

TRANSPORTATION TOMORROW SURVEY

2001

DATA VALIDATION

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*A Telephone Interview Survey on
Household Travel Behaviour in
Greater Toronto and the Surrounding Areas
Conducted in the Fall of 2000, Fall of 2001 and Spring of 2002*

DATA VALIDATION

*Prepared for the
Transportation Information
Steering Committee*

by the

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University of Toronto
Joint Program in Transportation*

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Participating Agencies:

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

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Summary

Dwelling Units

Due to under-representation of apartment type dwelling, the 2001 TTS data were expanded to represent the total population of the survey area using Canada Post dwelling type counts and occupied dwelling unit counts from the 2001 Census as control totals. Sample control processes and expansion were performed based on Canada Post Forward Sortation Areas (FSAs). Since there are differences between FSA and municipality boundaries, there are discrepancies in dwelling unit totals between the Census and TTS. For rural FSAs and areas with insufficient sample records, expansion factors were calculated at municipality level, which give a precise match in the total dwelling unit counts.

Population

The survey under represents the population of the survey area by an average of 2.9%. The under representation occurs in all regions with the exception of Niagara Region, which is slightly over represented by 0.1%. The under representation is attributable primarily to the exclusion of collective homes, such as hospitals, nursing homes and prisons. Babies less than 1 year old are under represented by 45% and persons over the age of 68 are under represented by an average of 7%. The 18 to 27 age group is also under represented by 10% and the geographic distribution of that age group is somewhat different from the census data. The difference in geographic distribution can be attributed to the timing and definition of the survey relative to the census and the effect that has on the location of post secondary school students. Women are under represented slightly more than men (3.5% vs. 3.0%) due to the high proportion of women in the over-68 age group. These differences in total population and age distribution need to be considered when using the TTS data for demographic purposes but should have minimal or no effect on the reliability of the trip data.

Employed Labour Force and Employment

There are some discrepancies in the employed labour force and employment between the TTS and Canada Census data. The employed labour force distribution shares a similar pattern as the population distribution. Under representation of employment outside GTA is due to the coverage area of the survey. Seasonal variations might also account for the differences. Previous validation of the 1986, 1991 and 1996 TTS suggest that the 2001 TTS will prove to be a reliable source of information on both employed labour force and employment.

Post Secondary School Students

The TTS data accurately reflects the number of full time post secondary school students in most parts of the survey area. Initial comparisons with university and college enrollment data suggest that there may be under representation of students at McMaster, Guelph, and Trent Universities. Further investigation of these differences, 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 these institutions. Under representation for part time post-secondary enrollments occurred at the universities of Guelph, Brock and Trent, and at nearly all the colleges. 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

Travel Data

The TTS data may be used with a high degree of confidence for the analysis of peak period travel patterns and travel behaviour characteristics specific to the peak period. There is no evidence of any under reporting of work or school trips or of other trips made in the a.m. peak period. Total daily travel on the TTC Subway, GO Rail, and most municipal bus services are accurately represented by the survey data. The survey data under represents total daily automobile travel by about 23% and streetcar use in downtown Toronto by 29%. Total daily bus use in Toronto may be under represented by as much as 19%. These differences need to be considered when using the TTS data for the analysis of off peak or total daily travel. 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.

The above findings are highly consistent with the results of the validation exercises performed for the 1986, 1991 and 1996 TTS. The data from the four surveys may therefore be used for almost any type of time series analysis for which there is sufficient data to ensure statistical accuracy.

1 Introduction

The 2001 TTS consists of demographic and travel information collected throughout the survey area. The sample frame is listed residential telephone numbers. The survey data has been expanded to represent the total population of the survey area by applying an expansion factor to all of the household, person and trip data associated with each household. The expansion factors are calculated by geographic area using total dwelling unit counts from the 2001 Canada Census. The calculation of the expansion factors is described in the Joint Program in Transportation Working Paper #9, 2001 Transportation Tomorrow Survey Working Paper: Data Expansion.

Chapter 2 of this report provides a discussion of potential sources of errors and bias due to the survey methodology and expansion process. Chapter 3 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
 - Employment (Not available until February 2003)
- 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.

Except as noted the comparisons have been made using version 1.0 of the 2001 TTS database. Some of the earlier comparisons were done using the preliminary version. The differences between the versions are not significant.

2 Potential Sources of Error and Bias

2.1 Sample Frame

Listed residential phone numbers do not provide total representation of all the households in the survey area. Households without phones or with unlisted numbers are excluded, as are most institutions such as prisons and hospitals. Households with more than one listed phone number will be over represented in the sample. The potential for survey bias exists to the extent that households excluded from or over represented in the sample frame have different demographic and travel characteristics from the other households in the sample frame. The number of households without phones is small and has not been a major cause of concern in the TTS.

Unlisted phone numbers account for 5% to 10% of all households. 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. No further investigations of the effect of excluding unlisted numbers have been carried out for either the 1991, 1996 or 2001 TTS.

The exclusion of institutions and other “collective homes” from the sample frame is not a major concern for the purposes of transportation planning since the residents are not likely to be making a large number of trips. The effect on total population and age distribution is discussed in chapter 3.

Unlike the previous surveys, the 2001 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. Within some FSAs, apartment buildings are under-represented relative to other types of housing. The calculation of expansion factors for different dwelling types is described in the Joint Program in Transportation Working Paper #9, 2001 TTS Working Paper Series: Data Expansion. Comparison of number of dwellings with Census data at FSA level will be presented in chapter 3

2.2 Timing of Sample Selection

The household composition of the survey area changes continuously as people move and new houses are built. The data files from which Cornerstone List Management draws the sample are updated once a month and the lead-time required to obtain and process the sample in advance of the survey is several weeks.

The samples for areas outside the GTA were obtained in early August and mid October of 2000. Areas within GTA and the City of Hamilton were sampled in early July and early October of 2001. The sample selection was staggered to ensure a reasonable representation of the student population in the cities outside the GTA with universities and other post secondary school facilities. Additional samples for the GTA and the City of Hamilton were obtained at the end of October 2001 and April 2002. Details of the sample selection process and problems encountered are contained in the report: 2001 Transportation Tomorrow Survey: Design and Conduct of the Survey.

The Canada Census was carried out at the end of May 2001 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 3.

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. 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 9% 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 21% of the households contacted refused to participate in the survey. Although the number is significantly greater than for non-contact, 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 for other surveys, have generally 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 automobile. There was no significant difference in reported trip rates for travel to and from school or work or for discretionary trips by public transit. 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 Validation

3.1 Dwelling Units and Population

The Canada Census provides very accurate and detailed information on the number of households and the distribution of population throughout the country. It is for that reason that the dwelling unit counts from the census are used as the base for expansion of the TTS data. Joint Program in Transportation Working Paper #9, 2001 TTS Working Paper Series: Data Expansion, contains the results of the validation of the 2001 TTS data in which the expanded house and person totals, aggregated by municipality, were compared with the census dwelling unit and population data at the census sub-division (CSD) level. In most cases there is a one to one correspondence between CSDs and municipalities. The results of the comparison are reproduced in Table 1 together with a summary by regional municipality.

Discrepancies between the expanded number of households in the TTS and the census dwelling unit count at the municipal level occur for one of four reasons. In order of magnitude they are:

1. Small sections of the rural FSAs (L0A, L0B, L0G) were accidentally sampled in the fall of 2000 and again in the fall of 2001. Although two expansion factors were applied in each of these FSAs, one for local delivery units and the other for the rest of the FSA, there are discrepancies in the dwelling unit counts. Most of these discrepancies are minor with the largest difference in New Tecumseth (14%). This inconsistency can also be contributed by the following factors.
2. Sample selection and control processes were performed on the basis of FSAs. FSA boundaries do not coincide exactly with planning district or municipal boundaries. The resulting differences are minor and should not affect the use of the TTS data for transportation planning purposes. The largest discrepancies occur in Vaughan (5.0%) and East Gwillimbury (4.2%).
3. For rural FSAs, a factor of 20 was applied to all dwelling types. Similarly, if there were less than 50 surveyed households for either dwelling type in an FSA, all households were combined to give a common expansion factor.

4. The postal code for some households belongs to a different municipality determined by the addresses. The number of households involved is small and has no apparent effect on the travel data.

A primary source of differences between the expanded TTS population and census population is 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 institutional residents from the TTS does not necessarily result in a similar under reporting of total travel since most institutional residents do less travelling than the population in general. The difference in the total population of the survey area, at 2.9%, compares with differences of 2.2%, 2.5% and 2.8% recorded in the 1986, 1991 and 1996 TTS respectively. The higher percentage in the more recent surveys is consistent with an increase in the average age of the population, which has, presumably, resulted in an increase in the population of institutions such as nursing homes.

Some of the variations between regions and individual municipalities may be attributed to the number and location of the institutions involved. The difference in timing between the census and the survey may also affect the distribution of population, particularly with respect to post secondary school students. This factor is discussed further in section 3.2.

Table 1: Comparison of Expanded Totals by Municipality

Municipality	Census		TTS Records		Expanded Totals		Mean Fac.	Diff from census	
	Occu. Dwell.	Pop.	House	Person	House	Person		Dwell. Unit	Pop.
1 PD1		168042	4649	9056	86905	164180	18.69		-2.3%
2 PD2		204305	4726	11681	83210	199931	17.61		-2.1%
3 PD3		241536	5525	14746	89180	230871	16.14		-4.4%
4 PD4		205951	5732	12944	95892	202527	16.73		-1.7%
5 PD5		120038	2632	6799	45721	115751	17.37		-3.6%
6 PD6		216996	5393	12939	89316	209624	16.56		-3.4%
7 PD7		57984	1441	3480	24270	55637	16.84		-4.0%
8 PD8		182891	4392	11310	70511	177650	16.05		-2.9%
9 PD9		101061	1728	5551	28701	91246	16.61		-9.7%
10 PD10		146564	2811	8334	48253	140010	17.17		-4.5%
11 PD11		156411	3753	9608	59557	147312	15.87		-5.8%
12 PD12		81136	1846	5272	27368	76753	14.83		-5.4%
13 PD13		217765	4742	13450	75392	210845	15.90		-3.2%
14 PD14		64978	1542	4081	25314	65310	16.42		0.5%
15 PD15		84323	1466	4374	26458	77620	18.05		-7.9%
16 PD16		226196	4147	12817	67203	203440	16.21		-10.1%
Toronto	943079	2476177	56525	146442	943251	2368707	16.69	0.0%	-4.3%
17 Brock	4399	12110	222	548	4400	10861	19.82	0.0%	-10.3%
18 Uxbridge	5900	17377	393	1119	5732	16350	14.59	-2.8%	-5.9%
19 Scugog	7095	20224	414	1154	7357	20529	17.77	3.7%	1.5%
20 Pickering/Ajax	26945	87139	1499	4700	27101	84308	18.08	0.6%	-3.2%
21 Ajax	23181	73753	1236	3813	23221	71233	18.79	0.2%	-3.4%
22 Whitby	28641	87413	1556	4594	28974	84747	18.62	1.2%	-3.0%
23 Oshawa	52356	139051	2785	7383	52204	134354	18.74	-0.3%	-3.4%
24 Clarington	23206	69834	1252	3618	24153	69814	19.29	4.1%	0.0%
Durham	171723	506901	9357	26929	173142	492195	18.50	0.8%	-2.9%

Municipality	Census		TTS Records		Expanded Totals		Mean Fac.	Diff from census	
	Occu. Dwell.	Pop.	House	Person	House	Person		Dwell. Unit	Pop.
25 Georgina	13882	39536	697	1881	13800	37254	19.80	-0.6%	-5.8%
26 East Gwillimbury	6511	20555	447	1370	6781	20490	15.17	4.2%	-0.3%
27 Newmarket	21309	65788	1188	3530	22035	64899	18.55	3.4%	-1.4%
28 Aurora	12994	40167	814	2488	13035	39504	16.01	0.3%	-1.7%
29 Richmond Hill	41347	132030	2317	7353	42022	133162	18.14	1.6%	0.9%
30 Whitchurch-Stouffville	7467	22008	368	1030	7380	20656	20.05	-1.2%	-6.1%
31 Markham	60664	208615	3237	10514	61024	198201	18.85	0.6%	-5.0%
32 King	6051	18533	309	921	6050	18033	19.58	0.0%	-2.7%
33 Vaughan	52960	182022	3095	10672	55584	188755	17.96	5.0%	3.7%
York	223185	729254	12472	39759	227711	720953	18.26	2.0%	-1.1%
34 Caledon	16112	50595	803	2448	16108	49107	20.06	0.0%	-2.9%
35 Brampton	97552	325428	5307	17119	97774	312992	18.42	0.2%	-3.8%
36 Mississauga	195181	612925	11530	35663	194688	592127	16.89	-0.3%	-3.4%
Peel	308845	988948	17640	55230	308571	954226	17.49	-0.1%	-3.5%
37 Halton Hills	16383	48184	846	2397	16173	45675	19.12	-1.3%	-5.2%
38 Milton	10682	31471	626	1749	10707	29652	17.10	0.2%	-5.8%
39 Oakville	49260	144738	2776	7935	49480	140039	17.82	0.4%	-3.2%
40 Burlington	57340	150836	3170	8241	57239	148742	18.06	-0.2%	-1.4%
Halton	133665	375229	7418	20322	133599	364108	18.01	0.0%	-3.0%
41 Flamborough		37796	601	1827	11609	35373	19.32		-6.4%
42 Dundas		24394	570	1498	9844	25285	17.27		3.7%
43 Ancaster		27485	494	1434	8999	26022	18.22		-5.3%
44 Glanbrook		12145	247	699	4910	13903	19.88		14.5%
45 Stoney Creek		57327	1103	3238	19715	57335	17.87		0.0%
46 Hamilton		331121	7181	17824	133804	328030	18.63		-0.9%
City Of Hamilton	188156	490268	10196	26520	188881	485948	18.52	0.4%	-0.9%
GTA+Hamilton	1968653	5566777	113608	315202	1975154	5386137	17.39	0.3%	-3.2%
51 Grimsby	7587	21297	441	1191	7585	20485	17.20	0.0%	-3.8%
52 Lincoln	7125	20612	296	832	7125	20026	24.07	0.0%	-2.8%
53 Pelham	5596	15272	221	578	5596	14635	25.32	0.0%	-4.2%
54 Niagara-on-the-Lake	4959	13839	197	472	4958	11880	25.17	0.0%	-14.2%
55 St Catharines	53807	129170	2955	7221	54011	130676	18.28	0.4%	1.2%
56 Thorold	6905	18048	362	927	6903	17678	19.07	0.0%	-2.1%
57 Niagara Falls	31506	78815	1693	4366	31339	80732	18.51	-0.5%	2.4%
58 Welland	19753	48402	1109	2805	19751	49957	17.81	0.0%	3.2%
59 Port Colbourne	7617	18450	436	1058	7617	18483	17.47	0.0%	0.2%
60 Fort Erie	11379	28143	591	1450	11377	27912	19.25	0.0%	-0.8%
61 West Lincoln	3951	12268	211	656	3952	12287	18.73	0.0%	0.2%
62 Wainfleet	2227	6258	107	308	2227	6409	20.81	0.0%	2.4%
Niagara	162412	410574	8619	21864	162441	411160	18.85	0.0%	0.1%
71 Puslinch	1955	5885	60	171	1955	5571	32.58	0.0%	-5.3%
72 Guelph/Eramosa	3705	11174	174	518	3704	11028	21.29	0.0%	-1.3%
73 Wellington Centre	8594	24280	401	1134	8593	24302	21.43	0.0%	0.1%
79 Erin	3749	11052	136	384	3750	10587	27.57	0.0%	-4.2%
Wellington County	18003	52391	771	2207	18002	51488	23.35	0.0%	-1.7%

