



2011 TTS VERSION 1.0
DATA EXPANSION & VALIDATION

TRANSPORTATION TOMORROW SURVEY
2011

*A Telephone Interview Survey on
Household Travel Behaviour in
Greater Toronto and the Surrounding Areas
Conducted in the Fall of 2011 and 2012*

VERSION 1.0
DATA EXPANSION & VALIDATION

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Transportation Information
Steering Committee*

by the

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Participating Agencies:

Ministry of Transportation, Ontario • City of Barrie • City of Brantford • City of Guelph
City of Hamilton • City of Kawartha Lakes • City of Orillia • City of Peterborough
City of Toronto • County of Brant • County of Dufferin • County of Peterborough
County of Simcoe • County of Wellington • Metrolinx • Regional Municipality of Durham
Regional Municipality of Halton • Regional Municipality of Niagara
Regional Municipality of Peel • Regional Municipality of Waterloo
Regional Municipality of York • Toronto Transit Commission • Town of Orangeville

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Summary

Population

Population counts by age from the 2011 census were used as control totals for the purpose of expanding the 2011 TTS data to represent the total population of the survey area. Therefore there is a precise match in population totals between the census and TTS at the municipal level. However, the TTS data were collected in the fall of 2011 and fall of 2012 whereas the census data applies to the census day – May 10th 2011. This difference in timing is most likely to affect those involved in post secondary education, many of whom will have been recorded in the Census at their permanent home location instead of where they live when they are at school. Previous TTS were expanded on the basis of dwelling unit counts and under represented the census population by between 2% and 3%. The under representation was due, in a large part, to the exclusion of institutions (Prisons, Hospitals, Nursing homes etc.) from the census dwelling unit counts. Institutional residents are, however, included in the Census population numbers.

These factors and the difference in expansion procedure relative to previous TTS, need to be taken into account when using the TTS data for demographic purposes, particularly when making time series comparisons.

Dwelling Units

Because the 2011 TTS data has been expanded on the basis of age specific population there is not a single unique expansion factor that can be applied to each household. The summary statistics in this report have been generated using the mean expansion for the persons that make up each household. The use of the mean value gives household statistics that are consistent with any person or trip tabulations based on complete households. It is not valid for tabulation of partial household data (i.e. the number of employed persons, students or licensed drivers). This method of calculation gives an expanded household total for the survey area as a whole that is an almost match (-0.2%) with the census dwelling unit count. At the funding agency level the difference in dwelling unit totals between the TTS and Census is less than 5% with the exception of Dufferin County (+6.1%). Differences in distribution at the municipal level can largely be attributed to the difference in timing of the TTS relative to the census. Previous TTS, expanded on the basis of dwelling units, generally over represented the population in areas with universities and post secondary colleges and an under representation elsewhere. Because the 2011 TTS is expanded to represent the population at the time of the census the same differences in distribution appear as an under representation of dwelling units instead of an over representation of population.

As with population these factors need to be taken into account when using the TTS data for demographic purposes.

Employed Labour Force and Employment

Statistics Canada replaced the long census questionnaire with the voluntarily based National Household Survey, which was conducted from May to August of 2011. The employed labour force represented by the 2011 TTS is more comparable to the National Household Survey data relative to the previous surveys. This could be a result of the new expansion method applied to the survey data. Seasonal variations might account for the slight differences.

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Post Secondary School Students

Full time post secondary school students are overall under represented by the 2011 TTS. Further investigation of the discrepancies, and the validity the data used in the comparisons, should be carried out before the TTS data is used for any analysis that is specific to education institutes. Comparison of the TTS data with part time enrollment at post secondary schools is not meaningful without more detailed information on the nature and location of the courses being offered and therefore omitted from this report.

Travel Data

Comparisons with traffic and transit ridership counts are, in general, not as consistent as they were for the 2006 TTS. In the a.m. peak period traffic flows were under represented by an average of 5% in the peak direction and 12% in the reverse direction. Daily traffic (13 hour counts) was under represented by an average of 24%. TTC total daily ridership is under represented by 7% but the a.m. peak period is over represented by an average of 17%. Similar patterns occur with a number of the other municipal transit operators. GO Rail ridership, both daily and a.m. peak period, is over represented by an average of 17%. GO Bus ridership is significantly over represented by 28% in the peak period and 72% daily. These differences need to be considered when using the TTS data and appropriate adjustments made when necessary. The detailed transit route information contained in the TTS database should be verified against actual boarding counts prior to using it for analysis of ridership characteristics at the individual route level. There is no evidence of any under reporting of work or school trips.

The significant discrepancies found in the age distribution of the TTS sample relative to the census, is cause for concern especially as there are most likely a symptom of sample bias rather than the under lying cause. There may be other "hidden" factors that cannot be identified. The fact that a large segment of the population, mostly in the 18 to 35 age range, are not included in the frame from which the sample is drawn means that there is much greater scope for hidden biases than there was in previous surveys. That factor, together with the change in data expansion technique, needs to be taken into consideration when using the 2011 data and in particular when performing time series analysis with data from the 1986, 1991, 1996 2001 and 2006 TTS.

1 Introduction

The 2011 TTS consists of demographic and travel information collected throughout the survey area. The sample frame is listed residential telephone numbers. The data from previous TTS were expanded to represent the total population of the survey area by applying an expansion factor, based on dwelling unit counts, to all of the household, person and trip data associated with each household.

Chapter 2 of this report provides a discussion of potential sources of errors and bias due to the survey methodology and expansion process. Of major concern is the adequacy of the sample frame in providing a representative sample of households throughout the survey. The widespread use of cell phones, and other forms of communication technology, has lead to a significant reduction in the proportion of households that have conventional land lines with listed phone numbers. The database from which the sample was drawn only contains about 50% of the households in the survey area as a whole with much lower representation of some categories than other. The discrepancy in age distribution is an indirect outcome of a biased sample there are likely to be other factors that cannot be identified or corrected for. This potential for “hidden” bias is inherently greater than in previous surveys. Due diligence needs to be exercised in assessing the quality and reliability of the TTS data, both on its own and in conjunction with the data from previous surveys, with respect to each specific application.

Chapter 3 describes the data expansion process and the calculation of expansion factors. The 2011 survey differs in that the expansion factors are based on age specific population counts and are applied to the person and trip data associated with each individual person. There is not a single factor applied to each household. This change in expansion strategy was adopted because of significant differences between the age distributions of the population that was surveyed relative to the 2011 Canada Census data for the survey area as a whole.

Chapter 4 is devoted to data validation consisting primarily of comparisons made between the survey results and data obtained from a number of other independent sources. Those sources and data items include:

- Canada Census
 - Dwelling units
 - Population by age and gender
 - Employed Labour Force
- Universities & Colleges
 - Student Enrollment
- Municipal Cordon Counts
 - Traffic volumes
- Transit Operators
 - Transit ridership

The comparisons identify significant differences between the TTS and other data but the comparisons, of themselves, do not identify either the reason for the difference or which data set is likely to be the most reliable. Subjective evaluations, both as to the quality of the data being compared with and the reason for the differences, are provided where appropriate. It is the responsibility of the user to determine what adjustments, if any, are appropriate for a given application.

Except as noted the comparisons have been made using version 1.0 of the 2011 TTS database. In some cases results from previous expansion of the data without age adjustment have been included to demonstrate the significance of the age adjustment factors. The previous expansion

included adjustment factors to give a precise match with the census dwelling unit counts at the municipal and planning district level.

2 Potential Sources of Error and Bias

The two primary sources of bias in the survey results are sample selection and non-response. Comparisons with exogenous data, such as the Canada Census, can identify some of the symptoms of bias, but not the underlying cause nor is it possible to distinguish between the problems associated with sample selection and non-response. The underlying assumption in the expansion of the TTS data is that travel patterns and behaviour of those included in the survey is the same, or similar, to those who were not.

2.1 Sample Frame

Listed residential telephone numbers do not provide total representation of all the households in the survey area. The increasing use of cell phones as a substitute for landlines was identified as a major concern in the 2006 TTS. Cell phone numbers belong to individuals and are unlisted. Its effect on the survey results in terms of either demographics or travel behaviour is uncertain. Households without phones, with unlisted numbers and those on the “do not call” list for telemarketers are also excluded from the sample frame.

Validation done for the 1986 TTS revealed that households with unlisted phone numbers tend to be concentrated at the two opposite extremes of the economic spectrum with regard to household income. It was not possible to identify any specific characteristics that might translate into bias in terms of either demographics or travel behaviour.

The survey results could be biased if there are significant differences between the demographic and travel behaviour characteristics of households that respond to the survey relative to those that do not. The effect of sample bias on total population and age distribution is discussed in chapter 3.

The 2006 TTS does not consist of a random selection of households throughout the survey area. Some forward sortation areas (FSAs), the geographic aggregation that sample control processes were based on, have been sampled at a higher rate than others have due to low response rate. Within some areas, apartment buildings are under-represented relative to other types of dwelling. Comparison of number of dwellings with Census data will be presented in chapter 3.

2.2 Timing of Sample Selection

The household composition of the survey area changes continuously as people migrate in and out of an area. The data files from which the Cornerstone Group of Companies draws the sample are updated monthly with new information obtained from Bell Canada that includes listed phone numbers in areas not served by Bell Canada. The drawing of each sample was timed to immediately follow the completion of a monthly update.

The main sample used in each of the two phases of the survey (fall 2011 and fall 2012) was drawn in two stages. An initial sample selection, used in training and at the start of each phase, was drawn in early August. A larger sample was drawn in early October after the September updates were complete. The timing of sample selection was staggered to ensure a reasonable representation of the student population in the cities with universities and other post secondary school facilities. Additional sample for selected areas was drawn in late November 2012 to

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correct for below average response rates in those areas. Details of the sample selection process and problems encountered are contained in the report 2011 TTS: Design and Conduct of the Survey.

The Canada Census was carried out on May 10, 2011 and may therefore represent a slightly different population from that of the survey. The most significant difference is likely to be in the number and distribution of post secondary school students. These differences, and the effects on the results of the survey, are discussed in Chapter 4.

2.3 Bias Due to Non Response

The survey results could be biased if there are significant differences between the demographic and travel behaviour characteristics of households that respond to the survey relative to those that do not due to either the sample selection process or non-response. A high response rate minimizes the potential for bias. Non-response may be due to failure to make contact with a household or their refusal to participate. The ease with which each household is contacted could be correlated to household size and frequency of trip making. Approximately 28% of the households in the sample were not contacted despite a minimum of 8 attempts. The potential bias due to that level of non-response is small.

Approximately 22% of the households contacted refused to participate in the survey. There is no clear evidence to suggest that the demographic and travel characteristics of these households differ significantly from those that did participate in the survey. Follow up investigations of non-responders, done elsewhere, have generally had limited success and have been inconclusive.

2.4 Under Reporting of Trips

The reliance on one member of each household to report person and trip information for all members of the household is a potential source of error and, more significantly, the under reporting of trip information. Separate studies comparing trip rates for “informants” and “non informants” have been done for both the 1986 and 1996 TTS. These studies showed a significant difference in reported trip rates for discretionary (non work or school related) travel by auto drivers and, to a lesser extent for trips made by auto passengers and public transit. There was no significant difference in reported trip rates for travel to and from school or work. The total extent of the under reporting of trip information is addressed in chapter 3.

2.5 Incorrect Information

Individual items of information contained in the TTS may be incorrect due to errors made by respondents in answering the survey questions, mistakes made by the interviewers in recording the information or the inability of coding staff to assign the correct coordinates on the basis of the geographic information provided. Close monitoring and built in logic checks in the interview and coding software minimize, but do not eliminate, the potential for error.

3 Data Expansion

The 2011 TTS data has been expanded to represent the total population of the survey area using control totals obtained from the 2011 Canada Census. The expansion procedure differs significantly from that used in all previous TTS in that it is based on population instead of dwelling units. The expansion factors used in previous surveys were obtained by dividing the number of dwelling units in a given geographic area from the census, by the number of completed household interviews contained in the final TTS database for the same area. The same expansion factor was applied to all the household, person and trip data associated with the households in that geographic area. For the 2011 survey age specific expansion factors are applied to the person and trip data associated with each person included in the survey. There is not, therefore, a single unique expansion factor that can be applied to the household data. The calculation of expansion factors was a 2 stage process. Stage 1 of the process is based on the postal code information obtained with the original sample. The initial expansion factors used are the number of dwelling units, obtained from the census, in a postal area divided by the number of completed interviews in the same postal area. In rural areas Canada Post delivery counts were used as control totals instead of Census data.

In stage 2 adjustment factors are applied by municipality and age group of each person for which survey information were collected. To obtain the municipality the UTM coordinates belonging to each household were assigned to traffic zones and then to municipalities. The control totals for each combination of age group and municipality were obtained from the Canada Census.

3.1 Expansion by postal area

The postal areas, calculations and resulting factors used in stage 1 of the expansion are contained in Appendix A. In urban municipalities the postal areas are defined by Forward Sortation Areas (FSAs). A minimum of 500 completed interviews was used as a criterion for the definition of each postal area. FSAs with less than that number were combined with adjacent FSAs in order to meet that criterion. In rural areas the first 5 characters of the postal code were used to define postal areas. Each 5 character code represents a rural post office. Delivery unit counts, obtained from the Canada Post web site in May 2012, were used as control totals in those areas. Dwelling Unit counts from the Census are only available by FSA. Both the census dwelling unit and delivery counts are included in Appendix A. There is an almost exact match for most FSAs. Delivery counts were not available for all rural post offices. Postal areas for which no control count exists were aggregated with adjacent areas for which counts do exist. The expansion factor for the combined area was calculated for the part of the area for which count data are available. The same expansion factor is then used for the remainder of the aggregated area for which count data do not exist.

3.2 Age adjustment factors

Exhibit 1 shows the age cohorts that were selected for application of age correction factors and the mean value of the adjustment factors that were necessary to correct for the difference in age distribution between the survey and the Census data. The adjustment factors are applied by Municipality and are shown in Appendix B. The City of Toronto was sub-divided into 16 Planning Districts and the City of Hamilton into the 6 Municipalities that made up the former Region of Hamilton-Wentworth. Age groups have been combined where necessary, as shown by the grouped cells surrounded by boxes, to obtain a minimum of 1,000 person records for the application of any single adjustment factor. The greatest spread in adjustment factors is for Planning District 1 in Toronto where a person in the 63 to 77 age range was more than 6 times as likely to have been included in the survey as someone in the 18 to 32 age range.

The final expansion factor applied to each person record is the product of factors shown in Appendix A and Appendix B.

Exhibit 1: Age Adjustment Factor

Age cohort	Proportion of total population		Mean age adjustment
	TTS	Census	
0-17	20%	21%	1.081
18-32	13%	20%	1.535
33-47	20%	22%	1.158
48-62	24%	21%	0.905
63-77	16%	11%	0.701
78+ Female	3.5%	2.9%	0.854
78+ Male	3.1%	1.9%	0.613

4 Data Validation

4.1 Dwelling Units and Population

The Canada Census provides detailed information on the number of households and the distribution of population throughout the country. It is for that reason that population counts from the census are used as the base for expansion of the TTS data. Exhibit 2 gives the TTS house and person record counts and compares the expanded totals with the Census data by municipality.

Most households contain multiple people each with a different expansion factor. The expanded dwelling unit totals shown in Exhibit 2 were obtained by applying the mean expansion factor for all members of each household. The use of the mean expansion factors yields dwelling unit totals that are consistent with any tabulation of person data that is based on complete households. It is not valid for the tabulation of partial household data – for example the number of households with a set number of employed persons, students or licensed drivers.

Because the age adjusted expansion factors are based on population and are applied by municipality there is a precise match between the census and TTS populations at the municipal level. The differences in population shown in Exhibit 2 can be attributed to rounding.

A primary source of differences between the expanded TTS population and census population in previous surveys has been due to the exclusion of institutions and collective dwelling units (hospitals, nursing homes, prisons etc.) from the survey. Institutions are included in the census population data but not in the dwelling unit count. The exclusion of institutions from the dwelling unit counts used to expand previous surveys has therefore contributed to the under representation of the population. Differences in the total population of the survey area of 2.8%, 2.9%, 2.8%, 2.5% and 2.2% were recorded in the 2006, 2001, 1996, 1991 and 1986 TTS respectively. There is no under representation of population in the 2011 survey. Institutional residents likely make few trips. Their inclusion in the population counts used to expand the survey therefore is likely to contribute to a greater distortion of trip making patterns than was observed in previous surveys.

In previous surveys the difference in timing between the TTS and the Census was identified as a factor affecting the distribution of population. Some over representation of population was observed in the areas surrounding major Universities and post secondary colleges with a corresponding under-representation in other areas. The TTS was thought to provide a better representation of the distribution of population at the time of the survey than did the Census. Expanding the data on the basis of population is therefore likely to contribute to a greater distortion of travel behaviour patterns than existed in previous TTS. The representation of school enrolment is discussed further in Section 4.4.

The sample purchased for previous TTS from 1996 to 2006 did not include apartment numbers meaning that it was unlikely that their residents would receive the advance letter. The fact that one segment of the populations does not receive the letter therefore introduces the possibility of systematic bias in the survey results. The absence of apartment numbers is thought to be just one of a number factors contributing to a lower response rate for people living in apartment units. In 2001 differential expansion rates were applied to reduce the potential bias. In 2006 apartments were sampled at a higher rate as a corrective measure.

The sample information obtained for the 2011 TTS did include apartment numbers. Apartments were sampled at a higher rate in the initial sample purchase in 2011 based on the previously observed differences in response rates. Further adjustments were to the sampling rates in 2012

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based on the observed response rates in 2011. Details of the sample purchases are contained in the Conduct of the Survey Report.

Exhibit 2: Comparison of Expanded Totals by Municipality

	TTS Record Count		Population			Dwelling units			Sample Size	
	House	Person	Census	TTS	Diff.	Census	TTS	Diff.	House	Pers.
PD 1 of Toronto	6090	11096	224,005	224,250	0.1%		115,124			5.0%
PD 2 of Toronto	4032	9602	196,295	196,566	0.1%		78,444			4.9%
PD 3 of Toronto	4633	11594	237,515	237,582	0.0%		89,637			4.9%
PD 4 of Toronto	5341	11772	229,485	229,692	0.1%		95,534			5.1%
PD 5 of Toronto	2400	5856	123,495	123,674	0.1%		47,275			4.7%
PD 6 of Toronto	4336	10402	208,830	208,973	0.1%		82,754			5.0%
PD 7 of Toronto	1435	3152	59,010	59,018	0.0%		25,466			5.3%
PD 8 of Toronto	4017	9635	191,975	191,860	-0.1%		74,852			5.0%
PD 9 of Toronto	1422	4305	97,110	97,256	0.2%		30,439			4.4%
PD 10 of Toronto	2585	7286	148,460	148,514	0.0%		49,790			4.9%
PD 11 of Toronto	4036	9509	194,180	194,354	0.1%		76,607			4.9%
PD 12 of Toronto	1431	3689	78,655	78,791	0.2%		28,299			4.7%
PD 13 of Toronto	3919	10437	229,815	230,191	0.2%		80,822			4.5%
PD 14 of Toronto	1321	3102	63,970	64,031	0.1%		25,057			4.8%
PD 15 of Toronto	1309	3623	84,885	84,907	0.0%		28,955			4.3%
PD 16 of Toronto	3654	10458	247,050	247,126	0.0%		80,395			4.2%
Toronto	51,961	125,518	2,614,735	2,616,785	0.1%	1,047,880	1,009,451	-3.7%	5.0%	4.8%
Brock	316	753	11,345	11,356	0.1%	4,330	4,508	4.1%	7.3%	6.6%
Uxbridge	402	1030	20,625	20,631	0.0%	7,335	7,591	3.5%	5.5%	5.0%
Scugog	484	1192	21,570	21,550	-0.1%	7,960	8,066	1.3%	6.1%	5.5%
Pickering	1522	4132	88,720	88,704	0.0%	29,325	30,841	5.2%	5.2%	4.7%
Ajax	1612	4843	109,600	109,626	0.0%	35,030	35,486	1.3%	4.6%	4.4%
Whitby	2059	5694	122,020	122,128	0.1%	41,015	41,938	2.2%	5.0%	4.7%
Oshawa	2927	6962	149,605	149,655	0.0%	58,795	58,557	-0.4%	5.0%	4.7%
Clarington	1519	3993	84,550	84,581	0.0%	29,885	29,917	0.1%	5.1%	4.7%
Durham	10,841	28,599	608,035	608,231	0.0%	213,675	216,903	1.5%	5.1%	4.7%
Georgina	856	2205	43,520	43,560	0.1%	15,860	16,054	1.2%	5.4%	5.1%
East Gwillimbury	355	932	22,475	22,467	0.0%	7,540	7,838	3.9%	4.7%	4.1%
Newmarket	1506	4119	79,975	80,003	0.0%	27,410	28,450	3.8%	5.5%	5.2%
Aurora	890	2448	53,205	53,300	0.2%	17,695	18,377	3.9%	5.0%	4.6%
Richmond Hill	2905	8656	185,540	185,545	0.0%	58,655	61,090	4.2%	5.0%	4.7%
Whitchurch-Stouffville	667	1782	37,625	37,630	0.0%	13,040	13,317	2.1%	5.1%	4.7%
Markham	4650	14352	301,710	301,945	0.1%	90,535	94,915	4.8%	5.1%	4.8%
King	299	821	19,900	19,923	0.1%	6,650	6,832	2.7%	4.5%	4.1%
Vaughan	4452	13973	288,300	288,369	0.0%	86,060	89,973	4.5%	5.2%	4.8%
York	16,580	49,288	1,032,250	1,032,742	0.0%	323,445	336,846	4.1%	5.1%	4.8%
Caledon	1049	2951	59,460	59,482	0.0%	19,075	19,870	4.2%	5.5%	5.0%
Brampton	6881	22547	523,910	524,202	0.1%	149,270	155,714	4.3%	4.6%	4.3%
Mississauga	11573	33635	713,450	713,897	0.1%	234,585	238,665	1.7%	4.9%	4.7%
Peel	19,503	59,133	1,296,820	1,297,581	0.1%	402,930	414,249	2.8%	4.8%	4.6%
Halton Hills	1051	2839	59,010	59,071	0.1%	20,275	21,045	3.8%	5.2%	4.8%
Milton	1277	3746	84,360	84,395	0.0%	27,565	27,871	1.1%	4.6%	4.4%
Oakville	3274	8663	182,520	182,625	0.1%	62,410	64,999	4.1%	5.2%	4.7%
Burlington	3324	7942	175,780	175,938	0.1%	68,780	69,778	1.5%	4.8%	4.5%
Halton	8,926	23,190	501,670	502,029	0.1%	179,030	183,694	2.6%	5.0%	4.6%

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Exhibit 2: Comparison of Expanded Totals by Municipality

	TTS Record Count		Population			Dwelling units			Sample Size	
	House	Person	Census	TTS	Diff.	Census	TTS	Diff.	House	Pers.
Flamborough	618	1648	40,055	40,089	0.1%		14,038			4.1%
Dundas	565	1320	24,785	24,791	0.0%		10,564			5.3%
Ancaster	630	1627	36,940	37,060	0.3%		13,599			4.4%
Glanbrook	522	1511	22,435	22,485	0.2%		8,142			6.7%
Stoney Creek	1126	3015	65,070	65,131	0.1%		23,696			4.6%
Hamilton	7008	16153	330,325	330,257	0.0%		134,899			4.9%
Hamilton	10,469	25,274	519,950	520,131	0.0%	203,800	205,125	0.7%	5.1%	4.9%
Grimsby	546	1290	25,325	25,378	0.2%	9,615	10,347	7.6%	5.7%	5.1%
Lincoln	457	1179	22,490	22,464	-0.1%	8,145	8,002	-1.8%	5.6%	5.2%
Pelham	281	661	16,600	16,570	-0.2%	6,200	6,501	4.8%	4.5%	4.0%
Niagara-on-the-Lake	384	887	15,400	15,411	0.1%	5,920	6,279	6.1%	6.5%	5.8%
St. Catharines	2903	6588	131,400	131,529	0.1%	55,415	54,819	-1.1%	5.2%	5.0%
Thorold	353	827	17,930	17,921	-0.1%	7,090	7,039	-0.7%	5.0%	4.6%
Niagara Falls	1760	4055	82,995	83,075	0.1%	33,380	34,249	2.6%	5.3%	4.9%
Welland	1160	2584	50,630	50,617	0.0%	21,490	20,862	-2.9%	5.4%	5.1%
Port Colborne	437	919	18,425	18,471	0.2%	7,905	7,966	0.8%	5.5%	5.0%
Fort Erie	575	1320	29,960	29,906	-0.2%	12,545	12,244	-2.4%	4.6%	4.4%
West Lincoln	252	724	13,840	13,822	-0.1%	4,630	4,437	-4.2%	5.4%	5.2%
Wainfleet	138	333	6,360	6,374	0.2%	2,330	2,336	0.3%	5.9%	5.2%
Niagara	9,246	21,367	431,355	431,538	0.0%	174,665	175,079	0.2%	5.3%	5.0%
Waterloo	2233	5620	98,780	98,853	0.1%	37,520	36,757	-2.0%	6.0%	5.7%
Kitchener	4391	10906	219,150	219,334	0.1%	86,375	82,950	-4.0%	5.1%	5.0%
Cambridge	2349	6206	126,750	126,852	0.1%	46,455	45,101	-2.9%	5.1%	4.9%
North Dumfries	203	565	9,335	9,351	0.2%	3,225	3,271	1.4%	6.3%	6.1%
Wilmot	439	1124	19,220	19,205	-0.1%	6,960	6,859	-1.4%	6.3%	5.8%
Wellesley	192	623	10,715	10,710	0.0%	3,145	3,284	4.4%	6.1%	5.8%
Woolwich	605	1718	23,145	23,150	0.0%	7,915	8,049	1.7%	7.6%	7.4%
Waterloo R	10,412	26,762	507,095	507,455	0.1%	191,595	186,273	-2.8%	5.4%	5.3%
Guelph	2474	6143	121,690	121,726	0.0%	48,120	46,935	-2.5%	5.1%	5.0%
Puslinch	124	292	7,030	7,024	-0.1%	2,530	2,673	5.7%	4.9%	4.2%
Guelph/Eramosa	384	1097	12,380	12,367	-0.1%	4,215	4,223	0.2%	9.1%	8.9%
Centre Wellington	587	1462	26,695	26,686	0.0%	9,945	10,040	1.0%	5.9%	5.5%
Erin	408	1155	10,770	10,770	0.0%	3,730	3,857	3.4%	10.9%	10.7%
Wellington	1,503	4,006	56,875	56,847	0.0%	20,420	20,794	1.8%	7.4%	7.0%
Orangeville	589	1531	27,975	27,978	0.0%	10,080	10,404	3.2%	5.8%	5.5%
East Garafraxa	59	157	2,595	2,570	-1.0%	845	884	4.6%	7.0%	6.1%
Amaranth	46	138	3,965	3,946	-0.5%	1,270	1,273	0.2%	3.6%	3.5%
East Luther										
Grand Valley	31	81	2,725	2,710	-0.6%	1,010	1,037	2.7%	3.1%	3.0%
Mono	115	295	7,550	7,535	-0.2%	2,555	2,755	7.8%	4.5%	3.9%
Mulmur	75	174	3,395	3,395	0.0%	1,275	1,301	2.1%	5.9%	5.1%
Melancthon	30	79	2,840	2,855	0.5%	970	1,090	12.3%	3.1%	2.8%
Shelburne	151	392	5,845	5,825	-0.3%	2,085	2,285	9.6%	7.2%	6.7%
Dufferin	507	1,316	28,915	28,836	-0.3%	10,010	10,624	6.1%	5.1%	4.6%
Barrie	2416	6106	135,710	135,792	0.1%	49,935	50,624	1.4%	4.8%	4.5%

