) being 25 to 34, for a total of 72% being under 34;
- similarly, over one-quarter of rail passengers surveyed at both rail stations were 16-24 years of age, with another one-fifth being 25 to 34; and
- compared to the general population, the demographics of air travellers show greater proportions for all of the age brackets between 25 and 64 years.

Although benchmark data on intercity travellers are not available from other sources, the age distributions seem generally consistent with informal observations of the users of each mode and with the general tariff structures associated with each mode.

The survey results also suggest:

- the gender balance for air travellers is more or less on par with that for the general population of the NCR, while
- females comprise a slight majority of rail and bus travellers.

Given that only one person in each travelling party completed the survey demographics, the possibility of selection bias does exist, and the results above should be interpreted with caution.

3.2.2. Local Travellers (intercity, local escorts/supporters, those with business at terminal)

Exhibit 3-3 shows the results for the entire survey sample, including intercity travellers, escorts, supporters, and those with business at the terminal. In other words, these demographics may be said to represent the demographics of all local travellers who made trips to and/or from the terminals. Again, the same caveat applies that these results only represent the individuals surveyed, and may not represent everyone who may have accompanied the person surveyed.

While the figures differ somewhat from those presented for intercity travellers alone, the general trends are similar to those observed in the previous section.

Exhibit 3-3: Demographics – Member of Travelling Party Surveyed (Incl. Escort/Supporter Surveys)

Age	16-24	25-34	35-44	45-54	55-64	65-74	75+	Sex Total
Sex								
2011 Census – Ottawa Gatineau CMA								
Male	8.4%	7.9%	8.3%	9.7%	7.3%	4.0%	2.7%	**48.2%**
Female	8.3%	8.3%	8.8%	10.1%	7.6%	4.5%	4.2%	**51.8%**
Age Group Total	**16.7%**	**16.2%**	**17.1%**	**19.8%**	**14.9%**	**8.4%**	**6.9%**	**100.0%**
Survey Average								
Male	7.0%	8.8%	10.1%	10.1%	9.0%	4.0%	0.7%	**49.6%**
Female	10.1%	11.6%	8.6%	9.3%	6.3%	3.3%	1.2%	**50.4%**
Age Group Total	**17.1%**	**20.4%**	**18.7%**	**19.4%**	**15.3%**	**7.2%**	**1.8%**	**100.0%**
Ottawa Airport								
Male	4.4%	9.1%	10.3%	11.7%	10.7%	4.4%	0.6%	**51.1%**
Female	4.6%	11.3%	10.5%	11.7%	6.4%	2.9%	1.4%	**48.9%**
Age Group Total	**9.0%**	**20.4%**	**20.8%**	**23.4%**	**17.1%**	**7.3%**	**2.0%**	**100.0%**
Ottawa Train Station								
Male	7.7%	6.2%	11.1%	7.5%	8.2%	2.9%	1.3%	**44.9%**
Female	18.5%	13.6%	7.1%	4.7%	6.6%	4.0%	0.7%	**55.1%**
Age Group Total	**26.2%**	**19.7%**	**18.2%**	**12.3%**	**14.8%**	**6.9%**	**2.0%**	**100.0%**
Fallowfield Train Station								
Male	12.9%	6.2%	6.3%	9.1%	5.9%	3.3%	0.9%	**44.5%**
Female	14.5%	10.6%	4.2%	9.5%	9.7%	6.2%	0.8%	**55.5%**
Age Group Total	**27.4%**	**16.8%**	**10.5%**	**18.6%**	**15.6%**	**9.5%**	**1.6%**	**100.0%**
Greyhound Bus Station								
Male	18.4%	11.6%	8.4%	5.2%	1.6%	3.3%	0.3%	**48.9%**
Female	27.1%	10.8%	1.8%	2.6%	4.8%	3.5%	0.6%	**51.1%**
Age Group Total	**45.5%**	**22.4%**	**10.2%**	**7.8%**	**6.4%**	**6.8%**	**0.9%**	**100.0%**

n=2,087. Note: Excludes a small number of cases with unknown age and/or gender.

3.3. Intercity Travellers: Home Residence

The following charts in Exhibit 3-4 highlight the hometown geographies of the intercity travellers who used the transportation terminals, while Exhibit 3-5 provides a more detailed breakdown by TRANS District (transportation planning zones within the NCR). The exhibits show the following:

- The expanded numbers represent 17,100 travellers, of whom 11,900 were at the airport, 2,700 were at the Ottawa Train Station, 2,000 were at the bus station, and 500 were at Fallowfield. (All figures are rounded.)
- Not quite half (46%) of users of the intercity passenger travel terminals live in the NCR. Another 6% live in nearby communities outside the NCR. In other words, just over half the travellers are local.
- The NCR-based proportions range from 43% among airport travellers to 51% at the Ottawa Train Station, 53% at the bus station and 54% at Fallowfield train station. The lower airport proportion likely reflects, in part, the range of direct nationwide, cross-border and international connections that are available at this facility which would attract more residents of communities outside the NCR within are with reasonable driving distance. The lower airport proportion also likely reflects the NCR as a destination for tourists and business visitors from across the country (outside the catchment within which automobile or train travel may be convenient) and other countries, i.e., visitors to the NCR may exceed the number of local and nearby residents travelling out of the city.
- Ottawa NCR residents are the greatest users of each terminal, ranging from 38% at the airport to 54% at Fallowfield station. The latter proportion is consistent with the station's location in suburban Ottawa, as well as the fact that the Ottawa train station (which offers the same services) is closer to the Québec NCR. Québec NCR residents make up 5% of airport travellers, 6% of Ottawa train station travellers and 7% of bus station travellers. No Québec NCR residents were observed at Fallowfield station. Note that Québec NCR residents comprise 25% of the population in the NCR but only 11% of intercity travellers who are NCR residents (of all intercity travellers, 5% are Quebec NCR residents, relative to a 46% share for all NCR residents combined).
- Within the NCR, one-fifth (19%) of airport travellers and 16% of bus station travellers resided in the Ottawa Inner Area, which accounted for only 7.0% of the study area's population in 2011.[7] The remaining airport and bus station travellers, and the Ottawa train station travellers, were well distributed throughout the NCR. The Fallowfield train station travellers tended to live in west and southwest Ottawa, as expected, with 13% living in Bayshore / Cedarview and 10% in Kanata / Stittsville. Note that the two train stations largely but not exclusively serve complementary markets, although there is some splitting of the 'markets' between the two (e.g., 6% of Ottawa station users reside in Merivale as do 8% of Fallowfield station users – in this

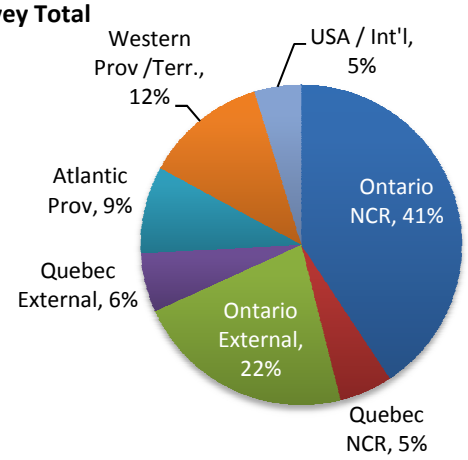
[7] The reasons for these concentrations of intercity bus and air travellers in the Ottawa Inner Area are not explained by the survey data collected. The Ottawa Inner Area may have a high concentration of post-secondary students, a group who may be more likely to undertaken intercity travel if their permanent residence is in another city. The area may have a higher concentration of workers who have the types of jobs that require them to undertake air travel for business or a higher concentration of people within age groups or income brackets that are more likely to undertake air travel for vacations. Without further investigation into the demographics of residents of this area, this is speculative.

case consistent with the approximately mid-way location of this district between the two stations).

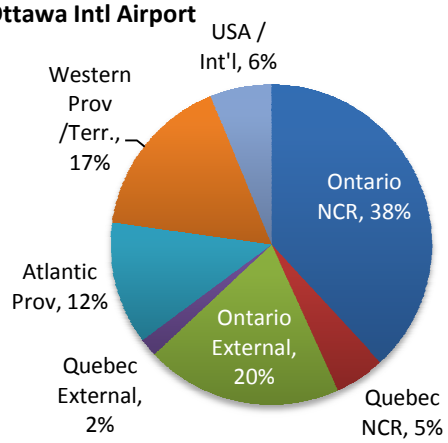
- The proportions of travellers who live in nearby communities range from 2% at the bus station to 6% at the airport, with the two rail stations each recording proportions of 4%. The relative proportions are consistent with the availability of services in nearby communities, noting that the airport in particular serves eastern Ontario, west Québec and parts of upstate New York, and that the intercity trains that serve both rail stations also serve many nearby communities.
- Among the non-local users of rail and bus terminals, Ontario and Québec residents who live over a 90 minute drive away dominate, ranging from 44% at the bus station (23% in Ontario and 21% in Québec), 36% at the Ottawa train station (25% in Ontario and 11% in Québec), and 35% at Fallowfield Station (30% in Ontario and, interestingly, 5% in Québec [which may reflect some rural Québec residents who live west of the urban area, as well as residents of other parts of Québec travelling via rail to visit a destination near Fallowfield Station]).
- Among the non-local users of the airport, locations outside Ontario and Québec dominate, which naturally reflects the convenience of air travel for long-distance journeys.
- Not surprisingly, travellers who live further away from the NCR are most prominent among airport users, comprising one-third (35%) of all airport travellers. The proportions were 8% at the Ottawa Train Station, 7% at Fallowfield Station and 0% at the Greyhound Bus Station.

Exhibit 3-4: Home Residence: Where do Intercity Travellers Call Home?

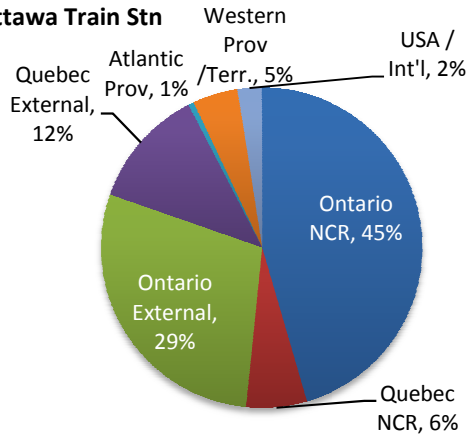
Survey Total



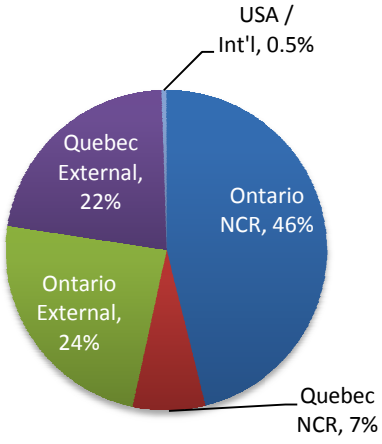
Ottawa Intl Airport



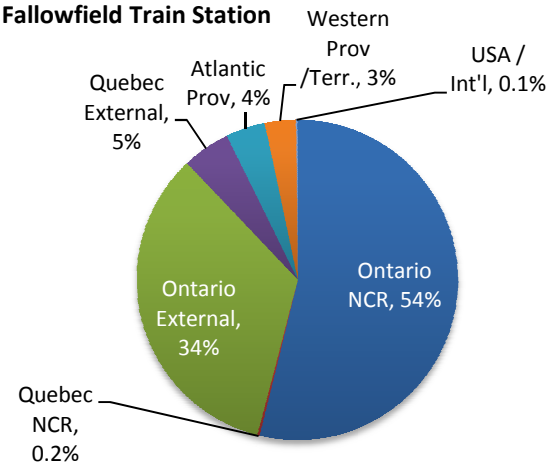
Ottawa Train Stn



Greyhound Bus Stn



Fallowfield Train Station



n=1,600 (surveys completed directly with intercity travellers only)

Exhibit 3-5: Intercity Travellers' Home Residence by TRANS District

		Survey Average	Ottawa Intl Airport	Ottawa Train Stn.	Fallowfield Train Stn.	Greyhound Bus Station
Ottawa NCR Residents		**41%**	**38%**	**45%**	**54%**	**46%**
1	Ottawa Centre	1%	1%	1%	-	2%
50	Ottawa Inner Area	8%	19%	5%	0%	16%
100	Ottawa East	2%	2%	1%	0%	4%
120	Beacon Hill	1%	3%	1%	0%	1%
140	Alta Vista	3%	3%	3%	2%	3%
180	Hunt Club	2%	1%	2%	1%	0%
200	Merivale	5%	3%	6%	8%	7%
240	Ottawa West	2%	2%	2%	6%	2%
260	Bayshore / Cedarview	3%	1%	2%	13%	4%
300	Orleans	4%	5%	4%	-	4%
350	Rural East	0%	2%	0%	-	-
360	Rural Southeast	1%	0%	1%	-	0%
400	S. Gloucester / Leitrim	1%	-	1%	1%	0%
425	South Nepean	2%	-	3%	5%	1%
450	Rural Southwest	1%	-	1%	4%	0%
500	Kanata / Stittsville	4%	2%	4%	10%	0%
560	Rural West	0%	0%	1%	1%	0%
	Unknown / imprecise	0%	0%	0%	3%	0%
Québec NCR Residents		**5%**	**5%**	**6%**	**0%**	**7%**
600	Ile de Hull	0%	0%	0%	-	0%
625	Hull Périphérie	1%	1%	1%	-	2%
650	Plateau	1%	1%	1%	-	1%
700	Aylmer	1%	2%	1%	0%	1%
750	Rural Northwest	1%	0%	1%	-	0%
800	Gatineau Centre	1%	1%	1%	-	2%
820	Gatineau Est	0%	1%	0%	-	1%
840	Rural Northeast	0%	0%	0%	-	-
845	Masson-Angers	1%	-	1%	-	-
Non-NCR Residents		**54%**	**57%**	**48%**	**46%**	**47%**
Ontario nearby communities		5%	6%	3%	4%	1%
Ontario over 90 min. drive		17%	14%	25%	30%	23%
Québec nearby communities		1%	0%	1%	-	1%
Québec over 90 min. drive		5%	1%	11%	5%	21%
Atlantic Provinces		9%	12%	1%	4%	-
Western Provinces/Territories		12%	17%	5%	3%	-
International (USA or overseas)		5%	6%	2%	0%	0%
Grand Total		**100%**	**100%**	**100%**	**100%**	**100%**
Expanded Travellers (avg. daily)		17,125	11,878	2,666	532	2,049
Sample size (n)*		1,600	733	421	247	199

* Surveys completed directly with intercity travellers only. 0% = greater than 0.0% but less than 0.5%

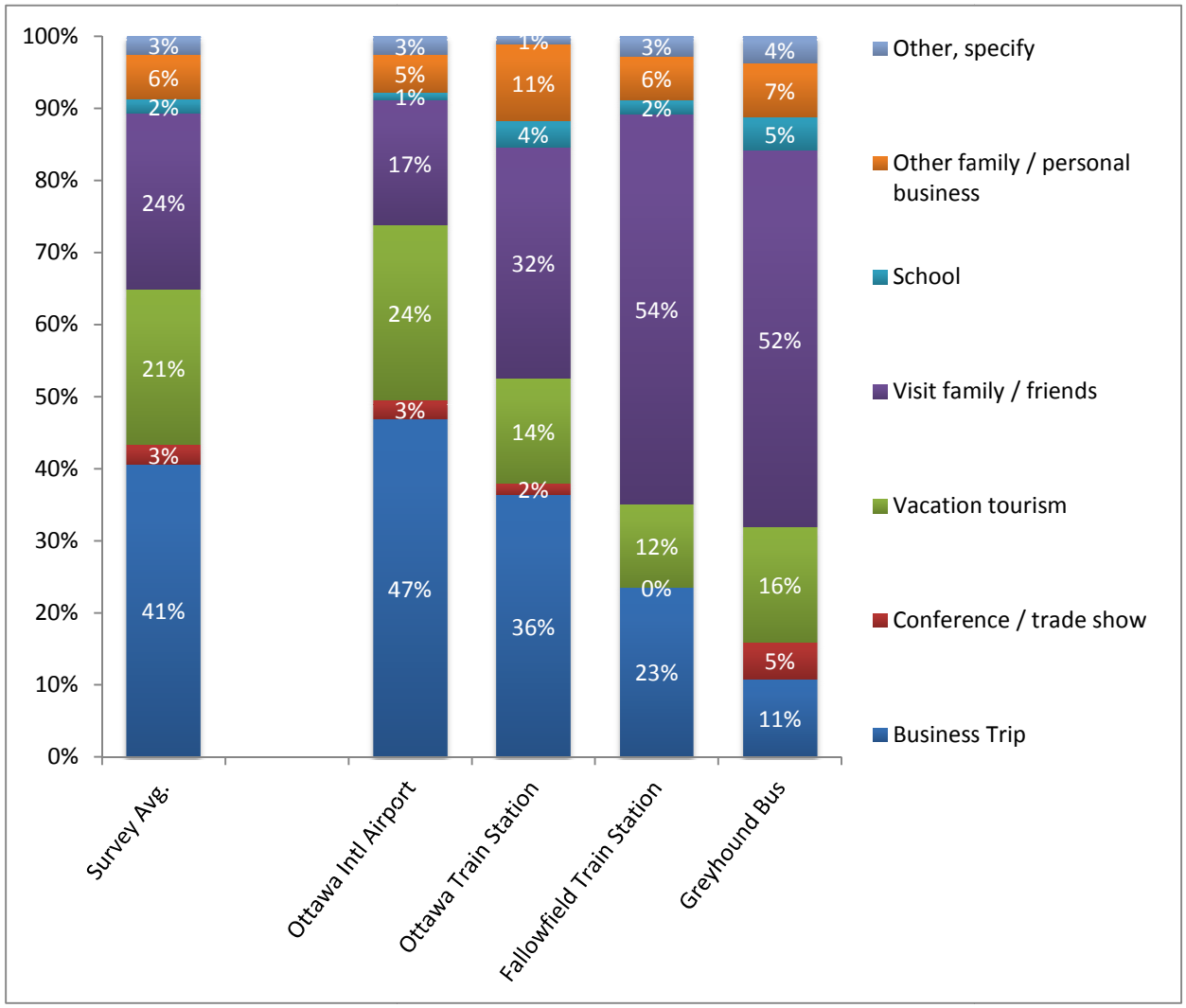
3.4. Intercity Travellers: Terminal Use

3.4.1. Intercity Travel Purpose

Exhibit 3-6 summarizes intercity travellers' purposes in leaving or travelling to the NCR.