Municipality	Census		TTS Records		Expanded Totals		Mean Fac.	Diff from census	
	Occu. Dwell.	Pop.	House	Person	House	Person		Dwell. Unit	Pop.
82 Innisfil	10198	28666	437	1233	10200	28778	23.34	0.0%	0.4%
83 Bradford-West Gwillimbury	7131	22228	376	1145	7133	21721	18.97	0.0%	-2.3%
84 New Tecumseth	9278	26141	711	1998	10575	28982	14.87	14.0%	10.9%
85 Adjala	3300	10082	141	442	3299	10343	23.40	0.0%	2.6%
86 Essa	5545	16808	241	685	5567	15824	23.10	0.4%	-5.9%
87 Clearview	4804	13796	167	467	4805	13436	28.77	0.0%	-2.6%
88 Springwater	5351	16104	229	647	5352	15120	23.37	0.0%	-6.1%
127 Collingwood	6576	16039	338	796	6577	15490	19.46	0.0%	-3.4%
128 Wasaga Beach	5196	12419	250	561	5195	11658	20.78	0.0%	-6.1%
129 Tiny	3720	9035	117	305	3719	9696	31.79	0.0%	7.3%
130 Penatanguishene	3133	8316	177	419	3133	7416	17.70	0.0%	-10.8%
131 Midland	6550	16214	329	768	6550	15291	19.91	0.0%	-5.7%
132 Tay	3472	9162	158	417	3471	9161	21.97	0.0%	0.0%
133 Oro-Medonte	6607	18315	276	757	6607	18123	23.94	0.0%	-1.1%
134 Severn	4185	11135	133	333	4186	10480	31.47	0.0%	-5.9%
135 Ramara	3631	8615	139	335	3631	8750	26.12	0.0%	1.6%
Simcoe County	88677	243075	4219	11308	90000	240267	21.33	1.5%	-1.2%
104 Cavan-Millbrook-North Monaghan	2840	8453	173	490	2841	8046	16.42	0.0%	-4.8%
106 South Monaghan-Otonabee	2516	6966	99	272	2516	6912	25.41	0.0%	-0.8%
108 Asphodel-Norwood	1486	4080	62	158	1486	3787	23.97	0.0%	-7.2%
109 Dummer-Douro	2376	6852	75	210	2376	6653	31.68	0.0%	-2.9%
111 Smith-Ennismore-Lakefield	6565	16414	340	853	6565	16471	19.31	0.0%	0.3%
Peterborough County	15783	42765	749	1983	15784	41869	21.07	0.0%	-2.1%
70 City of Guelph	40514	106170	2302	5990	40851	104357	17.75	0.8%	-1.7%
80 Orangeville	8602	25248	481	1352	8600	24174	17.88	0.0%	-4.3%
80 Dufferin			53	161	1060	3220	20.00		
81 Barrie	36855	103710	1969	5359	36860	100320	18.72	0.0%	-3.3%
136 Orillia	11609	29121	629	1510	11611	27875	18.46	0.0%	-4.3%
89 Kawartha Lakes	26781	69179	1312	3254	26778	66414	20.41	0.0%	-4.0%
103 Peterborough City	29174	71446	1667	3992	30372	72333	18.22	4.1%	1.2%
Total excl. GTA & Ham & Dufferin	438410	1153679	22718	58819	441299	1140258	19.43	0.7%	-1.2%
Total excl. GTA & Ham.			22771	58980	442359	1143478	19.43		
Total survey area excl. Dufferin	2407063	6720456	136326	374021	2416453	6526395	17.73	0.4%	-2.9%
Total survey area			136379	374182	2417513	6529615	17.73		

Due to under-representation of apartment type housing in some FSAs, separate expansion factors were applied. This process was performed on the basis of the dwelling unit counts by dwelling type provided by Canada Post in June 2002. After the release of similar information from the 2001 Census, another comparison was made. Table 2 shows the dwelling counts by structure type and their corresponding percentages from both TTS and Census for the surveyed FSAs. The split between the two dwelling types are compatible from both sources of data. Some of the FSAs were not completely included in the survey area, which lead to significant differences in the dwelling unit counts.

Table 2: Comparison of Expanded Totals by Dwelling Type and by FSA

FSA	2001 TTS				2001 Census			
	House	Apt.	% House	% Apt.	Non-Apt.	Apt.	% Non-	% Apt.
M1B	12,233	5,039	71%	29%	12,355	4,865	72%	28%
M1C	10,073	196	98%	2%	9,700	545	95%	5%
M1E	9,604	6,681	59%	41%	9,225	7,010	57%	43%
M1G	5,323	4,722	53%	47%	5,060	4,960	51%	50%
M1H	3,618	3,613	50%	50%	3,555	3,660	49%	51%
M1J	4,401	7,781	36%	64%	3,915	8,235	32%	68%
M1K	7,905	9,680	45%	55%	7,555	9,980	43%	57%
M1L	5,140	5,097	50%	50%	5,035	5,165	49%	51%
M1M	5,332	2,881	65%	35%	4,970	3,230	61%	39%
M1N	6,476	2,877	69%	31%	5,920	3,415	63%	37%
M1P	6,125	6,305	49%	51%	6,110	6,280	49%	51%
M1R	6,722	3,918	63%	37%	6,295	4,320	59%	41%
M1S	7,296	2,829	72%	28%	7,290	2,805	72%	28%
M1T	5,355	6,720	44%	56%	5,295	6,740	44%	56%
M1V	10,839	4,494	71%	29%	10,595	4,700	69%	31%
M1W	8,939	6,783	57%	43%	8,800	6,870	56%	44%
M1X	532		100%	0%	510	20	96%	4%
M2H	6,311	2,285	73%	27%	6,280	2,295	73%	27%
M2J	8,614	10,354	45%	55%	8,870	10,040	47%	53%
M2K	2,989	2,314	56%	44%	2,905	2,375	55%	45%
M2L	3,250	847	79%	21%	3,065	1,025	75%	25%
M2M	5,895	5,189	53%	47%	5,960	5,095	54%	46%
M2N	7,347	9,849	43%	57%	7,950	9,195	46%	54%
M2P	1,887	636	75%	25%	1,705	810	68%	32%
M2R	5,236	9,458	36%	64%	5,250	9,410	36%	64%
M3A	5,248	7,847	40%	60%	5,580	7,480	43%	57%
M3B	3,329	1,465	69%	31%	3,295	1,480	69%	31%
M3C	1,967	12,006	14%	86%	2,240	11,680	16%	84%
M3H	6,614	5,462	55%	45%	6,165	5,875	51%	49%
M3J	2,642	5,893	31%	69%	2,845	5,655	33%	67%
M3K	1,818	390	82%	18%	1,480	720	67%	33%
M3L	3,349	2,438	58%	42%	3,525	2,230	61%	39%
M3M	3,749	4,911	43%	57%	3,710	4,925	43%	57%
M3N	5,494	8,249	40%	60%	5,495	8,205	40%	60%
M4A	1,798	3,853	32%	68%	1,885	3,750	33%	67%
M4B	3,917	3,797	51%	49%	3,525	4,155	46%	54%
M4C	10,505	9,127	54%	46%	9,510	10,050	49%	51%
M4E	7,345	3,058	71%	29%	6,030	4,335	58%	42%
M4G	4,512	2,212	67%	33%	4,470	2,230	67%	33%
M4H	307	6,071	5%	95%	110	6,250	2%	98%
M4J	10,833	3,809	74%	26%	10,295	4,300	71%	29%
M4K	7,104	7,550	48%	52%	6,570	8,035	45%	55%
M4L	9,781	3,634	73%	27%	8,560	4,810	64%	36%
M4M	6,662	1,990	77%	23%	5,720	2,900	66%	34%
M4N	3,618	2,555	59%	41%	3,390	2,755	55%	45%
M4P	1,594	8,450	16%	84%	1,570	8,435	16%	84%
M4R	2,576	2,178	54%	46%	2,420	2,315	51%	49%
M4S	3,796	7,762	33%	67%	3,870	7,640	34%	66%
M4T	2,146	2,926	42%	58%	1,645	3,410	33%	67%
M4V	2,417	6,406	27%	73%	2,265	6,535	26%	74%
M4W	2,106	3,174	40%	60%	1,915	3,360	36%	64%
M4X	1,005	8,528	11%	89%	1,080	8,425	11%	89%

FSA	2001 TTS				2001 Census			
	House	Apt.	% House	% Apt.	Non-Apt.	Apt.	% Non-	% Apt.
M4Y	698	13,390	5%	95%	400	13,640	3%	97%
M5A	3,051	12,535	20%	80%	2,830	12,705	18%	82%
M5B	479	3,870	11%	89%	230	4,105	5%	95%
M5C	115	953	11%	89%	15	1,050	1%	99%
M5E	193	2,128	8%	92%	15	2,300	1%	99%
M5G	129	2,001	6%	94%	20	2,105	1%	99%
M5H	20	140	13%	88%	15	145	9%	91%
M5J	699	2,431	22%	78%	280	2,845	9%	91%
M5M	7,199	2,338	75%	25%	7,030	2,480	74%	26%
M5N	3,132	3,392	48%	52%	3,150	3,345	48%	51%
M5P	3,180	5,567	36%	64%	2,975	5,750	34%	66%
M5R	3,745	8,786	30%	70%	3,195	9,310	26%	75%
M5S	1,981	3,862	34%	66%	1,350	4,475	23%	77%
M5T	2,374	5,149	32%	68%	2,190	5,310	29%	71%
M5V	632	4,467	12%	88%	640	4,440	13%	87%
M6A	2,294	4,395	34%	66%	2,395	4,275	36%	64%
M6B	4,320	6,720	39%	61%	4,150	6,860	38%	62%
M6C	5,379	4,961	52%	48%	5,080	5,235	49%	51%
M6E	9,545	4,989	66%	34%	9,070	5,435	63%	37%
M6G	9,685	3,478	74%	26%	7,410	5,710	56%	44%
M6H	11,742	5,295	69%	31%	9,670	7,315	57%	43%
M6J	7,869	3,563	69%	31%	5,995	5,400	53%	47%
M6K	2,928	11,761	20%	80%	3,480	11,155	24%	76%
M6L	3,408	3,791	47%	53%	3,455	3,715	48%	52%
M6M	6,464	8,141	44%	56%	5,790	8,765	40%	60%
M6N	9,270	5,270	64%	36%	8,885	5,610	61%	39%
M6P	7,619	9,265	45%	55%	5,870	10,970	35%	65%
M6R	5,606	3,138	64%	36%	4,435	4,280	51%	49%
M6S	8,069	4,522	64%	36%	7,395	5,145	59%	41%
M8V	4,825	9,651	33%	67%	4,765	9,670	33%	67%
M8W	5,375	3,078	64%	36%	5,155	3,275	61%	39%
M8X	2,032	1,680	55%	45%	2,215	1,495	60%	40%
M8Y	4,048	3,962	51%	49%	3,870	4,115	48%	52%
M8Z	4,884	268	95%	5%	4,520	620	88%	12%
M9A	5,733	6,662	46%	54%	5,510	6,845	45%	55%
M9B	7,176	2,962	71%	29%	7,240	2,870	72%	28%
M9C	6,780	6,639	51%	49%	6,825	6,545	51%	49%
M9L	3,064	565	84%	16%	2,790	815	77%	23%
M9M	3,438	2,546	57%	43%	3,425	2,535	57%	42%
M9N	3,838	5,926	39%	61%	3,700	6,040	38%	62%
M9P	4,345	3,623	55%	45%	4,275	3,660	54%	46%
M9R	4,692	7,034	40%	60%	4,950	6,735	42%	58%
M9V	8,985	7,501	55%	45%	9,075	7,355	55%	45%
M9W	7,512	4,864	61%	39%	8,170	4,185	66%	34%
City of Toronto	472,225	473,544	50%	50%	447,235	495,620	47%	53%
K0L	11,512	573	95%	5%	24,685	1,830	93%	7%
K0M	9,948	367	96%	4%	17,175	840	95%	5%
K9H	7,973	3,043	72%	28%	7,690	3,280	70%	30%
K9J	14,159	3,726	79%	21%	13,070	4,620	74%	26%
K9K	2,823	374	88%	12%	2,775	405	87%	13%
K9L	1,968	287	87%	13%	1,660	210	88%	11%
K9V	8,122	2,204	79%	21%	7,385	2,020	79%	21%

