

DTO MODEL CALIBRATION

Highway and PT Assignment Model Calibration and Validation Report

FINAL

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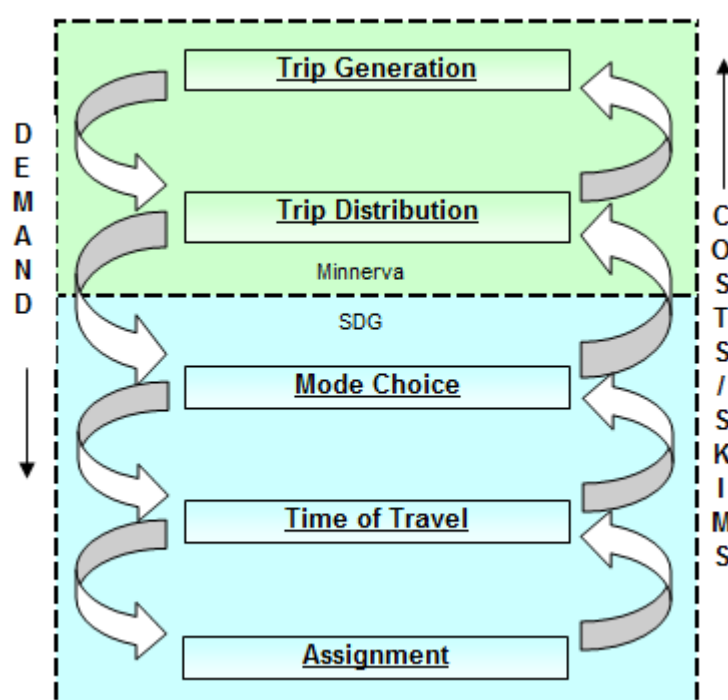
F NOTES ON LUAS CALIBRATION JUNE 2009

G UPDATES TO LUAS CALIBRATION JULY 2009

1. INTRODUCTION

- 1.1 In September 2008, Dublin Transportation Office (DTO) commissioned Steer Davies Gleave (SDG) to undertake the calibration of the public transport (PT) and highway (HW) assignment models associated with their morning (AM) peak model. Furthermore Steer Davies Gleave was charged with calibrating the time of travel and mode choice elements also.
- 1.2 The consultants Minnerva were commissioned separately to calibrate the trip assignment (TAGM) and distribution (TDM) elements of the process. The whole process is illustrated in the figure below.

FIGURE 1.1 STRUCTURE OF THE DTO AM PEAK MODEL

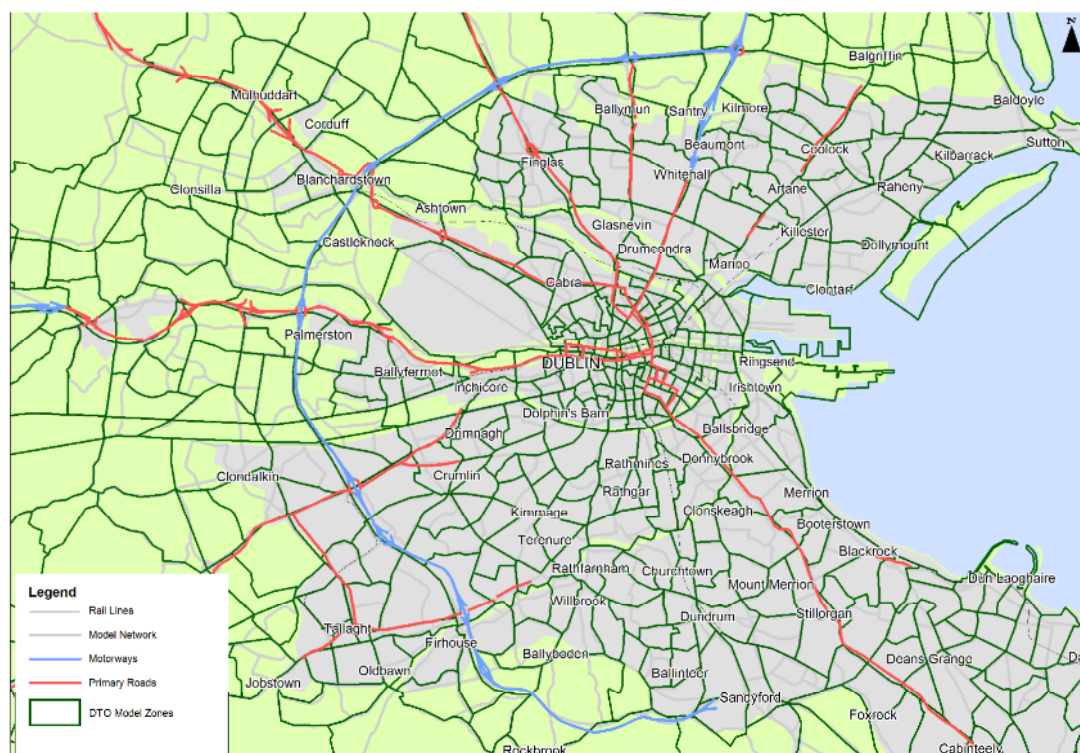


- 1.3 The previous DTO model had a base year of 2002. The overall purpose of this project was to develop a new base year, 2006, and ensure that network conditions, traveller behaviour and demand levels were commensurate with this change.

The DTO Model

- 1.4 The DTO model is a comprehensive, multi-modal tool, which includes a morning peak model with generation, distribution, mode choice, time-of-travel, public transport route choice and highway route choice elements. Within this context the morning peak refers to the three hour period 07:00 to 10:00.
- 1.5 The overleaf below shows the model coverage and zones (shown in green). Urban area is shaded in grey and rural area in light green. The modelling road network is also shown in light grey.

FIGURE 1.2 **DTO MODEL ZONES AND COVERAGE**



Overview to the Process

- 1.6 This project has been unique in nature as there was an underlying requirement for a high degree of collaboration between the two sets of consultants: Steer Davies Gleave team and Minnerva. The calibration tasks were envisaged to be undertaken simultaneously. In other words the process was designed to operate as follows:
- Initial target matrices were developed by Minnerva.
 - These were then assigned to the PT and highway networks by Steer Davies Gleave. Initial changes to the networks were made together with some high level matrix adjustments where matrix demand and observed counts did not match sufficiently.
 - These new matrices together with resulting cost skims were then provided to Minnerva. Updated target matrices were developed and supplied back to Steer Davies Gleave.
 - Then the process repeated itself until a good calibration of the networks was reached.
 - Next the final skims from the highway and PT models were passed to the time of travel model. This was calibrated and the outputs of this passed to the mode choice model. Once calibrated the outputs of this model were supplied to Minnerva who used them to develop future year matrices.
- 1.7 This report is concerned with the calibration and validation tasks of the PT and highway assignment models. A separate document deals with the calibration of the time of travel and mode choice models.

- 1.8 Please note that this report overlaps with the one titled: Initial Calibration Report, issued in December 2008. This earlier report described the calibration process required to reach the initial calibration stage, where cost skims were first provided to Minnerva. The purpose of this initial stage was to reach a position in the overall process where any large network changes had been made and a reasonable level of calibration resulted in the networks. This would allow Minnerva to make progress in the refining of the matrices whilst Steer Davies Gleave continued with the detailed calibration phase. This report recaps the initial calibration work but then continues to describe the remainder of the process together with the results of the final calibration.

Contents of the Remainder of this Report

- 1.9 The remainder of this report is set out as follows:
- Chapter 2 describes the process around the demand matrices. It documents the rationale for any changes required at each stage and the resultant matrix sizes. Please note that matrix estimation was not been used at any point in this process.
 - In Chapter 3 we discuss the process of calibrating the PT assignment model. This begins with the first assignment (before any matrix or network changes were made) and describes the process of reaching the initial calibration stage as described above. It then goes on to discuss the adjustments required to reach final calibration and presents the results of this in full.
 - Similarly to Chapter 3, Chapter 4 describes the process of calibrating the highway model. It details the network changes required and displays the results of the process at each stage.
- 1.10 There are also seven appendices to this report.
- Appendix A provides results of sensitivity tests carried out on the PT model to determine the most appropriate parameter values;
 - Appendix B provides detailed results of the PT calibration by each mode;
 - Appendix C shows detailed results of the highway journey time validation work;
 - Appendix D shows the performance of the model against count data;
 - Appendix E contains GEH statistics for all count sites together with calibration results for count sites that are not on the cordons or screenlines that have been used for this work;
 - Appendix F is a discussion on the Luas calibration in the form of a technical note; and
 - Appendix G the results of additional work on the Luas calibration that has been undertaken following the original submission of this report.

2. 2006 BASE DEMAND MATRICES

Introduction

- 2.1 The process of arriving at the final set of demand matrices was a lengthy and highly interactive process. It involved a number of iterations between Minnerva, the team responsible for developing the generation and distribution demand models and ourselves (Steer Davies Gleave). All changes made to the demand matrices were made in consultation with the DTO.
- 2.2 The aim of the process was to produce a final set of demand matrices which would result in a calibrated network, mode choice and time of day choice models, while maintaining the integrity of the Trip Attraction and Generation Model (TAGM)/ Trip Demand Model (TDM) models which are underpinned by highly detailed survey data. Therefore any changes to the matrices were made with great care not to distort the overall pattern of demand and only where the observed counts indicated this was necessary.
- 2.3 The changes made to the matrices were therefore made by either;
- Revisiting the demand at the trip generation or distribution level to improve the base demand (for clarity these changes are described as '*corrections*' of the target matrices);
 - Re-profiling demand across the 3 modelled hours (for clarity these changes are described as '*re-profiling*' of the target matrices; or
 - Factoring directional demand on a highly aggregated sector basis (for clarity these changes are described as '*factoring*' of the target matrices).
- 2.4 The significance of this approach was that it did not involve any matrix estimation on traffic counts. Matrix estimation is a useful tool for developing base year matrices that match observed flows. Its weakness is that it modifies the matrix with a very limited control over the distribution of the underlying demand data. We therefore undertook a more complex process which sought to maintain the link between the TAGM/ TDM matrices and assigned network matrices.

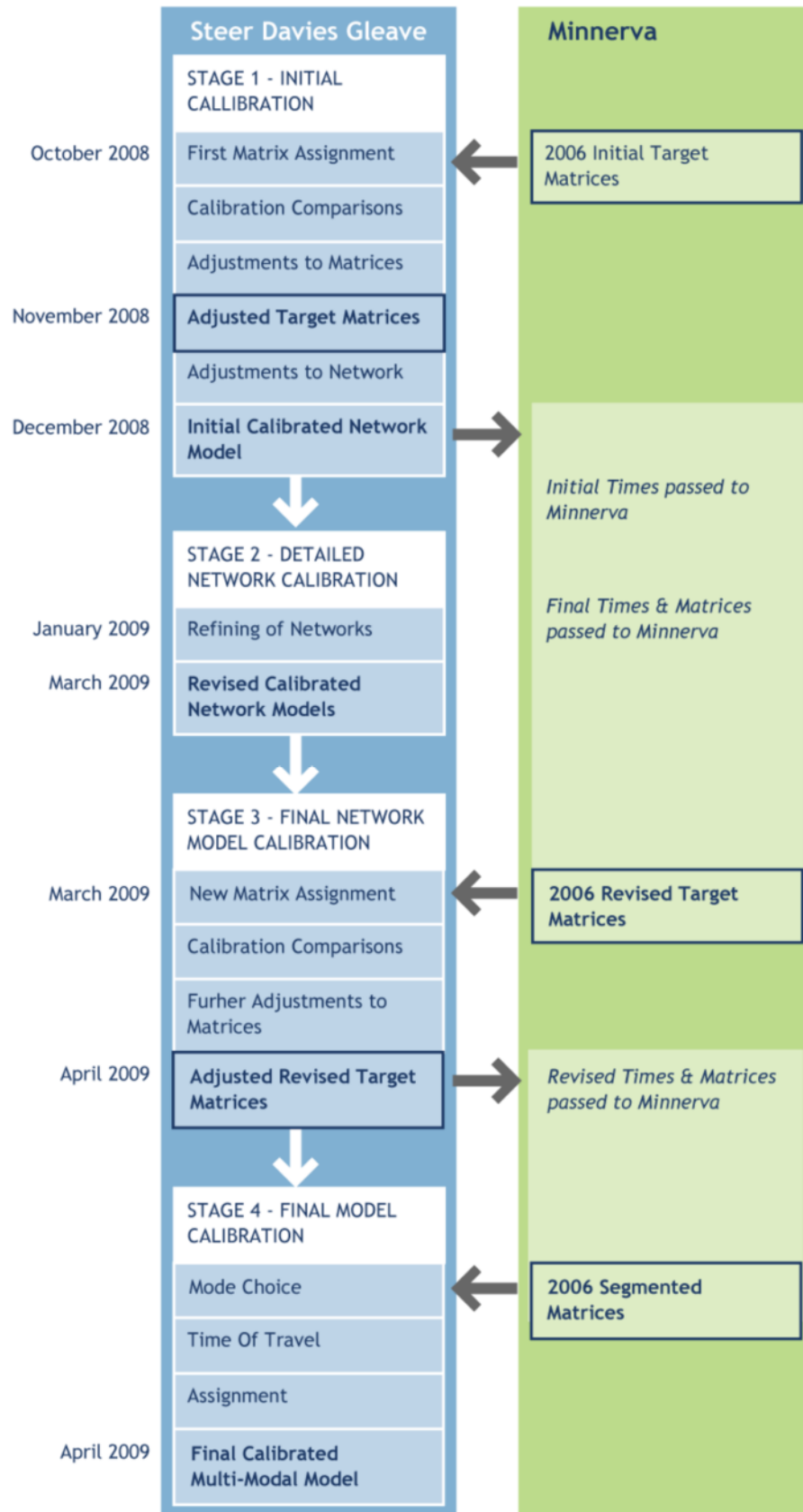
Process Overview

- 2.5 In the summer and early autumn of 2008 Minnerva developed initial target matrices for the AM peak model. For the purpose of this report these matrices are referred to as the '*initial target matrices*' and are dated October 2008 to coincide with the time when they were first received by Steer Davies Gleave. These initial matrices were based on the following data:
- Journey to work census;
 - Education survey; and
 - Household interview data sets.

- 2.6 In October 2008 the initial target matrices were assigned to the 2006 networks, and analysis against count data carried out. For the purpose of this report we refer to this assignment as the '*first assignment*'. As a result of this analysis a number of adjustments were proposed and employed. This resulted in an updated set of initial matrices which were used by Steer Davies Gleave for the bulk of the detailed calibration work. We refer to these matrices as '*initial calibrated matrices*' and date them December 2008 to coincide with the point when they were returned to Minnerva.
- 2.7 Following on from this Minnerva developed the TAGM and TDM models utilising the cost skims provided by Steer Davies Gleave in December 2008. The matrices derived from the model were intended to closely replicate the initial calibrated matrices supplied at this time. In March 2009 Minnerva re-supplied an updated set of target matrices which we describe as '*TAGM/ TDM matrices*' intended for the final calibration of the model.
- 2.8 Figure 2.1 overleaf provides an overview to this whole process, indicating the exchange of data between Steer Davies Gleave and Minnerva through time. Finalised matrices at each stage in the process are highlighted in bold and shown inside a box.
- 2.9 Thus this chapter documents the matrix adjustments made at each stage and the rationale for each change. At all stages manual adjustments have been made in close consultation with both DTO and Minnerva. Matrix estimation techniques have not been employed.

Adjustments to the Target Matrices (October 2008)

- 2.10 In this section we describe the first wave of matrix adjustments that were necessary to complete initial calibration tasks. As mentioned above, after completion of the first assignment a number of discrepancies were identified when comparing assignment totals to observed Census volumes. Thus a series of adjustments were proposed and then made to the initial target matrices. After completion of these adjustments and initial calibration tasks, the adjusted initial calibrated matrices were re-supplied to Minnerva in December 2008 for further revision. During the period that followed (between January and March 2009) Steer Davies Gleave undertook the main detailed calibration tasks, the results of which are referred to as the '*revised calibration results*'. These adjusted initial calibrated matrices were used throughout this work.

FIGURE 2.1 MATRIX AND NETWORK CALIBRATION PROCESS


- 2.11 To summarise the starting position, the matrix totals from the initial target matrices are shown in the table below.

TABLE 2.1 2006 INITIAL TARGET MATRIX TOTALS

Time Period	PT Totals	Car Totals
07:00-08:00	27,124	139,789
08:00 -09:00	102,807	259,764
09:00-10:00	61,159	195,769
Total 07:00-10:00	191,091	595,322

- 2.12 In both the case of the PT and highway models, the matrices were compared at both the level of arrival hour and journey purpose, and the matrix totals compared to observed data sources such as the Census.

Adjustments to Public Transport (PT) Matrices

- 2.13 To begin with, the two main journey purposes of 'Home to work' and 'Home to education' in the set of PT matrices were identified as not closely replicating observed volumes. Thus to make corrections for these two purposes the three individual hour matrices were aggregated to a total 07:00-10:00 matrix for each journey purposes. Factors based on the 2006 Census volumes were then calculated and applied to 'Home to work' and 'Home to education' journey purposes to improve their fit against Census totals. These census factors were calculated by comparing the 2006 target matrices to 2006 census data shown in Table 2.2 below.

TABLE 2.2 PUBLIC TRANSPORT MATRIX INITIAL CENSUS FACTORS

Trip Purpose	Factor
Home to Education	1.1678
Home to Work	0.9678

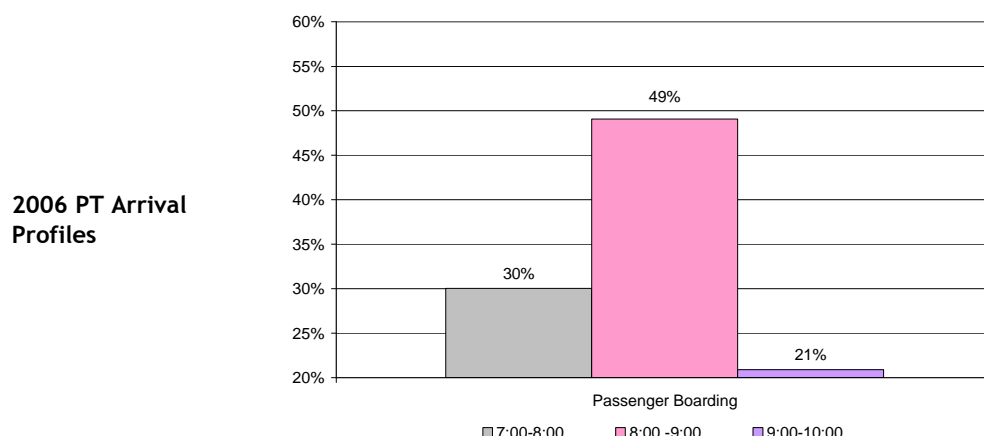
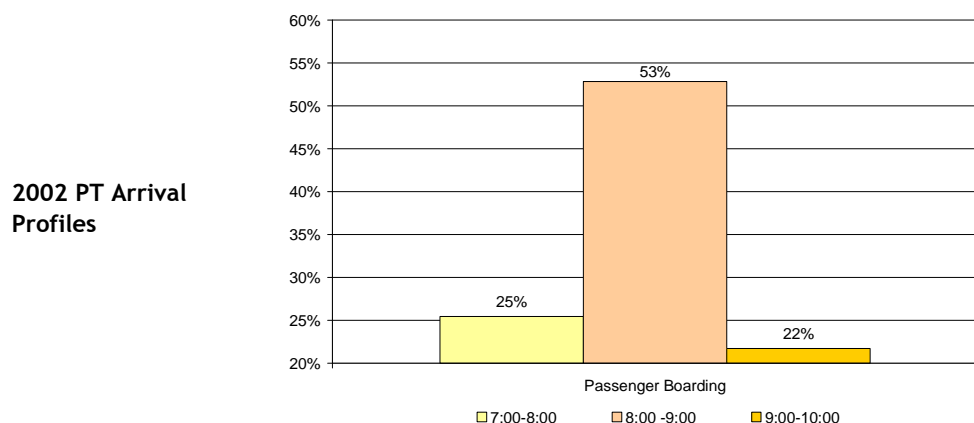
- 2.14 To summarise the Home to Education purpose was found to be too low in the demand matrices as compared to census volumes. The matrix was thus increased by around 17%. The home to work matrix on the other hand was found to be too large and was reduced on aggregate by a factor of around 3%.
- 2.15 Post matrix factoring, and for the purpose of the PT assignment, all the trip purpose matrices were added back together to give a single 07:00-10:00 all purpose matrix for public transport. The revised corrected target matrix totals following this journey purpose based factoring is summarised in Table 2.3 below.

TABLE 2.3 INITIAL PT TARGET MATRIX - WITH PURPOSE CORRECTION FACTORS

Time Period	Initial Target Matrices	Corrected Target Matrices	% Variation
07:00-08:00	27,124	26,857	-1.0%
08:00 -09:00	102,807	108,193	5.2%
09:00-10:00	61,159	62,921	2.9%
Total 07:00-10:00	191,090	197,971	3.6%

- 2.16 At this stage, to improve the fit with the observed arrival profile a series of factors were applied to the 2006 target matrices. This problem was highlighted following analysis of PT flow profiles for 2002 and 2006 AM periods, as shown in Figure 2.2. Comparison of the 2002 and 2006 arrival profile data suggested that some peak spreading had occurred between the period 07:00 to 08:00 and the following period (08:00 to 09:00).

FIGURE 2.2 PT AM PERIOD COUNT PROFILE FOR 2002 AND 2006



- 2.17 Thus the next stage in the process was to separate the total matrix into individual hours 07:00-08:00, 08:00-09:00 and 09:00-10:00 by applying a set of hourly factors obtained from PT count information to ensure that the PT model assignment matrices matched the aggregate level observed flow profiles closely. It should be noted that the matrix totals are virtually identical across the three hour modelled period. The individual hour factors are shown in Table 2.4 and the resulting re-profiled matrix totals are shown in Table 2.5.

TABLE 2.4 INDIVIDUAL HOUR FACTORS FOR PUBLIC TRANSPORT

Time Period	Factor
7:00-8:00	0.30
8:00 -9:00	0.49
9:00-10:00	0.21

TABLE 2.5 VARIATION IN MATRIX TOTALS

	Corrected Target Matrices	Re-profiled Corrected Matrices	% Variation
07:00 to 08:00	26,857	59,390	121%
08:00 to 09:00	108,193	97,005	-10%
09:00 to 10:00	62,921	41,573	-34%
07:00 to 10:00 (total)	197,971	197,968	0%

- 2.18 Once the adjustments were completed and the additional airport trips added to matrices, they were loaded into the network model and a revised assignment carried out. Table 2.6 shows the resulting passenger flows by mode across the three modelled hours. The overall calibration was good across all the periods and in particular the peak 08:00-09:00 hour where the comparison by individual modes matched the observed counts very closely.

TABLE 2.6 INITIAL PT CALLIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	39,013	23%
	Rail	101,559	98,241	-3%
	Luas	46,964	40,212	-14%
	Total PT	180,154	177,466	-1%
08:00 to 09:00	Bus	51,285	54,862	7%
	Rail	166,275	180,718	9%
	Luas	86,383	84,276	-2%
	Total PT	303,943	319,855	5%
09:00 to 10:00	Bus	32,372	23,709	-27%
	Rail	60,298	89,240	48%
	Luas	50,647	47,627	-6%
	Total PT	143,317	160,576	12%
07:00 to 10:00	Bus	115,288	117,584	2%
	Rail	328,132	368,199	12%
	Luas	183,994	172,114	-6%
	Total PT	627,414	657,897	5%

2.19 To illustrate this further, the entire process of matrix for PT is shown in Figure 2.3.

FIGURE 2.3 OVERVIEW TO INITIAL PT MATRIX ADJUSTMENT PROCESS



Initial Adjustments to Highway Matrices

2.20 Similarly to public transport the highway matrices were also adjusted in a number of ways following on from the first assignment. We reanalysed the matrix building process from the survey data and with input from DTO and Minnerva considered if any of the journey purpose segments had been over represented. The totals from the initial target matrices as provided by Minnerva in October 2008 are shown in Table 2.7.

TABLE 2.7 2006 HIGHWAY TARGET MATRICES TOTALS

Time Period	Initial Target Matrices
07:00-08:00	139,789
08:00 -09:00	259,764
09:00-10:00	195,412

- 2.21 Again to check that these overall matrix levels were realistic we undertook a comparison of the initial target matrices totals with the 2006 census data. This indicated that there was some overestimation of trips in the matrix and thus a set of factors were applied to bring the matrix totals down. These were a set of flat factors and applied only for the purposes 'Home to Work' and 'Home to Education', and are displayed in Table 2.8 and the matrix totals are shown in Table 2.9 below.

TABLE 2.8 CARS MATRIX 'FLAT FACTORS'

Trip Purpose	Factor
Home to Education	0.9442
Home to Work	0.9378

TABLE 2.9 INITIAL HW MATRIX + JOURNEY PURPOSE CORRECTION FACTORS

Time Period	Initial Target Matrices	Corrected Target Matrices	% Variation
07:00 to 08:00	139,789	127,098	-9.1%
08:00 to 09:00	259,764	247,524	-4.7%
09:00 to 10:00	195,412	181,370	-7.2%
07:00 to 10:00 (total)	594,965	555,992	-6.6%

- 2.22 Initial calibration work was then undertaken using these new adjusted matrices. However it soon became apparent that there were some anomalies at the sectoral level. Analysis of flows was undertaken on a directional basis across screenlines, using a comparison of actual and demand modelled flows on the screen lines defined. Where, demand flow is the total traffic in the matrix assigned to the network, whereas actual flow is the traffic that can get through the network during the modelled hour. Therefore the difference between demand and actual flows is a measure of the extent to which the network is over capacity.
- 2.23 First we analysed the canal and outer cordons to identify any differences between observed and modelled flows. By undertaking the comparison between observed and modelled *actual* flows it was apparent that there was an imbalance between inbound and outbound flows. In the 08:00-09:00 and 09:00-10:00 period there were significantly higher inbound flows than outbound in comparison to the counts. However the period between 7:00 and 8:00 was found to exhibit a much better fit. The next table shows the total inbound and outbound flows crossing the outer cordon and the canal cordon.

TABLE 2.10 2006 HIGHWAY CALIBRATION: MODELLED ACTUAL FLOW

Time Period	Direction	Observed Count	SATURN Actual Flow	Percentage Difference
07:00 to 08:00	Inbound	45,686	46,474	2%
	Outbound	31,373	31,112	-1%
	Total	77,060	77,586	1%
08:00 to 09:00	Inbound	47,278	53,338	13%
	Outbound	38,393	33,092	-14%
	Total	85,671	86,431	1%
09:00 to 10:00	Inbound	46,960	50,958	9%
	Outbound	37,104	29,871	-19%
	Total	84,064	80,828	-4%
07:00 to 10:00	Inbound	139,925	150,770	8%
	Outbound	106,869	94,075	-12%
	Total	246,549	244,845	-1%

- 2.24 Since a good fit existed in the period 07:00 to 08:00 for modelled *actual* flows, we then proceeded to look at modelled *demand*. The next table shows the differences observed before correcting the demand. Note once more that SATURN demand and actual flows are different measures.

TABLE 2.11 2006 HIGHWAY CALIBRATION: MODELLED DEMAND

Time Period	Direction	Observed Count	SATURN Demand	Percentage Difference
07:00 to 08:00	Inbound	45,686	56,375	23%
	Outbound	31,373	37,953	21%
	Total	77,060	94,328	22%
08:00 to 09:00	Inbound	47,278	72,696	54%
	Outbound	38,393	42,946	12%
	Total	85,671	115,642	35%
09:00 to 10:00	Inbound	46,960	65,471	39%
	Outbound	37,104	38,871	5%
	Total	84,064	104,342	24%
07:00 to 10:00	Inbound	139,925	194,542	39%
	Outbound	106,869	119,769	12%
	Total	246,794	314,312	27%

- 2.25 The results of the demand test as shown in the table above highlighted again that the goodness of fit in the second two modelled hours (08:00 to 10:00) was poor. Thus the next step was to adjust the demand in the two periods 08:00 to 09:00 and 09:00 to 10:00, so that a good fit could be achieved overall. This was done by estimating factors that could be applied to the second and third time periods in order to achieve a similar level of variation between count and modelled actual flow

as the period 07:00 to 08:00. By adjusting the demand for these periods, the actual flows should react in a similar way. Therefore if the demand can be adjusted so as to replicate the 23% margin of error as in Table 2.10 for inbound traffic between 07:00 and 08:00, this should correspond to a 2% margin of error for actual flow (as in Table 2.9).

- 2.26 Since the bias between in and outbound was only found in the car flows, the factors were only applied to these matrices. The factors by time period and direction are shown in the table below.

TABLE 2.12 CORRECTION FACTORS APPLIED TO MATRICES

	Period	Inbound	Outbound
Matrix Factor	07:00 to 08:00	1.00	1.00
	08:00 to 09:00	0.74	0.84
	09:00 to 10:00	1.17	1.38

- 2.27 These adjustments were designed to keep the overall size of the target matrix consistent; both pre and post adjustments. Table 2.13 compares the total demand in the census target matrices with the revised model matrices by hour band post sectoral correction.

TABLE 2.13 VARIATION IN MATRIX TOTALS

	Corrected Target Matrices	Factored Corrected Target Matrices	% Variation
07:00 to 08:00	127,098	127,098	0.0%
08:00 to 09:00	247,524	235,139	-5.0%
09:00 to 10:00	181,370	179,877	-0.8%
07:00 to 10:00 (total)	555,992	542,114	-2.50%

- 2.28 Thus in summary we made the following changes to the initial highway matrices:
- Adjusted Home to work and home to education purposes using flat factors to ensure matrix totals were closer to observed Census levels; and
 - Made sectoral adjustments to trips across the cordons by factoring inbound and outbound flows separately by hour band.
- 2.29 This overall process was found to reduce the bias and gave a better match with observed data. These matrices have been used in our initial calibration work and underpin both the initial and revised calibration results.

Treatment of Airport Trips

- 2.30 Furthermore trips to the airport were believed to be under represented. A large number of airport trips were captured in the census data used to build the revised target matrices, however it was agreed that these only accurately represented the journey to work trips made by airport employees. In other words passenger trips to the airport were thought to be omitted. Therefore the demand matrices were supplemented with these missing passenger trips using the airports own survey data.

- 2.31 Table 2.15 summarises the number of airport trips that were later added.

TABLE 2.14 ADDITIONAL AIRPORT TRIPS

	HIGHWAY Airport Trips	PT Airport Trips
07:00 to 08:00	2,938	719
08:00 to 09:00	2,955	835
09:00 to 10:00	4,411	1,279
07:00 to 10:00 (total)	10,304	2,833

- 2.32 In all subsequent analysis the additional airport trips have been added at the end of the matrix building process and are not affected by any of the matrix re-profiling or factoring. Therefore all matrix totals in the sections that follow exclude these airport trips unless explicitly stated otherwise.

Adjusted Initial Calibrated Model Matrix Totals

- 2.33 Once the airport trips were added into the matrices the totals were as follows in table 2.16 below.

TABLE 2.15 INTITIAL CALIBRATED MATRIX TOTALS

Time Period	PT			Highway		
	Final	Airport	Total	Final	Airport	Total
07:00-08:00	59,390	719	60,109	127,098	2,938	130,036
08:00 -09:00	97,005	835	97,840	235,139	2,955	238,094
09:00-10:00	41,573	1,279	42,852	179,877	4,411	184,288
Total 07:00-10:00	197,968	2,833	200,801	542,114	10,304	552,418

Final Adjustment to the TAGM/TDM Matrices (March 2009)

Overview

- 2.34 Revised TAGM/TDM matrices were supplied by Minnerva in March 2009 as a result of cost skim and adjusted demand matrices provided by Steer Davies Gleave in December 2008. These revised matrices however had higher totals compared to the matrices used throughout the calibration processes to date (the initial calibration matrices). This was problematic since at this stage, much of the calibration work had been completed. Furthermore the initial calibration matrix totals had received much scrutiny to the extent that it had been agreed that they should be fixed and any changes made by Minnerva apply to the distribution only.
- 2.35 Thus after a new 'first assignment' had been undertaken it was clear that further adjustments would be required to bring the matrix totals closer to the previous ones. A summary of the revised TAGM/TDM matrices together with the totals for the initial Oct 2008 and adjusted December 2008 ones are shown in the tables overleaf. These adjustments are described in the sections that follow.

TABLE 2.16 VARIATION IN PT MATRIX TOTALS

	Initial Target Matrices Oct 2008	SDG Initial Calibration Matrices Dec 2008	TAGM/TDM Revised Matrices March 2009
07:00 to 08:00	27,124	59,390	57,424
08:00 to 09:00	102,807	97,005	121,664
09:00 to 10:00	61,159	41,573	52,487
07:00 to 10:00 (total)	191,091	197,968	231,575

TABLE 2.17 VARIATION IN CAR PCU MATRIX TOTALS

	Initial Target Matrices Oct 2008	SDG Initial Calibration Matrices Dec 2008	TAGM/TDM Revised Matrices March 2009
07:00 to 08:00	139,789	127,098	142,456
08:00 to 09:00	259,764	235,139	257,701
09:00 to 10:00	195,412	179,877	165,260
07:00 to 10:00 (total)	594,965	542,114	565,417

- 2.36 The first adjustments made to the matrices came directly from the advice of the DTO. The updated home to work and home to education purpose segments had, in the initial matrices, been derived specifically for each modelled hour, with separate distributions. However for the updated version there was a single distribution for the whole AM period which was then re-profiled across the time periods. After discussing with the DTO it was agreed that for these two purposes they should be taken directly from the adjusted initial calibrated matrix. The revised matrix totals are displayed below in Table 2.18 and Table 2.19.

TABLE 2.18 CORRECTED MINNERVA REVISED PT MATRICES

	TAGM/TDM Matrices March 2009	Corrected TAGM/TDM Matrices March 2009
07:00 to 08:00	57,424	62,899
08:00 to 09:00	121,664	104,599
09:00 to 10:00	52,487	61,638
07:00 to 10:00 (total)	231,575	229,136

TABLE 2.19 CORRECTED MINNERVA REVISED CAR PCU MATRICES

	TAGM/TDM Matrices March 2009	Corrected TAGM/TDM Matrices March 2009
07:00 to 08:00	142,456	98,911
08:00 to 09:00	257,701	240,193
09:00 to 10:00	165,260	215,127
07:00 to 10:00 (total)	565,417	554,231

Adjustments to the Revised PT Matrices

- 2.37 The journey purpose changes slightly reduced the matrices, but a number of additional changes were required to ensure the revised PT matrix totals were reasonably consistent with the adjusted matrix totals used in the detailed calibration work.
- 2.38 The first problem to overcome was that the revised overall (07:00-10:00) PT matrix total was found to be higher than both observed levels and the adjusted matrix total. Thus the total of the new three hour all purpose PT matrix was factored down by applying the value shown in Table 2.20. The factor of 0.876 was obtained by comparing the new corrected matrix and initial calibrated adjusted matrix totals.

TABLE 2.20 PUBLIC TRANSPORT MATRIX FACTORS

All Purposes	Adjusted Matrix Total December 2008	Corrected Target Matrix Total March 2009	Factor
07:00-10:00	197,968	229,136	0.87

- 2.39 The resulting 07:00-10:00 matrices were then split back down to the three individual hours. This was done by applying factors obtained by comparing the 2006 observed individual hour matrices to the 07:00-10:00 combined matrix. The purpose of applying these factors was to reflect the observed flow proportions for each hour in the target matrices. These factors are shown in Table 2.21. The matrices were adjusted to achieve a peak across 8:00-9:00 period.

TABLE 2.21 INDIVIDUAL HOUR FACTORS FOR PT MATRICES

Time Period	Factor
7:00-8:00	0.30
8:00 -9:00	0.49
9:00-10:00	0.21

TABLE 2.22 INITIAL ADJUSTED PT MATRICES

Time Period	2006 Corrected Target Matrices	Final Factored Matrices	% Variation
07:00 to 08:00	62,899	60,125	-4%
08:00 to 09:00	104,599	98,371	-6%
09:00 to 10:00	61,638	42,161	-32%
07:00 to 10:00 (total)	229,136	200,657	-12%

- 2.40 Having re-profiled the corrected target matrices the DTO requested that we did some analysis on how this had affected the journey purposes in each of the modelled periods. For the 08:00-09:00 and 09:00-10:00 period this was found to have a good correlation to journey purposes in the adjusted calibrated matrices from December 2008 and where therefore deemed to be acceptable.

- 2.41 However in the 07:00-08:00 period, two journey purposes were still found to be very high when compared to the adjusted matrices being used in December 2008: 'Home to work' and 'Home to Education'. This issue was discussed extensively with DTO and following on from this discussion a decision was made to return to the adjusted matrices as of December 2008 for the 'Home to Education' purpose.
- 2.42 For the 'Home to work' purpose, further adjustments were made to the revised target matrices. The first round of adjustments had ensured that the new totals for 07:00-08:00 hour across all journey purposes became fairly comparable with the adjusted totals (December 2008). To improve the fit for the important 'Home to Work' segment the new matrix total was compared with the total from the adjusted, and based on this comparison a factor of 0.734 was applied to give a revised matrix for the 07:00-08:00 'Home to work' segment.

TABLE 2.23 PUBLIC TRANSPORT MATRIX FACTORS

Trip Purpose	Adjusted Matrix Total December 2008	Revised Minnerva Matrix Total March 2009	Adjustment Factor
Home to Work	34,846	47,271	0.734

- 2.43 The matrix totals at the end of this process are shown in Table 2.24 below. Following from this the all journey purpose matrices (including airport matrices) were combined to produce a final 07:00-08:00 all purpose matrix, which was used in the subsequent final calibration work.

TABLE 2.24 FINAL PT MATRIX TOTALS BEFORE AIRPORT MATRIX TOTALS

Time Period	2006 Revised Target Matrices	Final Factored Matrices	% Variation
07:00 to 08:00	62,899	47,331	-25%
08:00 to 09:00	104,599	98,371	-6%
09:00 to 10:00	61,638	42,161	-32%
07:00 to 10:00 (total)	229,136	187,863	-18%

Adjustments to the TAGM/TDM Highway Matrices

- 2.44 Further adjustments were also required to the highway matrices in order to move them closer to those used in our detailed calibration work. As described above and in line with the PT matrix corrections a number of journey purposes were replaced entirely with those used in the detailed calibration tasks. This was the case for the 'Home to education' and 'Home to work' purpose matrices. For all other journey purposes including 'Education to home' and 'Work to home' the revised TAGM/TDM demand matrices were used.
- 2.45 Next demand for 'Home to education' and 'Home to work' purposes in both directions were added together and inbound/outbound factor matrices applied separately for all three time periods. These inbound/outbound factor matrices were derived from SATURN.
- 2.46 The factored demand matrices for both directions of all other journey purposes together with the airport demand matrices for each time period were then combined together and fed into the model.

2.47 Following on from this some other additional adjustments to the matrices were required. These were divided into two steps for the different highway user classes;

- Light vehicles factored by direction using the differences in tidal modelled flows to traffic counts; and
- HGV vehicles adjusted using matrix estimation on observed HGV traffic counts.

Light Vehicles

2.48 For the light vehicle class in the demand matrices, comparisons on the outer and inner cordons were recreated. The results were similar for overall traffic and are shown in Table 2.23.

TABLE 2.25 2006 HIGHWAY CALIBRATION: CAR ACTUAL

Time Period	Direction	Observed Count	SATURN Actual	Percentage Difference
07:00 to 08:00	Inbound	40,288	33,549	-17%
	Outbound	26,735	16,925	-37%
	Total	67,023	50,474	-25%
08:00 to 09:00	Inbound	41,904	47,032	12%
	Outbound	33,298	27,940	-16%
	Total	75,202	74,973	0%
09:00 to 10:00	Inbound	39,121	43,699	12%
	Outbound	29,285	26,722	-9%
	Total	68,406	70,421	3%
07:00 to 10:00	Inbound	121,314	124,281	2%
	Outbound	89,318	71,587	-20%
	Total	210,632	195,868	-7%

2.49 In order to derive factors for the matrix adjustments it was necessary to compare the traffic demand to the counts, as shown in Table 2.24. Due to the high traffic levels and confined network in Dublin during the peak hours, there is more traffic on the network than can be accommodated by the physical road layout. The difference between demand and actual flows represents this effect. Thus in order to factor down the matrices correctly it was necessary to understand the relationship between demand, actual flows and the observed counts.

TABLE 2.26 2006 HIGHWAY CALIBRATION: CAR DEMAND

Time Period	Direction	Observed Count	SATURN Demand	Percentage Difference
07:00 to 08:00	Inbound	40,288	34,244	-15%
	Outbound	26,735	17,350	-35%
	Total	67,023	51,594	-23%
08:00 to 09:00	Inbound	41,904	62,869	50%
	Outbound	33,298	35,772	7%
	Total	75,202	98,641	31%
09:00 to 10:00	Inbound	39,121	51,112	31%
	Outbound	29,285	31,337	7%
	Total	68,406	82,449	21%
07:00 to 10:00	Inbound	121,314	148,225	22%
	Outbound	89,318	84,459	-5%
	Total	210,632	232,684	10%

2.50 During the initial calibration work the pre peak period 07:00-08:00 had been found to have a good match to the counts and was therefore used to derive the factors for the other two modelled hours. This was not the case with the new TAGM/TDM matrices and thus a new approach was developed to calculate the factors.

2.51 To derive the factors the ratio between demand and actual flows on the network was calculated and then factored according to the observed counts. The matrix factoring process was iterative as the nature of simulation modelling means that small changes in demand can have a large effect on capacity. In addition the non separable cost element of junction modelling usually results in conflicting movements having an impact on opposing traffic. Therefore factoring in one direction effects the opposite direction. It was thus necessary to make a number of refinements to the directional factors as well as making adjustments to the network. The final factors are shown in Table 2.27 below.

TABLE 2.27 FINAL CORRECTION FACTORS APPLIED TO MATRICES

	Period	Inbound	Outbound
Matrix Factor	07:00 to 08:00	1.24	1.99
	08:00 to 09:00	0.86	1.58
	09:00 to 10:00	0.91	1.39

2.52 The approach undertaken meant it was particularly important to ensure that the network was accurately represented. The relationship between demand and actual flows could result in the network being changed unrealistically to ensure that the actual flows matched the counts. Therefore great care was therefore taken so that any changes to the network were made to improve accuracy in the coding rather than to improve matrix calibration. Later in this report in chapter 4, we present the journey time comparisons which show a good match between observed and modelled times, indicating that the network has been coded accurately.

- 2.53 While the correction factors were in some cases quite large it should be noted that they are only applied to a proportion of the matrix: trips which cross either the inner or outer screenlines. Table 2.28 shows the sector to sector movements which have been affected by the inbound and outbound factors.

TABLE 2.28 MATRIX FACTORING BY SECTOR

	Inside Canal	Outer Dublin	Outside M50
Inside Canal	Matrix Fixed	Outbound	Outbound
Outer Dublin	Inbound	Matrix Fixed	Outbound
Outside M50	Inbound	Inbound	Matrix Fixed

- 2.54 Finally Table 2.29 shows the variation in matrix totals between the corrected TAGM/TDM matrices and the final adjusted matrices used in the highway assignment. Other than the pre-peak period where demand was significantly lower than the observed counts, the changes in demand are modest with adjustments limited to around 1%. Even when taking into account the pre-peak the overall demand changes by less than 3.5%.

TABLE 2.29 VARIATION IN MATRIX TOTALS

	2006 Corrected Target Matrices	Final Factored Matrices	% Variation
07:00 to 08:00	98,911	113,526	14.78%
08:00 to 09:00	240,193	242,709	1.05%
09:00 to 10:00	215,127	215,799	0.31%
07:00 to 10:00	554,231	572,034	3.21%

Summary of Final Calibrated Matrix Adjustments

- 2.55 A number of matrix adjustments have been required to improve the assignment model fit against observed counts and Census volumes. Changes have been made in two phases: whilst undertaking initial calibration tasks and in the latter stages to reach an acceptable level of final calibration. These adjustments have been restricted to specific journey purposes and/or time periods and applied on a case by case basis. All changes have been carried out in close consultation with both DTO and Minnerva to ensure that the links between the TAGM/TDM are preserved and that matrix trip rates are realistic.
- 2.56 After undertaking these adjustments to the updated target matrices the airport passenger trips were added to the matrix to get the final calibrated matrices. The final totals are displayed in Table 2.30 below.

TABLE 2.30 FINAL CALIBRATED MATRIX TOTALS

Time Period	PT			Highway		
	Final	Airport	Total	Final	Airport	Total
07:00-08:00	47,331	719	48,051	113,526	2,938	116,464
08:00 -09:00	98,371	835	99,206	242,709	2,955	245,664
09:00-10:00	42,161	1,279	43,440	215,799	4,411	220,210
Total 07:00-10:00	187,863	2,833	190,697	572,034	10,304	582,338

3. THE PT ASSIGNMENT MODEL

Introduction

- 3.1 The public transport assignment model is held in the software CUBE TRIPS. This chapter describes the process of calibration and validation of the public transport (PT) assignment model. Furthermore it describes details of the changes made in the main TRIPS network model and also includes changes made to the PT wait curves, PT lines and the input parameters.
- 3.2 The process of public transport model calibration was carried out in two main stages:
- **Stage 1 - Initial Calibration:** Using the 2006 initial target matrices, which were primarily based on 2006 POWCAR data for journey to work, 2006 education surveys for school trips and model estimates for other purposes, an initial calibration of the public transport models was carried out. This involved changes to both the matrices and the network model inputs. The objective of this stage was to obtain a reasonable fit to observed count data and to have an accurate network representation in the public transport model so as to provide robust network costs. The outputs (network skims and matrices) from this stage were fed into the TAGM/TDM models. These outputs were also used to set up the time period choice and mode choice models.
 - **Stage 2 - Final Calibration:** Revised matrices received from Minnerva were then used during the final calibration of the public transport model. The updated networks available from the initial calibration stage were used and further adjusted to provide good calibration and validation results. As described in chapter 2 the public transport matrices also required some adjustments to ensure a good fit to the observed data. After a series of modifications and test runs a good match was obtained. The outputs (network skims and matrices) were then fed into time period choice stage for the model estimation process. The finalised calibration matrices were also provided to Minnerva to ensure that the TAGM/TDM outputs appropriately matched the calibration matrices without impacting the underlying trip rates significantly.
- 3.3 The process used and the results obtained in these two stages are discussed in more detail below. At all points during each calibration stage we engaged in regular discussion and consultation with DTO. Therefore all key decisions in this process were taken in agreement with DTO.

Initial Calibration Process and Results

Count Data

- 3.4 A large set of recently collected public transport count information was provided by DTO. This consisted of:
- Bus occupancy counts at the Dublin city centre canal cordon in the inbound direction. Counts information was also available for both inbound and outbound directions from count locations spread across the Dublin city area mostly between the M50 and canal cordon. These counts had already been processed and tagged with model link numbers (A node - B node) that the site corresponded to; and

TABLE 3.1 PUBLIC TRANSPORT FIRST CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	17,066	-46%
	Rail	101,559	41,315	-59%
	Luas	46,964	24,728	-47%
	Total PT	180,154	83,109	-54%
08:00 to 09:00	Bus	51,285	50,078	-2%
	Rail	166,275	197,411	19%
	Luas	83,383	82,711	-4%
	Total PT	303,943	330,200	9%
09:00 to 10:00	Bus	32,372	30,085	-7%
	Rail	60,298	142,760	137%
	Luas	50,647	65,250	29%
	Total PT	143,317	238,095	66%
07:00 to 10:00	Bus	115,288	97,229	-16%
	Rail	328,132	381,487	16%
	Luas	183,994	172,689	-6%
	Total PT	627,414	651,404	4%

- 3.9 Thus a series of adjustments to the matrices were undertaken as described in chapter two. Following this a new assignment was carried out. We display the results of this in Table 3.2 and refer to them as the interim initial results. In summary the table shows that, during the peak hour (08:00-09:00) bus, Luas and Rail display a reasonable match between observed and modelled data at an aggregate level, representing a significant improvement on the first calibration. The balance between observed and modelled in the shoulder periods was not as good as in the peak 08:00 to 09:00 period, both at the aggregate level and at the individual mode level. More specifically, Luas modelled flows were lower than those observed. Again the match in the peak hour was the most reasonable.

TABLE 3.2 PUBLIC TRANSPORT INTERIM CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	39,013	23%
	Rail	101,559	98,241	-3%
	Luas	46,964	40,212	-14%
	Total PT	180,154	177,466	-1%
08:00 to 09:00	Bus	51,285	54,862	7%
	Rail	166,275	180,718	9%
	Luas	86,383	84,276	-2%
	Total PT	303,943	319,855	5%
09:00 to 10:00	Bus	32,372	23,709	-27%
	Rail	60,298	89,240	48%

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 10:00	Luas	50,647	47,627	-6%
	Total PT	143,317	160,576	12%
	Bus	115,288	117,584	2%
	Rail	328,132	368,199	12%
	Luas	183,994	172,114	-6%
	Total PT	627,414	657,897	5%

- 3.10 Further investigation suggested that this was a direct result of changes in matrix building approach used for the 2006 target matrices. In the previous version of the model (based on 2002), departure time profiles had been used in developing the target matrices; this new version of the model has been based on arrival time profile instead. Thus it was determined that a series of profiling factors were required to adjust the PT demand to the correct arrival hour. This has been discussed in more detail in chapter two.

Changes made to the PT Model for Improved Initial Calibration

- 3.11 The initial analysis undertaken resulted in the demand matrices being re-profiled so that there was a good correspondence between observed journeys crossing the screenlines, and modelled flows. However there were still some significant problems with the network calibration which required further investigation and changes to the network coding and model parameters.
- 3.12 The challenge of network calibration is to produce a network that accurately reflects real life conditions so that trips assigned to the correct routes. Assignment models such as TRIPS use a least cost algorithm to determine the routes and modes trips are assigned to. The model therefore assigns demand to the 'cheapest' routes between the various zone pairs. The 'cheapest' or 'best' route is determined by a combination of parameters which try to replicate the decisions people make in the real world.
- 3.13 In the Public Transport assignment model the costs are determined by the following:
- Time (the quickest route is most attractive)
 - Monetary cost (the cheapest route is most attractive)
 - Crowding (the least crowded is most attractive)
 - Interchange penalties (the least number of changes of mode or service is the most attractive. This is to reflect the inconvenience of having to change).
- 3.14 The assignment model determines the least cost route, by combining the various elements above to calculate a generalised cost. For example the quickest route can be the most expensive in monetary terms and therefore people will only use this route if they are prepared to pay for this time saving. The assignment model is therefore an extremely useful tool for replicating real life route choice decisions.
- 3.15 The complex interaction of the various elements of the cost function has therefore required considerable analysis to identify where changes needed to be made to the public transport model. The problems identified and the measures to resolve them are defined below and fall into two general categories;

- Network changes; for example, incorrectly coded or missing network links, incorrectly coded or missing public transport services, or incorrect public transport fares; and
- Parameter changes; the assumptions included in the model about route choice decision making, e.g. value of time (how much people are willing to pay to save time).

Network Calibration Issues

- 3.16 Thus after analysing the initial model results in further detail the following major problems were initially identified:

- There were many long distance walk trips, including many that did not use PT services at all.
- The combined Luas flows were under predicted in the model and at the individual level, as displayed in Table 3.3. In other words, Luas Green was under estimated and Luas Red was over estimated.

TABLE 3.3 LUAS RED & GREEN CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Luas Red	27,974	27,182	-3%
	Luas Green	18,990	13,030	-31%
	Total	46,964	40,212	-14.4%
08:00 to 09:00	Luas Red	46,617	54,818	18%
	Luas Green	39,766	29,458	-26%
	Total	86,383	84,276	-2.4%
09:00 to 10:00	Luas Red	29,744	33,896	14%
	Luas Green	20,903	13,730	-34%
	Total	50,647	47,627	-6.0%
07:00 to 10:00	Luas Red	104,335	115,897	11%
	Luas Green	79,659	56,218	-29%
	Total	183,994	172,114	-6.5%

- 3.17 Detailed analyses of the assignments suggested that a significant number of trips comprised no use of public transport as the least-cost route. This was counter-intuitive as the survey data used to build the public transport trip matrix only included journeys where people stated they used a public transport mode. While people perceive costs differently and therefore will use routes which are not the least cost we would expect the majority of journeys to replicate the observed surveyed data. Therefore the majority of OD pairs in the public transport demand matrix should have a least-cost route that would involve a mechanised public transport.

Assignment Parameter Changes

- 3.18 A series of tests were carried out to check if the public transport mode specific penalties in the assignment model were causing different public transport alternatives to be unattractive. These tests involved alterations in assignment

parameters related to choice of different public transport modes within the assignment model. The changes involved alterations to parameters such as the boarding penalty, interchange penalty and adjustments to wait curve and crowding (multiplicative) curves being used.

- 3.19 Investigation revealed that this was most apparent for OD movements where the expected public transport route involved use of two bus services with an interchange in between. Some analysis was undertaken to understand if there were issues with how interchange was being modelled.
- 3.20 In the network model assignment parameters were based on the 2002 version of DTO model. A 5 minute boarding penalty was being applied to the bus mode whereas all other modes had a boarding penalty of 30 seconds. Thus to improve the attractiveness of bus over walk, the boarding penalty of bus was reduced to 2.5 minutes from original value of 5 minutes.
- 3.21 The interchange penalty of 10 minutes was first reduced to zero to test the sensitivity of the parameter. Through further analysis the interchange penalty was increased from zero to 2 minutes to better reflect people's propensity to interchange. A summary of these changes is shown in Table 3.4.

TABLE 3.4 PT ASSIGNMENT MODEL PARAMETER VALUES

Parameter	Mode	Initial Value	Recommended Value
Boarding Penalty	Bus	5 minutes	2.5 minutes
	Luas	30 seconds	30 seconds
	Heavy Rail	30 seconds	30 seconds
Interchange Penalty	Bus	10 minutes	2 minutes
	Luas	10 minutes	2 minutes
	Heavy Rail	10 minutes	2 minutes

- 3.22 These changes to parameter values improved the overall calibration; however some mismatches still existed at the individual period and mode levels and even with these changes the long walk time problem was not resolved. To address this issue, further adjustments were made to the wait curves.
- 3.23 In TRIPS, the default assumption is that wait time is half of public transport mode headway. Wait curves are used to refine this assumption to match actual wait time duration for a particular network. The actual wait time value depends upon the level of service and the time table accuracy of the public transport mode. These wait curves have two components headway time and wait time.
- 3.24 The model originally had only one wait curve for all the three public transport modes: bus, rail and Luas. We introduced a separate wait curve for Luas in which the wait time was kept at the original values. For rail and bus however the original wait time values were reduced to half for up to headway of 20 minutes. The two wait curves are shown in Figure 3.2 and Figure 3.3. This again helped in improving the overall model calibration further, and the number of OD pairs with long walk times reduced, however in general the problem still remained.

FIGURE 3.2 WAIT CURVE USED FOR RAIL AND BUS IN AM PEAK MODEL

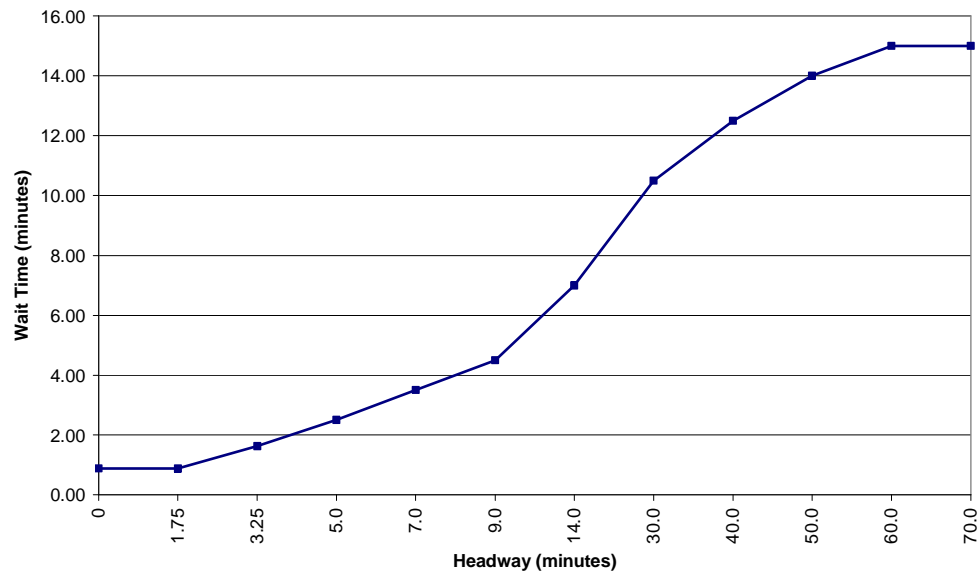
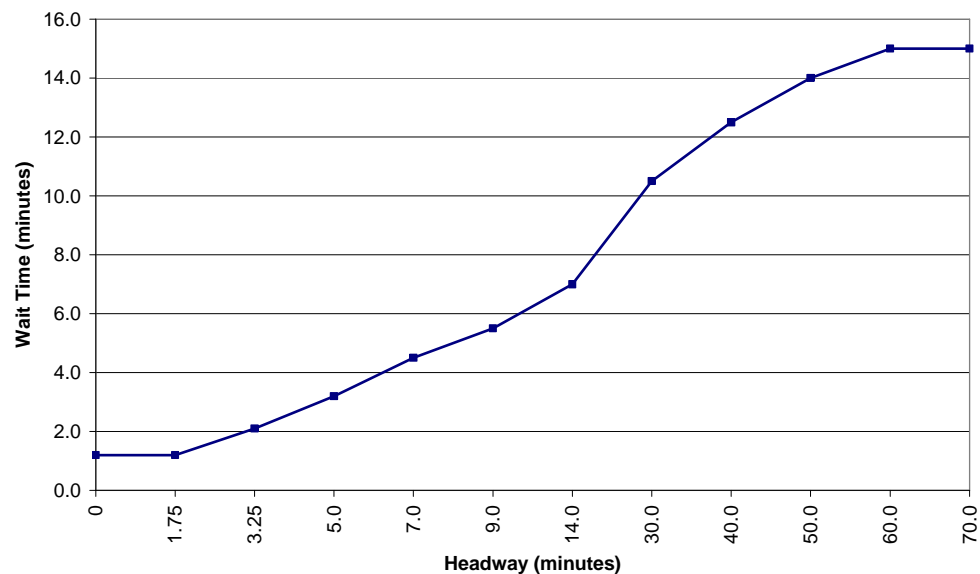


FIGURE 3.3 WAIT CURVE USED FOR LUAS RED & GREEN IN AM PEAK MODEL



- 3.25 Further analysis for Luas Green and Luas red also showed that although the observed volume profile for both Luas Green and Luas Red matched the model volume profile in both inbound and outbound directions, low modelled volume counts at the individual stations for both services was causing an overall under-estimation for this mode. To improve the bus utilization and refine Luas calibration, further changes were made in the model.

- 3.26 As part of the calibration, one of the tests carried out was to increase the Value of Time (VoT) from the 2002 base (8.10 euros/hour) to 2006 base (9.43 euros/hour) for all PT users in the assignment model. The use of VoT impacts PT assignment through representation of fares relative to travel time in the calculation of overall impedance or attractiveness of a particular route. However this test resulted in a worsening of the overall calibration results; thus the VoT values were set back to the 2002 base in the assignment model.
- 3.27 This result can be explained in part by the fact that integrated ticketing is not represented in the model. Rather than receive a rebate on subsequent modes when making a multi-mode journey, PT users are allocated two different fares for each individual mode leg. Therefore a lower VoT partially represents public transport users' perception of lower fare as in reality there is fare integration between different modes in Dublin. Our recommendation is that these VoT values are revisited when integrated ticketing is correctly represented in the PT assignment model.
- 3.28 The assignment software TRIPS uses a multiplicative curve in the crowding model to generate adjustment factors for public transport links, according to their level of utilization. The AM peak model was originally using two multiplicative curves, one for rail and other for both Luas and buses. To improve the utilization issue of walk links, a new Luas multiplicative curve was introduced. The utilization factor for the new Luas curve was kept higher than the corresponding bus multiplicative curve but yet lower than for rail.
- 3.29 The multiplicative curves used for the three modes are shown in Figure 3.4, Figure 3.5 and Figure 3.6.

FIGURE 3.4 MULTIPLICATIVE CURVE FOR RAIL IN AM PEAK MODEL

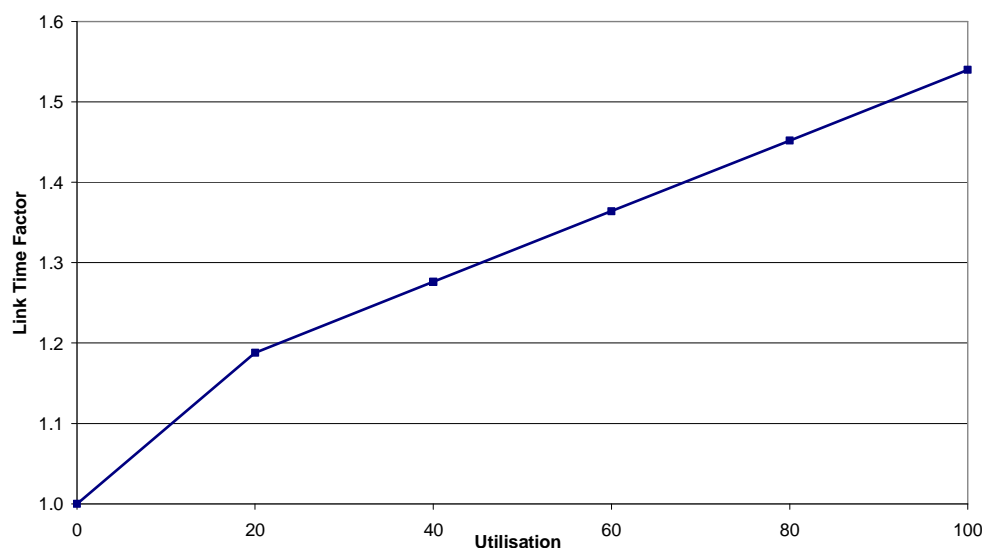


FIGURE 3.5 MULTIPLICATIVE CURVE FOR BUS IN AM PEAK MODEL

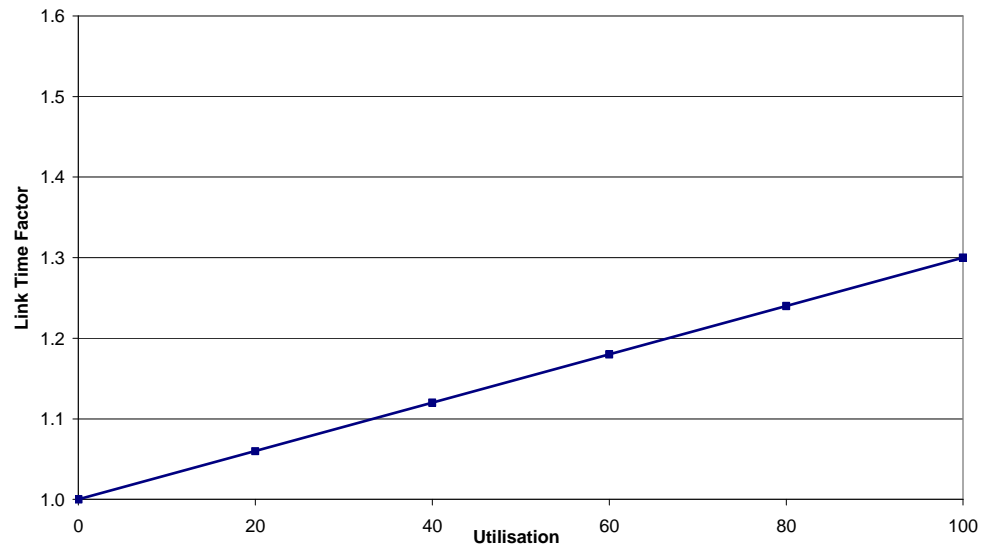
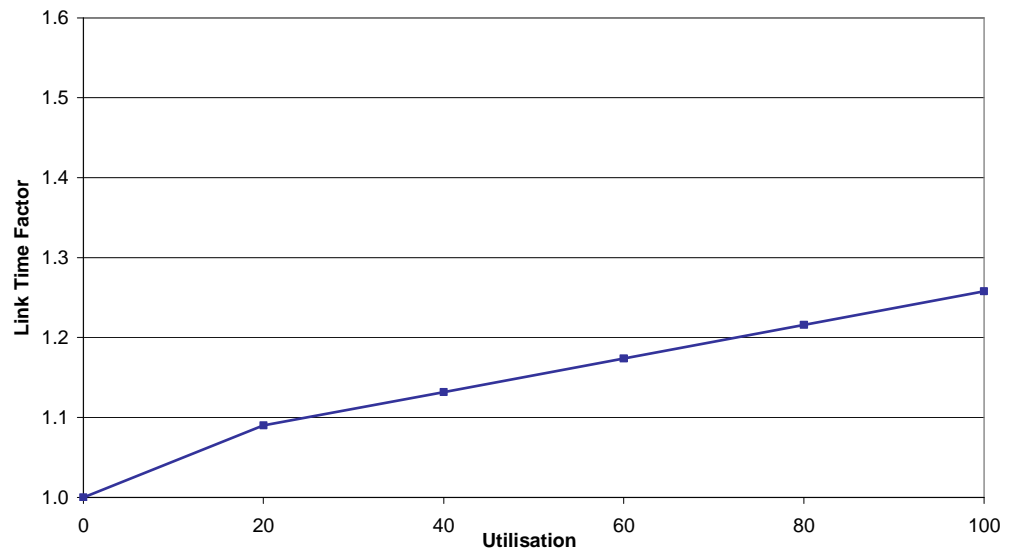


FIGURE 3.6 MULTIPLICATIVE CURVE FOR LUAS IN AM PEAK MODEL



Network Changes

- 3.30 The walk-only trips were pre-dominant for trips originating from the area outside the M50 where zone sizes were very large. All these issues were addressed individually by making individual adjustments to public transport model networks and assignment parameters. These are discussed in detail below.

- 3.31 The 08:00-09:00 time period skim resulting from subsequent test runs showed that the proportion of public transport trips for which in-vehicle time (IVT) was zero, was higher for trips with origin or destination outside the M50 as compared to the trips within the M50 as shown in Table 3.5. Further analysis suggested that the walk time values appeared more extreme in the routes where origins or destinations were outside of M50.
- 3.32 Thus the network detail was checked for zones outside the M50 where it was noted that the zone sizes were significantly larger than zone sizes inside M50 area. This is expected due to the focus of the model being on the Dublin city area. However the zone connectors which linked the zone centroids to transport network were found to be very long and also in several cases not connected to key routes going through the zones. Following further discussion with DTO it was established that the model used an automated way of creating zone connectors. The nearest node on the network to each quadrant of the zone is selected and then connected. This approach was seen to be working appropriately for the smaller zones inside M50. However for larger zones the connectors generated required further adjustments to accurately present access to public transport services in areas outside of the M50.
- 3.33 Although the zone sizes in areas outside M50 are large, people access public transport services by directly walking to the nearest stop/station or by accessing the nearest stop/station by car (as driver or passenger). Therefore an assumption was taken that an access penalty similar to that for zones inside M50 should be taken for these large zones.
- 3.34 Based on this analysis and discussions with DTO new walk links were introduced between zone centroids of zones in areas outside M50 and their nearest public transport (bus/Luas/rail) stops. All walk links were capped with a maximum length of 800 metres and an average walking speed (5 km/hr) was assumed on these walk links to represent equivalent access time to public transport services.
- 3.35 To increase utilization of Luas green, which was under-predicted, new walk links were introduced from Luas Green stops to zones in the surrounding areas. New walk links were also introduced to connect nearby bus stops to Luas Green stops. This improved the calibration for Luas green for all three individual hours and also improved overall calibration. Figure 3.7 overleaf shows the public transport TRIPS network, the new walk links introduced are shown in red.
- 3.36 The resulting model runs following these network changes showed significant improvement in overall average walk time for the whole model. The analysis of 08:00-09:00 time period skims showed that the walk times were reduced to an average of 34.8 minutes. More detailed analysis showed a pattern of walk time at a sector to sector level (Outside M50, Inside M50, and Inside City Centre) to be vastly improved and in line with expectations based on anecdotal evidence. The comparison for walk times before and after the network improvements are shown in Table 3.4. The biggest improvement was a large reduction in the average walk time for trips starting/ending outside the M50 which has been reduced by between 18% and 36%.

TABLE 3.5 AVERAGE WALK TIME: BEFORE & AFTER NETWORK IMPROVEMENTS

		Inside City Centre	Inside M50	Outside M50
Inside City Centre	Before	18.95	26.93	60.78
	After	19.58	26.72	37.3
	%Diff	3.3%	-0.8%	-38.6%
Inside M50	Before	26.16	29.83	58.1
	After	27.14	30.52	41.69
	%Diff	3.8%	2.3%	-28.2%
Outside M50	Before	51.78	51.84	85.54
	After	39.11	42.45	54.52
	%Diff	-24.5%	-18.1%	-36.3%
Average	Before	32.29	30.26	64.9
	After	28.08	29.51	41.75
	%Diff	-13.0%	-2.5%	-35.7%

3.37 Furthermore for trips within the M50, with the exception of specific trips from Inside M50 to inside city centre, there were slight improvements of 2-3%.

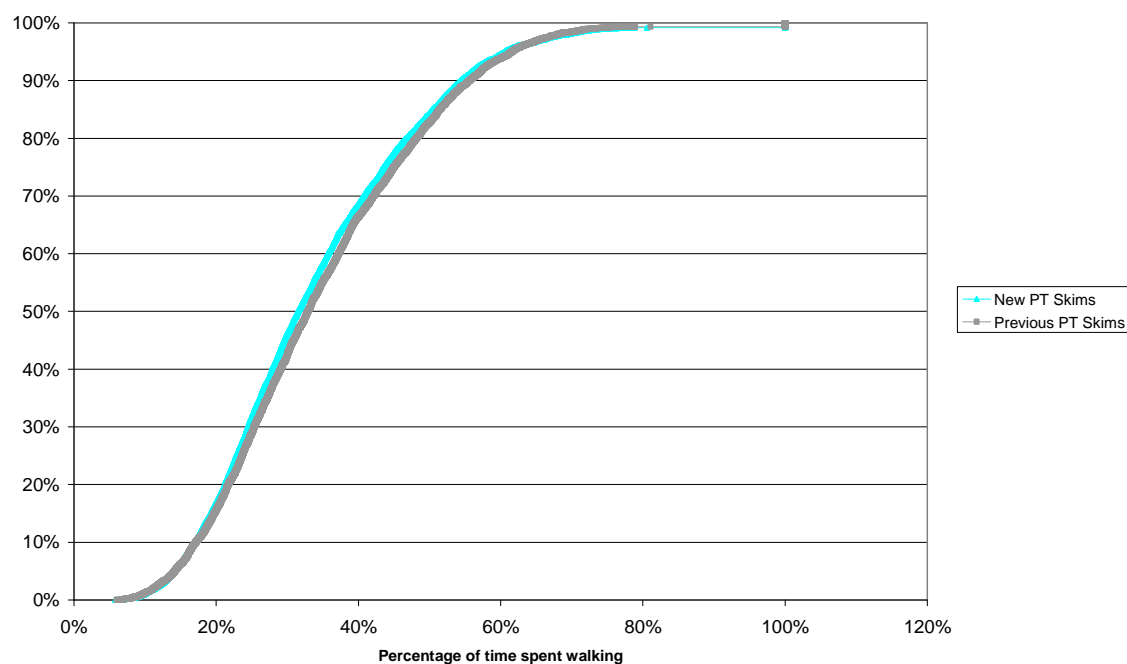
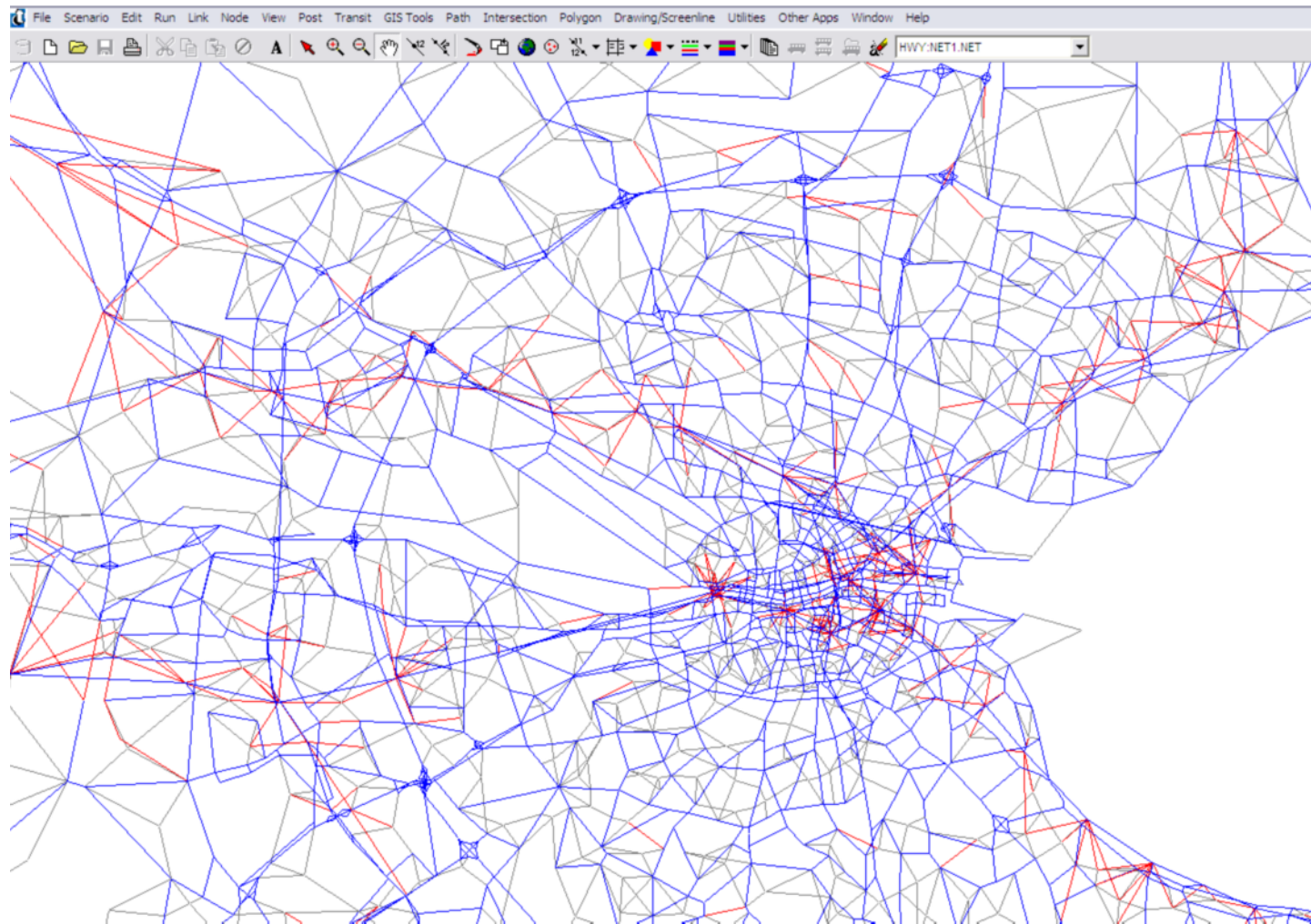
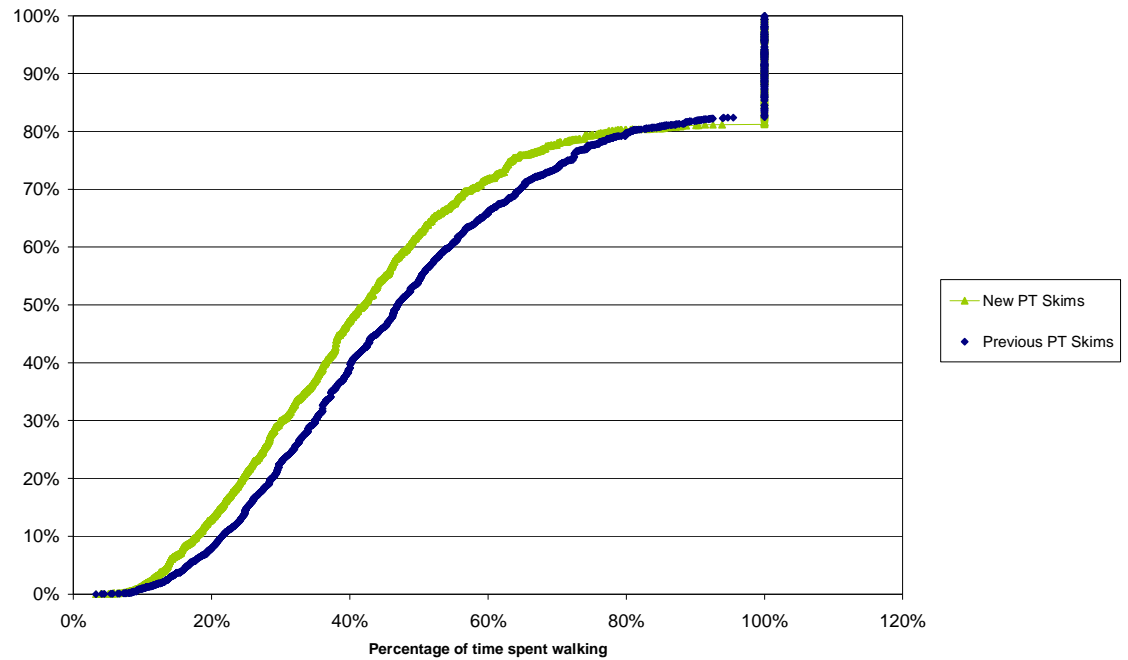
FIGURE 3.7 CUMULATIVE DISTRIBUTION OF THE % OF TIME SPENT WALKING FOR PT COMMUTERS (ARRIVING 08:00-09:00) INSIDE M50 TO CITY CENTRE


FIGURE 3.8 NEW WALK LINKS INTRODUCED IN THE PT MODEL

- 3.38 As compared to city centre the improvements for trips outside M50 were in the order of 10 - 30%, with higher proportion of trips being made with a lower walk time component as shown in Figure 3.9.