Reasons for intercity travel vary by generator. The Ottawa International Airport and the Ottawa Train Station serve proportionately more business travellers than the other terminals, at almost one half (47% and one-third (36%) of users respectively. Over half of users of Fallowfield Train Station and the Greyhound Bus Station travel to visit family and friends (54% and 52%, respectively). The vacation / tourism proportion was highest at the airport (24%), and otherwise varied between 12% and 16%.

Exhibit 3-6: Purpose of Intercity Travel



n=1,524 (surveys completed directly with intercity travellers only); excludes a small number of answers of don't know or no response

Exhibit 3-7 provides the information on intercity travel purpose broken out for NCR residents and NCR non-residents. In general, non-residents had similar or higher proportions of business travel than NCR residents, except at Fallowfield Station (which is consistent with that station's suburban location). At the airport, over half (52%) of non-residents were travelling for business, compared with 40% of residents. The proportions for visiting family and friends similarly were higher for non-residents at all terminals, except for the bus station (which is consistent with the higher number of students who use the bus – i.e., people who attend school in the NCR[8] may be travelling to their home town visit family and friends). The vacation / tourism proportions were highest for NCR residents, at all terminals.

Exhibit 3-7: Intercity Travellers' Reasons for Intercity Travel – Residents vs. Non-Residents

	Business Trip	Conference / trade show	Vacation tourism	Visit family / friends	School	Other family / personal business	Other, specify	Total
Survey Avg.	**41%**	**3%**	**21%**	**24%**	**2%**	**6%**	**3%**	**100%**
NCR Residents	35%	1%	31%	23%	2%	4%	3%	100%
Non-Residents	45%	4%	13%	26%	2%	8%	2%	100%
Airport	**47%**	**3%**	**24%**	**17%**	**1%**	**5%**	**3%**	**100%**
NCR Residents	40%	2%	38%	14%	1%	2%	4%	100%
Non-Residents	52%	4%	12%	20%	1%	8%	2%	100%
Ottawa Train Station	**36%**	**2%**	**14%**	**32%**	**4%**	**11%**	**1%**	**100%**
NCR Residents	36%	1%	15%	31%	3%	14%	1%	100%
Non-Residents	36%	2%	14%	34%	4%	7%	2%	100%
Fallowfield Train Stn.	**23%**	**0%**	**12%**	**54%**	**2%**	**6%**	**3%**	**100%**
NCR Residents	38%	0%	16%	36%	3%	6%	1%	100%
Non-Residents	8%	0%	6%	75%	0%	6%	5%	100%
Greyhound Bus Stn.	**11%**	**5%**	**16%**	**52%**	**5%**	**7%**	**4%**	**100%**
NCR Residents	7%	1%	19%	63%	5%	5%	2%	100%
Non-Residents	15%	11%	12%	39%	5%	11%	7%	100%

n=1,524 (surveys completed directly with intercity travellers only); excludes a small number of answers of don't know or no response.

Of note, the proportion of travellers using the bus for conferences or trade shows was 11% for non-residents and only 1% for non-residents. The survey data do not reveal the reasons for this, however, it may be possible that the local conference centre (Ottawa Shaw Centre) is more likely to attract external residents from nearby locales for whom bus travel is practical, while travellers to conferences outside the NCR (e.g., to Montreal or Toronto) may be more likely to use other modes of intercity travel.

[8] The survey question on home residence would have been open to the interpretation of the respondent. Some students who live in the NCR only to attend school may have responded with respect to their current residence in the NCR, while others may have responded with respect to their permanent residence outside the NCR.

3.4.2. Intercity Travel Party Size

As indicated in Exhibit 3-8, about three-quarters (77%) of intercity travellers served by the terminals surveyed are solo travellers, with Fallowfield Train Station and the Greyhound Bus Station having the highest percentages of solo travellers (89% and 83%, respectively). Although small, the airport had the highest percentage of 3+ travellers, at 5% of the total.

Exhibit 3-8: Intercity Travel Party Size

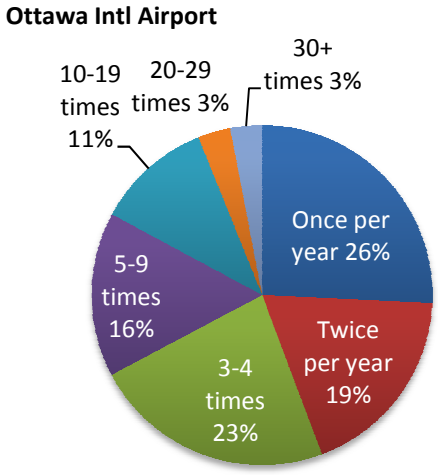
Number of Intercity Travellers in Travelling Party	Airport	Ottawa Train Station	Fallowfield Train Station	Greyhound Bus Station	Survey Average
1	75%	80%	89%	83%	77%
2	20%	19%	10%	16%	19%
3	3%	1%	1%	1%	3%
4+	2%	-	-	1%	1%
	100%	**100%**	**100%**	**100%**	**100%**

n=1,543 (surveys completed directly with intercity travellers only); excludes a small number of cases with unknown number of travellers (for such cases, the average party size for the generator was used for data weighting purposes).

3.4.3. Air Travellers: Frequency of Use of Terminal

At the airport, intercity travellers were asked how often they used the airport per year. The air travellers surveyed use the airport 5.65 times per year on average. One quarter indicated that they only use the airport once per year, while another one-fifth indicated twice per year. While only 17% of travellers use the airport 10 times or more in a year, they likely account for a large proportion of all airport travel throughout the year.

Exhibit 3-9: Number of Times Air Travellers Use Airport Annually



n=722 (surveys completed directly with intercity airport travellers only)

3.4.4. Air Travellers: Split between Business and Leisure Travel

Air travellers were also asked what proportion of their travel involving the airport was for business and for leisure. As presented in Exhibit 3-10, fully 38% of the air travellers surveyed use the airport exclusively for leisure, and about one third (34%) use the airport exclusively for business, while the remainder (28%) use the airport for both business and leisure purposes, in varying proportions.

Exhibit 3-10: Proportion of Annual Travel for Business and for Leisure

Proportion of Annual Travel via Ottawa International Airport for Given Purpose	Business	Leisure
Never use airport for this travel purpose	38%	34%
1-19% of airport travel is for this purpose	2%	4%
20%-39%	3%	6%
40%-59%	12%	13%
60%-79%	5%	2%
80%-99%	7%	2%
100% of airport travel is for this purpose	34%	38%
	100%	100%

n=659 (surveys completed directly with intercity airport travellers only)

This information was combined with the reported number of uses of the airport per year to determine the frequency of business and leisure travel per year, as illustrated in Exhibit 3-11. As might be expected, business travellers are more likely to be frequent travellers. On average, the air travellers surveyed use the airport for business travel 3.94 times per year, and for leisure 1.92 times per year. For both purposes, high frequency use is more prevalent among residents; lower frequency use is more prevalent among non-residents: this is consistent with the role of the airport as the 'base' airport for NCR and nearby residents.

Exhibit 3-11: Number of Times Travellers Use Airport Annually for Business and for Leisure Travel

	Survey Average		NCR Residents		Non-Residents	
Number of Times Use Ottawa International Airport Per Year*	For Business	For Leisure	For Business	For Leisure	For Business	For Leisure
Never use airport for this type of travel	38%	34%	40%	15%	37%	50%
Once per year or less often	16%	21%	9%	19%	21%	23%
Twice per year	11%	17%	8%	24%	14%	10%
3-4 times	14%	18%	16%	28%	13%	10%
5-9 times	10%	8%	13%	11%	8%	5%
10-19 times	7%	2%	8%	2%	5%	1%
20-29 times	2%	1%	3%	1%	2%	1%
30+ times	2%	0%	3%	0%	1%	0%
	100%	100%	100%	100%	100%	100%

*calculated from the number of times the respondent used the airport annually for all purposes multiplied by the percentage of annual trips for the given purpose; when grouping, fractions have been rounded to the closest integer, with the exception of a small number of fractions between 0.01 and 0.50, which were assigned to "once per year or less often".
n=659 (surveys completed directly with intercity airport travellers only)

3.5. Local Trip Volumes To and From Terminals

3.5.1. Local Trip Volumes – Across All Terminals

The survey data describe sets of intercity and local trips both to and from each terminal. The expanded trip volumes associated with all terminals and the relationship between trips to and from the terminals are presented in the diagram in Exhibit 3-12. These volumes are detailed in Exhibit 3-13 and broken out by terminal in Exhibit 3-14.

- Based on information sourced on volumes of arrivals and departures at each terminal, an estimated 8,500 intercity travellers arrive in the NCR every day via the four terminals surveyed, with an equivalent number (8,600) leaving the NCR, for a total of 17,100 intercity travelers processed through the terminals each day.
- This generates 15,400 local person-trips to the terminals and 15,300 local person-trips from the terminals, for 30,700 local person-trips in total. These counts include the 'solo'[9] trips of local supporters picking up/dropping off both arriving and departing intercity travellers. [10]
- The above trips represent approximately 5,900 auto vehicle-trips (personal vehicles and rental vehicles only, i.e., excluding taxis, limousines, etc.), arriving at the four terminals, and a similar number of auto vehicle-trips (6,000) leaving the terminals.[11] The difference in the number of auto-trips arriving and leaving the terminals may be attributed, in part, to apparently higher numbers of intercity travellers renting a vehicle at the airport and fewer returning a rental vehicle to the airport.[12]

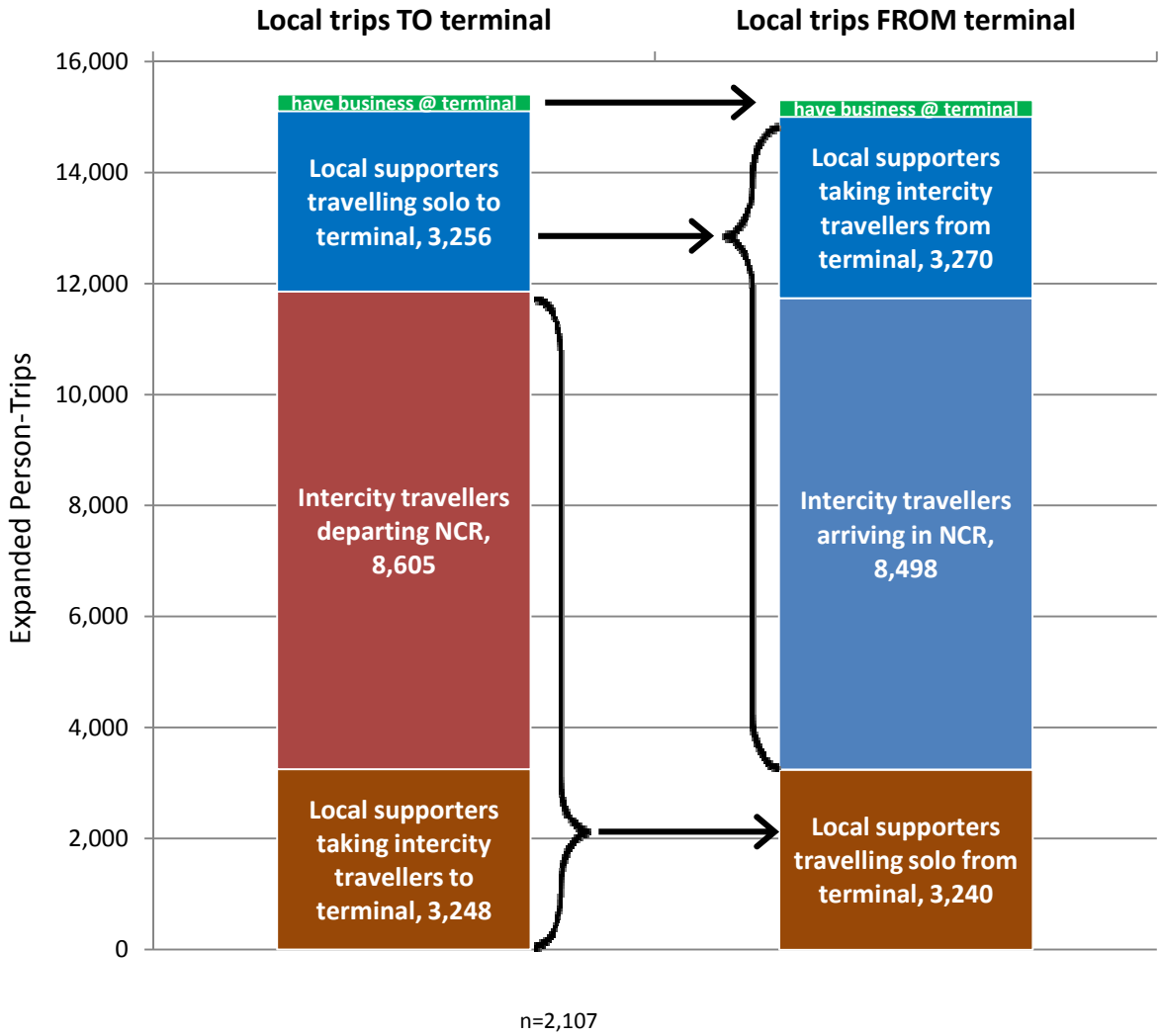
[9] By 'solo trip', we mean the trip to/from the terminal where the local supporters were travelling without intercity travellers (i.e. either the trip to the terminal before picking up passengers or the return trip after dropping them off). In many cases, there is only one local supporter, but in some cases, more than one local supporter travelled together on the 'solo' trip.

[10] The small differences between the numbers of supporter trips arriving at the terminals and the numbers leaving the terminals are not, in themselves, meaningful, and may reflect minor discrepancies in the data, including: rounding errors in the application of data weights or the summing of weighted results; and/or rare errors in the data that may not have been detected during data validation. These differences do not significantly impact the results.

[11] It may be noted that the number of auto-vehicle trips is estimated by summing the car-driver, car-passenger, and rental car survey responses. Interviewers were instructed to only survey one member of each travelling party. If a member of the travelling party indicated that they arrive (or departed) as a car passenger, there would have to be a vehicle serving that travelling party, whether the driver was a member of the intercity travelling party or a local supporter. Therefore, survey responses of car-driver and car-passenger equally represent a vehicle trip.

[12] Some of the difference in expanded auto-trips to and from the terminals may also be attributable to error associated with random sampling, with possibly differing proportions of intercity travellers leaving their own vehicles in parking while travelling for the sample of intercity arrivals surveyed as compared to the sample of intercity departures surveyed. Similarly, some of the apparent differences in the proportions renting or returning rental vehicles might also be influenced by random sampling. Regardless of the source of the difference, the expanded counts of auto-trips arriving and departing differ by only a few percent, with the magnitude in each direction being very similar.

Exhibit 3-12: Breakdown of Trips To/From All Terminals



n=2,107

Exhibit 3-13: Local Person-Trips To/From All Terminals

	To Terminal	From Terminal
Intercity travellers departing NCR	8,605	
Local supporters taking intercity travellers to terminal / travelling solo from terminal after drop-off	3,248	3,240
Intercity travellers arriving in NCR		8,498
Local supporters travelling solo to terminal before pick-up / taking intercity travellers from terminal	3,256	3,270
Have business @ terminal*	303	303
Total Local Trips	**15,412**	**15,311**

n=2,107 * business at terminal includes: business dealings at terminal, pick up or drop off an employee, purchasing tickets, watching trains or planes, and meeting / seeing off an intercity traveller (without escorting them on local travel).

3.5.2. Local Trip Volumes – by Terminal

By terminal,

- the Airport processes approximately 11,900 intercity air travellers per day, generating 10,600 local person-trips to the terminal and an equivalent number from the terminal (for over 21,100 local person-trips in total); [13]
- the Ottawa Train Station processes over 2,600 intercity rail passengers each day, generating over 2,300 local person-trips in each direction (or 4,600 local person-trips in total);
- the Fallowfield Train Station, which is a suburban satellite station on the same rail corridor, processes only about 500 intercity rail passengers per day, but generates proportionately more local person-trips per intercity passenger (over 600 in either direction, or 1,200 in total) due to relatively more intercity travellers being served by local escorts or supporters; and
- the Greyhound Bus Station processes over 2,000 intercity bus passengers per day, generating over 1,800 local person-trips in each direction (or 3,700 local person-trips in total).