FSA	2001 TTS				2001 Census			
	House	Apt.	% House	% Apt.	Non-Apt.	Apt.	% Non-	% Apt.
LOA	5,226	73	99%	1%	4,360	115	98%	3%
LOB	6,187	160	97%	3%	5,155	165	97%	3%
LOC	3,226	238	93%	7%	2,780	160	94%	5%
LOE	6,865	528	93%	7%	6,760	605	92%	8%
LOG	15,093	644	96%	4%	12,170	750	94%	6%
LOH	2,403		100%	0%	1,220	10	99%	1%
LOJ	1,782	90	95%	5%	960	55	95%	5%
LOK	11,693	574	95%	5%	11,770	495	96%	4%
LOL	24,073	834	97%	3%	18,190	765	96%	4%
LOM	9,218	970	90%	10%	9,890	640	94%	6%
LON	7,815	301	96%	4%	10,945	755	94%	6%
LOP	3,634	100	97%	3%	4,300	130	97%	3%
LOR	25,166	1,386	95%	5%	22,680	1,770	93%	7%
LOS	15,637	826	95%	5%	16,505	1,130	94%	6%
L1B	2,714	245	92%	8%	2,815	140	95%	5%
L1C	9,451	884	91%	9%	9,140	1,205	88%	12%
L1E	6,363	291	96%	4%	6,315	345	95%	5%
L1G	11,589	5,839	66%	34%	11,530	5,900	66%	34%
L1H	10,528	2,550	80%	20%	9,910	3,175	76%	24%
L1J	12,164	4,244	74%	26%	12,210	4,195	74%	26%
L1K	5,223	74	99%	1%	5,235	65	99%	1%
L1L	115		100%	0%	115	0	100%	0%
L1M	2,300	40	98%	2%	2,295	50	98%	2%
L1N	13,138	3,159	81%	19%	12,920	3,375	79%	21%
L1P	2,526	424	86%	14%	2,265	690	77%	23%
L1R	6,628	107	98%	2%	6,450	280	96%	4%
L1S	10,925	2,662	80%	20%	10,650	2,925	78%	22%
L1T	7,501	564	93%	7%	7,510	560	93%	7%
L1V	13,592	2,094	87%	13%	13,465	2,215	86%	14%
L1W	5,568	270	95%	5%	5,545	290	95%	5%
L1X	4,095	91	98%	2%	4,020	180	96%	4%
L1Y	663	37	95%	5%	680	15	97%	2%
L1Z	1,600		100%	0%	1,575	25	98%	2%
L2A	5,760	1,127	84%	16%	5,365	1,060	84%	16%
L2E	7,646	1,760	81%	19%	6,935	2,470	74%	26%
L2G	8,629	1,991	81%	19%	8,295	2,325	78%	22%
L2H	4,987	478	91%	9%	4,860	610	89%	11%
L2J	5,036	553	90%	10%	4,735	845	85%	15%
L2M	10,126	3,504	74%	26%	9,890	3,720	73%	27%
L2N	9,551	2,963	76%	24%	9,620	2,890	77%	23%
L2P	4,560	916	83%	17%	4,135	1,330	76%	24%
L2R	7,785	3,533	69%	31%	7,330	3,920	65%	35%
L2S	5,254	777	87%	13%	5,035	995	83%	17%
L2T	3,678	1,216	75%	25%	3,585	1,290	73%	26%
L2V	5,449	933	85%	15%	5,060	960	84%	16%
L2W	467	18	96%	4%	465	25	96%	5%
L3B	7,042	1,674	81%	19%	7,065	2,145	77%	23%
L3C	9,557	1,852	84%	16%	9,310	2,040	82%	18%
L3K	6,426	1,118	85%	15%	6,325	1,410	82%	18%
L3M	6,668	791	89%	11%	6,675	760	90%	10%
L3P	11,621	861	93%	7%	11,385	1,090	91%	9%
L3R	14,318	891	94%	6%	14,045	1,165	92%	8%
L3S	10,241	330	97%	3%	9,555	1,015	90%	10%

FSA	2001 TTS				2001 Census			
	House	Apt.	% House	% Apt.	Non-Apt.	Apt.	% Non-	% Apt.
L3T	11,902	3,845	76%	24%	11,465	4,285	73%	27%
L3V	13,731	2,500	85%	15%	12,375	3,320	79%	21%
L3X	5,823	397	94%	6%	5,885	330	95%	5%
L3Y	13,815	2,508	85%	15%	12,650	3,625	78%	22%
L3Z	5,754	588	91%	9%	5,395	1,195	82%	18%
L4A	5,797	604	91%	9%	5,445	945	85%	15%
L4B	7,505	239	97%	3%	7,125	620	92%	8%
L4C	17,256	5,802	75%	25%	16,565	6,500	72%	28%
L4E	4,044		100%	0%	3,910	135	97%	3%
L4G	11,803	1,211	91%	9%	11,740	1,270	90%	10%
L4H	5,492	74	99%	1%	5,580	0	100%	0%
L4J	13,543	3,379	80%	20%	13,530	3,385	80%	20%
L4K	3,754	162	96%	4%	3,575	340	91%	9%
L4L	14,395	580	96%	4%	14,210	770	95%	5%
L4M	11,040	2,944	79%	21%	9,575	3,675	72%	28%
L4N	21,184	3,557	86%	14%	20,445	4,605	82%	18%
L4P	7,453	382	95%	5%	7,105	725	91%	9%
L4R	5,528	1,651	77%	23%	5,545	1,575	78%	22%
L4S	6,406	78	99%	1%	6,445	55	99%	1%
L4T	8,729	2,269	79%	21%	7,410	3,590	67%	33%
L4W	4,988	1,962	72%	28%	5,120	1,820	74%	26%
L4X	3,006	3,520	46%	54%	3,200	3,325	49%	51%
L4Y	5,102	3,739	58%	42%	5,245	3,600	59%	41%
L4Z	7,400	2,066	78%	22%	7,105	2,360	75%	25%
L5A	6,487	11,240	37%	63%	6,585	11,145	37%	63%
L5B	6,310	8,498	43%	57%	6,165	8,640	42%	58%
L5C	7,740	1,884	80%	20%	7,655	1,975	80%	21%
L5E	3,148	1,714	65%	35%	3,235	1,620	67%	33%
L5G	4,362	3,679	54%	46%	4,400	3,625	55%	45%
L5H	5,291	708	88%	12%	4,845	1,155	81%	19%
L5J	7,440	2,642	74%	26%	7,600	2,485	75%	25%
L5K	2,840	1,806	61%	39%	2,995	1,655	64%	36%
L5L	12,740	1,998	86%	14%	12,600	2,140	85%	15%
L5M	15,599	764	95%	5%	15,150	1,205	93%	7%
L5N	20,154	4,387	82%	18%	20,595	3,940	84%	16%
L5R	6,092	3,227	65%	35%	6,305	3,015	68%	32%
L5V	9,555	430	96%	4%	9,225	760	92%	8%
L5W	1,642	17	99%	1%	1,640	15	99%	1%
L6A	10,639	90	99%	1%	10,625	100	99%	1%
L6B	1,225	20	98%	2%	1,185	60	95%	5%
L6C	4,810	149	97%	3%	4,880	85	98%	2%
L6E	364	36	91%	9%	250	155	63%	39%
L6G	65		100%	0%	70	0	108%	0%
L6H	13,301	2,607	84%	16%	13,715	2,190	86%	14%
L6J	7,845	695	92%	8%	7,420	1,115	87%	13%
L6K	2,926	2,574	53%	47%	3,005	2,495	55%	45%
L6L	7,284	2,133	77%	23%	7,410	2,005	79%	21%
L6M	9,380	524	95%	5%	8,960	945	90%	10%
L6P	570		100%	0%	575	0	101%	0%
L6R	9,135	96	99%	1%	9,040	190	98%	2%
L6S	13,580	1,737	89%	11%	13,030	2,285	85%	15%
L6T	7,541	5,965	56%	44%	7,430	6,080	55%	45%
L6V	11,109	1,693	87%	13%	9,975	2,815	78%	22%

FSA	2001 TTS				2001 Census			
	House	Apt.	% House	% Apt.	Non-Apt.	Apt.	% Non-	% Apt.
L6W	5,417	1,967	73%	27%	5,255	2,130	71%	29%
L6X	9,378	1,185	89%	11%	9,340	1,225	88%	12%
L6Y	12,455	4,714	73%	27%	11,985	5,185	70%	30%
L6Z	8,434	177	98%	2%	8,370	240	97%	3%
L7A	2,271		100%	0%	2,265	10	100%	0%
L7B	1,625	59	97%	3%	2,340	55	98%	2%
L7C	421		100%	0%	785	0	100%	0%
L7E	7,143	261	96%	4%	7,810	295	96%	4%
L7G	10,830	1,243	90%	10%	10,375	1,680	86%	14%
L7J	3,635	429	89%	11%	3,390	605	85%	15%
L7L	10,343	1,942	84%	16%	10,395	1,890	85%	15%
L7M	10,050	563	95%	5%	9,185	1,425	87%	13%
L7N	4,001	1,320	75%	25%	3,990	1,335	75%	25%
L7P	8,999	475	95%	5%	8,620	865	91%	9%
L7R	4,270	3,236	57%	43%	4,170	3,315	56%	44%
L7S	2,225	3,399	40%	60%	2,155	3,460	38%	62%
L7T	4,152	1,369	75%	25%	4,250	1,265	77%	23%
L8E	8,326	3,174	72%	28%	8,285	3,205	72%	28%
L8G	5,939	2,745	68%	32%	5,865	2,810	68%	32%
L8H	9,990	1,022	91%	9%	8,995	2,010	82%	18%
L8J	5,366	101	98%	2%	5,210	255	95%	5%
L8K	9,111	4,362	68%	32%	9,050	4,425	67%	33%
L8L	10,367	2,726	79%	21%	9,190	3,905	70%	30%
L8M	3,652	2,577	59%	41%	2,820	3,400	45%	55%
L8N	1,768	5,765	23%	77%	1,605	5,920	21%	79%
L8P	4,248	8,132	34%	66%	3,185	9,195	26%	74%
L8R	2,002	2,734	42%	58%	1,760	2,965	37%	63%
L8S	4,210	3,240	57%	43%	3,855	3,605	52%	48%
L8T	6,014	1,541	80%	20%	5,980	1,580	79%	21%
L8V	5,947	3,234	65%	35%	5,895	3,275	64%	36%
L8W	7,256	143	98%	2%	7,210	180	97%	2%
L9A	7,236	2,018	78%	22%	7,180	2,075	78%	22%
L9B	5,133	150	97%	3%	5,155	130	98%	2%
L9C	11,894	1,654	88%	12%	11,730	1,825	87%	13%
L9G	6,387	170	97%	3%	6,350	205	97%	3%
L9H	9,354	2,044	82%	18%	9,105	2,290	80%	20%
L9J	240		100%	0%				
L9K	1,353	189	88%	12%	1,435	90	94%	6%
L9L	4,112	410	91%	9%	4,025	485	89%	11%
L9M	3,715	439	89%	11%	3,815	825	82%	18%
L9N	2,719	79	97%	3%	2,620	155	94%	6%
L9P	4,522	257	95%	5%	4,225	550	88%	12%
L9R	4,257	687	86%	14%	3,945	965	80%	20%
L9T	8,104	1,170	87%	13%	7,620	1,635	82%	18%
L9V	217		100%	0%	180	5	97%	3%
L9W	8,581	1,075	89%	11%	10,040	1,470	87%	13%
L9Y	5,523	1,304	81%	19%	6,020	1,595	79%	21%
N0B	9,081	528	95%	5%	24,015	1,895	93%	7%
N0C	173		100%	0%	5,405	330	94%	6%
N1C	820	46	95%	5%	860	5	99%	1%
N1E	9,675	2,134	82%	18%	9,570	2,210	81%	19%
N1G	7,756	1,625	83%	17%	8,060	1,305	86%	14%
N1H	11,573	7,132	62%	38%	10,485	7,335	59%	41%

FSA	2001 TTS				2001 Census			
	House	Apt.	% House	% Apt.	Non-Apt.	Apt.	% Non-	% Apt.
N1K	1,683	18	99%	1%	1,670	35	98%	2%
N1L	1,011	64	94%	6%	1,040	25	97%	2%
N1M	4,583	1,007	82%	18%	4,035	920	81%	19%
Rest of Survey Area	1,210,178	261,566	82%	18%	1,211,820	294,460	80%	20%
Total Survey Area	1,682,403	735,110	70%	30%	1,659,055	790,080	68%	32%

3.2 Age and Gender

Table 3 compares the expanded TTS female and male population by age groups with data from the 2001 Canada 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. The comparison reveals significant under representation of 3 age groups in the TTS relative to the census.

1. The number of persons under 1 year of age is under represented by approximately 45% for both sexes. The amount of under representation is similar in magnitude for all geographic areas. There is no obvious explanation as to why this should have happened. There is no evidence of any over reporting of age 1 or 2. Similar distribution was observed in the 1996 survey. It seems possible that the under representation is linked in some way to the use of the Direct Data Entry software and/or the training of interviewers. **The under representation of age zero should be taken into account when estimating total population or if the TTS data is used in the calculation of fertility rates.** There should be no effect on the accuracy of the travel information collected.
2. Above age 68 there is increasing under representation of population by age. The under representation is greater for women than for men of the same age. The highest discrepancy is 44% for women over the age of 88. The under representation occurs in all parts of the survey area. The exclusion of collective homes from the survey is likely the major cause. **The under representation of the elderly should be taken into account if the TTS data is used for demographic projections or for the analysis of the future needs of the elderly.** The impact of this under representation on trip totals is likely to be minor as elderly people in general, and in particular those in collective homes, make relatively few trips compared to the population as a whole.

The under reporting of age zero together with age 68 and older accounts for approximately 40% of the total under reporting of population.

In total the survey under reports the female population slightly more than the male. The difference is due to a higher proportion of women than men in the older, under reported, age groups. The difference is not expected to show any significant effect in the analysis of travel data.

3. The 18 to 27 age group is under represented by an average of 10% relative to the census with considerable variation between regions and gender. The under-representation is higher in the 18 to 22 sub-group. A likely cause of under representation in this age group is the use of listed residential telephones as the sample frame. A number of post secondary students do not have their own telephones or may not acquire them at the start of the school year in time to be included in the drawing of the sample. Variations in geographic distribution may be due to the difference in timing between the census and the conduct of the survey and also the change in definition in census. The Canada Census was conducted on May 15th, 2001 when many post secondary students were likely to be living at home with their parents or otherwise

absent from their normal school locations. If the students were attending school on Census Day, they would still be included in their parents' households.

The under reporting of the 18 to 27 age group accounts for approximately 40% of the total under reporting of population. This is highest for Peterborough County (26%) followed by Halton Region, Counties of Simcoe and Wellington, and City of Kawartha Lakes. On the contrary, the 18 to 27 age group is over represented in the Cities of Guelph (13%) and Peterborough (1%). This pattern is consistent with the difference in timing and definition relative to the census and the availability of post secondary education facilities in the areas.

Within the GTA the under representation of the 18 to 27 age group needs to be taken into consideration if the TTS data is used for the analysis of demographics and travel behaviour specific to that age group including, specifically, the effect on estimates of public transit ridership.