FIGURE 3.9 CUMULATIVE DISTRIBUTION OF THE % OF TIME SPENT WALKING FOR PT COMMUTERS (ARRIVING 08:00-09:00) TRIPS OUTSIDE M50



Initial Calibration Results

- 3.39 Using the updated networks and adjusted demand matrices a new model assignment was carried out. The calibration results after these changes are shown in Table 3.6 below. The resulting skims and input matrices from these runs were then provided to Minnerva to be used as input for the TAGM/TDM process.

TABLE 3.6 INITIAL CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	41,199	30%
	Rail	101,559	94,308	-7%
	Luas	60,612	56,365	- 7%
	Total PT	193,802	191,872	-1%
08:00 to 09:00	Bus	51,285	60,879	19%
	Rail	166,470	167,679	1%
	Luas	89,772	97,350	8%
	Total PT	307,527	325,908	6%
09:00 to 10:00	Bus	32,372	27,361	-15%
	Rail	60,377	76,732	27%
	Luas	47,318	44,243	-6%
	Total PT	140,067	148,337	6%
07:00 to 10:00	Bus	115,288	129,438	12%
	Rail	328,406	338,720	3%
	Luas	197,702	197,959	0%
	Total PT	641,396	666,117	4%

- 3.40 The calibration result showed a good overall comparison for the three peak hours, but at an individual mode level the results are somewhat worse than in the first calibration (shown in Table 3.2).
- 3.41 Bus flows were over predicted for the pre-peak (07:00-08:00) and peak period (08:00-09:00), where as they were under predicted for the post peak hour (09:00-10:00).
- 3.42 Luas results were reasonable across all three hours with the margin of error within 10%. The rail results showed a good match for peak hour, but an over prediction in the post peak.

PT Final Calibration Stage

- 3.43 Matrices produced as an output of the TAGM/TDM process were used for the final calibration. The matrices received for both highway and public transport were split by six journey purposes for each direction, across all three time periods. Some adjustments were made to these matrices before they were fed into the model for the final assignment. These adjustments have been discussed in chapter two above.

Final Calibration Results

- 3.44 The calibration results from the assignment with final adjusted matrices are shown in Table 3.7.

TABLE 3.7 FINAL CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	36,474	15%
	Rail	101,559	87,359	-14%
	Luas	60,612	58,544	-3%
	Total PT	193,802	182,377	-6%
08:00 to 09:00	Bus	51,285	60,804	19%
	Rail	166,470	177,445	7%
	Luas	89,772	113,674	27%
	Total PT	307,527	351,923	14%
09:00 to 10:00	Bus	32,372	26,212	-19%
	Rail	60,377	80,841	34%
	Luas	47,318	50,909	8%
	Total PT	140,067	157,962	13%
07:00 to 10:00	Bus	115,288	123,490	7%
	Rail	328,406	345,644	5%
	Luas	197,702	223,127	13%
	Total PT	641,396	692,262	8%

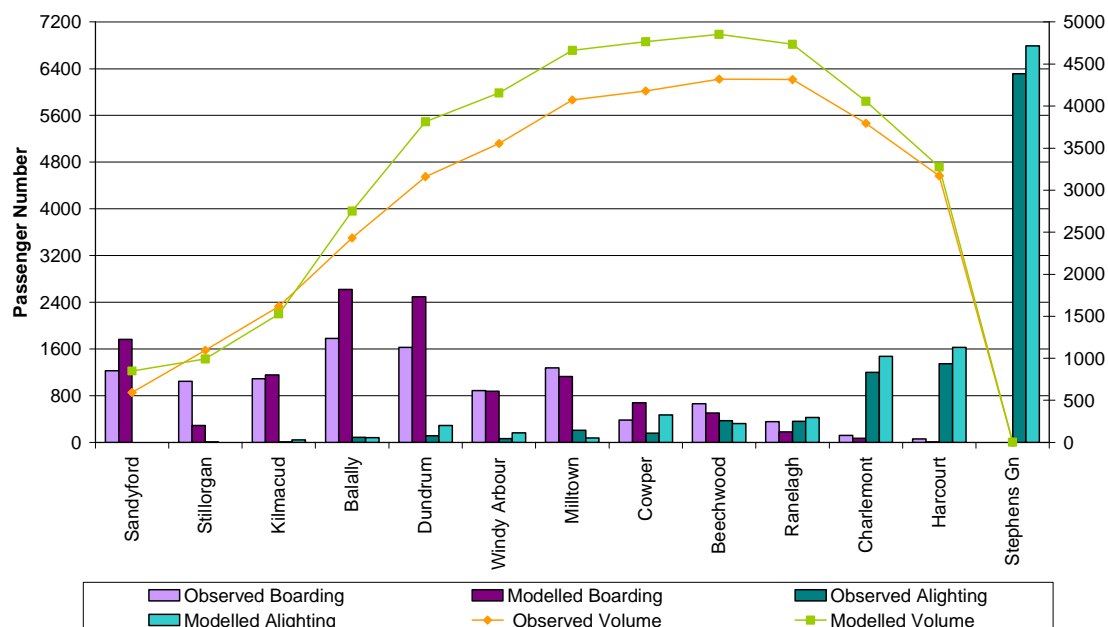
- 3.45 A good match has been achieved for the overall 07:00-10:00 period but with a slight over-prediction for Luas. However on hourly basis and by mode basis, the results are less good. One reason for this is that the observed count data is biased towards the congested areas of the network. Thus looking at the overall level of calibration does not provide a good indication of the fit at these congested points compared to outer areas. Thus more detailed analysis reveals that the calibration is better than first appears, at an aggregate level. Separate analysis has been carried out for each mode to illustrate this and is shown in the sections that follow.

Detailed Analysis of Luas Calibration

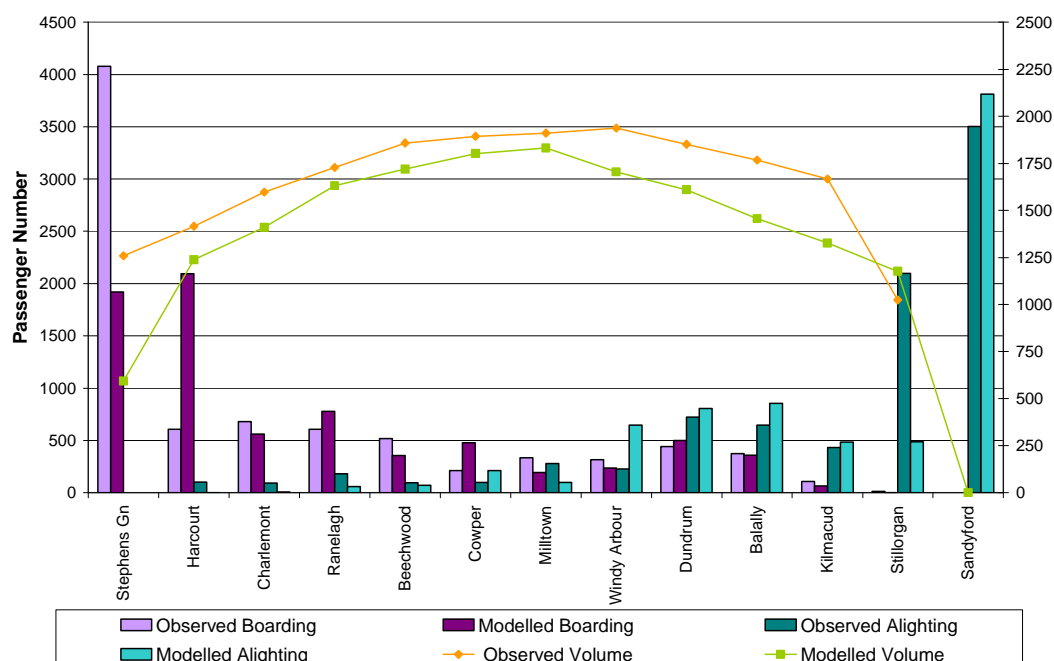
- 3.46 For Luas Green and Luas Red crowding analysis was carried out. In this analysis, the observed volume at each station was compared with the modelled volume. A volume profiled across the line was then constructed using this data. This analysis also involved the comparison of modelled and observed boarding and alighting at each station. Results of this analysis are shown in the figures overleaf.

3.47 Figure 3.10 shows the crowding analysis for Luas Green in the inbound direction and Figure 3.11 for Luas Green outbound.

FIGURE 3.10 LUAS GREEN SANDYFORD TO STEPHENS GREEN 07:00-10:00

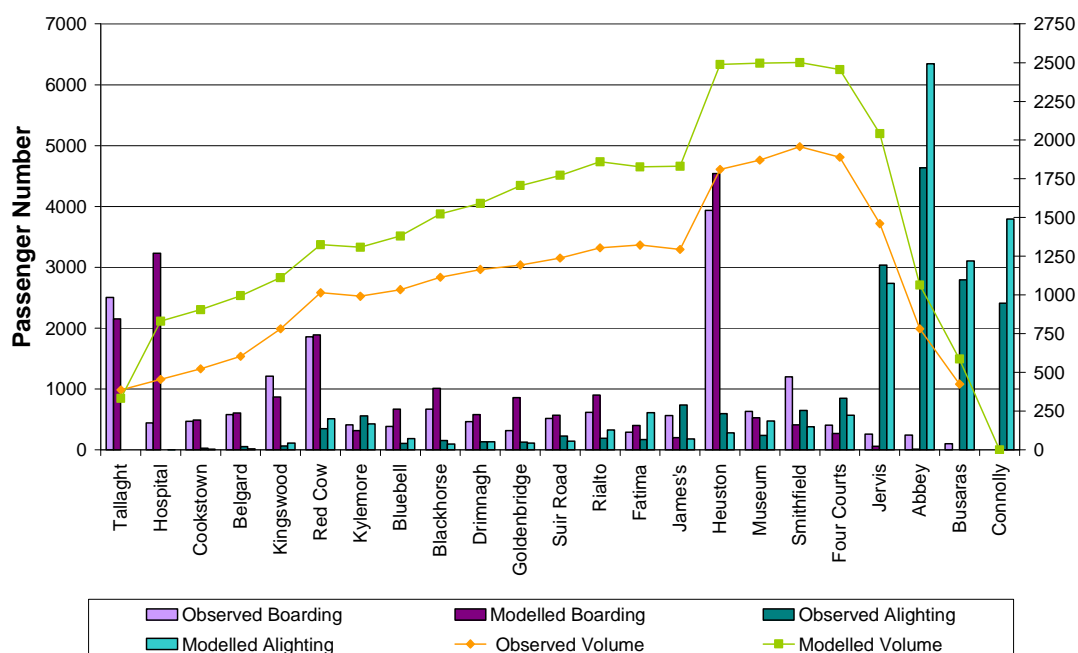


3.48 Both figures show that the volume profile of observed data closely matches the volume profile of modelled data. The figures also show good matches for boarding and alighting at individual stations. This shows that the demand and network parameters in the model are capable of providing a good match across the volume data.

FIGURE 3.11 LUAS GREEN STEPHENS GREEN TO SANDYFORD 07:00-10:00


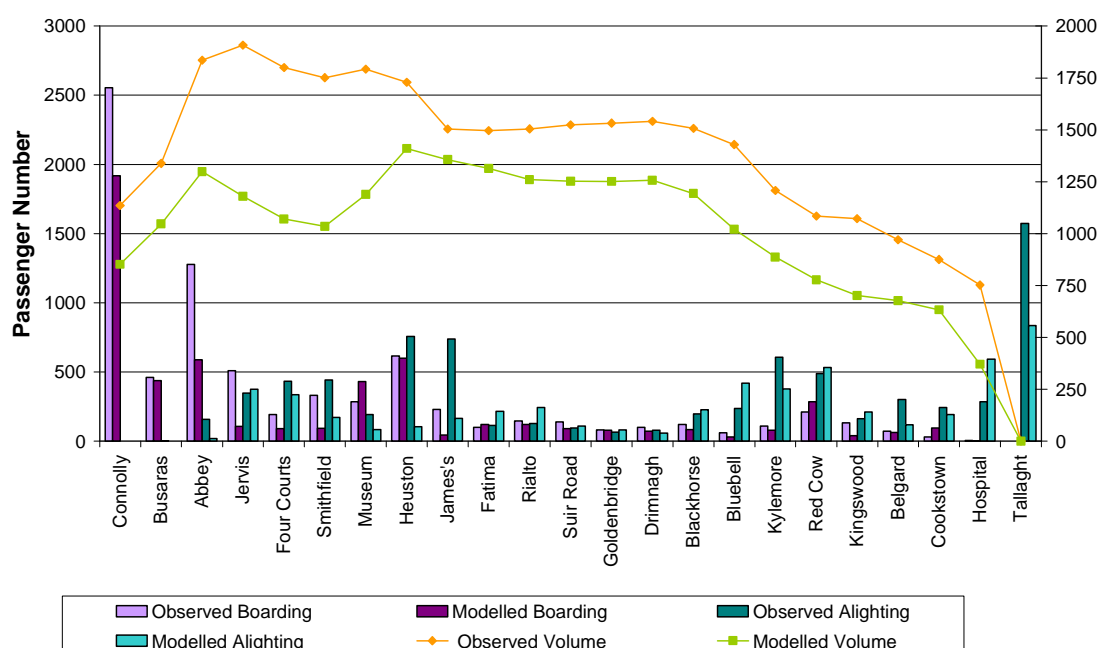
3.49 However, there are discrepancies at the individual station level, particularly Harcourt and Stephens Green in case of Luas Green station. The reason for this is because both Harcourt and Stephen Green station serve the same employment area, in reality they are used by passengers as if they are equivalent stations.

3.50 Figure 3.12 and Figure 3.13 show inbound and outbound crowding analysis for Luas Red.

FIGURE 3.12 LUAS RED TALLAGHT TO CONNOLLY 07:00-10:00


- 3.51 Both figures show that for both inbound and outbound directions, the profiles of line volumes closely matches the model at an area level with some boarding and alighting discrepancies at individual stations.
- 3.52 In particular there is some over-prediction on Luas Red for the inbound direction, however the boarding and alighting shows a good match across most of the stations with the exception of Hospital station, which is the main cause of the over-prediction in modelled volume.
- 3.53 In order to investigate the high observed volume at Hospital station, the number of OD trips was compared with planning data sheets for zones surrounding this area. This comparison showed that there were large developments in this area which was resulting in a high number of employment and education trips near the Hospital zone. A large number of these trips are also due to shift work patters which could account for the generation of higher than anticipated 'Work to Home' trips in the AM period, together with high numbers of people returning home after having dropping off a passenger.
- 3.54 In the outbound direction there is a slight under-prediction. This is primarily driven by large volumes of non fare paying passengers boarding Luas red at Connolly station. This issue is discussed further in the sections that follow.

FIGURE 3.13 LUAS RED CONNOLLY TO TALLAGHT 7-10AM



- 3.55 To take this analysis further, boarding and alighting passengers have been compared against observed volumes. Table 3.8 shows this for both Luas Red and Luas Green. The table shows that overall modelled Luas Green and Luas Red patronage reasonably matches the observed.

TABLE 3.8 BOARDING & ALIGHTING PAX FOR LUAS GREEN & RED 07:00-10:00

Luas Line	Boarding & Alighting Passengers		
	Observed	Modelled	% Diff
Green Inbound	7,290	8,163	12%
Green Outbound	4,604	4,187	-9%
Red Inbound	7,098	8,072	14%
Red Outbound	5,175	3,644	-30%
Total	24,167	24,066	0%

- 3.56 There is an under-prediction of boarding and alighting in the outbound direction particularly for Luas Red however. As mentioned above, this is because a large number of intra-city centre movements on Luas lines are taking place with zero fares, whereas the model considers these to be fare paying. In modelling terms these trips are assigned as walk-only within the public transport assignments and thus Luas demand is under-predicted. Due to increase in the overall size of the Luas matrix as compared to the initial updated matrices there are also some slight over-predictions in the inbound direction for both Luas Green and Luas Red.

Detailed Analysis of Bus Calibration

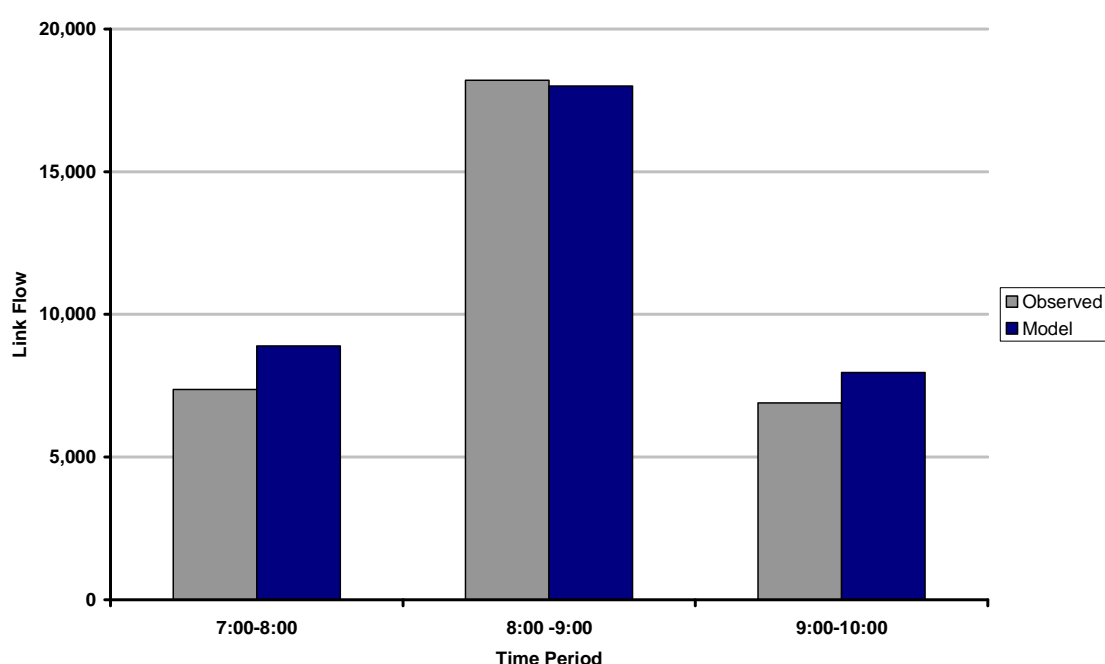
- 3.57 Table 3.9 shows a summary of the bus calibration for the 'Canal Cordon' area. The table shows that modelled frequency is significantly higher than observed in the hours 07:00-08:00 and 08:00-09:00 and is slightly lower in the post peak hour.
- 3.58 The modelled bus occupancy is also lower than observed occupancy for all the three time periods. As occupancy is affected by frequency, higher model frequency results in lower occupancy levels. Overall however there is a good match between observed and modelled volumes for 7:00-10:00 (-4%) as well as in the peak hour 8:00-9:00 (+5%). The values for post and pre peak hours are less good. This imbalance could be addressed by adjusting the modelled bus frequencies but in practise this is complex to achieve and can result in poor calibration for other modes.
- 3.59 The table highlights some imbalance between observed and modelled bus frequency. This is because in reality, as a result of congestion on the network, the number of buses observed during a single hour is lower. In other words, buses scheduled to arrive during the pre-peak period get held up on the network and actually arrive during the peak hour (08:00-09:00).
- 3.60 The model takes account of timetabled bus frequency, so as a result the number of buses going through the network during an hour in the model is higher than the observed number of buses on network.

TABLE 3.9 BUS CALIBRATION SUMMARY: CANAL CORDON

	07:00-08:00	08:00-09:00	09:00-10:00	07:00-10:00
Observed Frequency	271	441	437	1,149
Modelled Frequency	452	593	421	1,466
% Diff	67%	34%	-4%	28%
Observed Volume	12,401	24,950	16,956	54,307
Modelled Volume	15,319	26,094	10,927	52,340
% Diff	24%	5%	-36%	-4%
Observed Occupancy	47	57	39	141
Modelled Occupancy	36	44	26	104
% Diff	-24%	-22%	-33%	-26%

Detailed Analysis of Rail Calibration

- 3.61 A link-volume analysis was carried out for rail across three hours, for trips crossing the canal cordon. The results of this are shown in Figure 3.14. The figure shows an overall good match for total rail demand across over all three hours and in particular for the peak hour 08:00-09:00.

FIGURE 3.14 RAIL FLOWS (INBOUND+OUTBOUND) ACROSS CANAL CORDON

- 3.62 There is a small over prediction in the post and pre peak hour, which is related to the overall size of the Public transport matrix and a minor inbound vs. outbound biasness.

- 3.63 The calibration results and link volume analysis of canal cordon crossings shows a good result for 8:00-9:00 peak our flow but there are few discrepancies in the post peak and pre peak hour. This is due to the fact that majority of rail trips with in the model take more than one hour to complete. As a result it is not possible to correctly match the observed flows in each hour with model flows. This was discussed at length with the DTO team and based on those discussions, trip matrices were factored during the initial stages of this work to ensure a good fit for the 08:00-09:00 peak period. In particular this process was undertaken with the objective of obtaining a close match in the city centre which is the main attractor of rail trips.

PT Model Calibration Summary

- 3.64 The Public transport assignment component of the DTO transport model has been significantly enhanced during this update exercise. To summarise the key improvements made to the public transport assignment model are:
- Update of the 2006 base year network information to accurately represent Dublin's public transport system;
 - Significant improvement to the representation of access to the public transport network, especially in areas outside M50 through new walk links;
 - More detailed representation of the Luas system with Luas specific fare curves and crowding curves;
 - Update of the base year demand matrix information to closely match inputs from the TAGM/TDM stages of the model as well as to give good calibration against key observed count information. Without the use of any automated matrix estimation with counts, the use of limited matrix adjustments enabled retaining the link between the TAGM/TDM stages and the assignment public transport matrices; and
 - Good calibration against total observed public transport flows at a mode level arriving into Dublin city centre during the peak hour (08:00-09:00) which comprises of 50% total public transport flows during the AM period.
- 3.65 These public transport assignment model improvements are considered to be a key element for the overall DTO model update process. The resultant public transport model is considerably improved in terms of more robust representation of Dublin's public transport system and demand.
- 3.66 Although significant improvements have been made in the PT model during this update exercise there are still problems with detailed Luas and bus calibration that remain. These can be addressed by further enhancement to the model in representation of integrated ticketing which is considered to be impacting Luas calibration. Also more accurate representation of impact of highway congestion on bus time tables will help in improving the calibration of bus demand information.

4. THE HIGHWAY ASSIGNMENT MODEL

Introduction

- 4.1 This chapter describes the process carried out to calibrate the AM SATURN highway assignment model. The process includes changes to the matrices as well as changes on the network, such as capacities and signal optimization. The final validation results are also presented.

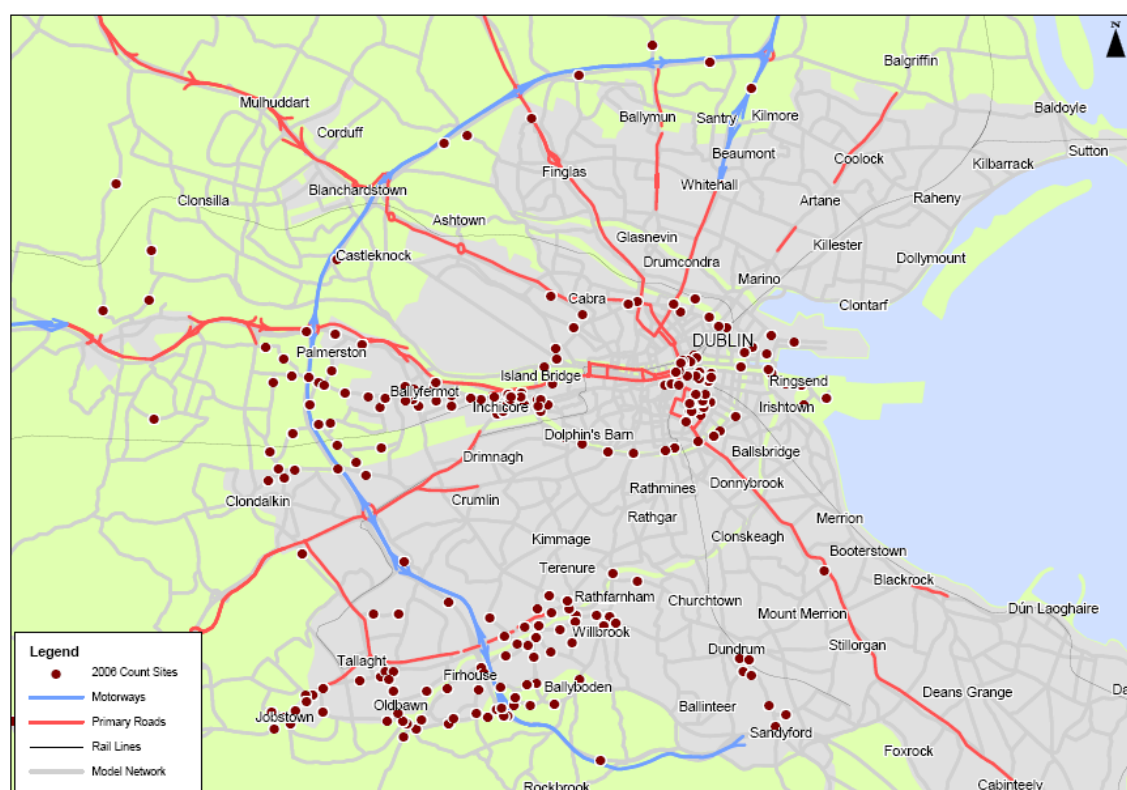
Highway: Data Requirements

- 4.2 A large amount of observed data was required within the calibration process. Firstly, target matrices for 2006 were provided to us by Minnerva as have been described in chapter two. These matrices were further enhanced by introducing non-work based trips to and from Dublin airport, again as described in chapter 2.
- 4.3 To make an assessment on the accuracy of the network coding and matrices a number of additional data sources have been employed. These were:

- Traffic Counts (2005, 2006, 2007);
- Journey Time Surveys (2006) for the period 08:00 to 09:00; and
- QBC data providing outbound journey time data (2006) for the off peak period.

Highway Count Data

- 4.4 The set of count data supplied by the DTO contained hundreds of link and turning counts. A considerable amount of analysis has been undertaken to clean the counts to remove errors and inconsistencies in the data. For example 2007 counts in the tunnel area have been removed as the tunnel was not in place in 2006 the base year. The locations of those counts used in the study are shown in the figure below.
- 4.5 A number of these have been selected and combined where appropriate to provide a set of cordons and screenlines across the network. These are listed in the table overleaf.
- 4.6 For the purpose of the initial calibration, the canal and outer cordons have been used to check the overall levels of traffic by direction. The two cordons are almost complete in that they cover the majority of links in the model into the city centre and within the M50 towards Dublin. This coverage means that even if the routing is not accurate it can be used effectively to check the matrix levels and directional flows.



ID	Name	Description
1	South Canal Screenline	Counts on the canal cordon to the south of the River Liffey
2	North Canal Screenline	Counts on the canal cordon to the north of the River Liffey
3	Canal Cordon	Combination of South Canal and North Canal Screenlines
4	Outer Screenline North	Screenline inside the M50 to the north of Dublin City Centre
5	Outer Screenline South	Screenline inside the M50 to the south of Dublin City Centre
6	Outer Screenline West	Screenline inside the M50 to the west of Dublin City Centre
7	Outer Cordon	Combination of North, South and West Outer Screenlines
8	M50 Counts	Counts on the M50

DTO within the Greater Dublin Area between October 2006 and January 2007. Routes one to sixteen were undertaken in the inbound direction only whilst surveys seventeen to twenty-one were orbital routes which were carried out in both directions. Table 4.2 describes the routes and the number of runs undertaken and Figure 4.2 shows these routes on the road network.

TABLE 4.2 SUMMARY OF AM PEAK JOURNEY TIME ROUTES - INBOUND

ID	From	To	Direction	Month of Survey	Runs
1	Sutton	City Centre	IB	November 2006	3
2	Portmarnock	City Centre	IB	November 2006	3
3	Swords	City Centre	IB	November 2006	5
4	Airport	City Centre	IB	November 20 06	4
5	Santry	City Centre	IB	November 20 06	4
6	Finglas	City Centre	IB	November 2006	4
7	Dunshaughlin	City Centre	IB	November 2006	5
8	Cooldrinagh	City Centre	IB	November 2006	5
9	Kill	City Centre	IB	November 2006	5
10	Tallaght	City Centre	IB	November 2006	3
11	Saggart	City Centre	IB	November 2006	4
12	Oldtown	City Centre	IB	November 2006	4
13	Edmondstown	City Centre	IB	November 2006	4
14	Stepaside	City Centre	IB	October 2006	4
15	Loughlinstown	City Centre	IB	November 2006	4
16	Monkstown	City Centre	IB	November 2006	5
17A	Orbital	Tallaght	WB	November 2006	3
17B	Orbital	Tallaght	EB	November 2006	6
18A	Orbital	Palmerstown	WB	November 2006	3
18B	Orbital	Palmerstown	EB	November 2006	5
19A	Orbital	City Centre	WB	Nov 2006 - Jan 2007	5
19B	Orbital	City Centre	EB	November 2006	5
20A	Orbital	Collins Avenue	WB	October 2006	1
20B	Orbital	Collins Avenue	EB	November 2006	3
21A	Orbital	M50	WB	November 2006	4
21B	Orbital	M50	EB	November 2006	5

- 4.8 Journey time routes for the outbound direction were not undertaken in the AM peak. However, information has been extracted from the November 2006 Quality Bus Corridor Monitoring Report published by the DTO. A total of twelve routes were identified. Since no AM outbound data was available in this report, the off peak data has been extracted Table 4.3 describes the routes whilst they are displayed in Figure 4.3.

TABLE 4.3 SUMMARY OF OFF PEAK JOURNEY TIME ROUTES - OUTBOUND

ID	From	To	Direction	Month of Survey	Runs
1	BlackHall Place	Coolmine Road	OB	November 2006	Average
2	Dorset Street Lr	Mellowes Bridge	OB	November 2006	Average
3	Heuston Station	Penny Hill Pub	OB	November 2006	Average
4a	Greencastle Rd	Clare Hall	OB	November 2006	Average
4b	Fairview	Kilmore Road	OB	November 2006	Average
5	Cornmarket	Coldcut Road	OB	November 2006	Average
6	Rathfarmam Rd	Dundrum Road	OB	November 2006	Average
7	Morehampton Rd	Foxrock Church	OB	November 2006	Average
8	SCR	O Connell	OB	November 2006	Average
9	Lenister Road	Main Street	OB	November 2006	Average
11	Bray Main Street	Shankill Village	OB	November 2006	Average
12	Amiens Street	Clontarf Grange	OB	November 2006	Average
13	Amiens Street	Raheny	OB	November 2006	Average

- 4.9 For each of the routes described in Table 4.2 and Table 4.3 the node paths were coded into SATURN and a subsequent joy ride was taken through the network. This allows the modelled journey time length to be extracted for each of the routes. This data is then compared against the observed values.

FIGURE 4.2 INBOUND JOURNEY TIME SURVEY ROUTES

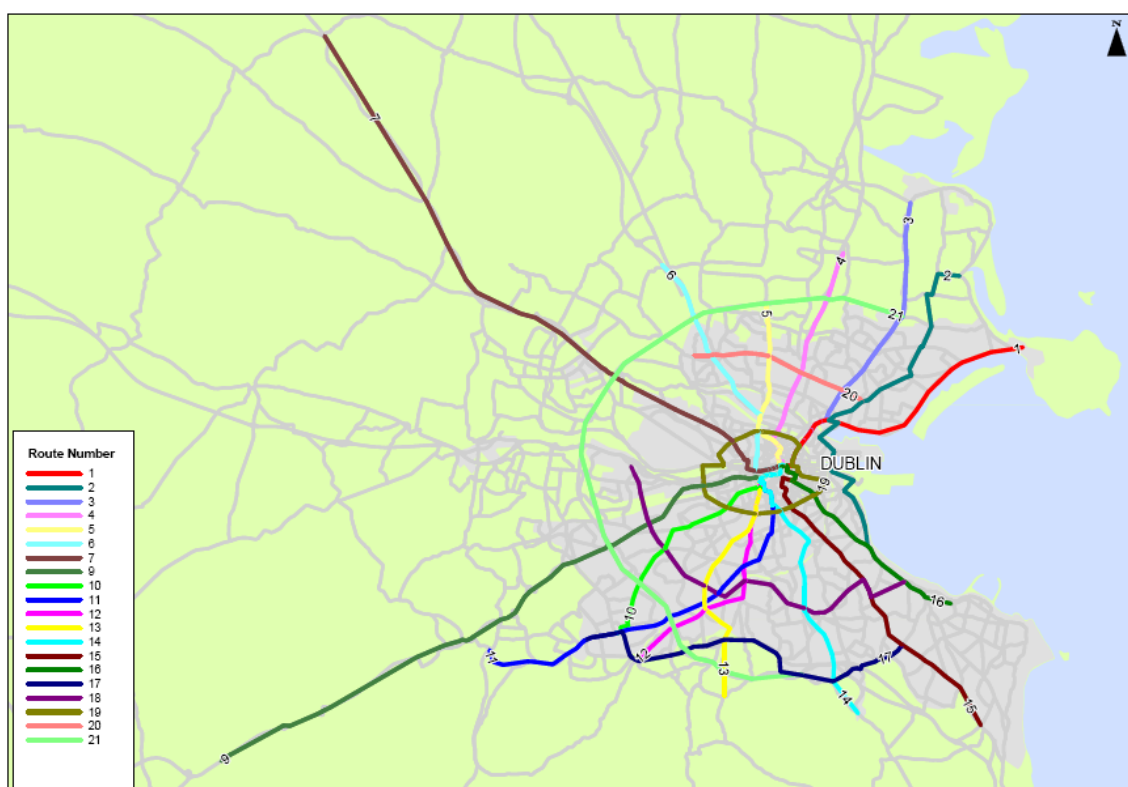
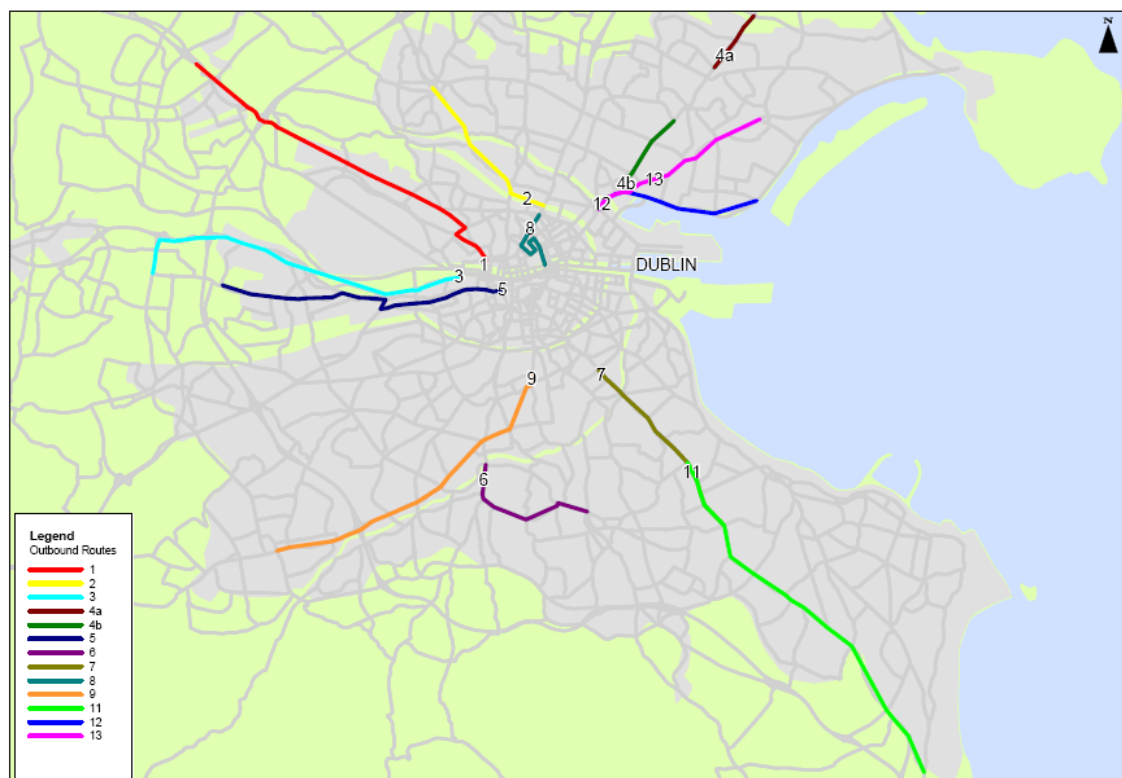


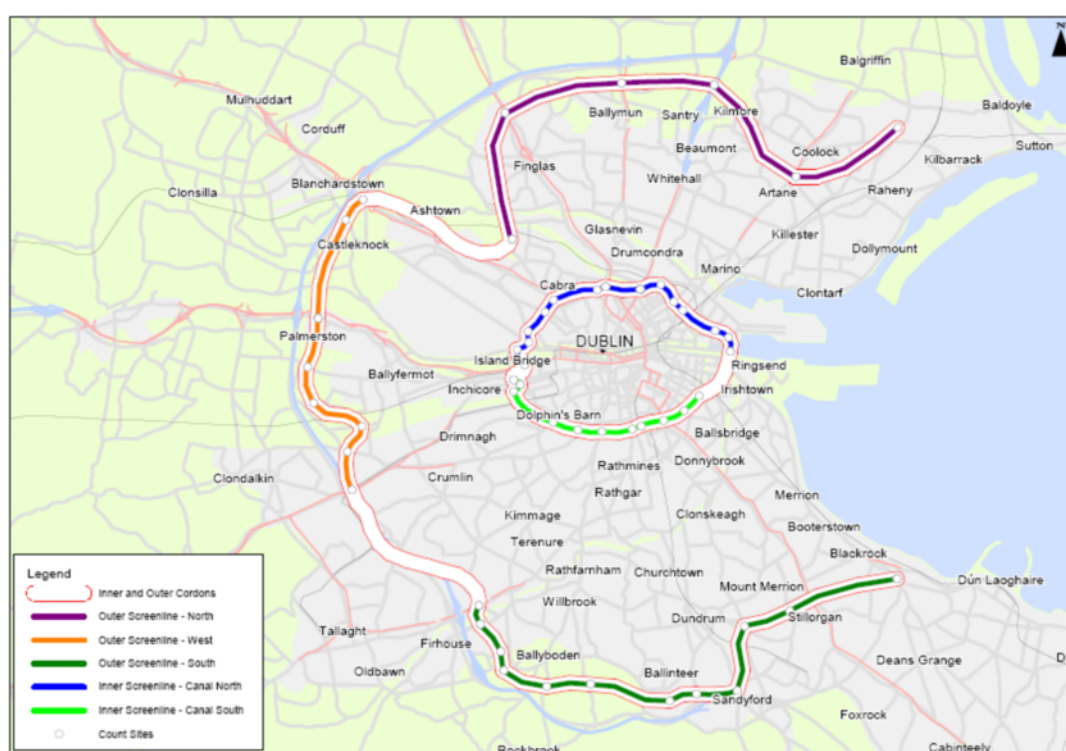
FIGURE 4.3 OUTBOUND JOURNEY TIME SURVEY ROUTES



Highway: Initial Results

- 4.10 In this section we provide the results of the initial calibration of the highway model, following the first assignment. This first run of the model was carried out with the initial target matrix and without adjusting the network as received from DTO. This calibration process has comprised two main steps:
- Comparison of model flows against observed count locations; and
 - Analysis of modelled journey routes and comparison with surveyed times on key routes.
- 4.11 Table 4.4 overleaf provides a summary of the results of the flow calibration by time period and direction across the canal cordon and M50 screen lines (whose exact location is shown in Figure 4.4

FIGURE 4.4 LOCATIONS OF SCREENLINES AND CORDONS



- 4.12 Overall for the three hour modelled period, the results were reasonably encouraging with overall demand levels for the three hours being quite accurate. However, when looking at the individual hour bands in more detail a number of issues emerged. The most important modelled hour is the arrival period between 08:00 and 09:00 as this is when the greater majority of trips occur. During this period there appears to be a heavy inbound bias (over 15% higher than observed), with the outbound traffic being under represented.

TABLE 4.4 INITIAL CALIBRATION SUMMARY

Time Period	Direction	Observed Count	SATURN Flow	Percentage Difference
07:00 to 08:00	Inbound	45,547	47,452	4%
	Outbound	31,536	31,303	-1%
	Total	77,083	78,755	2%
08:00 to 09:00	Inbound	47,048	53,435	14%
	Outbound	38,460	34,159	-11%
	Total	85,507	87,594	2%
09:00 to 10:00	Inbound	47,328	51,331	8%
	Outbound	36,630	29,923	-18%
	Total	83,958	81,254	-3%
07:00 to 10:00	Inbound	139,923	152,218	9%
	Outbound	106,626	95,386	-11%
	Total	246,549	247,603	0%

- 4.13 In addition the inbound journey times for this time period were running notably slower than those observed. However, the circular routes, particularly the M50 routes (21A and 21B) were running much faster (circa 22%), than the observed movements. This is shown in Figure 4.5 and Table 4.5 in more details.

FIGURE 4.5 INBOUND JOURNEY TIME COMPARISON - INITIAL CALIBRATION

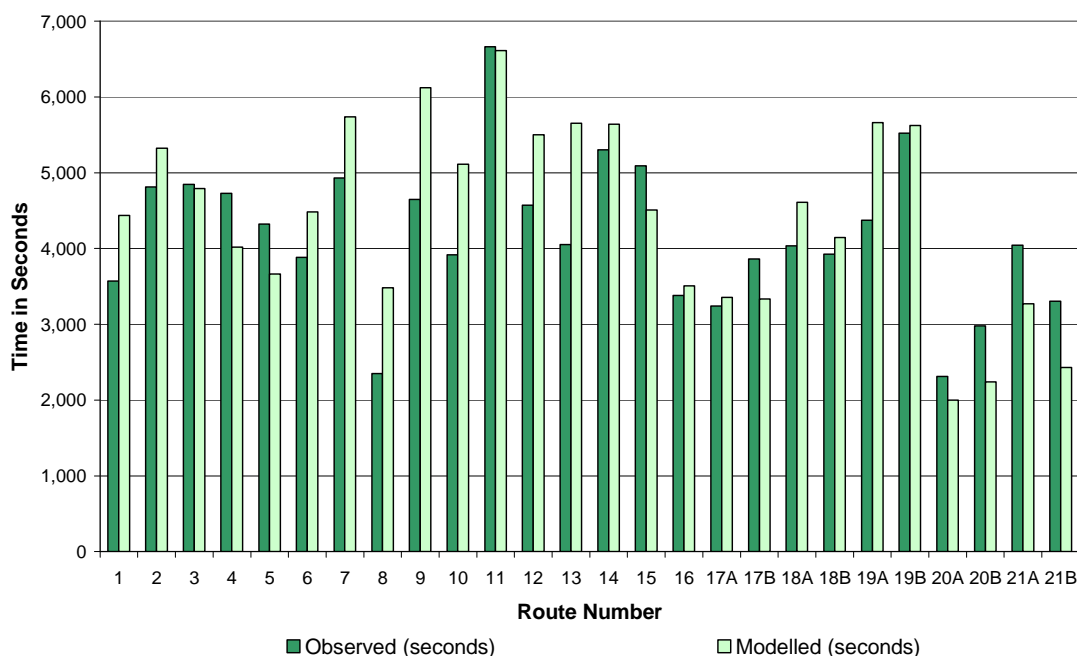


TABLE 4.5 INITIAL INBOUND JOURNEY TIME COMPARISON

Route	Observed (seconds)	Modelled (seconds)	Difference (seconds)	% Diff
1	3570	4440	870	20%
2	4813	5325	512	10%
3	4849	4791	-58	-1%
4	4729	4019	-710	-18%
5	4325	3665	-660	-18%
6	3886	4483	597	13%
7	4930	5737	807	14%
8	2349	3480	1131	33%
9	4647	6122	1475	24%
10	3920	5112	1192	23%
11	6664	6612	-52	-1%
12	4572	5503	931	17%
13	4054	5654	1600	28%
14	5305	5641	336	6%
15	5094	4509	-585	-13%
16	3381	3510	129	4%
17A	3244	3355	111	3%
17B	3865	3334	-531	-16%
18A	4035	4612	577	13%
18B	3925	4145	220	5%
19A	4372	5664	1292	23%
19B	5523	5624	101	2%
20A	2314	1999	-315	-16%
20B	2979	2240	-739	-33%
21A	4045	3272	-773	-24%
21B	3305	2432	-873	-36%
No of Routes within 15% of observed times			13 routes	
Percentage within 15% of observed times			50%	

Highway: Initial Investigations

- 4.14 The results described above, while reasonably accurate, were not considered good enough to feed into the next iteration of the demand model. The combination of high flows and slow journey times in the inbound directions strongly suggested that there was a problem with the matrix rather than the network. However, further investigation was required before any adjustments could be made to the observed survey data, which is used to build the target matrices. In response to some of the problems identified and following discussions with DTO we undertook the following lines of investigation:

- Running tests to identify sensitivity to Value of Time (VoT) assumptions;
- Checking whether ‘blocking back’ at specific junctions was being adequately modelled;
- Checking whether delays at toll booths were being accurately modelled;
- High level capacity checks;
- Initial checking of modelled junction signals;
- Analysis of modelled demand around Stephen’s Green employment area which straddles the canal cordon;
- Carrying out demand analysis by geographic sector; and
- Revisiting how the OD survey data was combined to produce the target matrices.

4.15 We describe these investigations and their outcome in further detail in the sections that follow.

Passing Queues to the Following Time Period

4.16 The initial model utilised the PASSQ function within SATURN, where traffic still queuing on the network at the end of the modelled period is passed onto the following period. Because of the highly congested nature of the Dublin network this resulted in large amounts of traffic being passed onto the 09:00-10:00 period resulting in unrealistic levels of delay.

4.17 The over representation of flows on the network when using the PASSQ function led to an investigation into the construction of the demand matrices. They were constructed using a variety of survey data that were based on people’s arrival times at their destination. It was therefore concluded that the demand assigned to the network included some traffic from the previous time period and that the PASSQ function was therefore no longer appropriate, as this was already represented in the matrix. Some outputs from the final calibrated assignments are presented below in paragraph 4.56 towards the end of this chapter.

Value of Time (VoT) Adjustments

4.18 The high speeds on the M50 combined with over estimation of inbound flows within the M50 corridor led to concerns that traffic was unrealistically avoiding the motorway. It was considered whether the values of time were too low, causing traffic to avoid tolled sections of the M50, and thus pushing traffic onto congested city centre routes.

4.19 The values of time used in the model were based upon the historical 2002 values. However, it is usual for these values to grow in relation to changes in GDP or other economic measures. Thus some adjustments were made in order to increase the 2002 VoT to an equivalent 2006 levels using a growth assumption of 4% per annum. A higher value of time implies that road users are more time sensitive; in other words they are prepared to ‘pay more’ in order to save time. Unfortunately, these changes were not found to have had a significant impact on journey times or flow comparisons.

TABLE 4.6 VALUE OF TIME CHANGE IN SATURN IN PENCE PER MINUTE (PPM)

Year	VoT in pence per minute
2002	21.2
2006	24.8

Initial Network Coding Checks

- 4.20 We then carried out some checks on the network coding and in particular undertook analysis to identify whether delays were being over represented in the model, which formed a significant part of the main calibration task. At this initial stage we were simply looking for any obvious issues that may resolve some of the initial calibration problems that had been identified. The network tests carried out are described below.
- 4.21 There were a number of junctions where capacity was so constrained that traffic blocked back and caused delays at surrounding junctions. A number of checks were carried out on the coding to understand whether this blocking back was a network coding issue or not. In general terms, of particular concern was:
- Conservative stacking capacities (stacking capacity is the number of PCU's that can queue before it effects the junction upstream);
 - Conservative saturation turning flows;
 - Poor signal (traffic light) coding;
 - Conservative link capacities; and
 - Missing bus lanes causing delays on links with high bus flows.

Junction and Link Capacities

- 4.22 The network coding at the junction level was found to be generally of a good standard. There was some coding identified which would improve the accuracy of the model, but it was decided that they were not significant enough to change the headline calibration results.
- 4.23 It should be noted that the highway model contained both junction coding and link speed flow curves. In a number of cases there were large delays caused by conservative link capacities rather than constraints at the junction. In an urban area we would expect the majority of delay to be caused at the junction. We therefore carried out a test where the link coding was removed in the city centre.
- 4.24 The effect of this test was too make journey times far too fast. This suggested that delays were occurring at both the junction and link level. Therefore this approach was abandoned and the link capacities reinstated. The links identified with conservative capacities were addressed again during the detailed calibration stages.

Toll Plazas and Blocking Back

- 4.25 The coding at the toll road plaza on the M50 was investigated to understand whether the fast journey times were caused by the under representation of delay at these locations. The junction was coded as a signal junction to simulate the delays caused by cars having to stop to pay the tolls. After liaising with our in house toll road experts we were advised to recode the junction as a dummy node and put in a

fixed delay. This coding is line with best practice but unfortunately did not have a significant impact on the journey time calibration.

- 4.26 After further discussion of fast journey times on the M50 with the DTO, they identified junction 7 as a location where the southbound off slip road caused blocking back onto the M50. The slip road was recoded to better reflect the road layout and this improved the journey time in this location.

Cordon Analysis including Stephen's Green

- 4.27 There was some concern that the imbalance between inbound and outbound trips was caused by the way the cordons were defined. For example if trips crossed the cordon more than once there could be an element of double counting. Of particular concern was Stephen's Green a large employment site to the south of the city centre as its position means that it straddles the canal cordon. To address these concerns the cordons were further split into screenlines (as described in Table 4.1 above) representing different geographical areas. This demonstrated that the overall traffic levels were consistent across the city providing further evidence that the problems were at a matrix rather than network level.
- 4.28 As discussed in chapter 2, we identified a degree of over estimation in the matrix and thus used a set of factors to reduce these matrix totals for specific journey purposes.

Updated Initial Calibration Results

- 4.29 The flat matrix factoring approach in combination with the network improvements already identified had little impact on the overall flow calibration. The table below shows the count comparisons of the updated model. A significant imbalance between inbound and outbound traffic remained.

TABLE 4.7 2006 HIGHWAY CALIBRATION: MODELLED ACTUAL FLOW

Time Period	Direction	Observed Count	SATURN Actual Flow	Percentage Difference
07:00 to 08:00	Inbound	45,686	46,474	2%
	Outbound	31,373	31,112	-1%
	Total	77,060	77,586	1%
08:00 to 09:00	Inbound	47,278	53,338	13%
	Outbound	38,393	33,092	-14%
	Total	85,671	86,431	1%
09:00 to 10:00	Inbound	46,960	50,958	9%
	Outbound	37,104	29,871	-19%
	Total	84,064	80,828	-4%
07:00 to 10:00	Inbound	139,925	150,770	8%
	Outbound	106,869	94,075	-12%
	Total	246,549	244,845	-1%

Highway: Interim Calibrated Model

- 4.30 Having interrogated the existing model fully (as described above) we concluded that the model would not calibrate until the imbalance in sectoral movements was corrected. We therefore investigated directional bias at the screen line level. This analysis was undertaken through comparison of the actual and demand modelled flows on the screen lines defined, as described in chapter 2. A series of adjustments were then made to the demand matrices, in consultation with DTO. These changes resolved the directional imbalance and improved overall fit at the cordon and screen line level.
- 4.31 While the matrix and network matched the observed data well after these changes were implemented, the issue of high speeds on the M50 remained. This was now matched with too much traffic compared to the count data, which showed that this was a network error rather than a problem with the matrix. In order to fix this, capacities were reduced on the links along the whole of the M50. The revised calibration results are discussed in the section that follows.

Highway: Revised Results

- 4.32 Following the specific changes made to junctions, speed-flow curves, capacities and demand matrices discussed above we reached a more acceptable level of calibration. The flow calibration for each period was acceptable whilst the overall matrix size had not changed significantly; and the distribution between inbound and outbound was much improved.

TABLE 4.8 REVISED 2006 HIGHWAY CALIBRATION (POST ADJUSTMENT)

Time Period	Direction	Observed Count	SATURN Flow	Percentage Difference
07:00 to 08:00	Inbound	45,686	47,198	3%
	Outbound	31,373	30,846	-2%
	Total	77,060	78,044	1%
08:00 to 09:00	Inbound	47,278	50,312	6%
	Outbound	38,393	38,082	-1%
	Total	85,671	88,394	3%
09:00 to 10:00	Inbound	46,960	50,618	8%
	Outbound	37,104	35,807	-3%
	Total	84,064	86,424	3%
07:00 to 10:00	Inbound	139,925	148,128	6%
	Outbound	106,869	104,734	-2%
	Total	246,794	252,863	2%

Journey Time Results

- 4.33 Figure Table 4.9 provides a summary of the routes for the period 08:00 to 09:00 in the inbound direction¹. The total journey times for the observed and modelled routes are given in seconds.

TABLE 4.9 REVISED INBOUND JOURNEY TIME COMPARISON 08:00 TO 09:00

Route	Observed (seconds)	Modelled (seconds)	Difference (seconds)	% Diff
1	3570	4054	484	12%
2	4813	4613	-200	-4%
3	4849	4397	-452	-10%
4	4729	4340	-389	-9%
5	4325	4595	270	6%
6	3886	3349	-537	-16%
7	4930	4675	-255	-5%
8	2349	2842	493	17%
9	4647	4654	7	0%
10	3920	3734	-186	-5%
11	6664	5461	-1203	-22%
12	4572	4560	-12	0%
13	4054	4308	254	6%
14	5305	5187	-118	-2%
15	5094	4160	-934	-22%
16	3381	3488	107	3%
17A	3244	3331	87	3%
17B	3865	2528	-1337	-53%
18A	4035	4244	209	5%
18B	3925	3498	-427	-12%
19A	4372	5453	1081	20%
19B	5523	5985	462	8%
20A	2314	1846	-468	-25%
20B	2979	1482	-1497	-101%
21A	4045	3903	-142	-4%
21B	3305	3666	361	10%
No of Routes within 15% of observed times			18 routes	
Percentage within 15% of observed times			69%	

¹ Recall that observed journey times have only been collected during the AM peak for the hour 08:00 to 09:00.

- 4.34 The journey time results provided confidence that the costs passed onto Minnerva for use in the TAGM/TDM gave an accurate representation of the speeds that occurred on the road network. There was obviously room to improve the network and matrices but overall the model had a good fit to the observed conditions.

Final Matrix Assignment

- 4.35 After receiving a new set of target matrices in March 2009 a similar process was carried out as described above. The matrices were assigned to the 'initial' calibrated model and further changes were made to the matrix and network to achieve the final calibrated AM peak model.

Initial comparisons

- 4.36 The first run of the model showed that while the overall demand matrix comparisons had improved since the first run of the model, there were still some significant imbalances between the assigned flows and observed counts, see Table 4.10 below. The pre peak period showed flows considerably under the observed counts. While the two following periods had reasonable overall traffic levels the directional flows were incorrect, with inbound traffic overrepresented and not enough outbound flows.

TABLE 4.10 2006 HIGHWAY CALIBRATION: MODELLED ACTUAL

Time Period	Direction	Observed Count	SATURN Actual	Percentage Difference
07:00 to 08:00	Inbound	45,574	41,746	-8%
	Outbound	31,646	24,071	-24%
	Total	77,220	65,817	-15%
08:00 to 09:00	Inbound	47,063	52,074	11%
	Outbound	38,842	32,975	-15%
	Total	85,905	85,049	-1%
09:00 to 10:00	Inbound	45,738	50,491	10%
	Outbound	35,390	32,268	-9%
	Total	81,128	82,759	2%
07:00 to 10:00	Inbound	138,376	144,311	4%
	Outbound	105,878	89,314	-16%
	Total	244,254	233,625	-4%

Further Demand Changes

- 4.37 In order to achieve a good calibration a number of further adjustments were made to the demand matrices. First light vehicles such as cars were factored by direction to adjust for the imbalance between inbound and outbound flows. Then heavy goods vehicles (HGV's) were added to the demand matrices using matrix estimation. These processes of updating the light vehicles is described in full in chapter 2 and the matrix estimation on HGV's is described below in this chapter.

HGV Matrix Estimation (ME)

- 4.38 The initial HGV matrix used in the study came directly from the 2002 DTO calibrated model. The matrix was first derived using a gravity model and then updated using matrix estimation. While this was a good starting point, it was important to understand how accurate the HGV matrix was. Table 4.11 below shows that there was a reasonable comparison for the 08:00-09:00 and 09:00-10:00 periods with some imbalances in the directional flows. The 07:00-08:00 period was significantly higher than the observed.

TABLE 4.11 2006 HIGHWAY CALIBRATION: HGV ACTUAL - PRE ME

Time Period	Direction	Observed Count	SATURN Actual	Percentage Difference
07:00 to 08:00	Inbound	5,287	7,471	41%
	Outbound	4,911	6,659	36%
	Total	10,198	14,130	39%
08:00 to 09:00	Inbound	5,159	5,229	1%
	Outbound	5,544	4,995	-10%
	Total	10,703	10,224	-4%
09:00 to 10:00	Inbound	6,617	6,822	3%
	Outbound	6,105	5,727	-6%
	Total	12,722	12,550	-1%
07:00 to 10:00	Inbound	17,062	19,522	14%
	Outbound	16,560	17,382	5%
	Total	33,622	36,903	10%

- 4.39 To achieve a better flow validation for HGV's matrix estimation on traffic counts was carried out for this user class only. Unlike the car matrix which has been derived from the demand model based on a comprehensive set of survey data, the HGV matrix is not underpinned by such detailed observations. Therefore matrix estimation is a suitable method to produce a matrix based on the observed data that exists.
- 4.40 Steps were taken to ensure that the prior matrix trip patterns were not distorted by:
- Using the standard recommend SATURN parameter XAMAX = 5.0 which limits the factor which can be applied to fix the flows to a count to no more than 5.
 - Freezing HGV trips to and from residential zones, in order to prevent an unrealistic growth in HGV flows from these zones.
- 4.41 The results from the final assignment can be seen in Table 4.12 for HGV flows crossing the cordons.
- 4.42 The results indicate an excellent flow validation for HGV's across the cordons, with the 08:00-09:00 and 09:00-10:00 showing an error against of observed of within 3% in both directions. While the pre peak period still has an over prediction of traffic the flows are fairly small so the absolute differences in flows are insignificant.

TABLE 4.12 2006 HIGHWAY CALIBRATION: HGV ACTUAL - POST ME

Time Period	Direction	Observed Count	SATURN Actual	Percentage Difference
07:00 to 08:00	Inbound	5,287	5,694	8%
	Outbound	4,911	5,731	17%
	Total	10,198	11,425	12%
08:00 to 09:00	Inbound	5,159	5,242	2%
	Outbound	5,544	5,700	3%
	Total	10,703	10,942	2%
09:00 to 10:00	Inbound	6,617	6,801	3%
	Outbound	6,105	6,227	2%
	Total	12,722	13,027	2%
07:00 to 10:00	Inbound	17,062	17,736	4%
	Outbound	16,560	17,658	7%
	Total	33,622	35,395	5%

4.43 The graphs below in Figure 4.6 and Figure 4.7 compare observed and modelled flows for the 08:00-09:00 period before and after matrix estimation. The charts plots counts against flows for the individual count sites. Where a perfect match is represented a black line running diagonally across the chart can be observed.

4.44 It can be seen that the points are clustered much more closely along the diagonal after matrix estimation showing a good match of observed and modelled flows.

FIGURE 4.6 HGV FLOW COUNT V ACTUAL - PRE MATRIX ESTIMATION

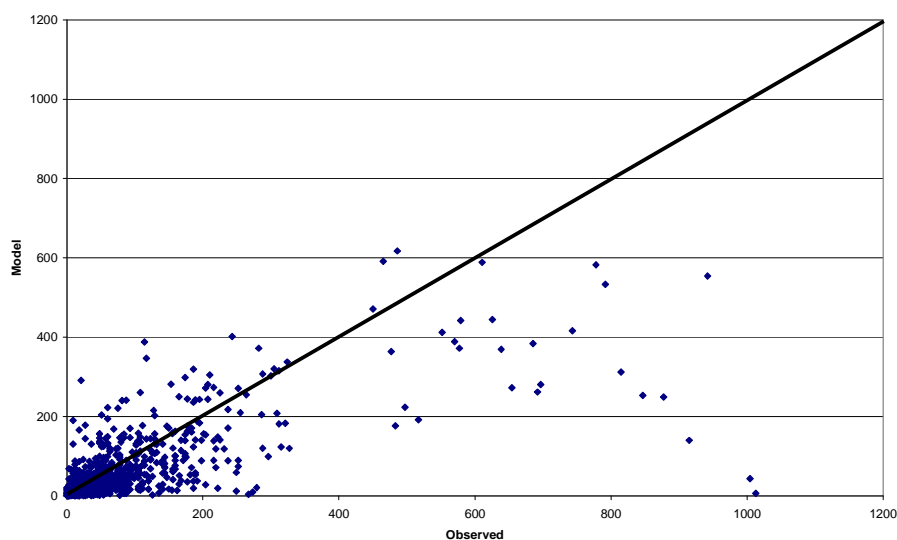
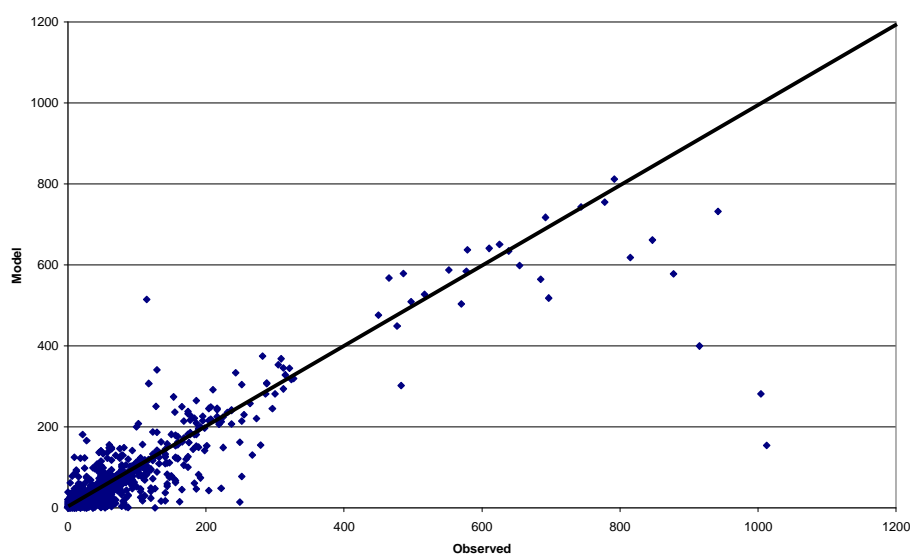


FIGURE 4.7 HGV FLOW COUNT V ACTUAL - POST MATRIX ESTIMATION

- 4.45 Because of the small size of the HGV matrix many of the statistical comparisons that are often used in validating transport models are not appropriate for the HGV flows. However the GEH statistics is a measure of goodness of fit which was developed to compare individual hourly traffic counts. It was developed to allow for a common measure of goodness of fit depending on the size of the count. For example a small count could have a large percentage difference but in absolute terms be a good match to the observed, with the opposite true of larger counts.

GEH:
$$\sqrt{\frac{2(x_i - y_i)^2}{x_i + y_i}}$$
 (Equation 1)

- 4.46 A GEH of less than 5 is considered to be an excellent match against the observed flows. The table below shows the differences in GEH in the HGV flows before and after matrix estimation on the inner and outer cordons combined. It can be seen that there is a considerable increase in the individual count validation after matrix estimation.

TABLE 4.13 COMPARISON OF HGV GEH PRE AND POST MATRIX ESTIMATION

Time Period	Direction	Pre ME	Post ME
0700-0800	IB	59%	75%
	OB	48%	79%
	Total	54%	77%
0800-0900	IB	73%	75%
	OB	59%	82%
	Total	66%	79%
0900-1000	IB	55%	68%
	OB	54%	80%
	Total	54%	74%

Final Calibration Results

Overview

- 4.47 The final flow calibration using adjusted matrices is presented below for flows crossing the cordons. The overall flows crossing the cordons provide a good match to the observed counts for the whole of the modelled period. In the 07:00 to 08:00 period, flows are still low in the outbound direction, but these flows are small and do not represent a significant element of overall demand. For the following periods the directional flows have a good match with observed. A detailed comparison of modelled and links flows can be seen in Appendix D.

TABLE 4.14 2006 HIGHWAY CALIBRATION: FINAL CALIBRATION RESULTS

Time Period	Direction	Observed Count	SATURN Demand	Percentage Difference
07:00 to 08:00	Inbound	45,574	43,945	-4%
	Outbound	31,646	27,718	-12%
	Total	77,220	71,663	-7%
08:00 to 09:00	Inbound	47,063	50,479	7%
	Outbound	38,842	37,467	-4%
	Total	85,905	87,946	2%
09:00 to 10:00	Inbound	45,738	49,029	7%
	Outbound	35,390	35,247	0%
	Total	81,128	84,276	4%
07:00 to 10:00	Inbound	138,376	143,453	4%
	Outbound	105,878	100,433	-5%
	Total	244,254	243,885	0%

- 4.48 In order to show the count validation on individual links Table 4.15 shows the results of the GEH analysis. A GEH of less than 5 is considered an excellent match against the observed counts, with less than 7.5 thought to be good and below 10 showing a reasonable correlation.

TABLE 4.15 PROPORTIONS OF COUNTS MATCHING GEH CRITERIA ON THE CORDONS

		Canal Cordon			Outer Cordon		
		GEH <5	GEH <7.5	GEH <10	GEH <5	GEH <7.5	GEH <10
07:00-08:00	IB	46%	75%	86%	30%	59%	89%
	OB	46%	64%	75%	50%	64%	79%
08:00-09:00	IB	57%	61%	75%	30%	59%	89%
	OB	61%	68%	82%	50%	57%	68%
09:00-10:00	IB	46%	61%	68%	30%	59%	89%
	OB	43%	71%	79%	52%	67%	81%

- 4.49 The GEH proportions in the table above provide a satisfactory match for individual counts on the cordons. With the matrix representing arrival matrices the canal cordon should have the most reliable count comparisons in the AM peak. We can see the following results;
- GEH <5 for around 60% of links in the peak hour 08:00-09:00 on the canal cordon
 - Over 60% under 7.5 GEH for all time periods on the canal
 - For both canal and outer cordons high proportion of links <10
- 4.50 Since no matrix estimation has been carried with the input matrices, the level of calibration that has been achieved at an individual count level is considered to be acceptable. Also due to the limited number of repeat observations at the same count locations across a number of days, the individual count level calibration is liable to be affected by day to day variations in the count data.
- 4.51 From our own experience in developing such strategic models for Abu Dhabi, Liverpool and Central London the level of validation achieved at an individual count level for AM period of the DTO highway assignment model is comparable. There are also examples of other strategic models in the U.K. where individual count validation results are of similar levels as that achieved by the DTO model. Most relevant examples include Transport Model² for Scotland and PRISM - West Midlands³. In both cases the AM period validation at individual count level ranged from only 40% to 60% of all counts being within the acceptable (GEH<5) criteria.

Independent Count Comparisons

- 4.52 To assess the accuracy of the modelled flows, the counts other than the cordoned counts (used to factor the matrix) were compared to the modelled flows. Firstly the route mean squared normalized error (*RMSNE*) was used on counts across the network. *RMSNE* is a useful way of measuring the goodness of fit of a large number of observations and it heavily penalises large errors meaning that any significant problems are highlighted in the final number. We show the formulation for this metric below in equation 2.

Route mean squared normalized error (*RMSNE*):
$$\sqrt{\frac{1}{N} \cdot \sum_{i=1}^N \left(\frac{x_i - y_i}{y_i} \right)^2}$$
 (Equation 2)

- 4.53 For *RMNSE* the nearer the value is to zero, the better the model fit, with values under 1 considered to indicate a reasonable level of fit. With the large number of observations (>700) and the effect of large errors being penalised the values in the table below indicate that the model has a good fit to the observed values.

² http://www.latis.org.uk/services/modelling/library/download_reports/TMfS05A_HCalValReport_05092008.pdf

³ <http://www.prism-wm.com/>

TABLE 4.16 ROOT MEAN SQUARED NORMALISED ERROR

Time Period	<i>RMNSE</i>
AM1 (07:00 – 08:00)	0.63
AM2 (08:00 – 09:00)	0.67
AM3 (09:00 – 10:00)	0.59

4.54 In addition to the error value presented above, we have also plotted the observed counts against the flows for the three modelled periods. The diagonal line represents a perfect fit and it can be seen that the data points are clustered around the diagonal further indicating that the model replicated the observed conditions well.

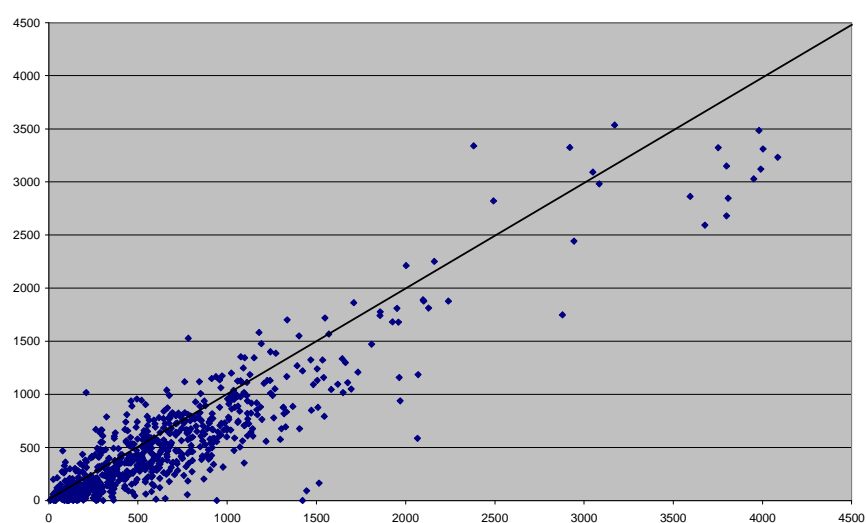
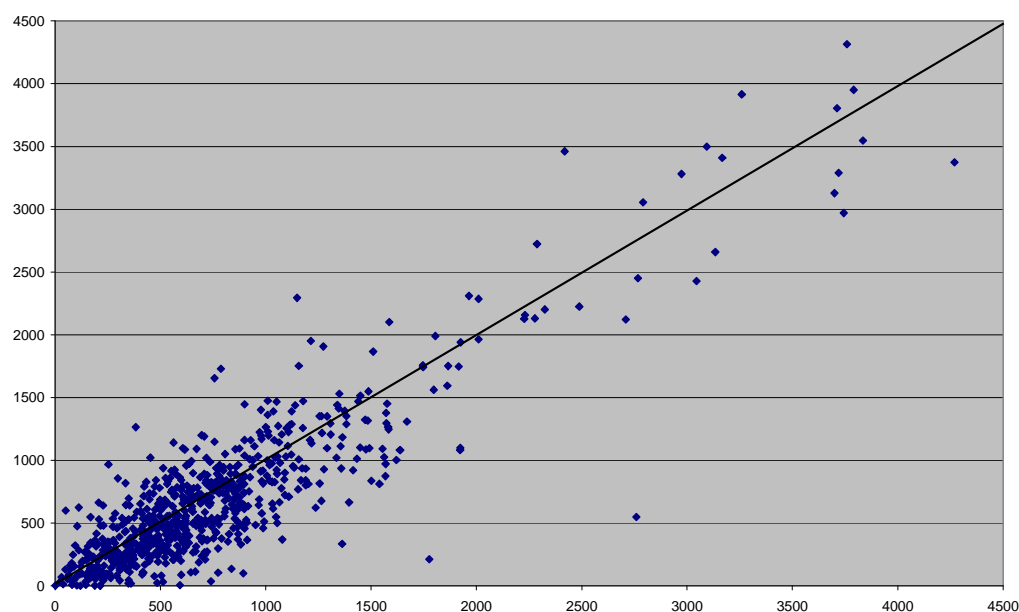
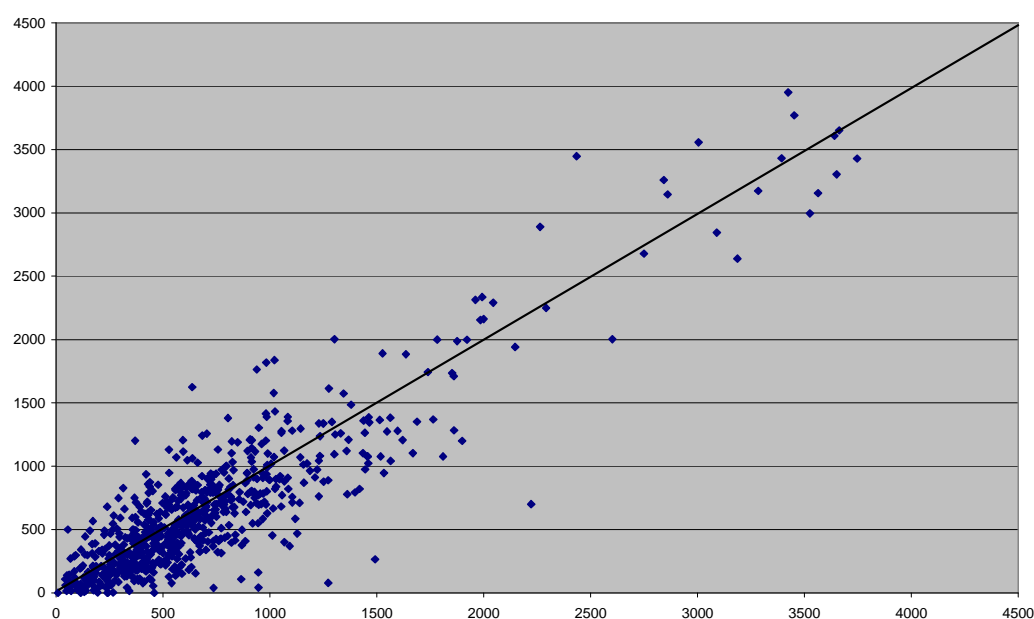
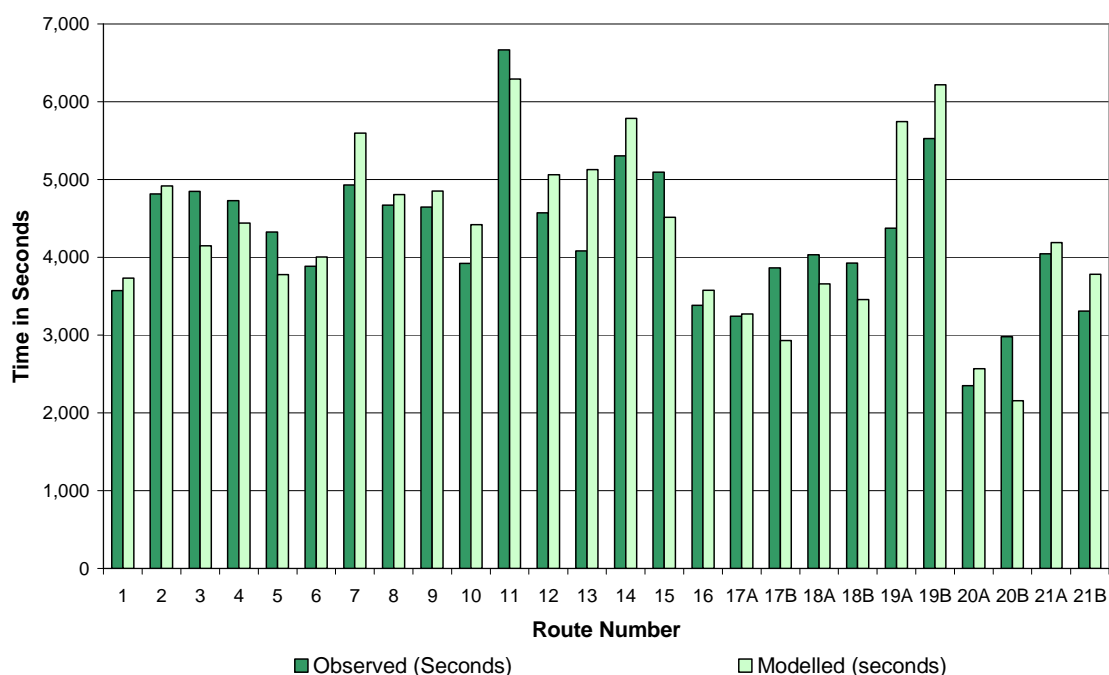
FIGURE 4.8 MODELLED FLOW 07:00-08:00: COUNT V ACTUAL

FIGURE 4.9 MODELLED FLOW 08:00-09:00: COUNT V ACTUAL**FIGURE 4.10** MODELLED FLOW 09:00-10:00: COUNT V ACTUAL

Final Journey Time Analysis

- 4.55 Presented below are the journey time comparisons for the final calibrated highway network. A total of 22 routes out of the 26 surveyed are within 15% of the observed journey times, meaning 85% of the routes are within the calibration criteria. The journey time comparisons are displayed in full in Appendix C which shows the intermediate times at junctions as well as the overall route comparison. This shows that the delays and times are replicated across the whole route including the M50 (route 21a and 21b).