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Exhibit 2: Comparison of Expanded Totals by Municipality

	TTS Record Count		Population			Dwelling units			Sample Size	
	House	Person	Census	TTS	Diff.	Census	TTS	Diff.	House	Pers.
Innisfil	663	1641	33,075	33,086	0.0%	12,305	12,322	0.1%	5.4%	5.0%
Bradford West										
Gwillimbury	461	1262	28,075	28,074	0.0%	9,460	9,467	0.1%	4.9%	4.5%
New Tecumseth	694	1749	30,235	30,275	0.1%	11,310	11,894	5.2%	6.1%	5.8%
Adjala-Tosorontio	217	556	10,600	10,624	0.2%	3,570	3,818	6.9%	6.1%	5.2%
Essa	244	649	18,505	18,565	0.3%	6,420	6,493	1.1%	3.8%	3.5%
Clearview	301	730	13,735	13,739	0.0%	5,035	5,153	2.4%	6.0%	5.3%
Springwater	314	879	18,225	18,326	0.6%	6,260	6,176	-1.3%	5.0%	4.8%
Collingwood	567	1177	19,240	19,203	-0.2%	8,335	8,438	1.2%	6.8%	6.1%
Wasaga Beach	457	993	17,540	17,574	0.2%	7,580	7,365	-2.8%	6.0%	5.7%
Tiny	336	730	11,230	11,195	-0.3%	4,620	4,867	5.3%	7.3%	6.5%
Penetanguishene	243	512	9,115	9,127	0.1%	3,615	4,042	11.8%	6.7%	5.6%
Midland	378	795	16,575	16,566	-0.1%	7,165	7,291	1.8%	5.3%	4.8%
Tay	201	486	9,735	9,846	1.1%	3,940	3,875	-1.6%	5.1%	5.0%
Oro-Medonte	505	1210	20,075	20,125	0.2%	7,475	7,712	3.2%	6.8%	6.0%
Severn	299	700	12,375	12,349	-0.2%	4,870	4,762	-2.2%	6.1%	5.7%
Ramara	234	531	9,275	9,303	0.3%	3,790	3,868	2.1%	6.2%	5.7%
Simcoe	6,114	14,600	277,610	277,977	0.1%	105,750	107,544	1.7%	5.8%	5.3%
Orillia	751	1663	30,585	30,652	0.2%	12,970	12,783	-1.4%	5.8%	5.4%
Kawartha Lakes	1592	3598	73,215	73,302	0.1%	29,685	29,917	0.8%	5.4%	4.9%
Peterborough	1670	3622	78,695	78,764	0.1%	33,435	32,977	-1.4%	5.0%	4.6%
Cavan-Monaghan	154	394	8,600	8,579	-0.2%	3,100	3,147	1.5%	5.0%	4.6%
Otonabee-										
South Monaghan	192	464	6,660	6,679	0.3%	2,530	2,575	1.8%	7.6%	7.0%
Asphodel-Norwood	67	156	4,045	4,064	0.5%	1,555	1,655	6.5%	4.3%	3.9%
Smith-Ennismore-										
Lakefield	473	1114	16,850	16,825	-0.1%	6,660	6,542	-1.8%	7.1%	6.6%
Douro-Dummer	181	420	6,805	6,833	0.4%	2,550	2,683	5.2%	7.1%	6.2%
Peterborough County	1,067	2,548	42,960	42,980	0.0%	16,395	16,603	1.3%	6.5%	5.9%
Brant	644	1589	35,635	35,640	0.0%	12,935	13,370	3.4%	5.0%	4.5%
Brantford	1892	4551	93,650	93,650	0.0%	37,500	37,507	0.0%	5.0%	4.9%
Total	159,157	410,404	8,515,425	8,520,636	0.1%	3,124,255	3,117,704	-0.2%	5.1%	4.8%

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Exhibit 3 compares the 2011 TTS expanded data by dwelling unit type with both the census and previous surveys. The proportion of apartment units is highly consistent with previous TTS. Applying the age specific adjustments to the expansion factors did not result in any significant change in the proportion of apartment units. The comparison with Census Data is open to question due to differences in definition. There are eight dwelling unit types defined by Statistics Canada but only three in TTS. The selection of the appropriate category in the TTS depends on the respondent's perception of the most appropriate description. One of the dwelling unit types was redefined in the 2006 census. Definitions of dwelling types have also changed over time as new concepts were created by developers. There have been changes in the enumeration process used to classify dwelling unit type as well as definitions of occupied private households since the 2001 census. For example, according to Statistics Canada, within the City of Toronto, the number of houses decreased by 15% (60,000 units) between 2001 and 2006 whereas apartments increased by 19% (90,000 units). The proportion of town houses is generally consistent with previous TTS.

Exhibit 3: Type of Dwelling Unit

	Apartments						Town Houses			
	Previous TTS			2011			TTS by Survey Year			
	1996	2001	2006	TTS	TTS w/o Age Adj	Census	1996	2001	2006	2011
Toronto	47%	50%	44%	44%	45%	61%	4%	3%	6%	6%
Durham	16%	14%	12%	11%	12%	16%	6%	6%	8%	8%
York	12%	10%	9%	11%	12%	16%	6%	7%	9%	10%
Peel	26%	24%	19%	21%	22%	29%	10%	8%	11%	11%
Halton	20%	18%	16%	16%	18%	18%	10%	9%	13%	15%
Hamilton	26%	26%	24%	24%	25%	28%	6%	5%	8%	8%
Niagara	19%	17%	14%	16%	16%	20%	4%	5%	5%	6%
Region of Waterloo	26%		18%	18%	19%	25%	8%		8%	8%
Guelph	30%	27%	21%	19%	20%	28%	7%	8%	10%	11%
Wellington	8%	9%	8%	6%	6%	9%	1%	2%	1%	3%
Orangeville	16%	11%	15%	16%	17%	17%	5%	8%	6%	8%
Dufferin			5%	6%	6%	5%				10%
Barrie	24%	18%	13%	16%	19%	23%	7%	7%	7%	3%
Simcoe	6%	8%	7%	4%	7%	9%	2%	2%	2%	1%
Orillia		21%	22%	23%	24%	31%		6%	4%	4%
Kawartha Lakes	12%	10%	10%	6%	7%	12%	2%	1%	1%	0%
City of Peterborough	27%	24%	24%	21%	23%	31%	4%	4%	4%	7%
County of Peterborough	4%	4%	4%	2%	2%	4%	0%	0%	0%	2%
Brant			8%	5%	5%	6%				8%
Brantford			18%	18%	19%	24%				3%
Total				25%	26%	35%				8%

4.2 Age and Gender

Exhibits 4 & 5 compare the age distribution of the unexpanded TTS data for the entire survey area with that of the Census. Respondents to the TTS frequently gave their age to the nearest 5 or 10 years. The age groupings have been selected to minimize the effect of this rounding.

Exhibit 4: Female Age Distribution

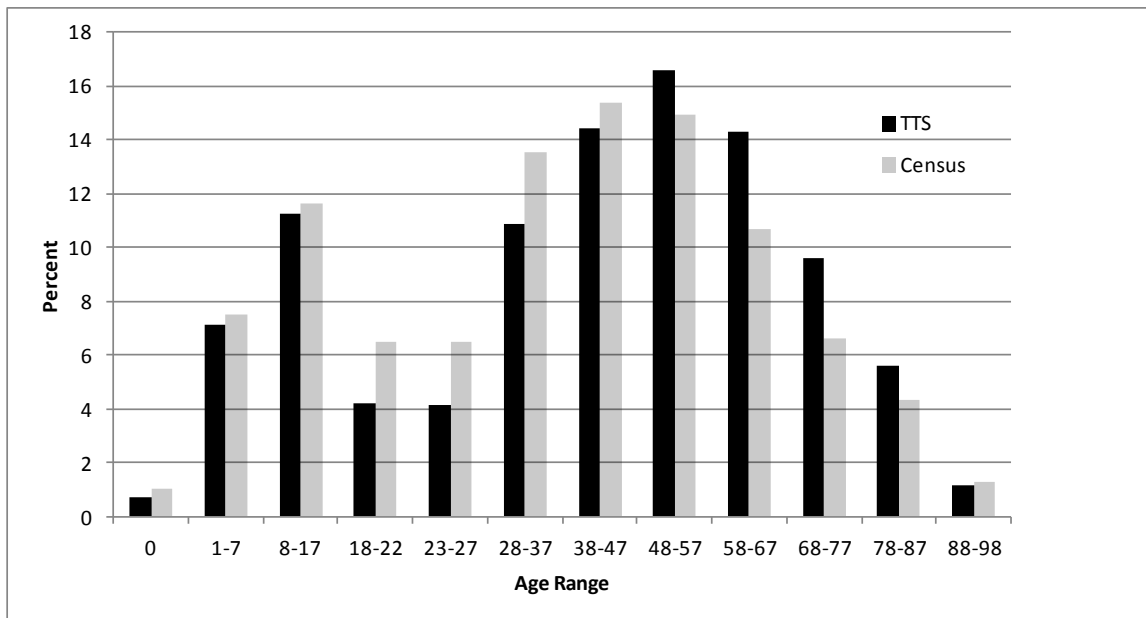
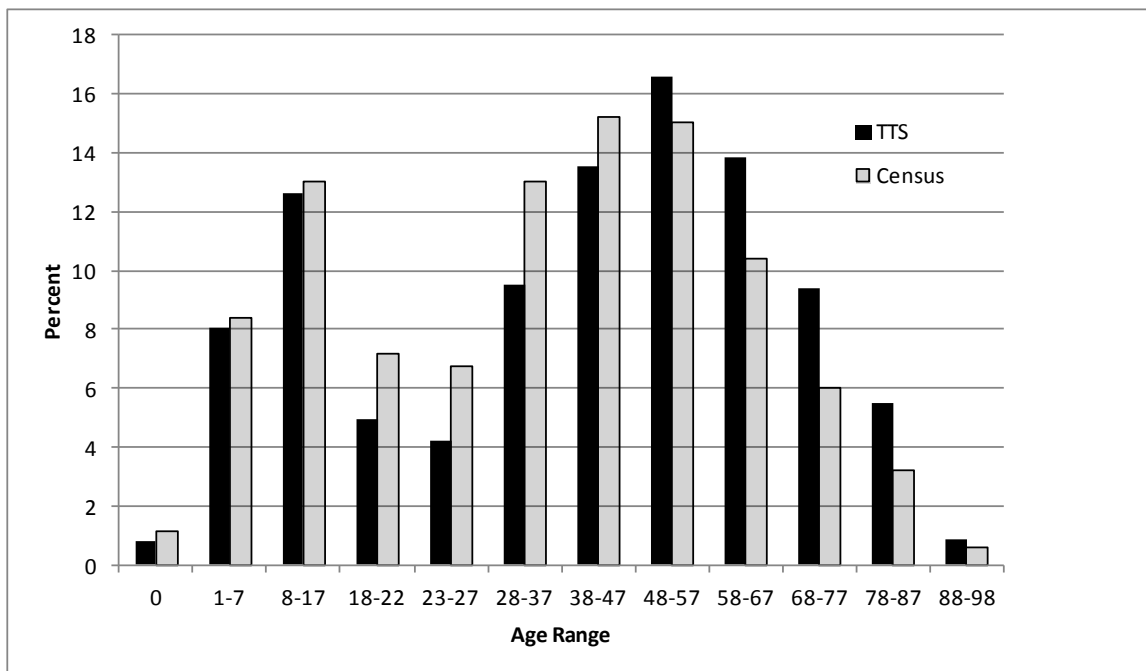


Exhibit 5: Male Age Distribution



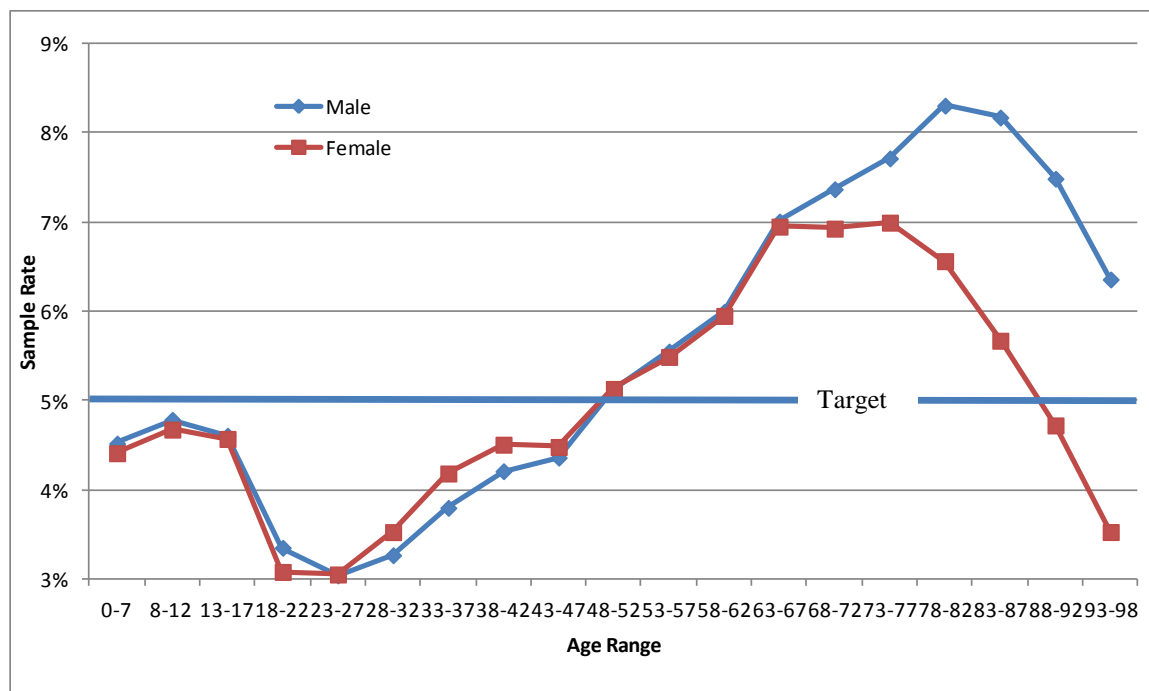
All previous TTS have also under represented the population under 1 year of age – not a concern since no trip data is collected for persons under the age of 11. In addition previous TTS, up to and including 2001 exhibited some under-representation of the over 75 age group, probably due to the exclusion of institutions from the survey – not a major concern since institutional residents,

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and those over 75 in general, do not make many trips. Other than those two exceptions there was a good match between the survey data and the census with respect to age distribution for both genders. In the 2006 TTS the 18 to 27 age range was under represented by 20% relative to the census. The differences observed in the 2011 survey, as demonstrated by Exhibits 4 & 5 are huge in comparison.

Exhibit 6 shows the total numbers of people in the survey area for which information was collected as a percentage of the census population within the same age group – i.e. the effective sampling rate. If the survey had consisted of a truly random selection of households throughout the survey area one would expect to see the same sample size (5%) for all age groups. In practice those over the age of 63 were, on average, sampled at more than twice the rate of those between the ages of 18 and 32. Representation is lower above age 78 than in the 63 to 77 age groups but that might be due to the inclusion of institutionalized population (hospitals & nursing homes) in the census population numbers. There is not an obvious explanation for the gender difference in that age group. The 78+ age group account for less than 5% of the total population. The most likely source of the age bias is the “sample frame” (listed phone numbers) from which the sample was selected. Comparisons with the census data and Canada Post delivery counts indicate that only about 50% of the households in the survey area were included. The apparent bias in age distribution would suggest that representation in the sample frame could be as high as 75% for the elderly (over 63) and as low as 30% for young adults.

Exhibit 6: Mean Sample Rate by Age and Gender



4.3 Employed Labour Force

In the 2011, Statistics Canada replaced the long census questionnaire with the National Household Survey, a voluntary, self-administered survey which was conducted between May and August 2011. About 30% of total dwelling units were selected randomly to participate in the survey and the response rate was 68.6%. The NHS survey includes employment as well as other detail information of the residents. Exhibit 7 compares TTS employed labour force with data obtained from the NHS. As it is expected, the data with age adjustment based on population and municipality are more comparable to the NHS at the municipal level.

Exhibit 7: Employed Labour Force

Municipality	Employed Labour Force			Difference		
	NHS	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	2006
City of Toronto	1,269,150	1,170,846	1,280,670	-8%	1%	-7%
Brock	5,520	4,881	5,758	-12%	4%	-7%
Uxbridge	11,305	9,747	10,955	-14%	-3%	-12%
Scugog	11,045	9,132	10,556	-17%	-4%	-15%
Pickering	46,530	40,851	46,560	-12%	0%	-6%
Ajax	57,570	54,416	55,891	-5%	-3%	-4%
Whitby	63,540	55,556	61,389	-13%	-3%	-8%
Oshawa	69,945	61,871	71,907	-12%	3%	-6%
Clarington	43,360	37,018	42,842	-15%	-1%	-8%
Durham Region	308,815	273,472	305,859	-11%	-1%	-7%
Georgina	22,825	23,197	23,949	2%	5%	-8%
East Gwillimbury	12,820	11,060	13,150	-14%	3%	-6%
Newmarket	42,960	38,881	43,128	-9%	0%	-7%
Aurora	28,720	25,910	29,346	-10%	2%	-8%
Richmond Hill	95,055	89,087	94,291	-6%	-1%	-8%
Whitchurch-Stouffville	19,780	18,955	20,228	-4%	2%	-6%
Markham	147,315	140,012	150,717	-5%	2%	-8%
King	10,375	9,801	11,037	-6%	6%	-14%
Vaughan	148,410	141,489	147,950	-5%	0%	-6%
York Region	528,260	498,391	533,797	-6%	1%	-7%
Caledon	31,895	28,318	32,599	-11%	2%	-9%
Brampton	254,595	239,237	253,874	-6%	0%	-6%
Mississauga	361,315	334,238	354,314	-7%	-2%	-7%
Peel Region	647,805	601,794	640,787	-7%	-1%	-7%
Halton Hills	31,965	28,000	31,493	-12%	-1%	-9%
Milton	45,370	44,694	44,242	-1%	-2%	-8%
Oakville	93,490	80,670	91,363	-14%	-2%	-9%
Burlington	93,030	79,726	89,967	-14%	-3%	-10%
Halton Region	263,855	233,090	257,065	-12%	-3%	-9%
City of Hamilton	243,075	219,784	242,521	-10%	0%	-10%

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Exhibit 7: Difference in 2011 TTS Employed Labour Force to the National Household Survey

Municipality	Employed Labour Force			Difference		
	Census	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	2006
Grimsby	12,710	12,145	13,280	-4%	4%	-12%
Lincoln	10,845	9,100	10,641	-16%	-2%	-10%
Pelham	8,115	6,452	7,832	-20%	-3%	-6%
Niagara-On-The-Lake	6,765	5,731	6,965	-15%	3%	-26%
St Catharines	61,000	51,781	59,344	-15%	-3%	-7%
Thorold	8,620	7,686	8,931	-11%	4%	-10%
Niagara Falls	39,635	33,616	38,798	-15%	-2%	-12%
Welland	22,695	17,360	21,001	-24%	-7%	-3%
Port Colbourne	7,940	5,546	7,127	-30%	-10%	-9%
Fort Erie	13,825	11,569	13,028	-16%	-6%	-10%
West Lincoln	7,175	6,606	7,124	-8%	-1%	-6%
Wainfleet	2,955	2,568	3,115	-13%	5%	-9%
Niagara Region	202,280	170,160	197,187	-16%	-3%	-9%
Waterloo	51,230	46,576	50,990	-9%	0%	-8%
Kitchener	114,800	101,914	110,108	-11%	-4%	-5%
Cambridge	64,215	58,971	63,290	-8%	-1%	-3%
North Dumfries	5,070	4,308	4,677	-15%	-8%	-8%
Wilmot	10,200	8,677	9,975	-15%	-2%	-7%
Wellesley	5,445	5,012	5,092	-8%	-6%	-7%
Woolwich	12,855	11,873	12,174	-8%	-5%	-5%
Waterloo Region	263,815	237,330	256,307	-10%	-3%	-5%
City of Guelph	64,280	58,348	63,048	-9%	-2%	-11%
Puslinch	3,875	2,924	3,626	-25%	-6%	-9%
Eramosa/Guelph	6,680	6,157	6,662	-8%	0%	-13%
Centre Wellington	14,005	11,993	13,541	-14%	-3%	-12%
Erin	6,200	5,430	5,731	-12%	-8%	-13%
Wellington County	30,760	26,504	29,560	-14%	-4%	-12%
Town of Orangeville	14,750	13,590	14,771	-8%	0%	-6%
Mulmur	1,865	1,370	1,527	-27%	-18%	-3%
Shelburne	2,675	2,590	2,650	-3%	-1%	-5%
Amaranth*		2,299	2,343			-5%
Melancthon*		1,543	1,742			-18%
Mono Township	3,910	3,168	4,094	-19%	5%	-16%
East Luther Grand Valley	1,525	1,666	1,706	9%	12%	-4%
East Garafraxa	1,500	1,148	1,281	-23%	-15%	-15%
Dufferin County**	11,475	9,942	11,260	-13%	-2%	-10%
City of Barrie	68,275	58,473	67,179	-14%	-2%	-7%

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Exhibit 7: Difference in 2011 TTS Employed Labour Force to the National Household Survey

Municipality	Employed Labour Force			Difference		
	Census	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	2006
Innisfil	16,595	14,922	17,092	-10%	3%	-4%
Bradford-W Gwillimbury	15,145	14,688	15,606	-3%	3%	2%
New Tecumseth	15,335	14,794	15,578	-4%	2%	-12%
Adjala-Tosorontio*		4,831	5,750			-16%
Essa	9,795	8,747	9,591	-11%	-2%	1%
Clearview	6,600	6,124	7,113	-7%	8%	-13%
Springwater	9,650	9,087	9,647	-6%	0%	-7%
Collingwood	8,715	7,660	9,490	-12%	9%	-9%
Wasaga Beach	7,145	5,381	6,417	-25%	-10%	-11%
Tiny & Christian Island 30*		4,309	5,030			1%
Penetanguishene	3,845	2,985	3,876	-22%	1%	4%
Midland	7,035	5,804	6,948	-17%	-1%	-8%
Tay	4,470	4,188	4,631	-6%	4%	-7%
Oro-Medonte	10,560	9,054	10,619	-14%	1%	-6%
Severn	6,295	4,896	5,739	-22%	-9%	-10%
Ramara	4,350	3,091	3,988	-29%	-8%	-7%
Simcoe County**	125,535	111,422	126,336	-11%	1%	-6%
City of Orillia	13,350	11,700	13,942	-12%	4%	-6%
City of Kawartha Lakes	33,065	29,946	34,559	-9%	5%	-12%
City of Peterborough	35,035	28,053	35,128	-20%	0%	-7%
Cavan-Millbrook-North		3,820	4,274			-6%
Otonabee-South Monaghan	3,630	3,008	3,531	-17%	-3%	1%
Asphodel-Norwood	1,820	1,549	1,891	-15%	4%	-12%
Dummer-Douro	3,465	2,844	3,424	-18%	-1%	-31%
Lakefield-Smith-Ennismore	8,070	6,654	7,742	-18%	-4%	2%
Peterborough County**	16,985	14,055	16,589	-17%	-2%	-6%
City of Brantford	44,775	40,492	44,372	-10%	-1%	-4%
Brant County	18,755	16,144	18,532	-14%	-1%	-12%
Total	4,204,095	3,823,537	4,189,466	-9%	0%	-7%

*Statistics Canada has suppressed the National Household Survey data due to data quality or confidentiality

** Regional totals were calculated for the local municipalities with both NHS and TTS data.

4.4 School Enrolment

Exhibit 8 provides a comparison between the number of students reported in the TTS and the actual school enrolment in the fall of 2011 or 2012 as obtained from each university. Exhibit 9 provides the same information for community colleges. The TTS numbers were obtained by tabulating the expanded number of students by school name, which was used to identify the location of the school. Students that live outside the survey are not included in the TTS data.

The enrolment records provided by the education institutes might include or exclude non-credit courses. Similarly, persons might be recorded in TTS as students if they went to a half-day course at a university or a college. These differences are larger for community colleges as adult continuing education could include credit and non-credit courses. In addition, information was not provided as to where these courses are given. If they contain a significant off campus component then the comparison with the TTS data is not valid. Without that additional information no assessment can be made as to how well the data from the TTS reflects part time education. Therefore, part time enrolments are excluded for comparisons.

Students were recorded at the locations where they resided during the survey. This is different from the census where their parents' residences were used as the home locations for the students if they lived away from home during school year. Since the age adjustment factors were also based on the municipalities of the home locations of the students, this could contribute to the discrepancies between the TTS numbers and the enrolment provided by the educational institutions. Comparing to previous surveys, the under representation of students in 2011 TTS is consistently higher for most institutions.

Similar to the 2006 TTS, the under representation of full time students at the University of Waterloo is the highest among all universities and colleges. This is because the full time enrolment number provided by the University of Waterloo includes the number of co-op students who were in their work term. These students will not be accounted for in TTS as they would be reported as employed instead. The TTS numbers are reported as the usual locations where the students attended school. Since it has been fairly common that some programs are jointly offered by two or more institutes. This perhaps explains the over representation of full time students for Ryerson University, which holds classes for students who enrolled in George Brown College and/or Centennial College. Full time students at universities located in cities where students contribute to a large proportion of the population are generally under reported. Possible explanations for the under representation of enrolment include:

1. students that do not have phones or only have cellular phones, and are therefore excluded from the sample frame
2. the sample being drawn does not include students in residences that are only used during the school year
3. non response

Any judgment as to the importance of each of the above factors cannot be made without further investigation and additional information.