Exhibit 3-14: Local Person-Trips To/From Each Terminal

	Airport		Ottawa Train Station		Fallowfield Train Station		Greyhound Bus Station	
	To Terminal	From Terminal	To Terminal	From Terminal	To Terminal	From Terminal	To Terminal	From Terminal
Intercity travellers departing NCR	5,952		1,351		268		1,035	
Local supporters taking intercity travellers to terminal / travelling solo from terminal after drop-off	2,424	2,424	388	388	120	120	316	307
Intercity travellers arriving in NCR		5,926		1,314		243		1,015
Local supporters travelling solo to terminal before pick-up / taking intercity travellers from terminal	1,994	2,000	576	576	215	219	471	476
Have business @ terminal	206	206	27	27	27	27	43	43
Total Local Trips	**10,576**	**10,557**	**2,342**	**2,305**	**629**	**609**	**1,864**	**1,841**

n=2,107

[13] Note that the 11,900 air travellers may include a small number of people who are connecting with other flights and who do not leave the terminal, however, the survey data only represent those with local travel.

3.5.3. Local Trip Generation Rates

Exhibit 3-15 presents the calculation of local 'trip generation rates' for each terminal, expressed as the number of local person-trips generated for each intercity traveller processed as an arrival or departure. For most of the terminals, the trip generation rate is close to the average of approximately 1.8 local person-trips per intercity traveller, with the exception of Fallowfield Train Station (2.4 local person-trips per intercity traveller), which has proportionately more trips involving local escorts/supporters.

Exhibit 3-15: Trip Generation Rates (Person-Trips)

	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Total
Total intercity trips (arrivals and departures combined)	11,878	2,666	510	2,049	**17,103**
Total local person-trips (to and from terminal combined)	21,133	4,647	1,238	3,705	**30,723**
Overall trip generation rate (local person-trips generated per intercity traveller)	1.779	1.743	2.425	1.808	**1.796**

n=2,107

3.6. Origins of Local Trips to Generator

3.6.1. Origin Type

Exhibit 3-16 and Exhibit 3-17 highlight the type of place survey respondents were at prior to travelling on their local trip to the transportation terminal. The results show that most came to the terminal from a residential location (whether their own home or someone else's home they may have been staying at or visiting socially)[14]. Temporary accommodations (hotel, etc.) were the next most common origin for airport trips (18%) but represent no more than 5% of trips for other terminals. In contrast, the workplace was the origin of 10% of rail trips at both terminals and 7% of bus trips. School represented 4-5% of trip origins for travellers at the rail and bus terminals.

The relatively high proportions for "other" at the Ottawa Train Station and the Greyhound Bus Station may reflect the relative proximity of coffee shops and other shopping venues nearby or within easy access. There are similar types of venues close to Fallowfield Station, although not as many as can be accessed at the other two locations. The lower proportion at the airport may reflect the security restrictions associated with air travel, as well as the availability of on-site services.

Exhibit 3-16: Type of Origin Prior to Travelling to Generator

Origin	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Average
Residence*	72%	70%	79%	80%	73%
Workplace	4%	10%	10%	7%	5%
Hotel/ motel/ B&B	18%	5%	2%	1%	13%
Restaurant/ club /bar	2%	3%	2%	2%	2%
School	1%	5%	4%	5%	2%
Convention centre	1%	1%	0%	0%	0%
Other**	3%	7%	4%	6%	4%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

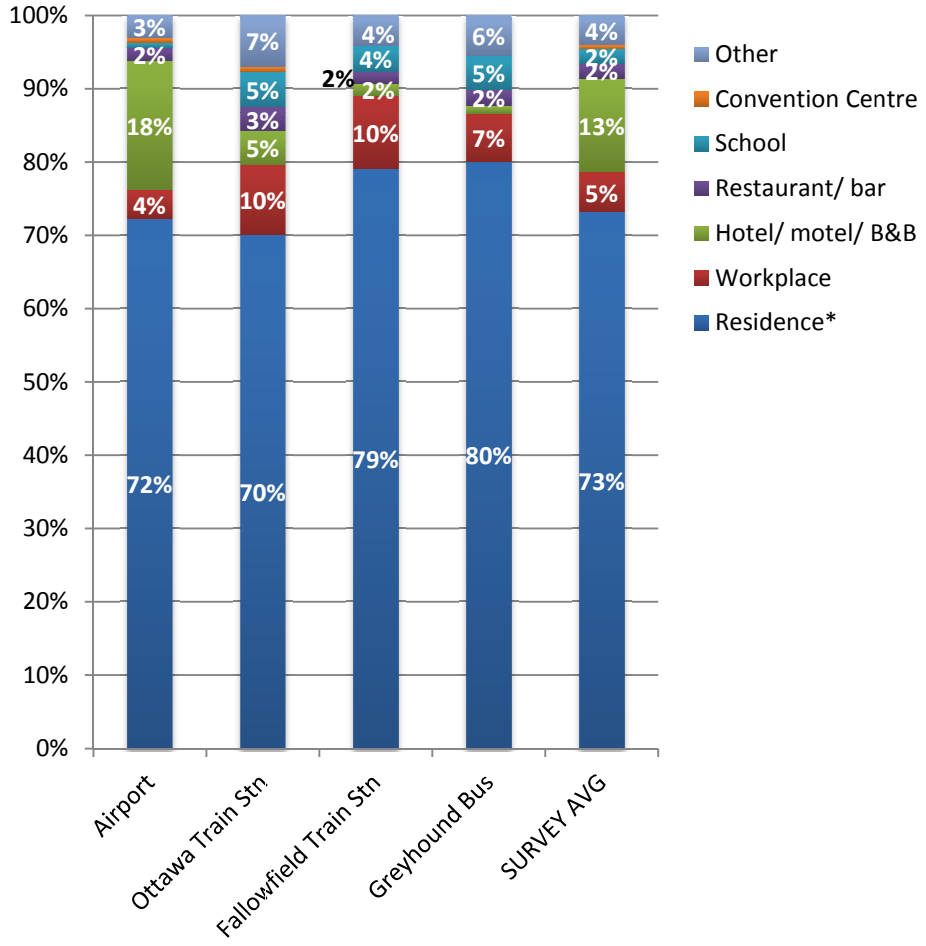
n=1,734. Excludes a small number of non-responses.

* Residence = either the traveller's own residence or someone else's home that they were staying at or visiting.

**Other = shopping centre, hospital, store, coffee shop, car rental, arena, gym, other transportation terminal, etc.

[14] The survey asked respondents who indicated that they were NCR residents whether they travelled directly from their own home in the NCR, and, if yes, skipped the question on the type of origin. However, since the survey could have been administered with either an intercity traveller or a local supporter, the 'direct from home' responses cannot be relied on to represent all persons in the travelling party. Therefore answers of 'came directly from home' and 'origin was a residence' have been collapsed into one group. Readers are referred to Sections 2.2 and 2.6 for more information on the limitations of the survey design as they relate to who in the travelling party completed the interview.

Exhibit 3-17: Origin Type: Where Did Respondents Travel to the Terminal From?



n=1,734. Excludes a small number of non-responses.

* Residence = either the traveller's own residence or someone else's home that they were staying at or visiting.

**Other = shopping centre, hospital, store, coffee shop, car rental, arena, gym, other transportation terminal, etc.

3.6.2. Origin Type – Differences between NCR Residents and Non-Residents

Types of trip origins are presented in more detail below for both NCR residents and non-residents. Some observations can be made:

- The large majority (88%) of NCR residents commence their trips at a residence located within the NCR (likely their own home) – with this figure being highest at the airport at 90% and 84% at the other terminals. This is consistent with the nature of inter-city travel, in which virtually any inter-city trip, including same-day trips, will require significant portions of the day.
- In contrast, 12-13% of non-NCR residents travelling by train or bus start their local trip at a residence outside the NCR (whether their own home or that of friends or family they were visiting), while 29% of non-NCR residents travelling by air start their trip at a residence outside the NCR (whether their own or that of friends / family): these differences are consistent with the more distant origins available via air travel, with the airport thus having a larger catchment area.
- For non-NCR residents, the highest proportion of origins is temporary accommodations (hotels, etc.), at 37% for air travellers. Corresponding proportions are much less for the other terminals, at 15% for Ottawa Train Station travellers, 7% for bus travellers and 5% for Fallowfield Station travellers. For non-NCR bus travellers, a significant proportion of trips begin at school, at 13%: this is consistent with the comparatively low cost of bus travel for cost-conscious students and the availability of service to student destinations outside the NCR that are not served by air or rail.[15]

Exhibit 3-18: Origin Types – NCR Residents vs. Non-Residents

	Airport		Ottawa Train Station		Fallowfield Train Station		Greyhound Bus Station		Survey Average	
	NCR Residents	Non Residents	NCR Residents	Non Residents	NCR Residents	Non Residents	NCR Residents	Non Residents	NCR Residents	Non Residents
Expanded Person-Trips	**5,883**	**4,693**	**1,585**	**757**	**439**	**210**	**1,542**	**314**	**9,450**	**5,974**
Residence in NCR*	90%	24%	84%	27%	84%	56%	84%	46%	88%	26%
Residence Outside NCR*	0%	29%	0%	12%	0%	13%	0%	12%	0%	25%
Workplace	4%	3%	7%	15%	10%	11%	7%	2%	6%	5%
Hotel/motel/B&B	0%	37%	0%	15%	0%	5%	0%	7%	0%	32%
Restaurant/club/bar	3%	1%	2%	7%	1%	3%	1%	8%	2%	2%
School	1%	0%	4%	7%	3%	5%	3%	13%	2%	2%
Convention Centre	0%	1%	0%	2%	0%	0%	0%	0%	0%	1%
Other**	2%	5%	4%	15%	3%	8%	4%	13%	3%	6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

n=1,734. Excludes a small number of non-responses.
* Residence = either the traveller's own residence or someone else's home that they were staying at or visiting.
**Other = shopping centre, hospital, store, coffee shop, car rental, arena, gym, other transportation terminal, etc.

[15] Further investigation of the data would be required to determine whether the notable proportion of non-NCR residents with school origins for their local trip to the bus terminal is indicative of non-NCR residents using the intercity bus to commute to school from nearby communities.

3.6.3. Origin Location

Exhibit 3-19 illustrates the origins of trips to the special generators, summarized at a regional level.

Exhibit 3-20 details the trip origins by TRANS district. Some observations can be made:

- NCR origins dominate, at 88% of all origins. This is consistent with the roles of the individual terminals as inter-city gateways for the NCR. The proportions are 94% for the Ottawa Train Station, 95% for Fallowfield and 96% for the bus station.
- For the airport, the proportion of trips originating in the NCR is 86%: this lower proportion is consistent with the larger geographical market that it serves; with the inclusion of nearby communities, the proportion rises to 95%. In comparison, the nearby community shares represent 1-2% of trip origins at the other terminals, so that when the nearby communities are included, all four terminals have the same proportion of trips originating in the NCR and surrounding area. Of interest, note that only the airport records at least 1% of origins from nearby Québec communities.
- Within the NCR, the distributions by district are similar to those associated with the travellers' home districts (see Exhibit 3-5), reflecting the high proportion of travellers who start their trip from their place of residence.
- As with the place of residence, the proportion of trip origins in the Québec NCR is significantly lower than its share of the overall population. However, the proportion of trips originating in the Quebec NCR is slightly higher than the proportion of intercity travellers residing there, at up to 11% versus 5-7%. Note that no Québec NCR residents were observed at Fallowfield Station as intercity travellers, and only 1% of Fallowfield trips originated in the Québec NCR: again, this is consistent with the availability of a closer alternative (Ottawa Train Station). The bus station had the highest proportion of Quebec NCR origins, at 11%, and also had the highest percentage of intercity travellers residing in the Quebec NCR, at 7%.
- Approximately 4% of origins were from Ontario locations, 90 minutes or more drive away from the terminal. These represented 5% of airport origins, 4% of Ottawa Train Station origins and 2% of Fallowfield origins (no origins from these locations were observed at the bus station). Only 1% of origins were from Québec locations that were 90 minutes or more drive away.

Exhibit 3-19: Trip Origins – Where did Terminal Visitors Travel From?

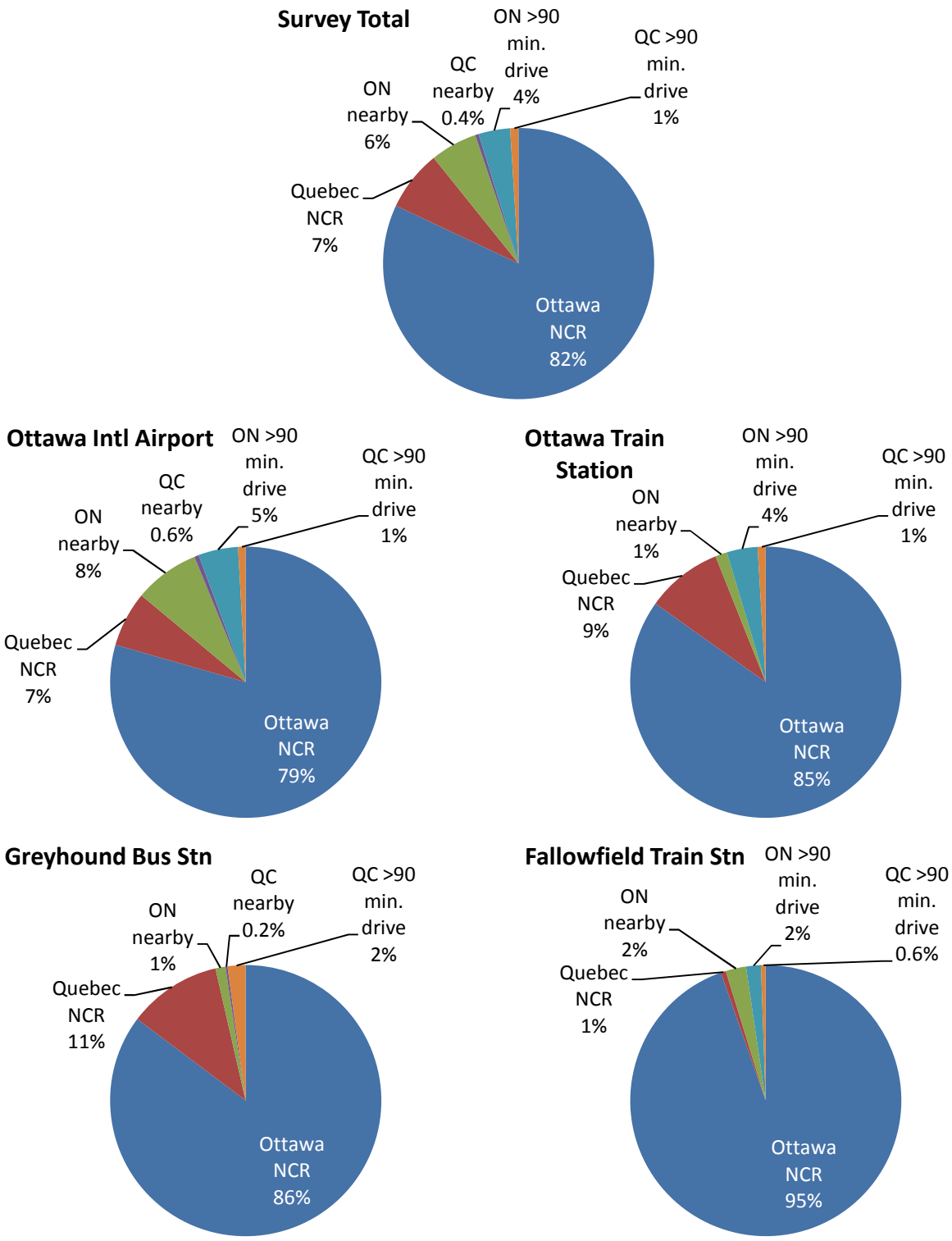


Exhibit 3-20: Origin-Generator Matrix by TRANS District

Origin		Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Average
Trip Origin in Ottawa NCR		**79%**	**85%**	**94%**	**86%**	**82%**
1	Ottawa Centre	12%	12%	2%	7%	11%
50	Ottawa Inner Area	11%	26%	1%	30%	15%
100	Ottawa East	5%	5%	0%	6%	5%
120	Beacon Hill	2%	2%		2%	2%
140	Alta Vista	5%	7%	1%	9%	6%
180	Hunt Club	7%	4%	4%	1%	6%
200	Merivale	9%	6%	12%	4%	8%
240	Ottawa West	3%	5%	7%	2%	4%
260	Bayshore / Cedarview	5%	4%	27%	7%	6%
300	Orleans	7%	8%		7%	7%
350	Rural East	0%	0%	0%	0%	0%
360	Rural Southeast	0%	1%	0%	1%	1%
400	S. Gloucester / Leitrim	1%	1%	5%	2%	1%
425	South Nepean	4%	1%	13%	3%	4%
450	Rural Southwest	0%	0%	6%		1%
500	Kanata / Stittsville	8%	3%	17%	4%	7%
560	Rural West	1%	0%	1%	1%	1%
Trip Origin in Québec NCR		**7%**	**9%**	**1%**	**11%**	**7%**
600	Ile de Hull	0%	1%	0%	1%	0%
625	Hull Périphérie	2%	1%		3%	2%
650	Plateau	0%	1%		2%	1%
700	Aylmer	1%	1%		1%	1%
750	Rural Northwest	1%	1%	0%	0%	1%
800	Gatineau Centre	1%	2%		2%	1%
820	Gatineau Est	1%	1%		1%	1%
840	Rural Northeast	0%	0%		1%	0%
845	Masson-Angers	0%				
Trip Origin External to NCR		**14%**	**6%**	**5%**	**4%**	**14%**
Ontario nearby communities		8%	1%	2%	1%	6%
Ontario > 90 minute drive away		5%	4%	2%		4%
Québec nearby communities		1%			0%	0%
Québec > 90 minute drive away		1%	1%	1%	2%	1%
Grand Total		**100%**	**100%**	**100%**	**100%**	**100%**

0% = greater than 0.0% but less than 0.5%
Individual rows may not add to 100% due to rounding.