FIGURE 4.11 FINAL HIGHWAY JOURNEY TIME COMPARISONS

TABLE 4.17 FINAL HIGHWAY JOURNEY TIME COMPARISON

Route	Observed (seconds)	Modelled (seconds)	Difference (seconds)	% Diff
1	3570	3730	160	4%
2	4813	4919	106	2%
3	4849	4148	-701	-14%
4	4729	4438	-291	-6%
5	4325	3775	-550	-13%
6	3885	4002	117	3%
7	4930	5595	665	13%
8	4672	4808	136	3%
9	4647	4850	203	4%
10	3920	4421	501	13%
11	6664	6292	-372	-6%
12	4572	5059	487	11%
13	4081	5126	1045	26%
14	5305	5785	480	9%
15	5094	4516	-578	-11%
16	3381	3577	196	6%
17A	3244	3270	26	1%
17B	3865	2928	-937	-24%
18A	4035	3657	-378	-9%

Route	Observed (seconds)	Modelled (seconds)	Difference (seconds)	% Diff
18B	3925	3454	-471	-12%
19A	4372	5744	1373	31%
19B	5523	6220	697	13%
20A	2349	2565	216	9%
20B	2979	2154	-825	-28%
21A	4045	4191	146	4%
21B	3305	3781	476	14%
No of Routes within 15% of observed times		22 routes		
Percentage within 15% of observed times		85%		

Over Capacity Traffic Flows

4.56 As mentioned previously in this report, the Dublin highway network suffers from high levels of congestion particularly in the peak hour (08:00-09:00). There is more demand on the network than the capacity to cope with it, resulting in traffic queuing into the following time periods. The way the matrix is constructed means that the full demand arriving at the destinations is assigned, therefore it is effectively modelling traffic queuing from the previous time period. Table 4.18 presents some assignment summary statistics showing a comparison of the modelled hour and the next time period. In our modelling framework this effectively represents traffic queuing from the previous period. The measures presented are: transient queues, over capacity queues, total network time, travel distance and link flows. Each of these metrics is defined below.

- *Transient Queues (PCU/hrs)* - Transient queues represent the queues caused at signal junctions or priority junctions, but where the movement is still operating within capacity for the modelled hour.
- *Over Capacity Queues (PCU/hrs)* - Over capacity queues represent the queues caused at junctions because the movement does not have enough capacity in the modelled hour.
- *Total Travel Time (PCU/hrs)* - Total travel time represents the total travel time across the network.
- *Travel Distance (PCU/kms)* - Travel distance represents the total distance travelled across the network.
- *Link Flows (PCU's)* - Link flows represent the total flows on the network links.

TABLE 4.18 ASSIGNMENT SUMMARY STATISTICS BY TIME PERIOD

AM1 (07:00-08:00)				
	Modelled Hour	Next time period	Total	Percent (next time period)
Transient Queues (PCU/HRs)	13,549	745	14,294	5%
Over Capacity Queues (PCU/HRs)	2,689	409	3,098	13%
Total Travel Time (PCU/HRs)	49,024	2,323	51,347	5%
Travel Distance (PCU/KMs)	1,751,578	54,327	1,805,904	3%
Link Flows (PCUs)	3,148,195	117,998	3,266,194	4%
AM2 (08:00-09:00)				
	Modelled Hour	Following time period	Total	Percent (next time period)
Transient Queues (PCU/HRs)	28,270	7,721	35,991	21%
Over Capacity Queues (PCU/HRs)	19,346	7,496	26,843	28%
Total Travel Time (PCU/HRs)	94,917	24,758	119,675	21%
Travel Distance (PCU/KMs)	2,276,807	429,010	2,705,817	16%
Link Flows (PCUs)	4,086,640	870,236	4,956,876	18%
AM3 (09:00-10:00)				
	Modelled Hour	Following time period	Total	Percent (next time period)
Transient Queues (PCU/HRs)	23,482	3,760	27,242	14%
Over Capacity Queues (PCU/HRs)	9,706	2,746	12,452	22%
Total Travel Time (PCU/HRs)	74,899	10,776	85,675	13%
Travel Distance (PCU/KMs)	2,090,348	187,070	2,277,419	8%
Link Flows (PCUs)	3,840,986	424,038	4,265,024	10%

- 4.57 The statistics presented above are in line with what would be expected. The important comparison is the relative difference between the over capacity traffic between time periods. As mentioned earlier in the report the modelled demand is arrival traffic and therefore the traffic that cannot get through the network represents demand which begins its journey in the previous time period. The relatively small additional queuing in the 07:00-08:00 period is therefore consistent with this assumption, as the majority of traffic which arrives at their destination before 08:00 will not suffer from significant congestion.
- 4.58 The larger queues in the main peak hour are due to the high levels of congestion during this period. For significant amounts of traffic, to arrive during the peak hour, high levels of congestion on the road network will require drivers to leave their origin in the previous hour. The final period falls somewhere in the middle indicating the reducing congestion as the AM peak ends, but the higher levels of demand than in the pre peak.

Conclusions

- 4.59 The results presented in this chapter demonstrate that the DTO recalibrated highway model is fit for purpose.
- The model matches the directional flows in and out of Dublin at a macro level;
 - It has a good match against individual counts; and
 - Accurately recreates network speeds and delays by matching the journey time surveys.
- 4.60 In addition this has been achieved by making only limited changes to the demand data provided by TAGM/TDM. This means that the trip distribution provided by the comprehensive survey data used in the matrix construction has been retained. It also results in a highway model that fits well within the full DTO model structure and can be reliably developed to test and appraise future year schemes and planning scenarios.

5. CONCLUSIONS AND RECOMMENDATIONS

- 5.1 The objective of this report was to summarise the update and calibration of the DTO transport model's AM period public transport (PT) and highway assignment models based on 2006 observed data. The processes used, assumptions taken and results obtained in each stage in this update exercise have been presented in detail in earlier sections of this report. Here we present the key conclusions of this exercise and recommendations for further enhancements of the model.

Conclusions

- 5.2 The AM period demand matrices developed for the 2006 updated version of the DTO model, both for PT and highway assignment models:
- Were directly based on the outputs from the TAGM/TDM stages of the model for the 07:00-10:00 period, which are in turn based on 2006 land use and demographic patterns in the Greater Dublin Area;
 - Had to be adjusted at an individual hour (07:00-08:00, 08:00-09:00 and 09:00-10:00) to remove specific biases using factors derived from observed count data. However no automated matrix adjustments using counts have been carried out so as to retain a close link with the TAGM/TDM stages of the model; and
 - Provide a good match with observed flow totals at cordon levels for both the highway and public transport model.
- 5.3 The update of the 2006 AM period PT assignment model has resulted in:
- Updates to the 2006 base year PT network information to accurately represent Dublin's PT system;
 - Significant improvements to the representation of access to the PT network, especially in areas outside M50;
 - More detailed representation of the Luas system with Luas specific fare curves and crowding curves; and
 - Good calibration against total observed PT flows at a mode level arriving into Dublin city centre during the peak hour (08:00-09:00) which comprises of 50% of the total PT flow during the AM period.
- 5.4 The SATURN based highway assignment component of the DTO model has been updated and calibrated to accurately represent 2006 AM period road network conditions in the Greater Dublin Area. This update has provided:
- Accurate representation of the 2006 road network structure, capacity and junction details in Dublin for modelling purposes;
 - Close matches between modelled and observed total flows crossing key cordons at the M50 and Dublin City Centre Canal;
 - An acceptable level of calibration at an individual flow level considering the fact that no matrix estimation has been carried out; and
 - Very good calibration against observed journey time on key routes, covering both arterial and circular and including minor roads and major roads, connecting different parts of the Greater Dublin Area.

- 5.5 In summary, the 2006 update and calibration exercise of DTO's PT and highway assignment models has delivered a significant improvement in representation of the supply side of Dublin's transport system. With close links maintained with the demand side of the DTO model, the assignment networks and associated demand information provide a robust starting point for testing future strategies and policies for Greater Dublin Area using the updated version of the DTO model.

Recommendations for Future Enhancements

- 5.6 During the course of the DTO model update exercise we noted a number of areas for improvement and possible enhancements for different stages of the model. These were discussed in detail with DTO and many of these have been implemented and are discussed in earlier chapters. Some further recommendations for future enhancements are presented below.

Additional Data

- 5.7 All strategic models are data hungry. DTO already has access to vast amount of recent and robust data sources for developing and updating its strategic models. However we have noticed a few gaps that could improve the model quality further but with a relatively small expansion of the data collection exercise. We would recommend collection of following data in the future to feed into the model calibration process:

Journey time data

- 5.8 To expand the travel time data collection task to cover inbound direction in the shoulder peaks (07:00-08:00, 09:00-10:00) and outbound direction across all periods.

Additional freight data

- 5.9 The HGV matrices are based on very old (1999) base information. Updating these matrices would be a valuable exercise and would require either Road Side Interviews (RSI's) or special site interviews for capturing freight movements.

More repeat observations

- 5.10 A number of counts used in this update exercise were: one day turn counts, bus occupancy counts, rail/Luas boarding and alighting counts. Calibration against individual counts is highly susceptible to biases introduced by a single day information which can be affected by numerous factors. In the UK, the guidance for data collection (Design Manual for Road and Bridges DMRB - Volume 12 Section 2 Part 1- Section 3.2.19) states that any counts that have their 95% confidence interval wider than $\pm 15\%$ should not be used in calibration and validation of models. In the case of the DTO model without repeat observations over a period of at least a week it is not possible to estimate the confidence interval of the counts hence their robustness for use in the model. Hence it would be advisable to carry out repeat observations at key locations covering:

- Traffic counts (including permanent ATC's around canal cordon)
- Station/stop boarding and alighting data
- Bus counts around the canal cordon

Assignment Models

- 5.11 In addition to the data collection exercise we have implemented a number of improvements to both the PT and highway assignment models. Further improvements to the model structure have been suggested to DTO, these have not been covered in this report. Some improvements which were identified are beyond the scope of the current update exercise, and are listed below.

Restructuring the PT Model to allow representation of zero Luas fares.

- 5.12 This particular improvement to the PT assignment model will allow representation of Luas passengers within the city centre who get complimentary travel on Luas as part of their rail tickets or passes.

Network coverage in large zones outside of M50

- 5.13 The zoning system and corresponding network details in the current model for areas outside M50 are too coarse in some cases where significant development has taken place. The model details in such areas warrant a finer zoning system and corresponding higher detail in the transport networks. We note that DTO adjust the zoning in these outer areas for the testing of specific schemes, however ensuring that the network coverage is also sufficient in these areas is a matter of great importance.

Restructuring of interface between bus services and highway congestion

- 5.14 The interface being used in the current model for updating bus speeds using highway network speeds and thereafter updating bus speeds to represent in the improvements due to QBC network implementation requires a thorough review and possibly updating. A key input requirement for updating this module would be observed bus speeds and highway speeds on both QBC and non-QBC routes.

APPENDIX A

PUBLIC TRANSPORT TESTS

A1. PUBLIC TRANSPORT TEST SUMMARY

- A1.1 For the calibration of PT model we carried out a series of test in which we altered various mode specific parameters to check if the mode specific penalties within the model were causing different public transport alternatives to be unattractive. The parameters were kept constant across the three hours.
- A1.2 The tests involved alterations of PT model assignment parameters such as the boarding penalty, interchange penalty, adjustments to wait curve and crowding (multiplicative) curves being used. The original values of parameters are shown in the table below.

APPENDIX: TABLE A1.1 PT ASSIGNMENT MODEL PARAMETER VALUES

Parameter	Mode	Initial Value
Boarding Penalty	Bus	5 minutes
	Luas	30 seconds
	Heavy Rail	30 seconds
Interchange Penalty	Bus	10 minutes
	Luas	10 minutes
	Heavy Rail	10 minutes

- A1.3 The tests which were carried out on the PT model are listed below.
- TEST 1 - Interchange Penalty =0, Value of time = 9.48
 - TEST 2 - Interchange Penalty =0, Value of time = 9.48, Bus Boarding penalty = 2.5
 - TEST 3 - Interchange Penalty =2, Value of time = 9.48, Bus Boarding penalty = 2.5, Wait Curve wait time reduced to half for up to 20 min headway.
 - TEST 4 - Interchange Penalty =2, Value of time = 9.48, Bus Boarding penalty = 2.5, Wait Curve wait time reduced to half for up to 20 min headway, New network and new walk links.
 - TEST 5 - Interchange Penalty =2, Value of time = 9.48, Bus Boarding penalty = 2.5, Bus and rail wait Curve wait time reduced to half for up to 20 min headway, New network.
 - TEST 6 - Interchange Penalty =2, Value of time = 9.48, Bus Boarding penalty = 2.5, Wait Curve wait time reduced to half for up to 20 min headway, New network, and new walk links, New Luas wait curve with wait time reduced to One-third up till 30 minutes headway.
 - TEST 7 - Interchange Penalty =2, Value of time = 8.10, Bus Boarding penalty = 2.5, Wait Curve wait time reduced to half for up to 20 min headway, New network, and new walk links, Luas wait curve with original wait time values, New network, and new walk links, New Luas Multiplicative Curve.
- A1.4 From TEST 6 and onwards, different parameter value crowding analysis was also carried out in parallel to the calibration analysis. The results for this analysis are also shown in this appendix.

A2. PT TEST CALIBRATION RESULTS

A2.1 The calibration results for these tests are shown in the table below.

Test 1 Results

APPENDIX: TABLE A2.1 TEST 1 CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	38,861	23%
	Rail	101,559	97,087	-4%
	Luas	46,964	43,016	-8%
	Total PT	180,154	178,964	-1%
08:00 to 09:00	Bus	51,285	57,631	12%
	Rail	166,275	172,235	4%
	Luas	86,383	81,515	-6%
	Total PT	303,943	311,380	2%
09:00 to 10:00	Bus	32,372	23,752	-27%
	Rail	60,298	90,113	49%
	Luas	50,647	47,487	-6%
	Total PT	143,317	161,352	13%
07:00 to 10:00	Bus	115,288	120,245	4%
	Rail	328,132	359,435	10%
	Luas	183,994	172,017	-7%
	Total PT	627,414	651,697	4%

Test 2 Results

APPENDIX: TABLE A2.2 TEST 2 CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	39,618	25%
	Rail	101,559	93,756	-8%
	Luas	46,964	40,421	-14%
	Total PT	180,154	173,795	-4%
08:00 to 09:00	Bus	51,285	58,287	14%
	Rail	166,275	171,299	3%
	Luas	86,383	76,313	-12%
	Total PT	303,943	305,900	1%
09:00 to 10:00	Bus	32,372	24,339	-25%
	Rail	60,298	88,261	46%
	Luas	50,647	44,981	-11%
	Total PT	143,317	157,581	10%

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 10:00	Bus	115,288	122,245	6%
	Rail	328,132	353,316	8%
	Luas	183,994	161,715	-12%
	Total PT	627,414	637,276	2%

Test 3 Results

APPENDIX: TABLE A2.3 TEST 3 CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	40,087	27%
	Rail	101,559	92,431	-9%
	Luas	46,964	39,198	-17%
	Total PT	180,154	171,716	-5%
08:00 to 09:00	Bus	51,285	56,976	11%
	Rail	166,275	178,294	7%
	Luas	86,383	76,191	-12%
	Total PT	303,943	311,461	2%
09:00 to 10:00	Bus	32,372	24,426	-25%
	Rail	60,298	88,382	47%
	Luas	50,647	44,874	-11%
	Total PT	143,317	157,682	10%
07:00 to 10:00	Bus	115,288	121,490	5%
	Rail	328,132	359,106	9%
	Luas	183,994	160,263	-13%
	Total PT	627,414	640,859	2%

Test 4 Results

APPENDIX: TABLE A2.4 TEST 4 CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	35,928	14%
	Rail	101,559	99,570	-2%
	Luas	46,964	42,980	-8%
	Total PT	180,154	178,478	-1%
08:00 to 09:00	Bus	51,285	53,878	5%
	Rail	166,275	174,844	5%
	Luas	86,383	77,439	-10%
	Total PT	303,943	306,162	1%
09:00 to 10:00	Bus	32,372	21,723	-33%
	Rail	60,298	90,550	50%

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 10:00	Luas	50,647	45,925	-9%
	Total PT	143,317	158,198	10%
	Bus	115,288	111,530	-3%
	Rail	328,132	364,964	11%
	Luas	183,994	166,345	-10%
	Total PT	627,414	642,838	2%

Test 5 Results

APPENDIX: TABLE A2.5 TEST 5 CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	40,158	27%
	Rail	101,559	94,369	-7%
	Luas	46,964	38,058	-19%
	Total PT	180,154	172,585	-4%
08:00 to 09:00	Bus	51,285	58,570	14%
	Rail	166,275	172,484	4%
	Luas	86,383	75,951	-12%
	Total PT	303,943	307,004	1%
09:00 to 10:00	Bus	32,372	25,338	-22%
	Rail	60,298	85,604	42%
	Luas	50,647	44,442	-12%
	Total PT	143,317	155,384	8%
07:00 to 10:00	Bus	115,288	124,066	8%
	Rail	328,132	352,456	7%
	Luas	183,994	158,451	-14%
	Total PT	627,414	634,974	1%

Test 6 Results

APPENDIX: TABLE A2.6 TEST 6 CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	42,729	35%
	Rail	101,559	95,418	-6%
	Luas	46,981	40,946	-13%
	Total PT	180,171	179,094	-1%
08:00 to 09:00	Bus	51,285	63,025	23%
	Rail	166,275	168,956	2%
	Luas	86,411	73,476	-15%
	Total PT	303,971	305,457	0%

Time Period	PT Mode	Observed	Modelled	% Difference
09:00 to 10:00	Bus	32,372	28,414	-12%
	Rail	60,298	76,889	28%
	Luas	50,647	33,180	-34%
	Total PT	143,317	138,483	-3%
07:00 to 10:00	Bus	115,288	134,168	16%
	Rail	328,132	341,263	4%
	Luas	184,039	147,602	-20%
	Total PT	627,459	623,034	-1%

Test 7 Results

APPENDIX: TABLE A2.7 TEST 7 CALIBRATION RESULTS

Time Period	PT Mode	Observed	Modelled	% Difference
07:00 to 08:00	Bus	31,631	42,698	35%
	Rail	101,559	95,402	-6%
	Luas	46,981	41,258	-12%
	Total PT	180,171	179,358	0%
08:00 to 09:00	Bus	51,285	62,725	22%
	Rail	166,275	169,002	2%
	Luas	86,411	76,414	-12%
	Total PT	303,971	308,140	1%
09:00 to 10:00	Bus	32,372	28,395	-12%
	Rail	60,298	76,898	28%
	Luas	50,647	33,409	-34%
	Total PT	143,317	138,702	-3%
07:00 to 10:00	Bus	115,288	133,818	16%
	Rail	328,132	341,302	4%
	Luas	184,039	151,081	-18%
	Total PT	627,459	626,201	0%

APPENDIX B

DETAILED PT RESULTS BY MODE

B1. LUAS GREEN ANALYSIS

Time Period - 7:00 - 8:00					
Green IN	Node_No	Link	Observed Flow	Model Flow	Difference
Stephens Gn	7446	7446			
Harcourt	7444	74447446	1167	1,274	9%
Charlemont	7442	74427444	1273	1,593	25%
Ranelagh	7440	74407442	1378	1,890	37%
Beechwood	7438	74387440	1367	1,936	42%
Cowper	7436	74367438	1334	1,896	42%
Milltown	7434	74347436	1326	1,815	37%
Windy Arbour	7432	74327434	1196	1,656	38%
Dundrum	7430	74307432	1076	1,508	40%
Balally	7428	74287430	845	1,096	30%
Kilmacud	7426	74267428	592	583	-2%
Stillorgan	7424	74247426	371	372	0%
Sandyford	7422	74227424	222	322	45%
Total			12,147	15,939	
Time Period - 8:00 - 9:00					
Green OUT	Node_No	Link	Observed Flow	Model Flow	Difference
Stephens Gn	7446	74467444	762	196	-74%
Harcourt	7444	74447442	860	544	-37%
Charlemont	7442	74427440	993	626	-37%
Ranelagh	7440	74407438	1081	727	-33%
Beechwood	7438	74387436	1158	770	-33%
Cowper	7436	74367434	1168	806	-31%
Milltown	7434	74347432	1166	824	-29%
Windy Arbour	7432	74327430	1190	796	-33%
Dundrum	7430	74307428	1156	749	-35%
Balally	7428	74287426	1117	670	-40%
Kilmacud	7426	74267424	1077	638	-41%
Stillorgan	7424	74247422	734	585	-20%
Sandyford	7422	7422			
Total			12,462	7,931	

Time Period - 8:00 - 9:00					
Green IN	Node_No	Link	Observed Flow	Model Flow	Difference
Stephens Gn	7446	7446			
Harcourt	7444	74447446	2159	2,751	27%
Charlemont	7442	74427444	2584	3,342	29%
Ranelagh	7440	74407442	3009	3,854	28%
Beechwood	7438	74387440	3038	3,944	30%
Cowper	7436	74367438	3022	3,850	27%
Milltown	7434	74347436	2936	3,797	29%
Windy Arbour	7432	74327434	2622	3,321	27%
Dundrum	7430	74307432	2360	3,061	30%
Balally	7428	74287430	1875	2,196	17%
Kilmacud	7426	74267428	1280	1,179	-8%
Stillorgan	7424	74247426	871	782	-10%
Sandyford	7422	74227424	485	669	38%
Total			26,241	32,744	

Green OUT	Node_No	Link	Observed Flow	Model Flow	Difference
Stephens Gn	7446	74467444	994	628	-37%
Harcourt	7444	74447442	1114	1,153	3%
Charlemont	7442	74427440	1266	1,307	3%
Ranelagh	7440	74407438	1390	1,516	9%
Beechwood	7438	74387436	1514	1,598	6%
Cowper	7436	74367434	1555	1,674	8%
Milltown	7434	74347432	1606	1,701	6%
Windy Arbour	7432	74327430	1631	1,564	-4%
Dundrum	7430	74307428	1604	1,480	-8%
Balally	7428	74287426	1556	1,353	-13%
Kilmacud	7426	74267424	1443	1,218	-16%
Stillorgan	7424	74247422	809	1,051	30%
Sandyford	7422	7422			
Total			16,482	16,241	

Time Period - 9:00 - 10:00					
Green IN	Node_No	Link	Observed Flow	Model Flow	Difference
Stephens Gn	7446	7446			
Harcourt	7444	74447446	1242	1121	-10%
Charlemont	7442	74427444	1608	1333	-17%
Ranelagh	7440	74407442	1827	1534	-16%
Beechwood	7438	74387440	1814	1558	-14%
Cowper	7436	74367438	1662	1519	-9%
Milltown	7434	74347436	1603	1489	-7%
Windy Arbour	7432	74327434	1302	1280	-2%
Dundrum	7430	74307432	1114	1169	5%
Balally	7428	74287430	782	833	6%
Kilmacud	7426	74267428	454	488	8%
Stillorgan	7424	74247426	334	314	-6%
Sandyford	7422	74227424	145	271	87%
Total			13,887	12,909	
Green OUT	Node_No	Link	Observed Flow	Model Flow	Difference
Stephens Gn	7446	74467444	510	201	-61%
Harcourt	7444	74447442	574	492	-14%
Charlemont	7442	74427440	616	557	-10%
Ranelagh	7440	74407438	641	635	-1%
Beechwood	7438	74387436	674	669	-1%
Cowper	7436	74367434	686	703	2%
Milltown	7434	74347432	668	714	7%
Windy Arbour	7432	74327430	667	654	-2%
Dundrum	7430	74307428	573	614	7%
Balally	7428	74287426	509	542	7%
Kilmacud	7426	74267424	481	481	0%
Stillorgan	7424	74247422	300	438	46%
Sandyford	7422	7422			
Total			6,899	6,701	

B2. LUAS RED ANALYSIS

Time Period - 7:00 - 8:00					
Red IN	Node_No	Link	Observed Flow	Model Flow	Difference
Connolly	7948	79467948	519	437	-16%
Busaras	7946	79427946	740	933	26%
Abbey	7942	79407942	1107	1,724	56%
Jervis	7940	79387940	1245	2,129	71%
Four Courts	7938	79367938	1246	2,175	75%
Smithfield	7936	79347936	1124	2,165	93%
Museum	7934	79327934	1082	2,131	97%
Heuston	7932	79307932	956	1,455	52%
James's	7930	79287930	937	1,462	56%
Fatima	7928	79267928	919	1,504	64%
Rialto	7926	79247926	867	1,472	70%
Suir Road	7924	79227924	865	1,435	66%
Goldenbridge	7922	79207922	841	1,365	62%
Drimnagh	7920	79187920	812	1,316	62%
Blackhorse	7918	79167918	768	1,202	56%
Bluebell	7916	79147916	743	1,161	56%
Kylemore	7914	79127914	783	1,155	48%
Red Cow	7912	79107912	583	871	49%
Kingswood	7910	79087910	463	768	66%
Belgard	7908	79067908	404	692	71%
Cookstown	7906	79047906	353	642	82%
Hospital	7904	79027904	291	199	-31%
Tallaght	7902	7902			
Total			17,648	28,395	
Red Out	Node_No	Link	Observed Flow	Model Flow	Difference
Connolly	7948	7948			
Busaras	7946	79487946	495	267	-46%
Abbey	7942	79467942	570	334	-41%
Jervis	7940	79427940	797	399	-50%
Four Courts	7938	79407938	858	356	-58%
Smithfield	7936	79387936	878	300	-66%
Museum	7934	79367934	902	280	-69%
Heuston	7932	79347932	969	332	-66%
James's	7930	79327930	933	407	-56%
Fatima	7928	79307928	886	382	-57%
Rialto	7926	79287926	885	366	-59%
Suir Road	7924	79267924	915	342	-63%
Goldenbridge	7922	79247922	931	337	-64%
Drimnagh	7920	79227920	938	337	-64%
Blackhorse	7918	79207918	934	340	-64%
Bluebell	7916	79187916	938	308	-67%
Kylemore	7914	79167914	904	247	-73%
Red Cow	7912	79147912	836	201	-76%
Kingswood	7910	79127910	819	179	-78%
Belgard	7908	79107908	805	165	-80%
Cookstown	7906	79087906	759	165	-78%
Hospital	7904	79067904	731	143	-80%
Tallaght	7902	79047902	672	93	-86%
Total			18,355	6,279	

Time Period - 8:00 - 9:00					
Red IN	Node_No	Link	Observed Flow	Model Flow	Difference
Connolly	7948	79468148	561	817	46%
Busaras	7946	79427946	1117	1,417	27%
Abbey	7942	79407942	1876	2,678	43%
Jervis	7940	79387940	2378	3,218	35%
Four Courts	7938	79367938	2429	3,276	35%
Smithfield	7936	79347936	2358	3,289	39%
Museum	7934	82327934	2270	3,272	44%
Heuston	7932	79308232	1432	2,369	65%
James's	7930	79287930	1463	2,377	62%
Fatima	7928	79267928	1458	2,427	66%
Rialto	7926	79247926	1392	2,312	66%
Suir Road	7924	79227924	1305	2,220	70%
Goldenbridge	7922	79207922	1270	2,078	64%
Drimnagh	7920	79187920	1207	1,998	66%
Blackhorse	7918	79167918	1115	1,813	63%
Bluebell	7916	79147916	1072	1,711	60%
Kylemore	7914	79127914	1107	1,742	57%
Red Cow	7912	79107912	928	1,477	59%
Kingswood	7910	79087910	712	1,323	86%
Belgard	7908	79067908	616	1,209	96%
Cookstown	7906	79047906	542	1,110	105%
Hospital	7904	79027904	467	447	-4%
Tallaght	7902				
Total			29,075	44,580	
Red Out	Node_No	Link	Observed Flow	Model Flow	Difference
Connolly	7948				
Busaras	7946	81487946	720	729	1%
Abbey	7942	79467942	840	876	4%
Jervis	7940	79427940	1135	1,091	-4%
Four Courts	7938	79407938	1146	985	-14%
Smithfield	7936	79387936	1089	907	-17%
Museum	7934	79367934	1056	883	-16%
Heuston	7932	79348232	1059	1,025	-3%
James's	7930	82327930	1028	1,216	18%
Fatima	7928	79307928	875	1,179	35%
Rialto	7926	79287926	890	1,145	29%
Suir Road	7924	79267924	885	1,104	25%
Goldenbridge	7922	79247922	911	1,100	21%
Drimnagh	7920	79227920	916	1,098	20%
Blackhorse	7918	79207918	921	1,102	20%
Bluebell	7916	79187916	894	1,062	19%
Kylemore	7914	79167914	826	929	12%
Red Cow	7912	79147912	639	831	30%
Kingswood	7910	79127910	521	701	35%
Belgard	7908	79107908	519	633	22%
Cookstown	7906	79087906	435	608	40%
Hospital	7904	79067904	368	582	58%
Tallaght	7902	79047902	301	323	7%
Total			17,974	20,108	

Time Period - 9:00 - 10:00					
Red IN	Node_No	Link	Observed Flow	Model Flow	Difference
Connolly	7948	79468148	134	354	164%
Busaras	7946	79427946	733	648	-12%
Abbey	7942	79407942	1185	1,433	21%
Jervis	7940	79387940	1306	1,781	36%
Four Courts	7938	79367938	1281	1,824	42%
Smithfield	7936	79347936	1255	1,837	46%
Museum	7934	82327934	908	1,835	102%
Heuston	7932	79308232	965	1,418	47%
James's	7930	79287930	942	1,379	46%
Fatima	7928	79267928	891	1,399	57%
Rialto	7926	79247926	867	1,334	54%
Suir Road	7924	79227924	852	1,291	52%
Goldenbridge	7922	79207922	815	1,204	48%
Drimnagh	7920	79187920	749	1,154	54%
Blackhorse	7918	79167918	708	1,053	49%
Bluebell	7916	79147916	691	1,002	45%
Kylemore	7914	79127914	478	986	106%
Red Cow	7912	79107912	363	771	112%
Kingswood	7910	79087910	311	705	127%
Belgard	7908	79067908	263	645	145%
Cookstown	7906	79047906	226	600	165%
Hospital	7904	79027904		243	
Tallaght	7902				
Total			15,923	24,896	
Red Out	Node_No	Link	Observed Flow	Model Flow	Difference
Connolly	7948				
Busaras	7946	81487946	488	251	-58%
Abbey	7942	79467942	598	309	-62%
Jervis	7940	79427940	822	380	-56%
Four Courts	7938	79407938	857	351	-52%
Smithfield	7936	79387936	733	318	-52%
Museum	7934	79367934	669	306	-54%
Heuston	7932	79348232	661	340	-46%
James's	7930	82327930	633	389	-21%
Fatima	7928	79307928	494	374	-20%
Rialto	7926	79287926	470	361	-21%
Suir Road	7924	79267924	457	344	-23%
Goldenbridge	7922	79247922	445	342	-23%
Drimnagh	7920	79227920	444	343	-25%
Blackhorse	7918	79207918	457	344	-20%
Bluebell	7916	79187916	429	327	-21%
Kylemore	7914	79167914	414	268	-20%
Red Cow	7912	79147912	337	221	-23%
Kingswood	7910	79127910	287	205	-28%
Belgard	7908	79107908	284	185	-29%
Cookstown	7906	79087906	261	178	-17%
Hospital	7904	79067904	214	169	9%
Tallaght	7902	79047902	155	100	
Total			10,609	6,403	

B3. BUS ANALYSIS

07:00 - 08:00					
CORDON			Link Volume		
A_NODE	B_NODE	Location	Model	Observed	Difference
2186	2184	Barrow Street	76	168	-55%
2961	2134	Mount Street Bridge	202	317	-36%
2951	2124	Baggot Street Bridge	169	119	42%
2931	2112	Leeson Street Bridge	1,213	686	77%
2911	2092	Charlemount Street Bridge	19	129	-85%
2711	2059	Portobello Bridge	422	993	-58%
2891	2890	Harolds Cross Bridge	953	638	49%
2871	2447	Clougher Road	4	94	-96%
2861	2364	Dolphins Barn	741	648	14%
2350	2354	South Circular Road	37	160	-77%
2338	2337	Old Kilmainham	402	778	-48%
2313	2306	St Johns Road West	1,370	481	185%
1942	1941	Conyngham Road	1,379	943	46%
1919	1471	Blackhorse Ave.	251	342	-27%
1917	1469	Old Cabra Road	1,654	506	227%
1908	1431	Cabra Road (St. Peter's Ch.)	858	701	22%
1469	1450	Nth. Circular Road(Charleville)	37	281	-87%
1429	1428	Phibsborough Road North	507	655	-23%
1799	1329	Ballybough (Clarke's) Bridge	61	184	-67%
1131	1319	Newcomen Road Bridge	2,019	1,744	16%
1410	1394	Binns Bridge	2,945	1,834	61%
TOTAL			15,319	12,401	24%
OUTER - Inbound					
Link Volume					
A_NODE	B_NODE	Location	Model	Observed	Difference
5131	2908	Dundrum Rd. - Bird Avenue	15	77	-81%
1638	1637	Raheny Village	281	247	14%
1859	1858	Swords Rd. - Collins Avenue	1,150	859	34%
4019	4017	Firhouse Rd. - Ballycullen	270	411	-34%
3483	3480	Blanchardstown Village	487	546	-11%
5161	2919	Clonskeagh Hospital	5	99	-95%
5095	5096	Dun Laoghaire	0	267	-100%
4181	4173	Glenview Estate Tallaght Rd.- M50	154	185	-17%
3504	1668	Coast Rd. Baldoyle Junction	91	162	-44%
3730	3731	St. Margarets Rd.	48	46	4%
2897	2718	Terenure Rd. East	363	755	-52%
2897	2900	Terenure Rd. North	507	314	61%
1667	1665	Grange Rd.	43	67	-35%
5128	5149	Rathfarnham - Tesco's Garage	0	132	-100%
1728	1727	Ballymun Rd. NCT Centre	343	50	585%
3601	1703	Old Swords Rd. RCSI Sports	611	286	114%
4395	4382	Coldcut Rd.	244	257	-5%
5123	5129	Wyckham Way	337	31	987%
1682	1681	Clarehall	407	494	-18%
5024	5023	Foxrock Church	836	1,022	-18%
4286	4283	Whitehall Rd. Wellington Lane	111	277	-60%
3392	3421	Navan Rd.	2,157	1,456	48%
2826	2820	Ballyfermot Rd. - Kylemore Rd.	143	332	-57%
4066	4065	Ballyboden Rd. - Taylors Lane	17	163	-90%
4442	4441	Fox and Geese	0	127	-100%
1764	1760	Finglas Tesco's	870	497	75%
5165	5164	Goat Grill	0	7	-99%
2866	2865	Drimnagh Rd. - Walkinstown Cross	388	527	-26%
4317	4311	Kings Hospital	2,341	992	136%
3400	1796	Ballycoolin Rd. - Cappagh Hospital	162	146	11%
4275	4274	Greenhills Rd. - Cuckoo's Nest	157	373	-58%
4161	2899	Templeogue Rd. - Templeville RD.	518	785	-34%

1724	1723	Ballymun Rd.	602	238	153%
5043	5042	Blackrock	65	253	-74%
TOTAL			13,723	12,480	10%
OUTER - Outbound			Link Volume		
A_NODE	B_NODE	Location	Model	Observed	Difference
2908	5131	Dundrum Rd. - Bird Avenue	78	163	-52%
1637	1638	Raheny Village	107	89	21%
1858	1859	Swords Rd. - Collins Avenue	974	463	110%
4017	4019	Firhouse Rd. - Ballycullen	108	72	50%
3480	3483	Blanchardstown Village	344	355	-3%
2919	5161	Clonskeagh Hospital	134	148	-9%
5096	5095	Dun Laoghaire	290	154	88%
4173	4181	Glenview Estate Tallaght Rd.- M50	169	200	-15%
1668	3504	Coast Rd. Baldoyle Junction	96	59	62%
3731	3730	St. Margarets Rd.	50	18	178%
2718	2897	Terenure Rd. East	175	240	-27%
2900	2897	Terenure Rd. North	122	128	-5%
1665	1667	Grange Rd.	10	0	0%
5149	5128	Rathfarnham - Tesco's Garage	0	170	-100%
1727	1728	Ballymun Rd. NCT Centre	127	4	3063%
1703	3601	Old Swords Rd. RCSI Sports	918	492	87%
4382	4395	Coldcut Rd.	146	118	24%
5129	5123	Wyckham Way	57	27	113%
1681	1682	Clarehall	120	228	-47%
5023	5024	Foxrock Church	69	320	-78%
4283	4286	Whitehall Rd. Wellington Lane	38	49	-22%
3421	3392	Navan Rd.	412	558	-26%
2820	2826	Ballyfermot Rd. - Kylemore Rd.	122	243	-50%
4065	4066	Ballyboden Rd. - Taylors Lane	0	13	-100%
4441	4442	Fox and Geese	0	229	-100%
1760	1764	Finglas Tesco's	222	167	33%
5164	5165	Goat Grill	104	45	131%
2865	2866	Drimnagh Rd. - Walkinstown Cross	548	425	29%
4311	4317	Kings Hospital	464	200	132%
1796	3400	Ballycoolin Rd. - Cappagh Hospital	275	397	-31%
4274	4275	Greenhills Rd. - Cuckoo's Nest	258	192	35%
2899	4161	Templeogue Rd. - Templeville RD.	220	251	-13%
1723	1724	Ballymun Rd.	122	315	-61%
5042	5043	Blackrock	552	218	153%
TOTAL			7,432	6,750	10%

08:00 - 09:00					
CORDON			Link Volume		
A_NODE	B_NODE	Location	Model	Observed	Difference
2186	2184	Barrow Street	266	237	12%
2961	2134	Mount Street Bridge	102	577	-82%
2951	2124	Baggot Street Bridge	174	372	-53%
2931	2112	Leeson Street Bridge	2,226	3,276	-32%
2911	2092	Charlemount Street Bridge	23	91	-75%
2711	2059	Portobello Bridge	889	1,290	-31%
2891	2890	Harolds Cross Bridge	1,518	1,227	24%
2871	2447	Clougher Road	3	75	-96%
2861	2364	Dolphins Barn	1,447	1,456	-1%
2350	2354	South Circular Road	20	245	-92%
2338	2337	Old Kilmainham	797	660	21%
2313	2306	St Johns Road West	2,823	2,224	27%
1942	1941	Conyngham Road	1,333	843	58%
1919	1471	Blackhorse Ave.	635	378	68%

1917	1469	Old Cabra Road	1,704	1,216	40%
1908	1431	Cabra Road (St. Peter's Ch.)	1,998	1,724	16%
1469	1450	Nth. Circular Road(Charleville)	50	318	-84%
1429	1428	Phibsborough Road North	888	1,110	-20%
1799	1329	Ballybough (Clarke's) Bridge	65	364	-82%
1131	1319	Newcomen Road Bridge	2,969	3,653	-19%
1410	1394	Binns Bridge	6,501	3,614	80%
TOTAL			26,430	24,950	6%
OUTER - Inbound			Link Volume		
A_NODE	B_NODE	Location	Model	Observed	Difference
5131	2908	Dundrum Rd. - Bird Avenue	30	68	-55%
1638	1637	Raheny Village	532	356	50%
1859	1858	Swords Rd. - Collins Avenue	3,916	1,165	236%
4019	4017	Firhouse Rd. - Ballycullen	537	307	75%
3483	3480	Blanchardstown Village	349	318	10%
5161	2919	Clonskeagh Hospital	4	129	-97%
5095	5096	Dun Laoghaire	0	292	-100%
4181	4173	Glenview Estate Tallaght Rd.- M50	307	405	-24%
3504	1668	Coast Rd. Baldoyle Junction	89	292	-70%
3730	3731	St. Margarets Rd.	113	31	263%
2897	2718	Terenure Rd. East	891	1,119	-20%
2897	2900	Terenure Rd. North	755	725	4%
1667	1665	Grange Rd.	87	119	-27%
5128	5149	Rathfarnham - Tesco's Garage	0	339	-100%
1728	1727	Ballymun Rd. NCT Centre	387	47	724%
3601	1703	Old Swords Rd. RCSI Sports	1,166	224	421%
4395	4382	Coldcut Rd.	650	407	60%
5123	5129	Wyckham Way	774	68	1038%
1682	1681	Clarehall	494	422	17%
5024	5023	Foxrock Church	1,152	1,741	-34%
4286	4283	Whitehall Rd. Wellington Lane	169	356	-53%
3392	3421	Navan Rd.	3,390	2,158	57%
2826	2820	Ballyfermot Rd. - Kylemore Rd.	300	891	-66%
4066	4065	Ballyboden Rd. - Taylors Lane	26	63	-59%
4442	4441	Fox and Geese	0	247	-100%
1764	1760	Finglas Tesco's	1,359	871	56%
5165	5164	Goat Grill	0	33	-100%
2866	2865	Drimnagh Rd. - Walkinstown Cross	996	834	19%
4317	4311	Kings Hospital	2,949	2,266	30%
3400	1796	Ballycoolin Rd. - Cappagh Hospital	181	225	-19%
4275	4274	Greenhills Rd. - Cuckoo's Nest	589	356	65%
4161	2899	Templeogue Rd. - Templeville RD.	1,248	1,016	23%
1724	1723	Ballymun Rd.	1,042	831	25%
5043	5042	Blackrock	12	237	-95%
TOTAL			24,493	18,958	29%
OUTER - Outbound			Link Volume		
A_NODE	B_NODE	Location	Model	Observed	Difference
2908	5131	Dundrum Rd. - Bird Avenue	73	99	-27%
1637	1638	Raheny Village	207	170	22%
1858	1859	Swords Rd. - Collins Avenue	1,314	525	150%
4017	4019	Firhouse Rd. - Ballycullen	88	84	4%
3480	3483	Blanchardstown Village	608	122	398%
2919	5161	Clonskeagh Hospital	172	268	-36%
5096	5095	Dun Laoghaire	199	226	-12%
4173	4181	Glenview Estate Tallaght Rd.- M50	180	92	96%
1668	3504	Coast Rd. Baldoyle Junction	94	180	-48%
3731	3730	St. Margarets Rd.	71	17	320%
2718	2897	Terenure Rd. East	223	161	38%

2900	2897	Terenure Rd. North	163	168	-3%
1665	1667	Grange Rd.	27	0	0%
5149	5128	Rathfarnham - Tesco's Garage	0	198	-100%
1727	1728	Ballymun Rd. NCT Centre	242	14	1631%
1703	3601	Old Swords Rd. RCSI Sports	688	422	63%
4382	4395	Coldcut Rd.	282	115	145%
5129	5123	Wyckham Way	114	53	115%
1681	1682	Clarehall	178	163	9%
5023	5024	Foxrock Church	210	829	-75%
4283	4286	Whitehall Rd. Wellington Lane	116	132	-12%
3421	3392	Navan Rd.	634	453	40%
2820	2826	Ballyfermot Rd. - Kylemore Rd.	250	356	-30%
4065	4066	Ballyboden Rd. - Taylors Lane	8	9	-9%
4441	4442	Fox and Geese	0	89	-100%
1760	1764	Finglas Tesco's	401	172	133%
5164	5165	Goat Grill	45	34	32%
2865	2866	Drimnagh Rd. - Walkinstown Cross	979	667	47%
4311	4317	Kings Hospital	706	344	105%
1796	3400	Ballycoolin Rd. - Cappagh Hospital	311	341	-9%
4274	4275	Greenhills Rd. - Cuckoo's Nest	481	138	248%
2899	4161	Templeogue Rd. - Templeville RD.	225	159	41%
1723	1724	Ballymun Rd.	226	391	-42%
5042	5043	Blackrock	367	186	98%
TOTAL			9,881	7,377	34%

09:00 - 10:00					
CORDON			Link Volume		
A_NODE	B_NODE	Location	Model	Observed	Difference
2186	2184	Barrow Street	75	343	-78%
2961	2134	Mount Street Bridge	40	452	-91%
2951	2124	Baggot Street Bridge	171	400	-57%
2931	2112	Leeson Street Bridge	881	1,791	-51%
2911	2092	Charlemount Street Bridge	20	97	-79%
2711	2059	Portobello Bridge	337	1,615	-79%
2891	2890	Harolds Cross Bridge	784	1,014	-23%
2871	2447	Clougher Road	1	134	-99%
2861	2364	Dolphins Barn	522	955	-45%
2350	2354	South Circular Road	3	258	-99%
2338	2337	Old Kilmainham	369	784	-53%
2313	2306	St Johns Road West	684	367	86%
1942	1941	Conyngham Road	899	1,073	-16%
1919	1471	Blackhorse Ave.	350	269	30%
1917	1469	Old Cabra Road	333	475	-30%
1908	1431	Cabra Road (St. Peter's Ch.)	816	599	36%
1469	1450	Nth. Circular Road(Charleville)	29	145	-80%
1429	1428	Phibsborough Road North	353	718	-51%
1799	1329	Ballybough (Clarke's) Bridge	18	233	-92%
1131	1319	Newcomen Road Bridge	1,256	2,714	-54%
1410	1394	Binns Bridge	2,989	2,520	19%
TOTAL			10,927	16,956	-36%
OUTER - Inbound					
Link Volume			Link Volume		
A_NODE	B_NODE	Location	Model	Observed	Difference
5131	2908	Dundrum Rd. - Bird Avenue	37	101	-64%
1638	1637	Raheny Village	237	354	-33%
1859	1858	Swords Rd. - Collins Avenue	1,661	626	165%
4019	4017	Firhouse Rd. - Ballycullen	195	136	43%
3483	3480	Blanchardstown Village	261	316	-17%
5161	2919	Clonskeagh Hospital	2	106	-98%

5095	5096	Dun Laoghaire	0	300	-100%
4181	4173	Glenview Estate Tallaght Rd.- M50	165	60	175%
3504	1668	Coast Rd. Baldoyle Junction	28	86	-67%
3730	3731	St. Margarets Rd.	47	21	125%
2897	2718	Terenure Rd. East	345	626	-45%
2897	2900	Terenure Rd. North	428	363	18%
1667	1665	Grange Rd.	40	10	298%
5128	5149	Rathfarnham - Tesco's Garage	0	254	-100%
1728	1727	Ballymun Rd. NCT Centre	184	21	774%
3601	1703	Old Swords Rd. RCSI Sports	534	713	-25%
4395	4382	Coldcut Rd.	295	204	44%
5123	5129	Wyckham Way	242	791	-69%
1682	1681	Clarehall	201	459	-56%
5024	5023	Foxrock Church	350	647	-46%
4286	4283	Whitehall Rd. Wellington Lane	108	197	-45%
3392	3421	Navan Rd.	1,097	1,013	8%
2826	2820	Ballyfermot Rd. - Kylemore Rd.	122	386	-68%
4066	4065	Ballyboden Rd. - Taylors Lane	2	45	-96%
4442	4441	Fox and Geese	0	164	-100%
1764	1760	Finglas Tesco's	662	278	138%
5165	5164	Goat Grill	0	7	-100%
2866	2865	Drimnagh Rd. - Walkinstown Cross	308	686	-55%
4317	4311	Kings Hospital	1,172	799	47%
3400	1796	Ballycoolin Rd. - Cappagh Hospital	219	63	248%
4275	4274	Greenhills Rd. - Cuckoo's Nest	185	267	-31%
4161	2899	Templeogue Rd. - Templeville RD.	445	549	-19%
1724	1723	Ballymun Rd.	384	209	84%
5043	5042	Blackrock	64	158	-60%
TOTAL			10,021	11,015	-9%
OUTER - Outbound			Link Volume		
A_NODE	B_NODE	Location	Model	Observed	Difference
2908	5131	Dundrum Rd. - Bird Avenue	38	41	-7%
1637	1638	Raheny Village	101	62	63%
1858	1859	Swords Rd. - Collins Avenue	865	309	180%
4017	4019	Firhouse Rd. - Ballycullen	42	30	42%
3480	3483	Blanchardstown Village	211	241	-13%
2919	5161	Clonskeagh Hospital	43	153	-72%
5096	5095	Dun Laoghaire	165	156	6%
4173	4181	Glenview Estate Tallaght Rd.- M50	156	24	551%
1668	3504	Coast Rd. Baldoyle Junction	34	54	-38%
3731	3730	St. Margarets Rd.	37	14	165%
2718	2897	Terenure Rd. East	130	71	83%
2900	2897	Terenure Rd. North	70	90	-22%
1665	1667	Grange Rd.	9	0	0%
5149	5128	Rathfarnham - Tesco's Garage	0	154	-100%
1727	1728	Ballymun Rd. NCT Centre	85	1	8416%
1703	3601	Old Swords Rd. RCSI Sports	466	290	61%
4382	4395	Coldcut Rd.	126	142	-11%
5129	5123	Wyckham Way	60	40	50%
1681	1682	Clarehall	105	148	-29%
5023	5024	Foxrock Church	118	368	-68%
4283	4286	Whitehall Rd. Wellington Lane	46	57	-19%
3421	3392	Navan Rd.	407	241	69%
2820	2826	Ballyfermot Rd. - Kylemore Rd.	108	204	-47%
4065	4066	Ballyboden Rd. - Taylors Lane	2	8	-72%
4441	4442	Fox and Geese	0	58	-100%
1760	1764	Finglas Tesco's	148	113	31%
5164	5165	Goat Grill	13	16	-17%
2865	2866	Drimnagh Rd. - Walkinstown Cross	423	267	59%

4311	4317	Kings Hospital	305	144	112%
1796	3400	Ballycoolin Rd. - Cappagh Hospital	156	141	11%
4274	4275	Greenhills Rd. - Cuckoo's Nest	217	132	65%
2899	4161	Templeogue Rd. - Templeville RD.	149	91	64%
1723	1724	Ballymun Rd.	92	354	-74%
5042	5043	Blackrock	335	187	79%
TOTAL			5,264	4,401	20%

B4. RAIL ANALYSIS

Time Period - 7:00 - 8:00					
From	To	Link	Observed Volume	Model Volume	Difference
Enfield	Kilcock	80268028	333	83	-75%
Kilcock	Maynooth	80288030	237	152	-36%
Maynooth	Leixlip Louisa Bridge	80308032	977	175	-82%
Leixlip Louisa Bridge	Leixlip Confey	80328034	987	253	-74%
Leixlip Confey	Clonsilla	80348036	1174	264	-78%
Clonsilla	Coolmine	80368038	1550	301	-81%
Coolmine	Castleknoch	80388040	2204	397	-82%
Castleknoch	Ashtown	80408042	2357	418	-82%
Ashtown	Broombridge	80428044	1372	412	-70%
Broombridge	Drumcondra	80448046	1376	409	-70%
Drumcondra	Connolly	80468148	1299	305	-77%
Mullingar	Enfield	80248026	131	13	-90%
Drogheda	Dundalk	81168114	0	19	-
Laytown	Drogheda	81188116	0	59	-
Gormanston	Laytown	81228118	0	0	-
Balbriggan	Gormanston	81248122	9	59	551%
Skerries	Balbriggan	81268124	6	116	1828%
Rush & Lusk	Skerries	81288126	0	130	-
Donabate	Rush & Lusk	81308128	0	134	-
Malahide	Donabate	81328130	0	152	-
Kilcoole	Greystones	81868184	254	237	-7%
Wicklow	Kilcoole	81888186	238	243	2%
Rathdrum	Wicklow	81908188	126	57	-54%
Arklow	Rathdrum	81928190	82	69	-16%
Dundalk	Drogheda	81148116	339	69	-80%
Drogheda	Laytown	81168118	759	513	-32%
Laytown	Gormanston	81188122	1115	0	-100%
Gormanston	Balbriggan	81228124	825	513	-38%
Balbriggan	Skerries	81248126	2246	1,149	-49%
Skerries	Rush & Lusk	81268128	2093	1,512	-28%
Rush & Lusk	Donabate	81288130	2371	1,742	-27%
Donabate	Malahide	81308132	3120	1,952	-37%
Greystones	Kilcoole	81848186	0	0	-
Kilcoole	Wicklow	81868188	0	0	-
Wicklow	Rathdrum	81888190	0	0	-
Rathdrum	Arklow	81908192	0	0	-
Enfield	Mullingar	80268024	0	0	-
Kilcock	Enfield	80288026	0	0	-
Maynooth	Kilcock	80308028	0	0	-
Leixlip Louisa Bridge	Maynooth	80328030	15	46	206%
Leixlip Confey	Leixlip Louisa Bridge	80348032	94	87	-8%
Clonsilla	Leixlip Confey	80368034	95	91	-4%
Coolmine	Clonsilla	80388036	89	94	6%
Castleknoch	Coolmine	80408038	87	96	10%
Ashtown	Castleknoch	80428040	87	97	11%
Broombridge	Ashtown	80448042	84	95	14%
Drumcondra	Broombridge	80468044	82	105	28%
Connolly	Drumcondra	81488046	110	68	-39%
Tara Street	Connolly	81508148	556	682	23%
Pearse	Tara Street	81528150	630	1,383	120%
Grand Canal Dock	Pearse	81548152	1415	1,724	22%
Lansdowne Road	Grand Canal Dock	81568154	1507	1,881	25%
Sandymount	Lansdowne Road	81588156	1652	1,952	18%
Sydney Parade	Sandymount	81608158	1479	1,954	32%
Boooterstown	Sydney Parade	81628160	1525	1,906	25%
Blackrock	Boooterstown	81648162	1486	1,858	25%
Seapoint	Blackrock	81668164	1388	1,696	22%
Salthill & Monkstown	Seapoint	81688166	1314	1,681	28%
Dún Laoghaire	Salthill & Monkstown	81708168	1949	1,524	-22%
Sandycove & Glasthule	Dún Laoghaire	81728170	1843	1,350	-27%
Glenageary	Sandycove & Glasthule	81748172	1724	1,229	-29%
Dalkey	Glenageary	81768174	0	1,157	-
Killiney	Dalkey	81788176	1741	1,026	-41%
Shankill	Killiney	81808178	1372	963	-30%
Bray	Shankill	81828180	1348	869	-36%
Greystones	Bray	81848182	836	586	-30%
Portmarnock	Malahide	81348132	44	214	387%
Howth Jct & Donaghmede	Portmarnock	81368134	74	216	192%
Kilbarrack	Howth Jct & Donaghmede	81388136	171	340	99%
Raheny	Kilbarrack	81408138	234	347	48%

Harmonstown	Raheny	81428140	246	363	48%
Killester	Harmonstown	81448142	246	371	51%
Clontarf Road	Killester	81468144	311	376	21%
Connolly	Clontarf Road	81488146	543	399	-26%
Sutton	Howth	81338131	80	46	-43%
Bayside	Sutton	81358133	107	50	-53%
Howth Jct & Donaghmede	Bayside	81368135	192	125	-35%
Howth	Sutton	81318133	269	190	-29%
Sutton	Bayside	81338135	424	314	-26%
Bayside	Howth Jct & Donaghmede	81358136	713	564	-21%
Connolly	Tara Street	81488150	4316	3,999	-7%
Tara Street	Pearse	81508152	3674	1,864	-49%
Pearse	Grand Canal Dock	81528154	1710	1,041	-39%
Grand Canal Dock	Lansdowne Road	81548156	1467	837	-43%
Lansdowne Road	Sandymount	81568158	1179	635	-46%
Sandymount	Sydney Parade	81588160	1121	519	-54%
Sydney Parade	Boooterstown	81608162	1079	473	-56%
Boooterstown	Blackrock	81628164	892	432	-52%
Blackrock	Seapoint	81648166	596	325	-46%
Seapoint	Salthill & Monkstown	81668168	513	319	-38%
Salthill & Monkstown	Dún Laoghaire	81688170	521	298	-43%
Dún Laoghaire	Sandycove & Glasthule	81708172	400	135	-66%
Sandycove & Glasthule	Glenageary	81728174	260	121	-53%
Glenageary	Dalkey	81748176	231	108	-53%
Dalkey	Killiney	81768178	284	73	-74%
Killiney	Shankill	81788180	166	63	-62%
Shankill	Bray	81808182	140	59	-58%
Bray	Greystones	81828184	0	22	-
Malahide	Portmarnock	81328134	2226	2,431	9%
Portmarnock	Howth Jct & Donaghmede	81348136	1516	2,457	62%
Howth Jct & Donaghmede	Kilbarrack	81368138	2826	3,266	16%
Kilbarrack	Raheny	81388140	2268	3,449	52%
Raheny	Harmonstown	81408142	2743	3,771	37%
Harmonstown	Killester	81428144	3049	3,962	30%
Killester	Clontarf Road	81448146	3519	4,219	20%
Clontarf Road	Connolly	81468148	1832	4,354	138%
Portarlinton	Monasterevan	82178219	509	358	-30%
Athy	Kildare	82188220	139	0	-100%
Monasterevan	Carlow	82198216	339	0	-100%
Kildare	Newbridge	82208222	1218	585	-52%
Newbridge	Sallins & Naas	82228224	802	764	-5%
Sallins & Naas	Hazelhatch & Celbridge	82248226	1594	897	-44%
Hazelhatch & Celbridge	Clondalkin	82268228	1351	956	-29%
Clondalkin	Cherry Orchard/Parkwest	82288230	534	952	78%
Cherry Orchard/Parkwest	Heuston	82308232	503	969	93%
Carlow	Athy	82168218	59	0	-100%
Carlow	Monasterevan	82168219	0	0	-
Athy	Carlow	82188216	0	0	-
Monasterevan	Portarlinton	82198217	10	0	-100%
Kildare	Athy	82208218	0	0	-
Newbridge	Kildare	82228220	33	90	173%
Sallins & Naas	Newbridge	82248222	7	147	2002%
Hazelhatch & Celbridge	Sallins & Naas	82268224	26	106	307%
Clondalkin	Hazelhatch & Celbridge	82288226	28	110	292%
Cherry Orchard/Parkwest	Clondalkin	82308228	27	87	224%
Heuston	Cherry Orchard/Parkwest	82328230	110	86	-22%
			101,559	87,359	

Time Period - 8:00- 9:00					
From	To	Link	Observed Volume	Model Volume	Difference
Enfield	Kilcock	80268028	157	438	179%
Kilcock	Maynooth	80288030	209	464	122%
Maynooth	Leixlip Louisa Bridge	80308032	371	847	128%
Leixlip Louisa Bridge	Leixlip Confey	80328034	862	1,243	44%
Leixlip Confey	Clonsilla	80348036	1044	1,292	24%
Clonsilla	Coolmine	80368038	1806	1,987	10%
Coolmine	Castleknoch	80388040	2564	2,500	-2%
Castleknoch	Ashtown	80408042	2462	2,715	10%
Ashtown	Broombridge	80428044	3646	2,726	-25%
Broombridge	Drumcondra	80448046	3654	2,746	-25%
Drumcondra	Connolly	80468148	3378	2,126	-37%

Mullingar	Enfield	80248026	90	87	-3%
Drogheda	Dundalk	81168114	40	20	-51%
Laytown	Drogheda	81188116	44	68	55%
Gormanston	Laytown	81228118	42	0	-100%
Balbriggan	Gormanston	81248122	42	73	73%
Skerries	Balbriggan	81268124	57	202	254%
Rush & Lusk	Skerries	81288126	76	240	216%
Donabate	Rush & Lusk	81308128	80	249	212%
Malahide	Donabate	81328130	106	270	154%
Kilcoole	Greystones	81868184	0	439	-
Wicklow	Kilcoole	81888186	0	445	-
Rathdrum	Wicklow	81908188	0	203	-
Arklow	Rathdrum	81928190	0	231	-
Dundalk	Drogheda	81148116	0	0	-
Drogheda	Laytown	81168118	410	173	-58%
Laytown	Gormanston	81188122	436	0	-100%
Gormanston	Balbriggan	81228124	149	170	14%
Balbriggan	Skerries	81248126	897	541	-40%
Skerries	Rush & Lusk	81268128	1938	1,302	-33%
Rush & Lusk	Donabate	81288130	2271	1,641	-28%
Donabate	Malahide	81308132	2409	2,003	-17%
Greystones	Kilcoole	81848186	29	0	-100%
Kilcoole	Wicklow	81868188	0	0	-
Wicklow	Rathdrum	81888190	19	0	-100%
Rathdrum	Arklow	81908192	15	0	-100%
Enfield	Mullingar	80268024	0	74	-
Kilcock	Enfield	80288026	0	74	-
Maynooth	Kilcock	80308028	13	74	472%
Leixlip Louisa Bridge	Maynooth	80328030	143	487	241%
Leixlip Confey	Leixlip Louisa Bridge	80348032	189	589	212%
Clonsilla	Leixlip Confey	80368034	182	599	229%
Coolmine	Clonsilla	80388036	250	605	142%
Castleknock	Coolmine	80408038	232	613	164%
Ashtown	Castleknock	80428040	210	699	233%
Broombridge	Ashtown	80448042	204	702	244%
Drumcondra	Broombridge	80468044	191	711	272%
Connolly	Drumcondra	81488046	220	536	144%
Tara Street	Connolly	81508148	1328	1,329	0%
Pearse	Tara Street	81528150	2473	2,650	7%
Grand Canal Dock	Pearse	81548152	3387	3,359	-1%
Lansdowne Road	Grand Canal Dock	81568154	4409	3,636	-18%
Sandymount	Lansdowne Road	81588156	4459	3,808	-15%
Sydney Parade	Sandymount	81608158	4442	3,853	-13%
Boosterstown	Sydney Parade	81628160	4829	3,797	-21%
Blackrock	Boosterstown	81648162	5598	4,112	-27%
Seapoint	Blackrock	81668164	5077	3,909	-23%
Salthill & Monkstown	Seapoint	81688166	5292	3,880	-27%
Dún Laoghaire	Salthill & Monkstown	81708168	4503	3,602	-20%
Sandycove & Glasthule	Dún Laoghaire	81728170	4020	3,479	-13%
Glenageary	Sandycove & Glasthule	81748172	3804	3,228	-15%
Dalkey	Glenageary	81768174	22	3,056	13791%
Killiney	Dalkey	81788176	2573	2,868	11%
Shankill	Killiney	81808178	2514	2,565	2%
Bray	Shankill	81828180	2210	2,226	1%
Greystones	Bray	81848182	620	1,504	143%
Portmarnock	Malahide	81348132	180	404	125%
Howth Jct & Donaghmede	Portmarnock	81368134	174	407	134%
Kilbarrack	Howth Jct & Donaghmede	81388136	354	677	91%
Raheny	Kilbarrack	81408138	398	696	75%
Harmonstown	Raheny	81428140	275	727	164%
Killester	Harmonstown	81448142	266	746	180%
Clontarf Road	Killester	81468144	440	756	72%
Connolly	Clontarf Road	81488146	866	789	-9%
Sutton	Howth	81338131	51	119	133%
Bayside	Sutton	81358133	137	133	-3%
Howth Jct & Donaghmede	Bayside	81368135	192	274	43%
Howth	Sutton	81318133	205	361	76%
Sutton	Bayside	81338135	708	491	-31%
Bayside	Howth Jct & Donaghmede	81358136	1265	805	-36%
Connolly	Tara Street	81488150	9882	7,561	-23%
Tara Street	Pearse	81508152	7525	4,254	-43%
Pearse	Grand Canal Dock	81528154	4469	2,642	-41%

Grand Canal Dock	Lansdowne Road	81548156	3191	2,288	-28%
Lansdowne Road	Sandymount	81568158	2313	1,939	-16%
Sandymount	Sydney Parade	81588160	1283	1,682	31%
Sydney Parade	Boosterstown	81608162	1727	1,613	-7%
Boosterstown	Blackrock	81628164	1182	1,401	19%
Blackrock	Seapoint	81648166	1223	1,146	-6%
Seapoint	Salthill & Monkstown	81668168	836	1,127	35%
Salthill & Monkstown	Dún Laoghaire	81688170	764	973	27%
Dún Laoghaire	Sandycove & Glasthule	81708172	491	405	-17%
Sandycove & Glasthule	Glenageary	81728174	383	357	-7%
Glenageary	Dalkey	81748176	366	333	-9%
Dalkey	Killiney	81768178	348	245	-30%
Killiney	Shankill	81788180	261	226	-13%
Shankill	Bray	81808182	134	194	44%
Bray	Greystones	81828184	47	0	-100%
Malahide	Portmarnock	81328134	1838	3,001	63%
Portmarnock	Howth Jct & Donaghmede	81348136	1208	3,139	160%
Howth Jct & Donaghmede	Kilbarrack	81368138	5079	4,461	-12%
Kilbarrack	Raheny	81388140	2871	4,725	65%
Raheny	Harmonstown	81408142	3306	5,286	60%
Harmonstown	Killester	81428144	3646	5,658	55%
Killester	Clontarf Road	81448146	4864	6,303	30%
Clontarf Road	Connolly	81468148	6083	6,574	8%
Portarlinton	Monasterevan	82178219	0	665	-
Athy	Kildare	82188220	117	0	-100%
Monasterevan	Carlow	82198216	112	0	-100%
Kildare	Newbridge	82208222	298	1,309	339%
Newbridge	Sallins & Naas	82228224	778	1,435	84%
Sallins & Naas	Hazelhatch & Celbridge	82248226	474	1,762	272%
Hazelhatch & Celbridge	Clondalkin	82268228	882	1,938	120%
Clondalkin	Cherry Orchard/Parkwest	82288230	0	1,829	-
Cherry Orchard/Parkwest	Heuston	82308232	0	1,840	-
Carlow	Athy	82168218	64	0	-100%
Carlow	Monasterevan	82168219	0	0	-
Athy	Carlow	82188216	45	0	-100%
Monasterevan	Portarlinton	82198217	0	0	-
Kildare	Athy	82208218	34	0	-100%
Newbridge	Kildare	82228220	21	277	1219%
Sallins & Naas	Newbridge	82248222	40	466	1064%
Hazelhatch & Celbridge	Sallins & Naas	82268224	25	281	1026%
Clondalkin	Hazelhatch & Celbridge	82288226	0	247	-
Cherry Orchard/Parkwest	Clondalkin	82308228	0	204	-
Heuston	Cherry Orchard/Parkwest	82328230	52	209	302%
			166,470	177,445	

Time Period - 9:00 - 10:00					
From	To	Link	Observed Volume	Model Volume	Difference
Enfield	Kilcock	80268028	0	0	-
Kilcock	Maynooth	80288030	0	0	-
Maynooth	Leixlip Louisa Bridge	80308032	225	245	9%
Leixlip Louisa Bridge	Leixlip Confey	80328034	205	539	163%
Leixlip Confey	Clonsilla	80348036	281	562	100%
Clonsilla	Coolmine	80368038	439	887	102%
Coolmine	Castleknock	80388040	579	1,126	94%
Castleknock	Ashtown	80408042	818	1,254	53%
Ashtown	Broombridge	80428044	834	1,257	51%
Broombridge	Drumcondra	80448046	842	1,250	48%
Drumcondra	Connolly	80468148	727	1,009	39%
Mullingar	Enfield	80248026	0	0	-
Drogheda	Dundalk	81168114	17	10	-43%
Laytown	Drogheda	81188116	13	33	157%
Gormanston	Laytown	81228118	0	0	-
Balbriggan	Gormanston	81248122	12	33	179%
Skerries	Balbriggan	81268124	36	80	122%
Rush & Lusk	Skerries	81288126	38	100	164%
Donabate	Rush & Lusk	81308128	50	105	111%
Malahide	Donabate	81328130	67	113	68%
Kilcoole	Greystones	81868184	0	295	-
Wicklow	Kilcoole	81888186	77	219	184%
Rathdrum	Wicklow	81908188	55	59	8%
Arklow	Rathdrum	81928190	38	103	171%

Dundalk	Drogheda	81148116	53	0	-100%
Drogheda	Laytown	81168118	50	290	481%
Laytown	Gormanston	81188122	78	0	-100%
Gormanston	Balbriggan	81228124	0	290	-
Balbriggan	Skerries	81248126	147	779	430%
Skerries	Rush & Lusk	81268128	212	1,039	390%
Rush & Lusk	Donabate	81288130	844	1,214	44%
Donabate	Malahide	81308132	709	1,402	98%
Greystones	Kilcoole	81848186	0	0	-
Kilcoole	Wicklow	81868188	0	0	-
Wicklow	Rathdrum	81888190	0	0	-
Rathdrum	Arklow	81908192	0	0	-
Enfield	Mullingar	80268024	0	83	-
Kilcock	Enfield	80288026	0	83	-
Maynooth	Kilcock	80308028	0	83	-
Leixlip Louisa Bridge	Maynooth	80328030	224	205	-8%
Leixlip Confey	Leixlip Louisa Bridge	80348032	244	249	2%
Clonsilla	Leixlip Confey	80368034	230	254	10%
Coolmine	Clonsilla	80388036	126	257	104%
Castleknock	Coolmine	80408038	120	266	122%
Ashtown	Castleknock	80428040	163	302	85%
Broombridge	Ashtown	80448042	166	308	85%
Drumcondra	Broombridge	80468044	167	317	90%
Connolly	Drumcondra	81488046	162	181	11%
Tara Street	Connolly	81508148	415	575	38%
Pearse	Tara Street	81528150	1066	1,226	15%
Grand Canal Dock	Pearse	81548152	2139	1,531	-28%
Lansdowne Road	Grand Canal Dock	81568154	2010	1,641	-18%
Sandymount	Lansdowne Road	81588156	1743	1,687	-3%
Sydney Parade	Sandymount	81608158	1723	1,694	-2%
Boosterstown	Sydney Parade	81628160	1437	1,648	15%
Blackrock	Boosterstown	81648162	1331	1,739	31%
Seapoint	Blackrock	81668164	1263	1,632	29%
Salthill & Monkstown	Seapoint	81688166	1424	1,619	14%
Dún Laoghaire	Salthill & Monkstown	81708168	1290	1,507	17%
Sandycove & Glasthule	Dún Laoghaire	81728170	1256	1,436	14%
Glenageary	Sandycove & Glasthule	81748172	1099	1,333	21%
Dalkey	Glenageary	81768174	548	1,263	131%
Killiney	Dalkey	81788176	793	1,183	49%
Shankill	Killiney	81808178	714	1,047	47%
Bray	Shankill	81828180	456	900	97%
Greystones	Bray	81848182	182	656	260%
Portmarnock	Malahide	81348132	101	170	68%
Howth Jct & Donaghmede	Portmarnock	81368134	150	171	14%
Kilbarrack	Howth Jct & Donaghmede	81388136	93	274	195%
Raheny	Kilbarrack	81408138	152	282	86%
Harmonstown	Raheny	81428140	157	296	89%
Killester	Harmonstown	81448142	160	305	91%
Clontarf Road	Killester	81468144	195	311	59%
Connolly	Clontarf Road	81488146	343	332	-3%
Sutton	Howth	81338131	54	51	-6%
Bayside	Sutton	81358133	76	56	-27%
Howth Jct & Donaghmede	Bayside	81368135	192	110	-43%
Howth	Sutton	81318133	382	158	-59%
Sutton	Bayside	81338135	110	264	140%
Bayside	Howth Jct & Donaghmede	81358136	216	458	112%
Connolly	Tara Street	81488150	3315	3,542	7%
Tara Street	Pearse	81508152	3003	1,632	-46%
Pearse	Grand Canal Dock	81528154	1671	867	-48%
Grand Canal Dock	Lansdowne Road	81548156	1210	753	-38%
Lansdowne Road	Sandymount	81568158	1180	609	-48%
Sandymount	Sydney Parade	81588160	809	532	-34%
Sydney Parade	Boosterstown	81608162	1051	505	-52%
Boosterstown	Blackrock	81628164	741	442	-40%
Blackrock	Seapoint	81648166	937	368	-61%
Seapoint	Salthill & Monkstown	81668168	549	365	-34%
Salthill & Monkstown	Dún Laoghaire	81688170	546	332	-39%
Dún Laoghaire	Sandycove & Glasthule	81708172	518	156	-70%
Sandycove & Glasthule	Glenageary	81728174	205	142	-31%
Glenageary	Dalkey	81748176	179	133	-26%
Dalkey	Killiney	81768178	172	100	-42%
Killiney	Shankill	81788180	130	92	-29%

Shankill	Bray	81808182	122	86	-30%
Bray	Greystones	81828184	96	20	-79%
Malahide	Portmarnock	81328134	829	1,804	118%
Portmarnock	Howth Jct & Donaghmede	81348136	256	1,823	612%
Howth Jct & Donaghmede	Kilbarrack	81368138	1205	2,428	102%
Kilbarrack	Raheny	81388140	898	2,544	183%
Raheny	Harmonstown	81408142	1516	2,763	82%
Harmonstown	Killester	81428144	1722	2,909	69%
Killester	Clontarf Road	81448146	1921	3,055	59%
Clontarf Road	Connolly	81468148	2191	3,163	44%
Portarlington	Monasterevan	82178219	119	265	123%
Athy	Kildare	82188220	0	0	-
Monasterevan	Carlow	82198216	0	0	-
Kildare	Newbridge	82208222	34	533	1467%
Newbridge	Sallins & Naas	82228224	215	687	220%
Sallins & Naas	Hazelhatch & Celbridge	82248226	0	775	-
Hazelhatch & Celbridge	Clondalkin	82268228	208	841	304%
Clondalkin	Cherry Orchard/Parkwest	82288230	207	798	286%
Cherry Orchard/Parkwest	Heuston	82308232	195	807	314%
Carlow	Athy	82168218	0	0	-
Carlow	Monasterevan	82168219	0	0	-
Athy	Carlow	82188216	0	0	-
Monasterevan	Portarlington	82198217	0	0	-
Kildare	Athy	82208218	29	0	-100%
Newbridge	Kildare	82228220	17	84	394%
Sallins & Naas	Newbridge	82248222	0	114	-
Hazelhatch & Celbridge	Sallins & Naas	82268224	0	93	-
Clondalkin	Hazelhatch & Celbridge	82288226	0	79	-
Cherry Orchard/Parkwest	Clondalkin	82308228	0	79	-
Heuston	Cherry Orchard/Parkwest	82328230	63	79	26%
			60,377	80,841	

APPENDIX C

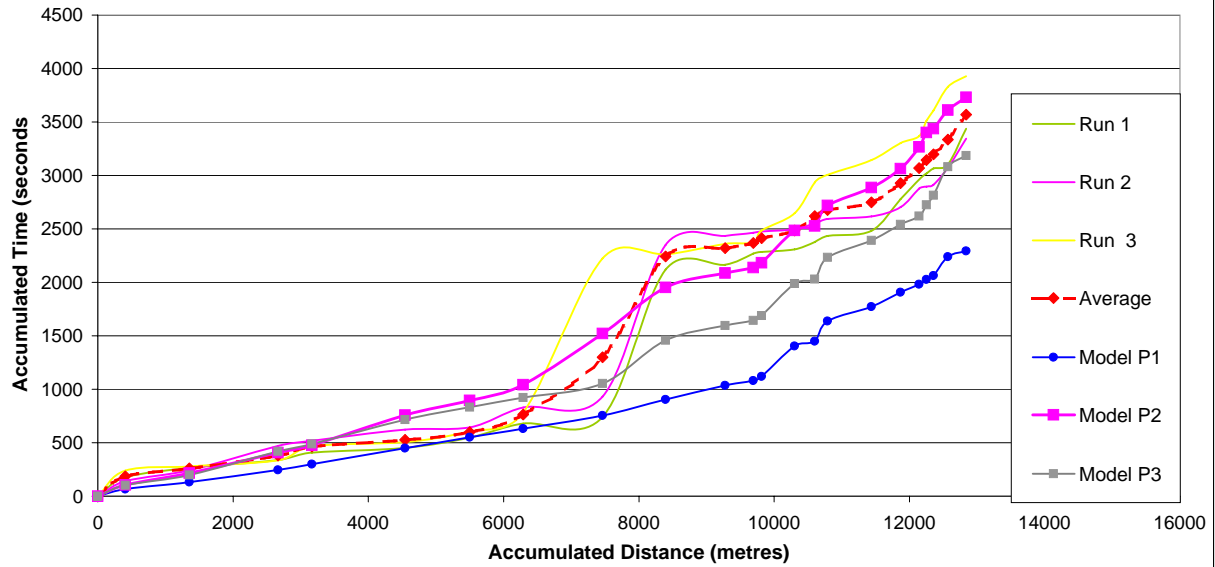
HIGHWAY CALIBRATION OF JOURNEY TIMES

C1. HIGHWAY CALIBRATION: JOURNEY TIMES

Route 1

From	To	A Node	B Node	Dist (meters)	Observed				Modelled Run Times		
					Run 1	Run 2	Run 3	Average	Model P1	Model P2	Model P3
Approach Howth Road / Church Road	Approach Howth Road / Church Road	3503	3503	0	0	0	0	0	0	0	0
Approach Howth Road / Church Road	Station Rd / Greenfield Rd - Sutton Cross	3503	3502	405	177	141	240	186	66	106	103
Station Rd / Greenfield Rd - Sutton Cross	Baldoyle Rd / Dublin Rd	3502	3501	1352	263	241	278	261	133	216	199
Baldoyle Rd / Dublin Rd	Kilbarack Rd / Dublin Rd	3501	1613	2663	337	470	336	381	245	407	418
Kilbarack Rd / Dublin Rd	Howth Rd / James Larkin Rd	1613	1612	3165	406	516	467	463	298	475	489
Howth Rd / James Larkin Rd	Watermill Rd / James Larkin Rd	1612	1611	4543	452	623	507	528	449	757	716
Watermill Rd / James Larkin Rd	Prospect Ave / James Larkin Rd	1611	1610	5497	547	642	607	599	552	894	832
Prospect Ave / James Larkin Rd	Clontarf Rd / Bull Wall	1610	1609	6290	681	830	782	765	633	1042	922
Clontarf Rd / Bull Wall	Clontarf Rd / Vernon Ave	1609	1608	7465	741	930	2223	1298	753	1520	1054
Clontarf Rd / Vernon Ave	Clontarf Rd / St. Lawrence Rd	1608	1607	8395	2120	2350	2259	2243	904	1951	1458
Clontarf Rd / St. Lawrence Rd	Clontarf Rd / Alfie Byrne Rd	1607	1605	9276	2166	2435	2359	2320	1036	2088	1595
Clontarf Rd / Alfie Byrne Rd	Fairview Rd / Howth Rd	1605	1604	9693	2270	2465	2373	2370	1080	2138	1645
Fairview Rd / Howth Rd	Fairview Rd / Malahide Rd	1604	1603	9816	2283	2475	2484	2414	1119	2184	1688
Fairview Rd / Malahide Rd	Fairview Strand / Fairview Ave	1603	1601	10304	2309	2497	2646	2484	1405	2485	1988
Fairview Strand / Fairview Ave	East Wall Rd / Poplar Row	1601	1133	10599	2377	2551	2933	2621	1448	2527	2030
East Wall Rd / Poplar Row	Ossory Rd / North Strand Road	1133	1132	10792	2433	2593	3006	2678	1639	2719	2235
Ossory Rd / North Strand Road	Portland Row / Seville Place	1132	1319	11438	2483	2615	3144	2748	1772	2886	2393
Portland Row / Seville Place	Talbot Street / Amiens St	1319	1316	11869	2778	2704	3301	2928	1907	3062	2543
Talbot Street / Amiens St	Memorial Rd / Amiens St	1316	1314	12145	2961	2878	3367	3069	1982	3265	2621
Memorial Rd / Amiens St	Memorial Rd / Custom House Quay	1314	1304	12251	3019	2894	3513	3142	2028	3402	2724
Memorial Rd / Custom House Quay	George's Quay / Moss St	1304	2173	12355	3067	2914	3408	3197	2064	3437	2815
George's Quay / Moss St	Burgh Quay / Tara St	2173	2172	12568	3103	3072	3830	3335	2241	3612	3080
Burgh Quay / Tara St	Finish turning onto O'Connell Bridge	2172	2001	12839	3438	3343	3927	3570	2294	3730	3187