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Exhibit 8: University Enrolment

University	Full- Time Students			Difference		
	Enrolment	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	2006
Brock University	15,467	5,283	7,672	-66%	-50%	-38%
St. Catharines		5,020	7,282			
Hamilton		244	357			
Sheridan - Oakville		19	33			
McMaster University	25,269	11,645	16,548	-54%	-35%	-36%
Main		10,137	14,436			
Centre For Continuing Education		170	229			
Medical Centre School		783	1,100			
Mohawk - McMaster		555	783			
Ontario College Of Arts & Design University	3,343	2,478	3,991	-26%	19%	-10%
Ryerson Polytechnic University	21,337	20,736	32,475	-3%	52%	23%
School of Business Management		5,327	8,366			
Trent University	6,704	2,032	3,653	-70%	-46%	-36%
Symons Campus		1,303	2,547			
Trail College		72	137			
Oshawa		657	969			
University of Guelph	24,927	7,115	10,420	-71%	-58%	-48%
Guelph Campus		4,964	7,071			
Guelph Humber Campus		2,151	3,349			
University of Toronto	71,096	49,810	77,918	-30%	10%	-10%
Downsview Campus		106	189			
Erindale Campus		9,248	12,894			
Scarborough Campus		9,428	13,955			
St. George Campus		30,844	50,627			
Social Work		184	253			
University of Waterloo	31,074	7,729	11,809	-75%	-62%	-61%
Main		7,203	11,046			
Conrad Grebel/St. Paul's		137	176			
Renison College		224	347			
Cambridge		165	240			
York University	45,095	40,496	59,724	-10%	32%	0%
Glendon Campus		2,015	3,111			
Keele		38,355	56,420			
Miles Nadal Centre		64	102			
Giffard Centre		62	91			
Total	240,969	103,621	224,210	-57%	-7%	-20%

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Exhibit 9: Community College Enrolment

Colleges	Full-Time Students			Difference		2006
	Enrolment	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
Centennial College	16,620	9,062	13,407	-45%	-19%	-9%
HP Science & Technology Centre		1,720	2,527			
Bell Centre		309	526			
GM Training Centre		23	31			
Ashtonbee	3,200	1,589	2,313			
Cowdray Court		59	93			
Midland		227	326			
Progress	8,920	4,780	7,038			
Shorting		19	24			
Warden Woods		336	529			
Centre for Creative Communications (East York)	1,040					
Morningside	3,460					
Conestoga College	10,146	7,449	10,630	-27%	5%	-28%
Guelph	433	536	740			
Kitchener	7,649	5,543	7,946			
Waterloo	777	649	942			
Stratford						
Brantford	21					
Ingersoll	80					
Cambridge	1,186	721	1,002			
Durham College	9,000	9,353	13,462	4%	50%	-10%
Oshawa/ UIOT		7,716	11,146			
Ajax & Pickering		467	643			
Whitby Skill Training Cnetre		1,109	1,584			
Uxbridge		61	89			
George Brown College	24,849	13,893	21,715	-44%	-13%	-23%
Ryerson		1,464	2,394			
Administration - Toronto		391	653			
Casa Loma		4,246	6,462			
Hospitality & Tourism		286	420			
St. James		7,399	11,651			
Nightingale		107	135			
Georgian College	11,000	5,167	8,269	-53%	-25%	-40%
Laurentian University At Georgian College - Barrie		83	400			
Barrie		4067	6,301			
Collingwood		34	38			
Midland		156	235			
Orangeville		9	13			
Orillia		728	1,125			
Kempenfelt - Innisfil		90	157			
Humber College	22,971	18,126	25,724	-21%	12%	-11%
North Campus	15,056	12,765	17,588			
Lakeshore Campus	7,723	5,361	8,136			
Orangeville	192					

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Exhibit 9: Community College Enrolment

Colleges	Full-Time Students			Difference		2006
	Enrolment	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
Mohawk College	12,561	8,629	12,040	-31%	-4%	-4%
Wentworth		232	333			
Stoney Creek	712	612	868			
Chedoke		184	248			
Fennell	8,779	6,119	8,576			
Brantford	1,062	927	1,232			
Mohawk-McMaster	1,708	555	783			
Mohawk-Laurier	224					
Ogwehoweh/Six Nations/Sheridan	76					
Niagara College	8,997	4,649	6,721	-48%	-25%	-26%
St. Catharines		39	54			
Welland		3,362	4,841			
Niagara On The Lake		1,189	1,751			
Maid Of The Mist		59	75			
Seneca College	19,599	15,323	22,602	-22%	15%	-19%
Newham	9,984	4,399	6,629			
King	3,222	2,463	3,540			
York University	4,640	3,664	5,376			
Jane	80	350	511			
Yorkgate		122	188			
Markham	1,673	999	1,392			
Don Mills		3,060	4,578			
Gordon Baker		62	89			
Richmond Hill		144	205			
Eglinton		60	94			
Sheridan College	14,989	11,625	15,790	-22%	5%	-11%
Trafalgar Road - Oakville	7,258	4,134	6,058			
Davis - Brampton	7,467	4,994	6,413			
Skills Training Centre - Oakville	264	172	225			
Burlington		65	95			
Credit Valley - Mississauga		166	222			
Mississauga		1,530	2,065			
Dixie - Brampton		564	712			
Sir Sanford Fleming College	6,422	2,330	4,178	-64%	-35%	-38%
Sutherland/ McRae	4,439	125	212			
Frost/Lindsay	1,866	607	1,033			
Lakeshore/Cobourg	35	16	23			
Haliburton	83		2,910			
Brealey/Peterborough		1,582				
Total	157,154	105,606	154,538	-33%	-2%	-18%

4.5 Traffic Volumes

Validation of the TTS auto driver trip data was performed using trip matrices extracted from the expanded TTS database. The trip tables are based on the 2001 extended GTA traffic zone system. Areas outside the GTHA were aggregated to the 26 super zones in the 2006 integrated emme2 networks maintained at the Data Management Group. The TTS trip tables were assigned to the 2006 GTA road network using the equilibrium assignment algorithm in emme2. The resulting link volumes were aggregated along inter-regional boundaries and compared with actual traffic counts collected as part of the 2011 Cordon Count program. Differences between the cordon count and TTS data that must be considered when evaluating the comparisons include:

1. The cordon counts were taken in May and June of 2011, the TTS data was collected partially in the fall of 2011 and the remainder in the fall of 2012.
2. The TTS represents average weekday conditions over two 3 to 4 month periods for all locations whereas the counts are individual one-day values taken on different days at different locations. Traffic volumes can vary substantially, both by time of year and from one day to another depending on traffic conditions.
3. The TTS data are aggregated on the basis of reported trip start times. Most respondents report trip times to the nearest 10 or 15 minutes. Significant peaks occur right on each hour and half hour with smaller peaks on the quarter hour. The total hourly volume can change significantly depending on which minute the hour is taken to begin and end on. The cordon counts are continuous with precise aggregation to 15 minute time periods for reporting purposes.
4. The TTS data are based on trip start times whereas the time at which a vehicle is counted in the cordon count program can occur at any point in the trip depending on the location of origin and destination. A 15-minute offset has been used in order to average out and minimize this difference but the relationship could be different on each screen line.
5. The assignment algorithm may not accurately reflect the actual travel routings used by people in the survey. However, this should not affect the total volume across a screen line unless there is potential for diversion to another screen line. The close proximity of Highway 407 parallel to the North Toronto boundary has the potential to cause some distortion, in this regard, at both the Peel East and Durham West boundaries.

Exhibits 10, 11 & 12 show the comparison for the a.m. peak 3 hour period. Moving the cordon count definition back or forward by 15 minutes does not result in any significant change in the average count.

In the peak direction the TTS assignments under represent the inbound traffic flow to Toronto from all 3 adjacent Regions by between 11% and 13%. Hamilton to Halton and Halton to Peel are over represented by 10% and 19% respectively. Over representation of these two screen lines also occurred in the 2006 TTS. The buildup of congestion on the QEW during the peak period could have the effect of lowering the traffic counts relative to the travel demand as determined by trip start time for trips of widely varying trip length. On average the TTS produced traffic volumes that were 5% less than cordon counts compared to a difference of 3% in 2006. Without the age adjustment factors in the expansion the average under representation would have been 10%.

In the reverse direction the most significant difference between the TTS and the counts is a 23% under representation of travel between Toronto and York. On average the TTS produced traffic volumes that were 12% less than cordon counts compared to a difference of 9% in 2006. Without the age adjustment factors in the expansion the average under representation would have been 18%.

The peak period comparisons between the TTS and the cordon count data are, on average, not as good as they were for 2006 TTS. That should not be a surprise given the much greater scope for hidden biases in sample selection. There was a marked improvement, however, across the boundaries East and West of York Region. An "all or nothing" assignment procedure was used for the comparisons in 2001. It is possible that resulted in an under assignment of TTS trips to Highway 407 relative to parallel routes that cross the Toronto boundary.

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Exhibits 13 & 14 show the cordon count comparisons for the 13 hour time period from 6 a.m. to 7 p.m. The differences between the TTS assignments and cordon counts are much greater than for the a.m. peak period. The total volume across all screen lines is under represented by 24%. This discrepancy is similar in magnitude to the differences observed in the validation of previous TTS data and is likely due to the under reporting of discretionary (non work or school) trips. **Due allowance must be made for the under reporting of discretionary travel when the TTS data are used for the analysis of off peak and total daily travel.** The age adjustment factors incorporated into the data expansion have a less significant effect than in the peak period.

Exhibit 10: A.M. Peak Period Traffic Volumes – Peak Direction

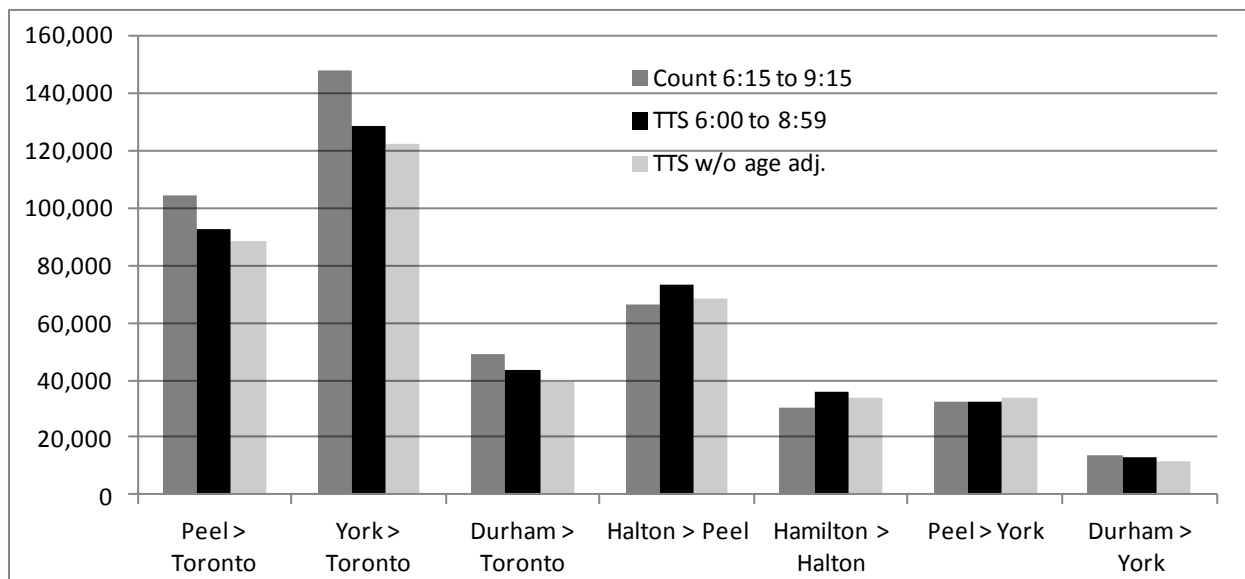


Exhibit 11: A.M. Peak Period Traffic Volumes – Reverse Direction

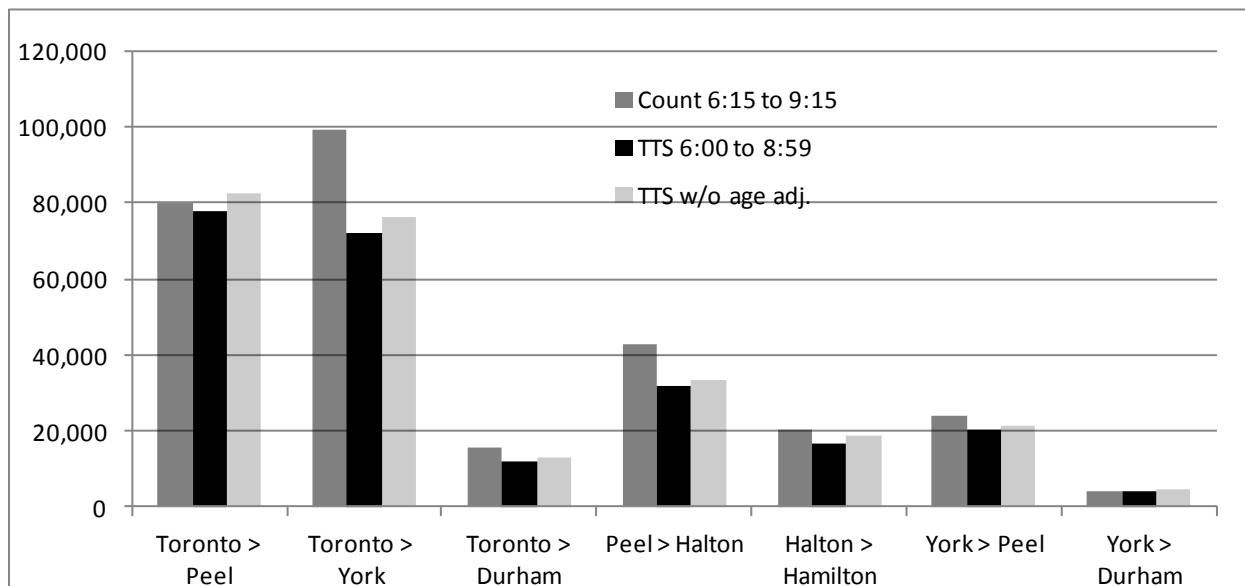
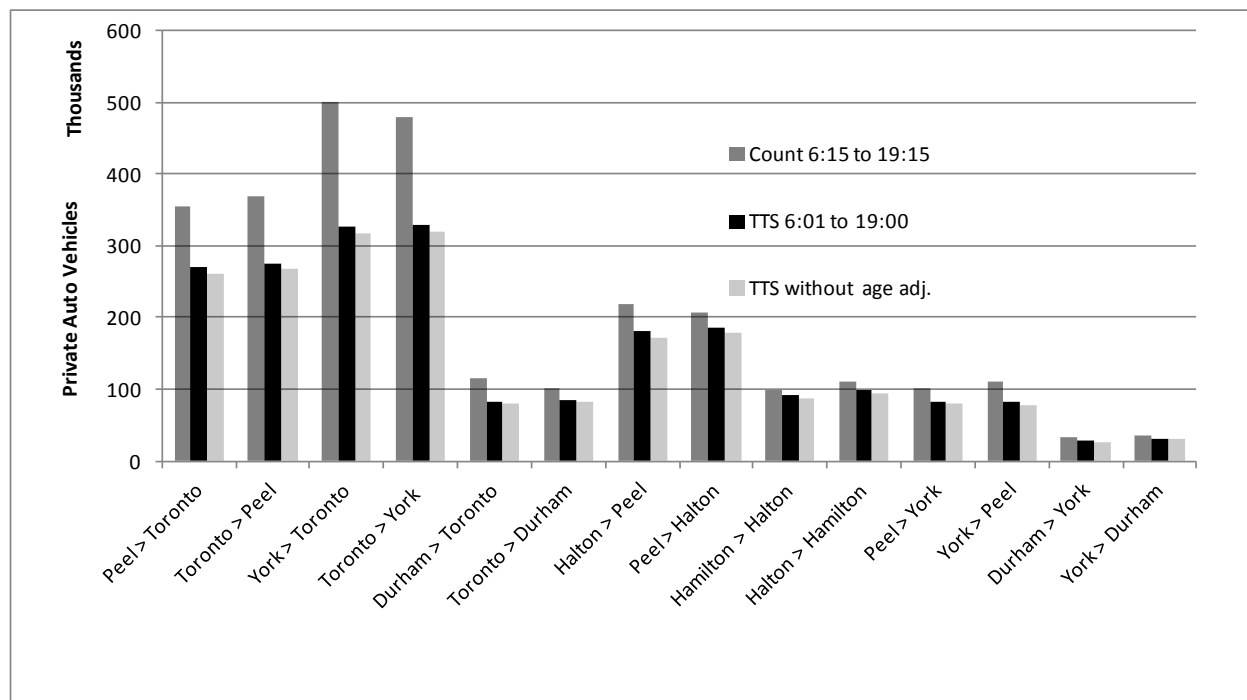


Exhibit 12: A.M. Peak Period Traffic Volumes

	Peak Direction					
	Count 6:15 to 9:15	TTS 6:00 to 8:59		Difference		
		TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	2006 TTS
Peel > Toronto	104,357	88,146	92,794	-16%	-11%	-6%
York > Toronto	147,991	122,153	128,466	-17%	-13%	-1%
Durham > Toronto	48,657	39,258	43,346	-19%	-11%	-10%
Halton > Peel	66,375	68,578	72,909	3%	10%	9%
Hamilton > Halton	30,233	33,645	35,990	11%	19%	4%
Peel > York	32,228	33,774	32,616	5%	1%	-4%
Durham > York	13,699	12,016	13,117	-12%	-4%	-29%
Total	443,540	397,570	419,238	-10%	-5%	-2%
	Reverse Direction					
Toronto > Peel	79,815	77,791	82,505	-3%	3%	-5%
Toronto > York	99,413	72,273	76,508	-27%	-23%	1%
Toronto > Durham	15,450	12,134	13,247	-21%	-14%	-13%
Peel > Halton	42,830	32,093	33,603	-25%	-22%	-26%
Halton > Hamilton	20,236	16,884	18,630	-17%	-8%	-11%
York > Peel	24,259	20,312	21,450	-16%	-12%	-23%
York > Durham	4,188	4,118	4,742	-2%	13%	-61%
Total	286,191	235,604	250,685	-18%	-12%	-9%

Exhibit 13: 13 Hour Traffic Volumes


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Exhibit 14: 13 Hour Traffic Volumes

	Count	TTS 6:00 to 19:15		Difference		
	6:15 to 19:15	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	2006 TTS
Peel > Toronto	354,060	260,540	270,518	-26%	-24%	-23%
Toronto > Peel	368,171	267,356	275,814	-27%	-25%	-26%
York > Toronto	500,986	316,921	327,974	-37%	-35%	-24%
Toronto > York	479,156	318,767	330,390	-33%	-31%	-22%
Durham > Toronto	116,457	79,180	82,449	-32%	-29%	-22%
Toronto > Durham	101,747	81,911	85,836	-19%	-16%	-15%
Halton > Peel	219,273	171,946	180,745	-22%	-18%	-16%
Peel > Halton	208,098	177,685	186,662	-15%	-10%	-17%
Hamilton > Halton	99,851	87,580	92,743	-12%	-7%	-17%
Halton > Hamilton	110,300	94,281	99,887	-15%	-9%	-17%
Peel > York	101,602	79,667	82,671	-22%	-19%	-23%
York > Peel	111,153	77,495	81,429	-30%	-27%	-21%
Durham > York	32,312	26,007	27,415	-20%	-15%	-41%
York > Durham	34,512	30,090	31,688	-13%	-8%	-36%
Total	2,837,678	2,069,426	2,156,221	-27%	-24%	-22%

4.6 Municipal Transit Ridership

Exhibit 15 gives comparisons between the TTS data and passenger boarding counts collected by the TTC. The table has been sorted in order of the route code within the three sub-categories of subway, streetcar and bus. Comparisons are shown for both the a.m. peak period and total daily boardings. The TTC boarding information is based on one-day counts taken on a rotating basis throughout the TTC system. The time period used by the TTC for the conduct of the counts is nominally from the start of service to 9 a.m. but varies slightly from route to route depending on the transition point from peak to off-peak scheduling. The TTS data is based on trip start time, not actual boarding time. The numbers given for the TTS are obtained from the detailed routing information as reported by each respondent to the survey. Errors can result from routes being incorrectly identified, by the respondent or the interviewer, or incomplete information on the number of different route segments that make up a trip. The actual date of each count is shown in the last column. Asterisks mark the counts that coincide with the period of the survey. There can be significant seasonal variation in the transit ridership on an individual route in addition to normal day-to-day variations. These variations, as well as the accuracy and timing of the TTC counts, need to be taken into consideration when drawing conclusions from the comparisons with the TTS data at the individual route level.

The TTC counts for subway ridership are based on platform usage counts during the months of January and May of 2011. The number of TTS subway trips during a.m. peak period includes trips with start times prior to 9 a.m. The numbers for the Yonge and University subway lines from the TTS are combined for comparison as they are considered as one line from the TTC counts. Transfers between the two lines are excluded from the numbers. Subway lines used in the TTS were determined by the on and off stations reported by the respondents and rules set by the TTC. The TTS data appears to slightly over represent total daily subway ridership but not significantly given the constraints of the comparison. Since the TTS numbers are based on trip start time and not actual boarding time, two time periods are selected for morning peak period comparison. Over representation of the subway lines for this time period is considerably less by using the trips up to 8:30 a.m. than to 9:00 a.m. This shows that difference in timing can contribute to the discrepancies. Ridership on the Sheppard line is under represented during a.m. peak and 24-hour periods, but it is possible that many survey respondents did not distinguish between that and the Sheppard buses.

Contrary to subway ridership, total streetcar ridership was under represented for 24-hour but over represented for a.m. peak period. A likely explanation is that the streetcar routes predominantly serve the downtown area and that a high proportion of their use is for short discretionary trips in off-peak periods. There is strong evidence that TTS tends to under report this type of travel with the exception of the Lake Shore route. Both Lake Shore and King streetcars ran on King Street between St. Andrew subway station and Roncesvalles Avenue that respondents might not distinguish between them. In addition, the TTC count provided for Lake Shore streetcar was collected in 2005 that it might not be a reliable source for comparison.

There is considerable variation in the accuracy with which the TTS data matches the TTC counts on individual bus routes. A large majority of the routes are under-reported with a few exceptions. The biggest discrepancies occur in Broadview bus and Downtown/Mount Pleasant express bus. There are only 12% of all bus routes have count information collected during the conduct of the TTS that seasonal variation should be considered. It is also possible that there is some under reporting of the number of bus boardings in the TTS due to incomplete routing information.

Although the TTS data without age adjustment appear to match the TTC boarding counts better in the a.m. peak period, there are variations in the accuracy of the numbers and multiple reasons for differences. Adjustment made to the data is necessary to compensate for the other problems associated with using the unadjusted data.

2011 TTS Version 1.0 Data Expansion & Validation

During the conduct of the survey staff from the TTC did a visual review of the information recorded for every transit trip. That review ensured that every route segment belonged to a valid transit route and call-backs and corrections were made to obvious inconsistencies. The review process, however, could not ensure that every route segment was actually reported nor necessarily identify the correct route where several feasible alternatives actually exist. The detailed validation work performed by the TTC using computer simulations should provide better insight into route-by-route variations and the reliability of the TTS data for analysis at the individual route level.