3.7. Trip Times

Survey respondents who had a local trip to the terminal were asked when they left their previous location to travel to the special generator and when they arrived at the terminal. The time the survey intercept was conducted was also recorded. Respondents with a local trip from the terminal were not asked when they planned to depart to their next destination.

It may be noted that, certain time values were estimated if they were missing or unknown. As explained in Section 2.5, departure times and next destination arrival times were imputed. And for surveys with intercity travelers with unknown information on a supporter's local trip without them, the missing trip's origin, origin type, mode, and trip times were imputed as the 'reverse' of the known trip either from or to the terminal.

The charts in Exhibit 3-21 illustrate the volumes of local person-trips by hour of arrival at each terminal and estimated hour of departure from the terminal, with the hour assigned being determined by the start of the hour (i.e., all times of 17:00 to 17:59 are associated with hour 17). The differential that may often be observed between the volumes of local trips arriving and departing the terminal coincides with the general pattern that more intercity departures occur earlier in the day, and more intercity arrivals occur later in the day. The differential is most apparent at the airport and at both train stations, especially during the early morning departures and evening arrivals.

Local person-trip arrivals and departures at the airport occur throughout the day, even in the late evening and early morning (4:00 am) – again, reflecting flight arrivals and departures. For the train stations, local arrival and departure patterns begin at 6:00 am at both stations and end with the last train arrivals, at 8:00 p.m. to 9:00 pm. For the bus station, trips begin at 7:00 am and end at 11:00 pm, again coinciding with bus schedules.[16] Note that activity at both train stations drops significantly after the morning peaks, with the lowest local trip volumes occurring between 9:00 and 11:00 am at Fallowfield and between 10:00 am and noon at Ottawa Station. There is a similar drop-off in local travel at the bus station between 9:00 and 11:00 am.

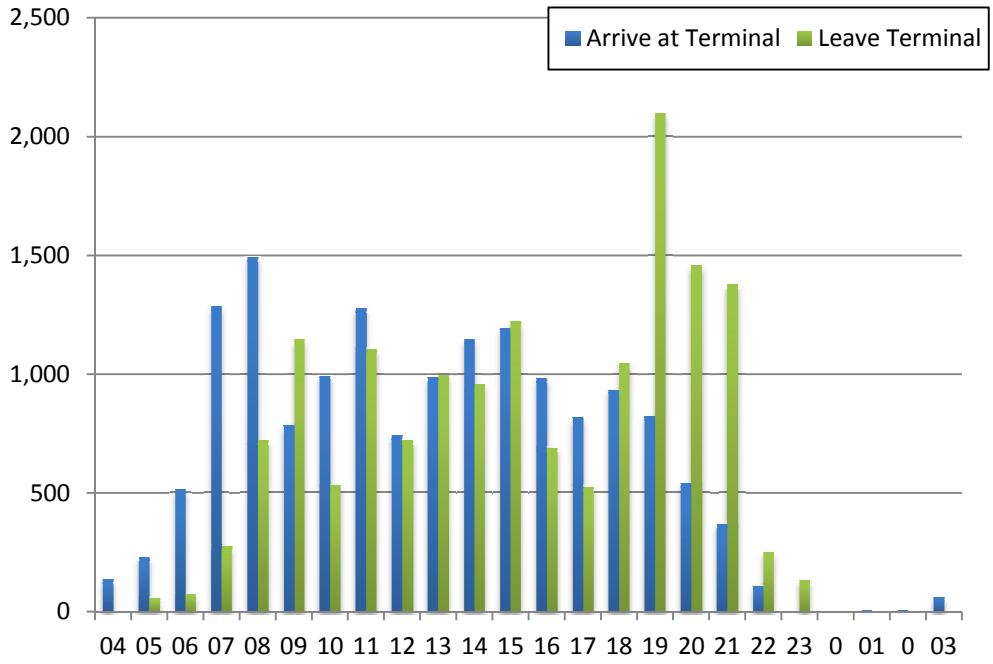
The highest airport terminal arrival volumes occur at 11:00 am. These volumes are slightly greater than the highest departurevolumes, which occur at 7:00 pm. For both train stations, the highest volumes occur with people leaving the respective terminals, at 7:00 pm: in both cases, these 7:00 p.m. 'leave terminal' volumes were of the order of 50% greater than the highest arrival volumes, which occurred at 2:00 pm at the Ottawa Train Station and at 6:00 pm at Fallowfield.

[16] There may be some omissions near the start/end boundaries if the survey hours did not cover all hours of bus operation for the terminal. As full bus schedules were not available, it was not possible to verify whether any hours were omitted. If there are any trips outside of the period covered by the survey data, they would likely be few in number.

Exhibit 3-21: Terminal Arrivals and Departures* (Local Trips)

*terminal departure not asked but estimated based on intercept time

Survey Total



Airport

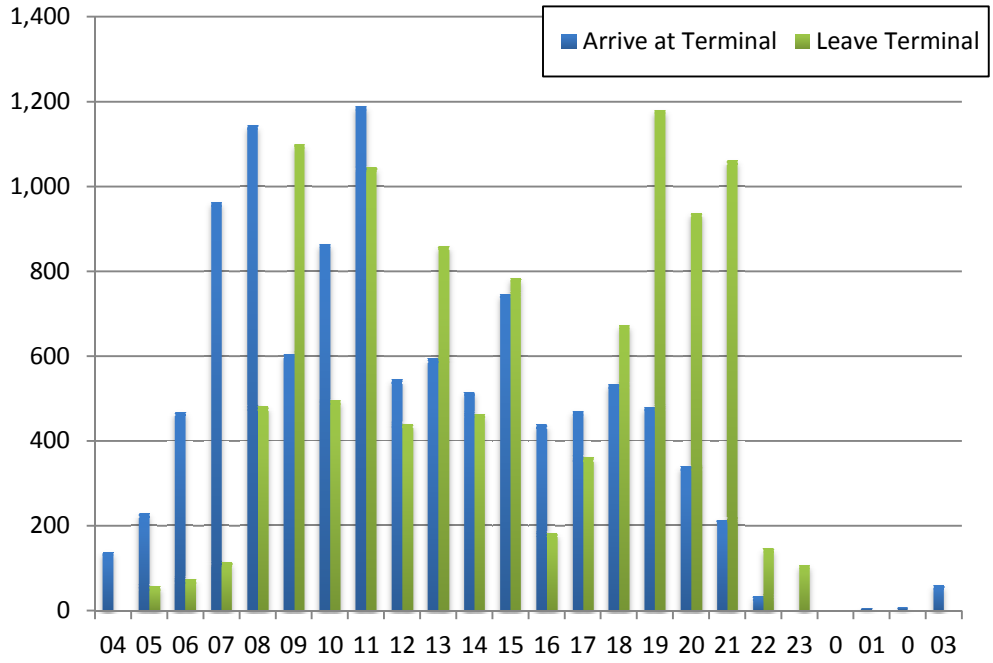
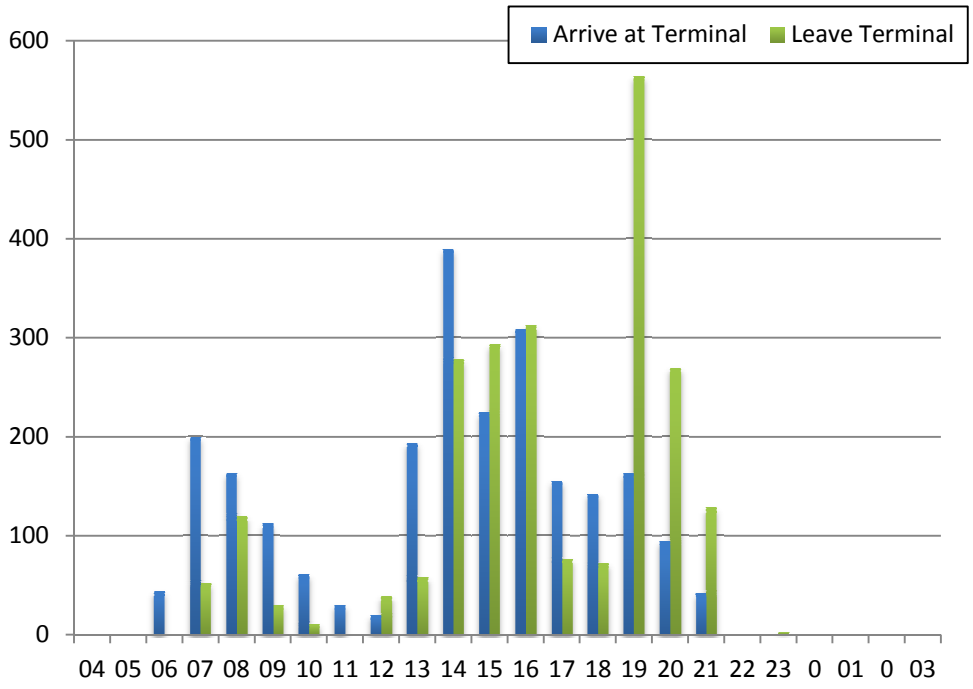


Exhibit 3-21: Terminal Arrivals and Departures* (Local Trips)

*terminal departure not asked but estimated based on intercept time

Ottawa Train Station



Fallowfield Train Station

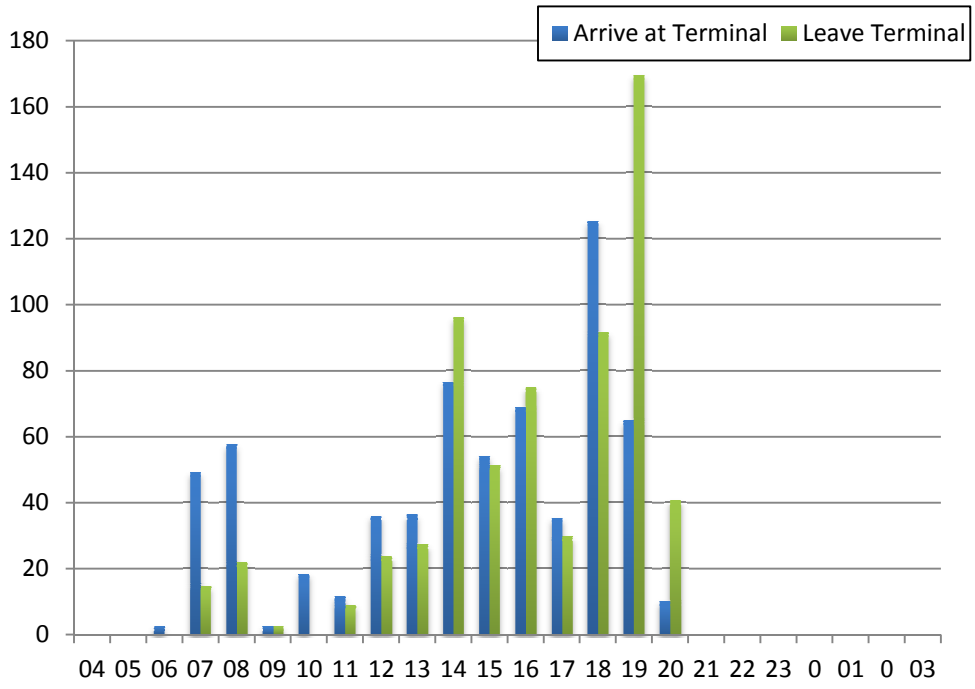
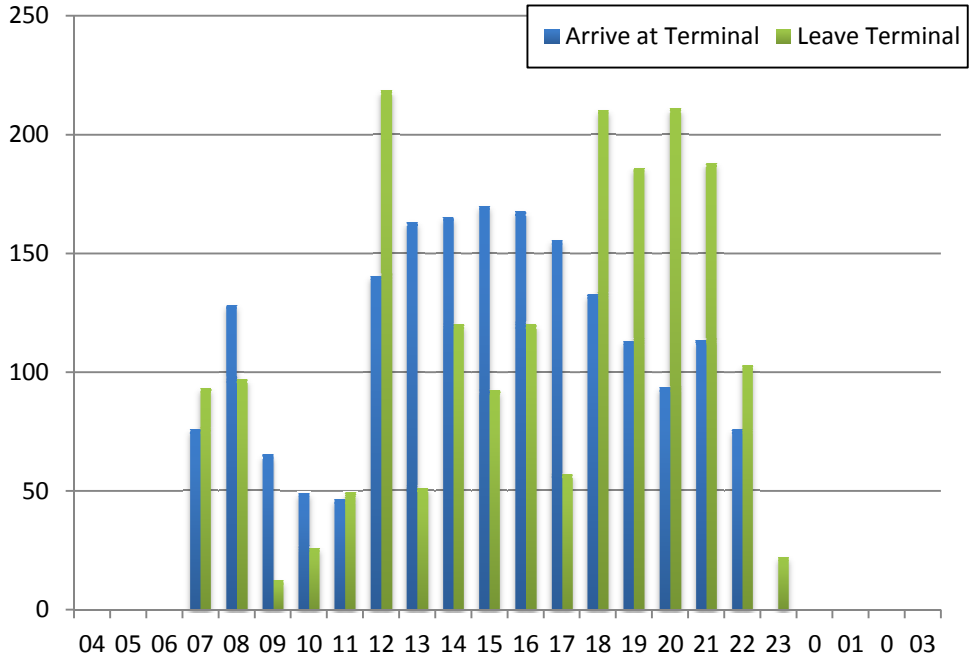


Exhibit 3-21: Terminal Arrivals and Departures* (Local Trips)

*terminal departure not asked but estimated based on intercept time

Greyhound Bus Station



3.8. Travel Mode

3.8.1. Arrival and Departure Modes

Exhibit 3-22 summarizes the mode shares for the local trips to each terminal. Exhibit 3-23, following, summarizes the mode shares for local trips leaving each terminal, along with the percentage-point difference between the arrival and departure mode shares. The mode shares are presented graphically in pie charts in Exhibit 3-24. Expanded trip counts for each mode are presented at the end of this section for reference.

Readers are reminded that this information is based on the person-trips of all individuals travelling to each terminal, including intercity travellers, local escorts/supporters, and/or those with business at the terminal. Taxi, shuttle, and limousine drivers are not included in the person trip counts.

Exhibit 3-22: Arrival Mode (Local Trip to Terminal, Last Mode Used)

Terminal / Arrival Mode	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Average
Car driver	36%	37%	50%	28%	35%
Car passenger	31%	24%	32%	21%	29%
Taxi or limo	21%	16%	4%	8%	18%
Urban Transit	5%	23%	13%	34%	11%
Walk	-	0%	0%	9%	1%
Rental car	6%	-	-	-	4%
Shuttle (hotel, YOW, park n fly)	2%	-	-	-	1%
Other	-	0%	0%	0%	0%
Total Person-Trips	**100%**	**100%**	**100%**	**100%**	**100%**
Sample size (n)	790	465	282	268	1,805

Other: motorcycle, bicycle. 0% = greater than 0.0% but less than 0.5%

Several observations can be made from Exhibit 3-22 with respect to the arrival mode:

- The private automobile is the dominant mode, as it is for all NCR trips, with an average of two-thirds (64%) of all arrival trips being made by auto, either as a driver or a passenger. The dominance of the private auto is consistent with, but lower than, the combined 71.5% daily auto mode share observedin the 2011 NCR region-wide OD survey.[17]
- Of note is the comparatively high proportion of auto passenger trips (a 29% share for all terminals combined, or 45% of all auto trips). This compares with the 13.1% share, or 18% of all auto trips, in the 2011 NCR region-wide OD survey. The higher auto passenger proportions are

[17] Source: *2011 NCR Household Origin-Destination Survey, Summary of Results*, January 2013. All 2011 NCR region-wide OD shares are for travellers 11 years of age and older. (The 2011 household survey captured trip data for residents 5+ years of age, but some statistics were calculated for travellers 11+ years of age for comparison with the 2005 survey.).

consistent with the multi-person size of many travelling parties (see Exhibit 3-8) and the fact that escorts accompany many travellers.

- The highest proportion of auto trips occurs at Fallowfield station, at 82%, with the highest proportions of both driver (50%) and passenger (32%) trips.
- Taxis and limos are prominent at the airport (21% of all trips) and at the Ottawa Train Station (16%). These proportions are significantly higher than the overall region-wide proportion, which is of the order of 1-2%.
- The average urban transit share is 11%, which is consistent with the daily 13.6% share observed in the 2011 NCR region-wide OD survey. Note, however, that this varies, from a low of 5% at the airport, to 13% at Fallowfield Station, 23% at the Ottawa Train Station and 34% at the bus station. These proportions are consistent with the locations of the terminals within the urban / suburban areas and the relative transit service levels.
- The walk shares are negligible at all terminals except the bus terminal, whose 9% walk share reflects its proximity to Ottawa's urban core.
- Rental cars (6%) and shuttles (2%) are observed only at the airport. These shares are consistent with expectations.