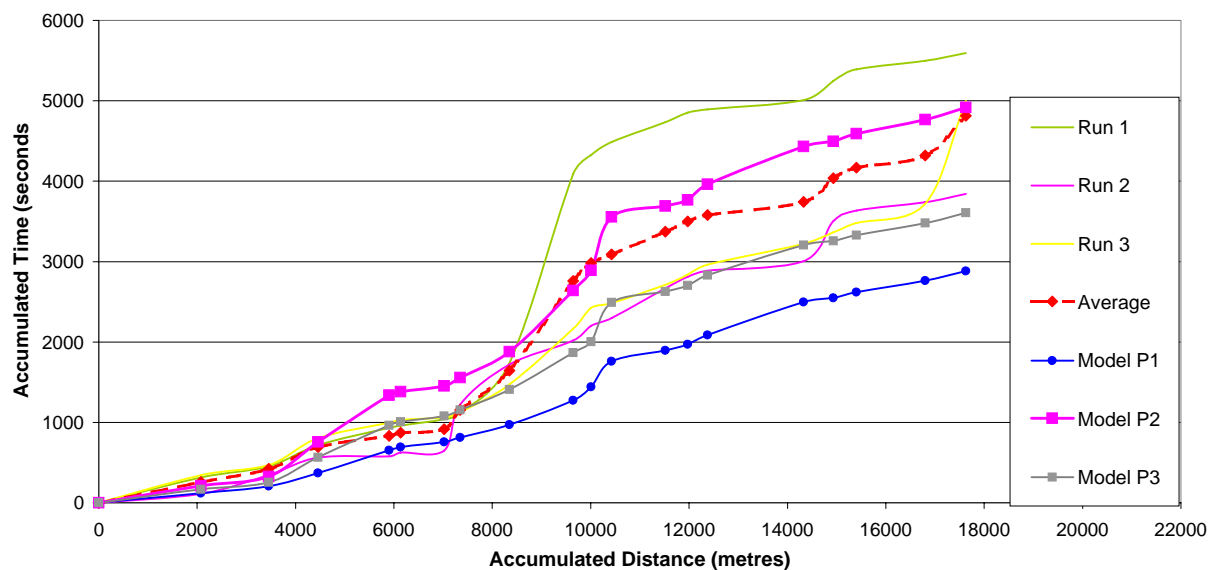
Route 1 - Journey Time Data for Observed and Modelled Runs



Route 2

From	To	A Node	B Node	Dist (meters)	Observed Journey Time				Modelled Run Times		
					Run 1	Run 2	Run 3	Average	Model P1	Model P2	Model P3
Approach Strand Rd/ Station Rd	Approach Strand Rd/ Station Rd	3507	3507	0	0	0	0	0	0	0	0
Approach Strand Rd/ Station Rd	Hole In The Wall Rd/ Balgriffin Rd	3507	3511	2075	316	112	343	257	121	212	167
Hole In The Wall Rd/ Balgriffin Rd	Grange Rd/ Hole in the Wall Rd	3511	1667	3454	454	345	469	423	206	325	253
Grange Rd/ Hole in the Wall Rd	Grange Rd/ Tonlegee	1667	1665	4455	717	560	805	694	371	756	567
Grange Rd/ Tonlegee	Station Rd/ Howth Rd	1665	1638	5903	932	576	994	834	651	1339	964
Station Rd/ Howth Rd	Watermill Rd/ Howth Rd	1638	1637	6135	960	626	1032	873	693	1381	1008
Watermill Rd/ Howth Rd	All Saint's Rd/ Howth Rd	1637	1636	7018	1040	650	1062	917	756	1452	1077
All Saint's Rd/ Howth Rd	Sybil Hill Rd/ Howth Rd	1636	1635	7346	1118	1221	1128	1156	813	1557	1153
Sybil Hill Rd/ Howth Rd	Collins Ave/ Howth Rd	1635	1633	8347	1734	1721	1473	1643	970	1881	1410
Collins Ave/ Howth Rd	Copeland Ave/ Howth Rd	1633	1631	9643	4089	2018	2166	2758	1276	2638	1867
Copeland Ave/ Howth Rd	Clontarf Rd/ Howth Rd	1631	1604	10005	4322	2203	2423	2983	1443	2890	2004
Clontarf Rd/ Howth Rd	Alfie Byrne/ Clontarf Rd	1604	1605	10422	4489	2299	2483	3090	1759	3556	2492
Alfie Byrne/ Clontarf Rd	Alfie Byrne/ East Wall Rd	1605	1123	11517	4733	2667	2713	3371	1895	3692	2628
Alfie Byrne/ East Wall Rd	East Wall Rd/ East Rd	1123	1121	11974	4852	2811	2838	3500	1970	3766	2705
East Wall Rd/ East Rd	East Wall Rd/ Tolka Quay	1121	1105	12378	4892	2887	2963	3581	2086	3962	2829
East Wall Rd/ Tolka Quay	South Bank Rd/ Sean Moore Rd	1105	2213	14328	5008	3005	3220	3744	2497	4433	3207
South Bank Rd/ Sean Moore Rd	Bath St/ Beach Rd/ Sean Moore Rd	2213	2205	14932	5247	3503	3366	4039	2547	4496	3257
Bath St/ Beach Rd/ Sean Moore Rd	Beach Rd/ Marine Dr.	2205	2206	15403	5390	3634	3481	4168	2619	4589	3329
Beach Rd/ Marine Dr.	Strand Rd/ St Johns Rd	2206	2992	16802	5499	3740	3719	4319	2762	4764	3478
Strand Rd/ St Johns Rd	Strand Rd/ Merriem Rd	2992	2970	17629	5595	3844	4999	4813	2882	4919	3608

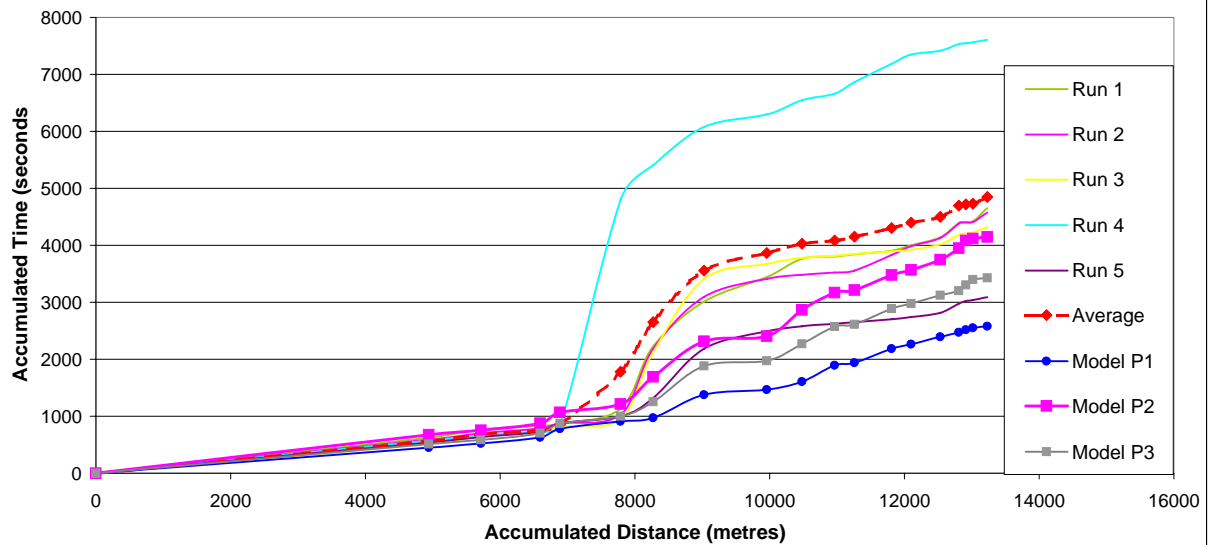
Route 2 - Journey Time Data for Observed and Modelled Runs



Route 3

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Average	Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5		Model P1	Model P2	Model P3
Start on approach to Swords Rd. / Dublin Rd	Start on approach to Swords Rd. / Dublin Rd	3517	3517	0	0	0	0	0	0	0	0	0	0
Start on approach to Swords Rd. / Dublin Rd.	Malahide Rd/ N32	3517	1682	4942	622	592	514	572	538	568	449	674	510
Malahide Rd/ N32	Malahide Rd/ Blunden Dr.	1682	1680	5717	772	701	649	671	633	685	521	751	586
Malahide Rd/ Blunden Dr.	Malahide Rd/ Greencastle Dr.	1680	1679	6596	832	785	719	734	730	760	629	875	702
Malahide Rd/ Greencastle Dr.	Malahide Rd/ Oscar Traynor Rd	1679	1678	6887	865	879	827	832	874	855	779	1067	872
Malahide Rd/ Oscar Traynor Rd	Malahide Rd/ Ardlea Rd Roundabout	1678	1676	7784	1132	1026	948	4799	1001	1781	912	1211	999
Malahide Rd/ Ardlea Rd Roundabout	Malahide Rd/ Kilmore Rd	1676	1675	8270	2222	2187	2121	5405	1322	2651	972	1690	1255
Malahide Rd/ Kilmore Rd	Malahide Rd/ Collins Ave	1675	1673	9024	3012	3097	3412	6081	2184	3557	1377	2312	1881
Malahide Rd/ Collins Ave	Malahide Rd/ Griffith Ave	1673	1672	9958	3445	3410	3674	6300	2486	3863	1467	2404	1973
Malahide Rd/ Griffith Ave	Malahide Rd/ Fairview Rd	1672	1603	10478	3764	3482	3783	6544	2576	4030	1608	2867	2271
Malahide Rd/ Fairview Rd	Fairview Strand / Fairview Ave	1603	1601	10966	3802	3520	3816	6663	2626	4085	1895	3169	2571
Fairview Strand / Fairview Ave	North Strand Rd/ Poplar Row	1601	1133	11261	3842	3554	3848	6867	2654	4153	1937	3211	2612
North Strand Rd/ Poplar Row	North Strand Rd/ Ossory Rd	1133	1131	11809	3907	3829	3896	7183	2702	4303	2188	3475	2886
North Strand Rd/ Ossory Rd	Amien St./ Portland Row	1131	1319	12100	4001	3983	3922	7348	2742	4399	2262	3569	2975
Amien St./ Portland Row	Amien St./ Talbot St.	1319	1316	12531	4139	4127	4017	7414	2815	4502	2396	3746	3126
Amien St./ Talbot St.	Amien St./ Memorial Row	1316	1314	12807	4396	4382	4183	7531	2978	4694	2471	3948	3204
Amien St./ Memorial Row	Memorial Row/ Custom house Quay	1314	1304	12913	4412	4400	4207	7547	3024	4718	2517	4086	3306
Memorial Row/ Custom house Quay	George Quay/ Moss St	1304	2173	13017	4422	4412	4225	7561	3038	4732	2553	4120	3398
George Quay/ Moss St	Burgh Quay/ Tara St.	2173	2172	13230	4653	4574	4322	7605	3089	4849	2581	4148	3426

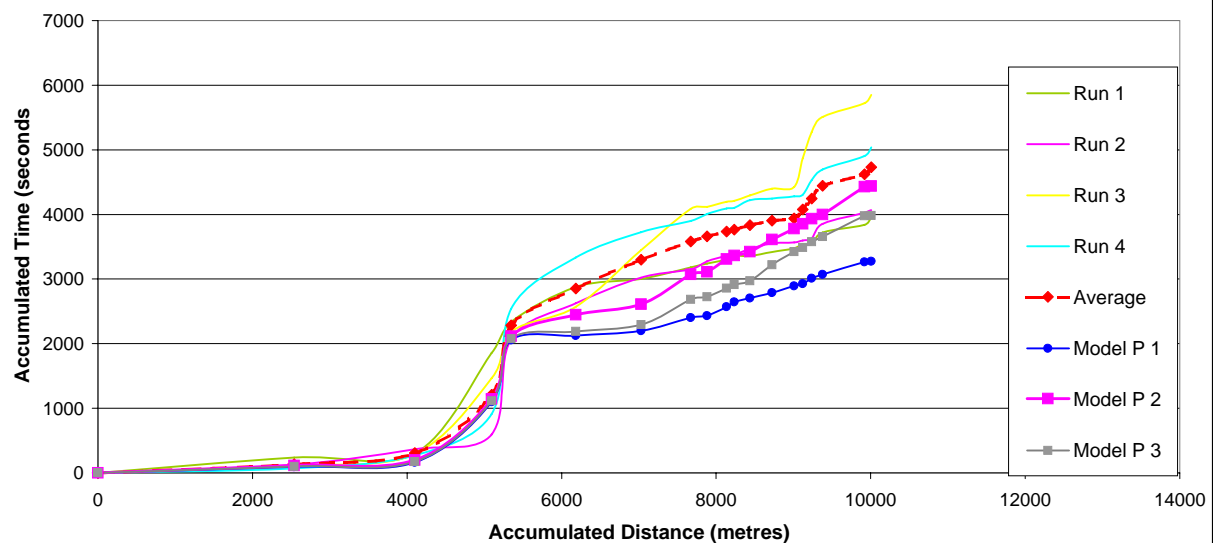
Route 3 - Journey Time Data for Observed and Modelled Runs



Route 3

From	To	A Node	B Node	Dist (meters)	Observed Journey Times					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Average	Model P 1	Model P 2	Model P 3
Airport Roundabout	Airport Roundabout	3555	3555	0	0	0	0	0	0	0	0	0
Airport Roundabout	M1/ M50/ N32	3555	3531	2538	240	127	108	67	135	96	112	100
M1/ M50/ N32	Coolock Lane/ M1	3531	1871	4100	300	367	295	270	308	164	196	172
Coolock Lane/ M1	Swords Rd/ Collins Ave West	1871	1861	5096	1860	595	1466	912	1208	1102	1145	1113
Swords Rd/ Collins Ave West	Drumcondra Rd Upr./ Griffith Ave	1861	1858	5349	2340	2077	2184	2540	2285	2057	2114	2074
Drumcondra Rd Upr./ Griffith Ave	Drumcondra Rd Upr./ Richmond Rd	1858	1857	6185	2880	2628	2573	3334	2854	2125	2448	2188
Drumcondra Rd Upr./ Richmond Rd	Drumcondra Rd Upr./ Clonliffe Rd	1857	1855	7030	3000	3022	3450	3725	3299	2200	2609	2295
Drumcondra Rd Upr./ Clonliffe Rd	Drumcondra Rd/ Portland Place	1855	1852	7671	3180	3151	4087	3900	3580	2402	3072	2687
Drumcondra Rd/ Portland Place	Upper Dorset St./ North Circular Rd	1852	1851	7883	3240	3273	4115	4009	3659	2434	3110	2723
Upper Dorset St./ North Circular Rd	Upper Dorset St./ Gardiner Street Upper	1851	1394	8134	3300	3360	4198	4090	3737	2573	3307	2856
Upper Dorset St./ Gardiner Street Upper	Dorset Street / Eccles Street	1394	1393	8234	3360	3377	4211	4104	3763	2645	3363	2911
Dorset Street / Eccles Street	Temple Street / Hill Street	1393	1392	8437	3360	3470	4293	4221	3836	2704	3422	2971
Temple Street / Hill Street	Hill Street / Parnell Street	1392	1359	8725	3420	3550	4401	4247	3905	2791	3612	3219
Hill Street / Parnell Street	Parnell St. / Marlborough St.	1359	1358	9009	3480	3566	4424	4281	3938	2895	3782	3424
Parnell St. / Marlborough St.	Marlborough St. / Cathal Brugha Street	1358	1356	9119	3540	3598	4871	4307	4079	2930	3852	3489
Marlborough St. / Cathal Brugha Street	O'Connell St. / Cathal Brugha St.	1356	1355	9236	3540	3627	5274	4535	4244	3010	3931	3577
O'Connell St. / Cathal Brugha St.	O'Connell St. / Earl St. North	1355	1365	9379	3720	3854	5510	4698	4446	3070	3999	3656
O'Connell St. / Earl St. North	O'Connell St. / Abbey St.	1365	1351	9919	3840	4027	5720	4906	4623	3265	4429	3977
O'Connell St. / Abbey St.	Finish Turning onto O'Connell St.	1351	1302	10007	3960	4068	5850	5037	4729	3273	4438	3985

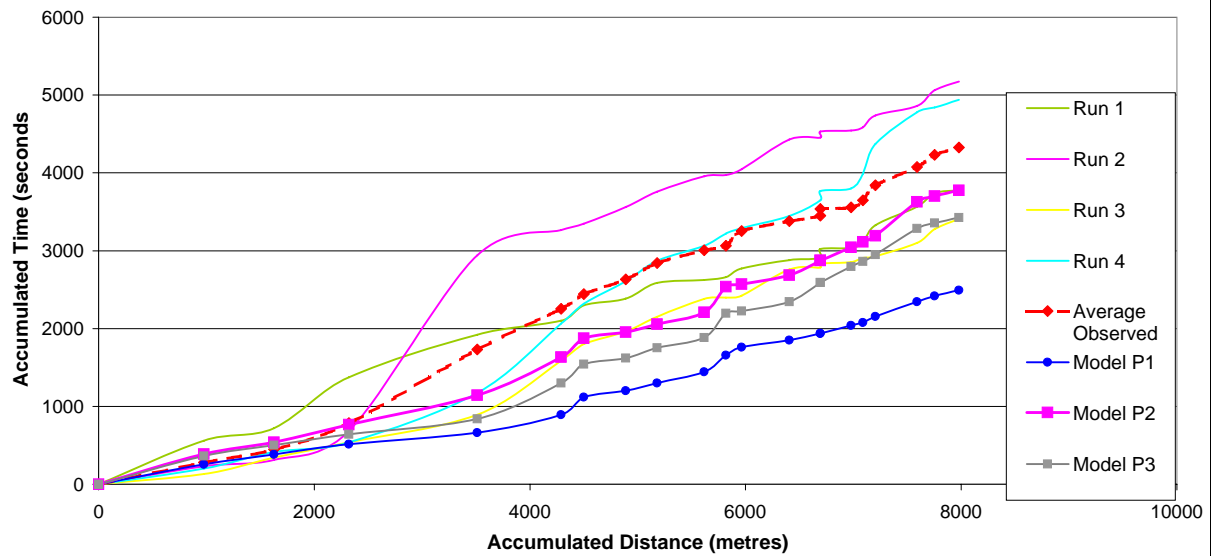
Route 4 - Journey Time Data for Observed and Modelled Runs



Route 5

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Average	Model P1	Model P2	Model P3
Start on approach to Ballymun Junction of M50	Start on approach to Ballymun Junction of M50	3648	3648	0	0	0	0	0	0	0	0	0
Ballymun Rd/ St. Margaret's Rd	Ballymun Rd/ St. Margaret's Rd	3648	1728	978	559	229	133	201	280	255	386	362
Ballymun Rd/ Shanghan Rd Roundabout	Ballymun Rd/ Shanghan Rd Roundabout	1728	1727	1627	720	314	342	415	448	384	538	503
Ballymun Rd/ Collins Ave Extension	St. Mobhi/ Griffith Ave	1727	1725	2320	1375	684	539	538	784	515	764	640
St. Mobhi/ Griffith Ave	St. Mobhi/ Botanic Ave	1725	1721	3511	1919	2940	892	1174	1731	664	1143	839
St. Mobhi/ Botanic Ave	Botanic Rd/ Glasnevin Hill Rd	1721	1717	4290	2102	3265	1589	2066	2256	894	1634	1300
Botanic Rd/ Glasnevin Hill Rd	Botanic Rd/ Prospect Way	1717	1716	4499	2299	3346	1800	2319	2441	1119	1876	1541
Botanic Rd/ Prospect Way	Prospect Rd/ Whitworth Rd	1716	1714	4889	2387	3561	1963	2609	2630	1199	1955	1621
Prospect Rd/ Whitworth Rd	Prospect Rd/ Whitworth Rd	1714	1711	5179	2587	3758	2150	2869	2841	1301	2058	1752
North Circular Rd/ Phibsborough - Doyles Corn	North Circular Rd/ Phibsborough - Doyles Corn	1711	1428	5616	2623	3956	2380	3065	3006	1442	2209	1882
Berkley Rd/ NCR	Berkley Rd/ NCR	1428	1415	5818	2662	3974	2396	3220	3063	1658	2538	2196
Berkley Rd/ Eccles St.	Berkley Rd/ Eccles St.	1415	1408	5962	2771	4048	2422	3290	3253	1760	2572	2226
Eccles St. / Dorset St.	Eccles St. / Dorset St.	1408	1392	6405	2880	4431	2761	3448	3380	1849	2684	2343
Temple St. / Hill St.	Temple St. / Hill St.	1392	1359	6693	2906	4455	2785	3648	3449	1936	2873	2591
Hill St. / Parnell St.	Hill St. / Parnell St.	1359	1359	6693	3021	4530	2835	3766	3538	1936	2873	2591
Parnell St. / Marlborough St.	Parnell St. / Marlborough St.	1356	1358	6977	3035	4544	2852	3799	3558	2040	3044	2796
Marlborough St. / Cathal Brugha St.	Marlborough St. / Cathal Brugha St.	1358	1356	7087	3109	4585	2906	3990	3648	2075	3114	2861
O'Connell St. / Earl St. North	O'Connell St. / Earl St. North	1356	1355	7204	3327	4738	2930	4370	3841	2154	3193	2949
O'Connell St. / Abbey Street	O'Connell St. / Abbey Street	1355	1363	7589	3566	4861	3101	4778	4077	2346	3628	3285
Finish turning onto O'Connell St.	Finish turning onto O'Connell St.	1365	1361	7753	3740	5061	3277	4841	4230	2419	3702	3355
		1361	1302	7979	3774	5175	3411	4939	4325	2494	3775	3426

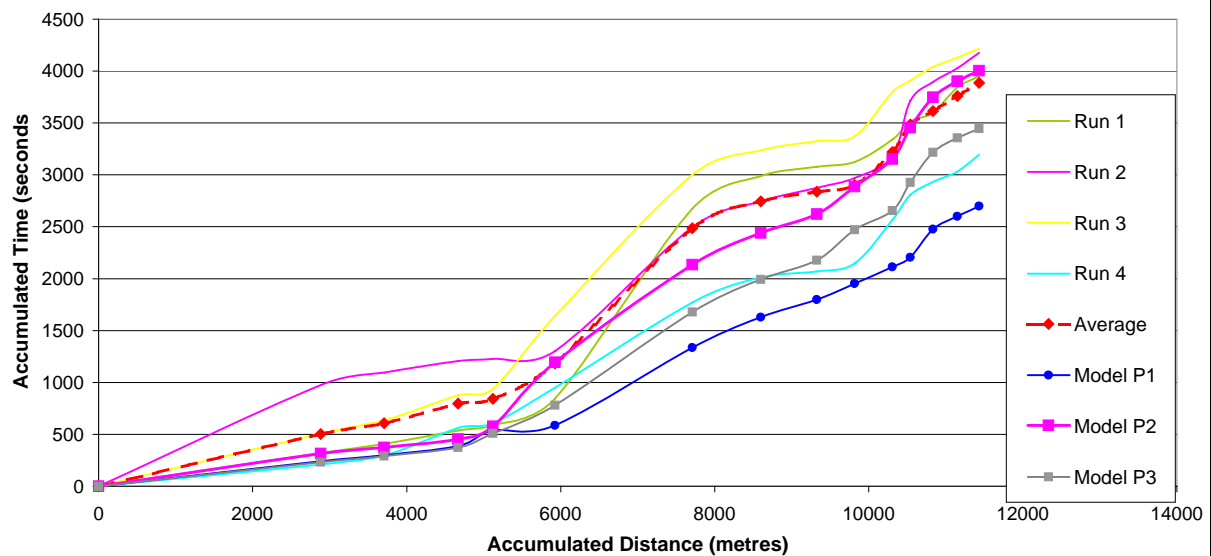
Route 5 - Journey Time Data for Observed and Modelled Runs



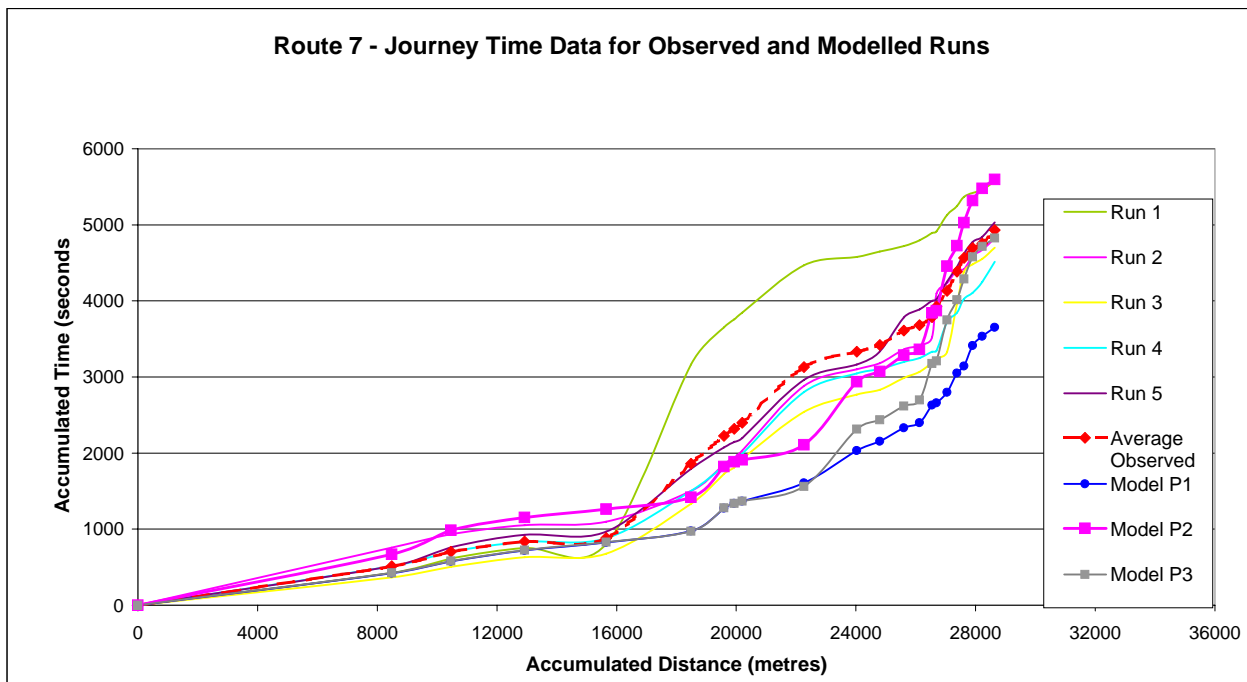
Route 6

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Average	Model P1	Model P2	Model P3
Kilshane Cross	Kilshane Cross	3793	3793	0	0	0	0	0	0	0	0	0
Kilshane Cross	M50	3793	3751	2884	322	975	507	210	503	240	315	231
M50	North RD/ St. Margaret's Rd	3751	1776	3707	409	1094	636	297	609	298	373	290
North RD/ St. Margaret's Rd	Finglas Bypass / Ballygall Rd	1776	1771	4668	536	1206	877	561	795	388	454	372
Finglas Bypass / Ballygall Rd	Finglas Rd/ Finglas Place	1771	1764	5118	589	1229	938	607	841	536	578	509
Finglas Rd/ Finglas Place	Finglas Rd/ Tolka Valley Rd	1764	1763	5925	845	1301	1640	950	1184	586	1194	781
Finglas Rd/ Tolka Valley Rd	Finglas Rd/ Prospect Road	1763	1715	7707	2676	2496	3000	1769	2485	1335	2134	1679
Finglas Rd/ Prospect Road	Phibsborough Rd/ North Circular Rd - Doyles Corner	1715	1428	8597	2989	2744	3236	2011	2745	1629	2440	1991
Phibsborough Rd/ North Circular Rd - Doyles Corner	Phibsborough Rd/ Western Way	1428	1426	9325	3080	2875	3325	2071	2838	1799	2621	2178
Phibsborough Rd/ Western Way	Church St/ King St Nth	1426	1424	9814	3126	2969	3372	2146	2903	1953	2887	2471
Church St/ King St Nth	Church St/ Arran Quay	1424	1421	10306	3342	3181	3797	2566	3221	2114	3152	2656
Church St/ Arran Quay	Chancery Place/ Ormond Quay	1421	1401	10538	3514	3715	3909	2806	3486	2206	3455	2926
Chancery Place/ Ormond Quay	Capel St/ Ormond Quay	1401	1382	10832	3599	3894	4040	2932	3616	2477	3746	3216
Capel St/ Ormond Quay	Liffey St/ Bachelors Walk	1382	1373	11151	3845	4029	4130	3033	3759	2600	3903	3355
Liffey St/ Bachelors Walk	Finish turning onto O'Connell Bridge	1373	1301	11433	3953	4176	4217	3196	3885	2699	4002	3446

Route 6 - Journey Time Data for Observed and Modelled Runs



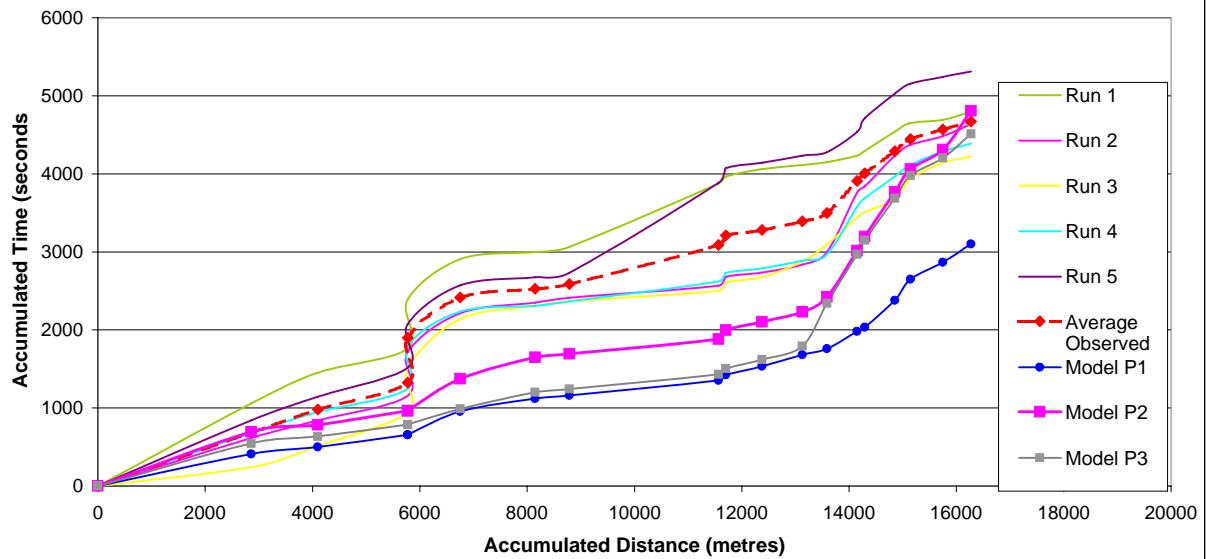
From	To	Dist		Observed Journey Time					Modelled Run Times			
		A Node	B Node	(meters)	Run 1	Run 2	Run 3	Run 4	Run 5	Average C	Model P1	Model P2
N3 / R154	N3 / R154	6134	6134	0	0	0	0	0	0	0	0	0
N3 / R154	N3 / R155	6134	6133	8487	424	759	364	513	511	514	420	669
N3 / R155	N3 / R157	6132	6132	10464	613	936	505	702	762	704	575	984
N3 / R157	N3 / R156 - Clonee Bypass first bridge	6133	3466	12922	753	1053	632	833	924	839	720	1151
N3 / R156 - Clonee Bypass first bridge	N3 / R156 - Clonee Bypass second bridge (Littlepace)	3466	3461	1502	802	1097	676	868	969	885	823	1263
Clonee Bypass second bridge (Littlepace)	N3 / Smugborough Road Slip lane	3461	3441	18486	3162	1503	1335	1504	1791	1859	976	1419
N3 / Smugborough Road Slip lane	Blanchardstown Bypass/ River Rd	3441	3433	19585	3651	1856	1724	1834	2073	2228	1276	1823
Blanchardstown Bypass/ River Rd	Blanchardstown Bypass/ M50 R/about	3433	3438	19936	3759	1939	1810	1939	2145	2318	1336	1886
Blanchardstown Bypass/ M50 R/about	Blanchardstown Bypass/ M50 R/about	3438	3394	20199	3844	2033	1923	1991	2195	2397	1366	1912
Blanchardstown Bypass/ Dunsink Lane	Blanchardstown Bypass/ Dunsink Lane	3394	3421	22267	4470	2883	2542	2804	2963	3132	1606	2107
Blanchardstown Bypass/ Dunsink Lane	Navan Rd/ Nephin Rd	3421	1915	24033	4577	3102	2767	3045	3166	3331	2033	2938
Navan Rd/ Nephin Rd	Navan Rd/ Cabra Rd	1915	1914	24798	4651	3181	2830	3106	3337	3421	2153	3070
Navan Rd/ Cabra Rd	Old Cabra Rd/ North Circular Rd	1914	1469	25600	4722	3363	2989	3198	3784	3611	2329	3285
Old Cabra Rd/ North Circular Rd	Prussia Rd/ Manor St/ Aughrim	1469	1468	26127	4797	3413	3068	3249	3887	3683	2397	3363
Prussia Rd/ Manor St/ Aughrim	Blackhall Place/ King St.	1468	1465	26544	4893	3522	3192	3331	4001	3788	2628	3840
Blackhall Place/ King St.	Queen St/ King St.	1465	1455	26691	4913	4009	3246	3347	4021	3925	2661	3871
Queen St/ King St.	Queen St/ Arman Quay	1455	1453	27051	5129	4233	3327	3718	4253	4132	2794	3799
Queen St/ Arman Quay	Inns Quay/ Church St	1453	1452	27378	5247	4404	3383	3963	4449	4383	3050	4276
Inns Quay/ Church St	Chancery Place/ Ormond Quay	1421	1401	27610	5370	4416	4384	4028	4622	4564	3142	5029
Chancery Place/ Ormond Quay	Capel St/ Ormond Quay	1401	1382	27904	5418	4590	4479	4106	4777	4695	3413	5320
Capel St/ Ormond Quay	Liffey St/ Bachelors Walk	1382	1373	28223	5462	4672	4554	4248	4845	4756	3536	5477
Liffey St/ Bachelors Walk	Finish turning onto O'Connell Bridge	1373	1302	28640	5577	4824	4701	4516	5032	4930	3652	5595



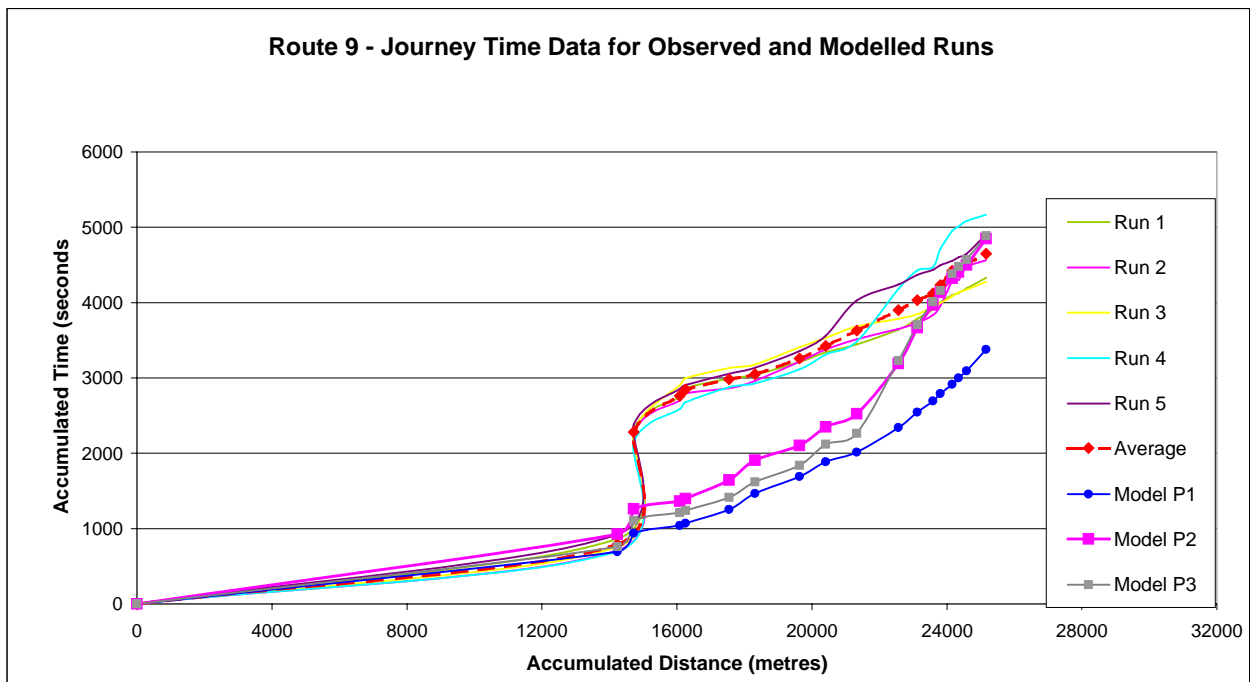
Route 8

From	To	A Node	B Node	Dist (meters)	Observed Journey Time						Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5	Average	Model P1	Model P2	Model P3
Start on approach from Leixlip to R148 / R403	Start on approach from Leixlip to R148 / R403	4376	4376	0	0	0	0	0	0	0	0	0	0
Adamstown Rd / Newcastle Rd	N4 / Esker Lane	4351	4303	2859	1060	615	242	675	842	687	412	694	545
N4 / Esker Lane	N4 / Ballyowen Rd	4303	4342	4097	1450	842	512	946	1143	979	501	785	634
N4 / Ballyowen Rd	Lucan Rd / Fonthill Rd.	4342	4331	5774	1762	1158	946	1247	1519	1326	657	963	788
Lucan Rd / Fonthill Rd.	Lucan Rd / M50 R'about	4331	4331	5774	2391	1718	1518	1798	2074	1900	657	963	788
Lucan Rd / M50 R'about	Lucan Rd / Kennelsfort Rd	4328	4328	6752	2908	2213	2142	2237	2570	2414	955	1375	989
N4 / The Oval	N4 / Lucan Road Slip	4331	2814	8149	2998	2348	2303	2308	2672	2526	1120	1650	1201
N4 / Lucan Road Slip	Chapelizod Bypass / Kylemore Rd - Over bridge	2814	2813	8786	3065	2411	2365	2367	2731	2588	1162	1692	1242
Chapelizod Bypass / Kylemore Rd - Over bridge	Chapelizod Bypass / Con Colbert Road	2813	2812	11564	3877	2566	2503	2620	3882	3090	1352	1884	1431
Chapelizod Bypass / Con Colbert Road	Con Colbert Rd / Inchicore Rd T-Junction	2812	2811	11700	3964	2684	2610	2731	4071	3212	1422	1999	1507
Con Colbert Rd / Inchicore Rd T-Junction	Con Colbert Rd / South Circular Rd	2811	2317	12375	4060	2735	2679	2788	4141	3281	1533	2105	1618
Con Colbert Rd / South Circular Rd	St. Johns Rd West / Military Rd	2317	2306	13130	4115	2840	2874	2889	4234	3390	1680	2229	1791
St. Johns Rd West / Military Rd	St Johns Rd West / Wolfe Tone Quay	2306	1479	13589	4151	2997	3097	2968	4276	3498	1759	2424	2340
St Johns Rd West / Wolfe Tone Quay	Ellis Quay / Blackhall Place	1479	1461	14146	4231	3759	3442	3581	4534	3909	1982	3016	2971
Ellis Quay / Blackhall Place	Aran Quay / Queen St	1461	1451	14292	4295	3839	3509	3686	4712	4008	2036	3194	3149
Aran Quay / Queen St	Chancery Place / Ormond Quay	1451	1401	14852	4540	4233	3676	3966	5028	4289	2378	3769	3687
Chancery Place / Ormond Quay	Capel St / Ormond Quay	1401	1382	15146	4649	4372	3938	4114	5157	4446	2649	4060	3977
Capel St / Ormond Quay	Liffey St / Bachelors Walk	1382	1301	15747	4693	4483	4143	4291	5243	4571	2867	4312	4205
Liffey St / Bachelors Walk	Finish turning onto O'Connell Bridge	1301	1304	16271	4800	4640	4220	4390	5312	4672	3099	4808	4512

Route 8 - Journey Time Data for Observed and Modelled Runs



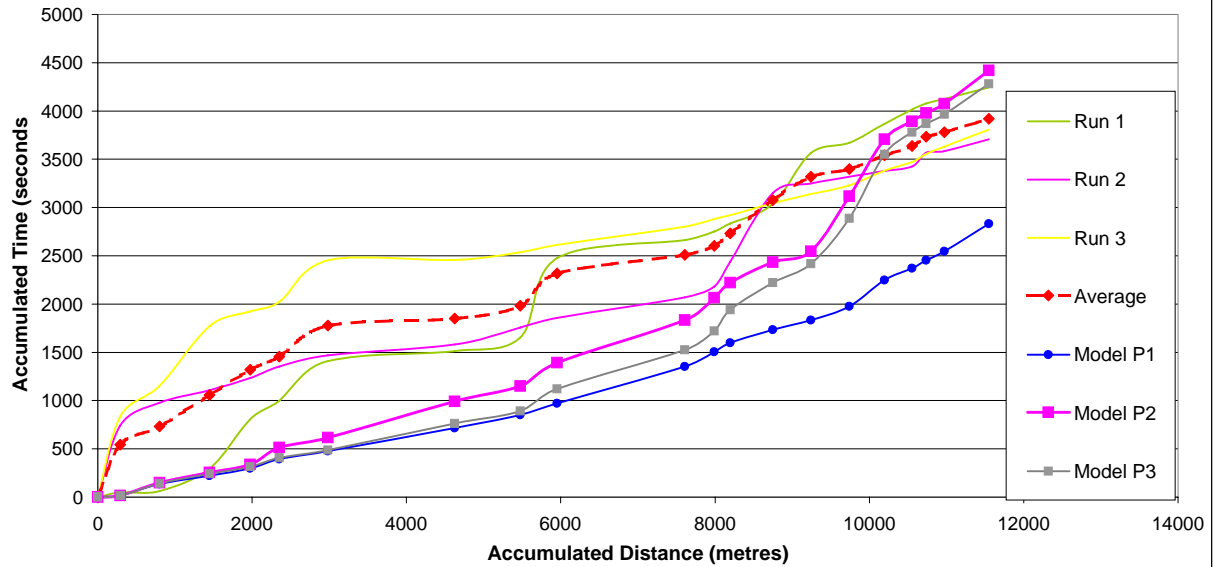
From	To	Dist		Observed Journey Time						Modelled Run Times			
		A Node	B Node	(meters)	Run 1	Run 2	Run 3	Run 4	Run 5	Average	Model P1	Model P2	Model P3
Approach along N7 at Kill	Approach along N7 at Kill	6211	6211	0	0	0	0	0	0	0	0	0	
Approach along N7 at Kill	Nasas Rd/ Boot Rd	6211	4234	14240	862	709	758	697	923	790	694	925	761
Nasas Rd/ Boot Rd	Nasas Rd/ Belgard Rd - Newlands Cross	4234	4233	14722	2314	2270	2285	2153	2379	2280	937	1261	1108
Nasas Rd/ Belgard Rd - Newlands Cross	Nasas Rd/ Monastery Rd	4233	4231	16086	2750	2074	2902	2587	2857	2760	1041	1366	1213
Nasas Rd/ Monastery Rd	Nasas Rd/ M50	4231	4227	16260	2862	2797	2995	2679	2905	2848	1071	1398	1240
Nasas Rd/ M50	Nasas Rd/ Long Mile Rd	4227	5501	17546	2992	2863	3131	2877	3056	2984	1252	1645	1416
Nasas Rd/ Long Mile Rd	Nasas Rd/ Kylemore Rd	5501	2845	18311	3041	2960	3180	2927	3137	3049	1468	1908	1620
Nasas Rd/ Kylemore Rd	Nasas Rd/ Tyrconnell Rd	2845	2843	19628	3211	3217	3406	3116	3356	3261	1692	2103	1839
Nasas Rd/ Tyrconnell Rd	Tyrconnell Rd/ Grattan Crescent	2843	2842	20410	3340	3378	3533	3310	3562	3425	1885	2348	2121
Tyrconnell Rd/ Grattan Crescent	Emmet Rd/ SCR	2842	2338	21331	3445	3513	3683	3483	4028	3630	2015	2522	2263
Emmet Rd/ SCR	Steven's Lane/ James's St	2338	2334	22565	3642	3650	3784	4180	4242	3900	2341	3192	3229
Steven's Lane/ James's St	Thomas St West/ Bridgefoot St.	2334	2331	23127	3782	3732	3847	4429	4369	4033	2546	3667	3705
Thomas St West/ Bridgefoot St.	Cormmarket / Francis St.	2331	2412	23584	3901	3839	3948	4471	4437	4121	2696	3969	4010
Cormmarket / Francis St.	Winetavern / High St/ Nicholas St	2412	2411	23804	4003	3858	3994	4712	4497	4233	2793	4136	4158
Winetavern / High St/ Nicholas St	Dame St / Parliament St	2411	2018	24161	4101	4282	4084	4952	4557	4424	2916	4321	4386
Dame St / Parliament St	Dame St / St. George's St	2018	2016	24344	4124	4300	4136	5008	4601	4434	2999	4408	4477
Dame St / St. George's St	Dame St / Suffolk St.	2016	2014	24582	4189	4469	4171	5081	4649	4512	3093	4502	4574
Dame St / Suffolk St.	Finish turning onto O'Connell Bridge	2014	1302	25159	4328	4563	4275	5166	4903	4647	3377	4850	4884



Route 10

From	To	A Node	B Node	Dist (meters)	Observed Journey Time				Modelled Run Times		
					Run 1	Run 2	Run 3	Average	Model P1	Model P2	Model P3
Approach N81 Tallaght / Belgard Rd.	Approach N81 Tallaght / Belgard Rd.	4185	4185	0	0	0	0	0	0	0	0
Approach N81 Tallaght / Belgard Rd.	N81 Tallaght / Old Bawn Road	4185	4184	290	50	744	836	543	17	17	17
N81 Tallaght / Old Bawn Road	Greenhills Rd/ Tallaght Main St.	4184	4126	799	63	978	1155	732	135	148	142
Greenhills Rd/ Tallaght Main St.	Greenhills Rd/ Airton Rd	4126	4125	1447	294	1106	1771	1057	223	256	243
Greenhills Rd/ Airton Rd	Greenhills Rd/ Mayberry Rd	4125	4124	1973	807	1232	1924	1321	298	338	316
Greenhills Rd/ Mayberry Rd	Greenhills Rd/ Tymon Rd	4124	4123	2351	998	1351	2022	1457	393	514	408
Greenhills Rd/ Tymon Rd	Greenhills Rd/ Ballymount Rd Upper	4123	4275	2984	1410	1470	2452	1777	476	616	488
Greenhills Rd/ Ballymount Rd Upper	Greenhills Rd/ Walkinstown Ave - Walkinstown	4275	2877	4626	1511	1583	2458	1851	717	993	762
Greenhills Rd/ Walkinstown Ave - Walkinstown	Walkinstown Ave/ Drimmagh	2877	2866	5477	1654	1756	2536	1982	853	1150	893
Walkinstown Ave/ Drimmagh	Drimmagh Rd/ Crumlin Rd @ Hospital	2866	2865	5954	2478	1858	2613	2316	970	1393	1120
Drimmagh Rd/ Crumlin Rd @ Hospital	Crumlin Rd/ Sundrive Rd	2865	2862	7608	2661	2070	2802	2511	1353	1835	1525
Crumlin Rd/ Sundrive Rd	Crumlin Rd/ Dolphin Rd/ Grand Canal	2862	2861	7989	2752	2180	2880	2604	1506	2064	1721
Crumlin Rd/ Dolphin Rd/ Grand Canal	Dolphins Barn/ SCR	2861	2363	8198	2835	2440	2920	2732	1599	2223	1939
Dolphins Barn/ SCR	Dolphins Barn/ Marrowbone/ Donore	2363	2361	8749	3036	3150	3045	3077	1733	2434	2223
Dolphins Barn/ Marrowbone/ Donore	Cork St./ Ardee St.	2361	2429	9242	3564	3250	3141	3318	1832	2548	2416
Cork St./ Ardee St.	Dean St./ Patrick St.	2429	2424	9740	3669	3320	3228	3397	1977	3116	2887
Dean St./ Patrick St.	Winetavern / High St/ Nicholas St	2424	2411	10195	3865	3380	3382	3542	2247	3707	3551
Winetavern / High St/ Nicholas St	Dame St / Parliament St	2411	2018	10552	4016	3425	3471	3637	2370	3892	3779
Dame St / Parliament St	Dame St / St. George's St	2018	2016	10735	4078	3568	3555	3734	2453	3979	3870
Dame St / St. George's St	Dame St / Suffolk St. St.	2016	2014	10973	4125	3585	3630	3780	2547	4074	3966
Dame St / Suffolk St. St.	Finish turning onto O'Connell Bridge	2014	1302	11550	4245	3707	3807	3920	2831	4421	4280

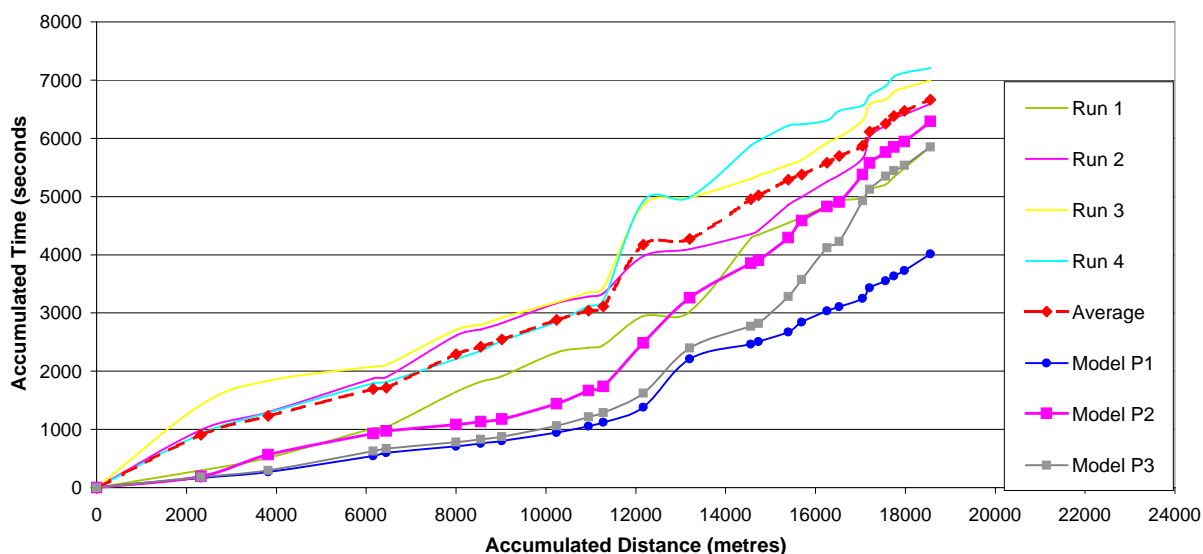
Route 10 - Journey Time Data for Observed and Modelled Runs



Route 11

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Average	Model P1	Model P2	Model P3
Approach Saggart Village crossroads from Rathfriland	Approach Saggart Village crossroads from Rathfriland	4119	4119	0	0	0	0	0	0	0	0	0
Approach Saggart Village crossroads from Rathfriland	Blessington Rd. / N82	4119	4192	2322	296	990	1424	925	909	165	195	181
Blessington Rd. / N82	Blessington Road / Fortunestown Road	4192	4191	3819	514	1297	1837	1287	1234	271	569	298
Blessington Road / Fortunestown Road	Tallaght / Belgard	4191	4185	6155	1017	1875	2080	1795	1692	547	928	625
N81 Tallaght / Belgard	N81 Tallaght / Oldbawn Rd	4185	4184	6445	1039	1899	2106	1817	1715	597	973	671
N81 Tallaght / Oldbawn Rd	Tallaght Bypass/ Tallaght Rd - Roundabout	4184	4181	8000	1647	2614	2708	2213	2295	709	1083	782
Tallaght Bypass/ Tallaght Rd - Roundabout	Tallaght Rd/ M50 Western Parkway	4181	4177	8546	1821	2717	2798	2348	2421	758	1132	831
Tallaght Rd/ M50 Western Parkway	Tallaght Rd/ Wellington Lane - Spawell Roundabout	4177	4171	9022	1915	2828	2920	2516	2545	804	1174	874
Tallaght Rd/ Wellington Lane - Spawell Roundabout	Tallaght Rd/ Cypress Grove Rd - Templeogue B	4171	4162	10234	2320	3167	3185	2848	2880	944	1439	1060
Tallaght Rd/ Cypress Grove Rd - Templeogue B	Templeogue Rd/ Templeville Rd	4162	4161	10947	2404	3282	3353	3124	3041	1057	1667	1216
Templeogue Rd/ Templeville Rd	Templeogue Rd/ Fortfield Rd	4161	2899	11274	2449	3340	3439	3211	3110	1124	1739	1285
Templeogue Rd/ Fortfield Rd	Templeogue Rd/ Terenure Rd - Terenure Cross	2899	2889	12170	2947	3977	4856	4920	4175	1379	2487	1620
Templeogue Rd/ Terenure Rd - Terenure Cross	Terenure Rd East/ Rathgar Ave/ Orwell Road	2889	2717	13202	3024	4096	4983	4986	4272	2211	3261	2395
Terenure Rd East/ Rathgar Ave/ Orwell Road	Rathmines Rd/ Castlewood Ave - Swan Centre	2717	2713	14559	4284	4356	5305	5877	4955	2461	3853	2769
Rathmines Rd/ Castlewood Ave - Swan Centre	Rathmines Rd/ Leinster Rd	2713	2712	14733	4345	4421	5363	5954	5021	2505	3906	2819
Rathmines Rd/ Leinster Rd	Rathmines Rd/ Canal Rd	2712	2711	15398	4548	4853	5543	6218	5290	2670	4292	3284
Rathmines Rd/ Canal Rd	Richmond St/ Adelaide Rd/ Harrington St	2711	2057	15694	4646	4990	5635	6242	5378	2845	4584	3573
Richmond St/ Adelaide Rd/ Harrington St	Wexford St/ Cuffe St	2057	2048	16260	4843	5254	5922	6306	5581	3036	4826	4117
Wexford St/ Cuffe St	Kevin Street Lower / Bride Street	2048	2023	16525	4932	5367	6020	6470	5697	3105	4904	4229
Kevin Street Lower / Bride Street	Kevin St/ Patrick Street	2023	2421	17045	4974	5652	6304	6567	5874	3247	5379	4925
Kevin St/ Patrick Street	Winetavern / High St/ Nicholas St	2421	2411	17202	5119	6028	6582	6736	6116	3429	5578	5122
Winetavern / High St/ Nicholas St	Dame St / Parliament St	2411	2018	17559	5206	6234	6669	6903	6250	3551	5763	5350
Dame St / Parliament St	Dame St / St. George's St	2018	2016	17742	5337	6337	6796	7058	6382	3634	5850	5441
Dame St / St. George's St	Dame St / Suffolk St	2016	2014	17980	5486	6411	6868	7126	6473	3728	5944	5537
Dame St / Suffolk St	Finish turning onto O'Connell Bridge	2014	1302	18557	5861	6595	6995	7206	6664	4013	6292	5852

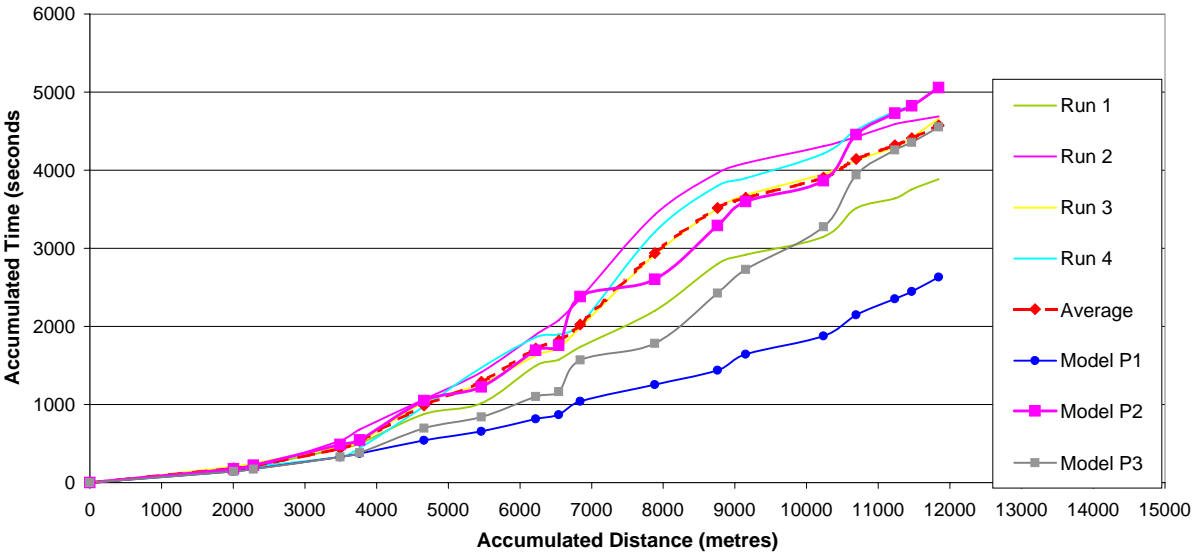
Route 11 - Journey Time Data for Observed and Modelled Runs



Route 12

From	To	A Node	B Node	Dist (meters)	Observed Journey Times					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Average	Model P1	Model P2	Model P3
Bohernabreena Rd/ Firhouse Rd - Brigid Bu	Bohernabreena Rd/ Firhouse Rd - Brigid Bu	4021	4021	0	0	0	0	0	0	0	0	0
Bohernabreena Rd/ Firhouse Rd - Brigid Burkes Roundabout	Firhouse Rd / Ballycullen Rd	4021	4019	2007	187	169	205	182	186	144	175	143
Firhouse Rd / Ballycullen Rd	Firhouse Rd / Delaford Ave	4019	4017	2283	209	189	247	204	212	177	221	174
Firhouse Rd / Delaford Ave	Firhouse Rd / Knocklyon Rd	4017	4015	3492	434	537	457	332	440	326	489	329
Firhouse Rd / Knocklyon Rd	Firhouse Rd / Butterfield Ave/ Ballyroan Rd - Blue Haven	4015	4014	3764	499	682	516	441	535	374	545	381
Firhouse Rd / Butterfield Ave/ Ballyroan Rd - Blue Haven	Butterfield Ave/ Fairways	4014	4012	4664	879	1066	1029	974	987	543	1050	697
Butterfield Ave/ Fairways	Butterfield Ave/ Rathfarnham Rd	4012	4062	5460	1018	1414	1264	1471	1292	657	1224	839
Butterfield Ave/ Rathfarnham Rd	Rathfarnham Rd/ Dodder Park Rd	4062	4061	6219	1494	1895	1625	1860	1719	816	1693	1101
Rathfarnham Rd/ Dodder Park Rd	Rathfarnham Rd/ Bushy Park Rd	4061	2721	6542	1574	2080	1720	1898	1818	869	1757	1163
Rathfarnham Rd/ Bushy Park Rd	Terenure Rd North/ Terenure Rd East - Terenure Cross	2721	2897	6843	1738	2356	1989	2019	2026	1043	2383	1570
Terenure Rd North/ Terenure Rd East - Terenure Cross	Harolds Cross Rd/ Rathgar Ave/ Kennilworth - Five Roads	2897	2896	7882	2202	3431	2917	3209	2940	1256	2603	1782
Harolds Cross Rd/ Rathgar Ave/ Kennilworth - Five Roads	Harolds Cross Rd/ Lower Harolds Cross Rd - Harolds Cross	2896	2892	8758	2799	3965	3507	3798	3517	1440	3292	2425
Harolds Cross Rd/ Lower Harolds Cross Rd - Harolds Cross	Harolds Cross Rd/ Grove Rd @ Canal	2892	2891	9149	2918	4089	3680	3897	3646	1644	3598	2731
Harolds Cross Rd/ Grove Rd @ Canal	Dean St. / Patrick St.	2891	2424	10235	3146	4308	3950	4213	3904	1878	3865	3276
Dean St. / Patrick St.	High St. / Nicholas St	2424	2411	10690	3512	4427	4125	4511	4144	2148	4456	3940
High St. / Nicholas St	Dame St. / St. George's St	2411	2016	11230	3639	4589	4295	4753	4319	2354	4728	4259
Dame St. / St. George's St	Dame St / Suffolk St	2016	2014	11468	3753	4631	4420	4832	4409	2448	4823	4355
Dame St / Suffolk St	Finish turning onto O'Connell Bridge	2014	2001	11845	3884	4690	4663	5051	4572	2633	5059	4555

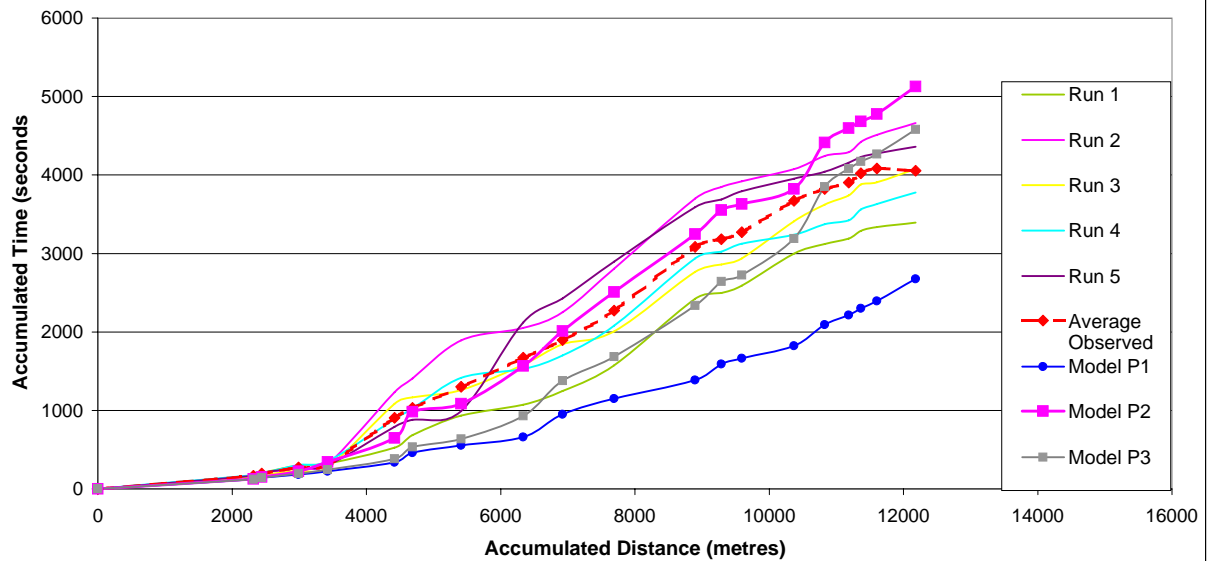
Route 12 - Journey Time Data for Observed and Modelled Runs



Route 13

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Average	Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5		Model P1	Model P2	Model P3
Approach Tibbradden rd. / Edmonstown Junc	Approach Tibbradden rd. / Edmonstown Junc	4068	4068	0	0	0	0	0	0	0	0	0	0
Approach Tibbradden rd. / Edmonstown Junction	Edmondstown Rd / Scholarstown Rd	4068	4067	2519	167	168	157	175	169	167	124	126	124
Edmondstown Rd / Scholarstown Rd	Taylor's Lane / Ballyboden Rd Roundabout	4067	4066	2443	204	203	181	195	203	197	142	150	144
Taylor's Lane / Ballyboden Rd Roundabout	Ballyroan Rd / Ballyboden Rd	4066	4065	2988	296	267	232	304	269	274	184	225	194
Ballyroan Rd / Ballyboden Rd	Ballyroan Rd / Marian Rd	4065	4031	3424	323	313	272	349	303	312	224	341	246
Ballyroan Rd / Marian Rd	Ballyroan Rd / Butterfield Ave - Blue Haven	4031	4014	4419	526	1230	1083	889	791	904	340	647	382
Ballyroan Rd / Butterfield Ave - Blue Haven	Old Bridge Rd / Templeogue Rd - N81	4014	4162	4686	685	1409	1167	1022	882	1033	459	981	536
Old Bridge Rd / Templeogue Rd - N81	Templeville Rd / Wainsfort Rd Roundabout	4162	4284	5412	936	1892	1260	1415	993	1299	556	1084	637
Templeville Rd / Wainsfort Rd Roundabout	Wainsfort Rd / Fortfield Rd	4284	2888	6338	1071	2050	1584	1529	2120	1671	662	1565	930
Wainsfort Rd / Fortfield Rd	Kimmage Rd / Terenure Rd @ KCR	2888	2886	6921	1250	2253	1845	1702	2426	1895	952	2011	1379
Kimmage Rd / Terenure Rd @ KCR	Kimmage Rd Lower/ Larkfield park/ Sundrive	2886	2885	7688	1575	2806	2008	2081	2898	2274	1150	2510	1684
Kimmage Rd Lower/ Larkfield park/ Sundrive	Harolds Cross Rd / Lower Harolds Cross Rd - H2	2885	2892	8894	2424	3700	2765	2938	3590	3083	1385	3247	2338
Harolds Cross Rd / Lower Harolds Cross Rd - H2	Harolds Cross Rd / Grove Rd @ Canal	2892	2891	9285	2496	3848	2860	3022	3689	3183	1589	3554	2643
Harolds Cross Rd / Grove Rd @ Canal	Clanbrassil St/ SCR	2891	2443	9593	2590	3918	2937	3125	3795	3273	1664	3630	2725
Clanbrassil St/ SCR	Patrick St/ Dean St.	2443	2424	10371	2998	4076	3408	3238	3954	3669	1823	3820	3188
Patrick St/ Dean St.	High Street / Nicholas St	2424	2411	10826	3121	4241	3623	3373	4043	3820	2093	4412	3852
High Street / Nicholas St	Dame St / Parliament St	2411	2018	11183	3189	4289	3739	3423	4158	3902	2216	4597	4080
Dame St / Parliament St	Dame St / St. George's St	2018	2016	11366	3287	4422	3880	3562	4229	4023	2299	4684	4171
Dame St / St. George's St	Dame St / Suffolk St.	2016	2014	11604	3335	4513	3906	3632	4273	4081	2393	4778	4267
Dame St / Suffolk St.	Finish turning onto O'Connell Bridge	2014	1302	12181	3395	4663	4075	3777	4362	4054	2677	5126	4582

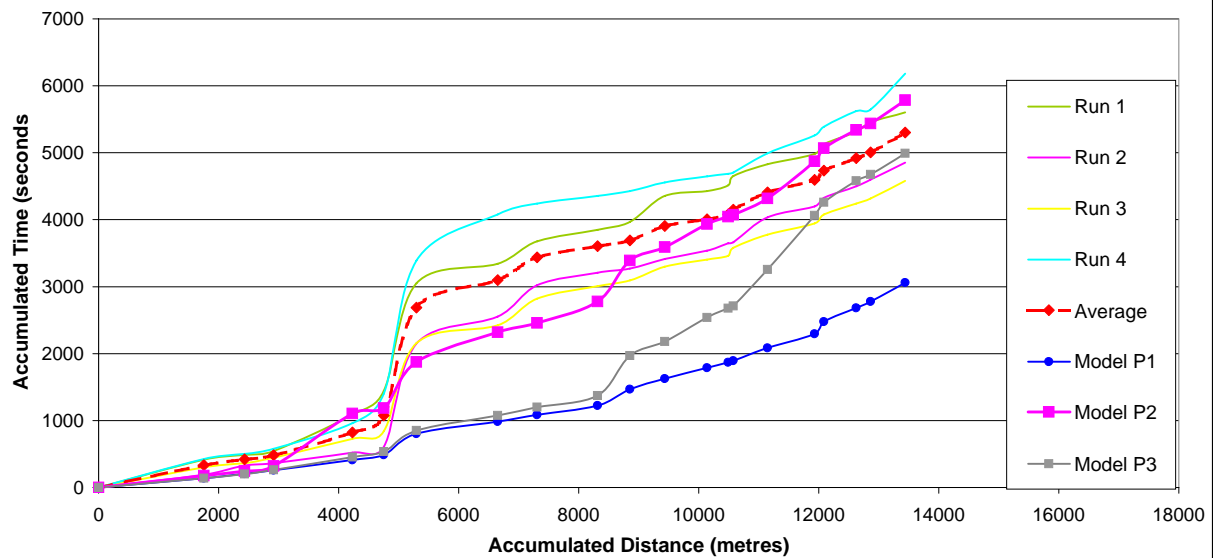
Route 13 - Journey Time Data for Observed and Modelled Runs



Route 14

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Average	Model P1	Model P2	Model P3
Eniskerry Rd / Burrow Rd	Eniskerry Rd / Burrow Rd	5139	5139	0	0	0	0	0	0	0	0	0
Eniskerry Rd / Burrow Rd	Blackglan rd / Hillcrest Rd	5139	5138	1754	416	190	302	426	333	140	177	139
Blackglan rd / Hillcrest Rd	Sandyford Rd / Kilgobbin Rd - Sandyford Village	5138	5137	2431	488	331	365	500	421	204	244	202
Sandyford Rd / Kilgobbin Rd - Sandyford Village	Sandyford Rd / Blackthorn Drive - Sandyford Ind	5137	5136	2917	543	361	444	578	481	260	319	261
Sandyford Rd / Blackthorn Drive - Sandyford Ind	Sandyford Rd / Wyckham	5136	5127	4227	1084	522	727	963	824	409	1105	456
Sandyford Rd / Wyckham	Main St / Ballinteer rd / Upper Kilmacud Rd	5127	5134	4754	1444	608	843	1401	1074	488	1185	535
Main St / Ballinteer rd / Upper Kilmacud Rd	Dundrum Rd / Churchtown Rd Upr @ Taney Cr	5134	5132	5295	3049	2151	2155	3388	2686	805	1876	852
Dundrum Rd / Churchtown Rd Upr @ Taney Cr	Dundrum Rd / Bird Ave	5132	5131	6650	3340	2551	2423	4078	3098	984	2317	1074
Dundrum Rd / Bird Ave	Dundrum Rd / Milltown Rd	5131	2908	7304	3676	3023	2819	4239	3439	1084	2459	1202
Dundrum Rd / Milltown Rd	Milltown Rd / Sandford Rd	2908	2919	8313	3851	3208	3008	4354	3605	1225	2779	1374
Milltown Rd / Sandford Rd	Sandford Rd / Marlborough Rd	2919	2917	8851	3967	3270	3092	4428	3689	1469	3390	1971
Sandford Rd / Marlborough Rd	Ranelagh / Charleston rd	2917	2913	9437	4356	3413	3301	4559	3907	1624	3591	2179
Ranelagh / Charleston rd	Ranelagh / Canal Rd	2913	2911	10136	4427	3538	3406	4649	4005	1788	3935	2537
Ranelagh / Canal Rd	Charlemont St / Harcourt Rd	2911	2055	10489	4514	3650	3464	4686	4078	1870	4045	2676
Charlemont St / Harcourt Rd	Harrington St / Richmond St	2055	2057	10578	4654	3664	3582	4704	4151	1894	4076	2712
Harrington St / Richmond St	Aungier St / Cuffe St	2057	2048	11144	4830	4037	3775	4993	4409	2085	4318	3255
Aungier St / Cuffe St	Kevin Street / Patrick St	2048	2421	11929	4984	4196	3946	5262	4597	2296	4872	4063
Kevin Street / Patrick St	Nicholas St / High St	2421	2411	12086	5131	4326	4079	5391	4732	2477	5070	4261
Nicholas St / High St	Dame St / St. George's St	2411	2016	12626	5314	4501	4242	5622	4920	2683	5342	4580
Dame St / St. George's St	Dame St / Suffolk St.	2016	2014	12864	5457	4602	4316	5648	5006	2776	5437	4676
Dame St / Suffolk St.	Finish turning onto O'Connell Bridge	2014	1302	13441	5605	4851	4581	6183	5305	3061	5785	4991

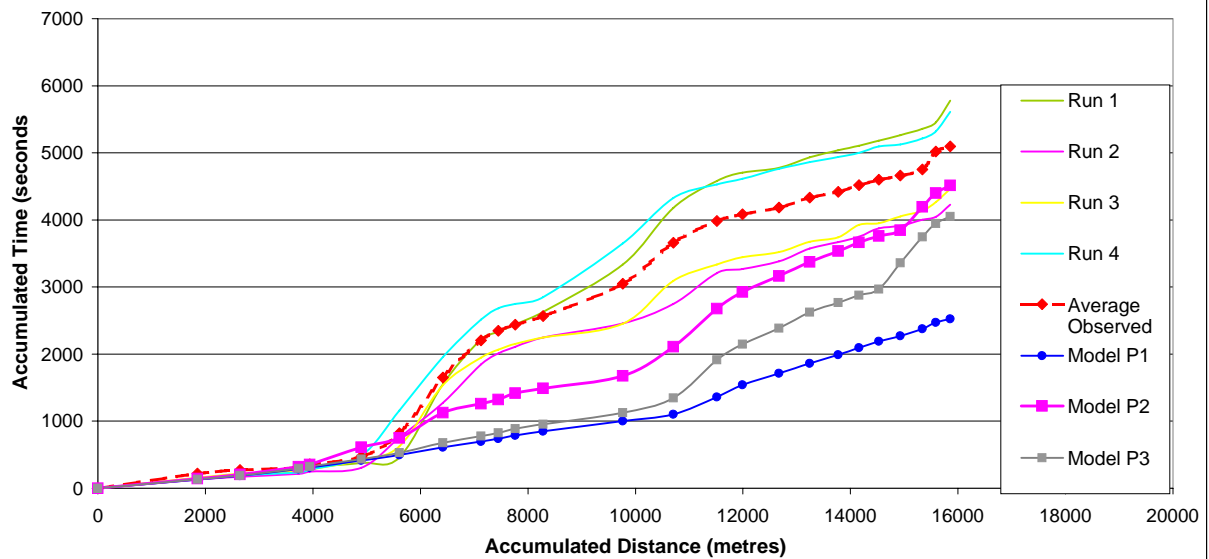
Route 14 - Journey Time Data for Observed and Modelled Runs



Route 15

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Average	Model P1	Model P2	Model P3
N11 / Wyatville Rd	N11 / Wyatville Rd	5028	5028	0	0	0	0	0	0	0	0	0
N11 / Wyatville Rd	N11 / Johnstown Rd	5028	5027	1852	146	131	159	139	217	128	141	132
N11 / Johnstown Rd	N11 / Clonkeen Rd	5027	5026	2641	203	173	214	195	270	186	205	192
N11 / Clonkeen Rd	N11 / Marl Lane	5026	5024	3733	247	216	254	235	312	286	322	295
N11 / Marl Lane	N11 / Kill Lane	5024	5023	3941	309	248	278	275	357	312	355	324
N11 / Kill Lane	Stillorgan Rd / Leopardstown Rd - Whites Cross	5023	5022	4899	379	306	427	485	473	416	610	435
Stillorgan Rd / Leopardstown Rd - Whites Cross	Stillorgan Rd / Brewery Rd	5022	5021	5610	456	756	625	1158	822	495	749	530
Stillorgan Rd / Brewery Rd	Stillorgan Rd / Lower Kilmacud Rd	5021	5019	6416	1551	1274	1537	1956	1653	609	1127	676
Stillorgan Rd / Lower Kilmacud Rd	Stillorgan Rd / Lower Trees Rd	5019	5018	7126	2219	1848	1947	2516	2206	697	1259	777
Stillorgan Rd / Lower Trees Rd	Stillorgan Rd / Mount Merrion Ave	5018	5017	7451	2330	2007	2067	2683	2345	741	1320	827
Stillorgan Rd / Mount Merrion Ave	Stillorgan Rd / Booterstown Ave	5017	5016	7765	2442	2111	2151	2749	2437	786	1415	888
Stillorgan Rd / Booterstown Ave	Stillorgan Rd / Fosters Ave	5016	5015	8280	2631	2246	2246	2848	2566	848	1490	955
Stillorgan Rd / Fosters Ave	Stillorgan Rd / Nutley lane	5015	2944	9767	3335	2458	2452	3652	3048	1000	1674	1125
Stillorgan Rd / Nutley lane	Stillorgan Rd / Eglinton Road	2944	2942	10704	4181	2747	3091	4327	3660	1104	2108	1345
Stillorgan Rd / Eglinton Road	Donnybrook Rd / Marlborough Rd	2942	2940	11516	4581	3207	3334	4527	3986	1360	2676	1914
Donnybrook Rd / Marlborough Rd	Leeson St Upr / Appian Way	2940	2938	11993	4706	3269	3445	4616	4083	1539	2926	2146
Leeson St Upr / Appian Way	Leeson St Lwr / Mespil Rd.	2938	2931	12673	4776	3383	3523	4760	4184	1712	3162	2384
Leeson St Lwr / Mespil Rd.	Leeson St Lwr / St. Stephens Green East	2931	2106	13241	4933	3574	3672	4862	4334	1863	3373	2623
Leeson St Lwr / St. Stephens Green East	St. Stephens Green North/Dawson Street	2106	2085	13774	5039	3668	3742	4937	4420	1990	3535	2768
St. Stephens Green North/Dawson Street	Dawson Street / Nassau Street	2085	2082	14161	5108	3749	3927	5001	4520	2094	3664	2879
Dawson Street / Nassau Street	Lincoln Place / Westland Row	2082	2131	14528	5184	3873	3952	5095	4600	2189	3759	2967
Lincoln Place / Westland Row	Westland Row / Pearse Street	2131	2154	14925	5263	3915	4052	5125	4662	2273	3847	3361
Westland Row / Pearse Street	Perse Street / Tara Street	2154	2152	15339	5359	4004	4139	5216	4753	2374	4195	3745
Perse Street / Tara Street	Tara Street / Burgh Quay	2152	2172	15586	5454	4046	4266	5319	5019	2473	4398	3945
Tara Street / Burgh Quay	Burgh Quay / O'Connell Bridge	2172	2001	15857	5778	4227	4466	5610	5094	2526	4516	4052