2011 TTS Version 1.0 Data Expansion & Validation

Exhibit 15: TTC Boardings

TTC Subway Routes		Daily Boardings					A.M. Peak Boardings					A.M. Peak Boardings					Count Year
Code	Name	TTS w/o			Difference (%)		(4:00-8:59)			Difference (%)		(4:00-8:29)			Difference (%)		
		Count	Age Adj	TTS	Age adj	TTS	Count	Age adj	TTS	TTS w/o	Age adj	TTS	Count	Age adj	TTS	TTS w/o	
T593/ T594	Yonge-University- Spadina Subway	707,505	643,379	747,790	-9%	6%	165,053	198,975	234,030	21%	42%	165,053	174,597	204,272	6%	24%	2011
T596	Bloor-Danforth Subway	508,404	438,336	507,652	-14%	0%	106,664	130,476	151,304	22%	42%	106,664	114,240	131,726	7%	23%	2011
T597	Scarborough RT	39,173	35,476	43,458	-9%	11%	8,590	11,267	13,740	31%	60%	8,590	10,231	12,486	19%	45%	2011
T598	Sheppard Subway	48,525	34,048	42,301	-30%	-13%	12,484	10,562	13,446	-15%	8%	12,484	9,357	11,837	-25%	-5%	2011
Total Subway		1,303,607	1,151,239	1,341,201	-12%	3%	292,791	351,280	412,520	20%	41%	292,791	308,425	360,321	5%	23%	
2006 TTS						-2%					25%					10%	

TTC Streetcar Routes		Daily Boardings			Difference (%)		A.M. Peak Boardings			Difference (%)		
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count Date
T501	Queen/Long Branch/ Neville Park	43,464	33,599	37,981	-23%	-13%	7,230	7,794	9,149	8%	27%	2006-10-27
T502	Downtown	3,812	1,205	1,339	-68%	-65%	1,134	429	445	-62%	-61%	*2011-11-29
T503	Kingston Rd	2,214	1,008	1,007	-54%	-55%	863	387	385	-55%	-55%	*2011-11-29
T504	King/Roncesvalles	56,720	48,302	54,909	-15%	-3%	11,302	13,657	16,275	21%	44%	2007-10-23
T505	Dundas	31,920	23,492	26,013	-26%	-19%	4,590	5,214	6,247	14%	36%	2008-02-05
T506	Carlton/College/ Gerrard/High Park/ Main	39,601	28,669	30,886	-28%	-22%	6,734	6,678	7,450	-1%	11%	*2012-05-14
T508	Lake Shore	911	905	1,068	-1%	17%	260	282	332	8%	28%	2005-05-17
T509	Harbourfront/ Queens Quay	11,572	8,714	10,267	-25%	-11%	1,733	1,923	2,464	11%	42%	2011-04-01
T510	Spadina	43,804	19,088	21,292	-56%	-51%	4,348	4,147	5,295	-5%	22%	2010-03-31
T511	Bathurst/ Exhibition	17,394	14,200	16,317	-18%	-6%	3,326	3,429	4,047	3%	22%	*2011-11-30
T512	St. Clair	32,351	21,564	22,424	-33%	-31%	6,379	5,466	5,959	-14%	-7%	2010-10-08
Total Streetcar		283,763	200,746	223,503	-29%	-21%	47,899	49,406	58,048	3%	21%	
2006 TTS						-21%					3%	

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TTC Bus Routes		Daily Boardings			Difference (%)		A.M. Peak Boardings			Difference (%)		Count	Date
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS		
T005	Avenue Rd	1,863	2,064	2,268	11%	22%	638	724	784	13%	23%	*2012-09-21	
T006	Bay	7,944	9,326	9,570	17%	20%	2,164	3,016	3,205	39%	48%	2012-03-20	
T007	Bathurst	24,262	17,170	18,886	-29%	-22%	5,628	4,627	5,389	-18%	-4%	2010-11-23	
T008	Broadview	920	2,172	2,432	136%	164%	168	627	719	273%	328%	2011-02-25	
T009	Bellamy	4,081	3,146	3,523	-23%	-14%	1,046	994	1,118	-5%	7%	2012-03-08	
T010	Van Horne	1,212	758	944	-37%	-22%	389	359	447	-8%	15%	*2011-12-13	
T011	Bayview	9,317	7,935	8,703	-15%	-7%	1,970	1,876	2,176	-5%	10%	2012-03-21	
T012	Kingston Rd	9,571	7,352	7,689	-23%	-20%	2,307	2,340	2,554	1%	11%	*2011-10-25	
T014	Glencairn	2,491	1,448	1,559	-42%	-37%	659	339	366	-49%	-44%	2012-03-08	
T015	Evans	2,967	1,753	1,780	-41%	-40%	810	585	617	-28%	-24%	*2011-12-07	
T016	McCowan	9,803	7,884	8,788	-20%	-10%	1,845	1,615	1,812	-12%	-2%	2010-04-08	
T017	Birchmount	11,191	8,944	10,397	-20%	-7%	3,051	2,719	3,130	-11%	3%	*2011-12-06	
T020	Cliffside	6,112	4,420	4,758	-28%	-22%	1,449	1,146	1,232	-21%	-15%	2011-03-30	
T021	Brimley	9,542	8,084	9,335	-15%	-2%	1,995	2,347	2,768	18%	39%	*2011-09-16	
T022	Coxwell	7,092	5,146	5,470	-27%	-23%	1,014	1,004	1,060	-1%	5%	2011-05-25	
T023	Dawes	6,193	4,225	4,455	-32%	-28%	1,445	1,292	1,343	-11%	-7%	2011-05-17	
T024	Victoria Park	24,731	18,473	21,554	-25%	-13%	5,640	4,730	5,446	-16%	-3%	2013-02-05	
T025	Don Mills	39,066	30,630	37,260	-22%	-5%	7,763	8,162	10,035	5%	29%	*2012-11-26	
T026	Dupont/Annette	3,608	2,905	2,890	-19%	-20%	817	867	893	6%	9%	2011-05-10	
T028	Davisville	1,043	1,855	1,942	78%	86%	463	523	581	13%	25%	2012-03-21	
T029	Dufferin	39,721	27,054	31,451	-32%	-21%	7,617	7,130	8,440	-6%	11%	2009-01-06	
T030	Lambton/High Park	2,516	2,173	2,367	-14%	-6%	702	502	592	-28%	-16%	2010-04-08	
T031	Greenwood	3,684	2,406	2,421	-35%	-34%	738	546	571	-26%	-23%	2008-10-16	
T032	Eglinton West/ Trethewey	48,684	31,655	35,169	-35%	-28%	10,958	9,444	10,768	-14%	-2%	*2011-10-18	
T033	Forest Hill	615	677	711	10%	16%	141	204	248	45%	76%	*2011-12-14	
T034	Eglinton East	29,501	25,893	29,169	-12%	-1%	5,811	6,847	8,007	18%	38%	2012-05-01	
T035	Jane	45,699	29,899	32,982	-35%	-28%	10,817	7,982	9,111	-26%	-16%	2012-02-14	
T036	Finch West	43,952	30,234	35,378	-31%	-20%	9,619	8,382	9,904	-13%	3%	2012-04-02	
T037	Islington/Rexdale	17,252	13,305	14,877	-23%	-14%	3,382	3,720	4,159	10%	23%	2011-05-06	
T038	Highland Creek	10,262	6,112	8,234	-40%	-20%	1,176	1,099	1,452	-7%	23%	2013-03-08	
T039	Finch East	41,434	24,411	30,365	-41%	-27%	9,471	6,928	8,651	-27%	-9%	2007-04-10	
T040	Junction	4,809	3,319	3,793	-31%	-21%	801	644	703	-20%	-12%	2011-04-20	
T041	Keele	24,597	18,401	21,517	-25%	-13%	5,598	4,605	5,391	-18%	-4%	2010-09-21	
T042	Cummer/McNicol	7,196	7,174	8,529	0%	19%	1,753	2,491	3,009	42%	72%	2010-04-27	
T043	Kennedy	15,494	11,753	14,049	-24%	-9%	2,788	3,124	3,789	12%	36%	2012-01-27	
T044	Kipling South	9,387	7,754	9,772	-17%	4%	2,311	2,513	3,090	9%	34%	2010-12-01	
T045	Kipling/Belfield Bus/Kipling North	18,682	15,236	17,345	-18%	-7%	4,424	4,779	5,480	8%	24%	2013-01-29	
T046	Martin Grove	6,813	5,928	6,727	-13%	-1%	1,837	1,774	2,028	-3%	10%	2010-05-27	
T047	Lansdowne/ Caledonia	15,354	8,445	9,877	-45%	-36%	3,414	2,201	2,527	-36%	-26%	2011-04-08	
T048	Rathburn/Anglesey	2,247	2,361	2,548	5%	13%	621	594	643	-4%	4%	*2011-12-07	
T049	Bloor West	3,124	3,299	3,815	6%	22%	936	1,079	1,200	15%	28%	2011-01-04	
T050	Burnhamthorpe	3,111	3,095	3,480	-1%	12%	735	976	1,094	33%	49%	2012-01-25	
T051	Leslie	4,117	3,381	3,872	-18%	-6%	1,054	1,105	1,250	5%	19%	2012-02-09	
T052	Lawrence West	23,036	21,858	24,661	-5%	7%	4,925	6,090	6,898	24%	40%	2011-03-25	
T053	Steeles East	28,050	18,349	22,053	-35%	-21%	5,810	5,442	6,490	-6%	12%	*2011-10-03	
T054	Lawrence East	36,277	25,737	29,116	-29%	-20%	7,968	6,649	7,712	-17%	-3%	*2012-10-10	
T055	Warren Park	1,150	839	1,023	-27%	-11%	276	168	206	-39%	-25%	2009-05-14	
T056	Leaside	3,384	2,718	3,089	-20%	-9%	818	845	992	3%	21%	*2012-09-14	
T057	Midland	11,921	10,588	12,361	-11%	4%	3,147	3,473	4,022	10%	28%	2010-05-04	
T058	Malton/Dixon	19,338	7,623	8,239	-61%	-57%	3,761	2,036	2,281	-46%	-39%	*2011-11-22	

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Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS		
T059	Maple Leaf	2,739	1,779	1,979	-35%	-28%	1,030	647	712	-37%	-31%	2009-05-12	
T060	Steeles West	29,819	20,360	24,212	-32%	-19%	6,500	6,015	7,064	-7%	9%	2010-09-30	
T061	Avenue Rd North	3,603	2,990	3,519	-17%	-2%	920	993	1,131	8%	23%	2012-02-09	
T062	Mortimer	2,860	2,771	2,757	-3%	-4%	651	857	896	32%	38%	2011-03-29	
T063	Ossington/ Oakwood	22,694	13,838	15,116	-39%	-33%	4,125	3,925	4,413	-5%	7%	2013-04-30	
T064	Main	6,409	4,081	4,482	-36%	-30%	1,256	1,023	1,097	-19%	-13%	2011-04-20	
T064	Main	6,409	4,081	4,482	-36%	-30%	1,256	1,023	1,097	-19%	-13%	2011-04-20	
T065	Parliament	3,961	3,326	3,426	-16%	-14%	709	691	836	-3%	18%	*2012-10-24	
T066	Prince Edward/ Park Lawn	4,704	4,614	5,098	-2%	8%	1,077	1,230	1,352	14%	26%	*2012-09-14	
T067	Pharmacy	5,318	4,733	5,371	-11%	1%	1,295	1,321	1,552	2%	20%	2012-04-24	
T068	Warden/Warden North	15,472	13,287	15,794	-14%	2%	4,083	3,861	4,689	-5%	15%	*2012-10-30	
T069	Warden South/ Birchmount South	5,370	4,493	5,098	-16%	-5%	1,001	1,297	1,473	30%	47%	2010-02-26	
T070	O'Connor	8,605	6,558	6,833	-24%	-21%	1,717	1,734	1,761	1%	3%	*2011-09-30	
T071	Runnymede	3,568	4,141	4,605	16%	29%	710	1,198	1,410	69%	99%	*2011-09-23	
T072	Pape/Carlaw	8,902	5,392	6,028	-39%	-32%	1,880	1,287	1,487	-32%	-21%	2009-04-30	
T073	Royal York/Royal York North/Albion	9,598	8,126	9,027	-15%	-6%	2,375	2,282	2,476	-4%	4%	*2012-12-11	
T074	Mt Pleasant	1,070	1,679	1,684	57%	57%	265	560	617	111%	133%	2009-05-07	
T075	Sherbourne	5,248	3,989	4,367	-24%	-17%	1,243	895	1,120	-28%	-10%	2010-12-07	
T076	Royal York South	10,063	8,245	9,225	-18%	-8%	2,533	2,942	3,225	16%	27%	*2012-09-28	
T077	Swansea	2,554	1,891	1,773	-26%	-31%	587	539	559	-8%	-5%	*2011-09-23	
T078	St Andrews	1,791	1,202	1,332	-33%	-26%	527	339	342	-36%	-35%	2013-04-04	
T079	Scarlett Rd	8,362	5,754	6,376	-31%	-24%	2,054	1,471	1,667	-28%	-19%	*2011-09-09	
T080	Queensway/Park Side	1,553	1,815	1,794	17%	16%	327	377	392	15%	20%	2010-01-05	
T081	Thornccliffe Park	6,039	3,344	4,525	-45%	-25%	1,565	835	1,145	-47%	-27%	2011-05-10	
T082	Rosedale	1,177	916	875	-22%	-26%	350	140	155	-60%	-56%	2010-12-07	
T083	Jones	2,283	1,430	1,617	-37%	-29%	681	534	593	-22%	-13%	2012-05-29	
T084	Sheppard West	15,654	16,185	19,078	3%	22%	4,357	4,344	5,204	0%	19%	2009-03-24	
T085	Sheppard East	27,146	22,359	26,601	-18%	-2%	5,531	6,071	7,378	10%	33%	2010-02-02	
T086	Scarborough/ Meadowdale	16,381	11,630	13,850	-29%	-15%	4,009	3,171	3,842	-21%	-4%	2010-05-13	
T087	Cosburn	8,191	6,011	6,040	-27%	-26%	2,018	1,909	1,989	-5%	-1%	2011-03-29	
T088	South Leaside/ Mcrae/Moore Park	5,008	2,680	2,870	-46%	-43%	1,277	734	888	-43%	-30%	2013-04-05	
T089	Weston	15,148	10,503	11,537	-31%	-24%	3,444	2,672	3,066	-22%	-11%	2011-03-11	
T090	Vaughan Woodbine/Woodbi	6,417	4,693	5,072	-27%	-21%	1,561	1,398	1,532	-10%	-2%	2012-12-13	
T091	ne North	5,589	4,070	4,496	-27%	-20%	1,451	1,330	1,386	-8%	-4%	*2012-12-12	
T092	Woodbine South	3,367	1,614	1,781	-52%	-47%	566	369	375	-35%	-34%	2011-08-03	
T093	Exhibition West Express		24	25								n/a	
T094	Wellesley/Harbord/ Hoskins	8,983	6,889	7,700	-23%	-14%	2,146	1,772	2,132	-17%	-1%	2009-04-28	
T095	York Mills/Ellesmere	24,709	25,384	30,936	3%	25%	5,916	7,196	8,736	22%	48%	2008-03-17	
T096	Wilson	24,700	21,407	24,203	-13%	-2%	5,430	5,924	6,784	9%	25%	2010-10-27	
T097	Yonge/Downtown	3,343	3,066	3,134	-8%	-6%	720	802	835	11%	16%	2009-05-27	
T098	Willowdale-Senlac	2,644	2,049	2,374	-23%	-10%	612	574	730	-6%	19%	2013-03-21	
T099	Arrow Rd	184	59	62	-68%	-66%	33					2009-03-25	
T100	Flemingdon Park	15,807	10,260	11,854	-35%	-25%	3,640	2,767	3,270	-24%	-10%	2012-05-09	
T101	Downsview Park	207					19					2009-10-16	
T102	Markham Rd	24,152	16,042	19,017	-34%	-21%	5,090	4,679	5,531	-8%	9%	*2011-11-01	

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Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
T103	Mt Pleasant North	1,397	655	679	-53%	-51%	436	159	197	-64%	-55%	2009-05-07
T104	Faywood	3,326	2,038	2,329	-39%	-30%	852	648	734	-24%	-14%	2011-04-14
T105	Dufferin North/ Wilson Heights	4,076	5,778	6,462	42%	59%	1,047	1,654	1,874	58%	79%	2011-04-12
T106	York University/Sentinel	6,589	5,915	7,461	-10%	13%	1,463	1,569	1,878	7%	28%	2010-01-19
T107	Keele North	4,381	4,180	4,933	-5%	13%	1,309	1,189	1,392	-9%	6%	2010-11-08
T108	Downsview/ Driftwood	6,410	5,483	6,485	-14%	1%	1,458	1,676	2,021	15%	39%	2010-04-27
T109	Ranee/Marlee	5,277	3,930	4,361	-26%	-17%	1,041	929	1,115	-11%	7%	2010-03-05
T110	Islington South/Horner	8,972	5,990	6,987	-33%	-22%	2,547	1,763	1,997	-31%	-22%	2011-01-11
T111	East Mall	6,376	4,403	4,797	-31%	-25%	1,174	1,008	1,097	-14%	-7%	*2012-12-13
T112	West Mall	7,922	7,101	8,171	-10%	3%	1,908	2,260	2,521	18%	32%	2010-04-28
T113	Danforth	4,795	4,198	4,650	-12%	-3%	1,015	1,222	1,364	20%	34%	2011-05-25
T115	Silver Hills	1,116	458	466	-59%	-58%	217	139	142	-36%	-35%	2011-01-07
T116	Morningside/ Guildwood Pkwy	22,285	17,871	21,701	-20%	-3%	4,496	4,969	6,164	11%	37%	2011-03-02
T117	Alness	2,771	1,516	1,761	-45%	-36%	1,119	543	622	-51%	-44%	2011-04-12
T120	Calvington	1,135	1,168	1,311	3%	16%	229	398	448	74%	96%	2009-05-27
T122	Graydon Hall	3,887	3,057	3,595	-21%	-8%	1,116	937	1,133	-16%	2%	2011-01-07
T123	Shorncliffe/ Browns Line	5,421	3,919	4,378	-28%	-19%	1,187	865	989	-27%	-17%	2010-05-05
T124	Sunnybrook	3,692	3,442	4,046	-7%	10%	993	894	1,091	-10%	10%	2011-02-24
T125	Drewry	2,897	2,777	3,162	-4%	9%	789	771	922	-2%	17%	2010-03-05
T126	Christie	2,607	1,991	2,109	-24%	-19%	637	575	623	-10%	-2%	2011-02-24
T127	Davenport	1,649	1,524	1,577	-8%	-4%	377	364	410	-3%	9%	2012-05-02
T129	McCowan North	14,645	11,504	14,018	-21%	-4%	3,011	2,911	3,591	-3%	19%	*2011-10-26
T130	Middlefield	1,944	1,762	2,125	-9%	9%	474	497	587	5%	24%	2013-01-08
T131	Nugget/Mclevin	6,270	5,964	7,440	-5%	19%	1,801	1,660	2,122	-8%	18%	*2011-11-15
T132	Milner	2,810	2,216	2,701	-21%	-4%	819	666	784	-19%	-4%	2013-01-08
T133	Neilson	9,601	8,502	10,395	-11%	8%	1,757	2,002	2,521	14%	43%	2009-03-10
T134	Progress/Tapscott	9,735	6,061	8,209	-38%	-16%	1,776	1,697	2,270	-4%	28%	2013-04-02
T135	Gerrard	2,358	1,474	1,614	-37%	-32%	557	439	467	-21%	-16%	*2011-09-30
T139	Finch-Don Mills	1,943	1,257	1,608	-35%	-17%	433	387	477	-11%	10%	2012-05-23
T141	Downtown/ Mt Pleasant Express	126	315	321	150%	155%	100	138	142	38%	42%	2012-06-29
T142	Downtown/ Avenue Rd Express	225	182	200	-19%	-11%	137	123	134	-10%	-2%	2012-06-26
T143	Downtown/ Beach Express	415	325	310	-22%	-25%	220	163	162	-26%	-26%	2012-02-10
T144	Downtown/ Don Valley Express	607	1,044	1,146	72%	89%	381	573	634	50%	66%	2012-06-26
T145	Downtown/ Humber Bay Exp	181	199	287	10%	59%	81	119	172	47%	112%	*2011-12-05
T160	Bathurst North	3,810	1,918	2,165	-50%	-43%	821	546	600	-33%	-27%	2011-05-17
T161	Rogers Rd/ Dovercourt	6,606	3,435	3,597	-48%	-46%	1,243	962	1,043	-23%	-16%	2012-04-24
T162	Lawrence-Donway	672	508	578	-24%	-14%	160	144	189	-10%	18%	2013-04-04
T165	Weston Rd North	21,361	8,765	9,940	-59%	-53%	5,379	2,603	3,028	-52%	-44%	*2012-12-03
T167	Pharmacy North	1,115	839	998	-25%	-10%	365	251	292	-31%	-20%	2013-02-05
T168	Symington/ Old Weston	7,607	5,577	6,279	-27%	-17%	1,695	1,451	1,658	-14%	-2%	2010-04-07
T169	Huntingwood	1,514	944	1,112	-38%	-27%	408	347	384	-15%	-6%	*2011-12-13
T171	Mt Dennis/ Progress E	308	59	63	-81%	-80%	50	20	17	-60%	-66%	2009-05-12

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T190	Scarborough Centre Rocket	10,061	5,050	6,345	-50%	-37%	1,616	1,173	1,471	-27%	-9%	2011-01-14
T191	Highway 27 Rocket	9,024	8,381	10,687	-7%	18%	2,022	2,495	3,212	23%	59%	2010-12-14
T192	Airport Rocket	4,027	2,375	2,574	-41%	-36%	646	466	562	-28%	-13%	*2011-11-16
T196	York University Rocket	20,199	15,129	22,687	-25%	12%	2,623	3,817	5,601	46%	114%	2010-01-21
T199	Finch Rocket	13,111	7,258	9,346	-45%	-29%	2,848	2,185	2,764	-23%	-3%	2011-01-06
T224	Victoria Park North	1,739	1,326	1,512	-24%	-13%	605	491	562	-19%	-7%	2006-11-23
T300	Bloor-Danforth	1,395	896	911	-36%	-35%		21	17			2002-11-04
T301	Queen		61	103								n/a
T302	Danforth Rd-McCowan	125	165	146	32%	17%		22	26			2013-02-18
T303	Don Mills-Coxwell	222	165	189	-26%	-15%		22	14			2001-11-14
T305	Eglinton East	257	85	92	-67%	-64%						2001-11-15
T306	Carlton	534	84	113	-84%	-79%						2001-11-14
T307	Eglinton West	255	142	187	-44%	-27%						2001-11-15
T308	Finch East	122	62	93	-49%	-24%		22	21			2001-11-15
T309	Finch West	338	20	34	-94%	-90%						2001-11-15
T310	Bathurst	191	60	96	-69%	-50%						2001-11-14
T311	Islington	205	60	56	-71%	-73%						2001-11-14
T312	St Clair	87	108	98	24%	13%		22	23			2001-11-15
T313	Jane/Dundas/Dundas-Jane	233	119	120	-49%	-48%		20	14			2001-11-13
T316	Ossington	110	130	164	18%	49%						2001-11-15
T319	Wilson	166	126	141	-24%	-15%						2001-11-15
T320	Yonge	1,285	703	759	-45%	-41%		21	22			2001-11-13
T321	York Mills/Neilson/Neilson-York Mills	342	233	270	-32%	-21%		44	53			2001-11-15
T322	Coxwell	68										2002-05-27
T324	Victoria Park	111										2002-05-27
T329	Dufferin	317	144	182	-55%	-43%		20	21			2001-11-16
T352	Lawrence West	79	40	28	-49%	-65%						2006-07-28
T353	Steeles East	35	41	42	17%	20%						2006-07-28
T354	Lawrence East	196	101	85	-48%	-57%						2006-07-28
T385	Sheppard East	131	60	79	-54%	-40%						2006-07-28
T400	Lawrence Manor Community Bus	70	19	15	-73%	-79%						*2012-09-17
T402	Parkdale Community Bus	30	22	13	-27%	-57%						*2012-09-21
T403	South Don Mills Community Bus	78										*2012-09-20
T404	East York Community Bus	54	42	27	-22%	-50%						*2012-11-14
T405	Etobicoke Community Bus	51	80	68	57%	33%						*2012-09-18
T498	TTC Wheel Trans		12,244	9,585				1,812	1,437			
T999	TTC Unknown Route		105	103								
Total Bus 2006 TTS		1,351,426	1,006,492	1,164,397	-26%	-14%	299,370	278,827	326,405	-7%	9%	
Total TTC System 2006 TTS		2,938,796	2,358,477	2,729,101	-20%	-7%	640,060	636,658	744,774	-1%	17%	
												-10%
												-2%

2011 TTS Version 1.0 Data Expansion & Validation

Exhibits 16 to 21 contain comparisons for other municipal transit operators in the GTHA. The data are presented for all routes for which counts were available but very few meet the criterion of 2000 boardings needed for a reasonable degree of statistical accuracy. Discrepancies in reported ridership by transit authorities and the TTS data could possibly be a result of the method of collection.

Exhibit 16 contains the comparison between Durham Region Transit and the TTS counts. The TTS data were collected in the fall of 2011 and 2012 whereas the average daily boarding counts were converted from the monthly boarding counts for November 2012. This could be one of the factors for the under representation by TTS. Several routes were significantly over represented but the number of boarding counts for these routes are relatively small that comparison is not reliable.

Exhibit 16: Durham Region Transit Boardings

Durham Region Transit Routes		Daily Boardings		Difference		Count Month
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	
D101	Industrial	231	240	282	4%	22%
D102	Liverpool/Village East		78	96		
D103	Amberlea	510	409	489	-20%	-4%
D105	Lookout Point/Westshore	128	195	225	53%	76%
D106	Bay Ridges	95	58	61	-39%	-36%
D107	Rosebank	115	195	259	69%	125%
D108	Village East		58	62		
D109	Rouge Hill Shuttle	92	58	79	-37%	-14%
D110	Central Pickering	1086	472	493	-57%	-55%
D111	Finch/Highway 2		315	365		
D112	Brock Road	507	467	594	-8%	17%
D114	Maple Ridge	180	19	24	-89%	-87%
D115	Lookout Point (Rush)	61	78	86	27%	40%
D117	Valley Farm	59	97	125	65%	112%
D121	Liverpool/Finch/Hwy2		163	192		
D122	Village East/Brock		97	107		
D141	Glendale/Maple Ridge		157	201		
D165	Bay Ridges/West Shore		45	64		
D193	Pickering Community Bus	34				
D197	Pickering School Special	971	389	496	-60%	-49%
D198	Pickering Wheel Trans		156	207		
D218	Beach	426	407	424	-5%	0%
D219	Ravenscroft	877	1065	1109	21%	27%
D221	Delaney	371	324	337	-13%	-9%
D222	Audley South	429	550	570	28%	33%
D224	Harwood	741	562	585	-24%	-21%
D225	Audley North Rush	898	799	851	-11%	-5%
D226	Duffins	339	663	759	96%	124%
D232	Village	328	246	252	-25%	-23%
D280	Westney/Village/Delaney		110	131		
D291/D292	Community Bus	270	24	30	-91%	-89%
D296	Ajax Wheel Trans		91	88		
D297	Ajax School Special	1424	337	366	-76%	-74%
D301	Otter Creek/West Lynde	444	227	273	-49%	-39%
D302	Brock St/Whitby Shores	1327	856	935	-36%	-30%
D303	Garden	450	309	389	-31%	-14%
D304	Anderson	556	571	609	3%	10%
D305	Thickson/Garrard	812	1190	1495	47%	84%
D306	White Oaks/Oshawa Centre	1158	662	856	-43%	-26%
D308	Whitby Shores	297	83	102	-72%	-66%

2011 TTS Version 1.0 Data Expansion & Validation

Durham Region Transit Routes		Daily Boardings			Difference		Count Month
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
D318	Otter Creek/Garden/Whitb	69	62	56	-10%	-19%	2012-11
D397	Whitby School Special	766	224	247	-71%	-68%	2012-11
D398	Whitby Wheel Trans		83	64			
D401	Simcoe	8600	3408	4280	-60%	-50%	2012-11
D402	King	1930	1486	1715	-23%	-11%	2012-11
D403	Park	1381	736	915	-47%	-34%	2012-11
D404	Bloor/College Hill	126	20	20	-84%	-84%	2012-11
D405	Central Park	461	145	149	-69%	-68%	2012-11
D406	Dean	649	452	468	-30%	-28%	2012-11
D407	Ritson	1243	815	908	-34%	-27%	2012-11
D408	Stevenson	509	514	617	1%	21%	2012-11
D409	Thornton	557	598	669	7%	20%	2012-11
D410	Olive/Harmony	1567	1309	1548	-16%	-1%	2012-11
D411	Grandview	981	709	928	-28%	-5%	2012-11
D412	Adelaide	760	639	794	-16%	4%	2012-11
D413	GO Shuttle	218	159	173	-27%	-21%	2012-11
D414	Oshawa Community Bus	29					2012-11
D419	GO Station Via Thornton		258	322			
D420	Durham College/UOIT	1288	1294	1793	0%	39%	2012-11
D421	Townline	152	100	132	-34%	-13%	2012-11
D496	Oshawa School Special	1149	318	388	-72%	-66%	2012-11
D497	Oshawa Wheel Trans		213	176			
D501	Aspen	178	142	173	-20%	-3%	2012-11
D502	Liberty	228	40	54	-82%	-76%	2012-11
D503	Wilmot Creek	9					2012-11
D504	Orono/Newcastle	5					2012-11
D597	Clarington School Special	273					2012-11
D606	Flag Bus 1 and 2		43	33			
D915	Taunton East/West	4844	2932	3618	-39%	-25%	2012-11
D916	Rossland East/West	4314	2801	3514	-35%	-19%	2012-11
D922	Bloor/Victoria East/West	240	444	525	85%	119%	2012-11
D923	Bayly/UOFT Scarborough	1847	446	562	-76%	-70%	2012-11
D950	Uxbridge/Port Perry/UOIT	281	87	132	-69%	-53%	2012-11
Total*		49,520	31,428	37,533	-37%	-24%	
	2006 TTS					20%	

*Totals calculated using routes that have both Durham Region Transit boarding and TTS counts to ensure proper comparison.