Table 3: Difference in 2001 TTS Population Relative to the Census

Women	Census (000's)														Total	Census (000's)
	0	1 - 7	8 - 17	18 - 22	23 - 27	28 - 37	38 - 47	48 - 57	58 - 67	68 - 77	78 - 87	88+				
Toronto	-46%	-6%	-4%	-12%	-4%	-1%	-2%	-6%	-1%	-6%	-12%	-45%	1285			
Durham	-47%	-3%	-3%	-24%	-12%	-5%	2%	4%	3%	2%	-8%	-54%	258			
York	-46%	-1%	1%	-12%	-6%	-2%	3%	-1%	-1%	-4%	-20%	-53%	370			
Peel	-44%	-1%	-2%	-12%	-7%	-1%	0%	-5%	0%	-11%	-16%	-26%	500			
Halton	-41%	7%	-1%	-28%	-13%	-5%	2%	-3%	9%	1%	-15%	-37%	192			
Hamilton	-49%	-2%	-2%	-7%	-7%	-5%	2%	2%	11%	6%	-3%	-40%	251			
Niagara	-52%	11%	6%	-12%	1%	6%	2%	-4%	6%	0%	-20%	-40%	211			
Wellington	-77%	-11%	10%	-13%	-20%	-15%	5%	16%	4%	-3%	-40%	-24%	211			
Simcoe	-42%	13%	3%	-31%	-12%	10%	-5%	0%	5%	-2%	-6%	-36%	123			
Peterborough	-34%	-6%	-3%	-26%	-14%	2%	0%	14%	9%	-4%	-11%	-60%	21			
City of Kawartha Lakes	-44%	9%	-4%	-22%	-23%	-5%	1%	5%	5%	-4%	-23%	-74%	35			
City of Guelph	-55%	8%	0%	28%	3%	2%	-2%	-15%	8%	-6%	-16%	-38%	54			
City of Barrie	-52%	-6%	1%	-8%	-10%	0%	0%	3%	2%	-8%	-27%	-65%	53			
City of Peterborough	-29%	6%	9%	15%	0%	11%	-2%	12%	1%	-4%	-32%	-61%	38			
City of Orillia	-100%	9%	-8%	-38%	-4%	6%	-6%	1%	8%	5%	-24%	-58%	15			
Town of Orangeville	8%	-5%	-5%	-23%	6%	2%	-5%	-7%	0%	-1%	-11%	-11%	13			
Total	-46%	-1%	-1%	-13%	-6%	-1%	0%	-3%	2%	-4%	-14%	-44%	3446			
Census Total (000's)	37	294	442	213	223	547	580	435	282	234	127	31	3446			
Abs. Diff. (000's)	-17	-4	-6	-28	-13	-6	-2	-12	6	-9	-17	-14	-120			

Men	Census (000's)														Total	Census (000's)
	0	1 - 7	8 - 17	18 - 22	23 - 27	28 - 37	38 - 47	48 - 57	58 - 67	68 - 77	78 - 87	88+				
Toronto	-45%	0%	-2%	-12%	-7%	-3%	-4%	-2%	-5%	-3%	-1%	-28%	1197			
Durham	-44%	-1%	0%	-19%	-7%	-9%	3%	1%	6%	3%	-1%	11%	249			
York	-40%	6%	4%	-11%	-8%	-3%	4%	0%	4%	-5%	7%	-32%	359			
Peel	-43%	4%	0%	-15%	-14%	-5%	0%	-1%	-3%	-8%	-3%	5%	489			
Halton	-42%	4%	1%	-29%	-10%	-9%	1%	-3%	3%	5%	13%	3%	183			
Hamilton	-41%	1%	-1%	-6%	-10%	-7%	-4%	4%	6%	13%	14%	-18%	240			
Niagara	-37%	13%	7%	-1%	-8%	0%	-1%	-9%	1%	5%	-9%	-34%	199			
Wellington	-25%	-10%	20%	-26%	-24%	-20%	1%	11%	0%	0%	-20%	-23%	26			
Simcoe	-58%	7%	-3%	-19%	-19%	4%	-7%	-2%	0%	5%	-6%	-20%	121			
Peterborough	-66%	8%	4%	-24%	-38%	-7%	-4%	1%	24%	-6%	13%	-100%	21			
City of Kawartha Lakes	-44%	-4%	-2%	-10%	-35%	-12%	4%	1%	4%	-4%	-24%	-36%	34			
City of Guelph	-57%	-2%	-6%	16%	5%	-12%	1%	-12%	-4%	-3%	-9%	-36%	52			
City of Barrie	-39%	-4%	-3%	-11%	-12%	1%	-2%	4%	0%	0%	-10%	-51%	51			
City of Peterborough	-32%	8%	-2%	3%	-17%	11%	-2%	9%	9%	-5%	-8%	-61%	33			
City of Orillia	-26%	9%	14%	-25%	12%	-2%	-20%	-3%	-9%	9%	-19%	-61%	14			
Town of Orangeville	-6%	-7%	4%	-26%	-11%	1%	1%	-8%	-25%	-6%	-12%	-100%	12			
Total	-43%	2%	0%	-13%	-9%	-4%	-1%	-1%	-1%	-1%	-1%	-24%	3281			
Census Total (000's)	39	309	467	219	212	519	555	414	263	191	79	12	3281			
Abs. Diff. (000's)	-17	7	2	-28	-20	-21	-8	-6	-2	-1	-1	-3	-97			

3.3 Employed Labour Force and Employed

Table 4 compares TTS employed labour force and employment with data obtained from the 2001 Census. Data for municipalities with less than 40 records in the Census are not available. Seasonal variations might account for some differences in both employed labour force and employment. Distribution of employment labour force is similar to population distribution. Under representation in employment in areas external to GTA is expected, given that people living outside the survey area were not included.

Table 4: Difference in 2001 TTS Employed Labour Force and Employment Relative to the Census

Municipality	Employed Labour Force			Employment		
	Census	TTS	Diff.	Census	TTS	Diff.
1 - 16 Toronto	1228015	1192866	-3%	1327610	1339539	1%
17 Brock		5332	n/a		2636	n/a
18 Uxbridge	9225	8130	-12%	4925	4726	-4%
19 Scugog		10841	n/a		6535	n/a
20 Pickering	48125	45693	-5%	31640	31411	-1%
21 Ajax	39360	37210	-5%	23055	21216	-8%
22 Whitby	46260	45500	-2%	29915	28442	-5%
23 Oshawa	68935	65901	-4%	57840	53661	-7%
24 Clarington	35490	34891	-2%	16175	15694	-3%
25 Georgina	20010	19174	-4%	6885	7174	4%
26 East Gwillimbury	11750	11658	-1%	4210	4130	-2%
27 Newmarket	36100	35433	-2%	32765	32817	0%
28 Aurora	21780	20608	-5%	16350	14173	-13%
29 Richmond Hill	69155	67601	-2%	47445	42156	-11%
30 Whitchurch-Stouffville	12140	10525	-13%	7470	7567	1%
31 Markham	108710	103091	-5%	116590	121972	5%
32 King	10270	8928	-13%	5875	5467	-7%
33 Vaughan	97705	102897	5%	112575	117923	5%
34 Caledon	28820	27883	-3%	16435	14675	-11%
35 Brampton	176820	168816	-5%	122280	119398	-2%
36 Mississauga	329690	311130	-6%	348780	346800	-1%
37 Halton Hills	26830	24795	-8%	14605	13652	-7%
38 Milton	18405	16039	-13%	20170	16430	-19%
39 Oakville	77085	71097	-8%	68160	65299	-4%
40 Burlington	82280	76868	-7%	71005	67681	-5%
41 - 46 Hamilton	232240	230543	-1%	188370	182592	-3%
51 Grimsby	11280	10114	-10%	6300	5831	-7%
52 Lincoln	10045	8810	-12%	8545	7802	-9%
53 Pelham	7765	6659	-14%	3575	3073	-14%
54 Niagara-on-the-Lake	7240	4531	-37%	9310	8022	-14%
55 St. Catharines	60820	60793	0%	58205	60410	4%
56 Thorold	9075	9039	0%	7205	6835	-5%
57 Niagara Falls	38605	38907	1%	34585	34193	-1%
58 Welland	22485	22441	0%	19460	19748	1%
59 Port Colborne	8080	8735	8%	5935	6012	1%
60 Fort Erie	13130	12936	-1%	10725	11160	4%
61 West Lincoln		5656	n/a		3164	n/a
62 Wainfleet	3230	3226	0%	1305	1380	6%
70 Guelph	57390	55192	-4%	62315	49480	-21%
71 Puslinch		3030	n/a		1456	n/a
72, 78 Guelph/Eramosa	6265	5833	-7%	3170	2495	-21%
73 - 77 Wellington Centre		12387	n/a		6832	n/a
79 Erin		5845	n/a		2117	n/a
80 Orangeville	13150	14273	9%	10985	9535	-13%
81 Barrie	53405	52959	-1%	45690	48579	6%

Municipality	Employed Labour Force			Employment		
	Census	TTS	Diff.	Census	TTS	Diff.
82 Innisfil	14490	14144	-2%	4940	4960	0%
83 Bradford-West Gwillimbury	12435	12255	-1%	5810	5554	-4%
84 New Tecumseth	13480	14637	9%	15305	14852	-3%
85 Adjala-Tosorontio		5897	n/a		1029	n/a
86 Essa		8570	n/a		5140	n/a
87 Clearview		6617	n/a		2846	n/a
88 Springwater	8115	7852	-3%	3700	4519	22%
89 - 102 Kawartha Lakes	31200	28941	-7%	18155	16899	-7%
103 Peterborough	31790	33069	4%	36515	38143	4%
104, 105 Cavan-Millbrook-North Monaghan		3793	n/a		2450	n/a
106, 107 Otonabee-South Monaghan	3470	3481	0%	1820	1123	-38%
109, 110 Douro-Dummer	3270	3295	1%	875	1015	16%
111, 112 Smith-Ennismore-Lakefield	8005	7338	-8%	3700	3586	-3%
108 Asphodel-Norwood		1630	n/a		537	n/a
127 Collingwood	7520	7842	4%	9590	8850	-8%
128 Wasaga Beach		4759	n/a		1808	n/a
129 Tiny		4546	n/a		1051	n/a
130 Penetanguishene	3725	3381	-9%	3965	3558	-10%
131 Midland	6925	6909	0%	9460	9486	0%
132 Tay	4050	4196	4%	1120	1228	10%
133 Oro-Medonte		9289	n/a		3616	n/a
134 Severn	5460	4280	-22%	2960	2447	-17%
135 Ramara		3866	n/a		3516	n/a
136 Orillia	13330	13605	2%	14520	14872	2%

3.4 School Enrollment

Table 5 provides a comparison between the number of students reported in the TTS and the actual school enrollment in the fall of 2001 as reported by the Registrar's office of each institution. Table 6 provides the same information for Community Colleges. The TTS numbers were obtained by tabulating the expanded number of students by school name. For 2001, the TTS database identifies the school location by name. A large component of the part time enrollment at the Community Colleges is adult continuing education that could include credit and non-credit courses. In most cases, information was 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 adult education.

The total number of full time students in the TTS for the Universities of Toronto, York and Ryerson are all within 2% of the reported enrollment for those institutions. There is no obvious explanation for the slight over representation of the TTS student population for the University of Toronto at both the Scarborough and Erindale campuses and York's Glendon campus.

Possible explanations for the under representation of enrollment at Guelph, McMaster and Trent 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. **The use of expansion factors based on average response rates instead of census data would increase the expanded number of students in**

the TTS database for these institutions and provide for better analysis of their travel behaviour characteristics.

The enrollment 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. Therefore, discrepancies exist between the number of part time students reported by TTS and enrollment records provided by the institutes.

The TTS data appears to have over represented the student population for Seneca College's Don Mills campus and under represented that for the Newnham campus. This might be caused by the fact that Newnham campus is located at Don Mills Rd. and Finch Ave., and interviewers and/or respondents mistakenly selected Don Mills Campus.

Fleming, Conestoga and Georgian College are located on the edge of the survey area. Full time and part time students that live outside the survey are not included in the TTS data. The exclusion of the continuing education component of Fleming's part time enrollment as it is not directly comparable with the TTS data.

Table 5: University Enrollment (Fall 2001)

University Campus	Full-Time				Part-Time			
	Enrollment	TTS	Difference		Enrollment	TTS	Difference	
Toronto	43,641	44,561	920	2%	14,418	13,227	-1,191	-8%
Downsview	97	27			5	0		
Scarborough	4,567	5,247			1,462	878		
St. George	34,364	33,958			11,208	11,386		
Erindale	4,613	5,329			1,743	963		
York	30,466	30,167	-299	-1%	9,112	10,246	1,134	12%
Keele	29,041	28,470			8,341	9,071		
Glendon	1,355	1,584			355	1,046		
Miles Nadal	0	97			76	111		
Giffard Centre	70	16			0	18		
Osgoode	0	0			340	0		
Ryerson	14,136	14,321	185	1%	9,224	9,202	-22	0%
McMaster	14,104	11,325	-2,779	-20%	3,399	3,295	-104	-3%
Guelph	14,240	8,523	-5,717	-40%	3,579	1,440	-2,139	-60%
Brock	7,863	6,880	-983	-13%	4,353	2,289	-2,064	-47%
St Catherines	7,563	6,568			4,353	2,151		
Hamilton	300	312			0	138		
Trent	4,153	2,463	-1,690	-41%	1,210	503	-707	-58%
Peterborough	3,894	2,228			726	308		
Oshawa	259	235			484	195		
Total	128,603	118,240	-10,363	-8%	45,295	40,202	-5,093	-11%

Table 6: Community College Enrollment (Fall 2001)

College Campus	Full-Time				Part-Time			
	Enrollment	TTS	Difference		Enrollment	TTS	Difference	
George Brown	8,995	9,274	279	3%	15,205	5,708	-9,497	-62%
St. James	4,261	4,620			6,465	3,118		
Nightingale	512	461			590	298		
Casa Loma	3,235	3,722			6,102	1,922		
Hosp./Tourism	987	471			2,048	370		
Seneca College	16,058	14,156	-1,902	-12%	26,000	10,436	-15,564	-60%
North Yonge	0	69			(estimate)	96		
Newnham	8,704	4,040				3,247		
King	2,241	1,523				389		
Richmond Hill	0	14				131		
Seneca @ York	3,771	2,645				1,296		
Buttonville	67							
Don Mills	1,195	4,391				3,746		
Eglinton	0	435				316		
Gordon Baker	0	470				514		
Jane	80	427				463		
Yorkgate		142				238		