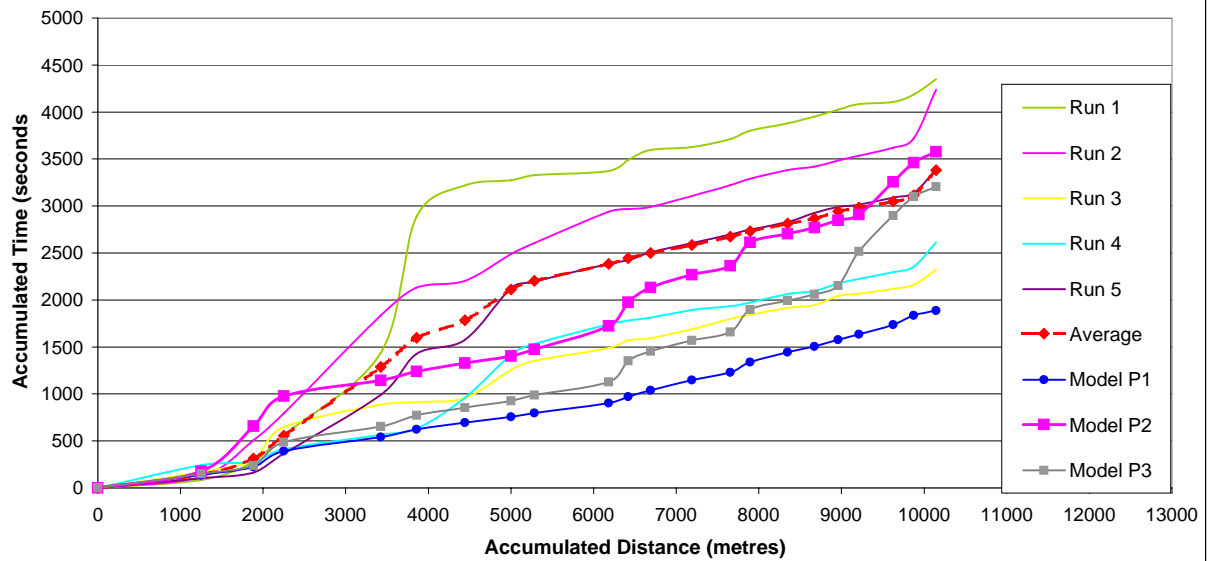
Route 15 - Journey Time Data for Observed and Modelled Runs



Route 16

From	To	A Node	B Node	Dist (meters)	Observed Journey Time						Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5	Average	Model P1	Model P2	Model P3
Approach Monkstown Crescent / Carrick Bn	Approach Monkstown Crescent / Carrick Br	5081	5081	0	0	0	0	0	0	0	0	0	0
Approach Monkstown Crescent / Carrick Brenn	Monkstown Rd/ Temple Hill/ Stradbrook	5081	5047	1252	86	118	171	243	103	144	140	177	151
Monkstown Rd/ Temple Hill/ Stradbrook	Frascati Rd / Carysfort Rd	5047	5045	1882	281	506	303	275	165	312	226	656	239
Frascati Rd / Carysfort Rd	Rock Rd/ Mt. Merrion Ave	5045	5043	2249	563	793	647	411	363	555	391	978	488
Rock Rd/ Mt. Merrion Ave	Rock Rd/ Booterstown Ave	5043	5042	3424	1438	1836	885	565	991	1288	543	1146	653
Rock Rd/ Booterstown Ave	Rock Rd/ Trimelston Rd	5042	5041	3859	2888	2131	914	630	1427	1598	622	1241	772
Rock Rd/ Trimelston Rd	Rock Rd/Strand Rd - Merrion Gate	5041	2970	4443	3220	2202	958	960	1578	1784	696	1327	855
Rock Rd/Strand Rd - Merrion Gate	Merrion Rd/ Nutley Lane	2970	2969	4999	3274	2490	1257	1416	2124	2112	755	1403	928
Merrion Rd/ Nutley Lane	Merrion Rd/ Ailesbury Rd	2969	2968	5282	3327	2606	1351	1533	2197	2203	797	1474	989
Merrion Rd/ Ailesbury Rd	Merrion Rd/ Sandymount Ave/ Simmonscourt	2968	2967	6183	3373	2940	1490	1740	2383	2385	903	1725	1126
Merrion Rd/ Sandymount Ave/ Simmonscourt	Merrion Rd/ Serpentine Ave	2967	2966	6418	3487	2965	1571	1780	2420	2445	971	1977	1352
Merrion Rd/ Serpentine Ave	Merrion Rd/ Angelsea Rd	2966	2965	6690	3597	2991	1595	1813	2506	2500	1040	2133	1453
Merrion Rd/ Angelsea Rd	Northumberland Rd / Pembroke Rd	2965	2962	7188	3627	3107	1688	1895	2605	2584	1147	2267	1571
Northumberland Rd / Pembroke Rd	Northumberland Rd / Haddington Rd	2962	2961	7655	3712	3222	1798	1934	2696	2672	1231	2364	1659
Northumberland Rd / Haddington Rd	Mount St/ Warrington Place	2961	2134	7894	3802	3289	1844	1972	2750	2731	1340	2612	1897
Mount St/ Warrington Place	Mount St./ Holles St.	2134	2133	8346	3880	3383	1913	2064	2830	2814	1444	2706	1992
Mount St./ Holles St.	Merrion Sq/ Clare St	2133	2132	8674	3952	3418	1944	2095	2925	2867	1505	2769	2060
Merrion Sq/ Clare St	Lincoln Place / Westland Row	2132	2141	8959	4027	3486	2044	2175	2989	2944	1576	2847	2152
Lincoln Place / Westland Row	Westland Row / Pearse St.	2141	2154	9212	4085	3536	2066	2223	3015	2985	1635	2908	2516
Westland Row / Pearse St.	Pearse St / Tara St.	2154	2152	9626	4109	3621	2119	2297	3090	3047	1736	3256	2900
Pearse St / Tara St.	Burgh Quay/ Tara St.	2152	2172	9873	4186	3718	2163	2352	3142	3112	1835	3459	3099
Burgh Quay/ Tara St.	Finish turning onto O'Connell Bridge	2172	2001	10144	4349	4236	2323	2612	3387	3381	1888	3577	3206

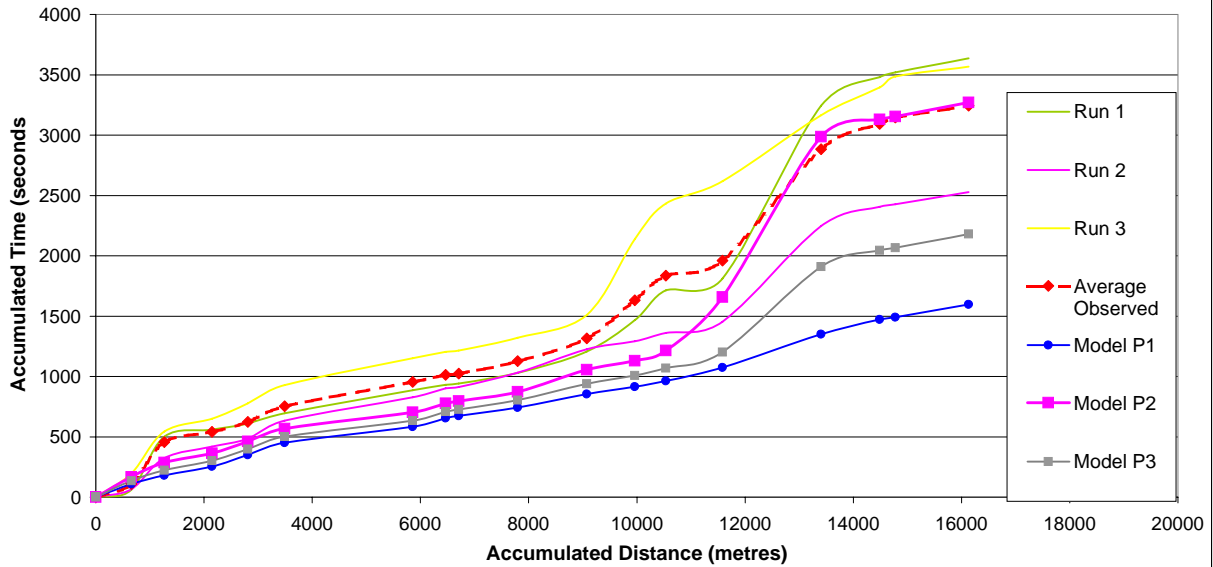
Route 16 - Journey Time Data for Observed and Modelled Runs



Route 17A

From	To	A Node	B Node	Dist (meters)	Observed Journey Time				Modelled Run Times		
					Run 1	Run 2	Run 3	Average	Model P1	Model P2	Model P3
Start approaching Newtown Park Avenue / N11	Start approaching Newtown Park Avenue / N11	5022	5022	0	0	0	0	0	0	0	0
Start approaching Newtown Park Avenue / N11	Leopardstown Rd / Torquay Rd	5022	5001	655	62	65	197	108	109	167	134
Leopardstown Rd / Torquay Rd	Leopardstown Rd / Brewery Rd Roundabout	5001	5186	1263	500	323	543	455	180	286	224
Leopardstown Rd / Brewery Rd Roundabout	Leopardstown Rd / Murphysstown Rd	5186	9568	2149	559	418	650	542	255	363	303
Leopardstown Rd / Murphysstown Rd	Hillcrest / Kilgobbin Rd	9568	5415	2811	609	482	777	623	349	462	399
Hillcrest / Kilgobbin Rd	Sandyford Rd / Blackglen Rd / Enniskerry	5415	5138	3488	694	635	928	752	452	568	502
Sandyford Rd / Blackglen Rd / Enniskerry	Harolds Grange Rd / Grange Rd	5138	5109	5859	885	828	1151	955	584	702	635
Harolds Grange Rd / Grange Rd	Grange Rd / Brehon Field Road	5109	5108	6465	931	901	1204	1012	655	777	708
Grange Rd / Brehon Field Road	Grange Rd / Stonemasons Way	5108	5107	6711	942	913	1214	1023	674	797	728
Grange Rd / Stonemasons Way	Grange Rd / Taylors lane	5107	4083	7797	1028	1032	1321	1127	743	874	803
Grange Rd / Taylors lane	Taylors Lane / Ballyboden Rd	4083	4066	9075	1207	1226	1510	1314	853	1056	940
Taylors Lane / Ballyboden Rd	Scholarstown R'about	4066	4035	9964	1466	1292	2138	1632	916	1131	1008
Scholarstown R'about	Scholarstown Rd / Knocklyon Rd	4035	4034	10537	1713	1362	2432	1836	964	1215	1069
Scholarstown Rd / Knocklyon Rd	Scholarstown Link Rd / Ballycullen Rd	4034	4042	11584	1812	1453	2617	1961	1074	1658	1201
Scholarstown Link Rd / Ballycullen Rd	Oldbawn Rd / Firhouse Rd	4042	4002	13407	3244	2246	3163	2884	1349	2987	1911
Oldbawn Rd / Firhouse Rd	Oldbawn Rd / N81 Tallaght Bypass	4002	4184	14484	3479	2406	3394	3093	1471	3130	2046
Oldbawn Rd / N81 Tallaght Bypass	Belgard Rd / N81 Tallaght Bypass	4184	4185	14774	3521	2428	3486	3145	1491	3153	2067
Belgard Rd / N81 Tallaght Bypass	Finish at The Square (N81 / Whitestown Way)	4185	4188	16129	3637	2527	3567	3244	1597	3270	2180

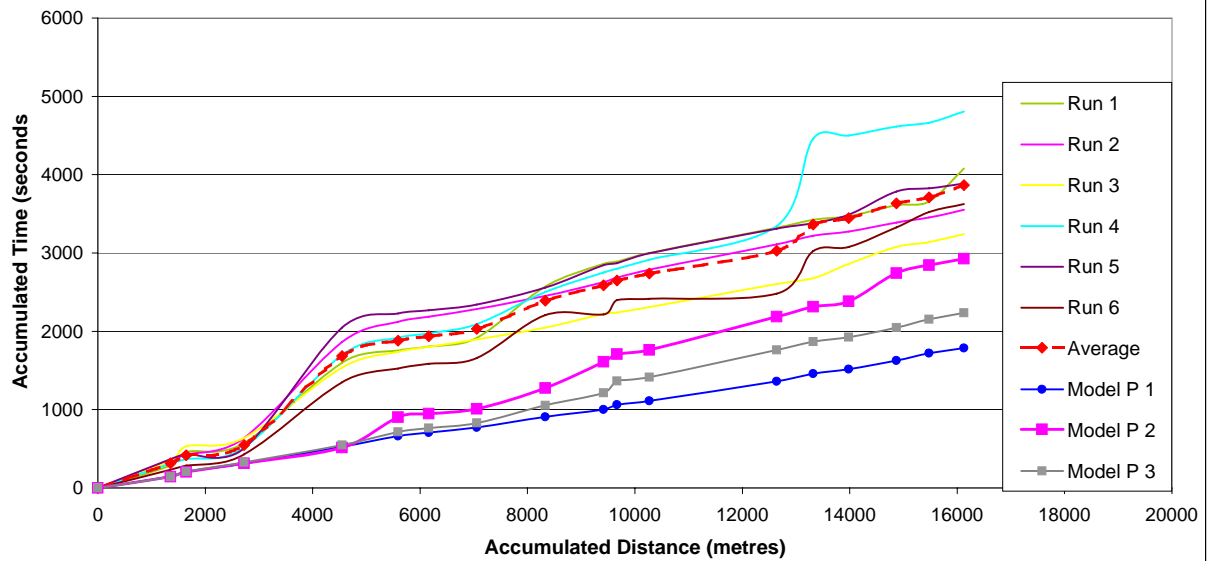
Route 17A - Journey Time Data for Observed and Modelled Runs



Route 17B

From	To	A Node	B Node	Dist (meters)	Observed Journey Time							Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Average	Model P 1	Model P 2	Model P 3
N81 / Whitestown Way	N81 / Whitestown Way	4188	4188	0	0	0	0	0	0	0	0	0	0	0
N81 / Whitestown Way	Belgard Rd / N81 Tallaght Bypass	4188	4185	1355	285	349	346	312	369	234	316	148	142	145
Belgard Rd / N81 Tallaght Bypass	Oldbawn Rd / N81 Tallaght Bypass	4185	4184	1645	458	424	533	368	429	286	416	207	203	207
Oldbawn Rd / N81 Tallaght Bypass	Oldbawn Rd / Firhouse Rd	4184	4002	2722	571	637	636	515	506	429	549	311	316	329
Oldbawn Rd / Firhouse Rd	Scholarstown Link Rd / Ballycullen Rd.	4002	4042	4545	1600	1864	1537	1701	2046	1349	1683	526	513	548
Scholarstown Link Rd / Ballycullen Rd.	Scholarstown Rd / Knocklyon Rd	4042	4034	5592	1755	2122	1739	1917	2229	1525	1881	661	903	715
Scholarstown Rd / Knocklyon Rd	Scholarstown R'about	4034	4035	6165	1805	2185	1801	1973	2270	1584	1936	708	947	763
Scholarstown R'about	Taylor's Lane / Ballyboden Rd	4035	4066	7054	1918	2284	1895	2094	2344	1661	2033	773	1010	830
Taylor's Lane / Ballyboden Rd	Grange Rd / Taylor's lane	4066	4083	8332	2571	2452	2046	2502	2558	2209	2390	907	1277	1054
Grange Rd / Taylor's lane	Grange Rd / Stonemasons Way	4083	5107	9418	2863	2627	2225	2749	2846	2215	2588	1001	1610	1214
Grange Rd / Stonemasons Way	Grange Rd / Brehon Field Rd.	5107	5108	9664	2891	2686	2241	2800	2868	2399	2648	1063	1709	1364
Grange Rd / Brehon Field Rd.	Harolds Grange Rd / Grange Rd	5108	5109	10270	3000	2788	2310	2915	2995	2415	2737	1112	1762	1416
Harolds Grange Rd / Grange Rd	Sandyford Rd / Blackglen Rd	5109	5138	12641	3324	3112	2602	3343	3309	2480	3028	1359	2187	1763
Sandyford Rd / Blackglen Rd	Hillcrest / Kilgobbin Rd	5138	5415	13318	3424	3219	2676	4458	3381	3024	3364	1459	2313	1869
Hillcrest / Kilgobbin Rd	Leopardstown Rd/ Murphystown Rd	5415	9568	13980	3472	3275	2861	4498	3490	3079	3446	1515	2381	1926
Leopardstown Rd/ Murphystown Rd	Leopardstown Rd/ Brewery Rd	9568	5186	14866	3611	3390	3077	4614	3786	3326	3634	1627	2743	2048
Leopardstown Rd/ Brewery Rd	Leopardstown Rd/ Torquay Rd	5186	5001	15474	3659	3454	3138	4663	3825	3523	3710	1722	2846	2155
Leopardstown Rd/ Torquay Rd	New Town Park Ave/ Stillorgan Rd	5001	5022	16129	4081	3552	3241	4805	3885	3624	3865	1788	2928	2235

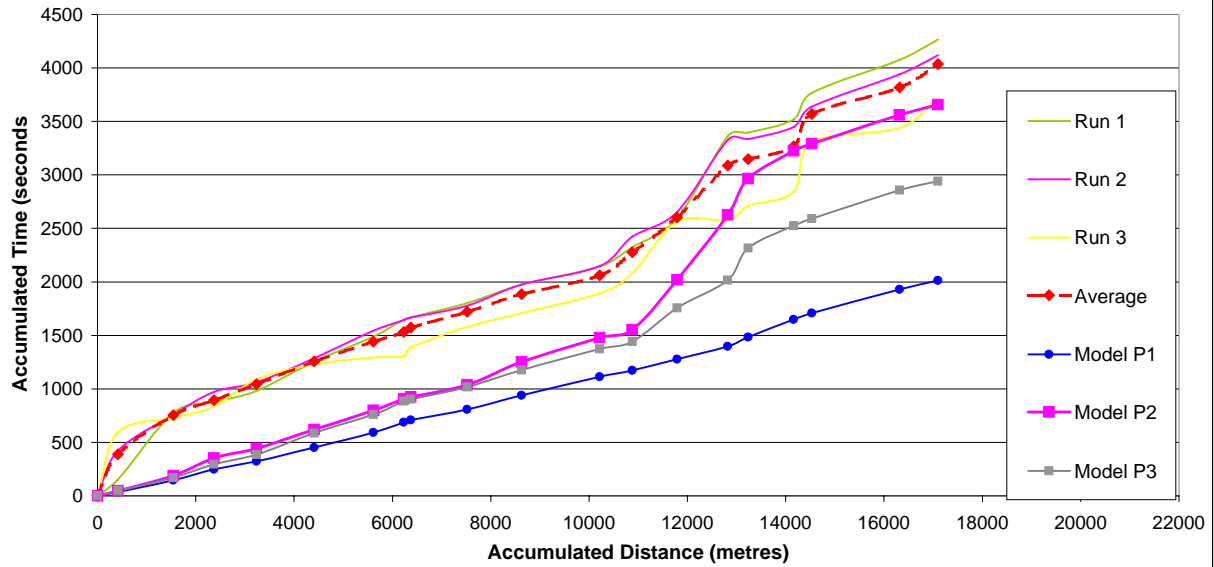
Route 17B - Journey Time Data for Observed and Modelled Runs



Route 18A

From	To	A Node	B Node	Dist (meters)	Observed Journey Time				Modelled Run Times		
					Run 1	Run 2	Run 3	Average	Model P1	Model P2	Model P3
Approach from Blackrock to Mount Merrion	Approach from Blackrock to Mount Merrion	5043	5043	0	0	0	0	0	0	0	0
Approach from Blackrock to Mount Merrion Av	Mount Merrion Ave / Cross Ave	5043	5032	419	151	423	594	389	37	49	48
Mount Merrion Ave / Cross Ave	Mount Merrion Ave / Sullorgan Rd	5032	5017	1543	775	759	731	755	148	189	170
Sullorgan Rd / Fosters Ave	Fosters Ave / Roebuck Rd	5017	5015	2372	877	971	835	894	249	352	297
Sullorgan Rd / Fosters Ave	Mount Anville Rd / Goatstown Rd @ The Goat	5015	5172	3234	982	1062	1088	1044	322	443	387
Fosters Ave / Roebuck Rd	Churchtown Rd Upper / Dundrum Rd @ Taney	5172	5165	4405	1253	1287	1230	1257	453	619	586
Mount Anville Rd / Goatstown Rd @ The Goat	Churchtown Rd Upper / Churchtown Rd Lwr	5165	5132	5611	1491	1545	1293	1443	591	800	760
Churchtown Rd Upper / Dundrum Rd @ Taney	Churchtown Rd Upper / Beaumont Ave	5132	5112	6233	1648	1642	1305	1532	689	908	885
Churchtown Rd Upper / Churchtown Rd Lwr	Braemor Rd / Braemor Park	5112	5113	6377	1668	1668	1387	1574	708	926	904
Churchtown Rd Upper / Beaumont Ave	Dodder Park Rd (N81) / Rathfarnham Rd	5113	5102	7521	1800	1776	1581	1719	807	1038	1016
Braemor Rd / Braemor Park	Templeville Rd / Templeogue Rd	5102	4061	8630	1975	1975	1708	1886	939	1252	1176
Dodder Park Rd (N81) / Rathfarnham Rd	Templeville Rd / Wainsford Rd - Roundabout	4061	4161	10218	2145	2147	1895	2062	1112	1478	1373
Templeville Rd / Templeogue Rd	Templeville Rd / Whitehall Rd	4161	4284	10881	2324	2424	2081	2276	1173	1552	1442
Templeville Rd / Wainsford Rd - Roundabout	St. Peter's Rd / Greenhills Rd	4284	4283	11794	2595	2653	2563	2604	1279	2019	1755
Templeville Rd / Whitehall Rd	Walkinstown Roundabout	4283	4281	12819	3362	3327	2575	3088	1398	2627	2018
St. Peter's Rd / Greenhills Rd	Walkinstown Ave / Long Mile Rd	4282	2877	13236	3396	3335	2711	3147	1484	2965	2315
Walkinstown Roundabout	Kylemore Rd / Naas Rd	2877	2867	14159	3518	3446	2842	3269	1648	3226	2526
Walkinstown Ave / Long Mile Rd	Kylemore Rd / Ballyfermot Rd	2867	2845	14532	3767	3639	3305	3570	1707	3290	2591
Kylemore Rd / Naas Rd	Finish at Kylemore Rd / Lucan Rd @ T-Junction	2845	2826	16317	4074	3941	3442	3819	1929	3562	2857
Kylemore Rd / Ballyfermot Rd		2826	2816	17095	4265	4121	3719	4035	2013	3657	2941

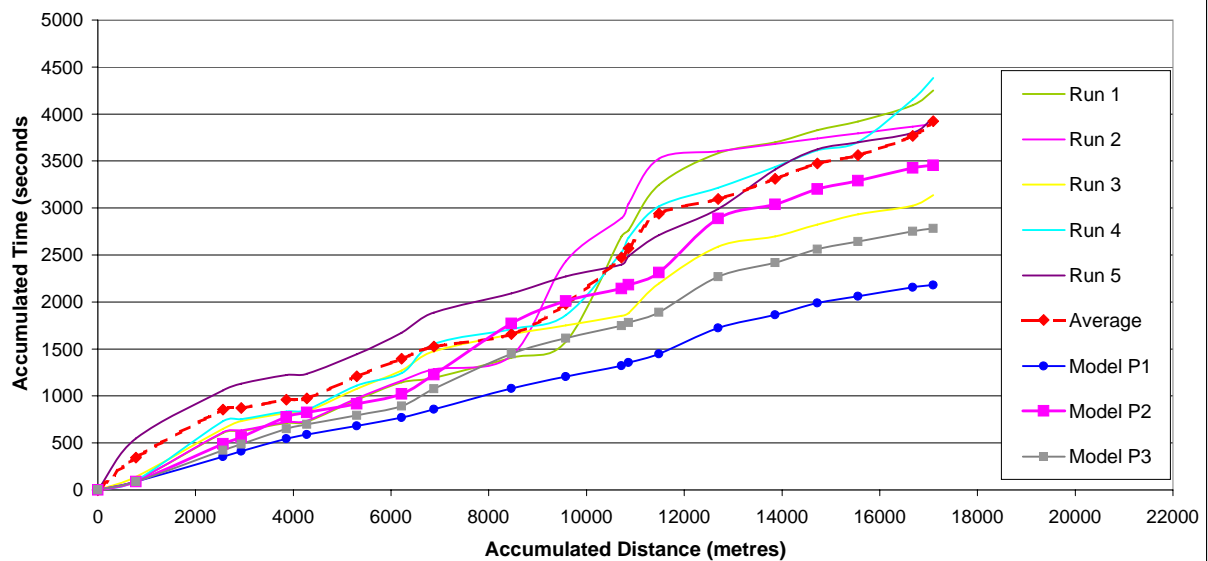
Route 18A - Journey Time Data for Observed and Modelled Runs



Route 18B

From	To	A Node	B Node	Dist (meters)	Observed Journey Time						Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5	Average	Model P1	Model P2	Model P3
Kylemore Rd/ Lucan Rd @ T-Junction	Kylemore Rd/ Lucan Rd @ T-Junction	2816	2816	0	0	0	0	0	0	0	0	0	0
Kylemore Rd/ Lucan Rd @ T-Junction	Kylemore Rd/ Ballyfermot Rd	2816	2826	778	100	100	140	100	548	344	88	89	88
Kylemore Rd/ Ballyfermot Rd	Kylemore Rd/ Naas Rd	2826	2845	2563	607	615	650	731	1058	854	353	492	423
Kylemore Rd/ Naas Rd	Walkinstown Ave / Long Mile Rd	2845	2867	2936	626	633	733	754	1130	872	413	562	488
Walkinstown Ave / Long Mile Rd	Walkinstown Roundabout	2867	2877	3859	712	721	819	836	1222	959	544	777	651
Walkinstown Roundabout	St. Peter's Rd / Greenhills Rd	2877	4281	4276	727	736	833	852	1238	974	588	825	699
St. Peter's Rd / Greenhills Rd	Templeville Rd / Whitehall Rd	4282	4283	5301	961	973	1076	1109	1443	1209	681	917	795
Templeville Rd / Whitehall Rd	Templeville Rd / Wainsfort Rd - Roundabout	4283	4284	6214	1146	1161	1271	1243	1672	1395	769	1021	894
Templeville Rd / Wainsfort Rd - Roundabout	Templeville Rd / Templeogue Rd	4284	4161	6877	1192	1285	1476	1554	1886	1527	859	1225	1076
Templeville Rd / Templeogue Rd	Dodder Park Road/ Rathfarnham Rd	4161	4061	8465	1408	1427	1656	1711	2092	1659	1081	1772	1447
Dodder Park Road/ Rathfarnham Rd	Braemor Rd / Braemor Park	4061	5102	9574	1576	2433	1752	1858	2271	1978	1207	2008	1615
Braemor Rd / Braemor Park	Churchtown Rd Upper / Beaumont Ave	5102	5113	10718	2696	2890	1853	2531	2397	2473	1321	2142	1747
Churchtown Rd Upper / Beaumont Ave	Churchtown Rd Upper / Churchtown Rd Lwr	5113	5112	10862	2761	3046	1879	2683	2487	2571	1354	2184	1780
Churchtown Rd Upper / Churchtown Rd Lwr	Churchtown Rd Upper / Dundrum Rd @ Taney	5112	5132	11484	3246	3526	2197	3019	2710	2940	1446	2312	1890
Churchtown Rd Upper / Dundrum Rd @ Taney	Mount Anville Rd / Goatstown Rd @ The Goat	5132	5165	12690	3584	3605	2589	3216	2989	3095	1723	2888	2269
Mount Anville Rd / Goatstown Rd @ The Goat	Fosters Ave / Roebuck Rd	5165	5172	13861	3699	3682	2697	3435	3410	3310	1863	3037	2417
Fosters Ave / Roebuck Rd	Stillorgan Rd / Fosters Ave	5172	5015	14723	3829	3738	2823	3613	3625	3473	1989	3201	2562
Stillorgan Rd / Fosters Ave	Mount Merrion Ave / Stillorgan Rd	5015	5017	15552	3920	3793	2934	3703	3699	3564	2061	3291	2644
Mount Merrion Ave / Stillorgan Rd	Mount Merrion Ave / Cross Ave	5017	5032	16676	4093	3867	3024	4155	3801	3768	2155	3426	2753
Mount Merrion Ave / Cross Ave	Junction of mount Merrion Ave & Rock Rd	5032	5043	17095	4250	3894	3136	4384	3960	3925	2180	3454	2783

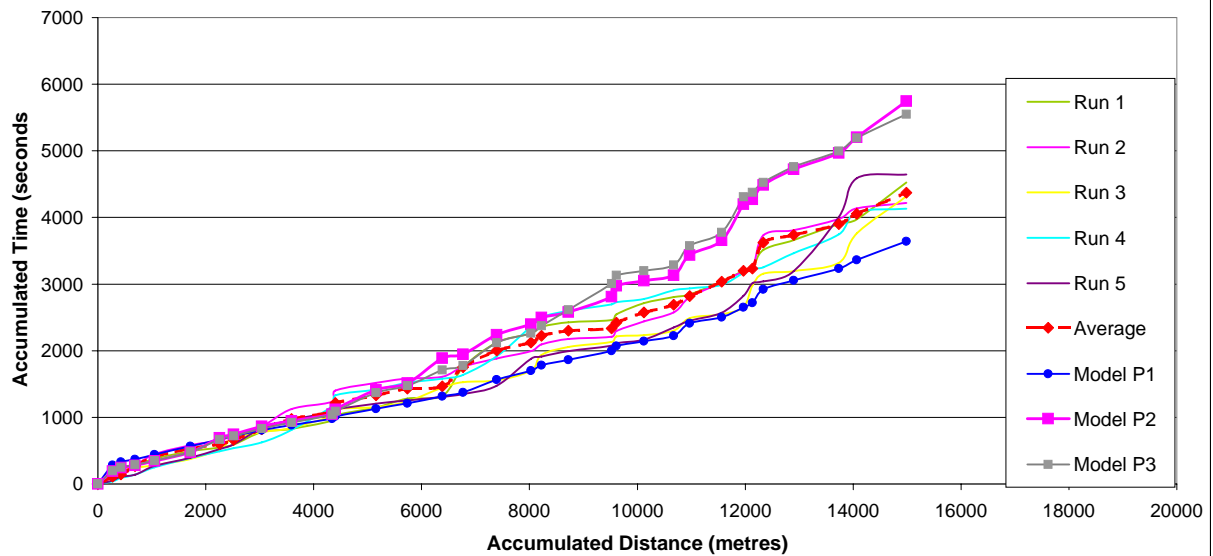
Route 18B - Journey Time Data for Observed and Modelled Runs



Route 19A

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Average	Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5		Model P1	Model P2	Model P3
Approach City Quay / Moss St from bridge	Approach City Quay / Moss St from bridge	2173	2173	0	0	0	0	0	0	0	0	0	0
Approach City Quay / Moss St from bridge	City Quay/ Lombard St	2173	2174	274	120	98	138	40	53	109	282	190	196
City Quay/ Lombard St	Townsend St / Lombard St	2174	2166	427	170	117	190	90	109	144	332	243	249
Townsend St / Lombard St	Sandwith/ Pearse	2166	2155	687	269	270	240	141	139	269	372	281	287
Sandwith/ Pearse	Pearse St / Macken St	2155	2157	1053	380	445	284	248	270	413	441	346	350
Pearse St / Macken St	Ringsend St / South Lotts Rd	2157	2158	1716	488	580	377	390	395	534	565	476	480
Ringsend St / South Lotts Rd	Haddington Rd / Shelbourne Rd	2158	2981	2253	548	652	521	491	524	600	669	691	666
Haddington Rd / Shelbourne Rd	Haddington Rd / Northumberland Rd	2981	2961	2515	593	729	694	536	598	661	719	747	720
Haddington Rd / Northumberland Rd	Mespil Rd / Baggot Street Upper	2961	2951	3038	777	864	780	624	835	821	809	864	833
Mespil Rd / Baggot Street Upper	Lesson Street / Grand Parade	2951	2931	3589	826	1126	842	812	962	976	882	946	922
Lesson Street / Grand Parade	Ranelagh/ Canal Rd	2931	2901	4342	950	1233	1021	1166	1079	1092	978	1048	1037
Ranelagh/ Canal Rd	Rathmines Rd Lower / Canal Rd	2901	2711	4400	1031	1404	1124	1333	1119	1218	1012	1118	1091
Rathmines Rd Lower / Canal Rd	Harold's Cross Rd / Grove Rd	2711	2891	5157	1147	1518	1155	1416	1204	1333	1131	1411	1370
Harold's Cross Rd / Grove Rd	Harold's Cross Rd / Clogher Rd	2891	2871	5736	1285	1579	1239	1518	1255	1432	1213	1513	1475
Harold's Cross Rd / Clogher Rd	Crumlin Rd / Dolphin Rd	2871	2861	6383	1320	1609	1448	1583	1307	1465	1316	1887	1711
Crumlin Rd / Dolphin Rd	Dolphin Rd / Herberton Rd	2861	2851	6770	1751	1758	1527	1639	1348	1755	1373	1948	1778
Dolphin Rd / Herberton Rd	Dolphin Rd / Suir Rd/ Davitt Rd	2851	2353	7391	2123	1882	1558	1917	1473	2003	1567	2241	2118
Dolphin Rd / Suir Rd/ Davitt Rd	Emmet Rd / South Circular Rd	2353	2326	8028	2256	1992	1701	2364	1880	2124	1700	2397	2261
Emmet Rd / South Circular Rd	South Circular Rd / Con Colbert Rd	2326	2316	8224	2357	2093	1934	2501	1912	2225	1781	2500	2371
South Circular Rd / Con Colbert Rd	South Circular Rd / Conyngham Rd	2316	1942	8722	2424	2174	2057	2600	1996	2299	1862	2582	2614
South Circular Rd / Conyngham Rd	Main Rd / Parkgate St @ Phoenix Park Gates	1942	1941	9524	2460	2212	2133	2697	2077	2336	1997	2809	3006
Main Rd / Parkgate St @ Phoenix Park Gates	Parkgate St / Infirmary Rd	1941	1484	9610	2544	2297	2216	2727	2115	2421	2070	2972	3133
Parkgate St / Infirmary Rd	Infirmary Rd / NCR	1484	1486	10122	2714	2440	2332	2776	2167	2577	2143	3049	3202
Infirmary Rd / NCR	Blackhorse Ave / NCR	1486	1471	10675	2806	2577	2302	2905	2349	2692	2223	3132	3286
Blackhorse Ave / NCR	Old Cabra Rd / Prussia St/ NCR	1471	1469	10972	2842	2799	2487	2935	2448	2821	2412	3436	3574
Old Cabra Rd / Prussia St/ NCR	NCR / Rathdown Rd	1469	1459	11564	3043	3025	2546	2990	2569	3034	2504	3655	3778
NCR / Rathdown Rd	NCR / Dalymount	1459	1431	11968	3201	3197	2655	3169	2826	3199	2651	4200	4308
NCR / Dalymount	NCR / Phibsborough	1431	1428	12132	3243	3227	2980	3232	3010	3235	2720	4270	4378
NCR / Phibsborough	NCR / Berkely Road	1428	1415	12334	3510	3731	3158	3254	3043	3621	2920	4489	4527
NCR / Berkely Road	NCR / Dorset St. Lwr	1415	1394	12900	3663	3812	3193	3466	3194	3738	3056	4724	4759
NCR / Dorset St. Lwr	NCR Summerhill Parade	1394	1329	13735	3901	3979	3318	3748	4005	3901	3234	4970	4998
NCR Summerhill Parade	Portland Row / Amiens St	1329	1319	14068	3975	4136	3762	4081	4588	4056	3362	5204	5195
Portland Row / Amiens St	Finish at City Quay / Moss St	1319	2173	14985	4524	4219	4318	4131	4644	4372	3640	5744	5549

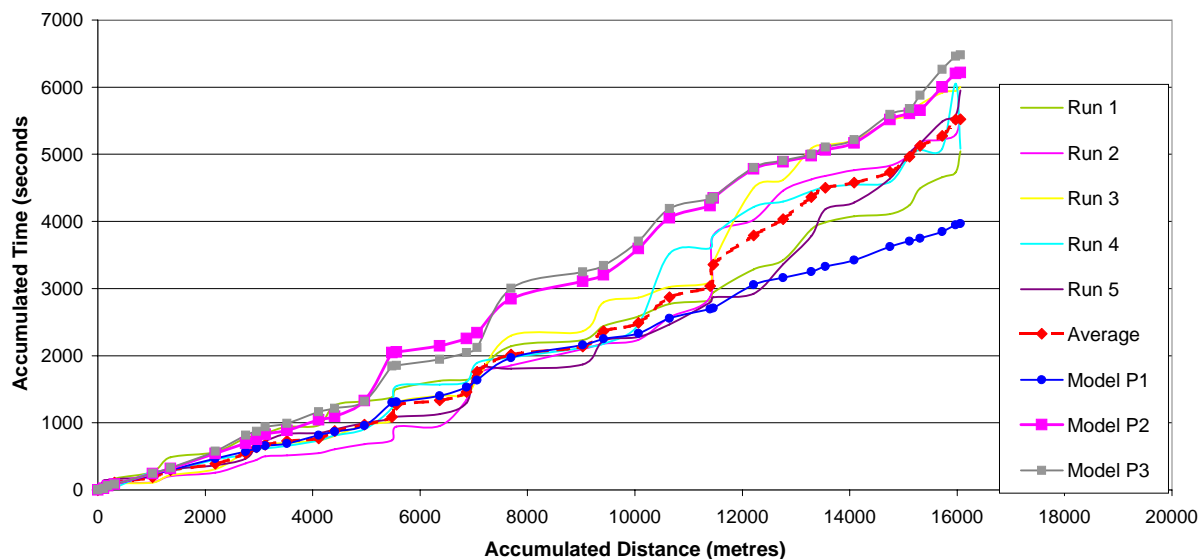
Route 19A - Journey Time Data for Observed and Modelled Runs



Route 19B

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5 / Average	Model P1	Model P2	Model P3
Approach Eden Quay / Beresford Place from Approach Eden Quay / Beresford Place from	Approach Eden Quay / Beresford Place from Approach Eden Quay / Beresford Place from	1303	1303	0	0	0	0	0	0	0	0	0
Approach Eden Quay / Beresford Place from Bu	Beresford Place/ Abbey St	1303	1311	110	16	16	20	12	140	41	23	24
Beresford Place/ Abbey St	Beresford Place/ Gardiner St	1311	1312	185	32	22	30	22	148	51	59	61
Beresford Place/ Gardiner St	Beresford Place/ Amiens St	1312	1314	312	165	99	97	32	160	111	81	85
Beresford Place/ Amiens St	Amiens St/ Portland Row @ Five Lamps	1314	1319	1019	265	113	109	271	196	191	231	242
Amiens St/ Portland Row @ Five Lamps	NCR / Summerhill Parade	1319	1329	1352	486	205	217	275	303	297	298	321
NCR / Summerhill Parade	NCR / Lwr Dorset St	1329	1394	2187	563	256	308	454	368	390	468	545
NCR / Lwr Dorset St	NCR / Berkeley Rd	1394	1415	2753	775	394	574	524	467	547	571	697
NCR / Berkeley Rd	NCR / Phibsborough	1415	1428	2953	795	449	653	610	669	635	621	752
NCR / Phibsborough	NCR / Dalymount	1428	1431	3119	838	499	681	622	731	674	657	830
NCR / Dalymount	NCR / Rathdown Rd	1431	1459	3523	940	515	701	656	834	729	693	887
NCR / Rathdown Rd	Old Cabra Rd / Prussia St	1459	1469	4115	964	550	739	733	850	767	815	1046
Old Cabra Rd / Prussia St	Blackhorse Ave / NCR	1469	1471	4412	1258	604	806	811	903	876	866	1097
Blackhorse Ave / NCR	Infirmary Rd / NCR	1471	1486	4965	1320	680	970	904	996	974	959	1328
Infirmary Rd / NCR	Parkgate St / Infirmary Rd	1486	1484	5477	1380	737	1034	1225	1058	1087	1303	2047
Parkgate St / Infirmary Rd	Parkgate St @ phoenix park gates	1484	1941	5563	1500	942	1301	1545	1090	1269	1313	2057
Parkgate St @ phoenix park gates	South Circular Rd / Conyngham Rd	1941	1942	6365	1627	956	1400	1571	1130	1337	1403	2147
South Circular Rd / Conyngham Rd	South Circular Rd / Con Colbert Rd	1942	2316	6863	1639	1346	1410	1612	1295	1460	1533	2255
South Circular Rd / Con Colbert Rd	Emmet Rd / South Circular Rd	2316	2326	7059	1731	1732	1647	1894	1798	1760	1634	2340
Emmet Rd / South Circular Rd	Dolphin Rd / Suir Rd	2326	2353	7696	2143	1857	2296	1973	1808	2015	1969	2847
Dolphin Rd / Suir Rd	Dolphin Rd / Herberton Rd	2353	2851	9030	2231	2100	2365	2117	1871	2137	2159	3111
Dolphin Rd / Herberton Rd	Crumlin Rd / Dolphin Rd	2851	2861	9417	2440	2180	2794	2180	2224	2364	2250	3202
Crumlin Rd / Dolphin Rd	Harold's Cross Rd / Clogher Rd	2861	2871	10064	2586	2237	2867	2465	2280	2487	2332	3597
Harold's Cross Rd / Clogher Rd	Harold's Cross Rd / Grove Rd	2871	2891	10643	2769	2572	3023	3519	2467	2870	2556	4055
Harold's Cross Rd / Grove Rd	Rathmines Rd Lower / Canal Rd	2891	2711	11400	2823	2877	3088	3599	2792	3036	2692	4232
Rathmines Rd Lower / Canal Rd	Ranelagh Rd / Canal Rd	2711	2901	11458	2941	3789	3389	3793	2870	3356	2709	4347
Ranelagh Rd / Canal Rd	Lesson Street / Grand Parade	2901	2931	12211	3286	4026	4502	4214	2925	3791	3057	4784
Lesson Street / Grand Parade	Mespil Rd / Baggot Street Upper	2931	2951	12762	3425	4459	4619	4294	3362	4032	3161	4888
Mespil Rd / Baggot Street Upper	Haddington Rd / Northumberland Rd	2951	2961	13285	3880	4626	5087	4449	3782	4365	3251	4978
Haddington Rd / Northumberland Rd	Haddington Rd / Shelbourne Rd	2961	2981	13547	3988	4679	5139	4509	4183	4500	3326	5065
Haddington Rd / Shelbourne Rd	Ringsend St / South Lotts Rd	2981	2158	14084	4079	4765	5210	4549	4281	4577	3423	5167
Ringsend St / South Lotts Rd	Pearse St / Macken St	2158	2157	14747	4111	4830	5497	4585	4641	4733	3622	5515
Pearse St / Macken St	Pearse St / Sandwith St	2157	2155	15113	4245	4990	5586	4985	5021	4965	3703	5607
Pearse St / Sandwith St	Pearse St / Lombard St	2155	2154	15308	4491	5183	5739	5066	5158	5127	3748	5655
Pearse St / Lombard St	Pearse St / Tara St	2154	2152	15722	4661	5217	5918	5082	5488	5273	3848	6003
Pearse St / Tara St	Tara St/ Burgh Quay	2152	2172	15969	4728	5291	5947	6052	5577	5519	3950	6204
Tara St/ Burgh Quay	Finish @ Eden Quay / Beresford Place	2172	1303	16059	5045	5531	6003	5085	5953	5523	3966	6220

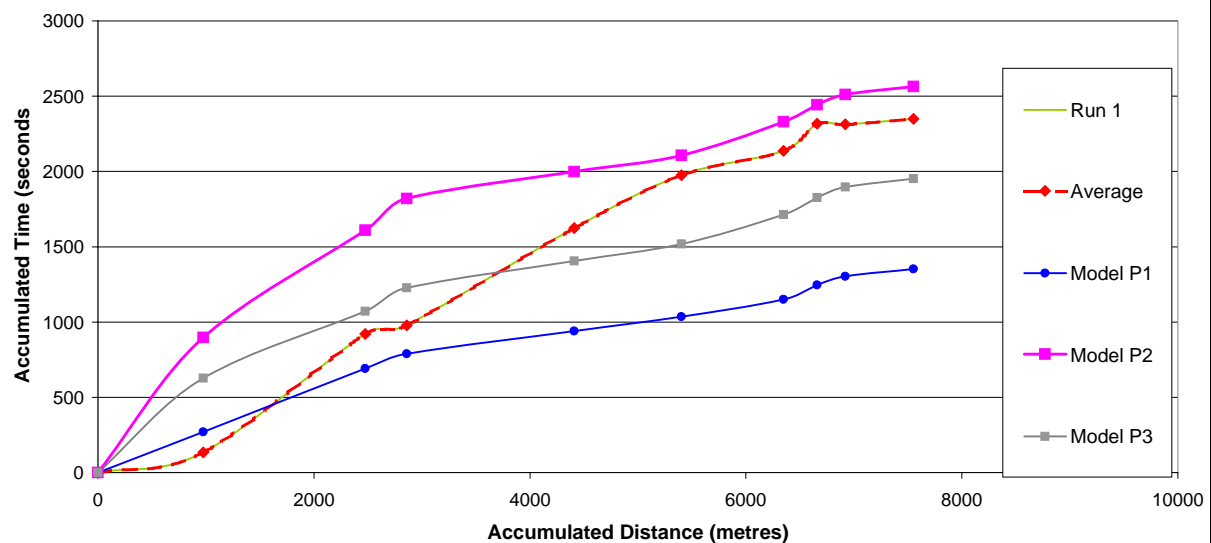
Route 19B - Journey Time Data for Observed and Modelled Runs



Route 20A

From	To	A Node	B Node	Dist (meters)	Observed		Modelled Run Times		
					Run 1	Average	Model P1	Model P2	Model P3
Howth Rd/ Collins Ave	Howth Rd/ Collins Ave	1633	1633	0	0	0	0	0	0
Howth Rd/ Collins Ave	Malahide Rd / Collins Ave	1633	1673	976	133	133	271	898	628
Malahide Rd / Collins Ave	Grace Park Rd / Collins Ave	1673	1813	2476	921	921	692	1610	1071
Grace Park Rd / Collins Ave	Swords Rd / Collins Ave	1813	1858	2861	979	979	789	1821	1226
Swords Rd / Collins Ave	Ballymun Rd / Collins Ave	1858	1725	4411	1625	1625	940	1999	1406
Ballymun Rd / Collins Ave	Beneavan Drive / Glasnevin Ave - Roundabout	1725	1744	5403	1975	1975	1035	2106	1519
Beneavan Drive / Glasnevin Ave - Roundabout	Ballygall Rd West / Clune Rd/ Glasanaon	1744	1743	6348	2138	2138	1150	2330	1714
Ballygall Rd West / Clune Rd/ Glasanaon	Seamus Ennis Rd / McKee Avenue	1743	1742	6659	2319	2319	1245	2443	1826
Seamus Ennis Rd / McKee Avenue	Seamus Ennis Rd / N2	1742	1772	6922	2314	2314	1304	2512	1897
Seamus Ennis Rd / N2	Finish at the Junction of Mellows Rd and Cappa	1772	1788	7552	2349	2349	1353	2565	1951

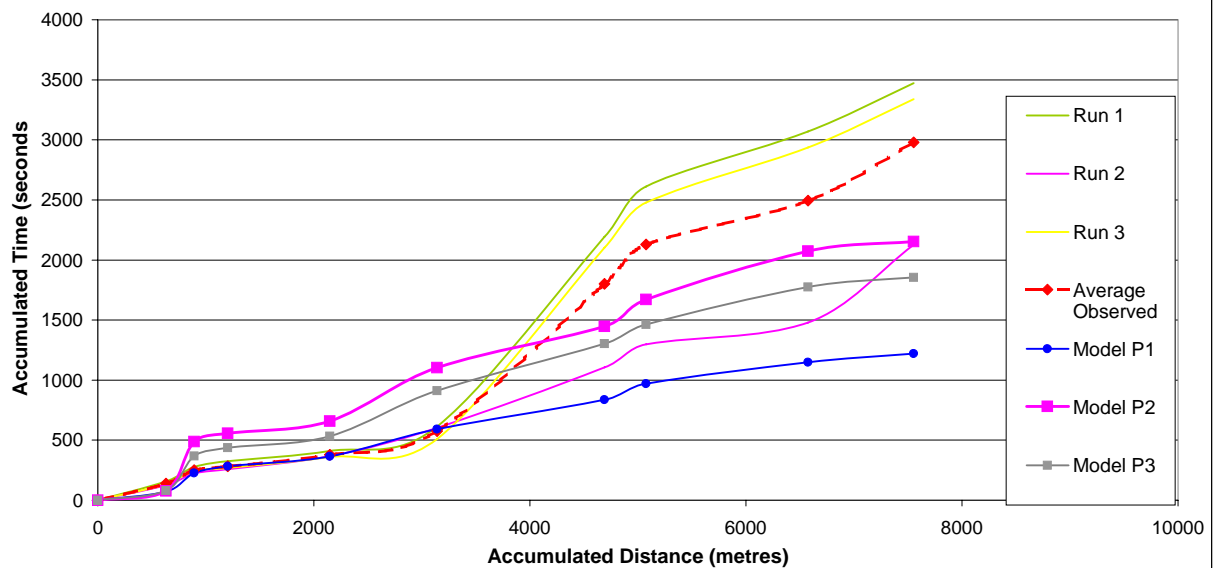
Route 20A - Journey Time Data for Observed and Modelled Runs



Route 20B

From	To	A Node	B Node	Dist (meters)	Observed Journey Time				Modelled Run Times		
					Run 1	Run 2	Run 3	Average	Model P1	Model P2	Model P3
Approach junction of Mellows Rd / Cappagh Rd	Approach junction of Mellows Rd / Cappagh Rd	1788	1788	0	0	0	0	0	0	0	0
Approach junction of Mellows Rd / Cappagh Rd	Mellows Rd / North Road N2	1788	1772	630	158	124	133	138	71	78	79
Mellows Rd / North Road N2	Seamus Ennis Rd / McKee Avenue	1772	1742	893	277	224	248	250	226	487	369
Seamus Ennis Rd / McKee Avenue	Ballygall Rd West / Clune Rd	1742	1743	1204	325	258	268	284	282	557	438
Ballygall Rd West / Clune Rd	Beneavin Drive / Glasnevin Ave	1743	1744	2149	410	367	361	379	364	658	533
Beneavin Drive / Glasnevin Ave	Ballymun Rd / Collins Ave	1744	1725	3141	612	602	510	575	591	1103	912
Ballymun Rd / Collins Ave	Swords Rd / Collins Ave	1725	1858	4691	2192	1107	2102	1800	837	1447	1303
Swords Rd / Collins Ave	Grace Park Rd / Collins Ave	1858	1813	5076	2612	1297	2478	2129	970	1670	1462
Grace Park Rd / Collins Ave	Malahide Rd / Collins Ave	1813	1673	6576	3070	1480	2936	2495	1149	2072	1774
Malahide Rd / Collins Ave	The Howth Rd and Collins Ave.	1673	1633	7552	3473	2126	3339	2979	1221	2154	1855

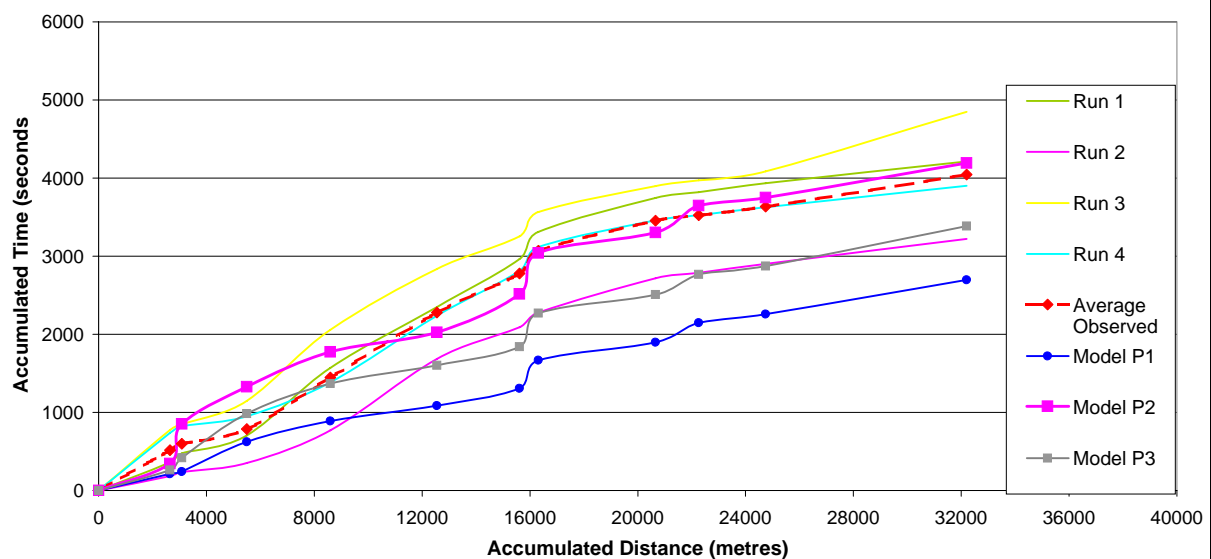
Route 20B - Journey Time Data for Observed and Modelled Runs



Route 21A

From	To	A Node	B Node	Dist (meters)	Observed Journey Time					Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Average	Model P1	Model P2	Model P3
Approach N32 / Malahide Rd	Approach N32 / Malahide Rd	1682	1682	0	0	0	0	0	0	0	0	0
Approach N32 / Malahide Rd	N32 / Clonsillaugh Rd	1682	1847	2651	363	185	775	739	515	215	343	262
N32 / Clonsillaugh Rd	M50 / M1	1847	3537	3091	474	238	850	824	596	242	851	419
M50 / M1	M50 / R108	3537	3644	5493	704	353	1147	951	789	625	1328	984
M50 / St. Margaret's Road	M50 / N2	3644	3754	8501	1570	772	2057	1386	1446	889	1774	1368
M50 / N2	M50 / N3	3754	3434	12548	2349	1683	2838	2238	2277	1085	2025	1601
M50 / N3	M50 / Toll Bridge	3434	3360	15616	2964	2089	3253	2810	2779	1306	2516	1840
M50 / Toll Bridge	M50 / N4	3360	4324	16316	3311	2280	3564	3120	3069	1670	3040	2269
M50 / N4	M50 / Naas Rd	4324	4224	20661	3745	2716	3897	3461	3455	1898	3303	2508
M50 / Naas Rd	M50 / Ballymount Interchange	4224	4291	22256	3818	2787	3970	3524	3525	2148	3646	2766
M50 / Ballymount Interchange	M50 / N81 Tallaght Rd	4291	4174	24738	3936	2901	4087	3625	3637	2258	3751	2875
M50 / N81 Tallaght Rd	End of M50 @ Ballinteer Road	4174	4097	32202	4212	3221	4848	3901	4045	2698	4191	3384

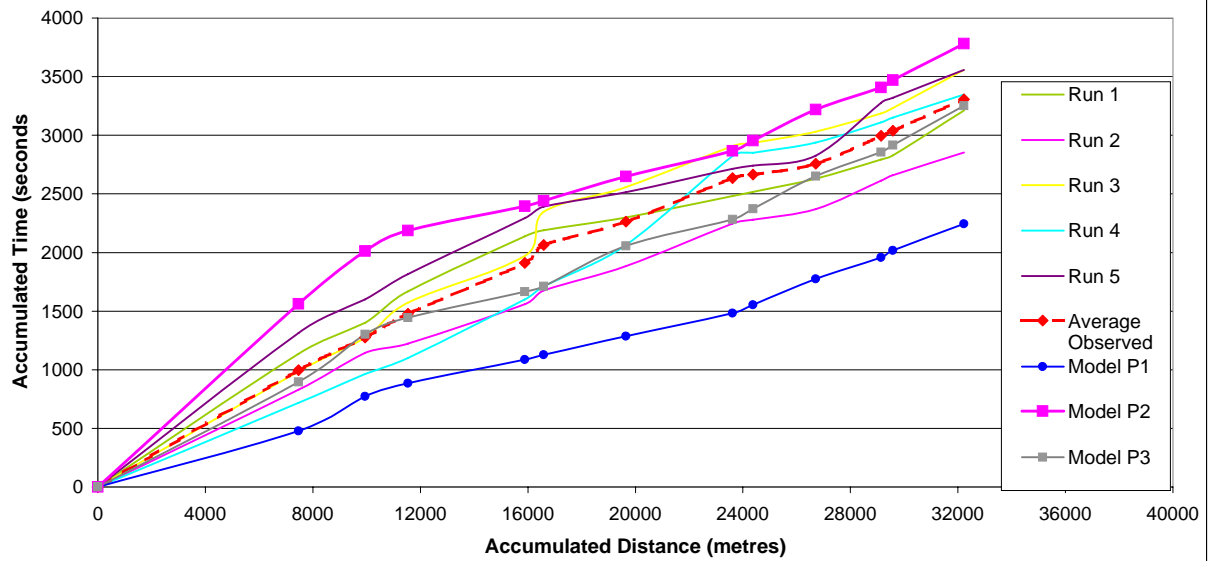
Route 21A - Journey Time Data for Observed and Modelled Runs



Route 21B

From	To	A Node	B Node	Dist (meters)	Observed Journey Time						Modelled Run Times		
					Run 1	Run 2	Run 3	Run 4	Run 5	Average	Model P1	Model P2	Model P3
Approach Start of M50 from Ballinteer Rd	Approach Start of M50 from Ballinteer Rd	4097	4097	0	0	0	0	0	0	0	0	0	0
Approach Start of M50 from Ballinteer Rd	M50 / N81 Tallaght Rd	4097	4174	7464	1136	831	985	719	1313	997	477	1563	896
M50 / N81 Tallaght Rd	M50 / Ballymount Interchange	4174	4291	9946	1401	1144	1273	963	1599	1276	774	2011	1303
M50 / Ballymount Interchange	M50 / Naas Rd	4291	4224	11541	1669	1223	1574	1100	1815	1476	885	2187	1445
M50 / Naas Rd	M50 / N4	4224	4324	15886	2139	1558	1972	1599	2294	1912	1086	2395	1665
M50 / N4	M50 / Toll Bridge	4324	3360	16586	2191	1677	2349	1712	2391	2060	1127	2440	1713
M50 / Toll Bridge	M50 / N3	3360	3434	19654	2300	1884	2559	2064	2515	2264	1286	2648	2056
M50 / N3	M50 / N2	3434	3754	23611	2481	2247	2907	2822	2714	2634	1483	2867	2282
M50 / N2	M50 / St. Margaret's Rd	3754	3727	24372	2518	2279	2935	2850	2742	2665	1554	2953	2373
M50 / St. Margaret's Rd	M50 / R 108	3723	3644	26709	2628	2371	3030	2938	2827	2759	1774	3219	2652
M50 / R 108	M50 / M1	3644	3537	29136	2793	2612	3187	3111	3277	2996	1958	3407	2856
M50 / M1	Clonsaugh Rd / N32	3537	1847	29576	2829	2659	3232	3152	3319	3038	2019	3471	2917
Clonsaugh Rd / N32	N32 / Malahide Rd	1847	1682	32227	3210	2854	3558	3347	3558	3305	2244	3781	3253

Route 21B - Journey Time Data for Observed and Modelled Runs



APPENDIX D

HIGHWAY CALIBRATION OF COUNT DATA

D1. HIGHWAY CALIBRATION: COUNTS

City Centre Cordon - All Counts

Summary Table

		Count	Flow	Diff	per	GEH
0700-0800	IB	20097	19330	-767	-4%	5.5
	OB	13078	11290	-1788	-14%	16.2
	Total	33175	30620	-2555	-8%	14.3
0800-0900	IB	20168	21594	1426	7%	9.9
	OB	13994	13757	-237	-2%	2.0
	Total	34162	35351	1189	3%	6.4
0900-1000	IB	19934	22187	2253	11%	15.5
	OB	12875	13825	950	7%	8.2
	Total	32809	36012	3203	10%	17.3

City Centre Cordon - All Counts

AM Peak (0700-0800) - Inbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1102	1110	2006	18/05	North Wall Quay (West of E Wall Rd)	WB	198	97	-51%	8.3	282	270	-4%	0.8	480	366	-24%	5.5
1104	1108	2006	18/05	Upper Sherrif St (West of E Wall Rd)	WB	73	21	-71%	7.6	21	105	399%	10.6	94	126	34%	3.0
1111	1103	2006	Nov	East Road (North of Upper Sherrif St)	SB	755	727	-4%	1.0	86	273	219%	14.0	840	1000	19%	5.3
1131	1319	2006	Nov	Newcomen Br	SB	1026	733	-29%	9.9	35	87	154%	6.8	1060	820	-23%	7.8
1799	1329	2006	Nov	Clarkes Br	SB	1358	1540	13%	4.8	80	63	-21%	2.0	1437	1603	12%	4.2
1801	1333	2006	Nov	Russell Street Bridge	SB	445	492	11%	2.2	47	43	-8%	0.6	491	535	9%	1.9
1410	1334	2005	07/11	Belvidere Rd	SB	430	380	-12%	2.5	99	60	-39%	4.4	529	440	-17%	4.1
1410	1394	2005	07/11	Dorset Steet Lower (North of North Circular)	SB	1266	1074	-15%	5.6	153	220	44%	4.9	1419	1294	-9%	3.4
1429	1428	2007	19/04	Prospect Rd (North of North Circular)	SB	993	1253	26%	7.8	86	73	-14%	1.4	1079	1327	23%	7.2
1908	1431	2006	Nov	New Cabra Rd (West of North Circular)	EB	538	595	11%	2.4	92	48	-47%	5.2	629	643	2%	0.6
1917	1469	2006	Nov	Old Cabra Rd (North of North Circular)	SB	489	307	-37%	9.1	77	50	-35%	3.4	565	357	-37%	9.7
1919	1471	2006	Nov	Blackhorse Avenue (West of North Circular)	EB	860	751	-13%	3.8	27	41	52%	2.4	887	792	-11%	3.3
1931	1486	2006	Nov	Fountain Rd	EB	388	37	-90%	24.0	9	3	-67%	2.5	397	40	-90%	24.1
1931	1941	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	EB	474	504	7%	1.4	8	12	61%	1.5	481	516	7%	1.6
1941	1942	2006	Nov	Conyngham Rd (West of Chesterfield Ave)	EB	647	454	-30%	8.2	68	83	23%	1.8	715	537	-25%	7.1
2313	2306	2006	Nov	St. Johns Road (East of South Circular Rd)	EB	1033	1370	33%	9.7	305	313	3%	0.5	1337	1683	26%	8.9
2326	2329	2006	Nov	Kilmainham Lane (East of South Circular Rd)	EB	147	446	204%	17.4	0	25	#DIV/0!	7.0	147	471	221%	18.4
2338	2337	2006	Nov	Prospect Terrace (East of South Circular)	EB	700	605	-14%	3.7	89	25	-72%	8.5	789	630	-20%	6.0
2354	2350	2006	Nov	South Circular Rd (East of Suir Rd)	EB	347	199	-43%	9.0	20	45	130%	4.5	367	244	-33%	7.0
2851	2352	2006	Nov	Herberton Rd Br	NB	591	551	-7%	1.7	63	164	160%	9.5	654	716	9%	2.4
2861	2364	2006	Nov	Dolphins Barn Br	NB	792	326	-59%	19.7	216	169	-22%	3.4	1008	495	-51%	18.7
2871	2447	2006	Nov	Clogher Rd Br / Sallys Bridge	NB	717	633	-12%	3.2	29	41	42%	2.0	745	673	-10%	2.7
2891	2890	2006	Nov	Harolds Cross Br	NB	1076	839	-22%	7.7	77	75	-2%	0.2	1153	914	-21%	7.4
2711	2059	2006	Nov	Portobello Br (Richmond St)	NB	673	605	-10%	2.7	38	38	1%	0.1	710	643	-9%	2.6
2911	2092	2006	Nov	Charlemont St Br	NB	397	387	-2%	0.5	29	13	-56%	3.5	426	400	-6%	1.3
2112	2931	2006	Nov	Leeson St Br	NB	468	312	-33%	7.9	47	46	-1%	0.1	515	358	-30%	7.5
2951	2124	2006	Nov	Baggott St Br	NB	531	1024	93%	17.7	47	34	-28%	2.0	578	1057	83%	16.8
2961	2134	2006	Nov	Mount St Br	NB	543	618	14%	3.1	27	33	23%	1.1	570	651	14%	3.3
Total						17949	16881	-6%	8	2148	2449	14%	6	20097	19330	-4%	5

City Centre Cordon - All Counts

AM Peak (0700-0800) - Outbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1110	1102	2006	18/05	North Wall Quay (West of E Wall Rd)	EB	475	343	-28%	6.5	201	215	7%	1.0	676	558	-17%	4.7
1108	1104	2006	18/05	Upper Sherrif St (West of E Wall Rd)	EB	84	61	-27%	2.7	120	209	74%	6.9	204	270	32%	4.3
1103	1111	2006	Nov	East Road (North of Upper Sherrif St)	NB	167	94	-43%	6.3	65	65	0%	0.0	231	159	-31%	5.1
1319	1131	2006	Nov	Newcomen Br	NB	504	245	-51%	13.3	44	89	106%	5.6	547	335	-39%	10.1
1329	1799	2006	Nov	Clarkes Br	NB	324	323	0%	0.0	27	64	136%	5.4	351	387	10%	1.9
1333	1801	2006	Nov	Russell Street Bridge	NB	131	82	-37%	4.7	32	31	-1%	0.0	162	113	-30%	4.1
1334	1410	2005	07/11/05	Belvidere Rd	NB	125	142	14%	1.5	84	35	-58%	6.4	209	177	-15%	2.3
1394	1410	2005	07/11	Dorset Steet Lower (North of North Circular)	NB	787	519	-34%	10.5	171	183	7%	0.9	958	702	-27%	8.9
1428	1429	2007	19/04	Prospect Rd (North of North Circular)	NB	616	451	-27%	7.2	69	112	62%	4.5	685	563	-18%	4.9
1431	1908	2006	Nov	New Cabra Rd (West of North Circular)	WB	298	241	-19%	3.4	119	122	3%	0.3	416	363	-13%	2.7
1469	1917	2006	Nov	Old Cabra Rd (North of North Circular)	NB	241	84	-65%	12.2	78	42	-47%	4.7	319	126	-60%	12.9
1471	1919	2006	Nov	Blackhorse Avenue (West of North Circular)	WB	133	282	112%	10.3	8	63	742%	9.4	141	345	145%	13.1
1486	1931	2006	Nov	Fountain Rd	WB	121	328	171%	13.8	5	4	-19%	0.4	126	332	164%	13.6
1941	1931	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	WB	218	58	-73%	13.6	8	8	11%	0.3	226	67	-70%	13.1
1942	1941	2006	Nov	Conyngham Rd (West of Chesterfield Ave)	WB	828	634	-23%	7.2	119	137	16%	1.7	947	772	-18%	6.0
2306	2313	2006	Nov	St. Johns Road (East of South Circular Rd)	WB	728	662	-9%	2.5	449	501	12%	2.4	1177	1163	-1%	0.4
2329	2326	2006	Nov	Kilmainham Lane (East of South Circular Rd)	WB	62	74	20%	1.5	2	5	215%	1.8	63	79	25%	1.9
2337	2338	2006	Nov	Prospect Terrace (East of South Circular)	WB	320	52	-84%	19.6	32	34	8%	0.4	351	86	-75%	17.9
2350	2354	2006	Nov	South Circular Rd (East of Suir Rd)	WB	583	543	-7%	1.7	15	30	101%	3.2	598	573	-4%	1.0
2352	2851	2006	Nov	Herberton Rd Br	SB	258	309	20%	3.1	24	99	313%	9.6	282	408	45%	6.8
2364	2861	2006	Nov	Dolphins Barn Br	SB	403	373	-8%	1.5	152	159	5%	0.6	555	532	-4%	1.0
2447	2871	2006	Nov	Clogher Rd Br / Sallys Bridge	SB	148	140	-5%	0.7	21	19	-9%	0.4	169	159	-6%	0.8
2890	2891	2006	Nov	Harolds Cross Br	SB	498	276	-45%	11.3	30	34	12%	0.6	528	310	-41%	10.7
2059	2711	2006	Nov	Portobello Br (Richmond St)	SB	242	367	52%	7.2	21	33	57%	2.3	263	400	52%	7.6
2092	2911	2006	Nov	Charlemont St Br	SB	554	419	-24%	6.1	59	26	-55%	5.0	613	446	-27%	7.3
2931	2112	2006	Nov	Leeson St Br	SB	1252	1053	-16%	5.9	48	40	-17%	1.3	1300	1093	-16%	6.0
2124	2951	2006	Nov	Baggott St Br	SB	393	323	-18%	3.7	57	88	54%	3.6	450	411	-9%	1.9
2134	2961	2006	Nov	Mount St Br	SB	505	311	-38%	9.6	32	52	66%	3.2	537	364	-32%	8.1
Total						10993	8792	-20%	22	2085	2499	20%	9	13078	11290	-14%	16

City Centre Cordon - All Counts

AM Peak (0800-0900) - Inbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1102	1110	2006	18/05	North Wall Quay (West of E Wall Rd)	WB	266	150	-44%	8.0	282	161	-43%	8.1	548	311	-43%	11.4
1104	1108	2006	18/05	Upper Sherrif St (West of E Wall Rd)	WB	110	41	-63%	8.0	42	80	91%	4.9	152	121	-21%	2.7
1111	1103	2006	Nov	East Road (North of Upper Sherrif St)	SB	699	833	19%	4.8	147	217	47%	5.2	846	1049	24%	6.6
1131	1319	2006	Nov	Newcomen Br	SB	1013	1055	4%	1.3	42	78	86%	4.7	1055	1133	7%	2.4
1799	1329	2006	Nov	Clarkes Br	SB	1240	1517	22%	7.5	60	74	23%	1.7	1300	1590	22%	7.7
1801	1333	2006	Nov	Russell Street Bridge	SB	435	655	51%	9.4	41	17	-58%	4.4	475	672	41%	8.2
1410	1334	2005	07/11	Belvidere Rd	SB	420	366	-13%	2.7	39	30	-23%	1.5	459	396	-14%	3.0
1410	1394	2005	07/11	Dorset Steet Lower (North of North Circular)	SB	1340	1343	0%	0.1	114	113	-1%	0.1	1454	1455	0%	0.0
1429	1428	2007	19/04	Prospect Rd (North of North Circular)	SB	925	1253	35%	9.9	101	111	11%	1.1	1026	1364	33%	9.8
1908	1431	2006	Nov	New Cabra Rd (West of North Circular)	EB	413	722	75%	13.0	86	77	-10%	1.0	499	799	60%	11.8
1917	1469	2006	Nov	Old Cabra Rd (North of North Circular)	SB	413	339	-18%	3.8	48	45	-7%	0.5	461	384	-17%	3.8
1919	1471	2006	Nov	Blackhorse Avenue (West of North Circular)	EB	840	902	7%	2.1	14	43	218%	5.5	854	944	11%	3.0
1931	1486	2006	Nov	Fountain Rd	EB	566	117	-79%	24.3	3	4	21%	0.3	569	120	-79%	24.2
1931	1941	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	EB	410	754	84%	14.3	2	9	487%	3.2	411	763	86%	14.5
1941	1942	2006	Nov	Conyngham Rd (West of Chesterfield Ave)	EB	577	454	-21%	5.4	62	97	57%	4.0	638	551	-14%	3.6
2313	2306	2006	Nov	St. Johns Road (East of South Circular Rd)	EB	872	1373	58%	15.0	290	266	-8%	1.4	1161	1639	41%	12.8
2326	2329	2006	Nov	Kilmainham Lane (East of South Circular Rd)	EB	149	241	62%	6.6	5	28	529%	5.9	154	269	76%	8.0
2338	2337	2006	Nov	Prospect Terrace (East of South Circular)	EB	570	708	24%	5.5	60	27	-55%	5.0	630	735	17%	4.0
2354	2350	2006	Nov	South Circular Rd (East of Suir Rd)	EB	459	343	-25%	5.8	35	55	60%	3.1	494	398	-19%	4.5
2851	2352	2006	Nov	Herberton Rd Br	NB	773	763	-1%	0.3	60	88	46%	3.2	833	851	2%	0.6
2861	2364	2006	Nov	Dolphins Barn Br	NB	914	599	-34%	11.5	138	34	-76%	11.3	1052	632	-40%	14.5
2871	2447	2006	Nov	Clogher Rd Br / Sallys Bridge	NB	763	686	-10%	2.8	20	39	98%	3.5	783	725	-7%	2.1
2891	2890	2006	Nov	Harolds Cross Br	NB	948	908	-4%	1.3	38	45	21%	1.2	986	953	-3%	1.0
2711	2059	2006	Nov	Portobello Br (Richmond St)	NB	675	671	-1%	0.1	36	38	5%	0.3	711	709	0%	0.1
2911	2092	2006	Nov	Charlemont St Br	NB	559	551	-1%	0.3	26	24	-6%	0.3	585	575	-2%	0.4
2112	2931	2006	Nov	Leeson St Br	NB	446	390	-13%	2.7	30	28	-8%	0.4	476	417	-12%	2.8
2951	2124	2006	Nov	Baggott St Br	NB	862	1276	48%	12.6	35	26	-26%	1.6	897	1301	45%	12.2
2961	2134	2006	Nov	Mount St Br	NB	647	704	9%	2.2	20	32	62%	2.4	666	735	10%	2.6
Total						18299	19712	8%	10	1869	1882	1%	0	20168	21594	7%	10

City Centre Cordon - All Counts

AM Peak (0800-0900) - Outbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1110	1102	2006	18/05	North Wall Quay (West of E Wall Rd)	EB	384	489	27%	5.0	159	112	-29%	4.0	543	601	11%	2.4
1108	1104	2006	18/05	Upper Sherrif St (West of E Wall Rd)	EB	82	60	-27%	2.6	123	111	-9%	1.1	205	171	-16%	2.4
1103	1111	2006	Nov	East Road (North of Upper Sherrif St)	NB	238	252	6%	0.9	38	41	10%	0.6	275	294	7%	1.1
1319	1131	2006	Nov	Newcomen Br	NB	531	287	-46%	12.1	41	76	88%	4.7	572	363	-37%	9.7
1329	1799	2006	Nov	Clarkes Br	NB	412	433	5%	1.0	41	33	-17%	1.2	453	467	3%	0.7
1333	1801	2006	Nov	Russell Street Bridge	NB	159	224	41%	4.7	39	56	43%	2.5	198	280	42%	5.3
1334	1410	2005	07/11/05	Belvidere Rd	NB	203	104	-49%	8.0	105	80	-24%	2.6	308	184	-40%	7.9
1394	1410	2005	07/11	Dorset Steet Lower (North of North Circular)	NB	857	588	-31%	10.0	174	149	-14%	2.0	1031	737	-29%	9.9
1428	1429	2007	19/04	Prospect Rd (North of North Circular)	NB	649	561	-14%	3.6	57	156	174%	9.6	706	717	2%	0.4
1431	1908	2006	Nov	New Cabra Rd (West of North Circular)	WB	308	53	-83%	19.0	114	23	-80%	11.0	422	76	-82%	21.9
1469	1917	2006	Nov	Old Cabra Rd (North of North Circular)	NB	239	175	-27%	4.4	63	64	2%	0.1	302	239	-21%	3.8
1471	1919	2006	Nov	Blackhorse Avenue (West of North Circular)	WB	216	388	80%	9.9	18	63	252%	7.1	234	451	93%	11.8
1486	1931	2006	Nov	Fountain Rd	WB	147	467	219%	18.3	6	20	228%	3.8	153	487	219%	18.7
1941	1931	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	WB	241	54	-77%	15.3	11	8	-26%	0.9	252	62	-75%	15.1
1942	1941	2006	Nov	Conyngham Rd (West of Chesterfiled Ave)	WB	732	740	1%	0.3	92	195	113%	8.7	823	936	14%	3.8
2306	2313	2006	Nov	St. Johns Road (East of South Circular Rd)	WB	660	863	31%	7.3	522	478	-8%	2.0	1182	1341	13%	4.5
2329	2326	2006	Nov	Kilmainham Lane (East of South Circular Rd)	WB	56	149	168%	9.2	0	6	#DIV/0!	3.5	56	155	180%	9.7
2337	2338	2006	Nov	Prospect Terrace (East of South Circular)	WB	331	146	-56%	12.0	57	59	3%	0.2	388	205	-47%	10.6
2350	2354	2006	Nov	South Circular Rd (East of Suir Rd)	WB	532	677	27%	5.9	15	21	37%	1.3	547	698	28%	6.1
2352	2851	2006	Nov	Herberton Rd Br	SB	415	478	15%	3.0	56	59	7%	0.5	470	537	14%	3.0
2364	2861	2006	Nov	Dolphins Barn Br	SB	493	488	-1%	0.2	155	113	-27%	3.6	648	601	-7%	1.9
2447	2871	2006	Nov	Clogher Rd Br / Sallys Bridge	SB	272	296	9%	1.4	39	41	5%	0.3	311	337	8%	1.5
2890	2891	2006	Nov	Harolds Cross Br	SB	514	415	-19%	4.6	42	44	4%	0.2	556	459	-17%	4.3
2059	2711	2006	Nov	Portobello Br (Richmond St)	SB	320	369	15%	2.6	21	21	-2%	0.1	341	390	14%	2.5
2092	2911	2006	Nov	Charlemont St Br	SB	545	507	-7%	1.7	26	33	30%	1.4	571	540	-5%	1.3
2931	2112	2006	Nov	Leeson St Br	SB	1374	1386	1%	0.3	29	107	277%	9.6	1402	1493	7%	2.4
2124	2951	2006	Nov	Baggott St Br	SB	469	461	-2%	0.3	69	68	-2%	0.1	538	529	-2%	0.4
2134	2961	2006	Nov	Mount St Br	SB	495	356	-28%	6.7	20	53	171%	5.5	514	409	-20%	4.9
Total						11867	11466	-3%	4	2127	2291	8%	3	13994	13757	-2%	2