2011 TTS Version 1.0 Data Expansion & Validation

Exhibit 17 contains comparison of York Region Transit (YRT) and the TTS transit data. York Region Transit staff was on strike from the end of October 2011 to the end of February 2012. Interviews were stopped being conducted in York Region immediately after the strike began and resumed in the 2nd interviewing phase in 2012. The routes that are significantly over represented include York University-Woodbridge, Unionville Local and Maple Express. Thornhill-York University bus might has been mis-reported as York University – Woodbridge by the respondent. Similarly, respondents might not distinguish Unionville Express and Unionville Local buses in the a.m. peak period. There are only 7 Maple Express buses running both direction during a.m. peak period that the number of boardings is relatively small. Therefore the comparison is not reliable. Total daily boardings for the YRT are under represented by 9% by TTS.

Exhibit 17: York Region Transit Boardings

York Region Transit Routes		Daily Boardings			Difference (%)		AM Peak Boardings			Difference (%)		Count Date
Code	Name	Count	Age Adj	TTS	Age Adj	TTS	Count	Age Adj	TTS	Age Adj	TTS	
Y001	Highway 7	2,187	867	979	-60%	-55%	476	182	226	-62%	-53%	2012-09-25
Y002	Miliken/14th Avenue	2,625	2,985	3,423	14%	30%	790	1,126	1,287	43%	63%	2012-10-04 2012-10-23
Y003	Thornhill-York U.	1,894	1,233	1,414	-35%	-25%	515	465	492	-10%	-4%	2012-10-04
Y004	Major Mackenzie	4,583	3,681	4,034	-20%	-12%	897	1,151	1,284	28%	43%	2012-10-11 2012-10-29
Y005	Clark	1,830	1,632	1,698	-11%	-7%	457	387	402	-15%	-12%	2012-10-17
Y007	Martin Grove	902	1,062	1,218	18%	35%	213	263	298	23%	40%	2012-10-11
Y008	Kennedy	1,535	891	941	-42%	-39%	375	256	276	-32%	-26%	2012-10-18
Y009	9th Line	237	108	128	-54%	-46%	54	22	30	-59%	-44%	2012-10-09
Y010	York U. - Woodbridge	463	870	1,040	88%	125%	120	250	287	108%	139%	2012-10-18
Y011	Woodbridge		38	44				19	20			
Y012	Pine Valley	509	454	531	-11%	4%	157	157	183	0%	17%	2012-09-13
Y013	Islington	590	384	413	-35%	-30%	168	123	134	-27%	-20%	2012-09-13
Y015	Stouffville Local		173	180				87	91			
Y018	Bur Oak	963	1,273	1,345	32%	40%	276	516	557	87%	102%	2012-11-01
Y020	Jane-Concord	2,711	2,102	2,494	-22%	-8%	599	633	726	6%	21%	2012-11-06
Y022	King City	1,241	777	1,046	-37%	-16%	257	215	302	-16%	18%	2012-10-09
Y023	Thornhill Woods	1,023	865	939	-15%	-8%	320	230	241	-28%	-25%	2012-09-06
Y028	Zenway-Hwy. 27	59					41					2012-09-13
Y031	Aurora North-Industrial Pky	103	185	191	80%	85%	33	41	41	24%	24%	2012-10-09
Y032	Aurora South	427	493	644	15%	51%	149	205	277	38%	86%	2012-10-18
Y033	Wellington	227	185	248	-19%	9%	54	42	53	-22%	-2%	2012-10-09
Y040	Unionville Local	421	384	402	-9%	-5%	63	144	154	129%	144%	2012-11-06
Y041	Markham Local	247	376	425	52%	72%	63	98	115	56%	83%	2012-10-18
Y042	Berczy South Unionville	144	80	80	-44%	-44%	58	59	58	2%	0%	2012-10-16
Y044	Woodspring-Bristol	282	235	274	-17%	-3%	77	80	90	4%	17%	2012-10-09
Y045	Mingay	93	66	96	-29%	3%	27	22	32	-19%	19%	2012-10-09
Y050	Queensway	891	163	204	-82%	-77%	154	20	14	-87%	-91%	2012-10-18
Y051	Keswick Local	192	164	156	-15%	-19%	51	61	61	20%	20%	2012-10-09
Y052	Holland Landing	322	44	66	-86%	-80%	54	22	33	-59%	-39%	2012-10-09
Y053	Woodspring-Clearmeadow		22	33								
Y054	Bayview	451	377	419	-16%	-7%	116	169	182	46%	57%	2012-10-10
Y055	Davis Drive	1,197	1,277	1,529	7%	28%	229	288	320	26%	40%	2012-10-11
Y056	Gorham-Eagle	500	273	343	-45%	-31%	125	97	121	-22%	-3%	2012-10-18
Y057	Clearmeadow-Mulock	788	925	1,043	17%	32%	205	240	261	17%	27%	2012-10-10
Y058	Leslie	125	61	82	-51%	-34%	16	18	17	13%	6%	2012-10-09
Y069	Sutton GO Bus		61	59				20	21			
Y077	Hwy. 7/Centre	4,672	3,399	3,820	-27%	-18%	1,150	885	1,003	-23%	-13%	2012-09-17
Y081	Inspiration	264	375	396	42%	50%	107	150	167	40%	56%	2012-10-11

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York Region Transit Routes		Daily Boardings			Difference (%)		AM Peak Boardings			Difference (%)		Count Date
Code	Name	TTS w/o Count	Age Adj	TTS	TTS w/o Age Adj	TTS	TTS w/o Count	Age Adj	TTS	TTS w/o Age Adj	TTS	
Y082	Valleymede-Spadina	363	404	428	11%	18%	118	112	112	-5%	-5%	2012-10-09
Y083	Trench	769	698	702	-9%	-9%	261	316	319	21%	22%	2012-10-09
Y084	Oak Ridges	155	130	123	-16%	-21%	34	19	20	-44%	-41%	2012-10-10
Y085	Rutherford/16th Avenue	4,546	3,624	4,024	-20%	-11%	1,109	1,107	1,212	0%	9%	2012-10-11
												2012-10-09
												2012-10-10
												2012-11-27
Y086	Newkirk-Red Maple	688	947	991	38%	44%	229	397	411	73%	79%	2012-10-10
Y087	Langstaff-Maple	823	811	821	-1%	0%	317	300	297	-5%	-6%	2012-10-16
Y088	Bathurst	5,990	3,840	4,493	-36%	-25%	1,037	1,118	1,314	8%	27%	2012-09-26
Y090	Leslie	4,004	2,614	3,120	-35%	-22%	1,150	763	955	-34%	-17%	2012-10-08
												2012-10-09
Y091	Bayview	4,451	4,675	5,215	5%	17%	1,237	1,463	1,607	18%	30%	2012-10-17
Y098	Yonge North	838	604	676	-28%	-19%	258	153	167	-41%	-35%	2012-10-03
												2013-10-09
Y098	Yonge Limited Express	31										2012-10-10
Y099	Yonge	2,036	2,293	2,474	13%	22%	452	638	744	41%	65%	2012-10-10
Y201	Markham Go Shuttle		105	123				62	72			
Y202	Unionville Go Shuttle		223	238				101	104			
Y222	Aurora-Newmarket Go Shuttle		141	156				41	41			
Y223	Newmarket Go Shuttle		38	44				19	22			
Y240	Mill Pond Go Shuttle		42	38				21	19			
Y241	Beverly Acres Go Shuttle		111	110				44	44			
Y242	North Richvale GO Shuttle											
Y243	Redstone Go Shuttle		69	75				46	50			
Y300	Business Express	322	265	389	-18%	21%	156	83	121	-47%	-22%	2012-10-31
Y301	Markham Express	134	228	261	70%	95%	71	84	104	18%	46%	2012-10-04
Y302	Unionville Express	209	146	164	-30%	-22%	104	83	95	-20%	-9%	2012-11-27
Y303	Bur Oak Express/ Cornell Express	281	430	474	53%	69%	149	215	237	44%	59%	2011-11-13
Y304	Mount Joy Express	257	126	133	-51%	-48%	167	63	66	-62%	-60%	2012-09-11
Y360	Maple Express	260	614	696	136%	168%	101	276	315	173%	212%	2012-10-25
Y400	Y400 Brother Andrew		64	67				20	21			
Y408	Markham District via Hwy		59	64				21	22			
Y409	Markham District via Bur		44	46				22	23			
Y410	Markham District via 14th		82	86				41	43			
Y411	Markham District via Box		120	125				20	21			
Y413	St Robert via Green Lane		40	41				20	21			
Y418	Pierre Elliot Trudeau		38	39				19	20			
Y420	Newmarket High		55	54								
Y422	Huron Heights High		193	276				65	99			
Y426	Dr GW Williams High		82	89				41	44			
Y440	Richmond Hill High		83	84				21	21			
Y443	Cardinal Carter High		21	22								
Y444	Langstaff High School		92	93				46	46			
Y445	St Robert via Valleymede		22	22								
Y446	St Theresa High		62	62				22	22			
Y449	Richmond Hill Green High		208	216				95	98			
Y452	Richmond Hill Green High		19	20								
Y461	Emily Carr Secondary		81	81				60	60			
Y462	Maple High School		65	65				22	22			
Y463	Vellore		60	60				40	40			

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York Region Transit Routes		Daily Boardings			Difference (%)		AM Peak Boardings			Difference (%)		Count Date
Code	Name	Count	Age Adj	TTS	Age Adj	TTS	Count	Age Adj	TTS	Age Adj	TTS	
Y464	St Joan of Arc School			22		22						
Y520	Newmarket Community			56		60						
Y521	Newmarket Community			99		111		20	17			
Y522	Newmarket Community			61		62						
Y589	Richmond Hill Community			305		328		69	83			
Y600	York Mobility Bus - YRT			730		728		79	104			
Y760	760 Vaughan Mills/Wonderland			40		40		20	20			
Y900	Y900 York Blue VIVA	21,547	16,366	18,879	-24%	-12%	4,524	4,599	5,320	2%	18%	2012-10-09
Y901	Y901 York Purple VIVA	9,238	5,874	7,316	-36%	-21%	1,588	1,586	2,017	0%	27%	2012-10-10
Y902	Y902 York Green VIVA	873	629	699	-28%	-20%	287	162	177	-44%	-38%	2012-10-10
Y903	Y903 York Pink VIVA	2,026	1,501	1,733	-26%	-14%	785	610	685	-22%	-13%	2012-10-09
Y904	Y904 York Orange VIVA	2,420	1,679	1,959	-31%	-19%	554	539	620	-3%	12%	2012-10-09
Y999	York Region Unknown Route			62		72		21	22			
Total*		96,869	76,744	87,831	-21%	-9%	23,093	23,303	26,6391	1%	15%	
	2006 TTS					-15%					n/a	

*Totals calculated using routes that have both York Region Transit boarding and TTS counts to ensure proper comparison.

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Exhibit 18 presents a comparison of the transit routes operated by Mississauga transit and TTS data. The Mississauga transit boardings are one-day counts collected on a weekday in September or October in 2012. Total daily and morning peak period boardings as reported by the TTS are within 16% and 5% respectively of the counts provided by Mississauga transit.

Exhibit 18: Mississauga Transit Boardings

Mississauga Transit Routes		Daily Boardings			Difference (%)		A.M. Peak Boardings			Difference (%)		Count Year
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
MS01	Dundas	15,478	12,152	13,923	-21%	-10%	2,672	2,734	3,191	2%	19%	2012
MS03	Bloor	8,040	6,861	7,496	-15%	-7%	1,824	1,736	1,936	-5%	6%	2012
MS04	Sherway Gardens	1,265	1,037	1,164	-18%	-8%	296	331	346	12%	17%	2012
MS05	Dixie	7,170	4,674	5,030	-35%	-30%	1,985	1,041	1,131	-48%	-43%	2012
MS06	Credit Woodlands	2,360	1,530	1,651	-35%	-30%	485	351	373	-28%	-23%	2012
MS07	Airport	4,637	2,705	3,027	-42%	-35%	853	622	698	-27%	-18%	2012
MS08	Cawthra-Indian Road	2,073	1,834	1,962	-12%	-5%	560	416	465	-26%	-17%	2012
MS09	Rathburn-Miller's Grove	2,388	1,759	1,991	-26%	-17%	422	473	532	12%	26%	2012
MS10	Bristol-Britannia	3,618	2,741	3,086	-24%	-15%	630	707	809	12%	28%	2012
MS11	Westwood	3,544	1,955	2,259	-45%	-36%	770	519	598	-33%	-22%	2012
MS12	Rexdale	463	224	258	-52%	-44%	167	43	61	-74%	-63%	2012
MS13	Glen Erin	3,743	3,710	4,115	-1%	10%	881	966	1,015	10%	15%	2012
MS14	Lorne Park	526	391	403	-26%	-23%	160	124	122	-23%	-24%	2012
MS15	Drew	1,256	610	698	-51%	-44%	374	178	210	-52%	-44%	2012
MS16	Malton East	737	504	534	-32%	-28%	202	175	186	-13%	-8%	2012
MS17	Timberlea		199	179				79	73			n/a
MS18	Northwest-Explorer /Malton	1,014	386	423	-62%	-58%	465	161	184	-65%	-60%	2012
MS19	Hurontario	20,554	17,002	18,933	-17%	-8%	3,951	3,690	4,124	-7%	4%	2012
MS20	Rathburn	3,253	3,127	3,552	-4%	9%	810	783	864	-3%	7%	2012
MS21	Explorer		82	77				41	38			n/a
MS22	Finch	4,572	1,595	1,954	-65%	-57%	787	466	564	-41%	-28%	2012
MS23	Lakeshore	4,139	2,223	2,394	-46%	-42%	831	493	516	-41%	-38%	2012
MS24	Northwest/ University (Meadowvale)		60	71								n/a
MS25	Traders Loop	164	104	129	-37%	-21%	85					2012
MS26	Burnhamthorpe	9,482	7,808	8,716	-18%	-8%	1,658	2,201	2,491	33%	50%	2012
MS27	Matheson		501	505				165	164			n/a
MS28	Confederation	2,192	2,238	2,396	2%	9%	432	538	591	25%	37%	2012
MS29	Park Royal/Sheridan park	2,062	1,314	1,414	-36%	-31%	423	266	295	-37%	-30%	2012
MS30	Woodbine	274	261	253	-5%	-8%		21	23			2012
MS31	Folkway-Homelands	840	370	400	-56%	-52%	157	103	109	-34%	-31%	2012
MS32	Lisgar GO/Rick Hansen/ Creditview	81	209	258	158%	219%	49	64	80	31%	63%	2012
MS33	Erin Centre Loop/ Rick Hansen/Sq One		148	184				63	74			n/a
MS34	Credit Valley	2,447	2,866	3,282	17%	34%	321	568	671	77%	109%	2012
MS35	Eglinton-Tenth Line	6,397	4,474	5,002	-30%	-22%	1,698	1,103	1,192	-35%	-30%	2012
MS36	Colonial Loop	1,502	998	1,096	-34%	-27%	288	208	225	-28%	-22%	2012
MS38	Creditview	3,118	3,108	3,401	0%	9%	791	889	976	12%	23%	2012
MS39	Britannia	2,072	1,609	1,842	-22%	-11%	512	426	476	-17%	-7%	2012
MS41	Thomas/port credit	717	825	949	15%	32%	222	338	376	52%	69%	2012
MS42	Derry	5,913	3,592	4,047	-39%	-32%	1,374	803	933	-42%	-32%	2012
MS43	Matheson-Argentia/ Speakman (Lisgar)	484	106	123	-78%	-75%	167	21	22	-87%	-87%	2012
MS44	Mississauga Road	2,960	2,180	2,802	-26%	-5%	700	416	547	-41%	-22%	2012
MS45	Winston Churchill	2,416	2,316	2,656	-4%	10%	749	655	726	-13%	-3%	2012
MS46	Tenth Line	185	222	233	20%	26%	74	121	127	64%	72%	2012

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Mississauga Transit Routes		Daily Boardings			Difference (%)		A.M. Peak Boardings			Difference (%)		Count Year
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
MS47	Ridgeway Loop	318	458	482	44%	52%	148	208	220	41%	49%	2012
MS48	Erin Mills	1,846	1,847	2,001	0%	8%	238	351	380	47%	60%	2012
MS49	McDowell	778	739	792	-5%	2%	243	212	220	-13%	-9%	2012
MS50	Creebank		143	166				62	74			n/a
MS51	Tomken	3,298	2,879	3,111	-13%	-6%	1,155	1,015	1,148	-12%	-1%	2012
MS53	Kennedy	1,798	1,272	1,462	-29%	-19%	622	452	519	-27%	-17%	2012
MS57	Courtneypark	1,082	620	810	-43%	-25%	455	221	301	-51%	-34%	2012
MS59	Airport Infield	11	21	34	91%	209%	11		0			2012
MS61	Mavis	4,864	4,007	4,606	-18%	-5%	996	1,088	1,260	9%	27%	2012
MS62	Cooksville GO	104	123	152	18%	46%	59	42	47	-29%	-20%	2012
MS64	Meadowvale GO	69	235	273	241%	296%	27	118	136	337%	404%	2012
MS65	Barondale Loop	319	104	116	-67%	-64%	81	41	41	-49%	-49%	2012
MS66	McLaughlin	4,474	3,200	3,886	-28%	-13%	864	786	940	-9%	9%	2012
MS67	Streetsville GO	100	147	165	47%	65%	66	63	71	-5%	8%	2012
MS68	Windsor Hill Loop	708	510	607	-28%	-14%	152	234	275	54%	81%	2012
MS70	Keaton	520	271	247	-48%	-53%	296	125	116	-58%	-61%	2012
MS71	Sheridan-Subway/Phillip Pocock-Tomken Special	84	149	195	77%	132%	53		0			2012
MS76	City Centre-Subway	1,966	1,371	1,425	-30%	-28%	733	314	317	-57%	-57%	2012
MS82	Financial	564	400	474	-29%	-16%	300	168	210	-44%	-30%	2012
MS87	Meadowvale-Skymark	654	61	71	-91%	-89%	258					2012
MS89/ 109	Meadowvale Express	1,380	2,009	2,230	46%	62%	560	672	753	20%	-1%	2012
MS90/ 201	Dundas	1,974	1,032	1,147	-48%	-42%	556	392	418	-29%	-25%	2012
MS91	Hillcrest/Hurontario	954	417	445	-56%	-53%	266	105	117	-61%	-56%	2012
MS97	Mississauga School Special		171	173				86	86			n/a
MS98	Mississauga Transhelp		465	390				83	74			n/a
MS99	Unknown Mississauga Transit Route		23	23				23	23			n/a
MS101	Dundas EXPRESS	2,546	1,739	2,079	-32%	-18%	783	576	691	-26%	-97%	2012
MS102	Intercity Express		42	43								n/a
MS103	Hurontario Express	7,248	2,930	3,157	-60%	-56%	1,847	726	793	-61%	-100%	2012
MS107	Malton Express	1,467	1,014	1,189	-31%	-19%	477	472	554	-1%	66%	2012
MS110	University Express	8,034	6,226	8,048	-23%	0%	1,388	1,492	1,906	7%	-46%	2012
MS301	Philip Pocock-Tomken	92	41	40	-55%	-57%						2012
MS302	Philip Pocock-Bloor West	31										2012
MS303	Father Goetz-City Centre	99	40	42	-60%	-58%		20	20			2012
MS304	Father Goetz- Mississauga Valley	64	41	42	-36%	-34%	29					2012
MS305	Streetsville Secondary- Falconer	41	64	60	56%	46%	10					2012
MS306	Streetsville Secondary- City Centre	17	43	49	153%	188%						2012
MS307	Philip Pocock - Bloor East/ ST Aloysius Gonzaga Special	54										2012
MS308	St. Joseph-Eglinton	23					9					2012
MS309	St. Joseph-Rathburn/ St. Joseph Square One	41	21	21	-49%	-49%						2012
MS310	Clarkson Secondary Winston Churchill/ John Cabot Square one	36	21	21	-42%	-42%						2012
MS311	John Cabot-City Centre	30										2012
MS312	Gordon Graydon- City Centre	56	144	175	157%	213%						2012
MS313	Streetsville Secondary	37	22	22	-41%	-41%						2012

2011 TTS Version 1.0 Data Expansion & Validation

Mississauga Transit Routes		Daily Boardings			Difference (%)		A.M. Peak Boardings			Difference (%)		Count Year
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
MS314	Rick Hansen-Donway	41	21	22	-49%	-46%	8					2012
MS315	Rick Hansen-City Centre	42					10					2012
MS316	St.Francis Xavier- City Centre	16										2012
MS317	Clarkson- Erindale Secondary	32	120	164	275%	413%		41	49			2012
MS318	Cawthra Secondary- City Centre	39	21	21	-46%	-46%						2012
MS319	Port Credit Secondary Square One	129	62	66	-52%	-49%						2012
MS320	Cawthra Secondary- Lorne Park	38	43	38	13%	0%		22	19			2012
MS321	Stephen Lewis-Joan of Arc	157	63	64	-60%	-59%	68	42	43	-38%	-37%	2012
MS328	Cawthra Secondary-Bloor	130	42	42	-68%	-68%						2012
MS334	St.Joseph-City Centre	38	43	43	13%	13%						2012
MS335	Allan A. Martin	32										2012
MS336	Lorne Park Secondary- Clarkson	13					13					2012
MS347	Meadowvale-City Centre	90					32					2012
MS990	Terragar-Copenhagen Loop	595	255	315	-57%	-47%	115	39	54	-66%	-53%	2012
Total*		182,978	136,651	154,469	-25%	-16%	41,235	34,683	39,292	-16%	-5%	
	2006 TTS					-19%					-11%	

*Totals calculated using routes that have both Mississauga Transit boarding and TTS counts to ensure proper comparison.

Comparison between Brampton Transit boardings and TTS counts are displayed in Exhibit 19. The boarding counts were collected on a weekday in the fall of 2012. Total daily and morning peak period boardings as reported by the TTS are within 25% and 12% respectively of the counts provided by the transit operator.

2011 TTS Version 1.0 Data Expansion & Validation

Exhibit 19: Brampton Transit Boardings

Brampton Transit Routes		Daily Boardings			Difference (%)		AM Peak Boardings			Difference (%)		Count Year
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
BR01	Queen	6,360	4184	4,529	-34%	-29%	1,158	998	1,113	-14%	-4%	2012
BR02	Main	2,720	2,849	3,023	5%	11%	453	695	788	53%	74%	2012
BR03	McLaughlin	2,961	2,284	2,513	-23%	-15%	613	451	520	-26%	-15%	2012
BR04	Chinguacousy	5,700	4,172	4,634	-27%	-19%	1,260	1,224	1,364	-3%	8%	2012
BR05	Bovaird	7,862	5,024	5,575	-36%	-29%	1,645	1,384	1,529	-16%	-7%	2012
BR07	Kennedy	6,706	4,307	4,747	-36%	-29%	1,489	1,051	1,170	-29%	-21%	2012
BR08	Centre	2,005	1,406	1,569	-30%	-22%	429	402	440	-6%	3%	2012
BR09	Vodden/Williams	1,505	1,384	1,507	-8%	0%	349	356	397	2%	14%	2012
BR10	South Industrial	375	380	394	1%	5%	165	157	160	-5%	-3%	2012
BR11	Steeles	4,013	8,241	9,230	105%	130%	989	2,354	2,656	138%	169%	2012
BR12	Grenoble	1,068	925	1,002	-13%	-6%	154	159	167	3%	8%	2012
BR13	Avondale	458	219	237	-52%	-48%	100	22	22	-78%	-78%	2012
BR14	Torbram	4,600	3,001	3,268	-35%	-29%	1,202	790	854	-34%	-29%	2012
BR15	Bramalea	3,969	3,711	4,161	-7%	5%	1,041	1,148	1,268	10%	22%	2012
BR16	Southgate	775	775	856	0%	10%	150	132	150	-12%	0%	2012
BR17	Howden	914	793	864	-13%	-5%	211	196	216	-7%	2%	2012
BR18	Dixie	5,927	4,171	4,497	-30%	-24%	1,633	1,027	1,107	-37%	-32%	2012
BR19	Fernforest	1,359	751	781	-45%	-43%	251	205	209	-18%	-17%	2012
BR20	East Industrial	331	198	207	-40%	-37%	169					2012
BR21	Snelgrove	156	300	301	92%	93%	56	138	136	146%	143%	2012
BR22	Springdale		44	44				22	22			2012
BR23	Sandalwood	3,944	2,565	2,839	-35%	-28%	835	699	754	-16%	-10%	2012
BR24	Van Kirk Industrial	829	786	850	-5%	3%	215	277	305	29%	42%	2012
BR25	Edenbrook	356	229	272	-36%	-24%	143	46	52	-68%	-64%	2012
BR26	Fletchers Meadow		46	46								2012
BR29	Williams	2,177	1,873	2,053	-14%	-6%	626	562	593	-10%	-5%	2012
BR30	Airport Rd	3,842	2,035	2,271	-47%	-41%	1,069	549	611	-49%	-43%	2012
BR31	Mcvean	247	22	28	-91%	-89%	64					2012
BR32	Father Tobin	350	237	253	-32%	-28%	56	25	25	-55%	-55%	2012
BR33	Peter Robinson	314	99	89	-68%	-72%	102	25	25	-75%	-75%	2012
BR35	Clarkway	130	134	127	3%	-2%	46					2012
BR40	Central Industrial	271	376	388	39%	43%	76	177	189	133%	149%	2012
BR50	Gore Road	1,695	1,413	1,622	-17%	-4%	350	314	353	-10%	1%	2012
BR51	Steeles West	1,831	779	808	-57%	-56%	329	179	189	-46%	-43%	2012
BR52	McMurchy	2,518	2,235	2,493	-11%	-1%	447	449	497	0%	11%	2012
BR53	Kingknoll	1,298	1,053	1,168	-19%	-10%	299	315	348	5%	16%	2012
BR54	James Potter	1,184	314	343	-73%	-71%	184	68	75	-63%	-59%	2012
BR56	Springbrook	121					36					
BR92	Go Express B	120	375	426	213%	255%	57	153	175	168%	207%	2012
BR97	Brampton School		962	1,028				399	431			
BR99	Unknown Route		72	62				25	19			
BR101	Airport Express	1,141	432	487	-62%	-57%	209	108	125	-48%	-40%	2012
/115												
BR501	ZUM (HWY7/ QUEEN ST E)	15,883	8,467	9,986	-47%	-37%	3,149	1,888	2,248	-40%	-29%	2012
BR502	ZUM (MAIN ST)	9,244	4,567	5,064	-51%	-45%	1,897	993	1,102	-48%	-42%	2012
BR511	Zoom	7,038	46	56	-99%	-99%	1,675	23	28	-99%	-98%	2012
Total*		114,176	77,112	85,518	-32%	-25%	25,066	19,739	21,960	-21%	-12%	
	2006 TTS					-16%					-13%	

*Totals calculated using routes that have both Brampton Transit boarding and TTS counts to ensure proper comparison.