Exhibit 3-23: Departure Mode (Local Trip from Terminal)

Departure Mode \ Terminal	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Average
Car driver	36%	40%	44%	29%	**36%**
Car passenger	29%	30%	41%	24%	**29%**
Taxi or limo	20%	12%	5%	10%	**17%**
Urban Transit	4%	16%	10%	25%	**9%**
Walk	-	1%	-	12%	**2%**
Rental car	10%	-	-	-	**7%**
Shuttle (hotel, YOW, park n fly)	1%	-	-	-	**1%**
Other	-	1%	0%	0%	**0%**
Total Person-Trips	**100%**	**100%**	**100%**	**100%**	**100%**
Sample size (n)	837	211	173	169	1,390

Difference in Departure Mode from Arrival Mode

Mode \ Terminal	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Average
Car driver	+1%	+3%	-7%	+1%	**+1%**
Car passenger	-2%	+6%	+9%	+2%	**0%**
Taxi or limo	-1%	-5%	+1%	+1%	**-1%**
Urban Transit	-1%	-7%	-3%	-8%	**-3%**
Walk	0%	+1%	-	+3%	**+1%**
Rental car	+3%	-	-	-	**+2%**
Shuttle (hotel, YOW, park n fly)	-	-	-	-	**0%**
Other	0%	+1%	0%	0%	**0%**

Other: motorcycle, bicycle

In most cases, the arrival and departure mode shares are similar. However, the differences in mode shares for arriving and departing trips show a general trend that, at most terminals, there are likely to be slightly more people using automobile-based travel modes when leaving the terminal as compared to trips to the terminal, and slightly fewer people using taxi and urban transit for their trips from the terminal. As presented earlier in this report (Section 3.7), earlier in the day there are higher volumes of trips to the terminals, while later in the day, there are higher volumes of trips from the terminals, due to when intercity departure and arrival times are typically scheduled. Differences in arriving and departing mode shares may be related to the relative availability of local escorts/supporters to pick up or drop off intercity travellers at different times of day, and the frequency and availability of transit at different times of day.

It can be seen from Exhibit 3-23 and Exhibit 3-24 that the urban transit shares drop substantially for departing trips, compared with the arrival trips, for an overall average share of 9% compared with 11%. The auto passenger share for departing trips increases at the train and bus stations, although it drops slightly at the airport. The auto driver share rises slightly overall, by 1%. The rental car share at the airport increases by 3%, to 10% of all departing trips. The walk share at the bus station also increases by 3%, to 12% of all departing trips, and a 1% walk share is now observed at the Ottawa Train Station.

Exhibit 3-24: Comparison of Arrival and Departure Modes

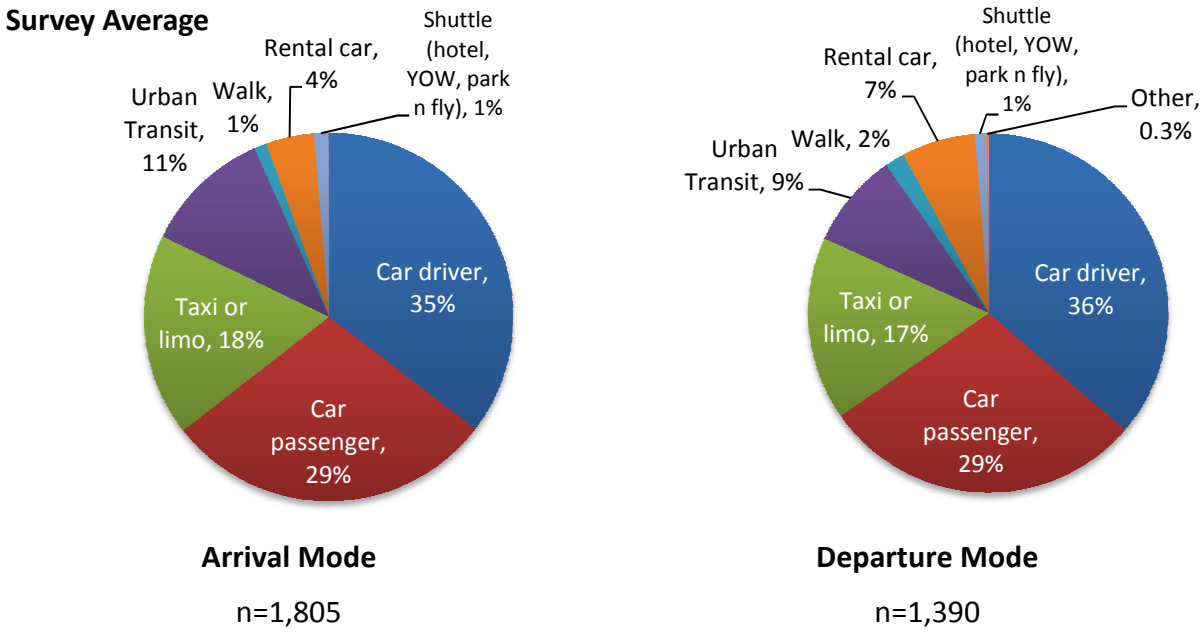
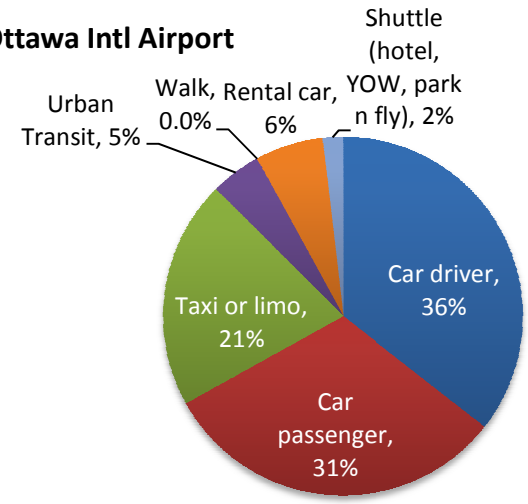


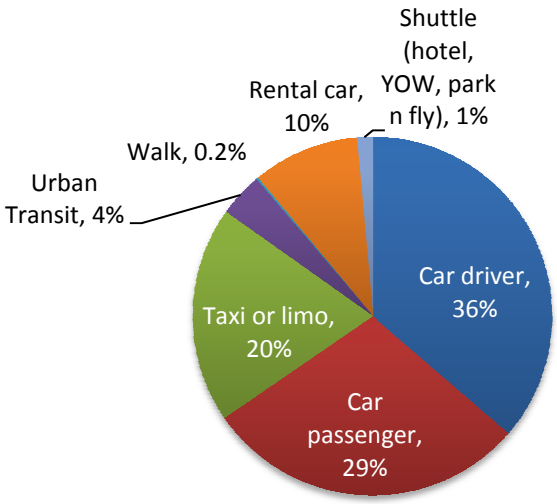
Exhibit 3-24: Comparison of Arrival and Departure Modes

Ottawa Intl Airport



Arrival Mode

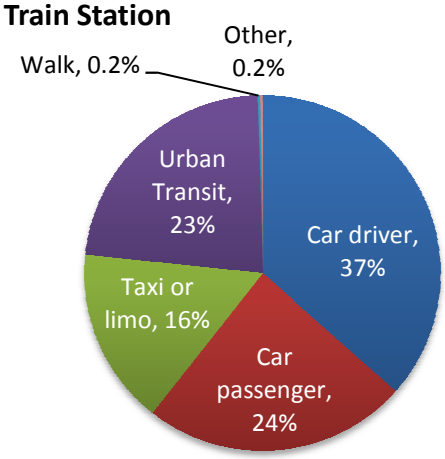
n=790



Departure Mode

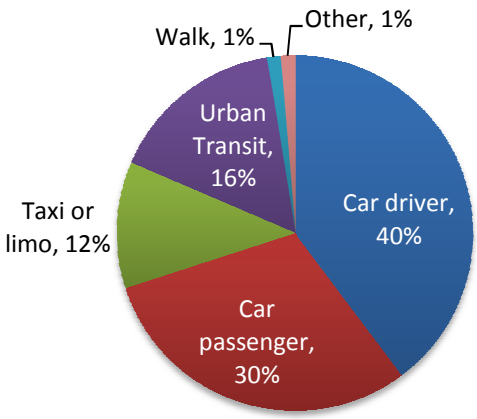
n=837

Ottawa Train Station



Arrival Mode

n=465

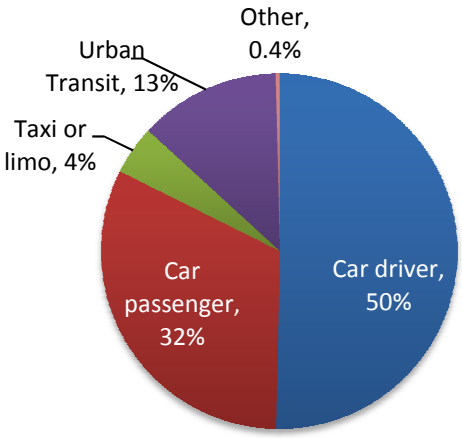


Departure Mode

n=211

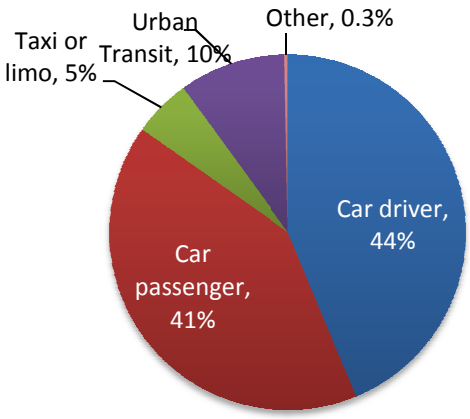
Exhibit 3-24: Comparison of Arrival and Departure Modes

Fallowfield Train Station



Arrival Mode

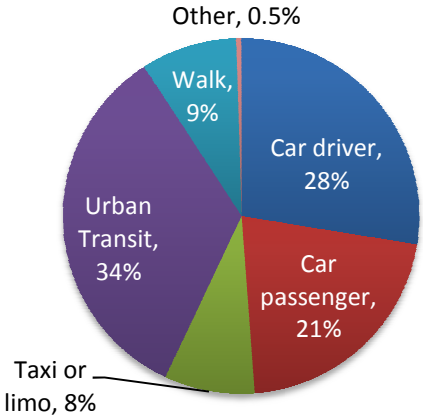
n=282



Departure Mode

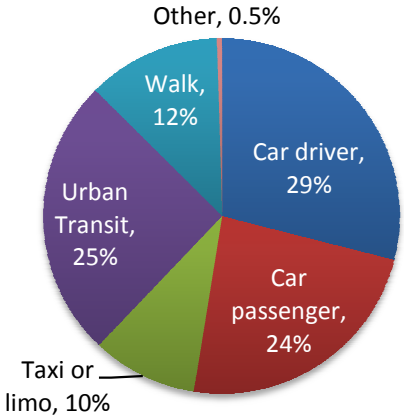
n=173

Greyhound Bus Terminal



Arrival Mode

n=268



Departure Mode

n=169

Other: motorcycle, bicycle

For reference, Exhibit 3-25 presents the expanded number of trips for each mode as represented by the survey data. Note that the arrival and departure numbers overall are of the same order of magnitude, with differences reflecting the shifts in mode choice that were described above.

Exhibit 3-25: Expanded Person- Trip Counts by Arrival and Departure Mode

Terminal Arrival Mode	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Station	Survey Total
Car driver	3,763	856	316	511	5,446
Car passenger	3,313	563	201	395	4,472
Taxi or limo	2,182	376	28	152	2,737
Urban Transit	480	536	80	629	1,725
Walk	-	5	1	161	168
Rental car	645	-	-	-	645
Shuttle (hotel, YOW, park n fly)	193	-	-	-	193
Other*	-	5	2	9	8
Total Person-Trips	**10,576**	**2,342**	**629**	**1,856**	**15,395**
Terminal Departure Mode	**Airport**	**Ottawa Train Stn**	**Fallowfield Train Stn**	**Greyhound Bus Station**	**Survey Total**
Car driver	3,836	917	267	538	5,558
Car passenger	3,065	696	251	438	4,450
Taxi or limo	2,059	265	32	177	2,533
Urban Transit	420	368	59	472	1,319
Walk	18	28	-	224	270
Rental car	1,010	-	-	-	1,010
Shuttle (hotel, YOW, park n fly)	150	-	-	-	150
Other*	-	30	2	9	41
Total Person-Trips	**10,557**	**2,305**	**611**	**1,858**	**15,330**

*Other: motorcycle, bicycle

Note: The table above involves estimations that impute the existence of other person-trips associated with other members of each travelling party with respondents who answered that they had car-passenger or car-driver surveys. The numbers may differ slightly from other tables in this report (e.g., Exhibit 3-14, Exhibit 3-25, or Exhibit 3-35) either due to rounding errors or minor differences in the treatment of the data on travelling party sizes. The differences are of the order of magnitude of only a few trips (within ±17 expanded trips) and are not enough to significantly affect the general interpretation of the survey results.

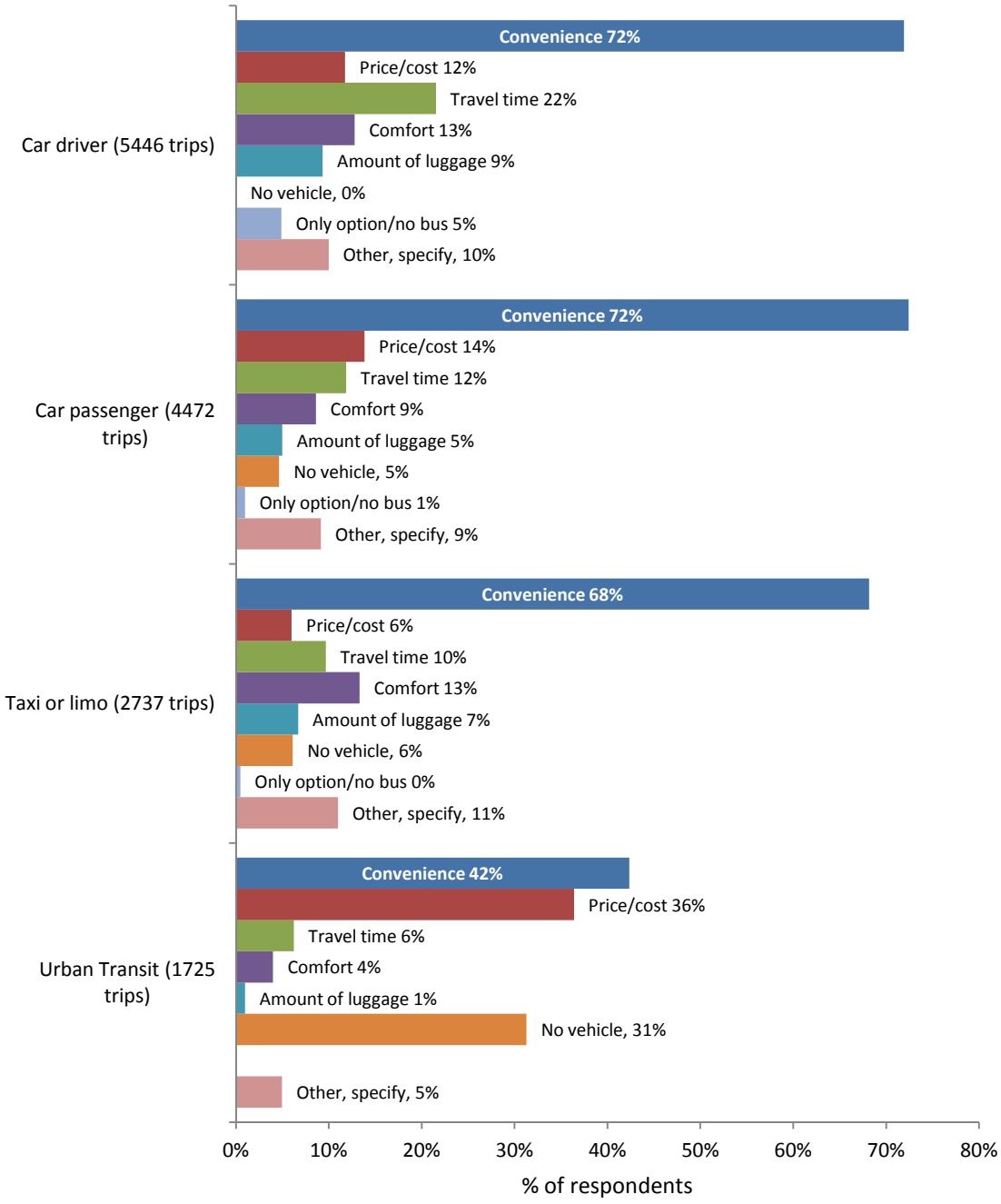
3.8.2. Reasons for Using Travel Mode

Survey respondents with local trips to the terminal were asked about their reasons for choosing their travel mode. The survey results for each of the four most common travel modes – car driver, car passenger, taxi or limo, and urban transit - are presented in Exhibit 3-26, following. Sample sizes for other modes such as walking, rental car, and shuttle were too small (n<30) to warrant presenting the results.

Several observations can be made from the exhibit:

- Convenience is cited as the most important reason for using each of the four modes. For the car and taxi modes, this is the dominant factor by far, at 68% - 72% of all responses.
- For urban transit, convenience is cited by 42% of all users, followed closely by price/cost at 36% and lack of a vehicle at 31%. Both these latter factors were significantly higher for urban transit users than for the other three modes.
- For car drivers, travel time was cited as the second-most important factor, at 22%, followed by comfort at 13% and price/cost at 12%. Price/cost was cited by 14% of car passengers, followed by travel time at 12%. Taxi / limo users cited comfort as a key factor, at 13%.
- The lack of a vehicle was cited by 5% of car passengers and 6% of taxi and limo users (and by none of the car drivers).
- Among the car and taxi users, the 'only option / no bus' choice was cited by 5% of car drivers, 1% of car passengers, and less than 1% of taxi and limo users.