College Campus	Full-Time				Part-Time			
	Enrollment	TTS	Difference	%	Enrollment	TTS	Difference	%
OCAD	1,895	1,422	-473	-25%	522	525	3	1%
Humber	12,283	11,397	-886	-7%	13,569	8,018	-5,551	-41%
Lakeshore	2,185	612			1,112	230		
North Campus	10,098	10,785			12,457	7,788		
Sheridan	10,316	8,892	-1,424	-14%	11,260	6,306	-4,954	-44%
Davis	3,527	3,424			(estimate) 2,668	2,668		
Skills Training	49	766				736		
Trafalgar	6,740	4,702				2,902		
Centennial College	11,051	9,592	-1,459	-13%	10,667	5,492	-5,175	-49%
Warden Woods	2,722	2,461			1,987	1,201		
Progress	5,439	5,212			6,224	3,023		
Ashtonbee	2,196	1,289			1,710	851		
The Centre	694	630			746	417		
Mohawk	8,646	6,053	-2,593	-30%	12,462	4,972	-7,490	-60%
Brantford	706	357				54		
IAHF	1,323	54				36		
Fennell	6,194	5,466				4,575		
Stoney Creek	423	176				307		
Fleming College	4,783	3,769	-1,014	-21%	423	1,306	883	209%
Lindsay	1,427	1,313			103	102		
Peterborough	3,326	2,456			300	1,204		
Lakeshore					20			
Georgian College	5,166	4,876	-290	-6%	10,986	2,146	-8,840	-80%
Barrie (main)	4,205	4,457			6,354	1,616		
Collingwood	0	0			269	50		
Midland	0	74			745	116		
Orangeville	0	0			180	18		
Orillia (main)	677	345			689	346		
Niagara	4,745	4,328	-417	-9%	2,417	2,922	505	21%
Glendale	1,303	1,348			883	1,333		
Welland	3,093	2,708			1,404	1,349		
Niagara	349	272			130	240		
Conestoga	4,921	721	-4,200	-85%	11,744	925	-10,819	-92%
Doon	4,672	420			7,007	332		
Guelph	41	88			1,590	483		
Waterloo	208	213			3,147	110		
Durham	4,862	4,353	-509	-10%	7,580	3,643	-3,937	-52%
Oshawa								
Ajax & Pickering	4,600	3,966			6,020	2,830		
Skills Training	262	387			1,040	813		
Uxbridge					520			
Total	93,721	78,833	-14,888	-16%	122,835	52,399	-70,436	-57%

3.5 Traffic Volumes

Validation of the TTS auto driver trip data was performed using expanded trip matrices extracted from the TTS database. The trip tables are based on the extended 1996 GTA traffic zone system and were assigned to the 2001 GTA road network, maintained at the Data Management group, using emme/2. The resulting link volumes were aggregated along inter-regional boundaries and compared with actual traffic counts collected as part of the 2001 Cordon Count program. Comparisons for smaller screen lines have not been included due to possible discrepancies between simulated and actual trip routings that could distort the comparison. There are other problems associated with the use of cordon counts as a base for comparison. 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 2001, the TTS was done in the fall of 2001.
2. The TTS represents average weekday conditions over a 3-month period for all locations whereas the counts are made are of individual one-day counts taken on different days at different locations. Traffic volumes can vary substantially from one day to another so that there is no guarantee as to how accurately the count at any one station reflects the true average daily traffic for that station.
3. The TTS data is aggregated on the basis of reported trip time. Most respondents report trip times to the nearest 10 or 15 minutes. Significant peaks occur right on each hour meaning that the 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 is 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 relative location of its origin and destination. A 15-minute offset has been used in order to average out and minimize this difference.
5. The cordon count data is for automobiles excluding taxis. Vehicles are classified by their visual appearance with the automobile category including vans and pick-up trucks that do not have commercial advertising on the side and which are not obviously being used for commercial purposes. The TTS data is not based on vehicle type although most commercially related travel is excluded.

Chart 1, Chart 2 and Table 7 show the comparison for the a.m. peak period. The differences are minor given the limitations of the comparison as previously noted. There is no evidence of any measurable under reporting of auto driver trips in the peak period.

Chart 8 and Table 8 show the 13-hour daily traffic volumes. The volumes given by the TTS are around 30% lower than those given by the cordon counts. This discrepancy is similar in magnitude to the differences observed in the validation of the 1986, 1991 and 1996 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 is used for the analysis of off peak and total daily travel.**

Chart 1: A.M. Peak Period Traffic Volumes in Peak Direction

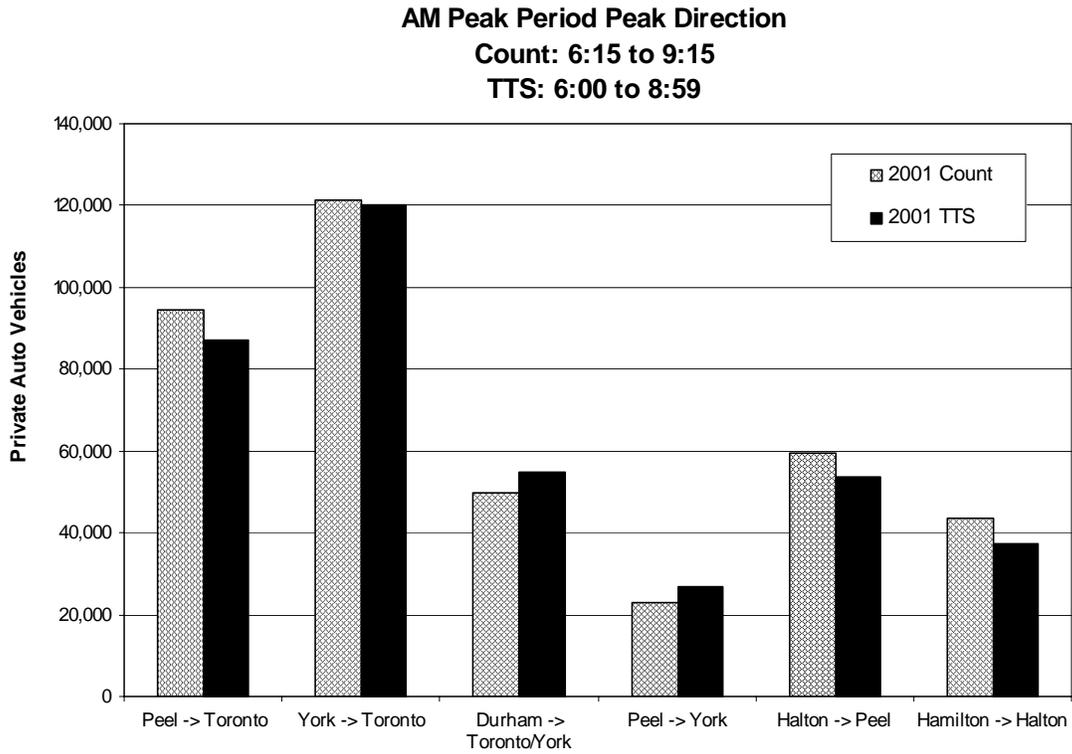


Chart 2: A.M. Peak Period Traffic Volumes in Reverse Direction

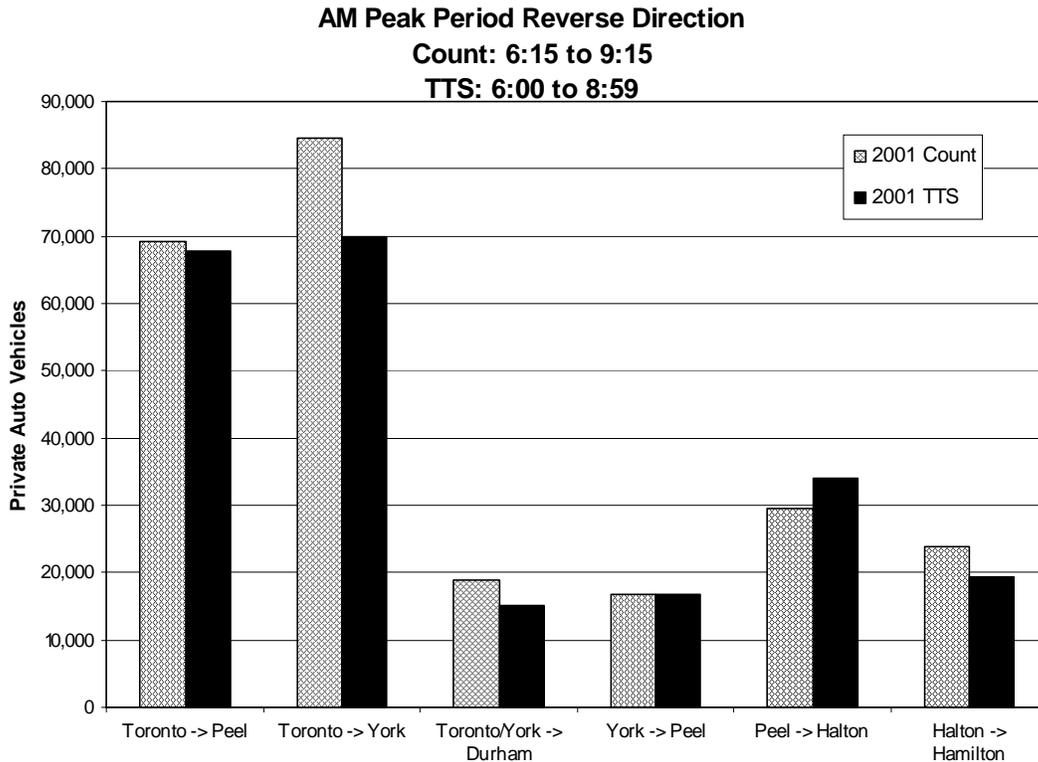


Chart 3: 13 Hour Traffic Volumes

13 Hour Traffic Volumes
6 a.m. to 7 p.m.

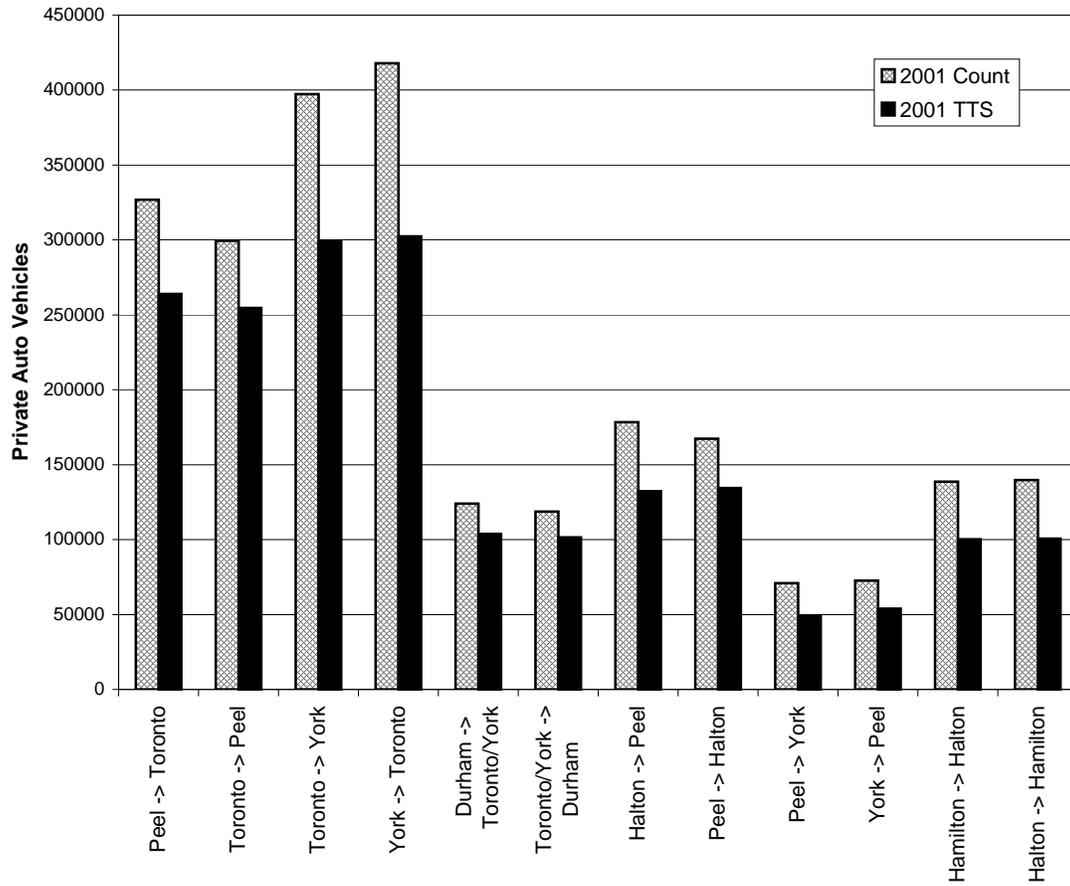


Table 7: A.M. Peak Period Traffic Volumes

	Peak Direction		
	Cordon Count	TTS	Difference
Peel -> Toronto	94,565	87,020	-8%
York -> Toronto	121,299	120,328	-1%
Durham -> Toronto/York	49,660	54,902	11%
Peel -> York	22,986	26,865	17%
Halton -> Peel	59,444	53,683	-10%
Hamilton -> Halton	43,449	37,479	-14%
Total	391,403	380,277	-3%

	Reverse Direction		
	Cordon Count	TTS	Difference
Toronto -> Peel	69,212	67,742	-2%
Toronto -> York	84,581	69,854	-17%
Toronto/York -> Durham	18,822	15,161	-19%
York -> Peel	16,776	16,799	0%
Peel -> Halton	29,423	33,992	16%
Halton -> Hamilton	23,751	19,289	-19%
Total	242,565	222,837	-8%

Table 8: 13 Hour Traffic Volumes (6 a.m. to 7 p.m.)