City Centre Cordon - All Counts

AM Peak (0900-1000) - Inbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1102	1110	2006	18/05	North Wall Quay (West of E Wall Rd)	WB	216	135	-38%	6.1	300	243	-19%	3.5	516	378	-27%	6.5
1104	1108	2006	18/05	Upper Sherrif St (West of E Wall Rd)	WB	139	37	-73%	10.9	51	80	56%	3.6	190	117	-39%	5.9
1111	1103	2006	Nov	East Road (North of Upper Sherrif St)	SB	511	779	52%	10.6	138	239	73%	7.4	649	1018	57%	12.8
1131	1319	2006	Nov	Newcomen Br	SB	977	992	2%	0.5	45	101	125%	6.6	1022	1093	7%	2.2
1799	1329	2006	Nov	Clarkes Br	SB	1362	1555	14%	5.1	71	65	-8%	0.7	1432	1620	13%	4.8
1801	1333	2006	Nov	Russell Street Bridge	SB	435	653	50%	9.3	36	40	12%	0.7	471	693	47%	9.2
1410	1334	2005	07/11	Belvidere Rd	SB	384	328	-15%	3.0	111	62	-44%	5.3	495	390	-21%	5.0
1410	1394	2005	07/11	Dorset Steet Lower (North of North Circular)	SB	1177	1246	6%	2.0	192	191	-1%	0.1	1369	1437	5%	1.8
1429	1428	2007	19/04	Prospect Rd (North of North Circular)	SB	857	1194	39%	10.5	101	99	-1%	0.1	957	1294	35%	10.0
1908	1431	2006	Nov	New Cabra Rd (West of North Circular)	EB	432	812	88%	15.2	81	36	-55%	5.8	513	848	65%	12.9
1917	1469	2006	Nov	Old Cabra Rd (North of North Circular)	SB	509	402	-21%	5.0	113	53	-53%	6.5	622	455	-27%	7.2
1919	1471	2006	Nov	Blackhorse Avenue (West of North Circular)	EB	677	852	26%	6.4	32	75	137%	5.9	708	927	31%	7.7
1931	1486	2006	Nov	Fountain Rd	EB	489	163	-67%	18.0	18	2	-91%	5.3	507	165	-68%	18.7
1931	1941	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	EB	435	734	69%	12.4	8	13	73%	1.7	442	747	69%	12.5
1941	1942	2006	Nov	Conyngham Rd (West of Chesterfield Ave)	EB	452	409	-9%	2.0	114	126	10%	1.1	566	535	-5%	1.3
2313	2306	2006	Nov	St. Johns Road (East of South Circular Rd)	EB	973	1409	45%	12.7	351	401	14%	2.6	1324	1810	37%	12.3
2326	2329	2006	Nov	Kilmainham Lane (East of South Circular Rd)	EB	138	283	106%	10.0	3	23	675%	5.6	141	306	118%	11.1
2338	2337	2006	Nov	Prospect Terrace (East of South Circular)	EB	576	596	4%	0.9	72	49	-32%	2.9	648	645	0%	0.1
2354	2350	2006	Nov	South Circular Rd (East of Suir Rd)	EB	397	372	-6%	1.3	38	84	123%	5.9	435	455	5%	1.0
2851	2352	2006	Nov	Herberton Rd Br	NB	757	811	7%	2.0	117	190	62%	5.9	874	1001	15%	4.2
2861	2364	2006	Nov	Dolphins Barn Br	NB	867	566	-35%	11.2	192	99	-49%	7.7	1059	664	-37%	13.4
2871	2447	2006	Nov	Clogher Rd Br / Sallys Bridge	NB	672	700	4%	1.1	20	25	29%	1.2	691	725	5%	1.3
2891	2890	2006	Nov	Harolds Cross Br	NB	949	960	1%	0.4	69	71	4%	0.3	1018	1031	1%	0.4
2711	2059	2006	Nov	Portobello Br (Richmond St)	NB	735	691	-6%	1.6	32	27	-14%	0.8	766	719	-6%	1.7
2911	2092	2006	Nov	Charlemont St Br	NB	556	632	14%	3.1	30	15	-50%	3.2	586	647	11%	2.5
2112	2931	2006	Nov	Leeson St Br	NB	404	388	-4%	0.8	32	27	-15%	0.9	435	415	-5%	1.0
2951	2124	2006	Nov	Baggott St Br	NB	769	1273	66%	15.8	51	41	-20%	1.5	820	1314	60%	15.1
2961	2134	2006	Nov	Mount St Br	NB	660	695	5%	1.4	24	42	74%	3.1	684	737	8%	2.0
Total						17497	19668	12%	16	2438	2519	3%	2	19934	22187	11%	16

City Centre Cordon - All Counts

AM Peak (0900-1000) - Outbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1110	1102	2006	18/05	North Wall Quay (West of E Wall Rd)	EB	255	192	-25%	4.2	225	257	14%	2.0	480	449	-7%	1.5
1108	1104	2006	18/05	Upper Sherrif St (West of E Wall Rd)	EB	69	31	-55%	5.4	90	202	124%	9.2	159	232	46%	5.2
1103	1111	2006	Nov	East Road (North of Upper Sherrif St)	NB	219	320	46%	6.1	66	75	14%	1.1	285	395	38%	5.9
1319	1131	2006	Nov	Newcomen Br	NB	492	306	-38%	9.3	63	89	41%	3.0	555	395	-29%	7.3
1329	1799	2006	Nov	Clarkes Br	NB	319	445	40%	6.5	44	36	-17%	1.2	363	482	33%	5.8
1333	1801	2006	Nov	Russell Street Bridge	NB	168	216	29%	3.5	47	61	32%	2.0	215	278	29%	4.0
1334	1410	2005	07/11/05	Belvidere Rd	NB	192	124	-36%	5.4	132	65	-51%	6.7	324	189	-42%	8.5
1394	1410	2005	07/11	Dorset Steet Lower (North of North Circular)	NB	747	626	-16%	4.6	138	149	8%	1.0	885	775	-12%	3.8
1428	1429	2007	19/04	Prospect Rd (North of North Circular)	NB	539	579	7%	1.7	69	108	56%	4.1	608	687	13%	3.1
1431	1908	2006	Nov	New Cabra Rd (West of North Circular)	WB	308	139	-55%	11.3	83	44	-47%	4.9	390	182	-53%	12.3
1469	1917	2006	Nov	Old Cabra Rd (North of North Circular)	NB	226	122	-46%	7.9	98	93	-5%	0.5	324	215	-34%	6.6
1471	1919	2006	Nov	Blackhorse Avenue (West of North Circular)	WB	165	325	97%	10.2	27	71	164%	6.3	192	396	106%	11.9
1486	1931	2006	Nov	Fountain Rd	WB	137	603	342%	24.2	12	24	100%	2.8	149	627	322%	24.3
1941	1931	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	WB	203	42	-79%	14.6	12	20	63%	1.9	215	61	-71%	13.1
1942	1941	2006	Nov	Conyngham Rd (West of Chesterfiled Ave)	WB	647	843	30%	7.2	147	184	25%	2.9	794	1028	30%	7.8
2306	2313	2006	Nov	St. Johns Road (East of South Circular Rd)	WB	567	775	37%	8.0	486	454	-7%	1.5	1053	1229	17%	5.2
2329	2326	2006	Nov	Kilmainham Lane (East of South Circular Rd)	WB	47	143	203%	9.8	0	19	#DIV/0!	6.1	47	161	243%	11.2
2337	2338	2006	Nov	Prospect Terrace (East of South Circular)	WB	292	108	-63%	13.0	50	49	0%	0.0	342	158	-54%	11.6
2350	2354	2006	Nov	South Circular Rd (East of Suir Rd)	WB	543	570	5%	1.2	23	23	4%	0.2	566	594	5%	1.2
2352	2851	2006	Nov	Herberton Rd Br	SB	400	454	13%	2.6	74	71	-3%	0.3	474	525	11%	2.3
2364	2861	2006	Nov	Dolphins Barn Br	SB	424	426	1%	0.1	159	160	1%	0.1	583	586	1%	0.1
2447	2871	2006	Nov	Clogher Rd Br / Sallys Bridge	SB	277	285	3%	0.5	20	20	3%	0.1	296	305	3%	0.5
2890	2891	2006	Nov	Harolds Cross Br	SB	481	353	-27%	6.3	53	59	12%	0.8	533	412	-23%	5.6
2059	2711	2006	Nov	Portobello Br (Richmond St)	SB	288	364	26%	4.2	27	25	-8%	0.4	315	389	23%	3.9
2092	2911	2006	Nov	Charlemont St Br	SB	488	503	3%	0.7	42	26	-38%	2.8	530	529	0%	0.0
2931	2112	2006	Nov	Leeson St Br	SB	1299	1551	19%	6.7	35	40	16%	0.9	1333	1591	19%	6.8
2124	2951	2006	Nov	Baggott St Br	SB	432	431	0%	0.1	33	86	161%	6.9	465	517	11%	2.4
2134	2961	2006	Nov	Mount St Br	SB	372	396	7%	1.2	33	44	34%	1.8	405	440	9%	1.7
Total						10592	11271	6%	6	2283	2554	12%	6	12875	13825	7%	8

City Centre Cordon - Canal South

Summary Table

		Count	Flow	Diff	per	GEH
0700-0800	IB	8996	8934	-61	-1%	0.6
	OB	7830	6794	-1036	-13%	12.1
	Total	16825	15728	-1097	-7%	8.6
0800-0900	IB	9423	9939	516	5%	5.2
	OB	8343	8629	286	3%	3.1
	Total	17766	18569	803	5%	6.0
0900-1000	IB	9423	9939	516	5%	5.2
	OB	7733	8463	730	9%	8.1
	Total	17156	18402	1246	7%	9.3

City Centre Cordon - Canal South

AM Peak (0700-0800) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
2313	2306	2006	Nov	St. Johns Road (East of South Circular Rd)	EB	1033	1370	33%	9.7	305	313	3%	0.5	1337	1683	26%	8.9
2326	2329	2006	Nov	Kilmainham Lane (East of South Circular Rd)	EB	147	446	204%	17.4	0	25	#DIV/0!	7.0	147	471	221%	18.4
2338	2337	2006	Nov	Prospect Terrace (East of South Circular)	EB	700	605	-14%	3.7	89	25	-72%	8.5	789	630	-20%	6.0
2354	2350	2006	Nov	South Circular Rd (East of Suir Rd)	EB	347	199	-43%	9.0	20	45	130%	4.5	367	244	-33%	7.0
2851	2352	2006	Nov	Herberton Rd Br	NB	591	551	-7%	1.7	63	164	160%	9.5	654	716	9%	2.4
2861	2364	2006	Nov	Dolphins Barn Br	NB	792	326	-59%	19.7	216	169	-22%	3.4	1008	495	-51%	18.7
2871	2447	2006	Nov	Clogher Rd Br / Sallys Bridge	NB	717	633	-12%	3.2	29	41	42%	2.0	745	673	-10%	2.7
2891	2890	2006	Nov	Harolds Cross Br	NB	1076	839	-22%	7.7	77	75	-2%	0.2	1153	914	-21%	7.4
2711	2059	2006	Nov	Portobello Br (Richmond St)	NB	673	605	-10%	2.7	38	38	1%	0.1	710	643	-9%	2.6
2911	2092	2006	Nov	Charlemont St Br	NB	397	387	-2%	0.5	29	13	-56%	3.5	426	400	-6%	1.3
2112	2931	2006	Nov	Leeson St Br	NB	468	312	-33%	7.9	47	46	-1%	0.1	515	358	-30%	7.5
2951	2124	2006	Nov	Baggott St Br	NB	531	1024	93%	17.7	47	34	-28%	2.0	578	1057	83%	16.8
2961	2134	2006	Nov	Mount St Br	NB	543	618	14%	3.1	27	33	23%	1.1	570	651	14%	3.3
Total						8013	7916	-1%	1	983	1018	4%	1	8996	8934	-1%	1

AM Peak (0700-0800) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1942	1941	2006	Nov	Conyngham Rd (West of Chesterfiled Ave)	WB	828	634	-23%	7.2	119	137	16%	1.7	947	772	-18%	6.0
2306	2313	2006	Nov	St. Johns Road (East of South Circular Rd)	WB	728	662	-9%	2.5	449	501	12%	2.4	1177	1163	-1%	0.4
2329	2326	2006	Nov	Kilmainham Lane (East of South Circular Rd)	WB	62	74	20%	1.5	2	5	215%	1.8	63	79	25%	1.9
2337	2338	2006	Nov	Prospect Terrace (East of South Circular)	WB	320	52	-84%	19.6	32	34	8%	0.4	351	86	-75%	17.9
2350	2354	2006	Nov	South Circular Rd (East of Suir Rd)	WB	583	543	-7%	1.7	15	30	101%	3.2	598	573	-4%	1.0
2352	2851	2006	Nov	Herberton Rd Br	SB	258	309	20%	3.1	24	99	313%	9.6	282	408	45%	6.8
2364	2861	2006	Nov	Dolphins Barn Br	SB	403	373	-8%	1.5	152	159	5%	0.6	555	532	-4%	1.0
2447	2871	2006	Nov	Clogher Rd Br / Sallys Bridge	SB	148	140	-5%	0.7	21	19	-9%	0.4	169	159	-6%	0.8
2890	2891	2006	Nov	Harolds Cross Br	SB	498	276	-45%	11.3	30	34	12%	0.6	528	310	-41%	10.7
2059	2711	2006	Nov	Portobello Br (Richmond St)	SB	242	367	52%	7.2	21	33	57%	2.3	263	400	52%	7.6
2092	2911	2006	Nov	Charlemont St Br	SB	554	419	-24%	6.1	59	26	-55%	5.0	613	446	-27%	7.3
2931	2112	2006	Nov	Leeson St Br	SB	1252	1053	-16%	5.9	48	40	-17%	1.3	1300	1093	-16%	6.0
2124	2951	2006	Nov	Baggott St Br	SB	393	323	-18%	3.7	57	88	54%	3.6	450	411	-9%	1.9
2134	2961	2006	Nov	Mount St Br	SB	505	311	-38%	9.6	32	52	66%	3.2	537	364	-32%	8.1
Total						6772	5537	-18%	16	1058	1257	19%	6	7830	6794	-13%	12

City Centre Cordon - Canal South

AM Peak (0800-0900) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
2313	2306	2006	Nov	St. Johns Road (East of South Circular Rd)	EB	872	1373	58%	15.0	290	266	-8%	1.4	1161	1639	41%	12.8
2326	2329	2006	Nov	Kilmainham Lane (East of South Circular Rd)	EB	149	241	62%	6.6	5	28	529%	5.9	154	269	76%	8.0
2338	2337	2006	Nov	Prospect Terrace (East of South Circular)	EB	570	708	24%	5.5	60	27	-55%	5.0	630	735	17%	4.0
2354	2350	2006	Nov	South Circular Rd (East of Suir Rd)	EB	459	343	-25%	5.8	35	55	60%	3.1	494	398	-19%	4.5
2851	2352	2006	Nov	Herberton Rd Br	NB	773	763	-1%	0.3	60	88	46%	3.2	833	851	2%	0.6
2861	2364	2006	Nov	Dolphins Barn Br	NB	914	599	-34%	11.5	138	34	-76%	11.3	1052	632	-40%	14.5
2871	2447	2006	Nov	Clogher Rd Br / Sallys Bridge	NB	763	686	-10%	2.8	20	39	98%	3.5	783	725	-7%	2.1
2891	2890	2006	Nov	Harolds Cross Br	NB	948	908	-4%	1.3	38	45	21%	1.2	986	953	-3%	1.0
2711	2059	2006	Nov	Portobello Br (Richmond St)	NB	675	671	-1%	0.1	36	38	5%	0.3	711	709	0%	0.1
2911	2092	2006	Nov	Charlemont St Br	NB	559	551	-1%	0.3	26	24	-6%	0.3	585	575	-2%	0.4
2112	2931	2006	Nov	Leeson St Br	NB	446	390	-13%	2.7	30	28	-8%	0.4	476	417	-12%	2.8
2951	2124	2006	Nov	Baggott St Br	NB	862	1276	48%	12.6	35	26	-26%	1.6	897	1301	45%	12.2
2961	2134	2006	Nov	Mount St Br	NB	647	704	9%	2.2	20	32	62%	2.4	666	735	10%	2.6
Total						8634	9212	7%	6	789	727	-8%	2	9423	9939	5%	5

AM Peak (0800-0900) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1942	1941	2006	Nov	Conyngham Rd (West of Chesterfiled Ave)	WB	732	740	1%	0.3	92	195	113%	8.7	823	936	14%	3.8
2306	2313	2006	Nov	St. Johns Road (East of South Circular Rd)	WB	660	863	31%	7.3	522	478	-8%	2.0	1182	1341	13%	4.5
2329	2326	2006	Nov	Kilmainham Lane (East of South Circular Rd)	WB	56	149	168%	9.2	0	6	#DIV/0!	3.5	56	155	180%	9.7
2337	2338	2006	Nov	Prospect Terrace (East of South Circular)	WB	331	146	-56%	12.0	57	59	3%	0.2	388	205	-47%	10.6
2350	2354	2006	Nov	South Circular Rd (East of Suir Rd)	WB	532	677	27%	5.9	15	21	37%	1.3	547	698	28%	6.1
2352	2851	2006	Nov	Herberton Rd Br	SB	415	478	15%	3.0	56	59	7%	0.5	470	537	14%	3.0
2364	2861	2006	Nov	Dolphins Barn Br	SB	493	488	-1%	0.2	155	113	-27%	3.6	648	601	-7%	1.9
2447	2871	2006	Nov	Clogher Rd Br / Sallys Bridge	SB	272	296	9%	1.4	39	41	5%	0.3	311	337	8%	1.5
2890	2891	2006	Nov	Harolds Cross Br	SB	514	415	-19%	4.6	42	44	4%	0.2	556	459	-17%	4.3
2059	2711	2006	Nov	Portobello Br (Richmond St)	SB	320	369	15%	2.6	21	21	-2%	0.1	341	390	14%	2.5
2092	2911	2006	Nov	Charlemont St Br	SB	545	507	-7%	1.7	26	33	30%	1.4	571	540	-5%	1.3
2931	2112	2006	Nov	Leeson St Br	SB	1374	1386	1%	0.3	29	107	277%	9.6	1402	1493	7%	2.4
2124	2951	2006	Nov	Baggott St Br	SB	469	461	-2%	0.3	69	68	-2%	0.1	538	529	-2%	0.4
2134	2961	2006	Nov	Mount St Br	SB	495	356	-28%	6.7	20	53	171%	5.5	514	409	-20%	4.9
Total						7203	7332	2%	2	1140	1298	14%	5	8343	8629	3%	3

City Centre Cordon - Canal South

AM Peak (0900-1000) - Inbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
2313	2306	2006	Nov	St. Johns Road (East of South Circular Rd)	EB	872	1373	58%	15.0	290	266	-8%	1.4	1161	1639	41%	12.8
2326	2329	2006	Nov	Kilmainham Lane (East of South Circular Rd)	EB	149	241	62%	6.6	5	28	529%	5.9	154	269	76%	8.0
2338	2337	2006	Nov	Prospect Terrace (East of South Circular)	EB	570	708	24%	5.5	60	27	-55%	5.0	630	735	17%	4.0
2354	2350	2006	Nov	South Circular Rd (East of Suir Rd)	EB	459	343	-25%	5.8	35	55	60%	3.1	494	398	-19%	4.5
2851	2352	2006	Nov	Herberton Rd Br	NB	773	763	-1%	0.3	60	88	46%	3.2	833	851	2%	0.6
2861	2364	2006	Nov	Dolphins Barn Br	NB	914	599	-34%	11.5	138	34	-76%	11.3	1052	632	-40%	14.5
2871	2447	2006	Nov	Clogher Rd Br / Sallys Bridge	NB	763	686	-10%	2.8	20	39	98%	3.5	783	725	-7%	2.1
2891	2890	2006	Nov	Harolds Cross Br	NB	948	908	-4%	1.3	38	45	21%	1.2	986	953	-3%	1.0
2711	2059	2006	Nov	Portobello Br (Richmond St)	NB	675	671	-1%	0.1	36	38	5%	0.3	711	709	0%	0.1
2911	2092	2006	Nov	Charlemont St Br	NB	559	551	-1%	0.3	26	24	-6%	0.3	585	575	-2%	0.4
2112	2931	2006	Nov	Leeson St Br	NB	446	390	-13%	2.7	30	28	-8%	0.4	476	417	-12%	2.8
2951	2124	2006	Nov	Baggott St Br	NB	862	1276	48%	12.6	35	26	-26%	1.6	897	1301	45%	12.2
2961	2134	2006	Nov	Mount St Br	NB	647	704	9%	2.2	20	32	62%	2.4	666	735	10%	2.6
Total						8634	9212	7%	6	789	727	-8%	2	9423	9939	5%	5

AM Peak (0900-1000) - Outbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1942	1941	2006	Nov	Conyngham Rd (West of Chesterfiled Ave)	WB	647	843	30%	7.2	147	184	25%	2.9	794	1028	30%	7.8
2306	2313	2006	Nov	St. Johns Road (East of South Circular Rd)	WB	567	775	37%	8.0	486	454	-7%	1.5	1053	1229	17%	5.2
2329	2326	2006	Nov	Kilmainham Lane (East of South Circular Rd)	WB	47	143	203%	9.8	0	19	#DIV/0!	6.1	47	161	243%	11.2
2337	2338	2006	Nov	Prospect Terrace (East of South Circular)	WB	292	108	-63%	13.0	50	49	0%	0.0	342	158	-54%	11.6
2350	2354	2006	Nov	South Circular Rd (East of Suir Rd)	WB	543	570	5%	1.2	23	23	4%	0.2	566	594	5%	1.2
2352	2851	2006	Nov	Herberton Rd Br	SB	400	454	13%	2.6	74	71	-3%	0.3	474	525	11%	2.3
2364	2861	2006	Nov	Dolphins Barn Br	SB	424	426	1%	0.1	159	160	1%	0.1	583	586	1%	0.1
2447	2871	2006	Nov	Clogher Rd Br / Sallys Bridge	SB	277	285	3%	0.5	20	20	3%	0.1	296	305	3%	0.5
2890	2891	2006	Nov	Harolds Cross Br	SB	481	353	-27%	6.3	53	59	12%	0.8	533	412	-23%	5.6
2059	2711	2006	Nov	Portobello Br (Richmond St)	SB	288	364	26%	4.2	27	25	-8%	0.4	315	389	23%	3.9
2092	2911	2006	Nov	Charlemont St Br	SB	488	503	3%	0.7	42	26	-38%	2.8	530	529	0%	0.0
2931	2112	2006	Nov	Leeson St Br	SB	1299	1551	19%	6.7	35	40	16%	0.9	1333	1591	19%	6.8
2124	2951	2006	Nov	Baggott St Br	SB	432	431	0%	0.1	33	86	161%	6.9	465	517	11%	2.4
2134	2961	2006	Nov	Mount St Br	SB	372	396	7%	1.2	33	44	34%	1.8	405	440	9%	1.7
Total						6554	7202	10%	8	1179	1261	7%	2	7733	8463	9%	8

Inner Cordon - Canal North

City Centre Cordon

		Count	Flow	Diff	per	GEH
0700-0800	IB	11102	10396	-705	-6%	6.8
	OB	5249	4496	-752	-14%	10.8
	Total	16350	14892	-1458	-9%	11.7
0800-0900	IB	10745	11655	910	8%	8.6
	OB	5651	5128	-523	-9%	7.1
	Total	16396	16783	387	2%	3.0
0900-1000	IB	10745	11655	910	8%	8.6
	OB	5142	5362	220	4%	3.0
	Total	15887	17017	1130	7%	8.8

Inner Cordon - Canal North

AM Peak (0700-0800) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration	Flow	% Diff	GEH	Calibration	Flow	% Diff	GEH	Calibration	Flow	% Diff	GEH
1102	1110	2006	18/05	North Wall Quay (West of E Wall Rd)	WB	198	97	-51%	8.3	282	270	-4%	0.8	480	366	-24%	5.5
1104	1108	2006	18/05	Upper Sherrif St (West of E Wall Rd)	WB	73	21	-71%	7.6	21	105	399%	10.6	94	126	34%	3.0
1111	1103	2006	Nov	East Road (North of Upper Sherrif St)	SB	755	727	-4%	1.0	86	273	219%	14.0	840	1000	19%	5.3
1131	1319	2006	Nov	Newcomen Br	SB	1026	733	-29%	9.9	35	87	154%	6.8	1060	820	-23%	7.8
1799	1329	2006	Nov	Clarkes Br	SB	1358	1540	13%	4.8	80	63	-21%	2.0	1437	1603	12%	4.2
1801	1333	2006	Nov	Russell Street Bridge	SB	445	492	11%	2.2	47	43	-8%	0.6	491	535	9%	1.9
1410	1334	2005	07/11	Belvidere Rd	SB	430	380	-12%	2.5	99	60	-39%	4.4	529	440	-17%	4.1
1410	1394	2005	07/11	Dorset Steet Lower (North of North Circular)	SB	1266	1074	-15%	5.6	153	220	44%	4.9	1419	1294	-9%	3.4
1429	1428	2007	19/04	Prospect Rd (North of North Circular)	SB	993	1253	26%	7.8	86	73	-14%	1.4	1079	1327	23%	7.2
1908	1431	2006	Nov	New Cabra Rd (West of North Circular)	EB	538	595	11%	2.4	92	48	-47%	5.2	629	643	2%	0.6
1917	1469	2006	Nov	Old Cabra Rd (North of North Circular)	SB	489	307	-37%	9.1	77	50	-35%	3.4	565	357	-37%	9.7
1919	1471	2006	Nov	Blackhorse Avenue (West of North Circular)	EB	860	751	-13%	3.8	27	41	52%	2.4	887	792	-11%	3.3
1931	1486	2006	Nov	Fountain Rd	EB	388	37	-90%	24.0	9	3	-67%	2.5	397	40	-90%	24.1
1931	1941	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	EB	474	504	7%	1.4	8	12	61%	1.5	481	516	7%	1.6
1941	1942	2006	Nov	Conyngham Rd (West of Chesterfield Ave)	EB	647	454	-30%	8.2	68	83	23%	1.8	715	537	-25%	7.1
Total						9665	8847	-8%	8	863	1057	23%	6	10528	9904	-6%	6

AM Peak (0700-0800) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration	Flow	% Diff	GEH	Calibration	Flow	% Diff	GEH	Calibration	Flow	% Diff	GEH
1110	1102	2006	18/05	North Wall Quay (West of E Wall Rd)	EB	475	343	-28%	6.5	201	215	7%	1.0	676	558	-17%	4.7
1108	1104	2006	18/05	Upper Sherrif St (West of E Wall Rd)	EB	84	61	-27%	2.7	120	209	74%	6.9	204	270	32%	4.3
1103	1111	2006	Nov	East Road (North of Upper Sherrif St)	NB	167	94	-43%	6.3	65	65	0%	0.0	231	159	-31%	5.1
1319	1131	2006	Nov	Newcomen Br	NB	504	245	-51%	13.3	44	89	106%	5.6	547	335	-39%	10.1
1329	1799	2006	Nov	Clarkes Br	NB	324	323	0%	0.0	27	64	136%	5.4	351	387	10%	1.9
1333	1801	2006	Nov	Russell Street Bridge	NB	131	82	-37%	4.7	32	31	-1%	0.0	162	113	-30%	4.1
1334	1410	2005	07/11/05	Belvidere Rd	NB	125	142	14%	1.5	84	35	-58%	6.4	209	177	-15%	2.3
1394	1410	2005	07/11	Dorset Steet Lower (North of North Circular)	NB	787	519	-34%	10.5	171	183	7%	0.9	958	702	-27%	8.9
1428	1429	2007	19/04	Prospect Rd (North of North Circular)	NB	616	451	-27%	7.2	69	112	62%	4.5	685	563	-18%	4.9
1431	1908	2006	Nov	New Cabra Rd (West of North Circular)	WB	298	241	-19%	3.4	119	122	3%	0.3	416	363	-13%	2.7
1469	1917	2006	Nov	Old Cabra Rd (North of North Circular)	NB	241	84	-65%	12.2	78	42	-47%	4.7	319	126	-60%	12.9
1471	1919	2006	Nov	Blackhorse Avenue (West of North Circular)	WB	133	282	112%	10.3	8	63	742%	9.4	141	345	145%	13.1
1486	1931	2006	Nov	Fountain Rd	WB	121	328	171%	13.8	5	4	-19%	0.4	126	332	164%	13.6
1941	1931	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	WB	218	58	-73%	13.6	8	8	11%	0.3	226	67	-70%	13.1
Total						3746	2912	-22%	14	827	1026	24%	7	4573	3938	-14%	10

Inner Cordon - Canal North

AM Peak (0800-0900) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1102	1110	2006	18/05	North Wall Quay (West of E Wall Rd)	WB	266	150	-44%	8.0	282	161	-43%	8.1	548	311	-43%	11.4
1104	1108	2006	18/05	Upper Sherrif St (West of E Wall Rd)	WB	110	41	-63%	8.0	42	80	91%	4.9	152	121	-21%	2.7
1111	1103	2006	Nov	East Road (North of Upper Sherrif St)	SB	699	833	19%	4.8	147	217	47%	5.2	846	1049	24%	6.6
1131	1319	2006	Nov	Newcomen Br	SB	1013	1055	4%	1.3	42	78	86%	4.7	1055	1133	7%	2.4
1799	1329	2006	Nov	Clarkes Br	SB	1240	1517	22%	7.5	60	74	23%	1.7	1300	1590	22%	7.7
1801	1333	2006	Nov	Russell Street Bridge	SB	435	655	51%	9.4	41	17	-58%	4.4	475	672	41%	8.2
1410	1334	2005	07/11	Belvidere Rd	SB	420	366	-13%	2.7	39	30	-23%	1.5	459	396	-14%	3.0
1410	1394	2005	07/11	Dorset Steet Lower (North of North Circular)	SB	1340	1343	0%	0.1	114	113	-1%	0.1	1454	1455	0%	0.0
1429	1428	2007	19/04	Prospect Rd (North of North Circular)	SB	925	1253	35%	9.9	101	111	11%	1.1	1026	1364	33%	9.8
1908	1431	2006	Nov	New Cabra Rd (West of North Circular)	EB	413	722	75%	13.0	86	77	-10%	1.0	499	799	60%	11.8
1917	1469	2006	Nov	Old Cabra Rd (North of North Circular)	SB	413	339	-18%	3.8	48	45	-7%	0.5	461	384	-17%	3.8
1919	1471	2006	Nov	Blackhorse Avenue (West of North Circular)	EB	840	902	7%	2.1	14	43	218%	5.5	854	944	11%	3.0
1931	1486	2006	Nov	Fountain Rd	EB	566	117	-79%	24.3	3	4	21%	0.3	569	120	-79%	24.2
1931	1941	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	EB	410	754	84%	14.3	2	9	487%	3.2	411	763	86%	14.5
1941	1942	2006	Nov	Conyngham Rd (West of Chesterfield Ave)	EB	577	454	-21%	5.4	62	97	57%	4.0	638	551	-14%	3.6
Total						9289	10310	11%	10	756	913	21%	5	10045	11223	12%	11

AM Peak (0800-0900) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1110	1102	2006	18/05	North Wall Quay (West of E Wall Rd)	EB	384	489	27%	5.0	159	112	-29%	4.0	543	601	11%	2.4
1108	1104	2006	18/05	Upper Sherrif St (West of E Wall Rd)	EB	82	60	-27%	2.6	123	111	-9%	1.1	205	171	-16%	2.4
1103	1111	2006	Nov	East Road (North of Upper Sherrif St)	NB	238	252	6%	0.9	38	41	10%	0.6	275	294	7%	1.1
1319	1131	2006	Nov	Newcomen Br	NB	531	287	-46%	12.1	41	76	88%	4.7	572	363	-37%	9.7
1329	1799	2006	Nov	Clarkes Br	NB	412	433	5%	1.0	41	33	-17%	1.2	453	467	3%	0.7
1333	1801	2006	Nov	Russell Street Bridge	NB	159	224	41%	4.7	39	56	43%	2.5	198	280	42%	5.3
1334	1410	2005	07/11/05	Belvidere Rd	NB	203	104	-49%	8.0	105	80	-24%	2.6	308	184	-40%	7.9
1394	1410	2005	07/11	Dorset Steet Lower (North of North Circular)	NB	857	588	-31%	10.0	174	149	-14%	2.0	1031	737	-29%	9.9
1428	1429	2007	19/04	Prospect Rd (North of North Circular)	NB	649	561	-14%	3.6	57	156	174%	9.6	706	717	2%	0.4
1431	1908	2006	Nov	New Cabra Rd (West of North Circular)	WB	308	53	-83%	19.0	114	23	-80%	11.0	422	76	-82%	21.9
1469	1917	2006	Nov	Old Cabra Rd (North of North Circular)	NB	239	175	-27%	4.4	63	64	2%	0.1	302	239	-21%	3.8
1471	1919	2006	Nov	Blackhorse Avenue (West of North Circular)	WB	216	388	80%	9.9	18	63	252%	7.1	234	451	93%	11.8
1486	1931	2006	Nov	Fountain Rd	WB	147	467	219%	18.3	6	20	228%	3.8	153	487	219%	18.7
1941	1931	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	WB	241	54	-77%	15.3	11	8	-26%	0.9	252	62	-75%	15.1
Total						4280	3646	-15%	10	828	881	6%	2	5108	4527	-11%	8

Inner Cordon - Canal North

AM Peak (0900-1000) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1102	1110	2006	18/05	North Wall Quay (West of E Wall Rd)	WB	266	150	-44%	8.0	282	161	-43%	8.1	548	311	-43%	11.4
1104	1108	2006	18/05	Upper Sherrif St (West of E Wall Rd)	WB	110	41	-63%	8.0	42	80	91%	4.9	152	121	-21%	2.7
1111	1103	2006	Nov	East Road (North of Upper Sherrif St)	SB	699	833	19%	4.8	147	217	47%	5.2	846	1049	24%	6.6
1131	1319	2006	Nov	Newcomen Br	SB	1013	1055	4%	1.3	42	78	86%	4.7	1055	1133	7%	2.4
1799	1329	2006	Nov	Clarkes Br	SB	1240	1517	22%	7.5	60	74	23%	1.7	1300	1590	22%	7.7
1801	1333	2006	Nov	Russell Street Bridge	SB	435	655	51%	9.4	41	17	-58%	4.4	475	672	41%	8.2
1410	1334	2005	07/11	Belvidere Rd	SB	420	366	-13%	2.7	39	30	-23%	1.5	459	396	-14%	3.0
1410	1394	2005	07/11	Dorset Steet Lower (North of North Circular)	SB	1340	1343	0%	0.1	114	113	-1%	0.1	1454	1455	0%	0.0
1429	1428	2007	19/04	Prospect Rd (North of North Circular)	SB	925	1253	35%	9.9	101	111	11%	1.1	1026	1364	33%	9.8
1908	1431	2006	Nov	New Cabra Rd (West of North Circular)	EB	413	722	75%	13.0	86	77	-10%	1.0	499	799	60%	11.8
1917	1469	2006	Nov	Old Cabra Rd (North of North Circular)	SB	413	339	-18%	3.8	48	45	-7%	0.5	461	384	-17%	3.8
1919	1471	2006	Nov	Blackhorse Avenue (West of North Circular)	EB	840	902	7%	2.1	14	43	218%	5.5	854	944	11%	3.0
1931	1486	2006	Nov	Fountain Rd	EB	566	117	-79%	24.3	3	4	21%	0.3	569	120	-79%	24.2
1931	1941	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	EB	410	754	84%	14.3	2	9	487%	3.2	411	763	86%	14.5
1941	1942	2006	Nov	Conyngham Rd (West of Chesterfiled Ave)	EB	577	454	-21%	5.4	62	97	57%	4.0	638	551	-14%	3.6
Total						9289	10310	11%	10	756	913	21%	5	10045	11223	12%	11

AM Peak (0900-1000) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1110	1102	2006	18/05	North Wall Quay (West of E Wall Rd)	EB	255	192	-25%	4.2	225	257	14%	2.0	480	449	-7%	1.5
1108	1104	2006	18/05	Upper Sherrif St (West of E Wall Rd)	EB	69	31	-55%	5.4	90	202	124%	9.2	159	232	46%	5.2
1103	1111	2006	Nov	East Road (North of Upper Sherrif St)	NB	219	320	46%	6.1	66	75	14%	1.1	285	395	38%	5.9
1319	1131	2006	Nov	Newcomen Br	NB	492	306	-38%	9.3	63	89	41%	3.0	555	395	-29%	7.3
1329	1799	2006	Nov	Clarkes Br	NB	319	445	40%	6.5	44	36	-17%	1.2	363	482	33%	5.8
1333	1801	2006	Nov	Russell Street Bridge	NB	168	216	29%	3.5	47	61	32%	2.0	215	278	29%	4.0
1334	1410	2005	07/11/05	Belvidere Rd	NB	192	124	-36%	5.4	132	65	-51%	6.7	324	189	-42%	8.5
1394	1410	2005	07/11	Dorset Steet Lower (North of North Circular)	NB	747	626	-16%	4.6	138	149	8%	1.0	885	775	-12%	3.8
1428	1429	2007	19/04	Prospect Rd (North of North Circular)	NB	539	579	7%	1.7	69	108	56%	4.1	608	687	13%	3.1
1431	1908	2006	Nov	New Cabra Rd (West of North Circular)	WB	308	139	-55%	11.3	83	44	-47%	4.9	390	182	-53%	12.3
1469	1917	2006	Nov	Old Cabra Rd (North of North Circular)	NB	226	122	-46%	7.9	98	93	-5%	0.5	324	215	-34%	6.6
1471	1919	2006	Nov	Blackhorse Avenue (West of North Circular)	WB	165	325	97%	10.2	27	71	164%	6.3	192	396	106%	11.9
1486	1931	2006	Nov	Fountain Rd	WB	137	603	342%	24.2	12	24	100%	2.8	149	627	322%	24.3
1941	1931	2006	Nov	Chesterfield Ave (West of Conyngham Rd)	WB	203	42	-79%	14.6	12	20	63%	1.9	215	61	-71%	13.1
Total						3783	3877	2%	2	879	1036	18%	5	4662	4913	5%	4

Outer Cordon - All Counts

Summary Table

		Count	Flow	Diff	per	GEH
0700-0800	IB	25477	24614	-863	-3%	5.5
	OB	18568	16428	-2140	-12%	16.2
	Total	44045	41042	-3003	-7%	14.6
0800-0900	IB	26895	28885	1990	7%	11.9
	OB	24848	23710	-1138	-5%	7.3
	Total	51743	52595	852	2%	3.7
0900-1000	IB	25804	26841	1037	4%	6.4
	OB	22515	21422	-1093	-5%	7.4
	Total	48319	48264	-55	0%	0.3

Outer Cordon - All Counts

AM Peak (0700-0800) - Inbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3504	3505	2005	09/11	Main St (north of Strand Rd)	SB	127	299	136%	11.8	42	42	0%	0.0	169	341	102%	10.8
1667	1665	2005	09/11	Grange Rd (north of Toniegee Rd)	SB	464	685	48%	9.2	54	62	15%	1.1	518	747	44%	9.1
1677	1676	2005	24/02	Malahide Rd (north of Toniegee Rd)	SB	1110	895	-19%	6.8	126	165	31%	3.2	1236	1060	-14%	5.2
3531	1873	2006	16/11	M1 (South of M50)	SB	1928	837	-57%	29.3	207	203	-2%	0.3	2135	1041	-51%	27.5
3641	3640	2005	24/11	Ballymun Rd (south of M50)	SB	562	1044	86%	17.0	141	138	-2%	0.2	703	1182	68%	15.6
3751	1776	2005	24/11	Finglas Rd (south of M50)	SB	1406	1615	15%	5.4	367	377	3%	0.5	1772	1992	12%	5.1
1792	1906	2007	19/04	Ratoath Rd (north of Nephin Rd)	SB	686	959	40%	9.5	33	128	288%	10.6	719	1087	51%	12.2
3431	3394	2005	22/11	N3 Navan Rd (south of M50)	SB	1031	1697	65%	18.0	174	337	94%	10.2	1205	2034	69%	20.6
3475	3474	2005	22/11	Castleknock Rd (south of M50)	SB	873	931	7%	1.9	12	10	-13%	0.5	885	941	6%	1.9
4317	4329	2006	16/11	N4 Lucan Rd (East of M50)	EB	983	742	-24%	8.2	636	455	-28%	7.7	1619	1198	-26%	11.2
4378	4381	2006	Mar	Ballyfermot Road (East of M50)	EB	988	868	-12%	3.9	105	112	6%	0.6	1093	980	-10%	3.5
2834	2837	2006	Mar	Cedar Brook Avenue (East of Park West Av)	EB	97	68	-30%	3.2	9	1	-93%	3.8	106	69	-35%	4.0
2838	2839	2006	Mar	Park West Road (East of Park West Av)	EB	483	279	-42%	10.4	102	40	-61%	7.4	585	319	-45%	12.5
4442	4441	2006	Mar	Nangor Road (East of Park West Av)	EB	916	949	4%	1.1	150	127	-16%	2.0	1066	1076	1%	0.3
4229	4213	2005	15/11	Naas Rd (East of M50)	EB	1966	2697	37%	15.1	429	584	36%	6.9	2395	3281	37%	16.6
4171	4163	2006	Oct	Tallaght Rd (East of M50)	EB	1238	964	-22%	8.2	129	135	5%	0.6	1367	1100	-20%	7.6
4017	4016	2006	May	Firhouse Rd (East of M50)	EB	1234	675	-45%	18.1	48	24	-49%	3.9	1282	699	-45%	18.5
4033	4032	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	EB	162	11	-93%	16.3	9	0	-100%	4.2	171	11	-94%	16.8
4034	4035	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	EB	583	377	-35%	9.4	54	33	-39%	3.2	637	411	-36%	9.9
4068	4067	2005	15/11	R116 Edmonstown Rd (North of M50)	NB	26	97	271%	9.0	0	1	#DIV/0!	1.1	26	97	274%	9.1
4073	4072	2005	16/11	Whitechurch Rd (North of M50)	NB	42	15	-63%	5.0	0	7	#DIV/0!	3.7	42	22	-47%	3.5
5117	5124	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	NB	483	102	-79%	22.2	21	1	-97%	6.2	504	103	-80%	23.0
5124	5119	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	NB	720	787	9%	2.4	48	78	62%	3.8	768	865	13%	3.4
5137	5136	2006	21/03	Sandyford Road (South of M50)	NB	582	445	-24%	6.1	36	42	15%	0.9	618	486	-21%	5.6
5167	5166	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	NB	454	542	19%	3.9	39	17	-57%	4.2	493	559	13%	2.9
5176	5175	2005	06/04	South Ave (North of Lower Kilmacud Rd)	NB	261	85	-68%	13.4	3	8	177%	2.2	264	93	-65%	12.8
9968	5018	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	NB	1461	1563	7%	2.6	93	40	-57%	6.4	1554	1604	3%	1.3
5048	5047	2005	19/01	Temple Hill (North of Monksstown Rd)	NB	1473	1141	-23%	9.2	72	78	8%	0.6	1545	1218	-21%	8.8
Total						22339	21370	-4%	7	3139	3245	3%	2	25477	24614	-3%	5

Outer Cordon - All Counts

AM Peak (0700-0800) - Outbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3505	3504	2005	09/11	Main St (north of Strand Rd)	NB	383	129	-66%	15.9	102	91	-11%	1.1	485	220	-55%	14.1
1665	1667	2005	09/11	Grange Rd (north of Toniegee Rd)	NB	587	406	-31%	8.1	60	61	2%	0.2	647	468	-28%	7.6
1676	1677	2005	24/02	Malahide Rd (north of Toniegee Rd)	NB	500	479	-4%	1.0	162	161	0%	0.1	662	640	-3%	0.9
1873	3531	2006	16/11	M1 (South of M50)	NB	1256	1306	4%	1.4	444	448	1%	0.2	1700	1754	3%	1.3
3640	3641	2005	24/11	Ballymun Rd (south of M50)	NB	1325	384	-71%	32.2	222	226	2%	0.3	1547	610	-61%	28.5
1776	3751	2005	24/11	Finglas Rd (south of M50)	NB	1312	1136	-13%	5.0	201	199	-1%	0.2	1513	1335	-12%	4.7
1906	1792	2007	19/04	Ratoath Rd (north of Nephin Rd)	NB	113	282	149%	12.0	15	65	334%	7.9	128	347	171%	14.2
3394	3431	2005	22/11	N3 Navan Rd (south of M50)	NB	1256	1007	-20%	7.4	135	400	196%	16.2	1391	1407	1%	0.4
3474	3475	2005	22/11	Castleknock Rd (south of M50)	NB	142	144	1%	0.2	0	13	#DIV/0!	5.1	142	157	11%	1.2
4329	4317	2006	16/11	N4 Lucan Rd (East of M50)	WB	1782	1861	4%	1.9	273	267	-2%	0.3	2055	2128	4%	1.6
4381	4378	2006	Mar	Ballyfermot Road (East of M50)	WB	440	512	16%	3.3	90	56	-38%	4.0	530	567	7%	1.6
2837	2834	2006	Mar	Cedar Brook Avenue (East of Park West Av)	WB	79	77	-2%	0.2	9	1	-87%	3.5	88	79	-11%	1.0
2839	2838	2006	Mar	Park West Road (East of Park West Av)	WB	170	90	-47%	7.0	108	80	-26%	2.9	278	170	-39%	7.3
4441	4442	2006	Mar	Nangor Road (East of Park West Av)	WB	347	323	-7%	1.3	66	112	69%	4.8	413	435	5%	1.1
4213	4229	2005	15/11	Naas Rd (East of M50)	WB	992	1205	21%	6.4	450	569	26%	5.3	1442	1774	23%	8.3
4163	4171	2006	Oct	Tallaght Rd (East of M50)	WB	1391	1355	-3%	1.0	75	133	78%	5.7	1466	1488	2%	0.6
4016	4017	2006	May	Firhouse Rd (East of M50)	WB	124	140	13%	1.4	15	12	-22%	0.9	139	152	9%	1.1
4032	4033	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	WB	178	0	-100%	18.9	3	0	-100%	2.4	181	0	-100%	19.0
4035	4034	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	WB	559	537	-4%	0.9	39	20	-49%	3.6	598	557	-7%	1.7
4067	4068	2005	15/11	R116 Edmonstown Rd (North of M50)	SB	58	65	12%	0.9	21	6	-73%	4.2	79	70	-11%	1.0
4072	4073	2005	16/11	Whitechurch Rd (North of M50)	SB	87	9	-89%	11.2	0	2	#DIV/0!	2.0	87	11	-87%	10.8
5124	5117	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	SB	269	158	-41%	7.6	33	31	-7%	0.4	302	188	-38%	7.3
5119	5124	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	SB	663	310	-53%	16.0	60	29	-52%	4.7	723	339	-53%	16.7
5136	5137	2006	21/03	Sandyford Road (South of M50)	SB	230	115	-50%	8.7	30	17	-45%	2.8	260	132	-49%	9.2
5166	5167	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	SB	222	163	-26%	4.2	18	54	198%	6.0	240	217	-10%	1.5
5175	5176	2005	06/04	South Ave (North of Lower Kilmacud Rd)	SB	76	149	96%	6.9	0	5	#DIV/0!	3.2	76	154	103%	7.3
5018	9968	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	SB	727	503	-31%	9.0	81	64	-21%	2.0	808	567	-30%	9.2
5047	5048	2007	17/01	Temple Hill (North of Monskstown Rd)	SB	474	349	-26%	6.2	114	113	-1%	0.1	588	462	-21%	5.5
Total						15742	13195	-16%	21	2826	3233	14%	7	18568	16428	-12%	16

Outer Cordon - All Counts

AM Peak (0800-0900) - Inbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3504	3505	2005	09/11	Main St (north of Strand Rd)	SB	314	726	131%	18.1	42	38	-8%	0.6	356	765	115%	17.3
1667	1665	2005	09/11	Grange Rd (north of Toniegee Rd)	SB	802	923	15%	4.1	42	36	-15%	1.0	844	958	14%	3.8
1677	1676	2005	24/02	Malahide Rd (north of Toniegee Rd)	SB	812	998	23%	6.2	96	103	7%	0.7	908	1101	21%	6.1
3531	1873	2006	16/11	M1 (South of M50)	SB	1722	1894	10%	4.0	210	193	-8%	1.2	1932	2086	8%	3.4
3641	3640	2005	24/11	Ballymun Rd (south of M50)	SB	570	976	71%	14.6	192	211	10%	1.3	762	1187	56%	13.6
3751	1776	2005	24/11	Finglas Rd (south of M50)	SB	1525	1488	-2%	1.0	398	406	2%	0.4	1923	1894	-2%	0.7
1792	1906	2007	19/04	Ratoath Rd (north of Nephin Rd)	SB	802	1069	33%	8.7	12	135	1023%	14.3	814	1203	48%	12.3
3431	3394	2005	22/11	N3 Navan Rd (south of M50)	SB	1494	1614	8%	3.0	156	226	45%	5.1	1650	1841	12%	4.6
3475	3474	2005	22/11	Castleknock Rd (south of M50)	SB	679	961	42%	9.9	3	9	187%	2.3	682	970	42%	10.0
4317	4329	2006	16/11	N4 Lucan Rd (East of M50)	EB	1143	1016	-11%	3.9	627	539	-14%	3.7	1770	1555	-12%	5.3
4378	4381	2006	Mar	Ballyfermot Road (East of M50)	EB	989	806	-19%	6.1	99	108	10%	0.9	1088	914	-16%	5.5
2834	2837	2006	Mar	Cedar Brook Avenue (East of Park West Av)	EB	102	339	233%	16.0	3	7	131%	1.8	105	346	230%	16.1
2838	2839	2006	Mar	Park West Road (East of Park West Av)	EB	660	450	-32%	8.9	138	61	-56%	7.7	798	511	-36%	11.2
4442	4441	2006	Mar	Nangor Road (East of Park West Av)	EB	921	1015	10%	3.0	180	126	-30%	4.4	1101	1141	4%	1.2
4229	4213	2005	15/11	Naas Rd (East of M50)	EB	2625	2913	11%	5.5	402	492	22%	4.3	3027	3405	12%	6.7
4171	4163	2006	Oct	Tallaght Rd (East of M50)	EB	1255	666	-47%	19.0	180	113	-37%	5.5	1435	779	-46%	19.7
4017	4016	2006	May	Firhouse Rd (East of M50)	EB	952	1200	26%	7.6	21	19	-11%	0.5	973	1219	25%	7.4
4033	4032	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	EB	217	108	-50%	8.5	0	1	#DIV/0!	1.5	217	109	-50%	8.4
4034	4035	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	EB	511	175	-66%	18.1	51	20	-61%	5.2	562	195	-65%	18.9
4068	4067	2005	15/11	R116 Edmonstown Rd (North of M50)	NB	98	202	106%	8.5	0	40	#DIV/0!	8.9	98	242	147%	11.0
4073	4072	2005	16/11	Whitechurch Rd (North of M50)	NB	123	125	2%	0.2	0	5	#DIV/0!	3.2	123	130	6%	0.6
5117	5124	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	NB	772	199	-74%	26.0	63	1	-99%	11.0	835	200	-76%	27.9
5124	5119	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	NB	678	584	-14%	3.7	90	112	25%	2.2	768	696	-9%	2.7
5137	5136	2006	21/03	Sandyford Road (South of M50)	NB	700	543	-22%	6.3	39	121	210%	9.1	739	663	-10%	2.9
5167	5166	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	NB	514	736	43%	8.9	57	33	-41%	3.5	571	770	35%	7.7
5176	5175	2005	06/04	South Ave (North of Lower Kilmacud Rd)	NB	348	148	-58%	12.7	9	11	24%	0.7	357	159	-55%	12.3
9968	5018	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	NB	945	2026	114%	28.0	75	100	33%	2.7	1020	2126	108%	27.9
5048	5047	2005	19/01	Temple Hill (North of Monksstown Rd)	NB	1332	1625	22%	7.6	105	94	-11%	1.1	1437	1719	20%	7.1
Total						23605	25525	8%	12	3290	3360	2%	1	26895	28885	7%	12

Outer Cordon - All Counts

AM Peak (0800-0900) - Outbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3505	3504	2005	09/11	Main St (north of Strand Rd)	NB	682	280	-59%	18.3	138	96	-31%	3.9	820	375	-54%	18.2
1665	1667	2005	09/11	Grange Rd (north of Toniegee Rd)	NB	1018	771	-24%	8.3	69	64	-8%	0.7	1087	835	-23%	8.1
1676	1677	2005	24/02	Malahide Rd (north of Toniegee Rd)	NB	922	814	-12%	3.7	168	169	1%	0.1	1090	983	-10%	3.3
1873	3531	2006	16/11	M1 (South of M50)	NB	1414	1389	-2%	0.7	408	408	0%	0.0	1822	1796	-1%	0.6
3640	3641	2005	24/11	Ballymun Rd (south of M50)	NB	1427	711	-50%	21.9	318	323	2%	0.3	1745	1034	-41%	19.1
1776	3751	2005	24/11	Finglas Rd (south of M50)	NB	1603	1485	-7%	3.0	330	353	7%	1.2	1933	1838	-5%	2.2
1906	1792	2007	19/04	Ratoath Rd (north of Nephin Rd)	NB	208	334	61%	7.6	21	150	616%	14.0	229	484	111%	13.5
3394	3431	2005	22/11	N3 Navan Rd (south of M50)	NB	1323	1290	-2%	0.9	216	212	-2%	0.3	1539	1502	-2%	0.9
3474	3475	2005	22/11	Castleknock Rd (south of M50)	NB	105	288	174%	13.1	12	7	-45%	1.8	117	294	152%	12.4
4329	4317	2006	16/11	N4 Lucan Rd (East of M50)	WB	2011	1992	-1%	0.4	282	263	-7%	1.2	2293	2255	-2%	0.8
4381	4378	2006	Mar	Ballyfermot Road (East of M50)	WB	591	685	16%	3.7	69	56	-19%	1.7	660	741	12%	3.0
2837	2834	2006	Mar	Cedar Brook Avenue (East of Park West Av)	WB	134	41	-70%	10.0	9	6	-30%	1.0	143	47	-67%	9.8
2839	2838	2006	Mar	Park West Road (East of Park West Av)	WB	219	57	-74%	13.8	132	42	-68%	9.6	351	99	-72%	16.8
4441	4442	2006	Mar	Nangor Road (East of Park West Av)	WB	595	508	-15%	3.7	138	197	43%	4.5	733	705	-4%	1.1
4213	4229	2005	15/11	Naas Rd (East of M50)	WB	1114	1424	28%	8.7	516	486	-6%	1.3	1630	1910	17%	6.6
4163	4171	2006	Oct	Tallaght Rd (East of M50)	WB	1971	2531	28%	11.8	96	108	12%	1.2	2067	2638	28%	11.8
4016	4017	2006	May	Firhouse Rd (East of M50)	WB	378	442	17%	3.2	27	20	-25%	1.4	405	462	14%	2.8
4032	4033	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	WB	235	211	-10%	1.6	6	3	-58%	1.7	241	213	-11%	1.8
4035	4034	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	WB	521	1096	110%	20.2	60	57	-5%	0.4	581	1154	99%	19.4
4067	4068	2005	15/11	R116 Edmonstown Rd (North of M50)	SB	100	139	39%	3.6	9	14	60%	1.6	109	154	41%	3.9
4072	4073	2005	16/11	Whitechurch Rd (North of M50)	SB	163	30	-81%	13.5	0	1	#DIV/0!	1.5	163	32	-81%	13.3
5124	5117	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	SB	336	289	-14%	2.7	33	32	-3%	0.2	369	321	-13%	2.6
5119	5124	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	SB	937	486	-48%	16.9	69	77	12%	1.0	1006	563	-44%	15.8
5136	5137	2006	21/03	Sandyford Road (South of M50)	SB	451	505	12%	2.5	54	32	-41%	3.4	505	537	6%	1.4
5166	5167	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	SB	490	465	-5%	1.2	30	26	-13%	0.7	520	491	-6%	1.3
5175	5176	2005	06/04	South Ave (North of Lower Kilmacud Rd)	SB	318	225	-29%	5.6	9	13	46%	1.2	327	238	-27%	5.3
5018	9968	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	SB	1077	1087	1%	0.3	126	59	-53%	7.0	1203	1146	-5%	1.7
5047	5048	2007	17/01	Temple Hill (North of Monksstown Rd)	SB	1088	728	-33%	12.0	72	136	89%	6.3	1160	864	-26%	9.3
Total						21431	20301	-5%	8	3417	3409	0%	0	24848	23710	-5%	7

Outer Cordon - All Counts

AM Peak (0900-1000) - Inbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3504	3505	2005	09/11	Main St (north of Strand Rd)	SB	316	516	63%	9.8	102	96	-6%	0.6	418	612	46%	8.5
1667	1665	2005	09/11	Grange Rd (north of Toniegee Rd)	SB	829	892	8%	2.2	57	56	-2%	0.2	886	948	7%	2.1
1677	1676	2005	24/02	Malahide Rd (north of Toniegee Rd)	SB	1036	827	-20%	6.9	225	217	-4%	0.6	1261	1043	-17%	6.4
3531	1873	2006	16/11	M1 (South of M50)	SB	1582	1285	-19%	7.8	288	287	-1%	0.1	1870	1572	-16%	7.2
3641	3640	2005	24/11	Ballymun Rd (south of M50)	SB	533	961	80%	15.7	210	220	5%	0.7	743	1181	59%	14.1
3751	1776	2005	24/11	Finglas Rd (south of M50)	SB	1279	1552	21%	7.3	474	482	2%	0.4	1753	2034	16%	6.5
1792	1906	2007	19/04	Ratoath Rd (north of Nephin Rd)	SB	653	958	47%	10.7	21	206	880%	17.4	674	1163	73%	16.1
3431	3394	2005	22/11	N3 Navan Rd (south of M50)	SB	1255	1604	28%	9.2	219	465	112%	13.3	1474	2068	40%	14.1
3475	3474	2005	22/11	Castleknock Rd (south of M50)	SB	803	955	19%	5.1	9	7	-21%	0.7	812	963	19%	5.1
4317	4329	2006	16/11	N4 Lucan Rd (East of M50)	EB	1102	861	-22%	7.7	501	522	4%	0.9	1603	1382	-14%	5.7
4378	4381	2006	Mar	Ballyfermot Road (East of M50)	EB	896	734	-18%	5.7	120	124	4%	0.4	1016	858	-16%	5.1
2834	2837	2006	Mar	Cedar Brook Avenue (East of Park West Av)	EB	91	129	42%	3.6	6	2	-70%	2.1	97	131	35%	3.2
2838	2839	2006	Mar	Park West Road (East of Park West Av)	EB	570	313	-45%	12.2	225	51	-77%	14.8	795	364	-54%	17.9
4442	4441	2006	Mar	Nangor Road (East of Park West Av)	EB	704	907	29%	7.2	300	179	-40%	7.8	1004	1086	8%	2.5
4229	4213	2005	15/11	Naas Rd (East of M50)	EB	2217	2600	17%	7.8	642	687	7%	1.7	2859	3287	15%	7.7
4171	4163	2006	Oct	Tallaght Rd (East of M50)	EB	1283	785	-39%	15.5	183	182	-1%	0.1	1466	967	-34%	14.3
4017	4016	2006	May	Firhouse Rd (East of M50)	EB	703	784	11%	3.0	30	18	-40%	2.5	733	801	9%	2.5
4033	4032	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	EB	169	97	-43%	6.2	0	0	#DIV/0!	0.4	169	97	-42%	6.2
4034	4035	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	EB	522	378	-28%	6.8	114	64	-44%	5.3	636	442	-30%	8.3
4068	4067	2005	15/11	R116 Edmonstown Rd (North of M50)	NB	84	58	-31%	3.0	0	0	#DIV/0!	#DIV/0!	84	58	-31%	3.0
4073	4072	2005	16/11	Whitechurch Rd (North of M50)	NB	52	34	-34%	2.7	0	12	#DIV/0!	4.8	52	46	-12%	0.9
5117	5124	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	NB	362	205	-43%	9.3	54	1	-99%	10.2	416	205	-51%	11.9
5124	5119	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	NB	790	620	-22%	6.4	90	91	1%	0.1	880	711	-19%	6.0
5137	5136	2006	21/03	Sandyford Road (South of M50)	NB	462	476	3%	0.6	36	48	33%	1.8	498	524	5%	1.1
5167	5166	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	NB	430	811	89%	15.3	39	34	-14%	0.9	469	844	80%	14.6
5176	5175	2005	06/04	South Ave (North of Lower Kilmacud Rd)	NB	205	165	-20%	3.0	9	11	19%	0.5	214	176	-18%	2.8
9968	5018	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	NB	1409	1783	27%	9.4	105	88	-16%	1.8	1514	1870	24%	8.7
5048	5047	2005	19/01	Temple Hill (North of Monksstown Rd)	NB	1288	1271	-1%	0.5	120	135	13%	1.3	1408	1406	0%	0.0
Total						21625	22559	4%	6	4179	4282	2%	2	25804	26841	4%	6

Outer Cordon - All Counts

AM Peak (0900-1000) - Outbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3505	3504	2005	09/11	Main St (north of Strand Rd)	NB	384	329	-14%	2.9	138	59	-57%	7.9	522	388	-26%	6.3
1665	1667	2005	09/11	Grange Rd (north of Toniegee Rd)	NB	791	759	-4%	1.2	69	75	8%	0.7	860	833	-3%	0.9
1676	1677	2005	24/02	Malahide Rd (north of Toniegee Rd)	NB	810	771	-5%	1.4	159	146	-8%	1.1	969	916	-5%	1.7
1873	3531	2006	16/11	M1 (South of M50)	NB	1201	1402	17%	5.6	393	385	-2%	0.4	1594	1787	12%	4.7
3640	3641	2005	24/11	Ballymun Rd (south of M50)	NB	1150	570	-50%	19.8	318	337	6%	1.1	1468	908	-38%	16.3
1776	3751	2005	24/11	Finglas Rd (south of M50)	NB	1523	1405	-8%	3.1	330	356	8%	1.4	1853	1761	-5%	2.2
1906	1792	2007	19/04	Ratoath Rd (north of Nephin Rd)	NB	184	270	47%	5.7	21	147	598%	13.7	205	417	103%	12.0
3394	3431	2005	22/11	N3 Navan Rd (south of M50)	NB	1439	1220	-15%	6.0	216	220	2%	0.3	1655	1440	-13%	5.5
3474	3475	2005	22/11	Castleknock Rd (south of M50)	NB	269	200	-25%	4.5	12	9	-21%	0.8	281	210	-25%	4.5
4329	4317	2006	16/11	N4 Lucan Rd (East of M50)	WB	1873	1906	2%	0.8	372	343	-8%	1.6	2245	2249	0%	0.1
4381	4378	2006	Mar	Ballyfermot Road (East of M50)	WB	593	627	6%	1.4	129	85	-34%	4.2	722	712	-1%	0.4
2837	2834	2006	Mar	Cedar Brook Avenue (East of Park West Av)	WB	125	94	-25%	3.0	3	0	-91%	2.1	128	94	-27%	3.2
2839	2838	2006	Mar	Park West Road (East of Park West Av)	WB	289	79	-72%	15.4	231	91	-60%	11.0	520	171	-67%	18.8
4441	4442	2006	Mar	Nangor Road (East of Park West Av)	WB	585	272	-53%	15.1	168	161	-4%	0.5	753	433	-42%	13.1
4213	4229	2005	15/11	Naas Rd (East of M50)	WB	979	1209	23%	6.9	516	598	16%	3.5	1495	1806	21%	7.7
4163	4171	2006	Oct	Tallaght Rd (East of M50)	WB	1535	2075	35%	12.7	141	144	2%	0.3	1676	2219	32%	12.3
4016	4017	2006	May	Firhouse Rd (East of M50)	WB	358	489	37%	6.4	15	13	-17%	0.7	373	502	34%	6.1
4032	4033	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	WB	159	76	-53%	7.7	9	0	-97%	4.1	168	76	-55%	8.4
4035	4034	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	WB	609	841	38%	8.6	102	23	-78%	10.0	711	864	21%	5.4
4067	4068	2005	15/11	R116 Edmonstown Rd (North of M50)	SB	89	78	-12%	1.2	3	15	392%	3.9	92	93	1%	0.1
4072	4073	2005	16/11	Whitechurch Rd (North of M50)	SB	98	29	-70%	8.6	3	8	173%	2.2	101	38	-63%	7.6
5124	5117	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	SB	201	233	16%	2.2	33	44	34%	1.8	234	278	19%	2.7
5119	5124	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	SB	579	418	-28%	7.2	90	38	-57%	6.4	669	456	-32%	9.0
5136	5137	2006	21/03	Sandyford Road (South of M50)	SB	435	445	2%	0.5	60	23	-61%	5.7	495	468	-5%	1.2
5166	5167	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	SB	330	305	-8%	1.4	48	55	15%	1.0	378	360	-5%	0.9
5175	5176	2005	06/04	South Ave (North of Lower Kilmacud Rd)	SB	263	204	-23%	3.9	3	5	83%	1.2	266	209	-21%	3.7
5018	9968	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	SB	918	826	-10%	3.1	156	157	1%	0.1	1074	984	-8%	2.8
5047	5048	2007	17/01	Temple Hill (North of Monksstown Rd)	SB	924	618	-33%	11.0	84	134	60%	4.8	1008	752	-25%	8.6
Total						18693	17749	-5%	7	3822	3673	-4%	2	22515	21422	-5%	7

Outer Cordon - Southern Screenline

Summary Table

		Count	Flow	Diff	per	GEH
0700-0800	IB	9271	7267	-2004	-22%	22.0
	OB	5547	4337	-1210	-22%	17.2
	Total	14818	11605	-3213	-22%	28.0
0800-0900	IB	9135	9007	-128	-1%	1.3
	OB	8656	8812	156	2%	1.7
	Total	17791	17819	28	0%	0.2
0900-1000	IB	8539	8148	-391	-5%	4.3
	OB	7245	7298	53	1%	0.6
	Total	15784	15446	-338	-2%	2.7

Outer Cordon - Southern Screenline

AM Peak (0700-0800) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
4171	4163	2006	Oct	Tallaght Rd (East of M50)	EB	1238	964	-22%	8.2	129	135	5%	0.6	1367	1100	-20%	7.6
4017	4016	2006	May	Firhouse Rd (East of M50)	EB	1234	675	-45%	18.1	48	24	-49%	3.9	1282	699	-45%	18.5
4033	4032	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	EB	162	11	-93%	16.3	9	0	-100%	4.2	171	11	-94%	16.8
4034	4035	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	EB	583	377	-35%	9.4	54	33	-39%	3.2	637	411	-36%	9.9
4068	4067	2005	15/11	R116 Edmonstown Rd (North of M50)	NB	26	97	271%	9.0	0	1	#DIV/0!	1.1	26	97	274%	9.1
4073	4072	2005	16/11	Whitechurch Rd (North of M50)	NB	42	15	-63%	5.0	0	7	#DIV/0!	3.7	42	22	-47%	3.5
5117	5124	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	NB	483	102	-79%	22.2	21	1	-97%	6.2	504	103	-80%	23.0
5124	5119	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	NB	720	787	9%	2.4	48	78	62%	3.8	768	865	13%	3.4
5137	5136	2006	21/03	Sandyford Road (South of M50)	NB	582	445	-24%	6.1	36	42	15%	0.9	618	486	-21%	5.6
5167	5166	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	NB	454	542	19%	3.9	39	17	-57%	4.2	493	559	13%	2.9
5176	5175	2005	06/04	South Ave (North of Lower Kilmacud Rd)	NB	261	85	-68%	13.4	3	8	177%	2.2	264	93	-65%	12.8
9968	5018	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	NB	1461	1563	7%	2.6	93	40	-57%	6.4	1554	1604	3%	1.3
5048	5047	2005	19/01	Temple Hill (North of Monksstown Rd)	NB	1473	1141	-23%	9.2	72	78	8%	0.6	1545	1218	-21%	8.8
Total						8719	6804	-22%	22	552	464	-16%	4	9271	7267	-22%	22

AM Peak (0700-0800) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
4163	4171	2006	Oct	Tallaght Rd (East of M50)	WB	1391	1355	-3%	1.0	75	133	78%	5.7	1466	1488	2%	0.6
4016	4017	2006	May	Firhouse Rd (East of M50)	WB	124	140	13%	1.4	15	12	-22%	0.9	139	152	9%	1.1
4032	4033	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	WB	178	0	-100%	18.9	3	0	-100%	2.4	181	0	-100%	19.0
4035	4034	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	WB	559	537	-4%	0.9	39	20	-49%	3.6	598	557	-7%	1.7
4067	4068	2005	15/11	R116 Edmonstown Rd (North of M50)	SB	58	65	12%	0.9	21	6	-73%	4.2	79	70	-11%	1.0
4072	4073	2005	16/11	Whitechurch Rd (North of M50)	SB	87	9	-89%	11.2	0	2	#DIV/0!	2.0	87	11	-87%	10.8
5124	5117	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	SB	269	158	-41%	7.6	33	31	-7%	0.4	302	188	-38%	7.3
5119	5124	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	SB	663	310	-53%	16.0	60	29	-52%	4.7	723	339	-53%	16.7
5136	5137	2006	21/03	Sandyford Road (South of M50)	SB	230	115	-50%	8.7	30	17	-45%	2.8	260	132	-49%	9.2
5166	5167	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	SB	222	163	-26%	4.2	18	54	198%	6.0	240	217	-10%	1.5
5175	5176	2005	06/04	South Ave (North of Lower Kilmacud Rd)	SB	76	149	96%	6.9	0	5	#DIV/0!	3.2	76	154	103%	7.3
5018	9968	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	SB	727	503	-31%	9.0	81	64	-21%	2.0	808	567	-30%	9.2
5047	5048	2007	17/01	Temple Hill (North of Monksstown Rd)	SB	474	349	-26%	6.2	114	113	-1%	0.1	588	462	-21%	5.5
Total						5058	3853	-24%	18	489	484	-1%	0	5547	4337	-22%	17

Outer Cordon - Southern Screenline

AM Peak (0800-0900) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
4171	4163	2006	Oct	Tallaght Rd (East of M50)	EB	1255	666	-47%	19.0	180	113	-37%	5.5	1435	779	-46%	19.7
4017	4016	2006	May	Firhouse Rd (East of M50)	EB	952	1200	26%	7.6	21	19	-11%	0.5	973	1219	25%	7.4
4033	4032	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	EB	217	108	-50%	8.5	0	1	#DIV/0!	1.5	217	109	-50%	8.4
4034	4035	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	EB	511	175	-66%	18.1	51	20	-61%	5.2	562	195	-65%	18.9
4068	4067	2005	15/11	R116 Edmonstown Rd (North of M50)	NB	98	202	106%	8.5	0	40	#DIV/0!	8.9	98	242	147%	11.0
4073	4072	2005	16/11	Whitechurch Rd (North of M50)	NB	123	125	2%	0.2	0	5	#DIV/0!	3.2	123	130	6%	0.6
5117	5124	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	NB	772	199	-74%	26.0	63	1	-99%	11.0	835	200	-76%	27.9
5124	5119	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	NB	678	584	-14%	3.7	90	112	25%	2.2	768	696	-9%	2.7
5137	5136	2006	21/03	Sandyford Road (South of M50)	NB	700	543	-22%	6.3	39	121	210%	9.1	739	663	-10%	2.9
5167	5166	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	NB	514	736	43%	8.9	57	33	-41%	3.5	571	770	35%	7.7
5176	5175	2005	06/04	South Ave (North of Lower Kilmacud Rd)	NB	348	148	-58%	12.7	9	11	24%	0.7	357	159	-55%	12.3
9968	5018	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	NB	945	2026	114%	28.0	75	100	33%	2.7	1020	2126	108%	27.9
5048	5047	2005	19/01	Temple Hill (North of Monskstown Rd)	NB	1332	1625	22%	7.6	105	94	-11%	1.1	1437	1719	20%	7.1
Total						8445	8337	-1%	1	690	670	-3%	1	9135	9007	-1%	1

AM Peak (0800-0900) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
4163	4171	2006	Oct	Tallaght Rd (East of M50)	WB	1971	2531	28%	11.8	96	108	12%	1.2	2067	2638	28%	11.8
4016	4017	2006	May	Firhouse Rd (East of M50)	WB	378	442	17%	3.2	27	20	-25%	1.4	405	462	14%	2.8
4032	4033	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	WB	235	211	-10%	1.6	6	3	-58%	1.7	241	213	-11%	1.8
4035	4034	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	WB	521	1096	110%	20.2	60	57	-5%	0.4	581	1154	99%	19.4
4067	4068	2005	15/11	R116 Edmonstown Rd (North of M50)	SB	100	139	39%	3.6	9	14	60%	1.6	109	154	41%	3.9
4072	4073	2005	16/11	Whitechurch Rd (North of M50)	SB	163	30	-81%	13.5	0	1	#DIV/0!	1.5	163	32	-81%	13.3
5124	5117	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	SB	336	289	-14%	2.7	33	32	-3%	0.2	369	321	-13%	2.6
5119	5124	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	SB	937	486	-48%	16.9	69	77	12%	1.0	1006	563	-44%	15.8
5136	5137	2006	21/03	Sandyford Road (South of M50)	SB	451	505	12%	2.5	54	32	-41%	3.4	505	537	6%	1.4
5166	5167	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	SB	490	465	-5%	1.2	30	26	-13%	0.7	520	491	-6%	1.3
5175	5176	2005	06/04	South Ave (North of Lower Kilmacud Rd)	SB	318	225	-29%	5.6	9	13	46%	1.2	327	238	-27%	5.3
5018	9968	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	SB	1077	1087	1%	0.3	126	59	-53%	7.0	1203	1146	-5%	1.7
5047	5048	2007	17/01	Temple Hill (North of Monskstown Rd)	SB	1088	728	-33%	12.0	72	136	89%	6.3	1160	864	-26%	9.3
Total						8065	8234	2%	2	591	579	-2%	1	8656	8812	2%	2

Outer Cordon - Southern Screenline

AM Peak (0900-1000) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
4171	4163	2006	Oct	Tallaght Rd (East of M50)	EB	1283	785	-39%	15.5	183	182	-1%	0.1	1466	967	-34%	14.3
4017	4016	2006	May	Firhouse Rd (East of M50)	EB	703	784	11%	3.0	30	18	-40%	2.5	733	801	9%	2.5
4033	4032	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	EB	169	97	-43%	6.2	0	0	#DIV/0!	0.4	169	97	-42%	6.2
4034	4035	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	EB	522	378	-28%	6.8	114	64	-44%	5.3	636	442	-30%	8.3
4068	4067	2005	15/11	R116 Edmonstown Rd (North of M50)	NB	84	58	-31%	3.0	0	0	#DIV/0!	#DIV/0!	84	58	-31%	3.0
4073	4072	2005	16/11	Whitechurch Rd (North of M50)	NB	52	34	-34%	2.7	0	12	#DIV/0!	4.8	52	46	-12%	0.9
5117	5124	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	NB	362	205	-43%	9.3	54	1	-99%	10.2	416	205	-51%	11.9
5124	5119	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	NB	790	620	-22%	6.4	90	91	1%	0.1	880	711	-19%	6.0
5137	5136	2006	21/03	Sandyford Road (South of M50)	NB	462	476	3%	0.6	36	48	33%	1.8	498	524	5%	1.1
5167	5166	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	NB	430	811	89%	15.3	39	34	-14%	0.9	469	844	80%	14.6
5176	5175	2005	06/04	South Ave (North of Lower Kilmacud Rd)	NB	205	165	-20%	3.0	9	11	19%	0.5	214	176	-18%	2.8
9968	5018	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	NB	1409	1783	27%	9.4	105	88	-16%	1.8	1514	1870	24%	8.7
5048	5047	2005	19/01	Temple Hill (North of Monskstown Rd)	NB	1288	1271	-1%	0.5	120	135	13%	1.3	1408	1406	0%	0.0
Total						7759	7466	-4%	3	780	682	-13%	4	8539	8148	-5%	4