Exhibit 3-26: Trips To Terminal – Reason for Using Arrival Mode – Survey Average Across Terminals



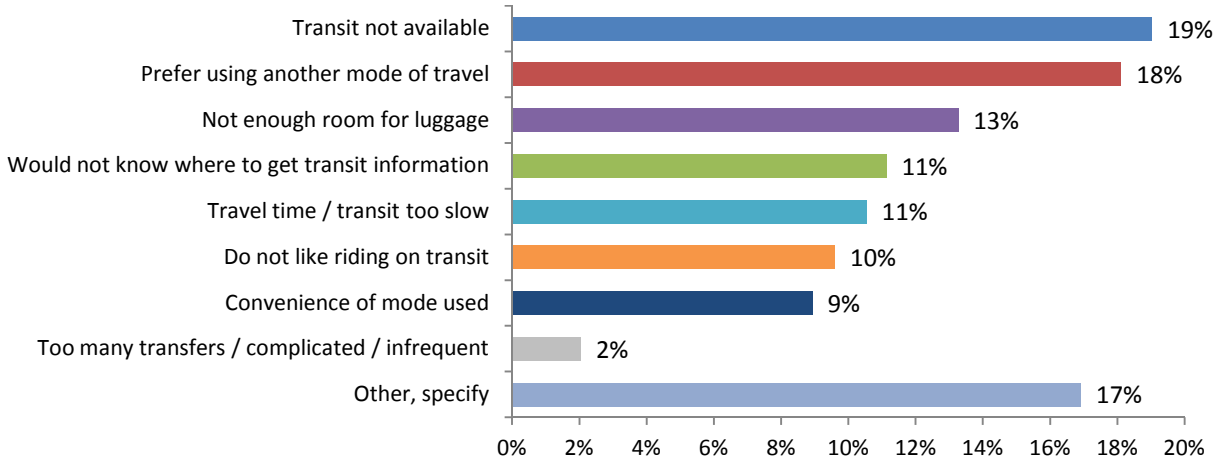
n=1,444; Excludes non-responses; Number of trips listed in brackets is total person trips via each mode; Excludes modes with low sample sizes (n<30); Percentages may add to greater than 100% due to multiple responses.

3.8.3. Reasons for Not Using Transit as Arrival Mode

Survey respondents who did not use urban transit to travel to the terminal were asked why they did not use transit. The overall survey results are presented in Exhibit 3-27. These results are broken out by travel mode in Exhibit 3-28, for NCR residents separately from non-residents in Exhibit 3-29, and by terminal in Exhibit 3-30.

Among all respondents (Exhibit 3-27), the unavailability of transit was most frequently cited, by one in five respondents (19%), followed closely by the respondent's preference for another mode (18%). These preferences were echoed by the car driver, car passenger and – to a lesser extent – by taxi and limo users, as shown in Exhibit 3-28. However, taxi and limo users were more concerned with not knowing where to get transit information (25%) and the travel time or 'slowness' of transit (17%).

Exhibit 3-27: Trips To Terminal – Reason for Not Using Transit – Survey Average Across Terminals



n=974; Excludes non-responses; Percentages may add to greater than 100% due to multiple responses.

Exhibit 3-28: Trips To Terminal – Reason for Not Using Transit – by Arrival Mode

Reasons for not using transit / Arrival Mode	Car driver	Car passenger	Taxi or limo	Survey Average
Transit not available	23%	19%	14%	19%
Prefer using another mode of travel	23%	21%	9%	18%
Not enough room for luggage	11%	14%	15%	13%
Would not know where to get transit information	2%	8%	25%	11%
Travel time / transit too slow	11%	7%	17%	11%
Do not like riding on transit	13%	10%	8%	10%
Convenience of mode used	8%	8%	9%	9%
Too many transfers / complicated / infrequent	4%	0%	4%	2%
Other, specify	15%	20%	15%	17%
Sample size (n)	406	307	221	974

Excludes non-responses. Percentages may add to greater than 100% due to multiple responses.
Distribution of responses for rental car, walk, shuttle, and other modes not provided due to small sample sizes (n<30)

Exhibit 3-29 shows that traveller preference was the most important factor for NCR residents (cited by 22% of respondents), followed by lack of room for luggage (15%) and unavailability of transit (14%). By comparison, the unavailability of transit was cited by one-quarter of non-residents (26%), followed by not knowing where to get transit information (21%).

Exhibit 3-29: Trips To Terminal – Reason for Not Using Transit – NCR Residents vs. Non-Residents

Reasons for not using transit	NCR Resident	Non-resident	Total
Transit not available	14%	26%	19%
Prefer using another mode of travel	22%	12%	18%
Not enough room for luggage	15%	10%	13%
Would not know where to get transit information	5%	21%	11%
Travel time / transit too slow	12%	7%	11%
Do not like riding on transit	12%	5%	10%
Convenience of mode used	9%	9%	9%
Too many transfers / complicated / infrequent	3%	0%	2%
Other, specify	16%	19%	17%
Sample size (n)	640	334	974

Excludes non-responses. Percentages may add to greater than 100% due to multiple responses.

Exhibit 3-30 shows that, by terminal, preferences for another mode were cited most frequently by rail and bus users, at 31% of Ottawa Train Station users, 27% of Fallowfield users and 26% of bus station users. The unavailability of transit was cited by 23% of Fallowfield users and 22% of airport users. Finally, insufficient room for luggage was cited by 19% of Ottawa Train Station users.

Exhibit 3-30: Trips To Terminal – Reason for Not Using Transit – by Terminal

Reasons for not using transit	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Total
Transit not available	22%	10%	23%	12%	19%
Prefer using another mode of travel	13%	31%	27%	26%	18%
Not enough room for luggage	13%	19%	6%	9%	13%
Would not know where to get transit information	12%	13%	7%	1%	11%
Travel time / transit too slow	12%	1%	15%	15%	11%
Do not like riding on transit	9%	11%	3%	11%	10%
Convenience of mode used	10%	5%	7%	7%	9%
Too many transfers / complicated / infrequent	2%	1%	4%	0%	2%
Other, specify	18%	11%	11%	22%	17%
Sample size (n)	412	265	187	110	974

Excludes non-responses. Percentages may add to greater than 100% due to multiple responses.

3.8.4. Transit Access Mode – Trips to Terminal

Exhibit 3-31 and Exhibit 3-32 summarize the access and egress modes for transit trips to the terminals. For the airport, access and egress mode were also asked of respondents using a hotel shuttle or the airport Park'n'Fly shuttle. As the sample size for hotel shuttles was quite small (n=7), access and egress responses have not been reported separately, but have been rolled into the results for public transit. As the Park'n'Fly shuttle services a relatively short distance trip, the Park'n'Fly arrival mode is qualitatively different; therefore, answers to access and egress mode questions cannot be grouped with transit. Since the sample size was small, Park'n'Fly results have not been reported separately and are excluded from the tables in the exhibit. (n=3, representing approximately 58 trips in the expanded dataset).

It can be seen that walking more than 50 metres was the dominant access mode (74% of all transit trips) and egress mode (70%). This was especially true for the train and bus stations, for which egress requires a short walk between the bus stop and the terminal; by comparison, transit buses stop directly at the air terminal, which is reflected by the higher proportion of stops 'right in front' of the facility (57%). The splits between the two walk access modes reflect the transit service at the trip origin, although the higher proportion of 'right in front of my origin' trips for air travellers (44%) may reflect the higher proportion of air travellers who were staying at temporary accommodations that, in turn, may have been served directly by transit.[18]

However, note that respondents might have perceived the same information in different ways. For example, Fallowfield Train Station is served by the adjacent Fallowfield Transitway Station, which has one stop in each direction. The exhibit indicates that 55% of Fallowfield transit users cited the egress mode as walking more than 50 metres, while 44% cited the station as being right in front of the generator. Both are valid, and may reflect whether or not the individual had to cross the transitway, where the bus actually stopped, or merely the respondent's perception of distance. The key point, then, is not necessarily the distinction between the two walking categories but rather that for the large majority of transit users, the transit egress and access modes were walking.

Also noteworthy is the use of other access and egress modes, even though the proportions are low. Of note is the use of car driver (2%), car passenger (4%) and taxi (2%) by those who used transit to access the Ottawa Train Station: this suggests knowledge of the transit system and, especially, of how the Transitway provides a quick and direct access to the station. Also noteworthy is the use of bicycles to access transit to the Ottawa Train Station (2%) and bus terminal (3%), which again suggests an understanding of how cycling and transit can be linked.

[18] It may be noted that the definition of transit includes both publicly-operated transit and privately-operated hotel shuttles (which are more likely to provide direct service to those temporary accommodations).

Exhibit 3-31: Transit Trips to Terminal – Transit Access Mode (% of Transit Users)

	Airport*	Ottawa Train Stn	Fallowfield Train Stn*	Greyhound Bus Stn	Survey Total
Transit trips to terminal	**481**	**531**	**82**	**624**	**1,718**
Hotel shuttle trips to airport	**135**				**135**
Transit Access Mode					
Car - driver		2%			1%
Car - passenger		4%	1%		1%
Taxi		2%			1%
Bicycle		2%		3%	2%
Walk (more than 50m)	55%	80%	84%	83%	74%
Stop/station right in front of my origin	44%	9%	13%	12%	20%
Other, please specify	1%	2%	2%	1%	1%
	100%	100%	100%	100%	100%
Sample size (n)	47	143	56	94	340

Excludes a small number of non-responses.

Exhibit 3-32: Transit Trips to Terminal – Transit Egress Mode (% of Transit Users)

	Airport*	Ottawa Train Stn	Fallowfield Train Stn*	Greyhound Bus Stn	Survey Total
Transit trips to terminal	**481**	**531**	**82**	**624**	**1,718**
Hotel shuttle trips to airport	**135**				**135**
Transit Egress Mode					
Bicycle				1%	0%
Walk (more than 50m)	42%	69%	55%	93%	70%
Stop/station right in front of [generator]	57%	31%	44%	5%	29%
Other, please specify	1%		1%	1%	1%
	100%	100%	100%	100%	100%
Sample size (n)	46	143	56	95	340

Excludes a small number of non-responses.
*Interpret results for Fallowfield station with caution due to small samples sizes.

The survey collected information on where respondents boarded their transit bus. While these geocoded locations are not presented in this report, they are available in the survey dataset.

3.8.5. Vehicle Occupancy

Exhibit 3-33 and Exhibit 3-34 highlight the vehicle occupancy of automobile trips to and from each terminal respectively for trips made with both personal vehicles and rental vehicles (taxis, limos and other vehicular modes are excluded). It should be noted that the tables below include all surveys reported with a mode of rental car, car driver, or car passenger (as trips reported by car passengers would each have had a driver, and the driver would not already have been surveyed as only one person per travelling party was surveyed), thus the total number of vehicle trips is greater than the total number of car driver trips reported elsewhere. The occupancies vary by terminal, with the highest arrival occupancy observed at the airport (1.86 persons per vehicle) and the highest departure occupancy recorded at Fallowfield Station, at 1.97 persons per vehicle.

Variations between arrival and departure occupancies at the same terminal also were observed, with higher occupancies recorded for arrivals at the airport, and higher departure occupancies recorded for the other three terminals. These differences are consistent with the change in urban transit and in car passenger shares that are associated with departing trips, as discussed in Section 3.8.1. They also may reflect the purpose of the trip; that is, whether it is dropping off or picking up someone at the terminal.

The highest two-occupant vehicle shares were observed for bus terminal arrivals (52%) and for Ottawa Train Station and Fallowfield Station departures (47% and 45%, respectively). Airport trips had the high proportions of 3 or more occupant vehicles (19% of arriving trips and 20% of departing trips). Fallowfield Station and the Greyhound Bus Station both had more modest proportions of 3 or more occupant vehicles for arriving trips (12% and 11% respectively) than for departing trips (19% and 21% respectively).

Exhibit 3-33: Trips to Terminal - Auto Vehicle Occupancy (% of Vehicle Trips)

	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Total
Avg. Daily Auto Vehicle Trips to Terminal	**4,156**	**856**	**330**	**511**	**5,853**
Vehicle Occupancy – Auto Trips					
1 Occupant	40%	46%	51%	38%	41%
2 Occupants	42%	44%	37%	52%	43%
3 Occupants	13%	9%	11%	7%	11%
4 or More Occupants	6%	1%	1%	4%	5%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Average Occupancy	**1.86**	**1.66**	**1.63**	**1.77**	**1.81**

n=1,120.

Exhibit 3-34: Trips From Terminal - Auto Vehicle Occupancy (% of Vehicle Trips)

	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Total
Avg. Daily Auto Vehicle Trips from Terminal	**4,336**	**917**	**281**	**538**	**6,038**
Vehicle Occupancy – Auto Trips					
1 Occupant	49%	40%	36%	46%	47%
2 Occupants	31%	47%	45%	34%	34%
3 Occupants	13%	12%	10%	15%	13%
4 or More Occupants	7%	2%	9%	6%	6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Average Occupancy	**1.82**	**1.76**	**1.97**	**1.81**	**1.80**

n=1,087

3.9. Parking for Auto Trips

Exhibit 3-35 details the volumes of auto trips where the driver parked either at or near the terminal, as well as the distribution of auto trips by parking location (excluding auto trips where there was only a pick-up or drop-off, with no parking). Exhibit 3-36, following, presents these distributions in pie charts. Whereas most trip volumes in this report are reported for expanded person-trips, the figures below are based on expanded auto-vehicle trips.

The geocoded locations of parking used are not detailed in this report, but are included in the survey dataset.

Exhibit 3-35: Use of Parking for Auto Trips to Terminal

	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn
Expanded Auto Trips to Terminal	**3,763**	**856**	**329**	**511**
Estimated Auto Trips with no parking, just pickup or drop-off*	1,723	292	117	163
% of total Auto Trips	46%	88%	71%	89%
Estimated Auto Trips with parking*	**2,039**	**40**	**48**	**21**
% of total Auto Trips	**54%**	**12%**	**29%**	**11%**
Parking Location (% of Parking Locations)				
Parking lot at terminal	n/a	93%	78%	94%
Airport parkade	70%	n/a	n/a	n/a
Airport surface parking lot	12%	n/a	n/a	n/a
Park'n'fly	11%	n/a	n/a	n/a
Airport curbside pickup/dropoff zone	6%	n/a	n/a	n/a
On-street	-	-	6%	4%
Municipal surface lot	-	2%	3%	-
Private parking garage	-	2%	-	-
Private surface lot	-	1%	1%	2%
Park and Ride	-	1%	13%	-
Other, please specify	1%	-	-	-
Total	**100%**	**100%**	**100%**	**100%**
Valid surveys with auto mode, parking questions answered (n)	445	131	155	72
No response to parking questions (surveys with auto mode)	122	66	45	45

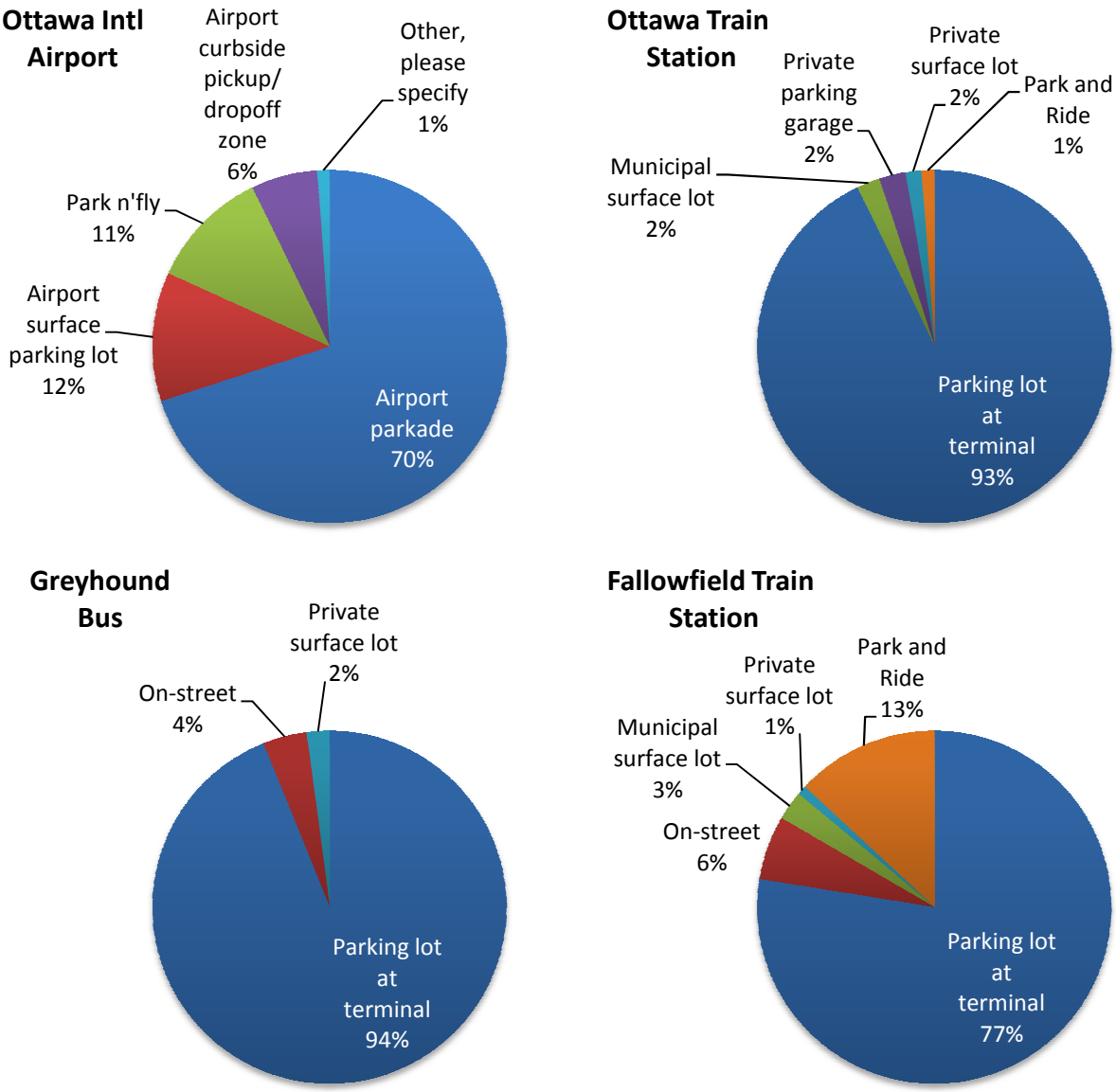
* due to high levels of non-response to this question, the responses of surveys with answers were scaled to the total number of auto-trips to compensate for surveys without known information about whether or where the auto driver parked. In total, 115 survey respondents with otherwise complete information about the trip to the terminal did not provide an answer to this question. Another 163 surveys had imputed trips to the terminal, as they were conducted directly with intercity arrivals and did not have answers regarding escorts'/supporters' trips to the terminal. Readers are referred to Section 2.5 of this report for more detail on these trip imputations.