	Cordon Counts	TTS	Difference
Peel -> Toronto	326,753	263,922	-19%
Toronto -> Peel	299,362	254,685	-15%
Toronto -> York	397,294	299,350	-25%
York -> Toronto	417,951	302,436	-28%
Durham -> Toronto/York	124,067	103,775	-16%
Toronto/York -> Durham	118,795	101,574	-14%
Halton -> Peel	178,296	132,351	-26%
Peel -> Halton	167,399	134,515	-20%
Peel -> York	70,970	48,808	-31%
York -> Peel	72,671	53,893	-26%
Hamilton -> Halton	138,592	100,282	-28%
Halton -> Hamilton	139,656	100,627	-28%
Total	2,451,806	1,896,218	-23%

3.6 Municipal Transit Ridership

Comparisons between TTS data and municipal transit ridership were done on the preliminary version of the 2001 TTS database. Table 9 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. The TTC boarding information is based on one-day counts taken on a rotating basis throughout the TTC system. 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. The TTS data is based on trip start time, not actual boarding time. Comparisons are shown for both the a.m. peak period and total daily boardings. The a.m. peak includes all TTS trips with a start time prior to 9 a.m. 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. 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 numbers given for 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. TTC staff will be performing a more detailed validation of the TTS data using computer simulations to emulate the logical choice of route for each transit trip in the TTS database. The simulated routings will be compared with the reported routings for individual trips and the total simulated volumes compared with the TTC counts.

Daily streetcar ridership appears to be under reported on all routes, as was the case in the 1986 and 1996 TTS. 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.

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 Lawrence-Donway bus, with the count information collected over 1 year prior to the TTS and seasonal variation should be considered. It is possible that measurable declines in ridership have occurred on a number of routes so that the actual number of boardings at the time of the survey is less than that given by the TTC counts. It is also possible that there is some under reporting of the number of bus boardings in the TTS due to incomplete routing information. 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 callbacks 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 by the TTC should provide better insight into route-by-route variations and the reliability of the TTS data for analysis at the individual route level. The total number of daily TTC bus boardings may be slightly under reported.

The TTC counts for subway ridership are based on platform counts. The TTS data considers transfer between subway lines as two separate boardings. The TTS data appears to slightly under represent total daily subway ridership but not significantly given the constraints of the comparison. Ridership on the Scarborough RT is under represented during A.M. peak and 24-hour periods, but it is possible that many survey respondents did not distinguish between the RT and the subway or ignored the transfer between the two. The reason for the difference in peak period volumes is not readily apparent.

Daily streetcar ridership appears to be significantly under reported on all routes as was the case in the 1996 TTS. 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. The number of peak period streetcar trips closely matches the TTC counts both in total and on all the major routes.

Table 9: TTC Boardings

Route Code	Route Name	A.M. Peak Boardings				Daily Boardings				Date
		Count	TTS	Difference		Count	TTS	Difference		
T593	University									
T594	Yonge	157,313	173,072	15,759	10%	601,090	558,902	-42,188	-7%	
T596	Bloor - Danforth	107,738	121,674	13,936	13%	450,486	419,655	-30,831	-7%	
T597	Scarborough RT	10,725	10,365	-360	-3%	40,490	34,664	-5,826	-14%	
	Total Rail	275,776	305,111	29,335	11%	1,092,066	1,013,221	-78,845	-7%	
T501	Queen	7,409	8,781	1372	19%	45,059	35,466	-9593	-21%	4/25/00
T502	Downtowner	1,162	549	-613	-53%	4,253	1,498	-2755	-65%	12/11/01 *
T503	Kingston Rd	1,041	834	-207	-20%	2,028	1,919	-109	-5%	12/11/01 *
T504	King	11,280	11,639	359	3%	50,219	39,397	-10822	-22%	1/10/00
T505	Dundas	6,499	5,693	-806	-12%	35,984	24,622	-11362	-32%	5/13/99
T506	Carlton	7,085	7,439	354	5%	40,299	31,867	-8432	-21%	1/24/00
T508	Lake Shore	478	223	-255	-53%	1,132	738	-394	-35%	2/1/00
T509	Harbourfront	748	885	137	18%	7,341	3,710	-3631	-49%	7/20/01
T510	Spadina	5,037	4,273	-764	-15%	40,519	22,939	-17580	-43%	1/26/01
T511	Bathurst	2,920	2,712	-208	-7%	14,811	10,523	-4288	-29%	12/5/01 *
T512	St. Clair	6,622	5,892	-730	-11%	32,156	21,632	-10524	-33%	12/7/01 *
	Total Streetcar	50,281	48,920	-1361	-3%	273,801	194,311	-79490	-29%	
T005	Avenue Rd	726	813	87	12%	2,964	2,529	-435	-15%	2/8/00
T006	Bay	3,754	2,774	-980	-26%	11,707	8,458	-3249	-28%	2/15/00
T007	Bathurst	6,463	5,320	-1143	-18%	27,332	18,782	-8550	-31%	10/20/00
T008	Broadview	136	562	426	313%	917	2,060	1143	125%	3/3/00
T009	Bellamy	866	1,150	284	33%	3,256	3,412	156	5%	1/29/02
T010	Van Horne	1,174	990	-184	-16%	3,283	2,641	-642	-20%	3/30/00
T011	Bayview	1,593	1,502	-91	-6%	7,654	5,625	-2029	-27%	10/12/00
T012	Kingston Rd	1,985	2,403	418	21%	6,730	7,038	308	5%	12/13/01 *
T014	Glencairn	776	634	-142	-18%	1,966	1,507	-459	-23%	10/30/01 *
T015	Evans	881	883	2	0%	3,493	2,396	-1097	-31%	2/22/01
T016	McCowan	2,075	2,573	498	24%	9,912	9,066	-846	-9%	12/15/00
T017	Birchmount	3,548	2,993	-555	-16%	11,534	9,188	-2346	-20%	11/7/01 *
T020	Cliffside	1,202	1,418	216	18%	6,198	4,715	-1483	-24%	10/11/00
T021	Brimley	2,006	2,451	445	22%	8,232	7,928	-304	-4%	4/2/01
T022	Coxwell	1,310	1,248	-62	-5%	6,825	5,257	-1568	-23%	2/8/00
T023	Dawes	1,561	1,492	-69	-4%	5,860	5,486	-374	-6%	10/11/01 *
T024	Victoria Park	5,978	5,678	-300	-5%	22,975	19,710	-3265	-14%	9/14/01 *
T025	Don Mills	7,310	8,793	1483	20%	36,335	32,455	-3880	-11%	5/16/00
T026	Dupont	914	678	-236	-26%	4,387	2,327	-2060	-47%	3/7/01
T028	Davisville	552	375	-177	-32%	1,130	1,067	-63	-6%	10/12/00
T029	Dufferin	8,661	8,452	-209	-2%	41,352	31,860	-9492	-23%	1/14/02
T030	Lambton	841	789	-52	-6%	2,958	2,806	-152	-5%	11/22/00
T031	Greenwood	959	1,116	157	16%	4,033	3,739	-294	-7%	9/27/00
T032	Eglinton West	9,466	8,593	-873	-9%	37,363	28,908	-8455	-23%	3/6/00
T033	Forest Hill	187	104	-83	-44%	658	372	-286	-43%	5/1/01
T034	Eglinton East	7,314	8,028	714	10%	26,200	26,451	251	1%	3/23/01
T035	Jane	9,041	9,167	126	1%	37,552	31,164	-6388	-17%	10/16/00
T036	Finch West	10,116	9,325	-791	-8%	38,298	31,453	-6845	-18%	12/17/99
T037	Islington	3,399	3,426	27	1%	15,223	13,264	-1959	-13%	3/9/01

Route Code	Name	A.M. Peak Boardings				Daily Boardings				Date
		Count	TTS	Difference		Count	TTS	Difference		
T038	Highland Creek	893	425	-468	-52%	4,552	1,823	-2729	-60%	2/6/01
T039	Finch East	10,619	10,505	-114	-1%	42,554	35,365	-7189	-17%	1/12/01
T040	Junction	1,122	427	-695	-62%	5,208	2,878	-2330	-45%	11/15/00
T041	Keele	5,693	5,082	-611	-11%	23,894	18,201	-5693	-24%	4/14/00
T042	Cummer	2,097	2,332	235	11%	7,229	7,028	-201	-3%	12/6/00
T043	Kennedy	2,870	3,181	311	11%	12,704	11,402	-1302	-10%	11/15/00
T044	Kipling South	1,786	1,440	-346	-19%	6,094	4,505	-1589	-26%	10/11/01 *
T045	Kipling	4,648	5,026	378	8%	17,051	16,305	-746	-4%	2/1/02
T046	Martin Grove	2,486	1,892	-594	-24%	9,664	7,105	-2559	-26%	5/15/01
T047	Lansdowne	4,283	4,052	-231	-5%	15,329	12,636	-2693	-18%	12/14/00
T048	Rathburn	789	624	-165	-21%	2,355	1,987	-368	-16%	2/22/01
T049	Bloor West	1,091	851	-240	-22%	3,210	2,213	-997	-31%	9/19/01 *
T050	Burnhamthorpe	930	1,318	388	42%	3,315	3,353	38	1%	9/18/01 *
T051	Leslie	1,137	1,187	50	4%	4,262	3,419	-843	-20%	11/30/00
T052	Lawrence West	4,475	7,140	2665	60%	20,192	22,914	2722	13%	12/17/01 *
T053	Steeles East	4,971	5,669	698	14%	20,602	19,111	-1491	-7%	3/29/01
T054	Lawrence East	7,483	6,531	-952	-13%	33,654	23,405	-10249	-30%	2/9/01
T055	Warren Park	310	156	-154	-50%	718	381	-337	-47%	11/22/01 *
T056	Leaside	1,126	817	-309	-27%	3,433	2,361	-1072	-31%	2/8/00
T057	Midland	3,850	3,431	-419	-11%	12,424	11,407	-1017	-8%	2/29/00
T058	Malton	3,183	1,992	-1191	-37%	13,886	6,579	-7307	-53%	11/23/01 *
T059	Maple Leaf	1,009	740	-269	-27%	3,458	1,912	-1546	-45%	2/2/99
T060	Steeles West	6,252	6,253	1	0%	24,024	22,199	-1825	-8%	5/1/00
T061	Avenue Rd North	955	913	-42	-4%	3,764	2,657	-1107	-29%	5/24/01
T062	Mortimer	943	587	-356	-38%	3,826	2,108	-1718	-45%	3/3/00
T063	Ossington	4,248	3,773	-475	-11%	20,146	13,819	-6327	-31%	4/7/00
T064	Main	1,460	1,116	-344	-24%	5,771	4,725	-1046	-18%	11/28/00
T065	Parliament	616	590	-26	-4%	2,784	2,260	-524	-19%	11/28/00
T066	Prince Edward	1,123	1,158	35	3%	4,037	3,597	-440	-11%	11/14/00
T067	Pharmacy	1,729	1,425	-304	-18%	5,892	4,534	-1358	-23%	11/29/00
T068	Warden	4,396	4,037	-359	-8%	15,685	14,009	-1676	-11%	11/27/00
T069	Warden South	1,591	1,572	-19	-1%	6,055	4,783	-1272	-21%	11/6/01 *
T070	O'Connor	1,733	1,547	-186	-11%	8,061	5,728	-2333	-29%	11/6/01 *
T071	Runnymede	717	1,034	317	44%	2,336	3,432	1096	47%	5/1/01
T072	Pape	1,901	1,600	-301	-16%	8,448	6,044	-2404	-28%	9/15/00
T073	Royal York	2,118	2,164	46	2%	8,423	7,965	-458	-5%	2/23/01
T074	Mt Pleasant	270	434	164	61%	1,140	1,279	139	12%	11/28/00
T075	Sherbourne	1,117	976	-141	-13%	4,727	3,688	-1039	-22%	12/11/00
T076	Royal York South	2,319	2,714	395	17%	8,401	7,859	-542	-6%	2/23/01
T077	Swansea	560	572	12	2%	2,301	1,890	-411	-18%	5/1/01
T078	St Andrews	576	486	-90	-16%	1,927	1,708	-219	-11%	9/25/01 *
T079	Scarlett Rd	1,875	1,347	-528	-28%	6,634	4,404	-2230	-34%	4/3/00
T080	Queensway	522	408	-114	-22%	1,983	1,393	-590	-30%	2/19/02
T081	Thornccliffe Park	1,874	1,111	-763	-41%	7,222	4,468	-2754	-38%	1/11/00
T082	Rosedale	405	382	-23	-6%	1,841	1,320	-521	-28%	12/11/00
T083	Jones	700	568	-132	-19%	1,982	1,673	-309	-16%	1/7/02
T084	Sheppard West	4,508	4,844	336	7%	15,800	14,325	-1475	-9%	2/5/02
T085	Sheppard East	7,567	8,500	933	12%	36,543	29,832	-6711	-18%	5/8/00
T086	Scarborough	4,221	2,878	-1343	-32%	14,901	9,702	-5199	-35%	11/9/00
T087	Cosburn	2,149	1,964	-185	-9%	7,864	6,381	-1483	-19%	6/7/01
T088	South Leaside	1,215	918	-297	-24%	3,510	2,879	-631	-18%	2/7/00
T089	Weston	2,935	2,950	15	1%	12,157	9,983	-2174	-18%	12/12/00
T090	Vaughan	1,948	1,389	-559	-29%	6,695	4,514	-2181	-33%	2/7/00
T091	Woodbine	1,569	1,380	-189	-12%	4,752	4,061	-691	-15%	12/11/00
T092	Woodbine South	667	496	-171	-26%	2,426	1,723	-703	-29%	2/22/01
T094	Wellesley	2,302	2,298	-4	0%	10,810	7,429	-3381	-31%	2/11/00
T095	York Mills	5,792	7,304	1512	26%	24,107	24,866	759	3%	2/2/01