AM Peak (0900-1000) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
4163	4171	2006	Oct	Tallaght Rd (East of M50)	WB	1535	2075	35%	12.7	141	144	2%	0.3	1676	2219	32%	12.3
4016	4017	2006	May	Firhouse Rd (East of M50)	WB	358	489	37%	6.4	15	13	-17%	0.7	373	502	34%	6.1
4032	4033	2006	Oct	Knocklyon Rd (East of Scholarstown Rd)	WB	159	76	-53%	7.7	9	0	-97%	4.1	168	76	-55%	8.4
4035	4034	2006	Oct	Scholarstown Rd (East of Ballycullen Rd)	WB	609	841	38%	8.6	102	23	-78%	10.0	711	864	21%	5.4
4067	4068	2005	15/11	R116 Edmonstown Rd (North of M50)	SB	89	78	-12%	1.2	3	15	392%	3.9	92	93	1%	0.1
4072	4073	2005	16/11	Whitechurch Rd (North of M50)	SB	98	29	-70%	8.6	3	8	173%	2.2	101	38	-63%	7.6
5124	5117	2005	16/11	Balintyre Walk (West of Southern Cross Rdbt)	SB	201	233	16%	2.2	33	44	34%	1.8	234	278	19%	2.7
5119	5124	2005	16/11	Ballinteer Rd (North of Southern Cross Rdbt)	SB	579	418	-28%	7.2	90	38	-57%	6.4	669	456	-32%	9.0
5136	5137	2006	21/03	Sandyford Road (South of M50)	SB	435	445	2%	0.5	60	23	-61%	5.7	495	468	-5%	1.2
5166	5167	2005	06/04	Lower Kilmacud Rd (South of Drummartin Rd)	SB	330	305	-8%	1.4	48	55	15%	1.0	378	360	-5%	0.9
5175	5176	2005	06/04	South Ave (North of Lower Kilmacud Rd)	SB	263	204	-23%	3.9	3	5	83%	1.2	266	209	-21%	3.7
5018	9968	2005	06/04	Stillmorgan Rd (North of Lower Kilmacud Rd)	SB	918	826	-10%	3.1	156	157	1%	0.1	1074	984	-8%	2.8
5047	5048	2007	17/01	Temple Hill (North of Monskstown Rd)	SB	924	618	-33%	11.0	84	134	60%	4.8	1008	752	-25%	8.6
Total						6498	6636	2%	2	747	661	-11%	3	7245	7298	1%	1

Outer Cordon - Western Screenline

Summary Table

		Count	Flow	Diff	per	GEH
0700-0800	IB	9673	10985	1312	14%	12.9
	OB	6467	7063	596	9%	7.3
	Total	16140	18048	1908	12%	14.6
0800-0900	IB	11035	11886	851	8%	8.0
	OB	6065	6127	62	1%	0.8
	Total	17100	18013	913	5%	6.9
0900-1000	IB	10334	11303	969	9%	9.3
	OB	6509	5725	-784	-12%	10.0
	Total	16843	17028	185	1%	1.4

Outer Cordon - Western Screenline

AM Peak (0700-0800) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1792	1906	2007	19/04	Ratoath Rd (north of Nephin Rd)	SB	686	959	-40%	9.5	33	128	-288%	10.6	719	1087	-51%	12.2
3431	3394	2005	22/11	N3 Navan Rd (south of M50)	SB	1031	1697	-65%	18.0	174	337	-94%	10.2	1205	2034	-69%	20.6
3475	3474	2005	22/11	Castleknoock Rd (south of M50)	SB	873	931	-7%	1.9	12	10	13%	0.5	885	941	-6%	1.9
4317	4329	2006	16/11	N4 Lucan Rd (East of M50)	EB	983	742	24%	8.2	636	455	28%	7.7	1619	1198	26%	11.2
4378	4381	2006	Mar	Ballyfermot Road (East of M50)	EB	988	868	12%	3.9	105	112	-6%	0.6	1093	980	10%	3.5
2834	2837	2006	Mar	Cedar Brook Avenue (East of Park West Av)	EB	97	68	30%	3.2	9	1	93%	3.8	106	69	35%	4.0
2838	2839	2006	Mar	Park West Road (East of Park West Av)	EB	483	279	42%	10.4	102	40	61%	7.4	585	319	45%	12.5
4442	4441	2006	Mar	Nangor Road (East of Park West Av)	EB	916	949	-4%	1.1	150	127	16%	2.0	1066	1076	-1%	0.3
4229	4213	2005	15/11	Naas Rd (East of M50)	EB	1966	2697	-37%	15.1	429	584	-36%	6.9	2395	3281	-37%	16.6
Total						8023	9191	-15%	13	1650	1794	-9%	3	9673	10985	-14%	13

AM Peak (0700-0800) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1906	1792	2007	19/04	Ratoath Rd (north of Nephin Rd)	NB	113	282	-149%	12.0	15	65	-334%	7.9	128	347	-171%	14.2
3394	3431	2005	22/11	N3 Navan Rd (south of M50)	NB	1256	1007	20%	7.4	135	400	-196%	16.2	1391	1407	-1%	0.4
3474	3475	2005	22/11	Castleknoock Rd (south of M50)	NB	142	144	-1%	0.2	0	13	#DIV/0!	5.1	142	157	-11%	1.2
4329	4317	2006	16/11	N4 Lucan Rd (East of M50)	WB	1782	1861	-4%	1.9	273	267	2%	0.3	2055	2128	-4%	1.6
4381	4378	2006	Mar	Ballyfermot Road (East of M50)	WB	440	512	-16%	3.3	90	56	38%	4.0	530	567	-7%	1.6
2837	2834	2006	Mar	Cedar Brook Avenue (East of Park West Av)	WB	79	77	2%	0.2	9	1	87%	3.5	88	79	11%	1.0
2839	2838	2006	Mar	Park West Road (East of Park West Av)	WB	170	90	47%	7.0	108	80	26%	2.9	278	170	39%	7.3
4441	4442	2006	Mar	Nangor Road (East of Park West Av)	WB	347	323	7%	1.3	66	112	-69%	4.8	413	435	-5%	1.1
4213	4229	2005	15/11	Naas Rd (East of M50)	WB	992	1205	-21%	6.4	450	569	-26%	5.3	1442	1774	-23%	8.3
Total						5321	5502	-3%	2	1146	1562	-36%	11	6467	7063	-9%	7

Outer Cordon - Western Screenline

AM Peak (0800-0900) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1792	1906	2007	19/04	Ratoath Rd (north of Nephin Rd)	SB	802	1069	-33%	8.7	12	135	-1023%	14.3	814	1203	-48%	12.3
3431	3394	2005	22/11	N3 Navan Rd (south of M50)	SB	1494	1614	-8%	3.0	156	226	-45%	5.1	1650	1841	-12%	4.6
3475	3474	2005	22/11	Castleknoock Rd (south of M50)	SB	679	961	-42%	9.9	3	9	-187%	2.3	682	970	-42%	10.0
4317	4329	2006	16/11	N4 Lucan Rd (East of M50)	EB	1143	1016	11%	3.9	627	539	14%	3.7	1770	1555	12%	5.3
4378	4381	2006	Mar	Ballyfermot Road (East of M50)	EB	989	806	19%	6.1	99	108	-10%	0.9	1088	914	16%	5.5
2834	2837	2006	Mar	Cedar Brook Avenue (East of Park West Av)	EB	102	339	-233%	16.0	3	7	-131%	1.8	105	346	-230%	16.1
2838	2839	2006	Mar	Park West Road (East of Park West Av)	EB	660	450	32%	8.9	138	61	56%	7.7	798	511	36%	11.2
4442	4441	2006	Mar	Nangor Road (East of Park West Av)	EB	921	1015	-10%	3.0	180	126	30%	4.4	1101	1141	-4%	1.2
4229	4213	2005	15/11	Naas Rd (East of M50)	EB	2625	2913	-11%	5.5	402	492	-22%	4.3	3027	3405	-12%	6.7
Total						9415	10183	-8%	8	1620	1703	-5%	2	11035	11886	-8%	8

AM Peak (0800-0900) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1906	1792	2007	19/04	Ratoath Rd (north of Nephin Rd)	NB	208	334	-61%	7.6	21	150	-616%	14.0	229	484	-111%	13.5
3394	3431	2005	22/11	N3 Navan Rd (south of M50)	NB	1323	1290	2%	0.9	216	212	2%	0.3	1539	1502	2%	0.9
3474	3475	2005	22/11	Castleknoock Rd (south of M50)	NB	105	288	-174%	13.1	12	7	45%	1.8	117	294	-152%	12.4
4329	4317	2006	16/11	N4 Lucan Rd (East of M50)	WB	2011	1992	1%	0.4	282	263	7%	1.2	2293	2255	2%	0.8
4381	4378	2006	Mar	Ballyfermot Road (East of M50)	WB	591	685	-16%	3.7	69	56	19%	1.7	660	741	-12%	3.0
2837	2834	2006	Mar	Cedar Brook Avenue (East of Park West Av)	WB	134	41	70%	10.0	9	6	30%	1.0	143	47	67%	9.8
2839	2838	2006	Mar	Park West Road (East of Park West Av)	WB	219	57	74%	13.8	132	42	68%	9.6	351	99	72%	16.8
4441	4442	2006	Mar	Nangor Road (East of Park West Av)	WB	595	508	15%	3.7	138	197	-43%	4.5	733	705	4%	1.1
4213	4229	2005	15/11	Naas Rd (East of M50)	WB	1114	1424	-28%	8.7	516	486	6%	1.3	1630	1910	-17%	6.6
Total						6300	6618	-5%	4	1395	1419	-2%	1	7695	8037	-4%	4

Outer Cordon - Western Screenline

AM Peak (0900-1000) - Inbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	Differences	GEH
1792	1906	2007	19/04	Ratoath Rd (north of Nephin Rd)	SB	653	958	-47%	10.7	21	206	-880%	17.4	674	1163	489	16.1
3431	3394	2005	22/11	N3 Navan Rd (south of M50)	SB	1255	1604	-28%	9.2	219	465	-112%	13.3	1474	2068	594	14.1
3475	3474	2005	22/11	Castleknoock Rd (south of M50)	SB	803	955	-19%	5.1	9	7	21%	0.7	812	963	151	5.1
4317	4329	2006	16/11	N4 Lucan Rd (East of M50)	EB	1102	861	22%	7.7	501	522	-4%	0.9	1603	1382	-221	5.7
4378	4381	2006	Mar	Ballyfermot Road (East of M50)	EB	896	734	18%	5.7	120	124	-4%	0.4	1016	858	-158	5.1
2834	2837	2006	Mar	Cedar Brook Avenue (East of Park West Av)	EB	91	129	-42%	3.6	6	2	70%	2.1	97	131	34	3.2
2838	2839	2006	Mar	Park West Road (East of Park West Av)	EB	570	313	45%	12.2	225	51	77%	14.8	795	364	-431	17.9
4442	4441	2006	Mar	Nangor Road (East of Park West Av)	EB	704	907	-29%	7.2	300	179	40%	7.8	1004	1086	82	2.5
4229	4213	2005	15/11	Naas Rd (East of M50)	EB	2217	2600	-17%	7.8	642	687	-7%	1.7	2859	3287	428	7.7
Total						8291	9060	-9%	8	2043	2242	-10%	4	10334	11303	969	9

AM Peak (0900-1000) - Outbound direction

A Node	B Node	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
1906	1792	2007	19/04	Ratoath Rd (north of Nephin Rd)	NB	184	270	-47%	5.7	21	147	-598%	13.7	205	417	-103%	12.0
3394	3431	2005	22/11	N3 Navan Rd (south of M50)	NB	1439	1220	15%	6.0	216	220	-2%	0.3	1655	1440	13%	5.5
3474	3475	2005	22/11	Castleknoock Rd (south of M50)	NB	269	200	25%	4.5	12	9	21%	0.8	281	210	25%	4.5
4329	4317	2006	16/11	N4 Lucan Rd (East of M50)	WB	1873	1906	-2%	0.8	372	343	8%	1.6	2245	2249	0%	0.1
4381	4378	2006	Mar	Ballyfermot Road (East of M50)	WB	593	627	-6%	1.4	129	85	34%	4.2	722	712	1%	0.4
2837	2834	2006	Mar	Cedar Brook Avenue (East of Park West Av)	WB	125	94	25%	3.0	3	0	91%	2.1	128	94	27%	3.2
2839	2838	2006	Mar	Park West Road (East of Park West Av)	WB	289	79	72%	15.4	231	91	60%	11.0	520	171	67%	18.8
4441	4442	2006	Mar	Nangor Road (East of Park West Av)	WB	585	272	53%	15.1	168	161	4%	0.5	753	433	42%	13.1
4213	4229	2005	15/11	Naas Rd (East of M50)	WB	979	1209	-23%	6.9	516	598	-16%	3.5	1495	1806	-21%	7.7
Total						6336	5877	7%	6	1668	1654	1%	0	8004	7532	6%	5

Outer Cordon - Northern Screenline

Summary Table

	Count	Flow	Diff	per	GEH	
0700-0800	IB	6533	6363	-171	-3%	2.1
	OB	6554	5027	-1527	-23%	20.1
	Total	13087	11390	-1698	-13%	15.3
0800-0900	IB	6725	7992	1266	19%	14.8
	OB	8497	6861	-1636	-19%	18.7
	Total	15222	14852	-370	-2%	3.0
0900-1000	IB	6931	7390	459	7%	5.4
	OB	7266	6593	-673	-9%	8.1
	Total	14197	13984	-214	-2%	1.8

Outer Cordon - Northern Screenline

AM Peak (0700-0800) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3504	3505	2005	09/11	Main St (north of Strand Rd)	SB	127	299	136%	11.8	42	42	0%	0.0	169	341	102%	10.8
1667	1665	2005	09/11	Grange Rd (north of Toniegee Rd)	SB	464	685	48%	9.2	54	62	15%	1.1	518	747	44%	9.1
1677	1676	2005	24/02	Malahide Rd (north of Toniegee Rd)	SB	1110	895	-19%	6.8	126	165	31%	3.2	1236	1060	-14%	5.2
3531	1873	2006	16/11	M1 (South of M50)	SB	1928	837	-57%	29.3	207	203	-2%	0.3	2135	1041	-51%	27.5
3641	3640	2005	24/11	Ballymun Rd (south of M50)	SB	562	1044	86%	17.0	141	138	-2%	0.2	703	1182	68%	15.6
3751	1776	2005	24/11	Finglas Rd (south of M50)	SB	1406	1615	15%	5.4	367	377	3%	0.5	1772	1992	12%	5.1
Total						5597	5375	-4%	3	937	987	5%	2	6533	6363	-3%	2

AM Peak (0700-0800) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3505	3504	2005	09/11	Main St (north of Strand Rd)	NB	383	129	-66%	15.9	102	91	-11%	1.1	485	220	-55%	14.1
1665	1667	2005	09/11	Grange Rd (north of Toniegee Rd)	NB	587	406	-31%	8.1	60	61	2%	0.2	647	468	-28%	7.6
1676	1677	2005	24/02	Malahide Rd (north of Toniegee Rd)	NB	500	479	-4%	1.0	162	161	0%	0.1	662	640	-3%	0.9
1873	3531	2006	16/11	M1 (South of M50)	NB	1256	1306	4%	1.4	444	448	1%	0.2	1700	1754	3%	1.3
3640	3641	2005	24/11	Ballymun Rd (south of M50)	NB	1325	384	-71%	32.2	222	226	2%	0.3	1547	610	-61%	28.5
1776	3751	2005	24/11	Finglas Rd (south of M50)	NB	1312	1136	-13%	5.0	201	199	-1%	0.2	1513	1335	-12%	4.7
Total						5363	3840	-28%	22	1191	1187	0%	0	6554	5027	-23%	20

Outer Cordon - Northern Screenline

AM Peak (0800-0900) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3504	3505	2005	09/11	Main St (north of Strand Rd)	SB	314	726	131%	18.1	42	38	-8%	0.6	356	765	115%	17.3
1667	1665	2005	09/11	Grange Rd (north of Toniegee Rd)	SB	802	923	15%	4.1	42	36	-15%	1.0	844	958	14%	3.8
1677	1676	2005	24/02	Malahide Rd (north of Toniegee Rd)	SB	812	998	23%	6.2	96	103	7%	0.7	908	1101	21%	6.1
3531	1873	2006	16/11	M1 (South of M50)	SB	1722	1894	10%	4.0	210	193	-8%	1.2	1932	2086	8%	3.4
3641	3640	2005	24/11	Ballymun Rd (south of M50)	SB	570	976	71%	14.6	192	211	10%	1.3	762	1187	56%	13.6
3751	1776	2005	24/11	Finglas Rd (south of M50)	SB	1525	1488	-2%	1.0	398	406	2%	0.4	1923	1894	-2%	0.7
Total						5745	7005	22%	16	980	987	1%	0	6725	7992	19%	15

AM Peak (0800-0900) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3505	3504	2005	09/11	Main St (north of Strand Rd)	NB	682	280	-59%	18.3	138	96	-31%	3.9	820	375	-54%	18.2
1665	1667	2005	09/11	Grange Rd (north of Toniegee Rd)	NB	1018	771	-24%	8.3	69	64	-8%	0.7	1087	835	-23%	8.1
1676	1677	2005	24/02	Malahide Rd (north of Toniegee Rd)	NB	922	814	-12%	3.7	168	169	1%	0.1	1090	983	-10%	3.3
1873	3531	2006	16/11	M1 (South of M50)	NB	1414	1389	-2%	0.7	408	408	0%	0.0	1822	1796	-1%	0.6
3640	3641	2005	24/11	Ballymun Rd (south of M50)	NB	1427	711	-50%	21.9	318	323	2%	0.3	1745	1034	-41%	19.1
1776	3751	2005	24/11	Finglas Rd (south of M50)	NB	1603	1485	-7%	3.0	330	353	7%	1.2	1933	1838	-5%	2.2
Total						7066	5449	-23%	20	1431	1412	-1%	1	8497	6861	-19%	19

Outer Cordon - Northern Screenline

AM Peak (0900-1000) - Inbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3504	3505	2005	09/11	Main St (north of Strand Rd)	SB	316	516	63%	9.8	102	96	-6%	0.6	418	612	46%	8.5
1667	1665	2005	09/11	Grange Rd (north of Toniegee Rd)	SB	829	892	8%	2.2	57	56	-2%	0.2	886	948	7%	2.1
1677	1676	2005	24/02	Malahide Rd (north of Toniegee Rd)	SB	1036	827	-20%	6.9	225	217	-4%	0.6	1261	1043	-17%	6.4
3531	1873	2006	16/11	M1 (South of M50)	SB	1582	1285	-19%	7.8	288	287	-1%	0.1	1870	1572	-16%	7.2
3641	3640	2005	24/11	Ballymun Rd (south of M50)	SB	533	961	80%	15.7	210	220	5%	0.7	743	1181	59%	14.1
3751	1776	2005	24/11	Finglas Rd (south of M50)	SB	1279	1552	21%	7.3	474	482	2%	0.4	1753	2034	16%	6.5
Total						5575	6033	8%	6	1356	1358	0%	0	6931	7390	7%	5

AM Peak (0900-1000) - Outbound direction

A Node	Bnode	Year	Date	Location	Dir	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3505	3504	2005	09/11	Main St (north of Strand Rd)	NB	384	329	-14%	2.9	138	59	-57%	7.9	522	388	-26%	6.3
1665	1667	2005	09/11	Grange Rd (north of Toniegee Rd)	NB	791	759	-4%	1.2	69	75	8%	0.7	860	833	-3%	0.9
1676	1677	2005	24/02	Malahide Rd (north of Toniegee Rd)	NB	810	771	-5%	1.4	159	146	-8%	1.1	969	916	-5%	1.7
1873	3531	2006	16/11	M1 (South of M50)	NB	1201	1402	17%	5.6	393	385	-2%	0.4	1594	1787	12%	4.7
3640	3641	2005	24/11	Ballymun Rd (south of M50)	NB	1150	570	-50%	19.8	318	337	6%	1.1	1468	908	-38%	16.3
1776	3751	2005	24/11	Finglas Rd (south of M50)	NB	1523	1405	-8%	3.1	330	356	8%	1.4	1853	1761	-5%	2.2
Total						5859	5236	-11%	8	1407	1357	-4%	1	7266	6593	-9%	8

M50 Counts

Summary Table

		Count	Flow	Diff	per	GEH
0700 - 0800	Total	43225	36820	-6405	-15%	32.0
0800 - 0900	Total	40521	39555	-966	-2%	4.8
0900 - 1000	Total	39595	39486	-109	0%	0.5

AM Peak (0700-0800)

A Node	Bnode	Year	Date	Location	Direction	Light Vehicles				Heavy Goods Vehicles				Total			
						Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH	Calibration Count	Flow	% Diff	GEH
3533	3644	2006	Weekday	Turnapin M50-23	WB	2419	2447	-1%	0.6	631	644	-2%	0.5	3050	3091	-1%	0.7
3644	3533	2006	Weekday	Turnapin M50-23	EB	2270	1760	22%	11.4	674	683	-1%	0.3	2944	2443	17%	9.7
3642	3754	2006	Weekday	Finglas M50-22	WB	2251	2194	3%	1.2	835	788	6%	1.6	3085	2983	3%	1.9
3754	3642	2006	Weekday	Finglas M50-22	EB	3134	2485	21%	12.2	817	544	33%	10.5	3951	3029	23%	15.6
3752	3434	2006	Weekday	Blanch North M50-21	SB	2379	3037	-28%	12.6	793	498	37%	11.6	3172	3535	-11%	6.3
3434	3752	2006	Weekday	Blanch North M50-21	NB	3266	2792	15%	8.6	738	520	29%	8.7	4004	3312	17%	11.4
3432	3362	2006	Weekday	Blanch Toll M50-20	SB	2814	3322	-18%	9.2	938	0	100%	43.3	3752	3322	11%	7.2
3362	3432	2006	Weekday	Blanch Toll M50-20	NB	2849	2680	6%	3.2	950	0	100%	43.6	3798	2680	29%	19.6
4172	4091	2006	Weekday	Balrothery M50-16	SB	3196	2200	31%	19.2	612	646	-6%	1.4	3808	2846	25%	16.7
4091	4172	2006	Weekday	Balrothery M50-16	NB	3438	3035	12%	7.1	543	449	17%	4.2	3981	3484	12%	8.1
4096	4095	2006	Weekday	Ballinteer M50-15	SB	3105	2373	24%	14.0	490	490	0%	0.0	3595	2863	20%	12.9
4095	4096	2006	Weekday	Ballinteer M50-15	NB	3429	2582	25%	15.5	657	651	1%	0.2	4086	3233	21%	14.1
Total						34549	30907	11%	20	8676	5913	32%	32	43225	36820	15%	32

M50 Counts

AM Peak (0800-0900)

A Node	Bnode	Year	Date	Location	Direction	Light Vehicles				Heavy Goods Vehicles				Total			
						Callibratio n Count	Flow	% Diff	GEH	Callibratio n Count	Flow	% Diff	GEH	Callibratio n Count	Flow	% Diff	GEH
3533	3644	2006	Weekday	Turnapin M50-23	WB	2152	2420	-12%	5.6	639	635	1%	0.1	2791	3055	-9%	4.9
3644	3533	2006	Weekday	Turnapin M50-23	EB	2075	1733	16%	7.8	692	718	-4%	1.0	2767	2451	11%	6.2
3642	3754	2006	Weekday	Finglas M50-22	WB	2230	2537	-14%	6.3	743	744	0%	0.0	2974	3281	-10%	5.5
3754	3642	2006	Weekday	Finglas M50-22	EB	2854	2466	14%	7.5	847	662	22%	6.7	3700	3128	15%	9.8
3752	3434	2006	Weekday	Blanch North M50-21	SB	2444	3298	-35%	15.9	815	618	24%	7.3	3259	3916	-20%	11.0
3434	3752	2006	Weekday	Blanch North M50-21	NB	2958	2969	0%	0.2	878	578	34%	11.1	3835	3548	7%	4.7
3432	3362	2006	Weekday	Blanch Toll M50-20	SB	2708	3523	-30%	14.6	1004	281	72%	28.5	3712	3805	-2%	1.5
3362	3432	2006	Weekday	Blanch Toll M50-20	NB	2731	2816	-3%	1.6	1013	155	85%	35.5	3744	2971	21%	13.4
4172	4091	2006	Weekday	Balrothery M50-16	SB	2557	2074	19%	10.0	577	585	-1%	0.3	3134	2659	15%	8.8
4091	4172	2006	Weekday	Balrothery M50-16	NB	3274	3424	-5%	2.6	517	528	-2%	0.5	3791	3952	-4%	2.6
4096	4095	2006	Weekday	Ballinteer M50-15	SB	2596	2991	-15%	7.5	497	509	-2%	0.5	3093	3500	-13%	7.1
4095	4096	2006	Weekday	Ballinteer M50-15	NB	3035	2725	10%	5.8	685	565	18%	4.8	3720	3290	12%	7.3
Total						31614	32977	-4%	8	8906	6578	26%	26	40521	39555	2%	5

AM Peak (0900-1000)

A Node	Bnode	Year	Date	Location	Direction	Light Vehicles				Heavy Goods Vehicles				Total			
						Callibratio n Count	Flow	% Diff	GEH	Callibratio n Count	Flow	% Diff	GEH	Callibratio n Count	Flow	% Diff	GEH
3533	3644	2006	Weekday	Turnapin M50-23	WB	2030	2318	-14%	6.2	831	828	0%	0.1	2861	3147	-10%	5.2
3644	3533	2006	Weekday	Turnapin M50-23	EB	1898	1821	4%	1.8	851	857	-1%	0.2	2749	2678	3%	1.4
3642	3754	2006	Weekday	Finglas M50-22	WB	2267	2167	4%	2.1	1016	1006	1%	0.3	3284	3173	3%	1.9
3754	3642	2006	Weekday	Finglas M50-22	EB	2529	2494	1%	0.7	1035	662	36%	12.8	3564	3156	11%	7.0
3752	3434	2006	Weekday	Blanch North M50-21	SB	2384	3046	-28%	12.7	1069	724	32%	11.5	3452	3770	-9%	5.3
3434	3752	2006	Weekday	Blanch North M50-21	NB	2600	3100	-19%	9.4	1063	551	48%	18.0	3663	3651	0%	0.2
3432	3362	2006	Weekday	Blanch Toll M50-20	SB	2384	3416	-43%	19.2	1362	13	99%	51.5	3746	3429	8%	5.3
3362	3432	2006	Weekday	Blanch Toll M50-20	NB	2305	2995	-30%	13.4	1220	0	100%	49.4	3526	2995	15%	9.3
4172	4091	2006	Weekday	Balrothery M50-16	SB	2383	2087	12%	6.3	707	757	-7%	1.8	3090	2844	8%	4.5
4091	4172	2006	Weekday	Balrothery M50-16	NB	2716	3369	-24%	11.8	708	583	18%	4.9	3424	3952	-15%	8.7
4096	4095	2006	Weekday	Ballinteer M50-15	SB	2192	2609	-19%	8.5	650	650	0%	0.0	2843	3260	-15%	7.6
4095	4096	2006	Weekday	Ballinteer M50-15	NB	2617	2666	-2%	0.9	777	766	1%	0.4	3394	3432	-1%	0.7
Total						28306	32089	-13%	22	11290	7398	34%	40	39595	39486	0%	1

APPENDIX E

GEH STATISTICS AND CALIBRATION RESULTS OFF SCREENLINES

E1. GEH STATISTICS

Inner Cordon GEH proportions

		GEH Criteria % of Links		
Time Period	Direction	<5	<7.5	<10
07:00 - 08:00	IB	46%	75%	86%
	OB	46%	64%	75%
	Total	46%	70%	80%
08:00 - 09:00	IB	57%	61%	75%
	OB	61%	68%	82%
	Total	54%	64%	75%
09:00 - 10:00	IB	46%	61%	68%
	OB	43%	71%	79%
	Total	38%	55%	69%

Outer Cordon GEH proportions

		GEH Criteria % of Links		
Time Period	Direction	<5	<7.5	<10
07:00 - 08:00	IB	29%	57%	86%
	OB	50%	64%	79%
	Total	39%	61%	82%
08:00 - 09:00	IB	29%	57%	86%
	OB	50%	57%	68%
	Total	39%	57%	77%
09:00 - 10:00	IB	29%	57%	86%
	OB	50%	64%	79%
	Total	39%	61%	82%

Combined Cordon GEH proportions

		GEH Criteria % of Links		
Time Period	Direction	<5	<7.5	<10
07:00 - 08:00	IB	38%	66%	86%
	OB	48%	64%	77%
	Total	43%	65%	81%
08:00 - 09:00	IB	43%	59%	80%
	OB	55%	63%	75%
	Total	49%	61%	78%
09:00 - 10:00	IB	38%	59%	77%
	OB	46%	68%	79%
	Total	42%	63%	78%

M50 Cordon GEH proportions

		GEH Criteria % of Links		
Time Period	Direction	<5	<7.5	<10
07:00 - 08:00	Both	17%	33%	50%
08:00 - 09:00	Both	33%	67%	83%
09:00 - 10:00	Both	42%	75%	100%

All other Counts GEH proportions

		GEH Criteria % of Links		
Time Period	Direction	<5	<7.5	<10
07:00 - 08:00	Both	35%	50%	63%
08:00 - 09:00	Both	39%	55%	68%
09:00 - 10:00	Both	38%	56%	70%

All Counts GEH proportions

		GEH Criteria % of Links		
Time Period	Direction	<5	<7.5	<10
07:00 - 08:00	Both	36%	52%	65%
08:00 - 09:00	Both	40%	56%	69%
09:00 - 10:00	Both	39%	58%	72%

E2. OFF SCREENLINE COUNT ANALYSIS

Additional Count Comparisons not included in the Cordon Analysis

AM1 - 07:00 - 08:00

						AM1											
A Node	B Node	Location	Direction	Year	Date	HGV				Car				Total			
						Count	Model	% Diff	GEH	Count	Model	% Diff	Car	Count	Model	% Diff	Car
1101	1306	North Wall Quay	E to W	2006	Nov	404	460	14%	2.7	544	185	-66%	18.8	948	645	-32%	10.7
1102	2212	East Wall Rd / N Wall Quay / E Link Toll Bridge	To C	2006	18/05	249	159	-36%	6.3	917	696	-24%	7.8	1166	855	-27%	9.8
1103	1309	Sheriff St Upper	E to W	2006	Nov	134	342	156%	13.5	430	414	-4%	0.8	563	756	34%	7.5
1105	1106	East Wall Rd / Tolka Quay	To C	2006	18/05	261	220	-16%	2.7	310	231	-26%	4.8	571	451	-21%	5.3
1105	1121	East Wall Rd / Tolka Quay	To A	2006	18/05	396	445	12%	2.4	348	356	2%	0.4	744	801	8%	2.0
1106	1105	East Wall Rd / Tolka Quay	Fm C	2006	18/05	852	602	-29%	9.3	68	64	-5%	0.4	920	667	-28%	9.0
1113	1131	Ossory Road	N to S	2006	Nov	5	0	-100%	3.0	121	14	-89%	13.0	125	14	-89%	13.3
1121	1105	East Wall Rd / Tolka Quay	Fm A	2006	18/05	219	219	0%	0.0	628	608	-3%	0.8	847	827	-2%	0.7
1131	1113	Ossory Road	O	2006	Nov	6	0	-100%	3.5	84	94	12%	1.1	90	94	4%	0.4
1301	1302	Eden Quay	W to E	2005	22/02	369	397	8%	1.4	1103	452	-59%	23.3	1472	850	-42%	18.3
1301	1361	O'Connell Street	S to N	2005	22/02	126	22	-83%	12.1	500	439	-12%	2.8	626	461	-26%	7.1
1301	2001	O'Connell Bridge	N to S	2005	22/02	105	104	-1%	0.1	1022	1083	6%	1.9	1127	1187	5%	1.8
1302	1303		W to E	2005	22/02	372	398	7%	1.3	1173	394	-66%	27.8	1545	793	-49%	22.0
1302	1351	Marlborough St / Abbey St Lwr	Fm C	2006	17/05	0	0	#DIV/0!	#DIV/0!	25	59	136%	5.2	25	59	136%	5.2
1303	1304		W to E	2005	22/02	384	451	17%	3.3	1265	566	-55%	23.1	1649	1016	-38%	17.3
1303	1311	Abbey St Lwr / Beresford Pl	Fm C	2006	17/05	96	193	101%	8.1	1372	1131	-18%	6.8	1468	1324	-10%	3.8
1306	1101	North Wall Quay	O	2006	Nov	515	371	-28%	6.8	62	76	24%	1.8	576	447	-22%	5.7
1309	1103	Sheriff St Upper	O	2006	Nov	47	135	190%	9.3	273	218	-20%	3.5	319	352	10%	1.8
1312	1313	Abbey St Lwr / Beresford Pl	To D	2006	17/05	30	171	471%	14.1	752	1355	80%	18.6	782	1527	95%	21.9
1312	1341	Abbey St Lwr / Beresford Pl	To A	2006	17/05	84	89	5%	0.5	762	800	5%	1.4	846	888	5%	1.4
1333	1334	NORTH CIRCULAR ROAD (A4)	2 E to W	2006	May	126	119	-6%	0.6	494	190	-62%	16.5	620	309	-50%	14.5
1334	1333	NORTH CIRCULAR ROAD (A4)	1 W to E	2006	May	99	168	69%	5.9	820	415	-49%	16.3	919	583	-37%	12.3
1334	1394	North Circular Road (E)	E to W	2005	07/11	201	143	-29%	4.4	310	249	-20%	3.6	511	392	-23%	5.6
1346	1393	Gardiner Street Upper	E to W	2005	07/11	69	51	-27%	2.4	356	303	-15%	2.9	425	353	-17%	3.6
1351	1302	Marlborough St / Abbey St Lwr	To C	2006	17/05	9	0	-100%	4.2	103	0	-100%	14.3	112	0	-100%	14.9
1351	1311	Marlborough St / Abbey St Lwr	To D	2006	17/05	24	0	-100%	6.9	134	1	-99%	16.2	158	1	-99%	17.6
1352	1351	Marlborough St / Abbey St Lwr	Fm A	2006	17/05	21	0	-100%	6.5	207	192	-7%	1.0	228	192	-16%	2.5
1359	1392	Temple Street	E to W	2005	07/11	12	12	1%	0.0	139	266	91%	8.9	151	278	84%	8.7
1361	1301	O'Connell Street	N to S	2005	22/02	48	58	21%	1.4	448	682	52%	9.9	496	741	49%	9.8
1367	1391	North Frederick Street	E to W	2005	07/11	0	2	#DIV/0!	2.2	7	3	-54%	1.7	7	6	-19%	0.5
1372	1390	Granby Row	E to W	2005	07/11	36	1	-98%	8.3	183	62	-66%	11.0	219	62	-72%	13.2
1373	1301	BACHELOR'S WALK (A1)	1 E to W	2006	May	384	273	-29%	6.1	1311	776	-41%	16.6	1695	1050	-38%	17.4
1382	1377		W to E	2005	22/02	321	275	-14%	2.7	1749	911	-48%	23.0	2070	1186	-43%	21.9
1382	2005	Capel Street Bridge	N to S	2005	22/02	126	99	-21%	2.5	586	624	6%	1.5	712	723	2%	0.4
1383	1382	Capel Street	N to S	2005	22/02	144	118	-18%	2.2	649	634	-2%	0.6	793	753	-5%	1.4
1384	1383	Capel Street	N to S	2005	22/02	111	120	8%	0.9	563	606	8%	1.8	674	726	8%	2.0
1389	1390	Dorset Street Upper (S)	S to N	2005	07/11	99	95	-4%	0.4	537	282	-47%	12.6	636	377	-41%	11.5
1390	1391	Dorset Street Upper (N)	S to N	2005	07/11	102	96	-5%	0.6	621	186	-70%	21.6	723	283	-61%	19.6
1390	1406	St. Mary's Place	E to W	2005	07/11	21	20	-6%	0.3	95	188	98%	7.8	116	208	79%	7.2
1391	1390	Dorset Street Upper (N)	N to S	2005	07/11	132	128	-3%	0.3	769	270	-65%	21.9	901	398	-56%	19.7
1391	1392	Dorset Street Lower (N)	S to N	2005	07/11	102	109	7%	0.7	667	209	-69%	21.9	769	319	-59%	19.3
1392	1391	Dorset Street Lower (N)	N to S	2005	07/11	135	126	-7%	0.8	761	264	-65%	22.0	896	390	-57%	20.0
1392	1393	Dorset Street Lower (N)	S to N	2005	07/11	108	137	27%	2.7	698	324	-54%	16.6	806	461	-43%	13.7

Additional Count Comparisons not included in the Cordon Analysis

AM1 - 07:00 - 08:00

						AM1													
						HGV				Car				Total					
1392	1417	Eccles Street	E to W	2005	07/11	9	6	-39%	1.3	233	411	77%	9.9	242	417	72%	9.6		
1393	1346	Gardiner Street Upper	W to E	2005	07/11	195	32	-84%	15.3	732	554	-24%	7.0	927	585	-37%	12.4		
1393	1392	Dorset Street Lower (N)	N to S	2005	07/11	135	137	1%	0.1	908	739	-19%	5.9	1043	876	-16%	5.4		
1393	1394	Dorset Street Lower (N)	S to N	2005	07/11	180	186	3%	0.4	882	560	-36%	12.0	1062	746	-30%	10.5		
1393	1409	Synott Place	E to W	2005	07/11	9	4	-52%	1.8	155	114	-26%	3.5	164	118	-28%	3.8		
1394	1334	North Circular Road (E)	W to E	2005	07/11	174	142	-18%	2.5	359	485	35%	6.1	533	627	18%	3.9		
1394	1393	Dorset Street Lower (N)	N to S	2005	07/11	186	163	-12%	1.7	1319	968	-27%	10.4	1505	1131	-25%	10.3		
1394	1413	North Circular Road (W)	E to W	2005	07/11	165	143	-13%	1.8	278	218	-22%	3.8	443	361	-18%	4.1		
1395	1382	Ormond Quay	W to E	2005	22/02	285	256	-10%	1.7	1679	902	-46%	21.6	1964	1159	-41%	20.4		
1396	1383	Marys Street	W to E	2005	22/02	0	0	#DIV/0!	0.1	27	13	-54%	3.2	27	13	-53%	3.2		
1407	1391	Blessington Street	W to E	2005	07/11	12	13	8%	0.3	161	26	-84%	13.9	173	39	-77%	13.0		
1408	1415		0 from B	2007	19/04	0	4	#DIV/0!	2.8	100	87	-13%	1.4	100	91	-9%	1.0		
1409	1393	Synott Place	W to E	2005	07/11	147	7	-95%	15.9	363	372	3%	0.5	510	379	-26%	6.2		
1410	1411	Dorset Street Lower (N)	S to N	2005	07/11	246	219	-11%	1.8	940	662	-30%	9.8	1186	881	-26%	9.5		
1411	1410	Dorset Street Lower (N)	N to S	2005	07/11	231	242	5%	0.7	1696	1440	-15%	6.5	1927	1682	-13%	5.8		
1411	1851	Drumcondra Road Lower (S)	S to N	2005	07/11	249	227	-9%	1.4	916	691	-25%	7.9	1165	919	-21%	7.6		
1413	1394	North Circular Road (W)	W to E	2005	07/11	174	83	-52%	8.0	309	336	9%	1.5	483	419	-13%	3.0		
1414	1415		0 from A	2007	19/04	63	148	135%	8.3	482	372	-23%	5.3	545	520	-5%	1.1		
1415	1408		0 to B	2007	19/04	18	1	-94%	5.5	507	571	13%	2.7	525	572	9%	2.0		
1415	1414		0 to A	2007	19/04	45	98	117%	6.2	625	678	8%	2.1	670	776	16%	3.9		
1415	1416		0 to C	2007	19/04	57	151	165%	9.2	543	420	-23%	5.6	600	571	-5%	1.2		
1416	1415		0 from C	2007	19/04	57	101	78%	5.0	1093	1243	14%	4.4	1150	1344	17%	5.5		
1416	1428		0 from B	2007	19/04	51	151	197%	10.0	522	420	-20%	4.7	573	571	0%	0.1		
1417	1392	Eccles Street	W to E	2005	07/11	51	22	-58%	4.9	292	178	-39%	7.4	343	200	-42%	8.7		
1420	1468		0 from C	2007	19/04	3	13	350%	3.7	232	388	67%	8.9	235	402	71%	9.4		
1427	1428		0 from C	2007	19/04	66	109	66%	4.6	621	431	-31%	8.3	687	540	-21%	5.9		
1428	1416		0 to B	2007	19/04	42	101	141%	7.0	1056	1243	18%	5.5	1098	1344	22%	7.0		
1428	1427		0 to C	2007	19/04	30	77	156%	6.4	731	1041	42%	10.4	761	1117	47%	11.6		
1428	1431		0 Wbd	2007	Apr	54	145	169%	9.1	569	389	-32%	8.2	623	534	-14%	3.7		
1431	1428		0 Ebd	2007	Apr	42	101	141%	7.0	802	1018	27%	7.2	844	1119	33%	8.8		
1454	1464	Blackhall Place/ Blackhall Street	From C	2005	17/05	57	0	-100%	10.6	296	38	-87%	19.9	353	39	-89%	22.5		
1460	1465	Blackhall Place/ King Street North	From A	2005	17/05	54	36	-33%	2.7	423	343	-19%	4.1	477	379	-20%	4.7		
1461	1451		0 0	2007	24/04	138	180	30%	3.3	1117	810	-27%	9.9	1255	990	-21%	7.9		
1461	1462		0 0	2007	24/04	72	36	-49%	4.8	371	321	-14%	2.7	443	357	-19%	4.3		
1463	1464		0 from C	2007	24/04	69	36	-47%	4.5	369	320	-13%	2.6	438	357	-19%	4.1		
1464	1460	Blackhall Place/ Blackhall Street	To B	2005	17/05	54	37	-32%	2.6	417	359	-14%	3.0	471	395	-16%	3.6		
1464	1463	Blackhall Place/ Blackhall Street	To A	2005	17/05	45	0	-100%	9.5	260	0	-100%	22.8	305	0	-100%	24.7		
1465	1455	Blackhall Place/ King Street North	To C	2005	17/05	72	58	-20%	1.8	950	937	-1%	0.4	1022	995	-3%	0.9		
1465	1466	Blackhall Place/ King Street North	To B	2005	17/05	30	21	-31%	1.8	281	215	-24%	4.2	311	236	-24%	4.6		
1466	1456	Rosemount Terrace / Stoneybatter / Brunswick Street North	To B	2005	17/05	42	64	53%	3.0	548	526	-4%	0.9	590	590	0%	0.0		
1466	1465	Blackhall Place/ King Street North	From B	2005	17/05	45	41	-10%	0.7	871	778	-11%	3.3	916	818	-11%	3.3		
1466	1467	Rosemount Terrace / Stoneybatter / Brunswick Street North	To A	2005	17/05	18	18	-2%	0.1	183	117	-36%	5.4	201	135	-33%	5.1		
1466	1478	Rosemount Terrace / Stoneybatter / Brunswick Street North	To D	2005	17/05	3	0	-84%	1.9	86	15	-83%	10.1	89	15	-83%	10.2		

Additional Count Comparisons not included in the Cordon Analysis

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					HGV				Car				Total				
1467	1466	Rosemount Terrace / Stoneybatter / Brunswick Street North	From A	2005	17/05	63	32	-50%	4.6	1070	613	-43%	15.8	1133	645	-43%	16.4
1467	1468		0 from B	2007	19/04	51	18	-65%	5.7	216	131	-39%	6.4	267	149	-44%	8.2
1467	1473		0 to D	2007	24/04	0	0	#DIV/0!	#DIV/0!	39	3	-94%	8.0	39	3	-94%	8.0
1468	1420		0 to C	2007	19/04	9	5	-39%	1.3	30	56	86%	3.9	39	61	57%	3.1
1468	1467		0 to B	2007	19/04	54	31	-42%	3.5	799	576	-28%	8.5	853	608	-29%	9.1
1468	1469		0 to A	2007	19/04	45	20	-57%	4.5	187	104	-44%	6.9	232	124	-47%	8.1
1469	1468		0 from A	2007	19/04	54	20	-63%	5.6	568	189	-67%	19.5	622	209	-66%	20.2
1473	1467	Stoneybatter / Manor Place / Kirwan Street	From A	2005	17/05	3	0	-99%	2.4	202	18	-91%	17.6	205	18	-91%	17.7
1474	1461		0 0	2007	24/04	174	200	15%	1.9	1248	1020	-18%	6.8	1422	1220	-14%	5.6
1478	1466	Rosemount Terrace / Stoneybatter / Brunswick Street North	From D	2005	17/05	21	71	236%	7.3	243	598	146%	17.3	264	669	153%	18.7
1651	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SE to NW	2005	24/02	42	41	-2%	0.1	361	381	6%	1.0	403	422	5%	0.9
1667	3511	B5	2 S to N	2005	09/11	177	54	-70%	11.5	1338	110	-92%	45.6	1515	164	-89%	46.6
1675	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SW to NE	2005	24/02	165	129	-22%	3.0	454	221	-51%	12.7	619	350	-44%	12.2
1676	1651	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NW to SE	2005	24/02	84	90	7%	0.6	627	383	-39%	10.9	711	472	-34%	9.8
1676	1675	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NE to SW	2005	24/02	114	86	-25%	2.8	786	641	-18%	5.4	900	727	-19%	6.1
1676	1819	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SE to NW	2005	24/02	24	1	-97%	6.6	321	84	-74%	16.6	345	85	-75%	17.7
1711	1851	Whitworth Street	W to E	2005	07/11	168	137	-18%	2.5	509	493	-3%	0.7	677	630	-7%	1.8
1819	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NW to SE	2005	24/02	51	1	-98%	9.8	309	71	-77%	17.2	360	72	-80%	19.6
1829	1846	B6	2 S to N	2005	23/11	6	33	446%	6.1	413	171	-59%	14.2	419	203	-51%	12.2
1846	1829	CLONSHAUGH ROAD	1 N to S	2005	23/11	6	23	276%	4.4	205	341	66%	8.2	211	364	72%	9.0
1851	1411	Drumcondra Road Lower (S)	N to S	2005	07/11	270	242	-11%	1.8	1690	1438	-15%	6.4	1960	1680	-14%	6.6
1851	1711	Whitworth Street	E to W	2005	07/11	84	87	4%	0.4	120	108	-10%	1.2	204	195	-4%	0.6
1851	1852	DRUMCONDRA ROAD LOWER / WHITWORTH ROAD	S to N	2005	07/11	192	199	4%	0.5	816	711	-13%	3.8	1008	910	-10%	3.2
1852	1851	Drumcondra Road Lower (N)	N to S	2005	07/11	129	160	24%	2.6	1205	1008	-16%	5.9	1334	1168	-12%	4.7
1855	1856	Drumcondra Road Upper	S to N	2005	06/11	135	294	118%	10.9	822	842	2%	0.7	957	1136	19%	5.5
1856	1855	Drumcondra Road Upper	N to S	2005	06/11	105	103	-2%	0.2	971	1250	29%	8.4	1076	1353	26%	8.0
1859	1861	M1 (A3)	1 S to N	2006	May	321	328	2%	0.4	870	1149	32%	8.8	1191	1477	24%	7.8
1861	1859	M1 (A3)	2 N to S	2006	May	99	0	-100%	14.1	843	0	-100%	41.1	942	0	-100%	43.4
1861	1871		0 Nbd	2007	Apr	87	301	246%	15.4	884	873	-1%	0.4	971	1174	21%	6.2
1871	1861		0 Sbd	2007	Apr	57	0	-100%	10.7	1365	0	-100%	52.2	1422	0	-100%	53.3
1901	1911		0 from A	2007	19/04	6	25	310%	4.8	157	256	63%	6.9	163	281	72%	7.9
1904	1906		0 from A	2007	19/04	30	36	21%	1.1	511	160	-69%	19.2	541	196	-64%	17.9
1906	1904		0 to A	2007	19/04	36	77	114%	5.5	559	646	16%	3.6	595	723	22%	5.0
1906	1914		0 from A	2007	19/04	6	42	599%	7.3	267	241	-10%	1.6	273	283	4%	0.6
1906	1915		0 from A	2007	17/04	60	44	-26%	2.2	724	305	-58%	18.5	784	350	-55%	18.2
1908	1911		0 from B	2007	19/04	54	122	126%	7.2	344	241	-30%	6.0	398	363	-9%	1.8
1911	1901		0 to A	2007	19/04	3	79	2519%	11.8	44	135	207%	9.6	47	214	354%	14.6
1911	1908		0 to B	2007	19/04	42	48	15%	0.9	685	595	-13%	3.6	727	643	-12%	3.2
1911	1912		0 to C	2007	19/04	51	96	88%	5.3	325	259	-20%	3.9	376	355	-6%	1.1
1912	1911		0 from C	2007	19/04	36	56	56%	3.0	553	701	27%	5.9	589	757	29%	6.5
1912	1913		0 from B	2007	19/04	69	95	37%	2.8	390	257	-34%	7.4	459	352	-23%	5.3
1913	1903		0 to A	2007	19/04	0	12	#DIV/0!	5.0	34	65	91%	4.4	34	77	127%	5.8
1913	1912		0 to B	2007	19/04	45	63	41%	2.5	639	747	17%	4.1	684	811	19%	4.6

Additional Count Comparisons not included in the Cordon Analysis

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										HGV			Car			Total			
1913	1914		0	from B	2007	19/04	69	83	21%	1.6	369	195	-47%	10.3	438	279	-36%	8.4	
1914	1906		0	to A	2007	19/04	0	14	#DIV/0!	5.3	49	36	-26%	1.9	49	50	3%	0.2	
1914	1913		0	to B	2007	19/04	45	52	15%	1.0	552	640	16%	3.6	597	692	16%	3.7	
1914	1915	Navan Road	0		2006	Nov	116	108	-7%	0.8	439	229	-48%	11.5	555	337	-39%	10.3	
1914	1917		0	to C	2007	19/04	54	50	-8%	0.6	643	307	-52%	15.4	697	357	-49%	14.8	
1915	1906		0	to A	2007	17/04	51	49	-3%	0.2	436	242	-45%	10.6	487	291	-40%	9.9	
1915	1914		0	to B	2007	17/04	69	50	-27%	2.4	911	615	-32%	10.7	980	665	-32%	11.0	
1915	1916		0	from B	2007	17/04	72	113	57%	4.3	520	290	-44%	11.4	592	403	-32%	8.5	
1915	1921	Navan Road / Nephin Road		To D	2005	17/05	18	42	133%	4.4	171	393	130%	13.2	189	435	130%	13.9	
1916	1915	Navan Road / Nephin Road		From A	2005	17/05	156	54	-65%	9.9	1105	726	-34%	12.5	1261	780	-38%	15.1	
1916	1918		0	from B	2007	17/04	72	111	54%	4.1	592	269	-55%	15.6	664	379	-43%	12.5	
1917	1914	Old Cabra Road / Cabra Road / Ratoath Road		From D	2005	17/05	45	42	-8%	0.5	258	84	-67%	13.3	303	126	-58%	12.1	
1918	1916		0	to B	2007	17/04	42	52	25%	1.5	996	418	-58%	21.7	1038	471	-55%	20.6	
1918	3421	Navan Road / Ashtown Roundabout		From C	2005	17/05	171	115	-33%	4.7	604	547	-10%	2.4	775	662	-15%	4.2	
1919	1920		0	from B	2007	17/04	0	62	#DIV/0!	11.2	94	219	133%	10.0	94	282	200%	13.7	
1920	1919	Blackhorse Avenue / Skreen Road		To C	2005	17/05	24	40	68%	2.9	619	643	4%	1.0	643	684	6%	1.6	
1920	1921		0	to C	2007	17/04	15	65	332%	7.9	78	298	281%	16.0	93	362	290%	17.8	
1921	1915		0	from C	2007	17/04	9	50	457%	7.6	166	298	80%	8.7	175	348	99%	10.7	
1921	1920	Blackhorse Avenue / Skreen Road		From A	2005	17/05	24	41	72%	3.0	618	730	18%	4.3	642	771	20%	4.9	
1921	1922		0	to C	2007	17/04	6	18	207%	3.6	128	164	28%	2.9	134	182	36%	3.8	
1922	1921		0	from C	2007	17/04	3	6	86%	1.2	674	498	-26%	7.3	677	504	-26%	7.1	
1922	3471		0	from B	2007	17/04	0	18	#DIV/0!	6.1	65	132	103%	6.7	65	150	131%	8.2	
2001	1301	O'Connell Bridge		S to N	2005	22/02	159	191	20%	2.4	667	510	-24%	6.5	826	700	-15%	4.5	
2001	2002			Wbd	2007	Apr	135	577	327%	23.4	672	202	-70%	22.5	807	778	-4%	1.0	
2001	2151	D'Olier Street		N to S	2005	22/02	207	160	-23%	3.5	1456	1138	-22%	8.8	1663	1298	-22%	9.5	
2004	2005	Wellington Quay		E to W	2005	22/02	552	580	5%	1.2	581	242	-58%	16.7	1133	823	-27%	9.9	
2005	2008	Parliament Street		N to S	2005	22/02	162	94	-42%	6.0	391	557	43%	7.6	553	651	18%	4.0	
2008	2018	Parliament Street		N to S	2005	22/02	162	94	-42%	6.0	384	470	22%	4.1	546	564	3%	0.8	
2011	2001		0	S to N	2005	22/02	186	181	-3%	0.4	729	317	-56%	18.0	915	498	-46%	15.7	
2011	2006	Fleet Street		E to W	2005	22/02	21	0	-100%	6.5	55	9	-84%	8.2	76	9	-88%	10.3	
2011	2151		0	W to E	2005	22/02	9	25	182%	4.0	184	126	-31%	4.6	193	152	-21%	3.1	
2012	2011	Westmoreland Street		S to N	2005	22/02	228	206	-10%	1.5	966	558	-42%	14.8	1194	765	-36%	13.7	
2012	2013	College Street		N to S	2005	22/02	126	151	20%	2.1	1242	735	-41%	16.1	1368	886	-35%	14.4	
2013	2012	College Street		S to N	2005	22/02	222	206	-7%	1.1	874	500	-43%	14.3	1096	707	-36%	13.0	
2013	2014	College Green		N to W	2005	22/02	36	96	166%	7.4	556	325	-42%	11.0	592	420	-29%	7.6	
2013	2081	Grafton Street		N to S	2005	22/02	90	55	-39%	4.1	706	408	-42%	12.6	796	463	-42%	13.3	
2014	2013	College Green		W to N	2005	22/02	222	206	-7%	1.1	874	500	-43%	14.3	1096	707	-36%	13.0	
2014	2015		0	E to W	2005	22/02	86	96	12%	1.1	520	295	-43%	11.1	606	391	-35%	9.6	
2015	2014	Dame St / Anglesea St		To C	2006	17/05	120	205	71%	6.7	794	467	-41%	13.0	914	672	-26%	8.6	
2015	2016	Dame Street		E to W	2005	22/02	84	92	10%	0.9	389	179	-54%	12.4	473	271	-43%	10.4	
2015	2061	Trinity Street		N to S	2005	22/02	75	27	-64%	6.7	184	405	120%	12.9	259	432	67%	9.3	
2016	2015	Dame Street		W to E	2005	22/02	230	228	0%	0.1	884	710	-20%	6.1	1113	939	-16%	5.4	
2016	2017	Dame Street		E to W	2005	22/02	90	99	10%	1.0	272	189	-30%	5.4	362	289	-20%	4.1	

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2016	2041	South Georges Street	N to S	2005	22/02	36	30	-18%	1.1	220	116	-47%	8.0	256	146	-43%	7.8
2017	2016	Dame Street	W to E	2005	22/02	210	228	8%	1.2	808	708	-12%	3.6	1018	936	-8%	2.6
2017	2018	Dame Street	E to W	2005	22/02	153	99	-35%	4.8	751	189	-75%	25.9	904	289	-68%	25.2
2018	2017	Dame Street	W to E	2005	22/02	111	228	105%	9.0	350	708	102%	15.6	461	936	103%	18.0
2018	2019	Lord Edward Street	E to W	2005	22/02	159	170	7%	0.9	861	495	-43%	14.1	1020	665	-35%	12.2
2019	2018	Lord Edward Street	W to E	2005	22/02	63	205	225%	12.3	261	582	123%	15.6	324	787	143%	19.6
2031	2043	St Stephen Street Upper	W to E	2005	22/02	18	16	-12%	0.5	173	254	47%	5.6	191	270	41%	5.2
2041	2016	South Georges Street	S to N	2005	22/02	39	36	-7%	0.4	182	128	-30%	4.4	221	164	-26%	4.1
2041	2042	South Georges Street	N to S	2005	22/02	36	30	-18%	1.1	226	116	-49%	8.4	262	146	-44%	8.2
2042	2041	South Georges Street	S to N	2005	22/02	39	36	-7%	0.4	182	128	-30%	4.4	221	164	-26%	4.1
2042	2043		N to S	2005	22/02	30	30	-2%	0.1	228	95	-58%	10.4	258	125	-52%	9.6
2042	2062	Exchequer Street	W to E	2005	22/02	57	0	-100%	10.7	100	75	-25%	2.7	157	75	-52%	7.7
2043	2042		S to N	2005	22/02	81	36	-55%	5.8	283	196	-31%	5.6	364	232	-36%	7.6
2043	2044	Aungier Street	N to S	2005	22/02	30	31	2%	0.1	233	110	-53%	9.4	263	140	-47%	8.6
2043	2065	St Stephen Street Lower	W to E	2005	22/02	18	15	-19%	0.8	151	190	26%	3.0	169	205	21%	2.6
2044	2043	Aungier Street	S to N	2005	22/02	72	36	-49%	4.8	259	242	-7%	1.1	331	278	-16%	3.0
2080	2014	Church Lane	S to N	2005	22/02	45	0	-100%	9.5	109	94	-14%	1.5	154	94	-39%	5.4
2081	2082	Nassau Street	W to E	2005	22/02	87	55	-37%	3.8	701	408	-42%	12.4	788	463	-41%	13.0
2082	2101	Leinster Street	W to E	2005	22/02	159	146	-8%	1.0	1173	688	-41%	15.9	1332	834	-37%	15.1
2083	2082		S to N	2005	22/02	138	92	-33%	4.3	581	254	-56%	16.0	719	346	-52%	16.1
2083	2102	Moles Worth Street	W to E	2005	22/02	57	42	-27%	2.2	533	96	-82%	24.6	590	138	-77%	23.7
2084	2083	Dawson Street	S to N	2005	22/02	150	134	-11%	1.4	1177	560	-52%	20.9	1327	694	-48%	19.9
2085	2084	Dawson Street	S to N	2005	22/02	141	134	-5%	0.6	1163	541	-53%	21.3	1304	675	-48%	20.0
2101	2102	Kildare Street	N to S	2005	22/02	53	54	4%	0.3	350	351	0%	0.1	402	405	1%	0.1
2101	2131	ANPR Ebd on Leinster St S	Ebd	2006	17/05	87	92	5%	0.5	799	338	-58%	19.3	886	430	-52%	17.8
2102	2083	Moles Worth Street	E to W	2005	22/02	27	0	-100%	7.3	21	59	181%	6.0	48	59	23%	1.5
2102	2103	ANPR Sbd on Kildare St	Sbd	2006	17/05	117	96	-18%	2.1	688	281	-59%	18.5	805	377	-53%	17.6
2103	2085	St Stephen's Street	E to W	2005	22/02	105	134	27%	2.6	1210	742	-39%	15.0	1315	876	-33%	13.3
2103	2104	St Stephen's Street	W to E	2005	22/02	99	96	-3%	0.3	764	311	-59%	19.5	863	407	-53%	18.1
2104	2103	St Stephen's Street	E to W	2005	22/02	105	134	27%	2.6	1210	742	-39%	15.0	1315	876	-33%	13.3
2104	2121	Merrion Row / Ely Pl / Merrion St Upr / Baggot St	Fm B	2006	17/05	84	96	14%	1.3	661	311	-53%	15.9	745	407	-45%	14.1
2105	2104	St Stephens Grn E / Hume St	To A	2006	17/05	171	134	-22%	3.0	1337	742	-44%	18.4	1508	876	-42%	18.3
2106	2105	St Stephens Grn E / Hume St	Fm B	2006	17/05	150	134	-11%	1.4	1168	683	-42%	15.9	1318	817	-38%	15.3
2121	2122	Merrion Row / Ely Pl / Merrion St Upr / Baggot St	To D	2006	17/05	144	151	5%	0.6	854	513	-40%	13.0	998	664	-33%	11.6
2121	2125	Merrion Sq / Merrion St Upr	Fm B	2006	17/05	6	0	-100%	3.4	40	48	20%	1.2	46	48	4%	0.3
2125	2121	Merrion Sq / Merrion St Upr	To B	2006	17/05	87	55	-37%	3.8	429	307	-29%	6.4	516	362	-30%	7.4
2125	2128	Merrion Sq / Merrion St Upr	To C	2006	17/05	12	20	69%	2.1	101	145	43%	4.0	113	165	46%	4.4
2125	2130	Merrion Sq / Merrion St Upr	To A	2006	17/05	6	17	183%	3.2	93	155	67%	5.6	99	172	74%	6.3
2128	2125	Merrion Sq / Merrion St Upr	Fm C	2006	17/05	15	13	-13%	0.5	103	285	176%	13.0	118	298	152%	12.5
2130	2125	Merrion Sq / Merrion St Upr	Fm A	2006	17/05	84	75	-11%	1.1	480	460	-4%	0.9	564	535	-5%	1.3
2130	2132	Merrion Sq / Clare St	Fm C	2006	17/05	6	17	184%	3.3	84	166	98%	7.4	90	183	104%	8.0
2131	2132	Merrion Sq / Clare St	Fm B	2006	17/05	30	30	0%	0.0	416	61	-85%	23.0	446	91	-80%	21.7
2131	2141	Lincoln Place	W to E	2005	22/02	60	87	45%	3.2	539	486	-10%	2.3	599	573	-4%	1.1

Additional Count Comparisons not included in the Cordon Analysis

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						AM1											
						HGV				Car				Total			
2132	2130	Merrion Sq / Clare St	To C	2006	17/05	72	75	4%	0.3	479	539	13%	2.7	551	614	11%	2.6
2132	2131	Merrion Sq / Clare St	To B	2006	17/05	24	25	4%	0.2	425	327	-23%	5.0	449	352	-22%	4.8
2132	2133	Merrion Sq / Clare St	To D	2006	17/05	60	55	-9%	0.7	599	192	-68%	20.4	659	247	-62%	19.3
2133	2132	Merrion Sq / Clare St	Fm D	2006	17/05	18	8	-56%	2.8	98	144	47%	4.2	116	152	31%	3.1
2141	2142		0 W to E	2005	22/02	102	106	4%	0.4	769	831	8%	2.2	871	938	8%	2.2
2141	2148	Westland Row	S to N	2005	22/02	45	73	62%	3.6	434	343	-21%	4.6	479	416	-13%	3.0
2142	2132	Merrion Sq / Clare St	Fm A	2006	17/05	102	100	-2%	0.2	905	686	-24%	7.8	1007	785	-22%	7.4
2142	2143		0 W to E	2005	22/02	33	5	-84%	6.3	176	76	-57%	8.9	209	82	-61%	10.6
2148	2141	Westland Row	N to S	2005	22/02	87	91	5%	0.4	664	661	-1%	0.1	751	752	0%	0.0
2148	2154	Westland Row	S to N	2005	22/02	75	73	-3%	0.3	447	343	-23%	5.2	522	416	-20%	4.9
2151	2012	Site 2: Pearse Street/D'Olier Street/College Street	E to W	2005	22/02	246	150	-39%	6.8	1724	789	-54%	26.4	1970	939	-52%	27.0
2152	2164	Tara Street	S to N	2005	22/02	249	245	-2%	0.2	1852	1633	-12%	5.3	2101	1878	-11%	5.0
2153	2152	Pearse Street	E to W	2005	22/02	273	245	-10%	1.7	1967	1633	-17%	7.9	2240	1878	-16%	8.0
2154	2148	Westland Row	N to S	2005	22/02	93	91	-2%	0.2	675	661	-2%	0.6	768	752	-2%	0.6
2154	2153		0 E to W	2005	22/02	210	242	15%	2.1	1919	1570	-18%	8.3	2129	1812	-15%	7.1
2155	2154	Pearse Street	E to W	2005	22/02	165	168	2%	0.2	1479	1166	-21%	8.6	1644	1334	-19%	8.0
2162	2172	Tara Street	S to N	2005	22/02	192	259	35%	4.5	1666	1518	-9%	3.7	1858	1777	-4%	1.9
2163	2164	Townsend Street	W to E	2005	22/02	66	36	-46%	4.2	545	513	-6%	1.4	611	549	-10%	2.6
2164	2162		0 S to N	2005	22/02	237	259	9%	1.4	1861	1629	-12%	5.6	2098	1888	-10%	4.7
2164	2165	Townsend St / Moss St	Fm B	2006	17/05	60	22	-64%	6.0	388	404	4%	0.8	448	426	-5%	1.1
2165	2153	Townsend St / Moss St	To C	2006	17/05	15	4	-75%	3.7	66	62	-6%	0.5	81	66	-19%	1.8
2165	2166	Townsend St / Moss St	To D	2006	17/05	75	106	41%	3.2	585	933	60%	12.6	660	1039	57%	13.0
2166	2154	Townsend St / Lombard St E	To C	2006	17/05	84	92	10%	0.9	756	723	-4%	1.2	840	815	-3%	0.9
2166	2167	Townsend St / Lombard St E	To D	2006	17/05	78	81	4%	0.4	828	679	-18%	5.4	906	761	-16%	5.0
2171	2001		0 E to W	2005	22/02	615	643	5%	1.1	867	449	-48%	16.3	1482	1093	-26%	10.9
2171	2161	Hawkins Street	N to S	2005	22/02	0	0	#DIV/0!	0.7	9	1	-85%	3.3	9	2	-82%	3.2
2172	1303	Butt Bridge	S to N	2005	22/02	117	241	106%	9.3	1286	1309	2%	0.6	1403	1551	11%	3.8
2172	2171	Burgh Quay	E to W	2005	22/02	687	644	-6%	1.7	854	515	-40%	12.9	1541	1158	-25%	10.4
2173	2165	Townsend St / Moss St	Fm A	2006	17/05	27	90	232%	8.2	259	549	112%	14.4	286	639	123%	16.4
2173	2172	Georges Quay	E to W	2005	22/02	684	628	-8%	2.2	451	289	-36%	8.4	1135	917	-19%	6.8
2174	2166	Townsend St / Lombard St E	Fm A	2006	17/05	87	67	-22%	2.2	999	493	-51%	18.5	1086	561	-48%	18.3
2202	2213		0 From C	2007	Apr	3	56	1777%	9.8	45	28	-38%	2.8	48	84	76%	4.5
2211	2213	East Wall Rd / S Bank Rd / Poolbeg Quay	Fm C	2006	18/05	132	17	-87%	13.3	656	566	-14%	3.6	788	583	-26%	7.8
2212	1102	East Wall Rd / N Wall Quay / E Link Toll Bridge	Fm C	2006	18/05	237	115	-52%	9.2	532	553	4%	0.9	769	668	-13%	3.8
2212	2213	East Wall Rd / S Bank Rd / Poolbeg Quay	Fm A	2006	18/05	243	157	-35%	6.1	926	651	-30%	9.8	1169	808	-31%	11.5
2213	2202		0 To C	2007	Apr	6	92	1438%	12.3	40	28	-30%	2.0	46	120	162%	8.2
2213	2211	East Wall Rd / S Bank Rd / Poolbeg Quay	To C	2006	18/05	246	52	-79%	15.9	896	625	-30%	9.8	1142	676	-41%	15.4
2213	2212	East Wall Rd / S Bank Rd / Poolbeg Quay	To A	2006	18/05	237	114	-52%	9.2	543	528	-3%	0.7	780	642	-18%	5.2
2213	2214		0 To E	2007	Apr	228	231	1%	0.2	142	147	3%	0.4	370	377	2%	0.4
2214	2213		0 From E	2007	Apr	261	261	0%	0.0	22	60	172%	5.9	283	321	13%	2.2
2304	1461		0 0	2007	24/04	30	16	-46%	2.9	207	109	-47%	7.8	237	126	-47%	8.3
2311	2811	Con Colbert Road / Memorial Road	Fm C	2006	Mar	462	570	23%	4.8	717	1012	41%	10.0	1179	1582	34%	10.8
2326	2338	Emmet Road / South Circular Road	Fm A	2006	Mar	27	39	43%	2.0	516	865	68%	13.3	543	904	67%	13.4

Additional Count Comparisons not included in the Cordon Analysis

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						HGV				Car				Total				
2326	2821	Memorial Road / Inchicore Road	Fm C	2006	Mar	33	32	-4%	0.2	429	224	-48%	11.3	462	256	-45%	10.9	
2338	2326	Emmet Road / South Circular Road	To A	2006	Mar	39	83	112%	5.6	642	554	-14%	3.6	681	637	-7%	1.7	
2338	2350	Emmet Road / South Circular Road	To C	2006	Mar	21	50	140%	4.9	532	654	23%	5.0	553	705	27%	6.0	
2338	2841	Emmet Road / South Circular Road	To B	2006	Mar	69	22	-69%	7.1	707	35	-95%	34.9	776	56	-93%	35.3	
2350	2338	Emmet Road / South Circular Road	Fm C	2006	Mar	42	80	90%	4.9	882	474	-46%	15.7	924	554	-40%	13.6	
2725	4061	Rathfarnham Rd/ Dodder Park Rd	Fm A	2006	Oct	45	20	-57%	4.5	304	156	-49%	9.8	349	175	-50%	10.7	
2801	2825	Sarsfield Road / St Laurence Road	Fm A	2006	Mar	0	13	#DIV/0!	5.0	140	114	-18%	2.3	140	127	-9%	1.1	
2811	2311	Con Colbert Road / Memorial Road	To C	2006	Mar	354	445	26%	4.6	2138	2376	11%	5.0	2492	2821	13%	6.4	
2811	2812	N4 / Con Colbert Road	Fm C	2006	Mar	465	579	24%	5.0	871	1123	29%	8.0	1336	1701	27%	9.4	
2812	2811	N4 / Con Colbert Road	To C	2006	Mar	327	315	-4%	0.6	1833	1935	6%	2.4	2160	2251	4%	1.9	
2812	2813	N4 / Con Colbert Road	To A	2006	Mar	432	422	-2%	0.5	604	615	2%	0.4	1036	1037	0%	0.0	
2812	2823	Sarsfield Road / Con Colbert Road	Fm A	2006	Mar	36	156	334%	12.3	257	508	98%	12.8	293	664	127%	17.0	
2813	2812	N4 / Con Colbert Road	Fm A	2006	Mar	246	240	-2%	0.4	1463	1622	11%	4.0	1709	1862	9%	3.6	
2814	4311	The Oval	0	2006	Nov	489	495	1%	0.3	904	774	-14%	4.5	1393	1269	-9%	3.4	
2819	2825	Sarsfield Road / St Laurence Road	Fm B	2006	Mar	129	134	4%	0.4	722	628	-13%	3.6	851	762	-10%	3.1	
2819	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm D	2006	Mar	45	107	137%	7.1	255	444	74%	10.1	300	550	83%	12.1	
2820	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm C	2006	Mar	225	187	-17%	2.7	436	246	-43%	10.3	661	433	-34%	9.7	
2821	2811	Con Colbert Road / Memorial Road	Fm B	2006	Mar	30	139	363%	11.8	459	551	20%	4.1	489	689	41%	8.3	
2821	2822	Memorial Road / Inchicore Road	To B	2006	Mar	18	29	60%	2.2	336	195	-42%	8.7	354	223	-37%	7.7	
2822	2821	Memorial Road / Inchicore Road	Fm B	2006	Mar	33	133	304%	11.0	339	504	49%	8.0	372	637	71%	11.8	
2822	2842	Sarsfield Road / Grattan Crescent	To B	2006	Mar	42	53	27%	1.7	857	687	-20%	6.1	899	740	-18%	5.6	
2823	2812	N4 / Con Colbert Road	Fm B	2006	Mar	84	76	-9%	0.8	356	312	-12%	2.4	440	389	-12%	2.5	
2823	2822	Sarsfield Road / Con Colbert Road	To C	2006	Mar	27	31	15%	0.7	545	532	-2%	0.6	572	563	-2%	0.4	
2823	2824	Sarsfield Road / Con Colbert Road	To B	2006	Mar	39	156	301%	11.9	259	508	96%	12.7	298	665	123%	16.7	
2824	2823	Sarsfield Road / Con Colbert Road	Fm B	2006	Mar	144	107	-25%	3.3	894	844	-6%	1.7	1038	951	-8%	2.8	
2824	2825	Sarsfield Road / Landen Road	To A	2006	Mar	36	98	173%	7.6	259	354	37%	5.4	295	452	53%	8.1	
2824	2831	Sarsfield Road / Landen Road	To B	2006	Mar	6	58	870%	9.2	20	140	599%	13.4	26	198	661%	16.3	
2825	2801	Sarsfield Road / St Laurence Road	To A	2006	Mar	0	29	#DIV/0!	7.6	31	30	-5%	0.3	31	59	89%	4.1	
2825	2819	Sarsfield Road / St Laurence Road	To B	2006	Mar	36	107	196%	8.4	255	442	73%	10.0	291	549	89%	12.6	
2825	2824	Sarsfield Road / Landen Road	Fm A	2006	Mar	144	107	-26%	3.3	814	770	-5%	1.5	958	877	-8%	2.7	
2826	2819	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To D	2006	Mar	147	134	-9%	1.1	691	642	-7%	1.9	838	776	-7%	2.2	
2826	2820	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To C	2006	Mar	111	73	-34%	3.9	637	362	-43%	12.3	748	435	-42%	12.9	
2826	2827	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To A	2006	Mar	105	111	6%	0.6	250	91	-64%	12.2	355	202	-43%	9.1	
2826	2830	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To B	2006	Mar	39	95	143%	6.8	233	397	70%	9.2	272	492	81%	11.3	
2827	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm A	2006	Mar	57	46	-20%	1.6	438	155	-65%	16.5	495	200	-60%	15.8	
2827	2828	Bally Fermt Road / Le Fanu Road	Fm A	2006	Mar	15	80	437%	9.5	264	326	23%	3.6	279	406	46%	6.9	
2828	2827	Bally Fermt Road / Le Fanu Road	To A	2006	Mar	30	133	343%	11.4	160	196	23%	2.7	190	329	73%	8.6	
2828	2829	Bally Fermt Road / Le Fanu Road	To B	2006	Mar	45	50	10%	0.7	295	213	-28%	5.2	340	262	-23%	4.5	
2828	2830	Bally Fermt Road / Le Fanu Road	To D	2006	Mar	78	69	-11%	1.0	634	546	-14%	3.6	712	616	-14%	3.7	
2829	2828	Bally Fermt Road / Le Fanu Road	Fm B	2006	Mar	93	71	-24%	2.5	770	577	-25%	7.5	863	647	-25%	7.8	
2829	2832	Ballyfermot Road / Clifden Road	To B	2006	Mar	12	1	-95%	4.5	45	27	-39%	2.9	57	28	-51%	4.5	
2829	4380	Ballyfermot Road / Clifden Road	To A	2006	Mar	48	49	2%	0.1	283	247	-13%	2.2	331	296	-11%	2.0	
2830	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm B	2006	Mar	75	73	-3%	0.3	682	655	-4%	1.0	757	728	-4%	1.1	