Several observations may be noted:

- Just under half the airport auto trips (46%) involved a pick-up or drop-off only (with no parking), whereas the large majority of auto trips at the other terminals did not require parking. Note that there were 2,000 auto trips with parking at the airport, compared with 20 to 50 parking trips at the other terminals.
- The large majority of parking trips occurred at the designated parking lot at the rail and bus terminals, representing 93% of parking trips at the Ottawa Train Station and 94% at the bus terminal. The proportion using Fallowfield station's designated lot is 78%; however, when the adjacent transit park and ride lot is included, the proportion rises to 91%.[19]
- Alone among the terminals, the airport offers several parking facilities, at different proximities to the terminal and with prices varying accordingly. The majority of parkers (70%) used the parkade, which is immediately adjacent to the terminal. Another 6% 'parked' at the airport curbside pick-up or drop-off zones, which also are immediately adjacent to the terminal. (Stopping at these zones to serve a passenger is legal, but parking is not legal.) Another 12% used the surface parking lot – a further distance from the terminal, but still within the airport boundaries – while 11% used the discount park'n'fly facility, which is located outside the airport and is served by a shuttle bus.

[19] It is possible that the "municipal surface lot" percentages should be included in the on-site parking totals for the Ottawa Train Station (2%) and Fallowfield Station (3%), given that some patrons might have misinterpreted the lot type. Similarly, the 6% "on-street" share at Fallowfield may reflect people who park illegally along the accesses to that station's parking lot while waiting for a train to arrive.

Exhibit 3-36: Type of Parking – for Auto Trips that Parked at Terminal



3.10. Next Destination after Departing the Special Generator

3.10.1. Destination Type

Exhibit 3-37 and Exhibit 3-38 highlight the type of place to which survey respondents travelled on local trips departing the terminal. The results are similar to the origin types described in Section 3.6.1, with most travellers (70%) destined to a residential location, whether their own home or someone else's.

At the airport and bus terminals, the proportion of trips from the terminal destined to a residential location was less than the proportion of trips to the terminal originating at a residence (67% vs. 72% for the airport, and 75% vs. 80% for the bus station). Conversely, for the two train stations, residential destinations of trips from the stations were higher than residential origins of trips from the stations (90% vs. 79% for Fallowfield Train Station, and 75% vs. 70% for Ottawa Train Station). These numbers are consistent with both the respective proportions of NCR-resident and non-resident travellers and also with the arrival times of many flights, trains and buses in the late afternoon and evening.

One-fifth of airport travellers (19%) went to temporary accommodation after leaving the airport – compared with 18% of trips to the airport which originated at such locations. The greatest differences occurred with workplace-destined trips: whereas the average proportion was the same for both destinations and origins at 5% each, the destinations showed less variation by terminal (2-6%) compared with the origins (4-10%); see Exhibit 3-16.

Exhibit 3-37: Type of Local Destination Travelled to After Departing Generator

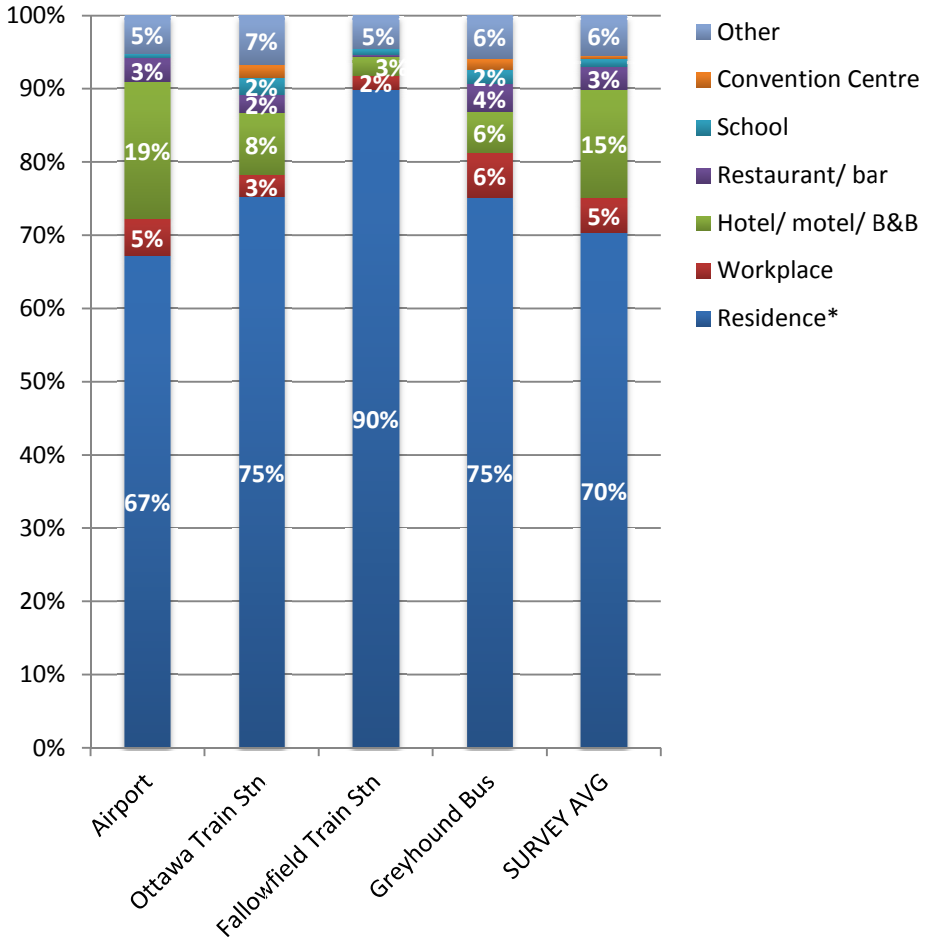
Origin	Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Average
Residence*	67%	75%	90%	75%	70%
Workplace	5%	3%	2%	6%	5%
Hotel/ motel/ B&B	19%	8%	3%	6%	15%
Restaurant/ club /bar	3%	2%	0%	4%	3%
School	1%	2%	1%	2%	1%
Convention centre	0%	2%	0%	2%	0%
Other**	5%	7%	5%	6%	6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

n=1,734. Excludes a small number of non-responses.

* Residence = either the traveller's own residence or someone else's residence that they were staying at or visiting.

**Other = shopping centre, hospital, store, coffee shop, car rental, arena, gym, other transportation terminal, etc.

Exhibit 3-38: Destination Type: What Kind of Local Place did Travellers go to from the Terminal?



n=1,734. Excludes a small number of non-responses.

* Residence = either the traveller's own residence or someone else's residence that they were staying at or visiting.

**Other = shopping centre, hospital, store, coffee shop, car rental, arena, gym, other transportation terminal, etc.

3.10.2. Next Destination Type – Differences between NCR Residents and Non-Residents

Exhibit 3-39 presents the types of trip destinations in more detail for both NCR residents and non-residents. The exhibit shows similar patterns to those associated with trip origins, as depicted in Exhibit 3-18, with a residence being the predominant choice of NCR residents, and temporary accommodations being cited by 38% of non-resident air travellers.

Exhibit 3-39: Destination Types – NCR Residents vs. Non-Residents

	Airport		Ottawa Train Stn		Fallowfield Train Stn		Greyhound Bus Stn		Survey Average	
	NCR Residents	Non Residents	NCR Residents	Non Residents	NCR Residents	Non Residents	NCR Residents	Non Residents	NCR Residents	Non Residents
Expanded Person-Trips	5,651	4,582	1,511	773	410	242	1,176	660	8,748	6,256
Residence in NCR*	87%	17%	93%	23%	96%	63%	85%	44%	88%	22%
Residence Outside NCR*	0%	25%	0%	18%	0%	17%	1%	13%	0%	22%
Workplace	3%	7%	1%	8%	1%	3%	5%	9%	3%	7%
Hotel/motel/B&B	3%	38%	1%	23%	0%	7%	0%	15%	2%	33%
Restaurant/club/bar	3%	4%	3%	1%	0%	1%	6%	0%	3%	3%
School	1%	1%	1%	4%	1%	1%	0%	5%	1%	1%
Convention Centre	0%	0%	0%	5%	0%	0%	0%	4%	0%	1%
Other**	3%	8%	1%	18%	2%	9%	3%	10%	3%	10%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

n=1,734. Excludes a small number of non-responses.

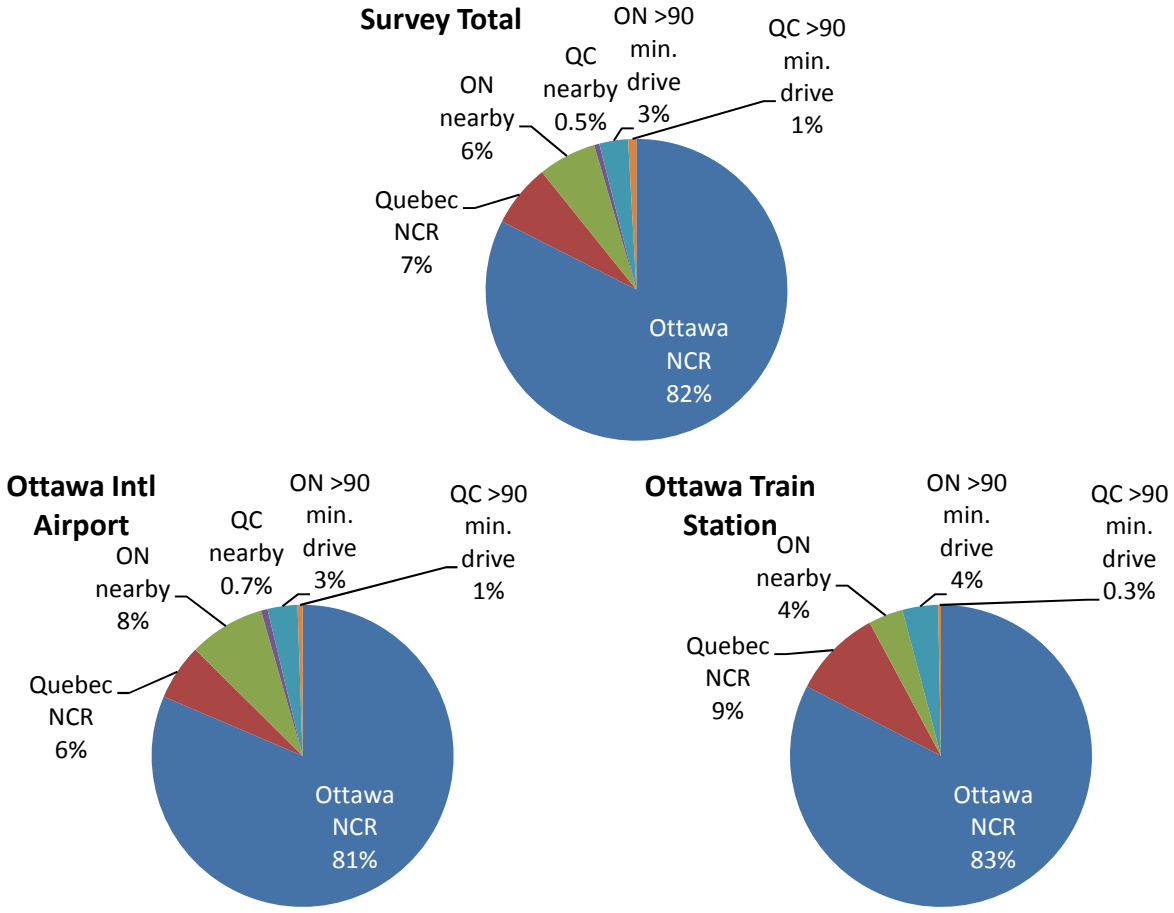
* Residence = either the traveller's own residence or someone else's residence that they were staying at or visiting.

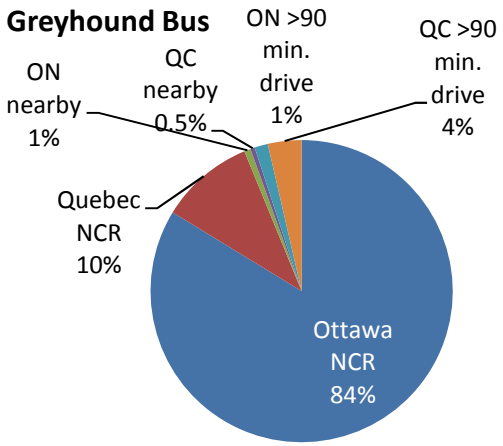
**Other = shopping centre, hospital, store, coffee shop, car rental, arena, gym, other transportation terminal, etc.

3.10.3. Destination Location

Exhibit 3-40 illustrates the destinations of trips from the terminals, summarized at a regional level. Exhibit 3-41 details the trip destinations by TRANS district. The distributions correspond closely to those associated with the origin locations (Exhibit 3-19 and Exhibit 3-20, respectively), with the Ottawa Inner Area attracting 24% of Ottawa Train Station travellers and 26% of bus station users; and Bayshore / Cedarview attracting 23% of Fallowfield users (with west and southwest Ottawa attracting most of the rest of Fallowfield users). As with the origins, Ottawa Centre and the Ottawa Inner Area attract proportions that are greater than those associated with the respondents' place of residence, again a function of the Centre / Inner Area's concentration of workplaces, attractions, schools and temporary accommodations. (Very few observations were recorded to Ile de Hull.) Nearby communities were the destination of 9% of airport trips, while communities greater than a 90 minute drive from the terminal were the destination of 3-5% of trips.

Exhibit 3-40: Trip Destinations – Where did Terminal Visitors Travel to Next?




Greyhound Bus
ON nearby 1%
QC nearby 0.5%
ON >90 min. drive 1%
QC >90 min. drive 4%
Quebec NCR 10%
Ottawa NCR 84%

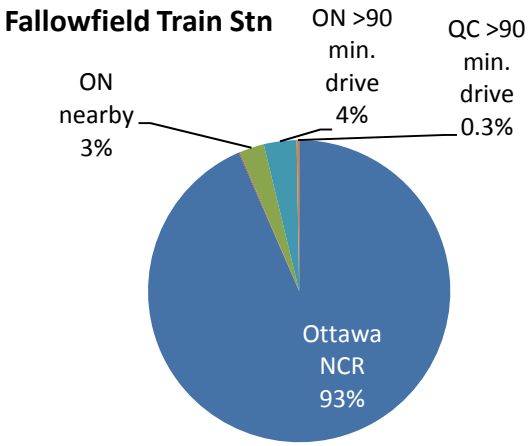

Fallowfield Train Stn
ON nearby 3%
ON >90 min. drive 4%
QC >90 min. drive 0.3%
Ottawa NCR 93%

Exhibit 3-41: Generator-Destination Matrix by TRANS District

Destination		Airport	Ottawa Train Stn	Fallowfield Train Stn	Greyhound Bus Stn	Survey Average
Trip Destination in Ottawa NCR		**81%**	**83%**	**93%**	**84%**	**82%**
1	Ottawa Centre	14%	13%	0%	13%	13%
50	Ottawa Inner Area	12%	24%	0%	26%	15%
100	Ottawa East	4%	9%		4%	4%
120	Beacon Hill	2%	2%		1%	2%
140	Alta Vista	6%	4%	2%	8%	6%
180	Hunt Club	8%	4%	3%	5%	7%
200	Merivale	9%	5%	8%	6%	8%
240	Ottawa West	3%	5%	9%	3%	4%
260	Bayshore / Cedarview	4%	2%	23%	6%	5%
300	Orleans	6%	5%		6%	5%
350	Rural East	0%	3%			1%
360	Rural Southeast	1%	0%	0%	0%	1%
400	S. Gloucester / Leitrim	2%	1%	5%	1%	2%
425	South Nepean	4%	3%	15%	1%	4%
450	Rural Southwest	1%		6%		1%
500	Kanata / Stittsville	6%	1%	20%	4%	6%
560	Rural West	1%	0%	0%	0%	0%
Trip Destination in Québec NCR		**6%**	**10%**	**0%**	**10%**	**7%**
600	Ile de Hull	0%	0%		1%	0%
625	Hull Périphérie	1%	2%		2%	1%
650	Plateau	0%	0%		0%	0%
700	Aylmer	1%	3%		1%	1%
750	Rural Northwest	1%	2%		0%	1%
800	Gatineau Centre	1%	2%		3%	1%
820	Gatineau Est	0%	1%		0%	0%
840	Rural Northeast	0%	0%	0%	3%	1%
845	Masson-Angers	0%				0%
Trip Destination External to NCR		**13%**	**8%**	**6%**	**6%**	**11%**
Ontario nearby communities		8%	4%	3%	1%	6%
Ontario > 90 minute drive away		3%	4%	3%	1%	3%
Québec nearby communities		1%			0%	1%
Québec > 90 minute drive away		1%	0%	0%	4%	1%
Grand Total		**100%**	**100%**	**100%**	**100%**	**100%**