Route Code	Name	A.M. Peak Boardings				Daily Boardings				Date
		Count	TTS	Difference		Count	TTS	Difference		
T096	Wilson	5,809	6,733	924	16%	21,514	21,828	314	1%	5/17/01
T097	Yonge	712	886	174	24%	2,295	2,755	460	20%	11/14/00
T098	Willowdale-Senlac	614	523	-91	-15%	1,846	1,496	-350	-19%	11/8/00
T099	Arrow Rd	132	0	-132	-100%	132	0	-132	-100%	3/3/98
T100	Flemingdon Park	3,632	3,183	-449	-12%	14,479	10,392	-4087	-28%	2/2/00
T102	Markham Rd	4,379	4,594	215	5%	18,710	15,197	-3513	-19%	4/3/01
T103	Mt Pleasant North	716	844	128	18%	2,107	2,076	-31	-1%	4/14/00
T104	Faywood	775	812	37	5%	3,157	2,368	-789	-25%	4/2/01
T105	Dufferin North	763	1,272	509	67%	2,517	3,707	1190	47%	10/30/01 *
T106	York University	1,201	1,536	335	28%	6,428	5,963	-465	-7%	3/6/01
T107	Keele North	1,683	1,323	-360	-21%	4,346	4,266	-80	-2%	3/7/01
T108	Downsview	1,769	1,290	-479	-27%	6,162	4,388	-1774	-29%	2/18/00
T109	Ranee	1,066	815	-251	-24%	4,557	2,944	-1613	-35%	11/29/00
T110	Islington South	2,665	2,439	-226	-8%	8,674	7,115	-1559	-18%	2/14/01
T111	East Mall	1,172	1,163	-9	-1%	5,332	4,190	-1142	-21%	1/11/00
T112	West Mall	2,349	1,807	-542	-23%	7,814	6,280	-1534	-20%	11/30/00
T113	Danforth Rd	1,191	832	-359	-30%	4,263	3,799	-464	-11%	11/14/00
T115	Silver Hills	237	173	-64	-27%	612	398	-214	-35%	12/11/01 *
T116	Morningside	3,827	4,099	272	7%	18,410	12,843	-5567	-30%	10/5/00
T117	Alness	1,285	672	-613	-48%	2,733	1,746	-987	-36%	10/19/00
T120	Calvington	193	81	-112	-58%	325	170	-155	-48%	11/14/00
T122	Graydon Hall	1,047	652	-395	-38%	2,959	1,605	-1354	-46%	1/7/02
T123	Shorncliffe	1,341	950	-391	-29%	6,006	3,714	-2292	-38%	12/15/00
T124	Sunnybrook	699	734	35	5%	2,946	2,444	-502	-17%	9/15/00
T125	Drewry	900	702	-198	-22%	2,667	2,008	-659	-25%	5/23/01
T126	Christie	694	628	-66	-10%	2,856	2,238	-618	-22%	4/14/00
T127	Davenport	549	488	-61	-11%	2,185	1,667	-518	-24%	11/15/00
T129	McCowan North	3,502	3,257	-245	-7%	13,804	12,008	-1796	-13%	11/22/01 *
T130	Middlefield	904	634	-270	-30%	2,591	1,922	-669	-26%	11/7/01
T131	Nugget	1,888	1,442	-446	-24%	6,452	4,064	-2388	-37%	2/12/02
T132	Milner	901	695	-206	-23%	2,357	1,928	-429	-18%	6/6/00
T133	Neilson	1,480	1,556	76	5%	6,886	6,134	-752	-11%	2/6/01
T134	Progress	1,797	1,917	120	7%	7,592	7,007	-585	-8%	1/29/02
T135	Gerrard	661	459	-202	-31%	3,024	1,522	-1502	-50%	11/6/01 *
T139	Huntingwood	931	460	-471	-51%	2,626	1,026	-1600	-61%	2/5/01 *
T141	DT/Mt Pleasant Exp.	97	95	-2	-2%	145	140	-5	-3%	10/23/01 *
T142	DT/Avenue Rd Exp.	186	245	59	32%	289	455	166	57%	10/23/01 *
T143	DT/Beach Exp.	175	85	-90	-51%	313	150	-163	-52%	10/23/01 *
T144	DT/Don Valley Exp.	320	285	-35	-11%	516	502	-14	-3%	10/30/01 *
T160	Bathurst North	809	740	-69	-9%	3,615	2,297	-1318	-36%	9/13/01 *
T161	Rogers Rd	1,586	1,242	-344	-22%	7,006	3,844	-3162	-45%	6/6/01
T162	Lawrence-Donway	42	119	77	183%	298	522	224	75%	9/15/00
T165	Weston Rd North	4,713	2,444	-2269	-48%	17,086	7,581	-9505	-56%	10/4/01 *
T168	Symington	1,966	1,333	-633	-32%	7,777	4,300	-3477	-45%	12/12/01 *
T191	Highway 27 Rocket	1,417	1,104	-313	-22%	2,690	3,090	400	15%	4/19/00
T192	Airport Rocket	156	40	-116	-74%	1,000	488	-512	-51%	5/1/01
T196	York U. Rocket	2,008	2,028	20	1%	10,272	7,237	-3035	-30%	3/6/01
T197	North Yonge	276	103	-173	-63%	1,058	408	-650	-61%	11/14/00
	Total Bus	303,733	289,750	-13983	-5%	1,202,519	975,413	-227106	-19%	
	Total TTC	629,790	643,781	13,991	2%	2,568,386	2,182,945	-385441	-15%	
	Blue night services						1463	1463	N/A	
T498	Wheeltrans					4745	4281	-464	-10%	
	Other/Unknown									

Table 10 presents a comparison of the transit routes operated by Mississauga transit and TTS data. The Mississauga transit boardings are one-day counts collected on weekdays from January to May 2001, which do not coincide with the conduct of TTS. Caution should be used when making comparisons, as seasonal variations should be considered. Total daily boardings as reported by the TTS are within 20% of the counts provided by Mississauga transit. The TTS also collected data for several new routes and one trial route, however at the time of validation Mississauga counts were unavailable for comparison.

Table 11 contains municipal comparisons of York Region Transit (YRT) and the TTS data. Average weekday revenue ridership counts for the month of October were used to compare with the TTS data. Over reporting occurred in all total daily boardings for the YRT municipalities except in Aurora, with Richmond Hill having the greatest difference. This might be caused by the service changes to absorbed and over-lapping routes as a result of the 2001 amalgamation of municipal transit authorities in York Region.

Tables 12 through 17 contain comparisons for other municipal transit operators in the GTA. Revenue ridership information that was available at the time of validation was provided by Hamilton, Brampton, Whitby, Oshawa, Oakville and Burlington transit authorities. Individual route counts are derived from the October and November totals and calculated according to the number of service days during the two months. 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. In general the TTS totals are slightly higher than operator counts possibly due to the comparison of revenue ridership that can contain limited service weekend counts. Accurate fare box reporting is dependent upon drivers correctly registering all revenue to assigned routes. Discrepancies in reported ridership by transit authorities and the TTS data could possibly be a result of the method of collection.

In the case of Hamilton Transit, there is a slight over-reporting by the TTS of 14%. The greatest percentage difference in the Dundas Local route can be attributed to inaccurate fare box reporting. A review of the revenue ridership during the rest of the year indicates much higher counts than those reported for October and November 2001. It is possible that there is a flaw in the counts for this particular route as it is a feeder route in an established neighbourhood.

Although, the TTS tends to over report for Oakville, Burlington, Oshawa and Whitby, most absolute differences for individual routes are within 600 of the reported ridership.

(Total revenue ridership counts for October and November were provided by the Ajax Pickering transit authority but no individual route counts available. Data not shown.)

Table 10: Mississauga Transit Boardings

Route Code	Name	Daily Boardings			
		Count	TTS	Difference	
MS01	Dundas	11483	8305	-3178	-28%
MS03	Bloor	7586	6442	-1144	-15%
MS04	Applewood	1055	664	-391	-37%
MS05	Dixie	5460	4804	-656	-12%
MS06	Credit Woodlands	2070	1613	-457	-22%
MS07	Airport	3614	3095	-519	-14%
MS08	Cawthra	2550	2398	-152	-6%
MS09	Streetsville	2638	2152	-486	-18%
MS10	Meadowvale	3586	2891	-695	-19%
MS11	Malton	1357	1089	-268	-20%
MS12	Rexdale	469	338	-131	-28%
MS13	Clakson	4765	2964	-1801	-38%
MS15	Woodbine Race Track Exp.		73	73	N/A
MS16	Malton East	901	570	-331	-37%
MS17	Dixie Ind. South	473	670	197	42%

Continued Mississauga Transit Boardings

Route Code	Name	Daily Boardings			
		Count	TTS	Difference	
MS18	Airport Indust.	1170	934	-236	-20%
MS19	Hurontario	20888	14202	-6686	-32%
MS20	Rathburn	3296	3210	-86	-3%
MS22	Humber College	1849	1621	-228	-12%
MS23	Lakeshore	3707	3119	-588	-16%
MS25	Britannia Industrial	728	360	-368	-51%
MS26	Bunhamthorpe	13155	10593	-2562	-19%
MS27	Matheson	711	698	-13	-2%
MS28	Confederation	1565	1448	-117	-7%
MS29	Sheridan Park	775	414	-361	-47%
MS30	Malton West	427	317	-110	-26%
MS32	Rick Hansen S.S.- Creditview	71	98	27	38%
MS33	Rick Hansen S.S.- Sq. One	98	130	32	33%
MS34	Eglinton West	2543	2197	-346	-14%
MS38	Creditview	2400	2764	364	15%
MS39	Britannia	991	1218	227	23%
MS40	Westwood	1400	906	-494	-35%
MS41	Port Credit	39	403	364	933%
MS42	Derry	3378	2612	-766	-23%
MS44	Mississauga Road	2142	1342	-800	-37%
MS45	Winston Churchill	232	680	448	193%
MS47	Collegeway	480	221	-259	-54%
MS48	Erin Mills Parkway	3449	3008	-441	-13%
MS49	Churchill Meadows		345	345	N/A
MS51	Tomken	2112	3045	933	44%
MS52	Meyerside Industrial	1224	215	-1009	-82%
MS53	Kennedy	748	1315	567	76%
MS57	Airport Infield		80	80	N/A
MS61	Mavis	956	1044	88	9%
MS63	Cooksville Shuttle		97	97	N/A
MS65	Sandalwood	436	136	-300	-69%
MS67	Heartland	964	553	-411	-43%
MS68	Bristol	654	399	-255	-39%
MS70	Orlando	397	244	-153	-39%
MS71	Philip Pocock S.S.- Tomken	166	45	-121	-73%
MS72	Father Goetz S.S.- Sq. One	226	29	-197	-87%
MS73	Father Goetz S.S.- Central Pkwy.	87		-87	
MS75	St. Francis Xavier S.S.	128	32	-96	-75%
MS77	Philip Pocock S.S.- Sq. One	47	46	-1	-2%
MS79	Mount Carmel S.S.	45	32	-13	-29%
MS81	Dundas Exp.	3791	2708	-1083	-29%
MS82	Financial Exp.	161	514	353	219%
MS85	Dixie Exp.	1532	392	-1140	-74%
MS86	Burnhamthorpe Exp.	3094	2075	-1019	-33%
MS88	City Centre Shuttle		169	169	N/A
MS89	Meadowvale Exp.	1919	1528	-391	-20%
MS90	Streetsville S.S.- Falcon	71	87	16	23%
MS91	Streetsville S.S.- Sq. One	28	0	-28	-100%
MS97	Mississauga School Special		317	317	N/A
MS99	Mississauga Route Unknown		307	307	N/A
Total Mississauga Transit		132287	106317	-25970	-20%

Table 11: York Region Transit Boardings

Route Code	Name	Daily Boardings			
		Count	TTS	Difference	
VA01	Woodbridge	115	166	51	44%
VA02	Pine Valley	80	162	82	103%
VA03	Islington Ave.	98	180	82	84%
VA04	Major Mackenzie	488	736	248	51%
VA05	Clark	1751	1681	-70	-4%
VA06	Ansley Grove	54	61	7	13%
VA07	Martin Grove	256	244	-12	-5%
VA08	York U (Thornhill)	184	198	14	8%
VA10	York U (Woodbridge)	52	159	107	206%
VA27	Hwy 27	18	92	74	411%
VA77	Hwy 7/Centre	1292	2216	924	72%
VA99	Vaughan Route Unknown		45	45	N/A
Total Vaughan Transit		4388	5940	1552	35%
MA01	Hwy 7	3768	3126	-642	-17%
MA02	Milliken/ 14th Ave.	2432	2790	358	15%
MA03	Thornhill Local	580	587	7	1%
MA04	Unionville Local	530	630	100	19%
MA08	Kennedy Rd.	231	603	372	161%
MA09	Markham Rd.	83	385	302	364%
MA90	Business Exp.	145	182	37	26%
MA91	Unionville Exp.	158	154	-4	-3%
MA92	Markham Exp.	363	519	156	43%
MA93	Unionville Go Shuttle	132	93	-39	-30%
MA94	Markham Go Shuttle	64	189	125	195%
MA95	Langstaff Go Shuttle	11	66	55	500%
MA96	Business Shuttle	1.6	42	40	2525%
MA97	Markham School Special		83	83	N/A
MA99	Markham Route Unknown		232	232	N/A
Total Markham Transit		8499	9681	1182	14%
RH01	Mill Pond/Beverly Acres	438	668	230	53%
RH02	Newkirk/Langstaff	868	1026	158	18%
RH03	Trench	485	785	300	62%
RH04	Oak Ridges	223	210	-13	-6%
RH05	16th Ave/Rutherford	575	1173	598	104%
RH06	Weldrick	272	669	397	146%
RH07	Major Mackenzie	200	554	354	177%
RH08	Bathurst	171	328	157	92%
RH97	Richmond Hill Community Bus	115	79	-36	-31%
RH99	Richmond Hill Route Unknown		16	16	N/A
Total Richmond Hill Transit		3347	5508	2161	65%
AU01	Aurora North	55	16	-39	-71%
AU02	Aurora South	135	133	-2	-1%
AU91	Aurora North Go Shuttle	35	42	7	20%
AU92	Aurora South Go Shuttle	52	32	-20	-38%
Total Aurora Transit		277	223	-54	-19%
NE04	*Upper Canada Mall - London				
NE06	Glenway - Summerhill	330	544	159	65%
NE05	Davis/Gorham/Eagle/Mulock	1704	2013	309	18%
NE33	Leslie-Prospect-Bayview	131	489	358	273%
NE97	Newmarket School Special	237	83	-154	-65%
NE99	Newmarket Route Unknown		31	31	N/A
Total Newmarket Transit		2402	3160	758	32%
Total York Region Transit		18913	24512	5599	30%

* Counts for Upper Canada Mall and Sherway were combined for comparison.