2011 TTS Version 1.0 Data Expansion & Validation

Exhibits 20 presents comparison of Oakville transit boarding counts and TTS data. Daily boarding counts from October 23, 2012 (Tuesday) and morning peak boarding counts from November 20, 2012 (Tuesday) were used for comparison. Day to day variations should be considered when comparisons are made.

Exhibit 20: Oakville Transit Boardings

Oakville Transit Routes		Daily Boardings			Difference (%)		A.M. Peak Boardings			Difference (%)	
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS
OA01	Trafalgar	950	1,393	1,828	47%	92%	255	382	519	50%	104%
OA02	Lakeshore	306	195	248	-36%	-19%	134	19	22	-86%	-84%
OA03	Third Line	356	296	381	-17%	7%	106	85	101	-20%	-5%
OA04	Speers-Cornwall	834	516	577	-38%	-31%	294	136	137	-54%	-53%
OA05	Dundas	130	123	153	-5%	18%	22	21	24	-5%	9%
OA06	Upper Middle	408	372	499	-9%	22%	160	145	189	-9%	18%
OA10	West Industrial	184	184	192	0%	4%	82	63	80	-23%	-2%
OA11	Linbrook	266	237	295	-11%	11%	85	100	127	18%	49%
OA13	Westoak Trails	926	997	1,257	8%	36%	290	312	390	8%	34%
OA14	Lakeshore West	1,602	1,472	1,707	-8%	7%	328	443	566	35%	73%
OA15	Bridge	569	352	388	-38%	-32%	136	112	147	-18%	8%
OA17	Kerr	432	453	573	5%	33%	126	113	141	-10%	12%
OA18	Glen Abbey South	243	81	117	-67%	-52%	158	41	59	-74%	-63%
OA19	River Oaks	977	749	945	-23%	-3%	356	211	252	-41%	-29%
OA20	Northridge/Iroquois Ridge	563	562	600	0%	7%	194	211	217	9%	12%
OA21	Clearview	183	421	540	130%	195%	69	155	182	125%	164%
OA22	Upper Glen Abbey	113	192	242	70%	114%	67	64	82	-4%	22%
OA24	South Common	1,202	1,259	1,670	5%	39%	465	402	532	-14%	14%
OA25	Aspen Forest	98	38	51	-61%	-48%	26	19	18	-27%	-31%
OA26	Falgarwood	306	234	272	-24%	-11%	94	79	85	-16%	-10%
OA28	Glen Abbey North	642	356	540	-45%	-16%	146	61	96	-58%	-34%
OA31	Lakeshore Woods										
OA32	Burloak - Great Lakes	201	74	109	-63%	-46%	43	37	64	-14%	49%
OA33	Palermo	51	84	90	65%	76%	45	42	45	-7%	0%
OA81/ 102	Winston Park	112	42	34	-63%	-70%	83				
OA82	Loyola North School Special	89					8				
OA83/ 190	River Oaks Express	154	134	131	-13%	-15%		58	54		
OA84	Oakville Trafalgar HS Special	71					33				
OA96	Oakville Zone Bus										
OA97	Oakville Transit School		116	132				41	46		
OA98	Oakville Community Bus										
OA99	Oakville Route Unknown		38	66				19	33		
Total*		11,808	10,816	13,637	-8%	15%	3,681	3,253	4,075	-12%	11%
	2006 TTS					9%					28%

*Totals calculated using routes that have both Oakville Transit boarding and TTS counts to ensure proper comparison.

2011 TTS Version 1.0 Data Expansion & Validation

Comparison between Hamilton Transit boarding counts and TTS data is shown in Exhibits 21. The latest counts provided by the transit operator were collected in 2009 which do not coincide with the conduct of TTS. Caution should be used when making comparisons, as seasonal variations should be considered

Exhibit 21: Hamilton Transit Boardings

Hamilton Transit Routes		Daily Boardings		Difference (%)		Count Year
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	
HA01	King	13,359	11,478	12,873	-14%	2009
HA02	Barton	9,312	8,027	8,983	-14%	2009
HA03	Cannon	1,531	1,891	2,136	24%	2009
HA04	Bayfront	3,153	3,428	3,891	9%	2009
HA05	Delaware	12,253	9,147	10,863	-25%	2009
HA06	Aberdeen	952	904	982	-5%	2009
HA07	Locke	515	526	546	2%	2009
HA08	York	689	682	652	-1%	2009
HA10	BeeLine	5,393	5,143	6,470	-5%	2009
HA11	Parkdale	1,669	2,176	2,612	30%	2009
HA12	Wentworth	62	233	244	276%	2009
HA16	Ancaster	191	154	212	-19%	2009
HA18	Waterdown	11	85	118	673%	2009
HA20	A Line Express		97	109		2009
HA21	Upper Kenilworth	2,564	2,629	3,202	3%	2009
HA22	Upper Ottawa	1,810	1,922	2,257	6%	2009
HA23	Upper Gage	2,833	2,459	2,552	-13%	2009
HA24	Upper Sherman	2,309	2,023	2,399	-12%	2009
HA25	Upper Wentworth	2,320	2,296	2,563	-1%	2009
HA26	Upper Wellington	3,464	2,473	3,060	-29%	2009
HA27	Upper James	2,490	2,957	3,473	19%	2009
HA33	Sanatorium	1,447	1,260	1,533	-13%	2009
HA34	Upper Paradise	1,912	1,530	1,752	-20%	2009
HA35	College	3,425	3,590	4,513	5%	2009
HA41	Mohawk	4,240	5,641	6,512	33%	2009
HA43	Stonechurch	1,403	1,398	1,594	0%	2009
HA44	Rymal	122	832	958	582%	2009
HA51	University	5,774	2,782	3,678	-52%	2009
HA52	Dundas Local	43	1,637	1,804	3707%	2009
HA55	Stoney Creek Central	2,023	1,569	1,797	-22%	2009
HA56	Confederation Park		56	73		
HA58	Stoney Creek Local	440	471	510	7%	2009
HA90	Hamilton School Extra		273	356		
HA91	Stoney Creek Trans		223	239		
HA92	Glandbrook Trans-Cab		54	71		
HA93	Dundas Trans-Link		64	68		
HA98	DARTS (Disabled and Aged Transit		974	938		
HA99	Hamilton Transit Route Unknown		63	85		
Total		87,709	81,343	94,739	-7%	8%
2006 TTS						n/a

*Totals calculated using routes that have both Hamilton Transit boarding and TTS counts to ensure proper comparison.

2011 TTS Version 1.0 Data Expansion & Validation

Exhibits 22 provides comparisons for Grand River Transit system with the TTS data. Daily boardings from a weekday in the fall of 2012 were provided. A factor of 19% was applied to calculate morning peak boardings. There is considerable variation in the accuracy with which the TTS data matches the GRT counts on individual bus routes. A large majority of the routes are under-reported with a few exceptions. The biggest discrepancies occur in Chicopee and Kumpf buses for both a.m. peak period and all day boardings, and Highland and Melran buses in a.m. peak period. The numbers of boardings for these routes are relatively small that the comparison is not reliable. Total daily boardings for the GRT are under represented by 23% by TTS.

Exhibit 22: Grand River Transit Boardings

Grand River Transit Routes		Daily Boardings			Difference (%)		A.M. Peak Boardings			Difference (%)		Count Year
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
WA01	1 Stanley Park	981	1,141	1,179	16%	20%	162	250	247	54%	53%	2012
WA02	2 Forest Hill	387	266	326	-31%	-16%	78	20	32	-74%	-59%	2012
WA03	3 Ottawa South	1,410	838	939	-41%	-33%	242	216	231	-11%	-5%	2012
WA04	4 Glasgow	709	547	602	-23%	-15%	139	147	172	6%	24%	2012
WA05	5 Erb West	682	973	1,183	43%	73%	134	154	181	15%	36%	2012
WA06	6 Bridgeport	641	562	700	-12%	9%	135	128	156	-5%	16%	2012
WA07	7 Mainline	16,228	9,396	10,686	-42%	-34%	2,389	2,297	2,636	-4%	10%	2012
WA08	8 University/ Fairview Park Mall	6,405	3,920	4,609	-39%	-28%	1,111	1,004	1,189	-10%	7%	2012
WA09	9 Lakeshore	3,739	1,793	2,445	-52%	-35%	654	496	698	-24%	7%	2012
WA10	10 Conestoga College	1,570	1,315	1,673	-16%	7%	271	329	434	21%	60%	2012
WA11	11 Country Hills	1,301	1,351	1,614	4%	24%	276	356	411	29%	49%	2012
WA12	12 Conestoga Mall/ Fairview Park Mall	6,043	4,081	5,145	-32%	-15%	974	971	1,247	0%	28%	2012
WA13	13 Laurelwood	1,848	1,438	2,031	-22%	10%	222	423	541	91%	144%	2012
WA14	14 Bathurst/ Waterloo Industrial	166	297	265	79%	60%	76	111	112	46%	47%	2012
WA15	15 Frederick	696	534	668	-23%	-4%	129	139	186	8%	44%	2012
WA16	16 Forest Glen/ Conestoga College	830	684	897	-18%	8%	222	192	240	-14%	8%	2012
WA17	17 Heritage Park	586	429	508	-27%	-13%	119	103	130	-13%	10%	2012
WA18	18 Guelph Street	326	170	200	-48%	-39%	77	75	83	-3%	7%	2012
WA19	19 Victoria South	470	426	447	-9%	-5%	176	204	203	16%	15%	2012
WA20	20 Victoria Hills	914	709	708	-22%	-23%	129	202	208	57%	61%	2012
WA21	21 Elmira/St Jacobs /Conestoga mall	397	357	334	-10%	-16%	72	53	58	-26%	-19%	2012
WA22	22 Laurentian West	1,485	2,073	2,563	40%	73%	350	626	775	79%	121%	2012
WA23	23 Idlewood	806	725	792	-10%	-2%	176	245	292	39%	66%	2012
WA24	24 Highland	1,156	859	860	-26%	-26%	170	341	340	101%	100%	2012
WA25	25 Queen South	1,386	1,119	1,279	-19%	-8%	348	340	379	-2%	9%	2012
WA27	27 Chicopee	295	608	685	106%	132%	65	144	147	120%	125%	2012
WA29	29 Keats Way	2,875	972	1,357	-66%	-53%	357	153	199	-57%	-44%	2012
WA31	31 Lexington	1,070	344	447	-68%	-58%	218	128	142	-41%	-35%	2012
WA32	32 Kumpf	79	142	186	80%	136%	27	56	81	110%	204%	2012
WA33	33 Huron	224	125	138	-44%	-38%	165	22	14	-87%	-92%	2012
WA35	35 Eastbridge	841	859	927	2%	10%	178	215	238	21%	34%	2012
WA51	51 Hespeler Rd	2,723	2,130	2,572	-22%	-6%	435	562	673	29%	55%	2012
WA52	52 Fairview Mall/ Ainslie St	2,704	1,327	1,522	-51%	-44%	493	397	464	-19%	-6%	2012
WA53	53 Franklin Blvd	929	653	741	-30%	-20%	286	308	349	8%	22%	2012
WA54	54 Lisbon Pines	465	189	212	-59%	-54%	92	63	70	-32%	-24%	2012
WA55	55 ST ANDREWS	845	403	495	-52%	-41%	146	77	110	-47%	-24%	2012
WA56	56 Dunbar	676	280	263	-59%	-61%	123	60	57	-51%	-54%	2012
WA57	57 Blair Road	257	176	151	-32%	-41%	62	40	44	-35%	-29%	2012

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Grand River Transit Routes		Daily Boardings			Difference (%)		A.M. Peak Boardings			Difference (%)		Count Year
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
WA58	58 Elmwood	469	252	330	-46%	-30%	93	63	90	-32%	-3%	2012
WA59	59 Christopher	739	409	427	-45%	-42%	147	184	197	25%	34%	2012
WA60	60 Northview Acres	681	472	516	-31%	-24%	109	81	93	-26%	-15%	2012
WA61	61 Conestoga College	953	564	761	-41%	-20%	210	220	299	5%	42%	2012
WA62	62 Woodside	370	309	438	-17%	18%	56	77	104	38%	86%	2012
WA63	63 Champlain	708	495	569	-30%	-20%	149	147	160	-2%	7%	2012
WA64	64 Langs	505	395	426	-22%	-16%	125	79	85	-37%	-32%	2012
WA65	65 Fisher Mills	362	217	269	-40%	-26%	94	59	66	-37%	-30%	2012
WA66	66 Winston	153	138	162	-10%	6%	44	59	66	35%	51%	2012
WA67	67 Lovell Industrial	216	168	215	-22%	0%	109	21	24	-81%	-78%	2012
WA68	68 Eagle Street		39	51					0			
WA71	71 Melran	334	452	523	35%	57%	61	196	232	222%	281%	2012
WA72	72 Cherry Blossom	49	38	56	-23%	14%	25	19	28	-23%	14%	2012
WA73	73 Northlake	52	167	166	221%	219%	26	18	20	-31%	-23%	2012
WA75	75 Saginaw/Cambridge Centre	304	231	261	-24%	-14%	66	63	77	-5%	16%	2012
WA76	76 Doon South	37					19					2012
WA90	200 iXpress	13,240	4,046	5,685	-69%	-57%	1,959	993	1,410	-49%	-28%	2012
WA91	110/111/116 Conestoga College	1,114	1,181	1,615	6%	45%	361	224	326	-38%	-10%	2012
WA92	Huron Industrial Special AM	23					23					2012
WA94	Northfield Industrial Special	37					27					2012
WA97	Waterloo Wheel Trans		393	415				84	112			
WA98	Waterloo School Special	995	1,482	1,605	49%	61%	545	721	779	32%	43%	2012
WA99	Waterloo Route Unknown		100	128								
WA201	201 Forest Glen Terminal IXpress	3,284	2,252	3,088	-31%	-6%	530	596	773	12%	46%	2012
Total*		89,675	57,479	69,461	-36%	-23%	16,184	15,467	18,598	-4%	15%	
	2006 TTS					n/a					n/a	

*Totals calculated using routes that have both Grand River Transit boarding and TTS counts to ensure proper comparison.

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Exhibits 23 presents comparisons between Brantford transit system with the TTS data. Daily boardings on November 16, 2011 were provided for each route. Total daily and morning peak counts as reported by TTS are within 20% and 4% respectively of the counts.

Exhibit 23: Brantford Transit Boardings

Brantford Transit Routes		Daily Boardings			Difference (%)		AM Peak Boardings			Difference (%)		Count Date
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
BT01	Eagle Place	632	344	356	-46%	-44%	125	101	104	-19%	-17%	2011-11-16
BT02	West St. Brier Park	628	384	422	-39%	-33%	127	40	50	-69%	-61%	2011-11-16
BT04	Mall Link #4-A/C	1,895	1,450	1,592	-23%	-16%	255	382	414	50%	62%	2011-11-16
BT05	West Brant/Oakhill	352	342	345	-3%	-2%	18	80	80	344%	344%	2011-11-16
BT06	West Brant/Shellard	339	181	189	-47%	-44%	79	20	95	-75%	20%	2011-11-16
BT07	East Ward N/Braneida	503	444	501	-12%	0%	166	120	139	-28%	-16%	2011-11-16
BT08	Holmedale/Mayfair	497	341	370	-31%	-26%	109	80	85	-27%	-22%	2011-11-16
BT09	Echo Place	1,015	787	852	-22%	-16%	232	182	189	-22%	-19%	2011-11-16
BT11	West Brant Oakhill/Holmedale	70	60	75	-14%	7%	70					2011-11-16
BT12	Eagle Place/West Brant Shellard	81					81					2011-11-16
BT13	King George Rd/Brantwood Pk	125	161	175	29%	40%	125					2011-11-16
BT14	Echo Place /East Ward N/Braneida	99	40	40	-60%	-60%	99					2011-11-16
BT15	West St/Mayfair	110					110					2011-11-16
BT97	Brantford School Special		161	163				60	63			
BT98	Brantford Wheel Trans		241	227				20	23			
	Special #103 - N.W.	45					45					2011-11-16
	Special #114 - N.W.	78					78					2011-11-16
Total		6,155	4,534	4,917	-26%	-20%	1,111	1,005	1,156	-10%	4%	
	2006 TTS					-12%					n/a	

*Totals calculated using routes that have both Brantford Transit boarding and TTS counts to ensure proper comparison.

Comparisons of daily ridership data from other municipal transit operators outside the GTHA are not shown either due to inconsistency of the data with the TTS or the information is not available.

4.7 GO Transit Ridership

Exhibit 24 contains a comparison between GO rail ridership provided by GO Transit and the TTS data. The discrepancy for individual rail line could be a result of variations in timing. The daily ridership is a summary derived from on-off counts collected continuously over a period of time in the fall of 2012. Although the unadjusted TTS data seem to be more comparable to the boarding counts, there are many reasons for differences and the adjustment was necessary to compensate for other issues with the unadjusted data. The total daily boardings of GO rail routes are within 17% reported by TTS.

Exhibit 25 contain comparisons between the TTS data and GO bus ridership supplied by GO transit. GO bus daily ridership counts were weekday averages based on sales and counter information over a period of time in the spring of 2011 whereas the TTS counts were collected over a four month period. Morning peak period ridership was selected for one day within the same time period. GO bus services are grouped by corridor for comparison as respondents might not have distinguished the differences of the lines. The TTS total daily and a.m. peak period bus ridership counts are over represented by the TTS data by 28% and 72% respectively. The significant differences in the a.m. peak period can be a result of a number of factors including variations in collection method and timing.

A summary of ridership comparisons between the TTS data and each transit system is provided in Exhibit 26.

Exhibit 24: GO Rail Daily Boardings

GO Rail Routes		Daily Boardings			Difference (%)		AM Peak Boardings (6:00-9:29)			Difference (%)		Count Year
Code	Name	TTS w/o Count	Age Adj	TTS	TTS w/o Age Adj	TTS	TTS w/o Count	Age Adj	TTS	TTS w/o Age Adj	TTS	
GT01	Lakeshore West	60,490	57,440	65,994	-5%	9%	23,173	23,803	27,369	3%	18%	2012
GT02	Milton	26,115	31,694	34,863	21%	33%	13,350	15,422	16,874	16%	26%	2012
GT03	Kitchener	19,568	20,076	22,086	3%	13%	9,768	9,617	10,533	-2%	8%	2012
GT05	Barrie	15,922	18,956	21,548	19%	35%	8,110	8,488	9,706	5%	20%	2012
GT06	Richmond Hill	10,528	12,403	13,754	18%	31%	5,212	6,143	6,800	18%	30%	2012
GT07	Stouffville	14,847	17,249	19,999	16%	35%	7,523	7,942	9,223	6%	23%	2012
GT09	Lakeshore East	51,525	48,447	54,940	-6%	7%	21,190	20,234	22,985	-5%	8%	2012
Total		198,995	206,265	233,184	4%	17%	88,326	91,649	103,490	4%	17%	
2006 TTS						0%						

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Exhibit 25: GO Bus Daily Ridership

GO Bus Routes		Daily Ridership			Difference (%)		AM Peak Ridership (6:00-9:29)			Difference (%)		Count Year
Code	Name	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	Count	TTS w/o Age Adj	TTS	TTS w/o Age Adj	TTS	
GB12/15/16 /19	Hamilton Corridor	5,106	6,195	7,719	21%	51%	1,375	2,179	2,741	58%	99%	2011
GB20/21/25 /27/29	Milton Corridor	6,453	7,159	8,595	11%	33%	1,101	2,110	2,498	92%	127%	2011
GB30	Kitchener Corridor	n/a	31	29			n/a	0	0			
GB31/32/33 /34/37/38	Georgetown Corridor	5,722	7,418	8,695	30%	52%	1,662	2,215	2,599	33%	56%	2011
GB40/46/52	Hwy 407 Corridor	15,762	15,454	20,850	-2%	32%	3,667	5,170	6,935	41%	89%	2011
GB61/65/66 /69	Newmarket Corridor	4,707	3,860	4,491	-18%	-5%	1,061	931	1,041	-12%	-2%	2011
GB71	Stouffville Corridor	2,440	1,773	1,984	-27%	-19%	201	432	488	115%	143%	2011
GB81/88/90 /93/94/95/96	Oshawa Corridor	11,794	10,941	14,031	-7%	19%	2,948	3,525	4,379	20%	49%	2011
Total		**54,469	52,799	66,365	-3%	22%	12,015	16,563	20,681	38%	72%	
	2006 TTS					-14%						

** Unassigned ridership of 2,485 was added to daily total.

Exhibit 26: Summary of Boarding/Ridership Comparisons

Transit System	Daily Boarding/Ridership			AM Peak Boarding/Ridership		
	TTS w/o Age Adj	TTS	2006	TTS w/o Age Adj	TTS	2006
GO	3%	19%	-3%	8%	24%	n/a
Rail	4%	17%	0%	4%	17%	n/a
Bus	-3%	22%	-14%	38%	72%	n/a
TTC	-20%	-7%	-10%	1%	17%	-2%
Subway	-12%	3%	-2%	5%	23%	10%
Streetcar	-29%	-21%	-21%	3%	21%	3%
Bus	-25%	-14%	-16%	-7%	9%	-2%
Durham	-37%	-24%	20%	n/a	n/a	n/a
York	-21%	-9%	-15%	1%	15%	n/a
Mississauga	-25%	-16%	-19%	-16%	-5%	-11%
Brampton	-32%	-25%	-16%	-21%	-12%	-13%
Oakville	-8%	15%	9%	-12%	11%	28%
Hamilton	-7%	8%	n/a	n/a	n/a	n/a
Waterloo	-36%	-23%	n/a	-4%	15%	n/a
Brantford	-26%	-20%	-12%	-10%	4%	n/a

2011 TTS Version 1.0 Data Expansion & Validation

Appendix A - Expansion Factors by Postal Area

FSA	Location	2011	Can. Post counts		Total Interviews	Aggregate totals		Expn. Factor
		Census	May-11	Nov-12		Interviews	Census	
M1B	Toronto	20045	19080	19331	912	1076	23576	21.91
M1X	Toronto	3531	3320	3438	164			21.91
M1A					1			21.91
M1C	Toronto	11152	11080	11229	551	551	11152	20.24
M1E	Toronto	16877	16760	16900	794	794	16877	21.26
M1G	Toronto	10092	9660	9687	488	909	18632	20.50
M1H	Toronto	8540	8540	8732	421			20.50
M1J	Toronto	12320	12240	12342	563	563	12320	21.88
M1K	Toronto	17692	17160	17324	808	808	17692	21.90
M1L	Toronto	12002	11560	11935	538	538	12002	22.31
M1M	Toronto	8611	8540	8658	413	883	17643	19.98
M1N	Toronto	9032	8880	8898	470			19.98
M1P	Toronto	15613	15720	16269	822	822	15613	18.99
M1R	Toronto	10636	10220	10195	484	484	10636	21.98
M1S	Toronto	11414	11040	11982	540	540	11414	21.14
M1T	Toronto	12536	12640	12618	673	673	12536	18.63
M1V	Toronto	16193	15800	15817	770	770	16193	21.03
M1W	Toronto	16076	16080	16056	775	775	16076	20.74
M2H	Toronto	8802	8440	8414	451	1904	36643	19.25
M2J	Toronto	19488	19960	20828	1000			19.25
M2K	Toronto	8353	8820	10154	453			19.25
M2G			Not listed		1			19.25
M2L	Toronto	4034	4220	4204	215	620	12117	19.54
M2P	Toronto	3007	3140	3131	154			19.54
M3B	Toronto	5076	5180	5175	251			19.54
M2S					1			19.54
M2W					2			19.54
M2X					1			19.54
M2M	Toronto	12399	12640	12578	622	622	12399	19.93
M2N	Toronto	29619	30280	32108	1584	1584	29619	18.70
M2R	Toronto	15215	15300	15195	711	711	15215	21.40
M3A	Toronto	13086	13240	13276	654	654	13086	20.01
M3C	Toronto	15625	16240	16607	784	784	15625	19.93
M3H	Toronto	13161	12840	12954	637	637	13161	20.66
M3J	Toronto	9484	10420	10998	472	583	11665	20.01
M3K	Toronto	2181	2180	2157	111			20.01
M3L	Toronto	6194	6340	6378	315	744	15377	20.67
M3M	Toronto	9183	9420	9438	429			20.67
M3N	Toronto	13748	14240	14182	732	732	13748	18.78
M4A	Toronto	6058	6260	6279	294	669	13613	20.35
M4B	Toronto	7555	7860	7753	375			20.35