3.11. Consultant's Observations

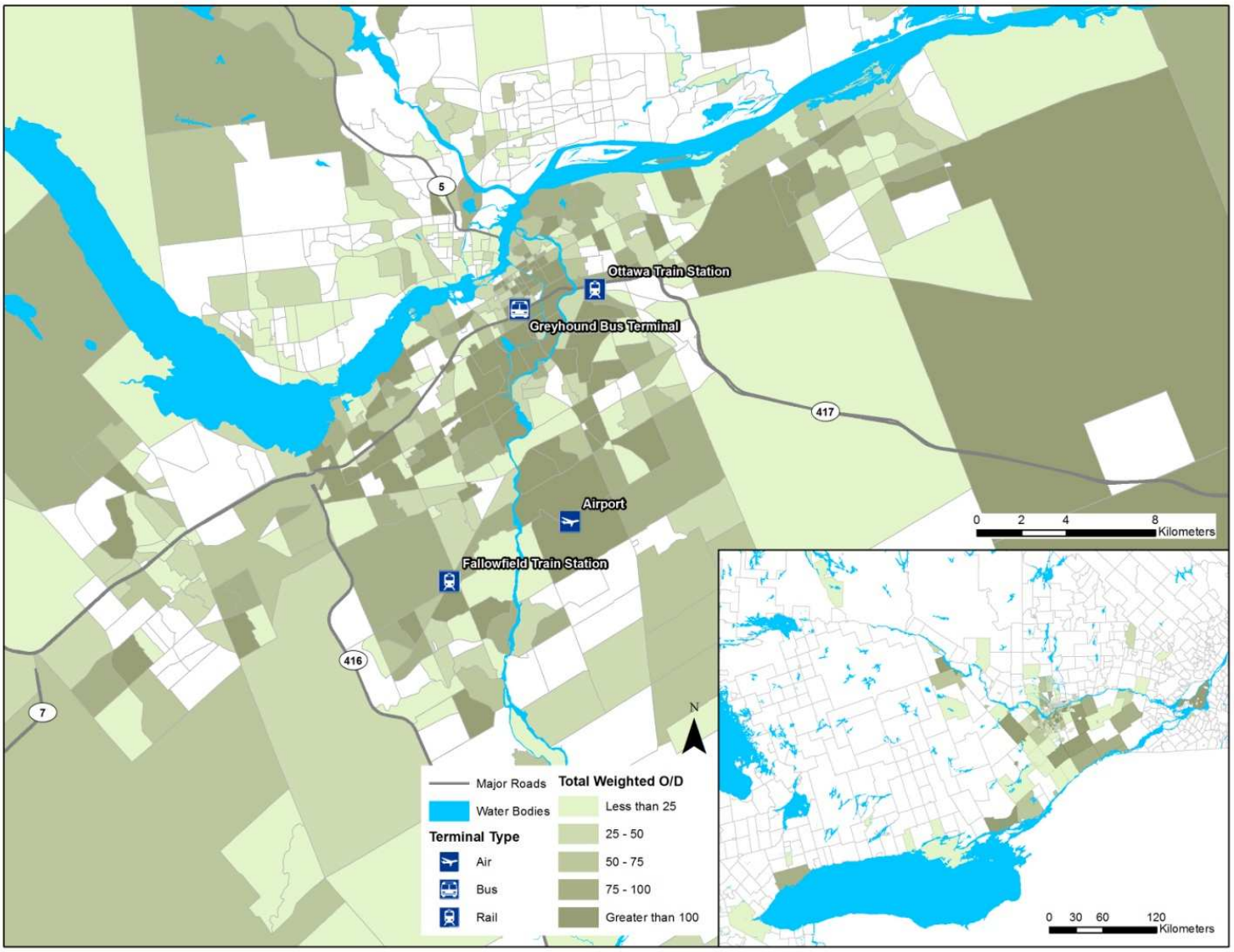
Reviewing the whole of the survey results yields the following key observations:

- The four terminals serve varying geographical catchment areas, including areas outside the NCR, with the airport serving the largest area - in part because it provides the broadest connections, nation-wide, cross-border and internationally, and in part because many of the train and bus services can be accessed outside the NCR.
- The proportion of Québec NCR residents among the travellers is much lower than their proportion of the NCR population. The reasons are not apparent, although possible reasons might include the availability of some services in the Québec NCR (e.g., bus, air though not rail); the relatively longer distances across the Ottawa River bridges and through downtown Ottawa for Quebec residents, which may 'entice' a greater percentage of travellers to drive to their intercity destination directly or to use one of the terminals in Montreal as the start/end point for their intercity trip (e.g., P-E T Airport in Montreal), especially if the trip would otherwise require a transfer in Montreal; or the usage of taxis or other commercial services by Québec NCR residents for intercity travel to nearby communities.
- The local origin and destination types and locations are very similar, with places of residence (whether the traveller's own residence or the residence of someone the traveller was staying with or visiting socially) dominating.
- The car is the most important mode, at about 2/3 of all arriving trips, with passengers making up almost half of these trips, and with vehicle occupancies ranging between 1.6 and 2.0 persons per vehicle. Taxis and limos represent another one-fifth of arriving trips, and urban transit about 11%. The Ottawa Train Station and the bus terminal – both located close to the Ottawa core – had the highest transit shares.
- The most important reason for using the chosen mode is 'convenience.' Transit users also cited price/cost and the lack of a vehicle as being important.
- The most important reasons for not using transit included traveller preference (for another mode), unavailability of transit service and – especially for non-residents – uncertainty as to where to find information on transit services.

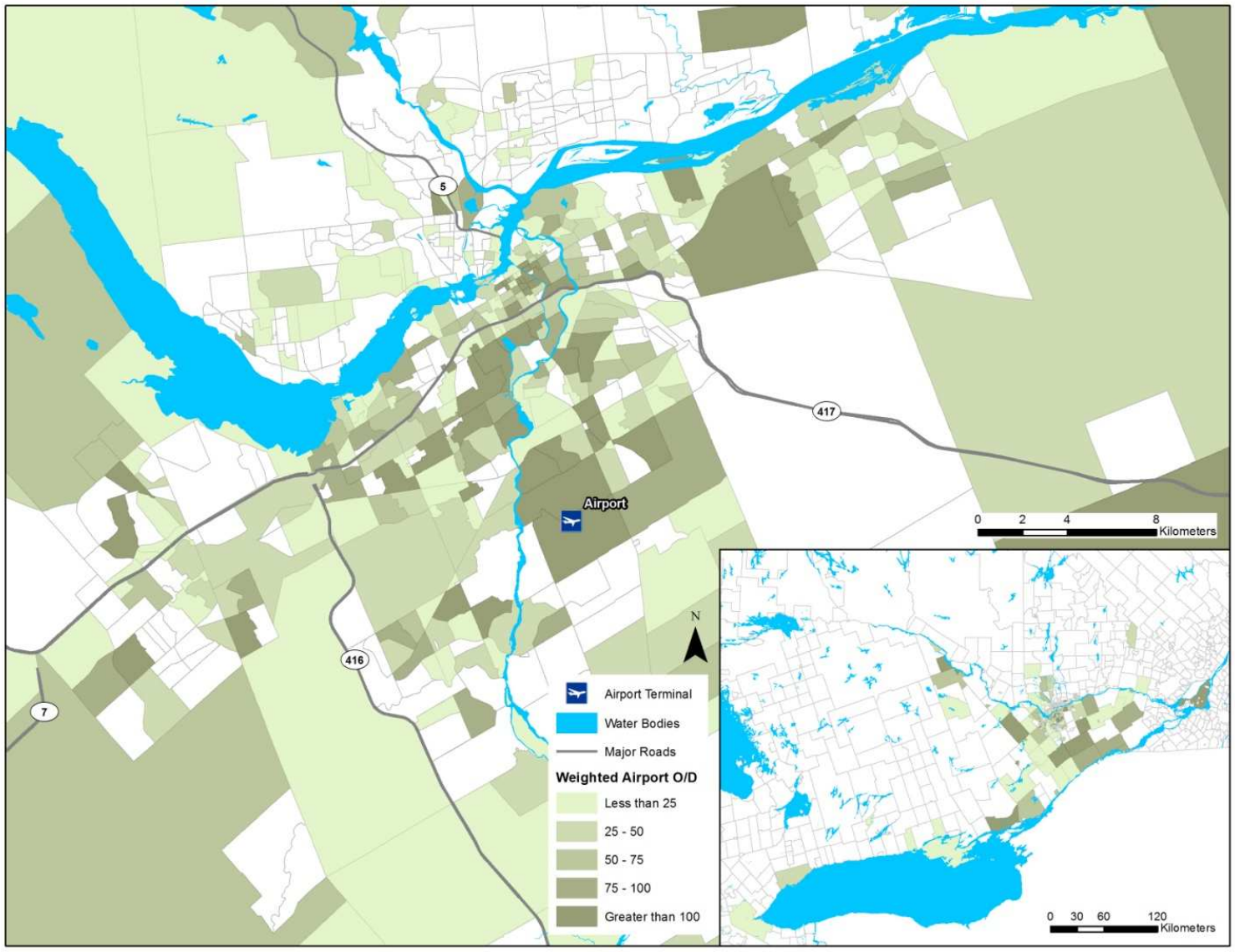
Appendix A: Maps of Generators and Origins/Destinations

Origins and destinations of local trips to/from intercity travel terminals.

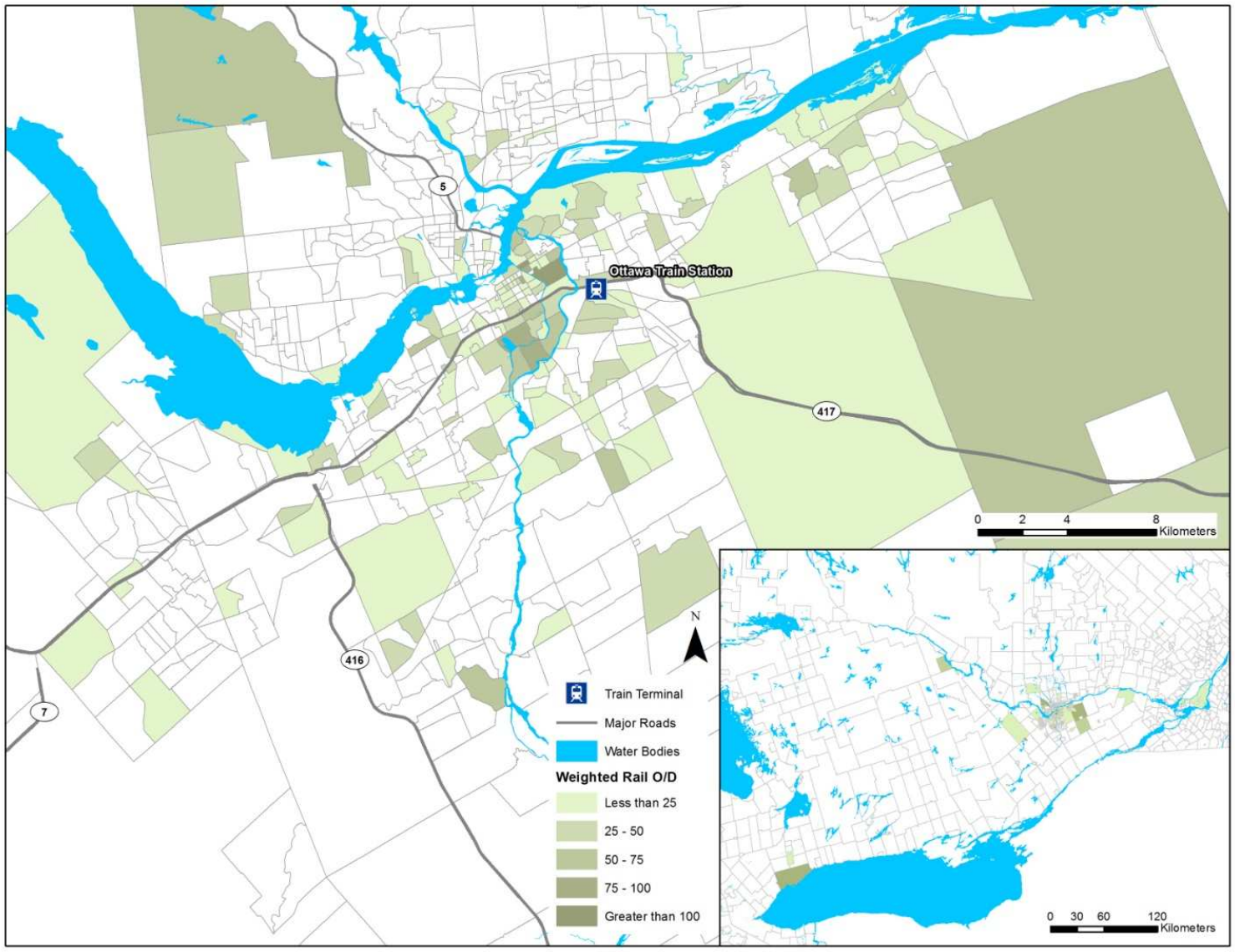
Overview – All Terminals



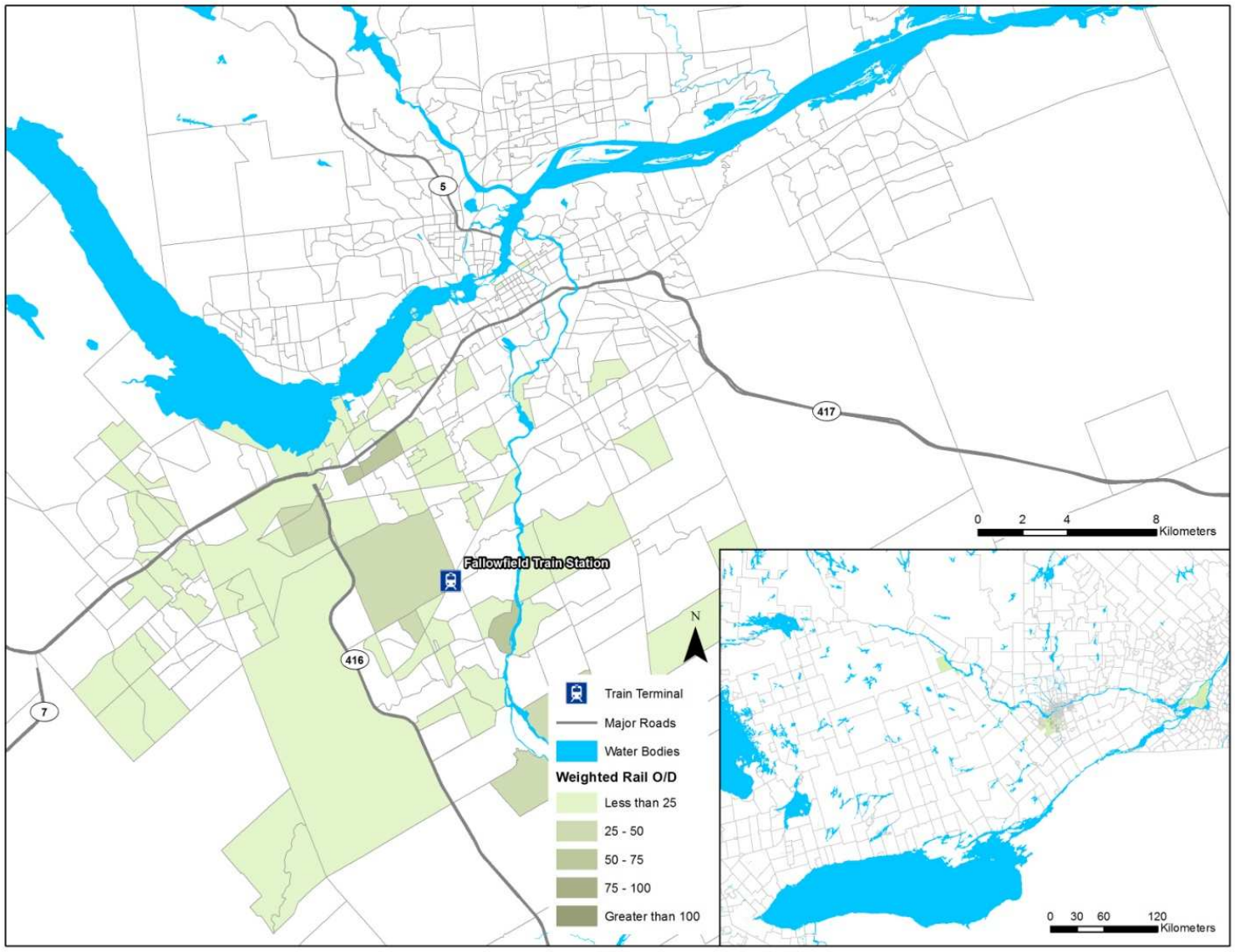
Airport


5
417
416
7
Airport
0 2 4 8
Kilometers
N
Airport Terminal
Water Bodies
Major Roads
Weighted Airport O/D
Less than 25
25 - 50
50 - 75
75 - 100
Greater than 100
0 30 60 120
Kilometers

Ottawa Train Station



Fallowfield Train Station



Greyhound Bus Station