Table 12: Hamilton Transit Boardings

Route		Daily Boardings			
Code	Name	Count	TTS	Difference	
HA01	King	8602	11168	2566	30%
HA02	Barton	8804	8362	442	5%
HA03	Cannon	1732	1324	-408	-24%
HA04	Bayfront	2642	3248	606	23%
HA05	Delaware	7882	7974	92	1%
HA06	*Aberdeen				
HA07	Locke	1184	1684	500	42%
HA08	York	504	524	20	4%
HA10	Beeline	3604	1847	-1757	-49%
HA11	Parkdale	1066	1465	399	37%
HA16	Ancaster	294	253	-41	-14%
HA21	Upper Kenilworth	2413	2287	-126	-5%
HA22	Upper Ottawa	2049	1643	-406	-20%
HA23	Upper Gage	2973	2551	-422	-14%
HA24	Upper Sherman	1891	1873	-18	-1%
HA25	*Upper Wentworth				
HA26	Upper Wellington	3897	5049	1152	30%
HA27	Upper James	2720	2701	-19	-1%
HA28	Hamilton Airport Shuttle		30	30	N/A
HA33	Sanatorium	1188	1338	150	13%
HA34	Upper Paradise	1337	1732	395	30%
HA35	College	617	3417	2800	454%
HA41	Mohawk	3432	5424	1992	58%
HA43	Stone Church	761	505	-256	-34%
HA51	University	808	1484	676	84%
HA52	Dundas Local	17	781	764	4469%
HA55	Stoney Creek Central	1048	1119	71	7%
HA58	Stoney Creek Local	84	355	271	323%
HA90	Hamilton School Extra		204	204	N/A
HA99	Hamilton Route Unknown				N/A
Total Hamilton Transit		61547	70342	8795	14%

* Count for Aberdeen bus was included in Locke bus for comparison.

* Counts for Upper Wentworth and Upper Wellington were combined for comparison.

Table 13: Brampton Transit Boardings

Route Code	Name	Daily Boardings			
		Count	TTS	Difference	
BR01	Queen	4439	4417	-22	-1%
BR02	Main	2315	3169	854	37%
BR03	McLaughlin	372	369	-3	-1%
BR04	Chinguacousy	404	636	232	57%
BR05	Bovaird	1005	1629	624	62%
BR06	Castlemore	27	38	11	42%
BR07	Kennedy	2172	2865	693	32%
BR08	Centre	841	980	139	16%
BR09	Vodden	551	619	68	12%
BR10	S. Industrial	125	169	44	35%
BR11	Steeles	1718	3109	1391	81%
BR12	Grenoble	737	1475	738	100%
BR13	Avondale	192	296	104	54%
BR14	Torbram	1257	2507	1250	99%
BR15	Bramalea	867	2391	1524	176%
BR16	Southgate	252	313	61	24%
BR17	Howden	542	923	381	70%
BR18	Dixie	1849	3027	1178	64%
BR20	E. Industrial	248	368	120	48%
BR21	Snelgrove	17	40	23	138%
BR22	Springdale	24		-24	
BR30	Airport	272	142	-130	-48%
BR77	Finch Subway	1195	1569	374	31%
BR80	Central Pk.- Bramalea GO	50	299	249	492%
BR81	North Pk. -Bramalea GO	60	62	2	3%
BR82	Peel Village	12	32	20	171%
BR83	Centre Street	48	105	57	118%
BR97	Brampton School Special		312	312	N/A
BR99	Other or unknown	99	554	455	458%
Total Brampton Transit		21692	32415	10723	49%

Table 14: Oshawa Transit Boardings

Route Code	Name	Daily Boardings			
		Count	TTS	Difference	
OS01	Simcoe	3073	3255	182	6%
OS02	King	883	1196	313	35%
OS03	Park	1418	1018	-400	-28%
OS04	Bloor	622	198	-424	-68%
OS05	Central Park	357	505	148	41%
OS06	Dean	811	170	-641	-79%
OS07	Ritson	567	1140	573	101%
OS08	Rossland	976	1479	503	51%
OS09	Thornton	682	728	46	7%
OS10	Olive/Harmony	595	695	100	17%
OS11	Grandview	826	734	-92	-11%
OS12	Adelaide	728	488	-240	-33%
OS13	Oshawa Go Shuttle	293	564	271	93%
OS14	Oshawa Community Bus	31	168	137	436%
OS15	Taunton	268	405	137	51%
OS99	Oshawa Route Unknown		339	339	N/A
Total Oshawa Transit		12130	13082	952	8%

Table 15: Oakville Transit Boardings

Route Code	Name	Daily Boardings			
		Count	TTS	Difference	
OA10	West Industrial	91	132	41	44%
OA11	Linbrook	389	294	-95	-24%
OA12	Bronte GO	40	117	77	191%
OA13	West Oak Trail	144	188	44	31%
OA14	Lakeshore West	1281	1738	457	36%
OA15	Bridge	481	419	-62	-13%
OA16	Speers	371	467	96	26%
OA17	Kerr-East Lake	352	514	162	46%
OA18	Glen Abbey/South Oakville GO	195	219	24	13%
OA19	River Oaks	625	970	345	55%
OA20	Iroquois Ridge	442	828	386	87%
OA21	Clearview	218	276	58	27%
OA23	Heritage Way	69	73	4	5%
OA24	South Common Mall	1082	1440	358	33%
OA25	Aspen Forest	54	54	0	0%
OA26	Falgarwood	299	204	-95	-32%
OA27	White Oaks	347	335	-12	-3%
OA28	Glen Abbey/North Oakville GO	464	342	-122	-26%
OA29	Uptown Core	275	487	212	77%
OA30	Crosstown	113	108	-5	-5%
OA72	Loylola	142	126	-16	-11%
OA81	Winston Park	24	66	42	172%
OA82	Glen Abbey Exp.	9	0	-9	
OA83	River Oaks Exp.	123	183	60	49%
OA98	Oakville Community Bus	75	239	164	218%
OA99	Oakville Route Unknown		112	112	N/A
Total Oakville Transit		7707	9931	2224	29%

Table 16: Burlington Transit Boardings

Route Code	Name	Daily Boardings			
		Count	TTS	Difference	
BU01	Plains- Fairview	1529	1821	292	19%
BU02	Grant	816	1270	454	56%
BU03	Guelph Line	665	756	91	14%
BU04	Pinedale	354	471	117	33%
BU05	Francis - Aldershot	156	232	76	49%
BU06	Headon Forest	339	457	118	35%
BU07	Tyandaga	36	21	-15	-41%
BU08	N. Service - Harvester	185	292	107	58%
BU10	New - Maple	1439	1126	-313	-22%
BU11	Appleby - Orchard	53	91	38	72%
BU12	Millcroft - Palmer	219	277	58	26%
BU22	GO Special - From Burl.	33	26	-7	-22%
BU23	GO Special - Burl. Downtown	9	0	-9	
BU52	GO Special - To Burl.	36	76	40	110%
BU62	GO Special - To Appleby	98	44	-54	-55%
BU63	GO Special - To Burl.	5	0	-5	
BU80	100 GO Special		42	42	N/A
BU82	102 GO Special	22	16	-6	-26%
BU99	Burlington Route Unknown		184	184	N/A
Total Burlington Transit		5992	7202	1210	20%

Table 17: Whitby Transit Boardings

Route		Daily Boardings			
Code	Name	Count	TTS	Difference	
WH01	Otter Creek/West Lynde	263	306	43	16%
WH02	Somerset Hill	378	482	104	28%
WH03	Garden	188	577	389	207%
WH04	Anderson	258	456	198	77%
WH05	Thickson/Garrard	451	755	304	68%
WH06	White Oaks/Oshawa Centre	829	846	17	2%
WH08	Whitby Shores	61	66	5	9%
WH09	Evening Shuttle	158	49	-109	-69%
WH97	Whitby School Special	1158	754	-404	-35%
WH99	Whitby Route Unknown		53	53	N/A
Total Whitby Transit		3743	4344	601	16%

Table 18 provides comparisons for municipal transit operators outside the GTA. The table is sorted in descending order by count and contains data pertaining to total daily ridership. Under reporting occurs in most systems with Guelph, Peterborough, Niagara and Orillia having the greatest percentage differences. Although ridership from fare box estimates is more comparable to the TTS data than physical one day counts, the TTS under reporting could be a result of the difference in the number of service days counted by the TTS and individual transit operators. The TTS numbers include only weekday ridership, whereas most municipal transit counts reflect weekday and weekend ridership. Another explanation for the under reporting of transit ridership in Guelph and Peterborough is the under representation of students in these two areas.

Table 18: Transit Ridership outside the GTA

		Daily Boardings			
Code	Operator	Count	TTS	Difference	
GU99	Guelph	19777	10805	-8972	-45%
SC99	*St. Catharines				
TH99	*Thorold	9686	9646	-40	0%
PE99	Peterborough	9275	5178	-4097	-44%
BA99	Barrie	4774	4814	40	1%
NI99	Niagara	2733	1437	-1296	-47%
WE99	Welland	1094	1122	28	3%
OR99	Orillia	910	591	-319	-35%
LI99	Lindsay	220	204	-16	-7%
MI99	Midland	164	144	-20	-12%
OV99	Orangeville	114	107	-7	-6%
CO99	Collingwood	106	137	31	29%
FE99	Fort Erie	60	116	56	95%
FG98	Fergus		88		N/A
BO99	Bowmanville		135		N/A
Total Non-GTA Transit		49470	34607	-14863	-30%

* St Catherines and Thorold counts are combined

3.7 GO Transit Ridership

Tables 19 and 20 contain comparisons between the TTS data and average weekday boarding count information for the month of October supplied by GO transit for GO Bus and GO Rail. GO bus data were collected from the ticket system and GO rail ridership data were derived from a one-day survey conducted in October 2001. The TTS total daily bus and rail ridership counts are under represented with the major difference in the Oshawa to Yorkdale service. The combined total daily ridership for all GO rail lines is slightly under reported by 3%. The TTS information is a good match comparing at individual rail line with differences of 2% to 8% relative to Go rail counts. Table 21 provides a comparison of the total daily boarding information for Go rail stations and the TTS data. Differences vary for individual stations but the total combined daily boardings is comparable with a difference of 2%.

Table 19: GO Rail Daily Boardings

Route Code	Name	Daily Boardings			
		Count	TTS	Difference	
GT01	Lakeshore West	46974	44329	-2645	-6%
GT02	Milton	20002	18797	-1205	-6%
GT09	Lakeshore East	38946	36846	-2100	-5%
GT03	Georgetown	12911	13515	604	5%
GT05	Bradford	5418	5285	-133	-2%
GT06	Richmond Hill	7458	7966	508	7%
GT07	Stouffville	6087	6565	478	8%
Total GO Train		137,796	133,303	-4493	-3%

Table 20: GO Bus Daily Boardings

Route Code	Route Name	Daily Boardings			
		Count	TTS	Difference	
GB01	Hamilton - Union - Newcastle	2145	1590	-555	-26%
GB15*	McMaster - Union	2305	1583	-722	-31%
GB16	Hamilton - Toronto Exp. (QEW)				
GB19	Oakville - Finch (Hwy 403)	417	518	101	24%
GB21	Milton - Union	2972	1466	-1506	-51%
GB27	Milton - Finch	735	364	-371	-50%
GB31	Guelph - Georgetown - Union	1083	747	-336	-31%
GB33	Guelph - Georgetown -York Mills	801	473	-328	-41%
GB34	Brampton - York Mills	2768	2222	-546	-20%
GB41	Orangeville - Brampton	131	90	-41	-31%
GB42	Bolton	101	38	-63	-62%
GB46	York University via Hwy 407	1691	951	-740	-44%
GB52	*Yonge "C"				
GB58	Bayview	10944	10757	-187	-2%
GB61	Newmarket - Richmond Hill- Union	348	296	-52	-15%
GB62	Newmarket "B"	3205	2482	-723	-23%
GB65	Barrie- Bradford- Newmarket - Union	405	556	151	37%
GB66	Newmarket - Yorkdale	580	462	-118	-20%
GB67	Newmarket Hwy 404		28	28	N/A
GB68	Barrie -Yorkdale	294	786	492	167%
GB69	Sutton - York Mills	478	119	-359	-75%
GB71	Uxbridge- Stouffville- Markham- Union	543	337	-206	-38%
GB81	Beaverton - Whitby	185	399	214	116%
GB94	Oshawa - Yorkdale	5086	3035	-2051	-40%
Total GO Bus		37217	29299	-7918	-21%

*Counts for Yonge "C" and Bayview were combined for comparison since individual GO bus counts are not available. Similarly McMaster-Union was included in bus count for Hamilton-Toronto Express.

Table 21: GO Station Daily Boardings

Station		Daily Boardings			
Code	Name	Count	TTS	Difference	
GS01	Oshawa	2779	2633	-146	-5%
GS02	Hamilton	584	1192	608	104%
GS03	Burlington	3214	3007	-207	-6%
GS04	Appleby	2481	2249	-232	-9%
GS05	Bronte/Oakville W.	1602	1584	-18	-1%
GS06	Oakville	5817	5743	-74	-1%
GS07	Clarkson	4938	4803	-135	-3%
GS08	Port Credit	2352	2198	-154	-7%
GS09	Long Branch	1077	1390	313	29%
GS10	Mimico	700	775	75	11%
GS11	Exhibition	246	130	-116	-47%
GS14	Scarborough	1008	895	-113	-11%
GS15	Eglinton	1754	1318	-436	-25%
GS16	Guildwood	1013	1312	299	30%
GS17	Rouge Hill	2611	2305	-306	-12%
GS18	Pickering	4363	3501	-862	-20%
GS19	Ajax	2910	3367	457	16%
GS20	Whitby	3650	3628	-22	-1%
GS21	Milton	626	571	-55	-9%
GS22	Meadowvale	1452	1799	347	24%
GS23	Streetsville	1502	1491	-11	-1%
GS24	Erindale	1814	2292	478	26%
GS25	Cooksville	2489	2680	191	8%
GS26	Dixie	694	737	43	6%
GS28	Maple	282	291	9	3%
GS29	King City	271	214	-57	-21%
GS30	Aurora	797	606	-191	-24%
GS31	Newmarket	563	822	259	46%
GS32	Bradford	261	328	67	26%
GS33	Richmond Hill	1865	2332	467	25%
GS34	Langstaff	694	805	111	16%
GS35	Old Cummer	738	598	-140	-19%
GS36	Oriole	485	319	-166	-34%
GS37	Agincourt	713	623	-90	-13%
GS38	Milliken	345	319	-26	-8%
GS39	Unionville	912	1130	218	24%
GS40	Markham	713	985	272	38%
GS41	Stouffville	233	275	42	18%
GS43	Weston	510	456	-54	-11%
GS44	Etobicoke North	797	585	-212	-27%
GS45	Malton	543	324	-219	-40%
GS46	Bramalea	1614	1743	129	8%
GS47	Brampton	1999	2679	680	34%
GS48	Georgetown	611	1169	558	91%
GS50	Aldershot	462	585	123	27%
GS52	Rutherford	650	424	-226	-35%
SS01	Kipling	473	601	128	27%
SS09	Bloor	93	69	-24	-26%
SS26	Danforth	377	241	-136	-36%
Total Go Rail		68677	70123	1446	2%