Appendix A – Expansion Factors by Postal Area

FSA	Location	2011 Census	Can. Post counts		Total Interviews	Aggregate totals		Expn. Factor
			May-11	Nov-12		Interviews	Census	
M4C	Toronto	19319	19240	19275	957	957	19319	20.19
M4E	Toronto	10767	10400	10552	540	540	10767	19.94
M4G	Toronto	7397	7760	7727	388	737	13743	18.65
M4H	Toronto	6346	6600	6597	349			18.65
M4J	Toronto	14719	13860	13991	731	731	14719	20.14
M4K	Toronto	14577	13880	14097	689	689	14577	21.16
M4L	Toronto	13716	12600	12863	700	1179	23175	19.66
M4M	Toronto	9459	8560	8897	479			19.66
M4N	Toronto	6037	6260	6261	318	906	17472	19.28
M4P	Toronto	11435	11620	12177	588			19.28
M4R	Toronto	4958	5020	5030	248	595	11408	19.17
M5N	Toronto	6450	6940	6957	347			19.17
M4S	Toronto	13591	13900	13954	724	724	13591	18.77
M4T	Toronto	5074	5400	5439	276	769	14504	18.86
M4V	Toronto	9430	9820	9856	493			18.86
M4W	Toronto	7109	7900	7954	378	889	17220	19.37
M4X	Toronto	10111	10800	10850	511			19.37
M4Y	Toronto	17237	18180	19344	814	814	17237	21.18
M5A	Toronto	18172	19200	19942	904	904	18172	20.10
M5B	Toronto	6549	8320	8086	461	684	10604	15.50
M5G	Toronto	4055	4680	5245	223			15.50
M5C	Toronto	1738	2040	2029	98	648	12759	19.69
M5E	Toronto	3982	4420	4531	206			19.69
M5H	Toronto	720	1200	1490	38			19.69
M5J	Toronto	6316	7200	7698	304			19.69
M5K	Toronto	2	200	70	0			19.69
M5W	Toronto	1	940	943	2			19.69
M5M	Toronto	9536	9580	9695	483	483	9536	19.74
M5P	Toronto	8611	8780	8857	424	894	18928	21.17
M6C	Toronto	10317	10140	10267	470			21.17
M5R	Toronto	13570	13720	14004	707	707	13570	19.19
M5S	Toronto	6719	7260	7617	367	728	15399	21.15
M5T	Toronto	8680	8340	8369	361			21.15
M7A					1			21.15
M5V	Toronto	19335	19800	24242	938	938	19335	20.61
M6A	Toronto	7495	7960	7904	434	1006	18550	18.44
M6B	Toronto	11055	11380	11400	572			18.44
M6E	Toronto	14340	13960	13984	696	696	14340	20.60
M6G	Toronto	13229	11760	11607	718	718	13229	18.42
M6H	Toronto	17735	16000	15948	813	813	17735	21.81
M6J	Toronto	12660	10680	12025	541	541	12660	23.40
M6K	Toronto	17712	16880	18736	816	1225	26276	21.45
M6R	Toronto	8564	7540	7624	409			21.45
M6L	Toronto	7412	7720	7668	384	1201	23072	19.21
M6M	Toronto	15660	16020	15752	817			19.21
M6N	Toronto	15845	15340	15260	789	789	15845	20.08
M6P	Toronto	17940	16620	17648	915	915	17940	19.61

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FSA	Location	2011 Census	Can. Post counts May-11	Nov-12	Total Interviews	Aggregate totals Interviews	Census	Expn. Factor
M6S	Toronto	13507	13120	13727	663	663	13507	20.37
M6Z					1			20.37
M8V	Toronto	16029	16780	17827	859	1281	24563	19.17
M8W	Toronto	8534	8480	8769	422			19.17
M8X	Toronto	4454	4700	4709	242	977	19605	20.07
M8Y	Toronto	8965	9000	9727	449			20.07
M8Z	Toronto	6186	6160	6148	286			20.07
M9A	Toronto	13874	14680	15334	751	751	13874	18.47
M9B	Toronto	11313	11700	11931	593	593	11313	19.08
M9C	Toronto	14244	14500	14474	741	741	14244	19.22
M9L	Toronto	3651	3400	3413	176	550	10438	18.98
M9M	Toronto	6787	6660	7076	374			18.98
M9N	Toronto	10240	10500	10398	483	921	18067	19.62
M9P	Toronto	7827	8240	8230	438			19.62
M9R	Toronto	11858	12340	12407	608	608	11858	19.50
M9V	Toronto	16465	16180	16091	743	743	16465	22.16
M9W	Toronto	13628	13400	13266	674	674	13628	20.22
M9Y					1			20.22
LOC1H	Brock	5970	2020	2099	122	1194		18.23
LOC1L	Brock		240	237	54			18.23
LOE1E	Brock		1180	1244	98			18.23
LOK1A	Brock		1860	2113	117			18.23
L9P	Uxbridge		6320	6444	316			18.23
LOC1A	Uxbridge	5462	520	520	21			18.23
LOC1C	Uxbridge		120	138	4			18.23
LOC1E	Uxbridge		140	145	3			18.23
LOE1T	Uxbridge		420	453	21			18.23
L9L	Scugog		6060	6090	337			18.23
LOB1B	Scugog		980	1028	56			18.23
LOB1E	Scugog		520	523	19			18.23
LOB1L	Scugog		500	512	14			18.23
LOC1B	Scugog		220	220	12			18.23
LOC1K			Not listed		13			18.23
LOC1G	Scugog		0	0	45			18.23

Appendix A – Expansion Factors by Postal Area

FSA	Location	2011	Can. Post counts		Total	Aggregate totals		Expn. Factor
		Census	May-11	Nov-12	Interviews	Interviews	Census	
L1V	Pickering	17250	17220	17439	886	1531		19.37
L1W	Pickering	6277	5900	6122	312			19.37
L1X	Pickering	4776	4580	4828	219			19.37
L1Y	Pickering	679	860	836	41			19.37
LOH1J	Pickering		440	434	11			19.37
LOH1A	Pickering		0	0	2			19.37
LOH1E	Pickering		0	0	34			19.37
LOH1H	Pickering		0	0	13			19.37
LOH1M	Pickering		0	0	13			19.37
LOH1R			Not listed		1			19.37
L1S	Ajax	14906	14500	14745	669	934	21176	22.67
L1Z	Ajax	6270	5780	6782	265			22.67
L1T	Ajax	13747	13500	13646	671	671		20.34
LOH1B	Ajax		0	0	0			20.34
L1M	Whitby	6034	6060	6446	296	912	17935	19.67
L1R	Whitby	11901	12060	12099	616			19.67
L1N	Whitby	17611	17880	18014	897	1130	22743	20.13
L1P	Whitby	5132	5160	5156	233			20.13
L1G	Oshawa	17401	18160	18100	869	869	17401	20.02
L1H	Oshawa	13289	13240	13393	611	611	13289	21.75
L1J	Oshawa	16611	16740	16793	941	941	16611	17.65
L1K	Oshawa	10623	10300	11130	462	555		22.96
L1L	Oshawa	946	1120	1141	50			22.96
LOB1A	Oshawa		480	471	25			22.96
LOL0L	Oshawa		0	0	18			22.96
L1B	Clarington	4148	4320	4520	267	1508		21.04
L1C	Clarington	14025	14180	14779	695			21.04
L1E	Clarington	8336	8300	8716	374			21.04
LOA1E	Clarington		260	268	4			21.04
LOA1J	Clarington		420	424	19			21.04
LOB1J	Clarington		1060	1100	61			21.04
LOB1M	Clarington		1880	1917	88			21.04
LOB1N			Not listed		2			21.04
LOB1P			Not listed		1			21.04

Appendix A – Expansion Factors by Postal Area

FSA	Location	2011	Can. Post counts		Total	Aggregate totals		Expn. Factor
		Census	May-11	Nov-12	Interviews	Interviews	Census	
L4P	Georgina	9788	9840	10226	480	1189		20.69
LOE1A	Georgina		140	158	3			20.69
LOE1L	Georgina		960	993	38			20.69
LOE1N	Georgina		1540	1929	170			20.69
LOE1P	Georgina		0	1	0			20.69
LOE1R	Georgina		2460	2588	122			20.69
LOE1S	Georgina		560	657	19			20.69
LOG1R	Georgina		660	784	27			20.69
LOE1H	Georgina		40	0	0			20.69
L9N	East Gwillimbury	3556	3140	3609	174			20.69
LOG1M	East Gwillimbury		2220	2444	107			20.69
LOG1V	East Gwillimbury		900	1211	49			20.69
LOG1E	East Gwillimbury		0	0	6			20.69
L3X	Newmarket	11557	11240	11800	663	663	11557	17.43
L3Y	Newmarket	16791	16820	16432	869	869	16791	19.32
L4G	Aurora	17691	18060	17837	892	948		19.65
LOH1G	Aurora		740	793	56			19.65
L4B	Richmond Hill	10677	10900	10791	470	903	20148	22.31
L4S	Richmond Hill	9471	9620	9721	433			22.31
L4C	Richmond Hill	25483	25440	25388	1264	1264	25483	20.16
L4E	Richmond Hill	13020	13340	14138	725	725	13020	17.96
L4A	Whitchurch-Stouffville	11894	11120	12869	612	623		20.66
LOH1L	Whitchurch-Stouffville		0	0	11			20.66
L3P	Markham	12750	12960	12946	676	676	12750	18.86
L3R	Markham	18332	18320	18458	937	986	20292	20.58
L6G	Markham	1960	1300	1936	49			20.58
L3S	Markham	14095	12720	12873	709	709	14095	19.88
L3T	Markham	17609	18180	18270	899	899	17609	19.59
L6B	Markham	6501	6220	7039	283	731		21.71
L6E	Markham	7810	7520	8834	447			21.71
LOH1K	Markham		0	0	1			21.71
L6C	Markham	11450	11520	12271	614	614	11450	18.65
L7B	King	2571	2860	3918	140	1437		20.58
LOG1J	King		0	0	36			20.58
LOG1T	King		1760	2125	87			20.58
LOJ1C	King		1280	1499	78			20.58
LOJ1E	King		0	0	10			20.58
L6A	Vaughan	21898	21260	22025	1086			20.58
LOG1C			Not listed		1			20.58
LOG1K			Not listed		5			20.58
L4H	Vaughan	16099	15720	16996	837	837	16099	19.23
L4J	Vaughan	24644	25120	25441	1236	1511	29456	19.49
L4K	Vaughan	4812	4760	4791	275			19.49
L4L	Vaughan	17222	17380	17732	951	951	17222	18.11

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FSA	Location	2011	Can. Post counts		Total	Aggregate totals		Expn. Factor
		Census	May-11	Nov-12	Interviews	Interviews	Census	
L7E	Caledon	10805	11420	11122	548	1042		20.65
L7C	Brampton	5500	5440	6030	284			20.65
L7K	Caledon	2824	3060	3069	162			20.65
LOG1N	Caledon		1000	1292	35			20.65
LON1E	Caledon		0	7	12			20.65
LOJ1M	Caledon		0	0	1			20.65
LOK0K	Caledon		0	0	0			20.65
LON1A			Not listed		8			20.65
L6P	Brampton	14291	13120	15150	664	664	14291	21.52
L6R	Brampton	19037	18040	18798	799	799	19037	23.83
L6S	Brampton	17016	16120	16165	819	819	17016	20.78
L6T	Brampton	12887	12960	12905	618	618	12887	20.85
L6V	Brampton	13728	12860	12868	611	1453	31145	21.43
L6W	Brampton	7955	7720	8019	421			21.43
L6Z	Brampton	9462	9160	9154	421			21.43
L6X	Brampton	16277	15240	16626	767	767	16277	21.22
L6Y	Brampton	21586	19520	20239	1000	1000	21586	21.59
L7A	Brampton	17026	16540	17133	761	761	17026	22.37
L4T	Mississauga	11442	10100	10099	561	824	17522	21.26
L4V	Mississauga	0	0	1	1			21.26
L5S	Mississauga	2	0	2	2			21.26
L5T	Mississauga	11	40	30	0			21.26
L5W	Mississauga	6067	6020	6143	260			21.26
L5Z					1			21.26
L4W	Mississauga	7424	7740	7757	389	975	19428	19.93
L4Z	Mississauga	12004	12020	12898	586			19.93
L4X	Mississauga	6878	6740	6876	332	792	15878	20.05
L4Y	Mississauga	9000	9040	9084	460			20.05
L5A	Mississauga	17976	18520	18516	892	892	17976	20.15
L5B	Mississauga	22597	22680	24118	1127	1127	22597	20.05
L5C	Mississauga	9978	9600	9606	498	498	9978	20.04
L5E	Mississauga	5231	5160	5188	247	655	13799	21.07
L5G	Mississauga	8568	8640	8850	408			21.07
L5H	Mississauga	6451	6420	6430	329	1096	21564	19.68
L5J	Mississauga	10428	10220	10305	500			19.68
L5K	Mississauga	4685	4880	4879	267			19.68
L5L	Mississauga	15059	15140	15156	748	748	15059	20.13
L5M	Mississauga	28843	28800	29569	1402	1402	28843	20.57
L5N	Mississauga	26957	26960	27065	1419	1419	26957	19.00
L5R	Mississauga	11659	11340	11304	568	568	11659	20.53
L5V	Mississauga	13323	13100	13288	638	638	13323	20.88

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FSA	Location	2011	Can. Post counts		Total	Aggregate totals		Expn. Factor
		Census	May-11	Nov-12	Interviews	Interviews	Census	
L7G	Halton Hills	14971	15120	15035	779	1379		17.52
L7H	Halton Hills		0	0	0			17.52
L7J	Halton Hills	4911	4960	4959	251			17.52
LOP1H	Halton Hills		340	347	15			17.52
LOP1K	Halton Hills		400	403	18			17.52
N0B1H	Halton Hills		200	211	0			17.52
N0B2K	Halton Hills		2740	3203	316			17.52
L7I					2			17.52
L9T	Milton	25725	25400	28362	1143	1229		24.57
LOP1B	Milton		1140	1491	73			24.57
LOP1E	Milton		340	345	13			24.57
LOR1K	Milton		Not listed		101			24.57
LOP1A			Not listed		1			24.57
LOP1C			Not listed		5			24.57
L6H	Oakville	19847	20480	20576	1065	1511	28181	18.65
L6J	Oakville	8334	8800	8788	446			18.65
L6K	Oakville	5493	5840	5774	310	916	16396	17.90
L6L	Oakville	10903	11300	11508	606			17.90
L6M	Oakville	17838	18360	18328	859	859	17838	20.77
L7L	Burlington	16650	16940	16911	760	760	16650	21.91
L7M	Burlington	15870	15120	16336	693	693	15870	22.90
L7N	Burlington	5467	5500	5492	303	664	13166	19.83
L7R	Burlington	7699	7840	7789	361			19.83
L7P	Burlington	10423	10420	10443	514	819		21.65
LOR2H	Burlington		6840	7286	305			21.65
L7S	Burlington	5895	5940	6176	341	707	12653	17.90
L7T	Burlington	6758	6860	4959	366			17.90
L8E	Hamilton	13764	14020	14404	659	1111	22704	20.44
L8G	Hamilton	8940	8980	9126	452			20.44
L8H	Hamilton	11032	11420	11434	564	564	11032	19.56
L8J	Hamilton	6862	6740	6956	314	1273		20.74
L8W	Hamilton	8132	8220	8483	390			20.74
LOR1C	Hamilton		4020	4599	295			20.74
LOR1J	Hamilton		80	88	1			20.74
LOR1T	Hamilton		1620	1734	60			20.74
LOR1V	Hamilton		780	845	27			20.74
LOR1W	Hamilton		3320	3406	173			20.74
LOR1Z	Hamilton		100	97	4			20.74
LOR1X	Hamilton		160	188	9			20.74
LOR1A	Hamilton		0	0	3			20.74
LOR1P	Hamilton		0	0	34			20.74
LOR1R	Hamilton		0	0	13			20.74
LOR2B	Hamilton		0	0	5			20.74

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FSA	Location	2011	Can. Post counts		Total	Aggregate totals		Expn. Factor
		Census	May-11	Nov-12	Interviews	Interviews	Census	
L8K	Hamilton	13652	13900	13901	643	643	13652	21.23
L8L	Hamilton	12957	13480	13551	658	658	12957	19.69
L8M	Hamilton	6394	6720	6767	329	677	13419	19.82
L8N	Hamilton	7025	8160	8264	348			19.82
L8P	Hamilton	12498	13460	13448	678	678	12498	18.43
L8R	Hamilton	4966	5260	5463	273	658	11456	17.41
L8S	Hamilton	6490	8120	8258	385			17.41
L8T	Hamilton	7731	7820	7812	404	897	17076	19.04
L8V	Hamilton	9345	9360	9417	493			19.04
L9A	Hamilton	9736	9660	9812	521	521	9736	18.69
L9B	Hamilton	6926	6880	7166	340	939	18293	19.48
L9K	Hamilton	3291	3180	3832	160			19.48
L9G	Hamilton	7978	7860	8151	427			19.48
L9J	Hamilton	98	0	173	12			19.48
L9C	Hamilton	14340	14520	14596	787	787	14340	18.22
L9H	Hamilton	12209	12540	12631	628	628		20.11
LOR1H	Hamilton		Not listed		15			20.11
LOR2M			Not listed		4			20.11
L3M	Grimsby	9458	9340	9500	531	531	9458	17.81
LOR1B	Lincoln		5400	5480	297	1015		23.92
LOR1G	Lincoln		80	86	6			23.92
LOR1S	Lincoln		2560	2853	14			23.92
LOR1E	West Lincoln		600	593	30			23.92
LOR1M	West Lincoln		280	271	32			23.92
LOR1Y	West Lincoln		500	514	23			23.92
LOR2A	West Lincoln		2520	2659	152			23.92
LOR2J	West Lincoln		720	723	36			23.92
LOS1E	Pelham		5620	6097	169			23.92
LOS1M	Pelham		540	588	21			23.92
LOS1P	St. Catharines		380	526	35			23.92
LOS1K	Thorold		680	694	20			23.92
LOS1G	Thorold		40	0	0			23.92
LOS1S	Welland		1560	1651	77			23.92
LOS1L	Niagara Falls		120	181	7			23.92
LOS1V	Wainfleet		1320	1361	96			23.92
LOR2C	Lincoln		0	0	129			23.92
LOR2E	Lincoln		0	0	6			23.92
LOS1A	Thorold		0	0	2			23.92
LOS1R	Fort Erie		0	0	12			23.92
LOS1C	Pelham		0	0	85			23.92
LOR1N			Not listed		4			23.92
LOR2L			Not listed		2			23.92
LOR2K			Not listed		1			23.92

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FSA	Location	2011	Can. Post counts		Total	Aggregate totals		Expn. Factor
		Census	May-11	Nov-12	Interviews	Interviews	Census	
LOS1J	Niagara-on-the-Lake		4380	5543	268	1094		18.99
LOS1T	Niagara-on-the-Lake		840	892	29			18.99
LOJ1J	Niagara-on-the-lake		2580	0	43			18.99
L2M	ST. Catharines	13623	14420	14339	754			18.99
L2N	ST. Catharines	13041	13380	14339	725	725	13041	17.99
L2P	ST. Catharines	5843	5960	6086	291	855	17090	19.99
L2R	ST. Catharines	11247	12040	12114	564			19.99
L2S	ST. Catharines	6978	6980	7126	321	603	12003	19.91
L2T	ST. Catharines	4368	5220	5242	252			19.91
L2W	ST. Catharines	657	660	661	30			19.91
L2V	Thorold	6145	6760	6849	337	993	18771	18.90
L3C	Welland	12626	12780	13008	656			18.90
L3B	Welland	9713	10140	10147	527	971	17681	18.21
L3K	Port Colborne	7968	8340	8364	444			18.21
L2E	Niagara Falls	8999	9640	9316	476	813	14904	18.33
L2J	Niagara Falls	5905	6020	6159	337			18.33
L2G	Niagara Falls	10754	11040	11042	550	938	18123	19.32
L2H	Niagara Falls	7369	7160	7365	388			19.32
L2A	Fort Erie	6806	7180	7203	319	500		24.20
LOS1B	Fort Erie		1460	1557	27			24.20
LOS1N	Fort Erie		3180	3341	154			24.20
N2J	Waterloo	8225	10140	10424	496	1238	18827	15.21
N2L	Waterloo	10602	14900	15299	742			15.21
N2K	Waterloo	9014	9180	9262	500	500	9014	18.03
N2T	Waterloo	6596	6540	6609	333	655	11659	17.80
N2V	Waterloo	5063	6540	5124	322			17.80
N2A	Kitchener	10146	9860	10428	487	857	17179	20.05
N2B	Kitchener	7033	7120	7126	370			20.05
N2C	Kitchener	6262	6560	6626	334	658	12674	19.26
N2P	Kitchener	6412	6480	6789	324			19.26
N2E	Kitchener	13082	12960	13275	616	722	15503	21.47
N2R	Kitchener	2421	2300	2737	106			21.47
N2S					1			21.47
N2G	Kitchener	6676	7180	7236	397	931	16746	17.99
N2H	Kitchener	10070	10220	10186	534			17.99
N2M	Kitchener	14217	14620	14596	726	1141	22716	19.91
N2N	Kitchener	8499	8360	8759	415			19.91
N1P	Cambridge	2169	2120	2197	100	1132	23337	20.62
N1R	Cambridge	16396	16540	17000	790			20.62
N1T	Cambridge	4772	4720	4877	242			20.62

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FSA	Location	2011 Census	Can. Post counts		Total Interviews	Aggregate totals		Expn. Factor
			May-11	Nov-12		Interviews	Census	
N3C	Cambridge	9010	8460	9139	451	923	17836	19.32
N3E	Cambridge	97	40	90	10			19.32
N3H	Cambridge	8729	8800	8738	462			19.32
N3D					1			19.32
N3K					1			19.32
N3M					1			19.32
N1S	Cambridge	7357	7420	7499	374	541		18.93
N0B1E	North Dumfries		1960	2232	140			18.93
N0B1L	North Dumfries		520	511	27			18.93
N3A	Wilmot	5383	5380	5672	338	1119		16.87
N0B2E	Wilmot		860	952	33			16.87
N0B2H	Wilmot		520	761	29			16.87
N0B1V	Wellesley		80	84	5			16.87
N0B1X	Wellesley		80	93	0			16.87
N0B2A	Wellesley		360	402	11			16.87
N0B2M	Wellesley		940	1119	33			16.87
N0B2T	Wellesley		1420	1548	138			16.87
N3B	Woolwich	4169	4160	4212	257			16.87
N0B1M	Woolwich		1600	1718	124			16.87
N0B1N	Woolwich		440	467	36			16.87
N0B2N	Woolwich		1240	1383	94			16.87
N0B2V	Woolwich		440	465	21			16.87
N0B2S	Wellesley		0	0	19			16.87
N0B2L	Wilmot		0	0	22			16.87
N0B1K	Woolwich		0	0	11			16.87
N0B2B	Woolwich		0	0	7			16.87
N0B1Y			Not listed		4			16.87
N0B2G			Not listed		2			16.87
N1C	Guelph	1172	1080	1119	52	910		21.04
N1G	Guelph	10041	12020	12013	636			21.04
N1L	Guelph	3914	3200	3910	155			21.04
LOP1J	Puslinch		340	357	25			21.04
N0B1C	Puslinch		60	61	0			21.04
N0B2C	Puslinch		260	268	0			21.04
N0B2J	Puslinch		1420	1417	42			21.04
N1E	Guelph	14727	14920	15004	734	734	14727	20.06
N1H	Guelph	18151	18860	19220	963	1083	20741	19.15
N1K	Guelph	2590	2440	2572	120			19.15

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FSA	Location	2011 Census	Can. Post counts		Total Interviews	Aggregate totals		Expn. Factor
			May-11	Nov-12		Interviews	Census	
N0B1B	Guelph/Eramosa		580	600	34	965		15.19
N1M	Centre Wellington	5782	5880	5984	343			15.19
N0B1J	Centre Wellington		740	880	27			15.19
N0B1S	Centre Wellington		3140	3850	170			15.19
L0N1N	Erin		420	451	20			15.19
L0P1N	Erin		80	82	10			15.19
N0B1T	Erin		1520	1844	238			15.19
N0B1Z	Erin		720	971	121			15.19
L0P1R	Erin		0	0	2			15.19
N0B1P	Guelph/Eramosa		0	0	4			15.19
N0B1G			Not listed		4			15.19
L9V	Orangeville	245	260	0	13	1086		23.04
L9W	Orangeville	13010	13300	17509	729			23.04
L0N1L	Amaranth		60	60	2			23.04
L0N1G	East Luther Grand Valley		1400	1583	71			23.04
L0N1P	Mono		400	416	25			23.04
L0N1S	Shelburne		4080	4545	203			23.04
L0M1A	Shelburne		40	0	2			23.04
L0M1K	Mulmur		200	222	10			23.04
L0M1M	Mulmur		640	686	31			23.04
L0N1H	Mulmur		0	0	1			23.04
L0N1M	Mulmur		0	0	17			23.04
L0N1J	Melancthon		0	0	6			23.04
L0N1C			Not listed		2			23.04
L0N1K			Not listed		2			23.04
L4M	Barrie	17344	17360	18052	848	848	17344	20.45
L4N	Barrie	33969	34120	34813	1667	1667	33969	20.38
L9S	Innisfil	9443	9920	9901	509	1138		20.44
L0L1C	Innisfil		440	474	38			20.44
L0L1K	Innisfil		420	418	28			20.44
L0L1L	Innisfil		960	1094	55			20.44
L0L1N	Innisfil		220	218	11			20.44
L0L1R	Innisfil		720	718	30			20.44
L0L1W	Innisfil		480	513	16			20.44
L3Z	Bradford West Gwillimbury	8947	8780	9703	432			20.44
L0G1B	Bradford West Gwillimbury		200	219	13			20.44
L0G1G	Bradford West Gwillimbury		0	0	1			20.44
L0G1H	Bradford West Gwillimbury		0	0	5			20.44
L0G2B	Bradford West Gwillimbury		0	0	0			20.44

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FSA	Location	2011	Can. Post counts		Total	Aggregate totals		Expn. Factor
		Census	May-11	Nov-12	Interviews	Interviews	Census	
L9R	New Tecumseth	6838	7260	7298	407	772		18.82
LOG1A	New Tecumseth		2380	2564	131			18.82
LOG1W	Adjala-Tosorontio		3180	3369	174			18.82
L0M1J	Adjala-Tosorontio		1120	1073	57			18.82
L0N1R	Adjala-Tosorontio		180	225	3			18.82
LOG1L	New Tecumseth		0	0	99			18.82
L0L2N	Essa		980	990	39	641		23.10
L0M1B	Essa		3700	3700	129			23.10
L0M1C	Essa		740	757	24			23.10
L0M1T	Essa		720	729	35			23.10
L0M1G	Clearview		860	977	107			23.10
L0M1N	Clearview		960	994	47			23.10
L0M1S	Clearview		2800	3088	96			23.10
L0L1X	Springwater		1700	1648	67			23.10
L0L1Y	Springwater		1140	1363	56			23.10
L0L2K	Springwater		560	560	19			23.10
L0L1A	Springwater		0	0	0			23.10
L0L1B	Springwater		0	0	9			23.10
L0L2R	Springwater		0	0	0			23.10
L0L2P	Springwater		0	0	8			23.10
L0L2S	Springwater		0	0	2			23.10
L0L2V	Springwater		0	0	0			23.10
L0M1L	Springwater		0	0	3			23.10
L0M1P	Clearview		0	0	14			23.10
N0C1M	Clearview		0	0	5			23.10
L0L1J			Not listed		1			23.10
L0L2M			Not listed		2			23.10
L0M1H			Not listed		7			23.10
L9Y	Collingwood	9390	11520	12059	597	1050	16955	16.15
L9Z	Wasaga Beach	7565	8640	9840	453			16.15

Appendix A – Expansion Factors by Postal Area

FSA	Location	2011 Census	Can. Post counts		Total Interviews	Aggregate totals		Expn. Factor
			May-11	Nov-12		Interviews	Census	
LOK1C	Tiny		0	0	29	1750		21.14
L0L1P	Tiny		2120	2618	118			21.14
L0L2J	Tiny		1200	1214	60			21.14
L0L2T	Tiny		800	818	39			21.14
L9M	Penetanguishene	5731	6260	6838	324			21.14
L4R	Midland	7699	7920	8195	405			21.14
LOK1R	Tay		1180	1235	76			21.14
LOK2A	Tay		1560	1716	67			21.14
LOK2E	Tay		340	353	18			21.14
L0L1H	Oro-Medonte		0	0	13			21.14
LOK1N	Oro-Medonte		300	352	57			21.14
LOK2G	Oro-Medonte		160	164	26			21.14
L0L1V	Oro-Medonte		600	615	18			21.14
L0L2X	Oro-Medonte		3000	3705	49			21.14
LOK1E	Severn		2620	2809	160			21.14
LOK1G	Severn		240	265	8			21.14
LOK1S	Severn		580	750	14			21.14
LOK2B	Severn		1420	1621	54			21.14
LOK2C	Severn		1000	1092	33			21.14
LOK1P	Severn		0	0	64			21.14
LOK1B	Ramara		1720	2067	88			21.14
LOK1L	Ramara		100	150	3			21.14
LOK1W	Ramara		400	410	27			21.14
L0L1T	Oro-Medonte		0	0	92			21.14
LOE1K	Coldwater		Not listed		1			21.14
L0L2E	Oro-Medonte		0	0	38			21.14
L0L2L	Oro-Medonte		0	0	63			21.14
L3V	Orillia	17936	18820	19290	1057	1077	17936	16.65
LOK1T	Orillia		0	0	20			16.65
K9V	Kawartha Lakes	10919	11260	11862	620	620	10919	17.61

Appendix A – Expansion Factors by Postal Area

FSA	Location	2011 Census	Can. Post counts		Total Interviews	Aggregate totals		Expn. Factor
			May-11	Nov-12		Interviews	Census	
K0L2W	Kawartha Lakes		2340	2439	126	814		26.73
K0L2X	Kawartha Lakes		160	196	8			26.73
K0M1A	Kawartha Lakes		1900	3479	96			26.73
K0M1C	Kawartha Lakes		220	248	6			26.73
K0M1G	Kawartha Lakes		820	933	44			26.73
K0M1K	Kawartha Lakes		540	670	32			26.73
K0M1L	Kawartha Lakes		880	895	40			26.73
K0M1N	Kawartha Lakes		2220	2814	103			26.73
K0M2A	Kawartha Lakes		480	733	0			26.73
K0M2B	Kawartha Lakes		1460	1707	58			26.73
K0M2C	Kawartha Lakes		1880	2015	81			26.73
K0M2L	Kawartha Lakes		400	470	4			26.73
K0M2M	Kawartha Lakes		980	931	39			26.73
K0M2T	Kawartha Lakes		1740	1804	57			26.73
LOA1B	Kawartha Lakes		660	661	0			26.73
LOA1K	Kawartha Lakes		800	894	28			26.73
LOB1K	Kawartha Lakes		820	868	88			26.73
K0M1B	Kawartha Lakes		0	0	4			26.73
K0M2J	Kawartha Lakes		0	0	16			26.73
LOA1A	Kawartha Lakes		0	0	48			26.73
K0M1E	Kawartha Lakes		0	0	18			26.73
K9H	Peterborough	12279	13140	13106	644	1053	19359	18.38
K9G					1			18.38
K9K	Peterborough	4684	4840	4895	269			18.38
K9L	Peterborough	2396	2400	2570	139			18.38
K9J	Peterborough	18796	19880	19805	991	991	18796	18.97

Appendix A – Expansion Factors by Postal Area

FSA	Location	2011 Census	Can. Post counts May-11	Nov-12	Total Interviews	Aggregate totals		Expn. Factor	
						Interviews	Census		
K0L1V	Cavan-Monaghan		500	521	26	729		24.65	
L0A1C	Cavan-Monaghan		1040	0	49			24.65	
L0A1G	Cavan-Monaghan		1260	2362	54			24.65	
K0L1B	Otonabee-South Monaghan		520	540	42			24.65	
K0L1E	Otonabee-South Monaghan		680	673	0			24.65	
K0L2G	Otonabee-South Monaghan		920	927	53			24.65	
K0L1Y	Asphodel-Norwood		0	0	0			24.65	
K0L2B	Asphodel-Norwood		400	405	25			24.65	
K0L1H	Smith-Ennismore-Lakefield		780	823	53			24.65	
K0L1J	Smith-Ennismore-Lakefield		300	579	9			24.65	
K0L1R	Smith-Ennismore-Lakefield		400	402	10			24.65	
K0L1T	Smith-Ennismore-Lakefield		1740	1914	133			24.65	
K0L2J	Smith-Ennismore-Lakefield		40	39	0			24.65	
K0L3G	Smith-Ennismore-Lakefield		80	83	0			24.65	
K0L1S	Douro-Dummer		120	123	7			24.65	
K0L1Z	Douro-Dummer		2200	2256	0			24.65	
K0L2H	Douro-Dummer		3720	4372	172			24.65	
K0L2V	Douro-Dummer		1440	1451	73			24.65	
K0L3A	Douro-Dummer		460	497	23			24.65	
N3L	Brant	5330	5400	5488	283	513		21.34	
N0E1A	Brant		640	1726	51			21.34	
N0E1B	Brant		60	60	1			21.34	
N0E1K	Brant		540	562	30			21.34	
N0E1L	Brant		120	124	3			21.34	
N0E1N	Brant		1580	1655	82			21.34	
N0E1R	Brant		1180	1331	54			21.34	
N0B1W	Brant		120	0	9			21.34	
N3P	Brantford	3156	3160	3170	161	890	17590	19.76	
N3R	Brantford	13884	14180	14157	701			19.76	
N3V	Brantford	550	560	550	28			19.76	
N3W					1			19.76	
N3S	Brantford	10404	10440	10781	524	524	10404	19.85	
N3T	Brantford	11902	12000	12629	605			605	11902
Total			3169480	3261473	159812	158786			

Appendix B - Age Adjustment Factors by Municipality

Age Range	TTS - Expanded by postal area only							Census							Municipal & age adjustment factor						
	0-17	18-32	33-47	48-62	63-77	78-99 Fem.	78-99 Male	0-17	18-32	33-47	48-62	63-77	78+ Fem.	78+ Male	0-17	18-32	33-47	48-62	63-77	78+ Fem.	78+ Male
Toronto	25418	28569	52300	58296	42282	7309	6713	19805	83805	56750	36925	19235	4610	2935	0.779	2.933	1.085	0.633	0.455	0.631	0.437
Toronto	37030	23725	46508	48431	31308	7191	6414	30385	50220	50470	36555	19470	5810	3575	0.821	2.117	1.085	0.755	0.622	0.808	0.557
Toronto	43560	32562	44818	54566	37792	10077	8031	47075	50155	52995	47145	26325	8625	5140	1.081	1.540	1.182	0.864	0.697	0.856	0.640
Toronto	43469	20412	40377	56918	44799	11614	9306	46325	46550	51810	44690	26195	8785	5120	1.066	2.281	1.283	0.785	0.585	0.756	0.550
Toronto	22241	13634	22024	27721	20236	6349	4859	25315	23285	26890	25090	14805	4960	3165	1.138	1.708	1.221	0.905	0.732	0.781	0.651
Toronto	42872	21656	49041	53745	30676	7032	5858	39775	39600	55140	44785	20680	5400	3450	0.928	1.829	1.124	0.833	0.674	0.768	0.589
Toronto	9831	6349	12542	17408	9945	2297	2518	9015	11655	14395	13920	6985	1875	1140	0.917	1.836	1.148	0.800	0.702	0.816	0.453
Toronto	33290	20377	32878	46083	34252	11238	9702	36865	33890	39395	41480	24465	9660	6040	1.107	1.663	1.198	0.900	0.714	0.860	0.623
Toronto	20564	15233	17466	19786	13446	2584	2698	23395	21205	20685	17875	9980	2300	1715	1.138	1.392	1.184	0.903	0.742	0.890	0.636
Toronto	31750	22337	27015	29299	22515	5327	5339	34460	32990	31070	26245	16460	3975	3225	1.085	1.477	1.150	0.896	0.731	0.746	0.604
Toronto	27366	26840	33484	45443	35368	11299	9387	30515	45670	43010	39225	22370	8305	5185	1.115	1.702	1.284	0.863	0.632	0.735	0.552
Toronto	11607	9405	12589	16415	15142	3455	2909	14645	15795	17900	15510	10435	2540	1765	1.262	1.679	1.422	0.945	0.689	0.735	0.607
Toronto	45054	30493	42212	48324	35557	9735	8850	50140	46840	50080	45610	24460	7800	5070	1.113	1.536	1.186	0.941	0.688	0.801	0.573
Toronto	10836	7453	10692	16648	11750	3743	2896	13165	10970	13125	14935	7565	2635	1600	1.215	1.472	1.228	0.897	0.644	0.704	0.552
Toronto	14101	12073	12103	19920	13625	2441	1939	17990	17260	16060	19630	10515	2060	1330	1.276	1.430	1.327	0.985	0.772	0.844	0.686
Toronto	38048	34061	36950	52180	39519	9898	8165	49735	51275	51050	52260	29485	7965	5240	1.307	1.505	1.382	1.002	0.746	0.805	0.642
Brock	2625	1801	1984	3558	2692	622	640	2325	1790	2090	2720	1640	485	300	0.886	0.994	1.054	0.764	0.609	0.622	0.622
Uxbridge	3830	1848	3131	5602	3186	775	591	4605	3150	4050	5140	2595	655	430	1.202	1.705	1.294	0.918	0.815	0.794	0.794
Scugog	3257	2623	2561	7109	4717	886	848	4240	3335	3920	5685	3100	750	505	1.302	1.272	1.531	0.800	0.657	0.724	0.724
Pickering	15650	11209	14192	22959	12328	2178	1887	19575	16985	18300	21280	9210	2055	1285	1.251	1.515	1.289	0.927	0.747	0.943	0.681
Ajax	26413	16327	24068	22854	11065	2196	1739	28110	21840	25695	22445	8725	1770	1015	1.064	1.338	1.068	0.982	0.789	0.806	0.584
Whitby	27667	14106	24575	26980	14972	2851	2507	31205	21870	29275	24750	10645	2695	1585	1.128	1.550	1.191	0.917	0.711	0.945	0.632
Oshawa	25787	20190	23630	33584	27064	5512	5490	30885	29665	30850	32780	17670	4790	2965	1.198	1.469	1.306	0.976	0.653	0.869	0.540
Clarington	18146	11680	14648	19648	15116	2407	2511	20370	15685	19070	17530	8640	1950	1300	1.123	1.343	1.302	0.892	0.572	0.810	0.518
Georgina	9942	4659	9514	12041	6942	1224	1074	9770	7720	9585	10185	4550	990	685	0.983	1.657	1.007	0.846	0.655	0.809	0.638
East Gwillimbury	3013	2552	2808	5703	3945	642	621	4795	4035	4705	5665	2540	400	330	1.591	1.581	1.676	0.993	0.644	0.578	0.578
Newmarket	18910	9610	15865	18572	9303	2362	1413	18910	14860	18010	17700	7345	2095	1060	1.000	1.546	1.135	0.953	0.790	0.887	0.750
Aurora	11684	4449	10107	12963	6586	1383	1205	13155	9065	12275	12100	4540	1370	755	1.126	2.038	1.215	0.933	0.689	0.991	0.626
Richmond Hill	40374	24412	39622	41917	22447	3532	3159	41995	33635	44615	40450	18280	3960	2575	1.040	1.378	1.126	0.965	0.814	1.121	0.815
Whitchurch-Stouffville	8072	4499	7321	7818	6752	1134	1152	8675	6580	8650	7480	4490	1025	730	1.075	1.463	1.181	0.957	0.665	0.904	0.634
Markham	62240	40476	59701	70729	41722	7181	5942	65405	58745	66410	67060	33045	6555	4530	1.051	1.451	1.112	0.948	0.792	0.913	0.762
King	3211	1956	3000	4486	3334	515	388	4365	3365	4025	4805	2490	480	395	1.360	1.721	1.341	1.071	0.794	0.794	0.794
Vaughan	67940	40564	64354	55682	32766	5824	5493	71040	53680	68935	56505	28300	5670	4170	1.046	1.323	1.071	1.015	0.864	0.974	0.759
Caledon	13368	7126	12212	15437	10397	1269	1475	14680	9560	13800	13160	6415	1050	770	1.098	1.342	1.130	0.853	0.617	0.827	0.522
Brampton	129766	83782	114409	93284	55089	8157	7231	138415	109825	123860	94730	44615	7510	4960	1.067	1.311	1.083	1.015	0.810	0.921	0.686
Mississauga	155649	102170	147174	159805	85678	16507	14222	160910	144250	159860	152485	71020	14970	9915	1.034	1.412	1.086	0.954	0.829	0.907	0.697
Halton Hills	12621	6244	11328	10499	7151	1465	1211	14860	9305	14380	12290	6045	1290	855	1.177	1.490	1.269	1.171	0.845	0.880	0.706
Milton	24506	15126	22791	16022	9590	1574	1409	23625	16395	23505	12940	6090	1130	685	0.964	1.084	1.031	0.808	0.635	0.718	0.486
Oakville	37905	16879	34779	40357	25882	5424	5159	44240	29890	42470	38740	19090	4845	3260	1.167	1.771	1.221	0.960	0.738	0.893	0.632
Burlington	33712	19634	32927	35876	31583	7062	6705	36670	29990	38375	36580	23215	6700	4265	1.088	1.527	1.165	1.020	0.735	0.949	0.636
Flamborough	6872	4097	6151	10402	6273	896	1095	9280	6480	8525	9265	4920	900	715	1.350	1.582	1.386	0.891	0.784	0.811	0.811
Dundas	5655	3182	4662	6013	4498	1520	1216	4620	3830	4405	5880	3730	1500	825	0.817	1.204	0.945	0.978	0.829	0.987	0.678
Ancaster	6340	4429	5824	7067	5569	1212	1449	8450	6295	7265	8475	4380	1275	880	1.333	1.421	1.247	1.199	0.787	1.052	0.607
Glanbrook	8767	4814	7780	5313	3557	565	518	5085	4035	4845	4085	3290	600	515	0.580	0.838	0.623	0.769	0.925	1.030	1.030
Stoney Creek	12825	9733	12375	13621	9976	2027	1694	13685	11970	13520	14495	7995	2145	1295	1.067	1.230	1.092	1.064	0.801	1.058	0.765

Appendix B - Age adjustment factors by municipality

Age Range	TTS - Expanded by postal area only							Census							Municipal & age adjustment factor						
	0-17	18-32	33-47	48-62	63-77	78-99 Fem.	78-99 Male	0-17	18-32	33-47	48-62	63-77	78+ Fem.	78+ Male	0-17	18-32	33-47	48-62	63-77	78+ Fem.	78+ Male
Hamilton	56058	48040	54906	74561	55548	13654	11151	65460	70895	65335	69630	38985	12395	7495	1.168	1.476	1.190	0.934	0.702	0.908	0.672
Grimsby	4261	3356	4247	6029	3762	796	843	5425	4050	5140	5715	3500	915	570	1.273	1.207	1.210	0.948	0.930	0.906	0.906
Lincoln	5438	3071	4346	6537	5630	1499	1667	4830	3635	4440	4740	3200	990	630	0.888	1.184	1.022	0.725	0.568	0.660	0.378
Pelham	2455	1455	2151	4300	3941	752	643	3220	2325	2885	4100	2895	710	435	1.312	1.597	1.341	0.953	0.735	0.821	0.821
Niagara-on-the-Lake	2571	1309	2034	4779	4796	934	895	2560	2020	2400	3790	3285	735	610	0.996	1.544	1.180	0.793	0.685	0.735	0.735
St. Catharines	21712	16912	19476	29857	26172	6734	6109	24535	25280	24260	28145	19320	6125	3730	1.130	1.495	1.246	0.943	0.738	0.910	0.611
Thorold	2201	2158	2671	4087	3575	587	554	3565	3575	3595	4035	2165	585	400	1.619	1.657	1.346	0.987	0.606	0.863	0.863
Niagara Falls	13056	11004	12690	18307	15581	3379	2886	16150	14705	16605	18430	11460	3540	2165	1.237	1.336	1.309	1.007	0.736	1.048	0.750
Welland	7132	5989	6907	11536	12200	2393	2221	9630	8955	9755	11515	7325	2140	1275	1.350	1.495	1.412	0.998	0.600	0.894	0.574
Port Colborne	1962	1798	1985	4317	4363	1288	1294	3250	2800	3305	4450	3015	995	635	1.657	1.558	1.665	1.031	0.691	0.772	0.491
Fort Erie	5143	3417	4611	8405	7359	1646	1356	5550	4530	5530	7370	4900	1215	800	1.079	1.326	1.199	0.877	0.666	0.738	0.590
West Lincoln	4001	2266	2735	4585	2920	384	432	3570	2470	2810	2980	1565	245	180	0.892	1.090	1.027	0.650	0.533	0.533	0.533
Wainfleet	967	782	871	2676	1728	253	391	1265	1035	1190	1645	975	125	120	1.333	1.333	1.333	0.615	0.514	0.514	0.514
Waterloo	19202	12863	18170	22884	14318	3262	3115	20845	23000	20905	19680	9810	2785	1750	1.086	1.788	1.151	0.860	0.685	0.854	0.562
Kitchener	44646	31107	43123	49724	33504	6805	7001	46890	49455	48010	43450	21885	5920	3535	1.050	1.590	1.113	0.874	0.653	0.870	0.505
Cambridge	26417	16950	24737	28698	19787	3616	3526	29755	24655	28535	25680	12840	3325	1945	1.126	1.455	1.154	0.895	0.649	0.919	0.552
North Dumfries	2538	1644	2087	2483	1754	278	195	2240	1395	2045	2220	1095	200	155	0.883	0.849	0.980	0.894	0.651	0.651	0.651
Wilmot	3693	2171	3146	4370	4414	627	644	4515	3180	4080	3955	2500	535	440	1.223	1.465	1.297	0.905	0.566	0.767	0.767
Wellesley	3348	1823	2266	1725	1032	169	169	3500	1960	2060	1930	960	175	125	1.045	1.075	0.909	1.119	0.920	0.920	0.920
Woolwich	7329	4027	5672	6058	4414	631	690	5675	4220	4620	4610	2750	785	480	0.774	1.048	0.815	0.761	0.623	0.958	0.958
Guelph	27027	18708	24312	26592	18356	4579	4153	26150	26840	26380	24050	12305	3645	2310	0.968	1.435	1.085	0.904	0.670	0.796	0.556
Puslinch	722	417	698	1770	1793	218	217	1285	1005	1305	1880	1250	140	145	1.957	1.957	1.957	1.062	0.689	0.689	0.689
Guelph/Eramosa	4771	1825	3784	5020	3429	415	440	2800	1795	2550	3055	1690	265	210	0.587	0.984	0.674	0.609	0.505	0.505	0.505
Centre Wellington	4421	3076	3439	5639	4144	914	968	6005	4265	5165	6015	3675	915	625	1.358	1.386	1.502	1.067	0.887	0.818	0.818
Erin	4534	1726	4323	4627	2314	228	171	2390	1490	2265	2980	1300	195	150	0.527	0.864	0.524	0.644	0.606	0.606	0.606
Orangeville	8628	5337	7721	7442	4537	965	599	7010	5270	6605	5325	2635	755	375	0.813	0.987	0.855	0.716	0.581	0.722	0.722
Barrie	28284	16741	25810	26337	19162	4730	3911	32485	27570	30855	25765	12785	4025	2225	1.149	1.647	1.195	0.978	0.667	0.851	0.569
Innisfil	5960	3847	5819	9223	6148	1269	1336	7225	5335	7375	7600	4100	775	660	1.212	1.387	1.267	0.824	0.667	0.611	0.494
Bradford West Gwillimbury	5030	3395	4623	7957	3685	696	430	6610	5745	6420	5900	2475	585	325	1.314	1.692	1.389	0.741	0.672	0.808	0.808
New Tecumseth	7116	5169	6703	6816	5253	887	1064	6575	5045	6300	6390	4215	990	740	0.924	0.976	0.940	0.938	0.802	1.116	0.695
Adjala-Tosorontio	1974	1002	1552	3736	1991	272	303	2355	1660	2360	2675	1270	145	150	1.193	1.657	1.521	0.716	0.610	0.610	0.610
Essa	2923	1552	3350	3756	2454	296	321	4420	3810	4410	3835	1645	240	175	1.512	2.454	1.316	1.021	0.671	0.671	0.671
Clearview	2665	1591	2536	4860	3655	587	411	3015	2110	2775	3230	1865	470	275	1.131	1.326	1.094	0.665	0.561	0.561	0.561
Springwater	4024	1949	3206	6017	3042	496	587	4190	2850	3840	4555	2165	365	310	1.041	1.462	1.198	0.757	0.712	0.623	0.623
Kawartha Lakes	11135	7538	10224	25240	21310	3715	3601	12980	10830	12265	18565	13075	3210	2285	1.166	1.437	1.200	0.736	0.614	0.864	0.635
Peterborough	9508	6744	9333	16058	16888	4577	4423	14200	16940	13360	16380	10880	4410	2505	1.493	2.512	1.432	1.020	0.644	0.963	0.566
Cavan-Monaghan	1404	839	1593	3022	1829	199	338	1705	1335	1575	2355	1155	270	185	1.214	1.197	1.197	0.779	0.681	0.681	0.681
Otonabee-South Monaghan	1531	816	1508	3674	2208	286	332	1225	995	1170	1855	1095	170	165	0.800	0.932	0.932	0.505	0.506	0.506	0.506
Asphodel-Norwood	690	271	690	937	1060	123	74	765	630	695	1005	680	180	110	1.196	1.196	1.196	1.196	0.772	0.772	0.772
Douro-Dummer	1044	934	1175	3175	2380	414	321	1325	1030	1280	1765	1085	155	175	1.269	1.096	1.096	0.556	0.454	0.454	0.454
Smith-Ennismore-Lakefield	3121	2465	3019	7492	7029	890	964	3055	2375	2715	4560	3220	500	400	0.979	0.963	0.899	0.609	0.458	0.486	0.486

Appendix B - Age adjustment factors by municipality

Age Range	TTS - Expanded by postal area only							Census							Municipal & age adjustment factor							
	0-17	18-32	33-47	48-62	63-77	78-99 Fem.	78-99 Male	0-17	18-32	33-47	48-62	63-77	78+ Fem.	78+ Male	0-17	18-32	33-47	48-62	63-77	78+ Fem.	78+ Male	
Brant	5691	4110	5038	9390	6877	1107	1150	7810	5790	7080	8400	4765	1055	740	1.372	1.409	1.405	0.895	0.693	0.953	0.643	
Collingwood	2836	1345	2542	4952	5220	1166	1069	3470	3085	3355	4300	3385	1015	585	1.224	2.294	1.320	0.868	0.648	0.871	0.547	
Wasaga Beach	1603	923	1732	4279	5887	761	962	2710	2040	2870	4025	4680	615	615	1.691	1.849	1.849	0.941	0.795	0.714	0.714	
Tiny	2309	1231	1929	5219	3537	619	642	1850	1400	1895	3165	2280	310	295	0.801	1.138	0.983	0.606	0.645	0.480	0.480	
Penetanguishene	1248	1227	1248	3215	2940	529	423	1590	1460	1645	2260	1495	420	240	1.274	1.190	1.318	0.703	0.554	0.554	0.554	
Midland	2178	1777	2536	4230	4483	862	740	2910	2715	2845	3965	2720	900	510	1.336	1.528	1.122	0.937	0.607	0.880	0.880	
Tay	1671	911	1925	2815	2200	233	402	1805	1465	1930	2520	1605	230	175	1.080	1.197	1.197	0.895	0.709	0.709	0.709	
Oro-Medonte	4039	2424	3552	7851	5299	923	757	4120	2865	3995	5310	2995	440	370	1.020	1.182	1.125	0.676	0.565	0.482	0.482	
Severn	1680	1111	1991	3900	3440	556	640	2280	1810	2380	3235	2040	315	280	1.357	1.629	1.196	0.830	0.593	0.498	0.498	
Ramara	1509	765	1253	2744	2925	423	511	1550	1255	1575	2410	1960	240	300	1.027	1.402	1.402	0.878	0.648	0.648	0.648	
Orillia	4355	3643	3528	6472	6513	1653	1637	5655	5695	5205	6860	4485	1780	960	1.298	1.563	1.475	1.060	0.689	1.077	0.587	
Mulmur	757	291	526	1400	729	69	184	695	460	740	900	470	60	70	1.204	1.204	1.204	0.630	0.630	0.630	0.630	
Shelburne	2396	1659	2028	1567	899	297	182	1485	1045	1265	1010	600	300	120	0.620	0.630	0.624	0.645	0.741	0.741	0.741	
Amaranth	759	346	665	876	530	0	0	985	565	880	945	460	45	65	1.374	1.374	1.374	1.078	1.078	1.078	1.078	
Melancthon	358	297	291	433	392	0	23	685	495	605	680	325	40	25	1.592	1.592	1.592	1.592	1.592	1.592	1.592	
Mono	1382	392	1037	1835	1728	115	300	1545	1095	1445	2100	1100	120	130	1.118	1.778	1.778	1.145	0.630	0.630	0.630	
East Luther Grand Valley	300	184	300	691	369	23	0	605	475	600	655	295	55	25	1.452	1.452	1.452	1.452	1.452	1.452	1.452	
East Garafraxa	639	284	542	874	657	100	130	595	395	530	665	285	50	40	1.037	1.037	1.037	0.591	0.591	0.591	0.591	
Brantford	19486	13594	15781	20683	14750	3094	2835	20530	17930	18680	19930	11155	3390	2030	1.054	1.319	1.184	0.964	0.756	1.096	0.716	
Total	1679622	1109949	1619188	1955811	1347228	289467	258959	1815625	1704100	1874785	1770280	944135	247140	158800								
															Mean	1.081	1.535	1.158	0.905	0.701	0.854	0.613
															Min.	0.527	0.630	0.524	0.505	0.454	0.454	0.378
															Max.	1.957	2.933	1.957	1.592	1.592	1.592	1.592