Additional Count Comparisons not included in the Cordon Analysis

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2830	2828	Bally Fermot Road / Le Fanu Road	Fm D	2006	Mar	45	94	109%	5.9	234	373	59%	8.0	279	467	67%	9.7		
2831	2824	Sarsfield Road / Landen Road	Fm B	2006	Mar	3	1	-78%	1.7	88	24	-73%	8.6	91	24	-73%	8.8		
2832	2829	Ballyfermot Road / Clifden Road	Fm B	2006	Mar	12	1	-90%	4.2	81	93	15%	1.3	93	94	1%	0.1		
2835	2837	Cloverhill Road / Cedar Brook Avenue	To C	2006	Mar	99	94	-5%	0.5	546	747	37%	7.9	645	841	30%	7.2		
2835	4382	Cloverhill Road / Cedar Brook Avenue	To A	2006	Mar	93	88	-5%	0.5	288	222	-23%	4.2	381	310	-19%	3.8		
2835	4430	Cloverhill Road / Cedar Brook Avenue	To B	2006	Mar	48	2	-96%	9.2	175	95	-46%	6.9	223	97	-56%	9.9		
2837	2835	Cloverhill Road / Cedar Brook Avenue	Fm C	2006	Mar	60	73	22%	1.6	146	145	-1%	0.1	206	218	6%	0.8		
2837	2838	Cedar Brook Avenue / Cherry Orchard	To B	2006	Mar	75	93	24%	2.0	618	733	19%	4.4	693	826	19%	4.8		
2838	2837	Cedar Brook Avenue / Cherry Orchard	Fm B	2006	Mar	75	73	-2%	0.2	145	140	-3%	0.4	220	214	-3%	0.4		
2838	4442	Park West Road / Park West Avenue	To C	2006	Mar	66	155	135%	8.5	371	654	76%	12.5	437	809	85%	14.9		
2841	2338	Emmet Road / South Circular Road	Fm B	2006	Mar	33	28	-15%	0.9	256	454	77%	10.5	289	482	67%	9.8		
2842	2822	Sarsfield Road / Grattan Crescent	Fm B	2006	Mar	33	126	283%	10.5	334	476	43%	7.1	367	603	64%	10.7		
2842	2847	Grattan Crescent / Emmet Road	To C	2006	Mar	48	52	8%	0.5	806	700	-13%	3.9	854	752	-12%	3.6		
2842	2848	Grattan Crescent / Emmet Road	To B	2006	Mar	48	52	9%	0.6	631	475	-25%	6.6	679	527	-22%	6.2		
2847	2842	Grattan Crescent / Emmet Road	Fm C	2006	Mar	30	17	-43%	2.7	302	134	-56%	11.4	332	151	-55%	11.7		
2848	2842	Grattan Crescent / Emmet Road	Fm B	2006	Mar	54	160	196%	10.2	621	830	34%	7.7	675	990	47%	10.9		
2899	4161	Templeogue Rd / Templeville Rd / Springfield	Fm D	2006	Oct	21	72	243%	7.5	503	278	-45%	11.4	524	350	-33%	8.3		
2931	2932		0 Ebd	2007	Apr	36	68	89%	4.4	406	589	45%	8.2	442	657	49%	9.2		
2932	2931		0 Wbd	2007	Apr	54	105	95%	5.7	424	426	1%	0.1	478	532	11%	2.4		
2932	2951	MESPIL ROAD (A5)	1 W to E	2006	May	69	77	11%	0.9	362	664	83%	13.3	431	740	72%	12.8		
2951	2932	MESPIL ROAD (A5)	2 E to W	2006	May	57	73	28%	2.0	347	357	3%	0.5	404	430	6%	1.3		
2999	3301	Blanchardstown Road south (N)	N to S	2005	22/11	45	69	53%	3.2	340	181	-47%	9.9	385	250	-35%	7.6		
3300	3301	Blanchardstown Road south (S)	S to N	2005	22/11	75	137	82%	6.0	720	660	-8%	2.3	795	797	0%	0.1		
3301	2999	Blanchardstown Road south (N)	S to N	2005	22/11	102	135	32%	3.0	968	706	-27%	9.1	1070	841	-21%	7.4		
3301	3300	Blanchardstown Road south (S)	N to S	2005	22/11	18	154	756%	14.7	301	326	8%	1.4	319	480	51%	8.1		
3301	3302	Blakestown Way	E to W	2005	22/11	18	6	-66%	3.4	132	60	-55%	7.3	150	66	-56%	8.1		
3302	3301	Blakestown Way	W to E	2005	22/11	30	89	196%	7.6	894	252	-72%	26.8	924	340	-63%	23.2		
3339	3343	DISWELLSTOWN	1 W to E	2005	22/11	6	12	105%	2.1	423	187	-56%	13.5	429	199	-54%	13.0		
3340	3343	CARPENTERSTOWN ROAD	1 W to E	2005	22/11	12	66	451%	8.7	480	407	-15%	3.5	492	473	-4%	0.9		
3343	3339	B16	2 E to W	2005	22/11	6	119	1878%	14.3	72	349	385%	19.1	78	468	500%	23.6		
3343	3340	B15	2 E to W	2005	22/11	3	0	-92%	2.2	102	1	-99%	14.0	105	1	-99%	14.2		
3347	3349	R121	N bd	2006	16/11	27	229	749%	17.9	429	299	-30%	6.8	456	528	16%	3.2		
3349	3347	R121	S bd	2006	16/11	30	76	152%	6.3	352	217	-38%	8.0	382	292	-23%	4.9		
3392	3421	Navan Road / Ashtown Roundabout	From A	2005	17/05	168	59	-65%	10.3	1452	1036	-29%	11.8	1620	1094	-32%	14.3		
3400	3401	Cappagh Road	W bd	2006	16/11	48	46	-5%	0.4	504	746	48%	9.7	552	792	43%	9.2		
3401	3400	CAPPAGH ROAD	1 N to S	2005	24/11	60	64	7%	0.5	406	824	103%	16.9	466	889	91%	16.2		
3411	3421		0 from A	2007	17/04	6	16	161%	2.9	283	289	2%	0.4	289	305	5%	0.9		
3421	1918	Navan Road / Ashtown Roundabout	To C	2005	17/05	162	54	-66%	10.4	1056	503	-52%	19.8	1218	557	-54%	22.2		
3421	3392	Navan Road / Ashtown Roundabout	To A	2005	17/05	168	166	-1%	0.2	683	842	23%	5.7	851	1007	18%	5.1		
3421	3411	Navan Road / Ashtown Roundabout	To B	2005	17/05	12	1	-94%	4.5	146	101	-31%	4.0	158	102	-36%	4.9		
3421	3471		0 to C	2007	17/04	9	37	310%	5.8	736	643	-13%	3.5	745	680	-9%	2.4		
3471	1922		0 to B	2007	17/04	6	5	-9%	0.2	451	424	-6%	1.3	457	429	-6%	1.3		
3471	3421		0 from C	2007	17/04	3	13	348%	3.6	327	158	-52%	10.8	330	172	-48%	10.0		

Additional Count Comparisons not included in the Cordon Analysis

AM1 - 07:00 - 08:00

						AM1											
						HGV				Car				Total			
3471	3472		0 to D	2007	17/04	3	16	443%	4.3	81	243	199%	12.7	84	259	208%	13.4
3472	3471		0 from D	2007	17/04	6	7	12%	0.3	428	544	27%	5.2	434	550	27%	5.2
3484	3485	Main Street	E to W	2005	22/11	21	20	-3%	0.1	73	43	-41%	3.9	94	64	-32%	3.4
3485	3484	Main Street	W to E	2005	22/11	45	14	-70%	5.8	712	223	-69%	22.6	757	237	-69%	23.3
3511	1667	MALAHIDE ROAD	1 N to S	2005	09/11	177	77	-56%	8.9	679	308	-55%	16.7	856	385	-55%	18.9
3535	3551	Turnapin Nth M01-20M	0	2006	Weekday	730	737	1%	0.3	2191	2586	18%	8.1	2921	3324	14%	7.2
3551	3535	Turnapin Nth M01-20M	0	2006	Weekday	700	608	-13%	3.6	3099	2541	-18%	10.5	3798	3149	-17%	11.0
3643	3651	Ballymun Nth R108-02	0	2006	Weekday	126	113	-11%	1.2	659	537	-18%	5.0	785	650	-17%	5.1
3651	3643	Ballymun Nth R108-02	0	2006	Weekday	373	232	-38%	8.1	530	346	-35%	8.8	903	578	-36%	11.9
3730	3731	R112	1 N to S	2005	24/11	57	134	134%	7.8	152	883	481%	32.1	209	1016	386%	32.6
3731	3730	B10	2 S to N	2005	24/11	141	116	-18%	2.2	900	472	-48%	16.4	1041	588	-44%	15.9
3761	3771	Kilshane Rd	W bd	2006	16/11	207	238	15%	2.1	519	585	13%	2.8	726	823	13%	3.5
3771	3761	Kilshane Rd	E bd	2006	16/11	165	170	3%	0.4	339	235	-31%	6.1	504	405	-20%	4.6
4000	4001	Old Bawn Rd / Seskin View Rd / Old Bawn Way	Fm A	2006	Oct	12	10	-14%	0.5	234	86	-63%	11.7	246	96	-61%	11.4
4000	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	Fm C	2006	Oct	39	37	-5%	0.3	693	762	10%	2.6	732	799	9%	2.4
4001	4000	Old Bawn Rd / Seskin View Rd / Old Bawn Way	To A	2006	Oct	36	13	-63%	4.5	656	340	-48%	14.1	692	354	-49%	14.8
4001	4002		0 Sbd	2007	Jan	67	11	-83%	8.9	202	151	-25%	3.8	269	162	-40%	7.2
4001	4182	Old Bawn Rd / Seskin View Rd / Old Bawn Way	To D	2006	Oct	3	2	-32%	0.6	246	19	-92%	19.7	249	21	-91%	19.6
4002	4001		0 Nbd	2007	Jan	32	16	-50%	3.3	630	395	-37%	10.4	663	411	-38%	10.9
4002	4003	Old Bawn Rd / Kiltipper Rd	Fm A	2006	Oct	18	36	100%	3.5	560	233	-58%	16.4	578	269	-53%	15.0
4002	4104	Old Bawn Rd / Firhouse Rd West	To B	2006	Oct	33	50	51%	2.6	433	451	4%	0.9	466	501	7%	1.6
4003	4002	Old Bawn Rd / Kiltipper Rd	To A	2006	Oct	54	56	4%	0.3	777	594	-24%	7.0	831	650	-22%	6.6
4003	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	Fm A	2006	Oct	24	37	55%	2.4	706	428	-39%	11.7	730	465	-36%	10.8
4005	4104		0 Fm B	2007	14 Feb	45	43	-5%	0.3	370	201	-46%	10.0	415	244	-41%	9.4
4005	4188	N81 / KILLINARDEN HEIGHTS (EAST)	Fm B	2006	08/06	39	3	-92%	7.9	243	41	-83%	16.9	282	44	-84%	18.6
4011	4012	Springfield / Fairways	To B	2006	Oct	24	10	-60%	3.5	69	37	-46%	4.3	93	47	-50%	5.5
4011	4061		0 From B	2007	6 March	72	55	-23%	2.1	1042	554	-47%	17.3	1114	609	-45%	17.2
4011	4161	Springfield / Fairways	To A	2006	Oct	21	45	115%	4.2	478	389	-19%	4.3	499	434	-13%	3.0
4012	4011	Springfield / Fairways	Fm B	2006	Oct	18	17	-5%	0.2	585	270	-54%	15.3	603	287	-52%	15.0
4012	4013	Butterfield Ave / Fairways	To B	2006	Oct	84	13	-85%	10.2	271	243	-10%	1.7	355	256	-28%	5.7
4012	4062	Butterfield Ave / Rathfarnham Rd / Grange Rd	Fm B	2006	Oct	18	41	129%	4.3	525	536	2%	0.5	543	577	6%	1.4
4013	4012	Butterfield Ave / Fairways	Fm B	2006	Oct	36	36	0%	0.0	760	640	-16%	4.5	796	676	-15%	4.4
4013	4014	Butterfield Ave / Marian Road	To B	2006	Oct	81	12	-85%	10.1	271	231	-15%	2.5	352	244	-31%	6.3
4013	4031	Butterfield Ave / Marian Road	To C	2006	Oct	6	0	-100%	3.5	22	1	-98%	6.4	28	1	-98%	7.3
4014	4013	Butterfield Ave / Marian Road	Fm B	2006	Oct	36	32	-12%	0.7	627	440	-30%	8.1	663	472	-29%	8.0
4014	4015		0 Wbd	2007	Jan	78	12	-85%	9.9	702	171	-76%	25.4	780	183	-77%	27.2
4014	4031	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave	To C	2006	Oct	24	8	-69%	4.2	251	70	-72%	14.3	275	77	-72%	14.9
4014	4162	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	Fm C	2006	Oct	42	49	18%	1.1	836	843	1%	0.2	878	892	2%	0.5
4015	4014	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave	Fm B	2006	Oct	96	27	-72%	8.9	753	479	-36%	11.0	849	506	-40%	13.2
4015	4016	Firhouse Rd / Knocklyon Rd	To B	2006	Oct	45	5	-89%	7.9	630	174	-72%	22.7	675	179	-73%	24.0
4015	4032	Firhouse Rd / Knocklyon Rd	To C	2006	Oct	0	7	#DIV/0!	3.7	133	67	-49%	6.6	133	74	-44%	5.8
4016	4015		0 Ebd	2007	Jan	83	18	-78%	9.1	592	260	-56%	16.1	675	278	-59%	18.2
4016	4163	Tallaght Rd / Wellington Lane / Spawell Rd	Fm C	2006	Oct	81	7	-91%	11.1	826	534	-35%	11.2	907	541	-40%	13.6

Additional Count Comparisons not included in the Cordon Analysis

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						AM1											
						HGV				Car				Total			
4017	4019	Firhouse Rd / Delaford Ave	To B	2006	Oct	3	7	139%	1.8	212	147	-31%	4.8	215	154	-28%	4.5
4017	4033	Firhouse Rd / Delaford Ave	To C	2006	Oct	9	0	-98%	4.1	105	14	-86%	11.7	114	14	-87%	12.4
4019	4017	Firhouse Rd / Delaford Ave	Fm B	2006	Oct	12	24	101%	2.8	1133	584	-48%	18.8	1145	608	-47%	18.2
4019	4020	Firhouse Rd / Ballycullen Rd / Mt Carmel Pk	To B	2006	Oct	9	3	-71%	2.6	199	53	-73%	13.0	208	56	-73%	13.2
4019	4041		0 Sbd	2007	Jan	9	1	-92%	3.7	145	44	-70%	10.4	154	45	-71%	10.9
4020	4019	Firhouse Rd / Ballycullen Rd / Mt Carmel Pk	Fm B	2006	Oct	18	24	33%	1.3	698	343	-51%	15.6	716	367	-49%	15.0
4020	4021	Firhouse Rd / Ballycullen Drive	To B	2006	Oct	9	3	-70%	2.6	198	55	-72%	12.7	207	58	-72%	13.0
4020	4041	Ballycullen Drive / Ballycullen Rd	Fm B	2006	Oct	3	0	-86%	2.0	360	3	-99%	26.5	363	3	-99%	26.6
4021	4003	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To A	2006	Oct	57	57	0%	0.0	831	620	-25%	7.8	888	677	-24%	7.5
4021	4020	Firhouse Rd / Ballycullen Drive	Fm B	2006	Oct	12	24	102%	2.9	564	346	-39%	10.2	576	370	-36%	9.5
4021	4022	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To B	2006	Oct	12	11	-5%	0.2	59	84	42%	2.9	71	95	34%	2.7
4021	4043	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To C	2006	Oct	54	51	-5%	0.4	590	519	-12%	3.0	644	571	-11%	3.0
4022	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	Fm B	2006	Oct	72	41	-44%	4.2	452	473	5%	1.0	524	514	-2%	0.4
4031	4013	Butterfield Ave / Marian Road	Fm C	2006	Oct	6	3	-50%	1.4	155	144	-7%	0.9	161	147	-9%	1.1
4031	4014	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave	Fm C	2006	Oct	30	19	-36%	2.2	332	278	-16%	3.1	362	297	-18%	3.6
4032	4015	Firhouse Rd / Knocklyon Rd	Fm C	2006	Oct	18	8	-53%	2.6	407	108	-74%	18.7	425	116	-73%	18.8
4032	4035	Knocklyon Rd / Templeroan Rd	To C	2006	Oct	0	7	#DIV/0!	3.7	130	67	-48%	6.3	130	74	-43%	5.5
4033	4017	Firhouse Rd / Delaford Ave	Fm C	2006	Oct	3	0	-100%	2.4	146	8	-95%	15.8	149	8	-95%	16.0
4033	4034	Knocklyon Rd / Scholarstown Rd	To B	2006	Oct	3	4	41%	0.6	238	112	-53%	9.5	241	117	-52%	9.3
4034	4033	Knocklyon Rd / Scholarstown Rd	Fm B	2006	Oct	3	16	444%	4.3	132	52	-60%	8.3	135	69	-49%	6.6
4034	4092	R113 / Scholarstown Rd / Orlagh Grove	To B	2006	Oct	39	22	-44%	3.1	712	742	4%	1.1	751	764	2%	0.5
4035	4032	Knocklyon Rd / Templeroan Rd	Fm C	2006	Oct	9	8	-6%	0.2	241	102	-57%	10.6	250	111	-56%	10.4
4035	4051	Scholarstown Rd / Templeroan Rd / Ballyboden Way	To C	2006	Oct	9	9	3%	0.1	80	71	-11%	1.0	89	80	-10%	0.9
4035	4066	Scholarstown Rd / Templeroan Rd / Ballyboden Way	To D	2006	Oct	39	25	-37%	2.6	509	299	-41%	10.5	548	323	-41%	10.8
4041	4019		0 Nbd	2007	Jan	30	0	-100%	7.7	335	110	-67%	15.1	365	110	-70%	16.6
4041	4020	Firhouse Rd / Ballycullen Drive	Fm C	2006	Oct	0	0	#DIV/0!	0.4	38	2	-96%	8.2	38	2	-96%	8.2
4041	4042	Killininny Rd / Ballycullen Rd / St Colmcille's Way	Fm A	2006	Oct	15	2	-88%	4.6	379	246	-35%	7.5	394	247	-37%	8.2
4042	4041	Killininny Rd / Ballycullen Rd / St Colmcille's Way	To A	2006	Oct	9	5	-40%	1.3	341	146	-57%	12.5	350	151	-57%	12.6
4042	4043	Killininny Rd / Ballycullen Rd / St Colmcille's Way	To B	2006	Oct	24	53	122%	4.7	509	324	-36%	9.1	533	377	-29%	7.3
4042	4090	R113 / M50 Interchange West Rdbt	Fm B	2006	Oct	51	48	-6%	0.4	886	1117	26%	7.3	937	1165	24%	7.0
4043	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	Fm C	2006	Oct	30	63	109%	4.8	683	578	-15%	4.2	713	641	-10%	2.8
4043	4042	Killininny Rd / Ballycullen Rd / St Colmcille's Way	Fm B	2006	Oct	51	43	-16%	1.2	476	401	-16%	3.6	527	443	-16%	3.8
4051	4035	Scholarstown Rd / Templeroan Rd / Ballyboden Way	Fm C	2006	Oct	15	9	-38%	1.6	246	199	-19%	3.1	261	208	-20%	3.4
4061	2725	Rathfarnham Rd/ Dodder Park Rd	To A	2006	Oct	42	36	-13%	0.9	944	693	-27%	8.8	986	729	-26%	8.8
4061	4011	Springfield Avenue	West	2005	Jan	36	31	-13%	0.8	286	202	-29%	5.4	322	234	-27%	5.3
4061	4062		0 To C	2007	6 March	18	17	-5%	0.2	330	137	-59%	12.7	348	154	-56%	12.3
4061	5102	Rathfarnham Rd/ Dodder Park Rd	To D	2006	Oct	60	57	-5%	0.4	1012	446	-56%	21.0	1072	503	-53%	20.3
4062	4012	Butterfield Ave / Rathfarnham Rd / Grange Rd	To B	2006	Oct	66	25	-62%	6.1	384	356	-7%	1.5	450	381	-15%	3.4
4062	4061	Rathfarnham Rd/ Dodder Park Rd	Fm C	2006	Oct	30	22	-26%	1.5	922	577	-37%	12.6	952	599	-37%	12.7
4062	4063	Butterfield Ave / Rathfarnham Rd / Grange Rd	To C	2006	Oct	42	41	-1%	0.1	405	334	-18%	3.7	447	375	-16%	3.5
4063	4062	Butterfield Ave / Rathfarnham Rd / Grange Rd	Fm C	2006	Oct	87	30	-65%	7.4	786	595	-24%	7.3	873	625	-28%	9.1
4063	4064	Willbrook Rd / Grange Rd	To B	2006	Oct	18	15	-14%	0.6	114	117	2%	0.2	132	132	0%	0.0
4063	4081	Willbrook Rd / Grange Rd	To C	2006	Oct	45	36	-20%	1.4	449	293	-35%	8.1	494	329	-33%	8.1

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4064	4063	Willbrook Rd / Grange Rd	Fm B	2006	Oct	18	4	-80%	4.4	410	236	-43%	9.7	428	239	-44%	10.3		
4064	4065		0 South Bnd	2007	31 May	15	14	-5%	0.2	175	109	-38%	5.6	190	123	-35%	5.3		
4065	4066	Ballyboden Rd	West Bnd	2006	May	21	19	-9%	0.4	201	170	-15%	2.3	222	189	-15%	2.3		
4066	4035	Scholarstown Rd / Templeroan Rd / Ballyboden Way	Fm D	2006	Oct	30	13	-58%	3.8	441	243	-45%	10.7	471	256	-46%	11.3		
4066	4065	Ballyboden Rd	East Bnd	2006	May	30	28	-7%	0.4	685	435	-36%	10.5	715	463	-35%	10.4		
4081	4063	Willbrook Rd / Grange Rd	Fm C	2006	Oct	93	37	-60%	7.0	538	435	-19%	4.7	631	472	-25%	6.8		
4090	4042	R113 / M50 Interchange West Rdbt	To B	2006	Oct	72	74	2%	0.2	503	421	-16%	3.8	575	495	-14%	3.5		
4090	4091	M50 Nbd On slip / R133 INTERCHANGE	Nbd	2006	31/05	54	7	-87%	8.5	768	922	20%	5.3	822	929	13%	3.6		
4090	4092	R113 /M50 Interchange East Rdbt	Fm B	2006	Oct	39	46	17%	1.0	641	730	14%	3.4	680	775	14%	3.5		
4091	4092	M50 Sbd Off slip / R133 INTERCHANGE	Sbd	2006	31/05	120	59	-51%	6.5	503	283	-44%	11.1	623	342	-45%	12.8		
4092	4034	R113 / Scholarstown Rd / Orlagh Grove	Fm B	2006	Oct	33	47	42%	2.2	255	381	49%	7.0	288	427	48%	7.4		
4092	4090	R113 /M50 Interchange East Rdbt	To B	2006	Oct	63	31	-51%	4.7	590	695	18%	4.1	653	725	11%	2.8		
4092	4093	M50 Sbd On slip / R133 INTERCHANGE	Sbd	2006	31/05	66	52	-21%	1.8	902	676	-25%	8.1	968	728	-25%	8.2		
4093	4090	M50 Nbd Off slip / R133 INTERCHANGE	Nbd	2006	31/05	51	48	-6%	0.5	552	260	-53%	14.5	603	308	-49%	13.8		
4100	4113		0 Fm A	2007	14 Feb	99	40	-59%	7.0	302	185	-39%	7.5	401	225	-44%	10.0		
4101	4102		0 Fm A	2007	14 Feb	216	132	-39%	6.4	990	970	-2%	0.6	1206	1102	-9%	3.1		
4102	4101		0 To A	2007	14 Feb	159	166	4%	0.5	801	540	-33%	10.1	960	706	-26%	8.8		
4102	4105		0 To B	2007	14 Feb	69	40	-42%	3.9	371	184	-50%	11.2	440	224	-49%	11.8		
4102	4107		0 To C	2007	14 Feb	282	134	-53%	10.3	792	995	26%	6.8	1074	1129	5%	1.6		
4104	4002	Old Bawn Rd / Firhouse Rd West	Fm B	2006	Oct	18	37	106%	3.6	558	184	-67%	19.4	576	221	-62%	17.8		
4104	4005		0 To B	2007	14 Feb	54	8	-85%	8.2	318	139	-56%	11.8	372	147	-60%	13.9		
4104	4186		0 To A	2007	14 Feb	78	48	-39%	3.8	671	347	-48%	14.4	749	394	-47%	14.8		
4105	4102		0 Fm B	2007	14 Feb	183	89	-51%	8.1	499	435	-13%	3.0	682	524	-23%	6.4		
4106	4113		0 Fm B	2007	14 Feb	45	85	88%	4.9	816	335	-59%	20.1	861	419	-51%	17.5		
4107	4102		0 Fm C	2007	14 Feb	111	119	7%	0.8	475	314	-34%	8.1	586	433	-26%	6.8		
4112	4114		0 To D	2007	13 Feb	249	143	-43%	7.6	429	638	49%	9.1	678	781	15%	3.8		
4112	4120		0 To A	2007	13 Feb	111	119	7%	0.7	480	292	-39%	9.6	591	410	-31%	8.1		
4112	4132		0 To C	2007	13 Feb	137	61	-55%	7.6	914	938	3%	0.8	1050	999	-5%	1.6		
4113	4100		0 To A	2007	14 Feb	84	89	6%	0.5	778	471	-39%	12.3	862	560	-35%	11.3		
4113	4106		0 To B	2007	14 Feb	18	26	45%	1.7	132	47	-64%	9.0	150	73	-51%	7.3		
4113	4140		0 To C	2007	14 Feb	93	22	-76%	9.4	488	208	-57%	15.0	581	230	-60%	17.4		
4114	4112		0 Fm D	2007	13 Feb	66	13	-81%	8.5	270	380	41%	6.1	336	393	17%	3.0		
4120	4112		0 Fm A	2007	13 Feb	270	139	-49%	9.2	753	1061	41%	10.2	1023	1200	17%	5.3		
4121	4122	Tymon Rd / Tallaght Rd	from C	2005	Jan	48	77	60%	3.7	289	321	11%	1.8	337	398	18%	3.2		
4122	4121	Tymon Rd / Tallaght Rd	to C	2005	Jan	9	30	228%	4.7	263	34	-87%	18.8	272	63	-77%	16.1		
4122	4123	Tymon Rd / Tallaght Rd	to A	2005	Jan	24	13	-46%	2.5	197	134	-32%	4.9	221	147	-33%	5.4		
4122	4127	Tymon Rd / Tallaght Rd	to B	2005	Jan	27	8	-70%	4.5	189	138	-27%	4.0	216	146	-32%	5.2		
4123	4122	Tymon Rd / Tallaght Rd	from A	2005	Jan	12	15	22%	0.7	194	21	-89%	16.7	206	35	-83%	15.6		
4123	4124	Greenhills Road (N)	N toS	2005	19/04	78	78	0%	0.0	419	501	20%	3.8	497	580	17%	3.6		
4123	4275	GREENHILLS ROAD	1 W to E	2005	15/11	81	186	130%	9.1	1013	831	-18%	6.0	1094	1017	-7%	2.4		
4124	4123	Greenhills Road (N)	S to N	2005	19/04	174	175	0%	0.0	886	714	-19%	6.1	1060	889	-16%	5.5		
4124	4125	Greenhills Road (S)	N toS	2005	19/04	60	49	-19%	1.5	317	245	-23%	4.3	377	294	-22%	4.5		
4124	4131	Mayberry Road	E to W	2005	19/04	39	38	-2%	0.1	196	198	1%	0.2	235	237	1%	0.1		

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4125	4124	Greenhills Road (S)	S to N	2005	19/04	114	81	-29%	3.3	472	216	-54%	13.8	586	298	-49%	13.7	
4125	4133		0 Fm D	2007	13 Feb	33	14	-57%	3.9	235	112	-52%	9.3	268	126	-53%	10.1	
4127	4122	Tymon Rd / Tallaght Rd	from B	2005	Jan	0	1	#DIV/0!	1.2	166	4	-98%	17.6	166	5	-97%	17.4	
4131	4124	Mayberry Rd (petrol st)	East Bnd	2006	May	93	75	-19%	1.9	273	236	-13%	2.3	366	311	-15%	3.0	
4131	4132	Mayberry Rd (parking bay)	West Bnd	2006	May	48	39	-20%	1.4	314	221	-29%	5.7	362	260	-28%	5.8	
4132	4112		0 Fm C	2007	13 Feb	104	173	67%	5.9	703	424	-40%	11.7	807	597	-26%	7.9	
4132	4131		0 To C	2007	13 Feb	75	76	1%	0.1	287	168	-41%	7.9	362	244	-33%	6.8	
4132	4133		0 To B	2007	13 Feb	93	27	-70%	8.4	685	414	-40%	11.5	778	442	-43%	13.6	
4133	4125		0 To D	2007	13 Feb	60	28	-53%	4.8	516	57	-89%	27.1	576	85	-85%	27.0	
4133	4132		0 Fm B	2007	13 Feb	108	99	-8%	0.9	449	455	1%	0.3	557	554	-1%	0.1	
4133	4134		0 To C	2007	13 Feb	66	18	-72%	7.3	639	225	-65%	19.9	705	244	-65%	21.2	
4134	4133		0 Fm C	2007	13 Feb	102	99	-3%	0.3	838	455	-46%	15.1	940	554	-41%	14.1	
4134	4135		0 To C	2007	13 Feb	36	35	-2%	0.1	315	163	-48%	9.8	351	198	-44%	9.2	
4134	4141		0 Fm C	2007	14 Feb	72	1	-99%	11.8	580	18	-97%	32.5	652	19	-97%	34.6	
4135	4134		0 Fm C	2007	13 Feb	39	43	11%	0.7	454	913	101%	17.6	493	957	94%	17.2	
4135	4185		0 To C	2007	13 Feb	39	35	-9%	0.6	313	163	-48%	9.7	352	198	-44%	9.3	
4136	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	Fm A	2006	Oct	9	0	-100%	4.2	94	1	-99%	13.5	103	1	-99%	14.1	
4140	4113		0 Fm C	2007	14 Feb	48	12	-75%	6.6	279	208	-26%	4.6	327	219	-33%	6.5	
4140	4141		0 Fm A	2007	14 Feb	102	17	-84%	11.1	767	187	-76%	26.6	869	204	-77%	28.7	
4141	4134		0 To C	2007	14 Feb	87	89	2%	0.2	235	261	11%	1.6	322	349	8%	1.5	
4141	4140		0 To A	2007	14 Feb	51	7	-86%	8.1	493	55	-89%	26.5	544	62	-89%	27.7	
4141	4142	Belgard Square West	N to S	2005	15/11	15	18	17%	0.6	106	121	14%	1.4	121	138	14%	1.5	
4142	4141		0 To A	2007	14 Feb	102	107	4%	0.4	895	493	-45%	15.2	997	600	-40%	14.1	
4142	4186	Belgard Square East	W to E	2005	15/11	15	1	-93%	4.9	105	67	-36%	4.1	120	68	-43%	5.3	
4147	4189	N81 / COOKSTOWN ROAD	Fm A	2006	08/06	108	107	-1%	0.1	710	658	-7%	2.0	818	765	-6%	1.9	
4151	4257		0 West Bnd	2007	28 March	69	35	-49%	4.7	510	508	0%	0.1	579	544	-6%	1.5	
4153	4191	N81 / FORTUNESTOWN ROAD	Fm A	2006	08/06	9	0	-100%	4.2	256	0	-100%	22.6	265	0	-100%	23.0	
4161	2899	Templeogue Rd / Templeville Rd / Springfield	To D	2006	Oct	36	46	28%	1.6	572	524	-8%	2.1	608	570	-6%	1.6	
4161	4011	Springfield / Fairways	Fm A	2006	Oct	60	63	4%	0.3	562	379	-33%	8.4	622	442	-29%	7.8	
4161	4162		0 from D	2007	6 March	24	87	264%	8.5	643	379	-41%	11.7	667	466	-30%	8.5	
4161	4284	Templeogue Rd / Templeville Rd / Springfield	To A	2006	Oct	33	33	0%	0.0	283	263	-7%	1.2	316	296	-6%	1.1	
4162	4014		0 to C	2007	6 March	30	57	90%	4.1	404	504	25%	4.7	434	561	29%	5.7	
4162	4161	Templeogue Rd / Templeville Rd / Springfield	Fm B	2006	Oct	39	45	15%	0.9	520	432	-17%	4.0	559	477	-15%	3.6	
4162	4163	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	To B	2006	Oct	33	127	285%	10.5	880	1021	16%	4.6	913	1148	26%	7.3	
4162	4284	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	To A	2006	Oct	78	55	-29%	2.8	841	717	-15%	4.4	919	772	-16%	5.0	
4163	4016	Tallaght Rd / Wellington Lane / Spawell Rd	To C	2006	Oct	27	7	-73%	4.7	187	85	-55%	8.8	214	92	-57%	9.8	
4163	4162	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	Fm B	2006	Oct	93	106	14%	1.3	928	880	-5%	1.6	1021	986	-3%	1.1	
4163	4286	Tallaght Rd / Wellington Lane / Spawell Rd	To A	2006	Oct	69	30	-57%	5.6	843	394	-53%	18.0	912	424	-54%	18.9	
4174	4292	Tymon M50-17 (2005 data)	0	2006	Weekday	766	367	-52%	16.7	3225	2753	-15%	8.6	3990	3121	-22%	14.6	
4177	4174	M 50 North Bound On-Slip	North Bd	2006	05/12	108	7	-93%	13.3	987	347	-65%	24.8	1095	354	-68%	27.5	
4180	4189	N81 / COOKSTOWN ROAD	Fm B	2006	08/06	207	217	5%	0.7	1017	914	-10%	3.3	1224	1131	-8%	2.7	
4180	4190	N81 / KILLINARDEN HEIGHTS (WEST)	Fm C	2006	08/06	165	168	2%	0.2	615	406	-34%	9.3	780	574	-26%	7.9	
4182	4001	Old Bawn Rd / Seskin View Rd / Old Bawn Way	Fm D	2006	Oct	3	0	-100%	2.4	85	0	-100%	13.0	88	0	-100%	13.3	

Additional Count Comparisons not included in the Cordon Analysis

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						AM1											
						HGV				Car				Total			
4183	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	Fm D	2006	Oct	132	146	11%	1.2	1110	1255	13%	4.2	1242	1401	13%	4.4
4184	4000	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To C	2006	Oct	12	26	115%	3.2	258	189	-27%	4.6	270	214	-21%	3.6
4184	4136	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To A	2006	Oct	12	0	-97%	4.6	181	3	-98%	18.5	193	4	-98%	19.1
4184	4183	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To D	2006	Oct	225	222	-1%	0.2	1584	1249	-21%	8.9	1809	1471	-19%	8.3
4184	4185	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To B	2006	Oct	147	141	-4%	0.5	1401	1579	13%	4.6	1548	1720	11%	4.2
4185	4135		0 Fm C	2007	13 Feb	51	43	-15%	1.1	951	913	-4%	1.2	1002	957	-5%	1.5
4185	4184		0 To C	2007	13 Feb	261	206	-21%	3.6	1472	1002	-32%	13.4	1733	1208	-30%	13.7
4185	4186		0 Fm D	2007	14 Feb	135	112	-17%	2.1	890	751	-16%	4.8	1025	863	-16%	5.3
4186	4104		0 Fm A	2007	14 Feb	279	0	-100%	23.6	321	11	-96%	24.0	600	11	-98%	33.7
4186	4142		0 To A	2007	14 Feb	51	14	-72%	6.4	448	280	-38%	8.8	499	294	-41%	10.3
4186	4185		0 To D	2007	14 Feb	174	185	6%	0.8	1501	925	-38%	16.5	1675	1110	-34%	15.2
4186	4187		0 To B	2007	14 Feb	159	140	-12%	1.6	915	836	-9%	2.7	1074	976	-9%	3.1
4187	4186		0 Fm B	2007	14 Feb	177	178	1%	0.1	1406	867	-38%	16.0	1583	1045	-34%	14.8
4187	4188	N81 / KILLINARDEN HEIGHTS (EAST)	Fm C	2006	08/06	207	200	-3%	0.5	875	912	4%	1.2	1082	1112	3%	0.9
4188	4005	N81 / KILLINARDEN HEIGHTS (EAST)	To B	2006	08/06	24	3	-87%	5.6	334	25	-92%	23.0	358	28	-92%	23.7
4188	4187	N81 / KILLINARDEN HEIGHTS (EAST)	To C	2006	08/06	303	307	1%	0.2	1553	1435	-8%	3.1	1856	1742	-6%	2.7
4188	4189	N81 / KILLINARDEN HEIGHTS (EAST)	To A	2006	08/06	231	202	-13%	2.0	867	803	-7%	2.2	1098	1005	-8%	2.9
4189	4147	N81 / COOKSTOWN ROAD	To A	2006	08/06	57	62	8%	0.6	354	369	4%	0.8	411	431	5%	1.0
4189	4180	N81 / COOKSTOWN ROAD	To B	2006	08/06	180	194	8%	1.0	597	466	-22%	5.7	777	661	-15%	4.3
4189	4188	N81 / KILLINARDEN HEIGHTS (EAST)	Fm A	2006	08/06	309	269	-13%	2.3	1643	1540	-6%	2.6	1952	1809	-7%	3.3
4190	4180	N81 / KILLINARDEN HEIGHTS (WEST)	To C	2006	08/06	216	217	0%	0.1	1024	914	-11%	3.5	1240	1131	-9%	3.2
4190	4191	N81 / KILLINARDEN HEIGHTS (WEST)	To A	2006	08/06	177	232	31%	3.8	687	471	-31%	9.0	864	703	-19%	5.8
4191	4153	N81 / FORTUNESTOWN ROAD	To A	2006	08/06	9	19	108%	2.6	93	69	-25%	2.6	102	88	-14%	1.4
4191	4190	N81 / KILLINARDEN HEIGHTS (WEST)	Fm A	2006	08/06	204	212	4%	0.6	1039	799	-23%	7.9	1243	1011	-19%	6.9
4191	4195	N81 / FORTUNESTOWN ROAD	To B	2006	08/06	174	169	-3%	0.4	624	350	-44%	12.4	798	519	-35%	10.9
4195	4191	N81 / FORTUNESTOWN ROAD	Fm B	2006	08/06	198	65	-67%	11.6	798	618	-23%	6.8	996	683	-31%	10.8
4233	4242	R113 Belgard Road	S bd	2006	16/11	156	147	-6%	0.7	934	1101	18%	5.2	1090	1248	14%	4.6
4242	4233	R113 Belgard Road	N bd	2006	16/11	198	201	1%	0.2	861	535	-38%	12.3	1059	736	-31%	10.8
4256	4257		0 East Bnd	2007	28 March	126	87	-31%	3.8	884	678	-23%	7.4	1010	765	-24%	8.2
4257	4151		0 East Bnd	2007	28 March	135	82	-39%	5.1	986	641	-35%	12.1	1121	724	-35%	13.1
4257	4256		0 West Bnd	2007	28 March	51	50	-3%	0.2	521	543	4%	0.9	572	592	4%	0.8
4273	4293	Ballymount	Wbd	2006	16/11	303	295	-3%	0.5	314	487	55%	8.6	617	781	27%	6.2
4275	4123	B24	2 E to W	2005	15/11	42	91	117%	6.0	416	504	21%	4.1	458	596	30%	6.0
4284	4161	Templeogue Rd / Templeville Rd / Springfield	Fm A	2006	Oct	60	68	13%	1.0	479	399	-17%	3.8	539	467	-13%	3.2
4284	4162		0 from A	2007	6 March	30	36	18%	1.0	357	293	-18%	3.5	387	329	-15%	3.1
4284	4287		0 North Bnd	2007	31 May	42	32	-24%	1.7	700	385	-45%	13.5	742	417	-44%	13.5
4286	4163	Tallaght Rd / Wellington Lane / Spawell Rd	Fm A	2006	Oct	6	13	116%	2.3	421	191	-55%	13.1	427	204	-52%	12.5
4287	4284		0 South Bnd	2007	31 May	24	32	35%	1.6	323	252	-22%	4.2	347	285	-18%	3.5
4292	4174	Tymon M50-17 (2005 data)	0	2006	Weekday	801	574	-28%	8.7	2876	2019	-30%	17.3	3677	2593	-29%	19.4
4293	4273	BALLYMONT	1 W to E	2005	15/11	192	185	-4%	0.5	1081	1201	11%	3.5	1273	1386	9%	3.1
4311	2814	The Oval	W to E	2006	Nov	266	306	15%	2.4	1738	1906	10%	3.9	2003	2212	10%	4.6
4314	4396	LiffeyValley Approach Road	E bd	2006	16/11	198	196	-1%	0.2	597	392	-34%	9.2	795	588	-26%	7.9
4315	4386	Fonthill Road (N)	3 N to W	2005	17/11	123	125	2%	0.2	542	747	38%	8.1	665	872	31%	7.5

Additional Count Comparisons not included in the Cordon Analysis

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						AM1															
						HGV				Car				Total							
4323	4327	Dead Mans Inn N04-40	0	2006	Weekday	691	647	-6%	1.7	1690	2692	59%	21.4	2381	3340	40%	17.9				
4332	4333	Lucan Road	W to E	2005	17/11	24	21	-13%	0.7	953	294	-69%	26.4	977	315	-68%	26.1				
4333	4331	Ballyfermot Road	W to E	2005	17/11	30	50	67%	3.2	490	893	82%	15.3	520	943	81%	15.6				
4333	4334	Fonthill Road (S)	N to S	2005	17/11	150	21	-86%	14.0	537	290	-46%	12.1	687	311	-55%	16.8				
4333	4336	Fonthill Road (N)	S to N	2005	17/11	318	0	-100%	25.2	1127	91	-92%	42.0	1445	91	-94%	48.8				
4334	4333	Fonthill Road (S)	S to N	2005	17/11	276	50	-82%	17.7	833	938	13%	3.5	1109	988	-11%	3.7				
4336	4333	Fonthill Road (N)	N to S	2005	17/11	144	0	-100%	17.0	338	46	-86%	21.1	482	46	-91%	26.9				
4377	4383	NEILSTOWN ROAD	Nbd	2006	01/06	21	68	225%	7.1	349	189	-46%	9.7	370	258	-30%	6.3				
4378	4382	Coldcut Road / Cloverhill Road	Fm C	2006	Mar	77	56	-28%	2.6	666	510	-23%	6.4	743	565	-24%	7.0				
4379	4381	Ballyfermot Road / Coldcut Road	Fm A	2006	Mar	51	18	-66%	5.7	335	348	4%	0.7	386	366	-5%	1.1				
4380	2829	Ballyfermot Road / Clifden Road	Fm A	2006	Mar	63	69	10%	0.7	649	730	12%	3.1	712	799	12%	3.2				
4380	4381	Ballyfermot Road / Coldcut Road	Fm C	2006	Mar	69	49	-29%	2.6	252	278	10%	1.6	321	327	2%	0.3				
4381	4379	Ballyfermot Road / Coldcut Road	To A	2006	Mar	60	52	-13%	1.0	448	226	-50%	12.1	508	278	-45%	11.6				
4381	4380	Ballyfermot Road / Coldcut Road	To C	2006	Mar	75	71	-5%	0.5	687	756	10%	2.6	762	827	9%	2.3				
4382	2835	Cloverhill Road / Cedar Brook Avenue	Fm A	2006	Mar	63	47	-26%	2.2	403	488	21%	4.0	466	535	15%	3.1				
4382	4378	Coldcut Road / Cloverhill Road	To C	2006	Mar	140	112	-20%	2.5	919	866	-6%	1.8	1059	978	-8%	2.5				
4382	4395	Liffey Valley Access/Coldcut Rd	From C	2006	16/11	96	94	-2%	0.2	309	307	-1%	0.1	405	401	-1%	0.2				
4383	4377	Neilstown Road	N to S	2005	17/11	3	23	681%	5.6	160	83	-48%	7.0	163	106	-35%	4.9				
4383	4394	Coldcut Road (W)	E to W	2005	17/11	84	77	-8%	0.7	311	293	-6%	1.0	395	370	-6%	1.3				
4383	4395	Liffey Valley Access/Coldcut Rd	From B	2006	16/11	48	97	102%	5.7	768	686	-11%	3.0	816	783	-4%	1.2				
4385	4430	Station Road / Newlands Road	Fm A	2006	Mar	93	75	-19%	2.0	687	738	7%	1.9	780	812	4%	1.1				
4386	4315	Fonthill Road (N)	S to N	2005	17/11	282	163	-42%	8.0	831	657	-21%	6.4	1113	820	-26%	9.4				
4386	4387	Fonthill Road (S)	N to S	2005	17/11	105	86	-18%	1.9	460	233	-49%	12.2	565	319	-44%	11.7				
4386	4393	Coldcut Road (E)	W to E	2005	17/11	51	53	3%	0.2	496	606	22%	4.7	547	658	20%	4.5				
4387	4386	Fonthill Road (S)	S to N	2005	17/11	252	119	-53%	9.8	1046	457	-56%	21.5	1298	576	-56%	23.6				
4387	4410	Newlands Rd / Foxdene Av	from C	2005	Jan	27	147	446%	12.9	178	234	31%	3.9	205	381	86%	10.3				
4393	4386	Coldcut Road (E)	E to W	2005	17/11	90	58	-35%	3.7	313	291	-7%	1.3	403	349	-13%	2.8				
4394	4383	Coldcut Road (W)	W to E	2005	17/11	48	36	-25%	1.9	486	622	28%	5.8	534	658	23%	5.1				
4395	4382	Liffey Valley Access/Coldcut Rd	To C	2006	16/11	93	109	18%	1.6	1174	942	-20%	7.1	1267	1051	-17%	6.3				
4395	4383	Liffey Valley Access/Coldcut Rd	To B	2006	16/11	51	94	85%	5.1	277	249	-10%	1.7	328	343	5%	0.8				
4395	4396	Liffey Valley Access/Coldcut Rd	To A	2006	16/11	48	0	-100%	9.8	89	0	-100%	13.3	137	0	-100%	16.6				
4396	4314	LiffeyValley Approach Road	W bd	2006	16/11	39	39	1%	0.0	76	10	-87%	10.1	115	49	-57%	7.3				
4396	4395	Liffey Valley Access/Coldcut Rd	From A	2006	16/11	48	9	-80%	7.2	463	268	-42%	10.2	511	278	-46%	11.7				
4410	4387	Newlands Rd / Foxdene Av	to C	2005	Jan	57	171	200%	10.7	1478	1151	-22%	9.0	1535	1322	-14%	5.6				
4410	4411	Newlands Rd / Foxdene Av	to A	2005	Jan	27	92	240%	8.4	185	219	19%	2.4	212	311	47%	6.1				
4411	4410	Newlands Rd / Foxdene Av	from A	2005	Jan	54	138	155%	8.6	1450	1101	-24%	9.8	1504	1239	-18%	7.2				
4430	2835	CLOVERHILL ROAD	1 W to E	2005	17/11	48	36	-25%	1.9	476	468	-2%	0.4	524	504	-4%	0.9				
4430	4385	Station Road / Newlands Road	To A	2006	Mar	39	31	-19%	1.3	115	137	19%	1.9	154	168	9%	1.1				
4430	4444	Station Road / Newlands Road	To B	2006	Mar	144	136	-6%	0.7	543	544	0%	0.0	687	680	-1%	0.3				
4442	2838	Park West Road / Park West Avenue	Fm C	2006	Mar	102	92	-10%	1.0	414	254	-39%	8.8	516	346	-33%	8.2				
4442	4443	Park West Avenue / Nangor Road	To B	2006	Mar	69	211	205%	12.0	298	374	26%	4.2	367	585	59%	10.0				
4443	4442	R134 / NANGOR ROAD	1 W to E	2005	17/11	102	102	0%	0.0	956	1025	7%	2.2	1058	1126	6%	2.1				
4443	4444	Newlands Road / Nangor Road	Fm D	2006	Mar	87	118	36%	3.1	276	373	35%	5.4	363	491	35%	6.2				

Additional Count Comparisons not included in the Cordon Analysis

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						HGV				Car				Total				
4444	4430	Station Road / Newlands Road	Fm B	2006	Mar	75	105	40%	3.2	448	513	14%	3.0	523	618	18%	4.0	
4444	4443	Newlands Road / Nangor Road	To D	2006	Mar	186	88	-53%	8.3	925	1024	11%	3.2	1111	1112	0%	0.0	
4444	4445	Newlands Road / Nangor Road	To B	2006	Mar	123	106	-14%	1.6	267	384	44%	6.5	390	490	26%	4.8	
4444	4471	Newlands Road / Nangor Road	To C	2006	Mar	33	69	110%	5.1	210	120	-43%	7.0	243	189	-22%	3.7	
4445	4444	Newlands Road / Nangor Road	Fm B	2006	Mar	129	91	-30%	3.7	835	972	16%	4.5	964	1062	10%	3.1	
4471	4444	Newlands Road / Nangor Road	Fm C	2006	Mar	54	24	-55%	4.7	206	152	-26%	4.0	260	177	-32%	5.6	
5014	5015	Junction N11	0	2006	Nov	51	69	36%	2.4	913	547	-40%	13.5	964	617	-36%	12.3	
5015	5014	Junction N11	S to N	2006	Nov	44	45	4%	0.2	2836	1703	-40%	23.8	2880	1748	-39%	23.5	
5019	5020	STILLORGAN RD / LOWER KILMACUD RD	To D	2005	06/04	9	9	3%	0.1	269	152	-44%	8.1	278	161	-42%	7.9	
5019	5021	STILLORGAN RD / LOWER KILMACUD RD	To C	2005	06/04	105	54	-49%	5.8	814	489	-40%	12.7	919	543	-41%	13.9	
5019	5180	THE HILL / LOWER KILMACUD RD / DUBLIN RD	Fm D	2005	06/04	12	88	636%	10.8	234	321	37%	5.2	246	409	66%	9.0	
5020	5019	STILLORGAN RD / LOWER KILMACUD RD	Fm D	2005	06/04	15	12	-23%	1.0	259	306	18%	2.8	274	317	16%	2.5	
5021	5019	STILLORGAN RD / LOWER KILMACUD RD	Fm C	2005	06/04	87	96	11%	1.0	1483	1471	-1%	0.3	1570	1567	0%	0.1	
5034	5049	Newtownpark Avenue	W to E	2005	19/01	15	1	-90%	4.7	242	95	-61%	11.3	257	97	-62%	12.1	
5036	5037		0 To B	2007	17/01	75	1	-99%	12.1	202	20	-90%	17.3	277	21	-93%	21.0	
5036	5050	Deans Grange Road	S to N	2005	19/01	39	28	-27%	1.8	604	233	-61%	18.1	643	262	-59%	17.9	
5036	5051	Deans Grange Road (S)	W to E	2005	19/01	3	6	111%	1.5	53	81	52%	3.4	56	87	55%	3.7	
5037	5036	Abbey Road	S to N	2005	19/01	33	35	5%	0.3	538	313	-42%	10.9	571	348	-39%	10.4	
5037	5052	Kill Lane	W to E	2005	19/01	87	115	33%	2.8	213	124	-42%	6.8	300	240	-20%	3.7	
5038	5053	Pottery Road	S to N	2005	19/01	24	5	-78%	4.9	263	62	-76%	15.7	287	68	-76%	16.5	
5038	5055	Johnstown Road	W to E	2005	19/01	3	4	36%	0.6	189	81	-57%	9.3	192	85	-56%	9.1	
5048	5049		0 To B	2007	17/01	99	92	-7%	0.7	441	196	-55%	13.7	540	289	-47%	12.3	
5048	5081	Monkstown Road	N to E	2005	19/01	24	50	108%	4.3	148	219	48%	5.3	172	269	57%	6.6	
5049	5034		0 To B	2007	17/01	6	40	560%	7.0	402	181	-55%	12.9	408	221	-46%	10.5	
5049	5048	Stradbroke Road	S to NE	2005	19/01	63	72	14%	1.1	1052	697	-34%	12.0	1115	769	-31%	11.3	
5049	5050		0 To C	2007	17/01	99	56	-44%	4.9	386	114	-70%	17.2	485	170	-65%	17.4	
5050	5036		0 To B	2007	17/01	75	0	-99%	12.1	199	6	-97%	19.1	274	6	-98%	22.6	
5050	5049		0 Fm C	2007	17/01	39	41	6%	0.3	1068	681	-36%	13.1	1107	722	-35%	12.7	
5050	5051	Stradbroke Road (E)	W to E	2005	19/01	33	55	68%	3.4	256	112	-56%	10.7	289	167	-42%	8.1	
5051	5036	Deans Grange Road (S)	E to W	2005	19/01	9	0	-97%	4.0	115	17	-85%	12.1	124	17	-86%	12.7	
5051	5050		0 Fm C	2007	17/01	21	13	-38%	1.9	615	465	-24%	6.5	636	478	-25%	6.7	
5051	5052	Abbey Road (S)	N to S	2005	19/01	21	34	62%	2.5	188	80	-57%	9.3	209	114	-45%	7.5	
5051	5061		0 To E	2007	17/01	6	35	475%	6.3	126	171	36%	3.7	132	205	56%	5.7	
5052	5037	Kill Lane	E to W	2005	19/01	39	38	-3%	0.2	567	247	-56%	15.8	606	285	-53%	15.2	
5052	5051		0 Fm C	2007	17/01	18	15	-17%	0.7	482	370	-23%	5.4	500	385	-23%	5.5	
5052	5053	Rochestown Avenue	N to S	2005	19/01	39	38	-2%	0.1	234	156	-33%	5.6	273	194	-29%	5.2	
5052	5062	Kill Avenue	W to E	2005	19/01	72	79	10%	0.8	165	74	-55%	8.4	237	153	-36%	6.0	
5053	5038	Pottery Road	N to S	2005	19/01	6	1	-83%	2.7	115	14	-88%	12.5	121	15	-87%	12.8	
5053	5052	Rochestown Avenue	S to N	2005	19/01	48	37	-24%	1.7	829	488	-41%	13.3	877	525	-40%	13.3	
5053	5054	Rochestown Avenue (SE)	W to SE	2005	19/01	36	22	-39%	2.6	126	77	-39%	4.9	162	99	-39%	5.6	
5054	5053	Rochestown Avenue (SE)	SE to W	2005	19/01	30	22	-27%	1.6	541	327	-40%	10.3	571	348	-39%	10.4	
5054	5055		0 To B	2007	16/01	30	17	-44%	2.7	95	55	-42%	4.6	125	72	-43%	5.4	
5054	5063	Sallynogin Road	W to E	2005	19/01	0	1	#DIV/0!	1.6	103	19	-82%	10.8	103	20	-81%	10.6	

Additional Count Comparisons not included in the Cordon Analysis

AM1 - 07:00 - 08:00

										AM1									
										HGV			Car			Total			
5055	5038		0 To B	2007	16/01	9	8	-9%	0.3	160	105	-35%	4.8	169	113	-33%	4.7		
5055	5054	Rochestown Avenue (S)	S to N	2005	19/01	24	4	-82%	5.2	538	338	-37%	9.5	562	343	-39%	10.3		
5055	5056		0 To C	2007	16/01	27	5	-83%	5.6	141	53	-63%	9.0	168	57	-66%	10.4		
5056	5055		0 Fm C	2007	16/01	15	1	-96%	5.2	338	290	-14%	2.7	353	291	-18%	3.5		
5056	5057		0 To C	2007	16/01	51	51	0%	0.0	469	346	-26%	6.1	520	397	-24%	5.8		
5056	5063	R 118	S to N	2005	19/01	9	12	38%	1.0	516	387	-25%	6.1	525	399	-24%	5.8		
5056	5066	Avondale road	NW to NE	2005	19/01	6	13	121%	2.3	157	100	-36%	5.0	163	114	-30%	4.2		
5057	5056	Church Road	S to N	2005	19/01	27	28	4%	0.2	881	740	-16%	4.9	908	769	-15%	4.8		
5061	5051		0 Fm E	2007	17/01	0	3	#DIV/0!	2.5	229	90	-61%	11.1	229	93	-60%	10.8		
5061	5062		0 To C	2007	17/01	3	8	153%	2.0	20	27	34%	1.4	23	34	49%	2.1		
5061	5071	Monkstown Avenue	S to E	2005	19/01	0	14	#DIV/0!	5.2	296	312	5%	0.9	296	325	10%	1.6		
5062	5052	Kill Avenue	E to W	2005	19/01	18	10	-43%	2.1	264	93	-65%	12.8	282	103	-64%	12.9		
5062	5061		0 Fm C	2007	17/01	0	2	#DIV/0!	2.2	249	183	-27%	4.5	249	185	-26%	4.3		
5063	5054	Sallynogin Road	E to W	2005	19/01	15	8	-47%	2.1	100	20	-80%	10.3	115	28	-75%	10.2		
5063	5056		0 Fm A	2007	16/01	24	45	87%	3.6	142	175	23%	2.6	166	220	33%	3.9		
5066	5056	Avondale road	NE to NW	2005	19/01	3	2	-41%	0.8	136	136	0%	0.0	139	138	-1%	0.1		
5070	5071	Carrickbrennan Road (N)	N to S	2005	19/01	0	7	#DIV/0!	3.7	66	65	-1%	0.1	66	72	9%	0.8		
5070	5081	Carrickbrennan Road	S to N	2005	19/01	15	15	-1%	0.1	641	525	-18%	4.8	656	540	-18%	4.7		
5071	5061		0 To B	2007	17/01	0	1	#DIV/0!	1.3	82	45	-45%	4.6	82	46	-44%	4.5		
5071	5070	Carrickbrennan Road (N)	S to N	2005	19/01	0	15	#DIV/0!	5.4	646	514	-20%	5.5	646	528	-18%	4.9		
5071	5072	Mountown Upper	S to E	2005	19/01	0	7	#DIV/0!	3.8	73	64	-12%	1.0	73	72	-2%	0.1		
5072	5071		0 Fm D	2007	17/01	3	1	-53%	1.1	198	244	23%	3.1	201	246	22%	3.0		
5072	5082	York Road	S to N	2005	16/11	27	5	-80%	5.4	103	163	58%	5.2	130	168	30%	3.1		
5073	5084	Glenageary Road	S to N	2005	16/11	15	5	-66%	3.1	153	164	7%	0.8	168	169	0%	0.1		
5079	5082	Cumberland Street	W to E	2005	16/11	18	3	-83%	4.6	57	23	-60%	5.4	75	26	-65%	6.9		
5080	5081	Monistown Crescent	E to W	2005	19/01	24	22	-10%	0.5	101	167	65%	5.7	125	188	51%	5.1		
5081	5048	Monkstown Road	E to N	2005	19/01	36	35	-3%	0.2	650	511	-21%	5.8	686	546	-20%	5.7		
5081	5070		0 To C	2007	17/01	0	7	#DIV/0!	3.7	78	71	-9%	0.8	78	78	-1%	0.0		
5081	5080	Monistown Crescent	W to E	2005	19/01	21	25	19%	0.8	83	75	-9%	0.9	104	100	-4%	0.4		
5081	5093	To Longford Terrace	S to N	2005	19/01	3	35	1059%	7.3	85	292	244%	15.1	88	327	272%	16.6		
5082	5072	York Road	N to S	2005	16/11	21	21	1%	0.0	49	66	35%	2.3	70	88	25%	2.0		
5082	5079	Cumberland Street	E to W	2005	16/11	18	18	-1%	0.0	89	124	39%	3.4	107	141	32%	3.1		
5082	5094	Clarence Street	S to N	2005	16/11	24	4	-83%	5.3	69	121	75%	5.3	93	125	34%	3.1		
5083	5082	Georges Street Lower	E to W	2005	16/11	27	16	-40%	2.3	50	79	58%	3.6	77	95	24%	2.0		
5083	5095	Marine Road	S to N	2005	16/11	12	9	-29%	1.1	93	7	-93%	12.2	105	15	-86%	11.6		
5083	5097	George Street Upper	W to E	2005	16/11	30	27	-11%	0.6	67	85	27%	2.1	97	112	16%	1.5		
5084	5073	Glenageary Road	N to S	2005	16/11	18	21	17%	0.7	52	36	-30%	2.3	70	57	-18%	1.6		
5084	5095	Queens Road	E to W	2005	16/11	15	7	-56%	2.6	411	131	-68%	17.0	426	137	-68%	17.2		
5084	5098	George's Street Upper	E to W	2005	16/11	12	12	-1%	0.0	135	292	116%	10.7	147	303	106%	10.4		
5084	5099	Summerhill Road	W to E	2005	16/11	6	0	-94%	3.1	25	11	-58%	3.4	31	11	-65%	4.4		
5094	5082	Clarence Street	N to S	2005	16/11	12	19	55%	1.7	47	45	-4%	0.3	59	64	8%	0.6		
5095	5083	Marine Road	N to S	2005	16/11	39	27	-32%	2.2	77	85	10%	0.9	116	112	-4%	0.4		
5095	5084	Queens Road	W to E	2005	16/11	9	0	-96%	4.0	103	3	-97%	13.7	112	3	-97%	14.3		

Additional Count Comparisons not included in the Cordon Analysis

AM1 - 07:00 - 08:00

						AM1											
						HGV				Car				Total			
5095	5096	Crofton Road	E to W	2005	16/11	15	15	1%	0.0	449	137	-69%	18.2	464	152	-67%	17.8
5096	5095	Crofton Road	W to E	2005	16/11	27	27	0%	0.0	162	88	-46%	6.6	189	115	-39%	6.0
5097	5083	George Street Upper	E to W	2005	16/11	21	25	18%	0.8	142	86	-40%	5.3	163	111	-32%	4.5
5098	5084	George's Street Upper	W to E	2005	16/11	21	21	0%	0.0	51	44	-14%	1.0	72	65	-10%	0.9
5099	5084	Summerhill Road	E to W	2005	16/11	3	13	346%	3.6	71	259	264%	14.6	74	272	267%	15.0
5102	4061		0 From D	2007	6 March	45	45	0%	0.0	757	226	-70%	23.9	802	271	-66%	22.9
5109	5125	HAROLDS GRANGE ROAD	1 N to S	2005	16/11	18	16	-9%	0.4	604	106	-83%	26.5	622	122	-80%	25.9
5125	5109	B32	2 S to N	2005	16/11	27	13	-51%	3.1	144	71	-50%	7.0	171	85	-51%	7.6
5127	5128	SANDYFORD RD / WYCKHAM WAY	to B	2005	05/04	39	40	3%	0.2	570	370	-35%	9.2	609	410	-33%	8.8
5127	5134	SANDYFORD RD / WYCKHAM WAY	to A	2005	05/04	6	4	-26%	0.7	91	39	-57%	6.5	97	43	-55%	6.4
5127	5135	SANDYFORD ROAD / BALALLY ROAD	Fm A	2005	05/04	15	33	123%	3.7	224	120	-46%	7.9	239	154	-36%	6.1
5127	5146	SANDYFORD RD / WYCKHAM WAY	to D	2005	05/04	21	23	10%	0.4	431	491	14%	2.8	452	514	14%	2.8
5128	5127	SANDYFORD RD / WYCKHAM WAY	fm B	2005	05/04	39	43	9%	0.5	520	479	-8%	1.9	559	521	-7%	1.6
5128	5148	DUNDRUM BYPASS / WYCKHAM WAY	to C	2005	05/04	48	27	-45%	3.5	344	157	-54%	11.8	392	184	-53%	12.3
5128	5149	DUNDRUM BYPASS / WYCKHAM WAY	to D	2005	05/04	54	25	-53%	4.6	465	312	-33%	7.8	519	337	-35%	8.8
5134	5127	Sandyford Road (N)	N to S	2006	21/03	0	10	#DIV/0!	4.4	97	40	-59%	6.9	97	49	-49%	5.6
5135	5127	SANDYFORD ROAD / BALALLY ROAD	To A	2005	05/04	39	45	16%	1.0	604	451	-25%	6.7	643	496	-23%	6.1
5135	5142	SANDYFORD ROAD / BALALLY ROAD	To B	2005	05/04	27	33	22%	1.1	272	105	-62%	12.2	299	138	-54%	10.9
5136	5142	SANDYFORD ROAD / BLACKTHORN DRIVE	To A	2005	05/04	24	49	102%	4.1	499	262	-48%	12.2	523	310	-41%	10.4
5136	5169	SANDYFORD ROAD / BLACKTHORN DRIVE	To C	2005	05/04	36	12	-67%	4.9	521	211	-59%	16.2	557	223	-60%	16.9
5142	5135	SANDYFORD ROAD / BALALLY ROAD	Fm B	2005	05/04	39	45	16%	0.9	546	331	-39%	10.3	585	376	-36%	9.5
5142	5136	Sandyford Road (N)	N to S	2006	21/03	24	18	-25%	1.3	303	119	-61%	12.6	327	137	-58%	12.4
5144	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm B	2005	06/04	57	26	-54%	4.8	601	636	6%	1.4	658	662	1%	0.2
5146	5127	Wyckham Way Extension	E to W	2006	21/03	12	3	-71%	3.1	177	51	-71%	11.7	189	55	-71%	12.1
5148	5128	DUNDRUM BYPASS / WYCKHAM WAY	fm C	2005	05/04	81	34	-58%	6.2	814	443	-46%	14.8	895	477	-47%	15.9
5149	5128	DUNDRUM BYPASS / WYCKHAM WAY	fm D	2005	05/04	48	20	-58%	4.8	531	135	-75%	21.7	579	155	-73%	22.1
5164	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm A	2005	06/04	12	47	291%	6.4	237	158	-33%	5.6	249	205	-18%	2.9
5165	5144	MOUNT ANVILLE RD / LOWER KILMACUD RD	To B	2005	06/04	48	19	-61%	5.1	317	115	-64%	13.7	365	134	-63%	14.7
5165	5164	MOUNT ANVILLE RD / LOWER KILMACUD RD	To A	2005	06/04	12	19	58%	1.8	415	649	56%	10.2	427	668	57%	10.3
5165	5166	MOUNT ANVILLE RD / LOWER KILMACUD RD	To C	2005	06/04	24	51	113%	4.4	403	172	-57%	13.6	427	223	-48%	11.3
5165	5172	MOUNT ANVILLE RD / LOWER KILMACUD RD	To D	2005	06/04	54	26	-52%	4.4	570	615	8%	1.8	624	641	3%	0.7
5166	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm C	2005	06/04	36	35	-2%	0.1	683	693	1%	0.4	719	728	1%	0.4
5166	5176	EDEN PARK RD / LOWER KILMACUD RD	To D	2005	06/04	33	15	-55%	3.7	317	107	-66%	14.4	350	122	-65%	14.8
5168	9571	DRUMMARTIN ROAD	1 N to S	2005	16/11	126	329	161%	13.5	1279	346	-73%	32.7	1405	675	-52%	22.6
5169	5136	Blackthorn Drive	E to W	2006	21/03	45	31	-31%	2.2	211	18	-92%	18.0	256	49	-81%	16.8
5172	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm D	2005	06/04	33	6	-82%	6.1	184	74	-60%	9.7	217	80	-63%	11.2
5176	5166	EDEN PARK RD / LOWER KILMACUD RD	Fm D	2005	06/04	30	20	-35%	2.1	274	65	-76%	16.1	304	84	-72%	15.8
5179	5180	THE HILL / LOWER KILMACUD RD / DUBLIN RD	Fm B	2005	06/04	30	11	-63%	4.2	439	68	-84%	23.3	469	80	-83%	23.5
5180	5019	THE HILL / LOWER KILMACUD RD / DUBLIN RD	To D	2005	06/04	36	19	-46%	3.1	338	246	-27%	5.4	374	265	-29%	6.1
5180	5179	THE HILL / LOWER KILMACUD RD / DUBLIN RD	To B	2005	06/04	111	37	-67%	8.6	430	137	-68%	17.4	541	175	-68%	19.4
9568	9577	B37	2 S to N	2005	16/11	147	99	-33%	4.3	627	534	-15%	3.9	774	633	-18%	5.3
9571	5168	B36	2 S to N	2005	16/11	51	35	-31%	2.4	252	573	127%	15.8	303	608	101%	14.3
9577	9568	LEOPARDSTOWN ROAD	1 N to S	2005	16/11	138	136	-1%	0.2	1928	450	-77%	42.9	2066	586	-72%	40.6

Additional Count Comparisons not included in the Cordon Analysis

AM2 - 08:00 - 09:00

						AM2											
A Node	B Node	Location	Direction	Year	Date	HGV				Car				Total			
						Count	Model	% Diff	GEH	Count	Model	% Diff	HGV	Count	Model	% Diff	GEH
1101	1306	North Wall Quay	E to W	2006	Nov	389	321	-17%	3.6	305	354	16%	2.7	694	675	-3%	0.7
1102	2212	East Wall Rd / N Wall Quay / E Link Toll Bridge	To C	2006	18/05	797	955	20%	5.3	216	243	12%	1.8	1013	1197	18%	5.5
1103	1309	Sheriff St Upper	E to W	2006	Nov	528	449	-15%	3.6	128	251	97%	9.0	656	700	7%	1.7
1105	1106	East Wall Rd / Tolka Quay	To C	2006	18/05	255	149	-42%	7.4	186	153	-18%	2.5	441	302	-31%	7.2
1105	1121	East Wall Rd / Tolka Quay	To A	2006	18/05	288	489	70%	10.2	477	449	-6%	1.3	765	938	23%	5.9
1106	1105	East Wall Rd / Tolka Quay	Fm C	2006	18/05	45	83	84%	4.7	942	733	-22%	7.2	987	815	-17%	5.7
1113	1131	Ossory Road	N to S	2006	Nov	163	62	-62%	9.6	3	0	-100%	2.4	166	62	-63%	9.8
1121	1105	East Wall Rd / Tolka Quay	Fm A	2006	18/05	475	595	25%	5.2	156	153	-2%	0.2	631	748	19%	4.5
1131	1113	Ossory Road	0	2006	Nov	90	50	-44%	4.8	2	0	-100%	1.7	92	50	-45%	4.9
1301	1302	Eden Quay	W to E	2005	22/02	860	591	-31%	10.0	312	346	11%	1.9	1172	936	-20%	7.3
1301	1361	O'Connell Street	S to N	2005	22/02	496	603	22%	4.6	120	94	-22%	2.5	616	697	13%	3.2
1301	2001	O'Connell Bridge	N to S	2005	22/02	916	1180	29%	8.2	84	83	-1%	0.1	1000	1264	26%	7.8
1302	1303	Marlborough St / Abbey St Lwr	0 W to E	2005	22/02	935	471	-50%	17.5	321	345	7%	1.3	1256	815	-35%	13.7
1302	1351		Fm C	2006	17/05	46	125	171%	8.5	3	5	58%	0.9	49	130	164%	8.5
1303	1304	0 W to E	2005	22/02	1106	552	-50%	19.2	309	369	19%	3.2	1415	920	-35%	14.5	
1303	1311	Abbey St Lwr / Beresford Pl	Fm C	2006	17/05	1265	1266	0%	0.0	81	149	84%	6.3	1346	1414	5%	1.8
1306	1101	North Wall Quay	0	2006	Nov	51	171	236%	11.4	483	302	-37%	9.1	534	474	-11%	2.7
1309	1103	Sheriff St Upper	0	2006	Nov	232	420	81%	10.4	42	50	20%	1.2	274	471	72%	10.2
1312	1313	Abbey St Lwr / Beresford Pl	To D	2006	17/05	736	1595	117%	25.2	51	134	163%	8.7	787	1729	120%	26.6
1312	1341	Abbey St Lwr / Beresford Pl	To A	2006	17/05	709	861	21%	5.4	63	68	9%	0.7	772	929	20%	5.4
1333	1334	NORTH CIRCULAR ROAD (A4)	2 E to W	2006	May	615	415	-33%	8.8	156	125	-20%	2.6	771	540	-30%	9.0
1334	1333	NORTH CIRCULAR ROAD (A4)	1 W to E	2006	May	713	827	16%	4.1	117	120	2%	0.3	830	946	14%	3.9
1334	1394	North Circular Road (E)	E to W	2005	07/11	333	472	42%	6.9	141	133	-5%	0.6	474	606	28%	5.7
1346	1393	Gardiner Street Upper	E to W	2005	07/11	342	437	28%	4.8	75	43	-43%	4.2	417	479	15%	3.0
1351	1302	Marlborough St / Abbey St Lwr	To C	2006	17/05	111	0	-100%	14.8	9	0	-100%	4.2	120	0	-100%	15.4
1351	1311	Marlborough St / Abbey St Lwr	To D	2006	17/05	186	1	-99%	19.1	27	0	-100%	7.3	213	1	-100%	20.5
1352	1351	Marlborough St / Abbey St Lwr	Fm A	2006	17/05	262	181	-31%	5.5	27	11	-59%	3.6	289	192	-34%	6.3
1359	1392	Temple Street	E to W	2005	07/11	178	309	74%	8.4	12	19	61%	1.8	190	329	73%	8.6
1361	1301	O'Connell Street	N to S	2005	22/02	488	791	62%	12.0	48	44	-9%	0.6	536	834	56%	11.4
1367	1391	North Frederick Street	E to W	2005	07/11	20	27	36%	1.5	3	3	-9%	0.2	23	30	30%	1.3
1372	1390	Granby Row	E to W	2005	07/11	191	87	-55%	8.9	33	26	-20%	1.2	224	113	-50%	8.6
1373	1301	BACHELOR'S WALK (A1)	1 E to W	2006	May	1029	793	-23%	7.8	327	320	-2%	0.4	1356	1113	-18%	6.9
1382	1377	0 W to E	2005	22/02	1355	979	-28%	11.0	315	329	4%	0.8	1670	1308	-22%	9.4	
1382	2005	Capel Street Bridge	N to S	2005	22/02	573	709	24%	5.4	75	57	-23%	2.2	648	767	18%	4.5
1383	1382	Capel Street	N to S	2005	22/02	634	760	20%	4.8	84	78	-7%	0.6	718	838	17%	4.3
1384	1383	Capel Street	N to S	2005	22/02	388	676	74%	12.5	60	61	2%	0.1	448	737	65%	11.9
1389	1390	Dorset Street Upper (S)	S to N	2005	07/11	486	241	-50%	12.8	93	78	-16%	1.7	579	319	-45%	12.3
1390	1391	Dorset Street Upper (N)	S to N	2005	07/11	567	218	-62%	17.6	102	94	-8%	0.8	669	312	-53%	16.1
1390	1406	St. Mary's Place	E to W	2005	07/11	117	241	106%	9.3	24	26	8%	0.4	141	267	89%	8.8
1391	1390	Dorset Street Upper (N)	N to S	2005	07/11	838	462	-45%	14.8	69	64	-7%	0.6	907	526	-42%	14.2
1391	1392	Dorset Street Lower (N)	S to N	2005	07/11	676	272	-60%	18.5	114	105	-8%	0.9	790	377	-52%	17.1
1392	1391	Dorset Street Lower (N)	N to S	2005	07/11	824	400	-51%	17.1	75	56	-25%	2.3	899	457	-49%	17.0
1392	1393	Dorset Street Lower (N)	S to N	2005	07/11	729	453	-38%	11.4	126	128	1%	0.2	855	581	-32%	10.2

Additional Count Comparisons not included in the Cordon Analysis

AM2 - 08:00 - 09:00

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1392	1417	Eccles Street	E to W	2005	07/11	193	401	108%	12.1	3	15	415%	4.1	196	416	112%	12.6
1393	1346	Gardiner Street Upper	W to E	2005	07/11	627	630	0%	0.1	111	30	-73%	9.6	738	660	-11%	2.9
1393	1392	Dorset Street Lower (N)	N to S	2005	07/11	961	821	-15%	4.7	93	70	-24%	2.5	1054	891	-15%	5.2
1393	1394	Dorset Street Lower (N)	S to N	2005	07/11	988	687	-30%	10.4	201	153	-24%	3.6	1189	841	-29%	10.9
1393	1409	Synott Place	E to W	2005	07/11	141	255	81%	8.1	3	20	553%	4.9	144	274	90%	9.0
1394	1334	North Circular Road (E)	W to E	2005	07/11	430	1016	136%	21.8	132	125	-5%	0.6	562	1142	103%	19.9
1394	1393	Dorset Street Lower (N)	N to S	2005	07/11	1415	950	-33%	13.5	147	75	-49%	6.8	1562	1026	-34%	14.9
1394	1413	North Circular Road (W)	E to W	2005	07/11	296	315	6%	1.1	117	119	2%	0.2	413	433	5%	1.0
1395	1382	Ormond Quay	W to E	2005	22/02	1295	938	-28%	10.7	288	309	7%	1.2	1583	1246	-21%	9.0
1396	1383	Marys Street	W to E	2005	22/02	155	89	-43%	6.0	3	9	208%	2.5	158	98	-38%	5.3
1407	1391	Blessington Street	W to E	2005	07/11	191	90	-53%	8.5	24	16	-35%	1.9	215	106	-51%	8.6
1408	1415	Synott Place	0 from B	2007	19/04	85	143	68%	5.4	3	11	283%	3.2	88	154	75%	6.0
1409	1393		W to E	2005	07/11	222	549	147%	16.7	63	27	-57%	5.4	285	576	102%	14.0
1410	1411	Dorset Street Lower (N)	S to N	2005	07/11	1103	705	-36%	13.2	255	230	-10%	1.6	1358	935	-31%	12.5
1411	1410	Dorset Street Lower (N)	N to S	2005	07/11	1769	1635	-8%	3.2	147	112	-24%	3.1	1916	1747	-9%	3.9
1411	1851	Drumcondra Road Lower (S)	S to N	2005	07/11	1100	926	-16%	5.5	264	258	-2%	0.4	1364	1184	-13%	5.0
1413	1394	North Circular Road (W)	W to E	2005	07/11	338	431	28%	4.8	111	69	-38%	4.4	449	500	11%	2.3
1414	1415	Eccles Street	0 from A	2007	19/04	448	535	19%	3.9	57	137	141%	8.1	505	673	33%	6.9
1415	1408		0 to B	2007	19/04	500	391	-22%	5.2	24	19	-21%	1.1	524	410	-22%	5.3
1415	1414		0 to A	2007	19/04	586	874	49%	10.6	51	99	94%	5.5	637	972	53%	11.8
1415	1416		0 to C	2007	19/04	495	615	24%	5.1	60	149	148%	8.7	555	764	38%	8.1
1416	1415		0 from C	2007	19/04	1048	1267	21%	6.4	75	123	64%	4.8	1123	1390	24%	7.5
1416	1428		0 from B	2007	19/04	536	615	15%	3.3	63	149	137%	8.4	599	764	28%	6.3
1417	1392		W to E	2005	07/11	333	354	6%	1.1	39	38	-4%	0.2	372	392	5%	1.0
1420	1468		0 from C	2007	19/04	210	452	115%	13.3	6	27	344%	5.1	216	479	122%	14.1
1427	1428		0 from C	2007	19/04	648	549	-15%	4.1	60	156	160%	9.2	708	705	0%	0.1
1428	1416		0 to B	2007	19/04	979	1267	29%	8.6	57	123	115%	6.9	1036	1390	34%	10.2
1428	1427	Blackhall Place/ Blackhall Street	0 to C	2007	19/04	644	1110	72%	15.7	51	89	74%	4.5	695	1199	73%	16.4
1428	1431		0 Wbd	2007	Apr	586	529	-10%	2.4	63	146	131%	8.1	649	674	4%	1.0
1431	1428		0 Ebd	2007	Apr	718	1051	46%	11.2	39	97	148%	7.0	757	1147	52%	12.7
1454	1464		From C	2005	17/05	299	179	-40%	7.7	69	51	-27%	2.4	368	230	-38%	8.0
1460	1465		From A	2005	17/05	450	300	-33%	7.8	84	68	-19%	1.8	534	368	-31%	7.8
1461	1451		0 0	2007	24/04	881	969	10%	2.9	99	200	102%	8.3	980	1169	19%	5.8
1461	1462		0 0	2007	24/04	420	220	-48%	11.2	21	30	42%	1.7	441	249	-43%	10.3
1463	1464		0 from C	2007	24/04	384	219	-43%	9.5	27	27	1%	0.1	411	247	-40%	9.1
1464	1460		To B	2005	17/05	412	324	-21%	4.6	72	69	-4%	0.3	484	394	-19%	4.3
1464	1463		To A	2005	17/05	238	73	-69%	13.2	54	7	-88%	8.6	292	80	-73%	15.6
1465	1455	Blackhall Place/ King Street North	To C	2005	17/05	773	860	11%	3.0	60	33	-45%	3.9	833	893	7%	2.0
1465	1466	Blackhall Place/ King Street North	To B	2005	17/05	303	308	2%	0.3	54	72	33%	2.3	357	380	6%	1.2
1466	1456	Rosemount Terrace / Stoneybatter / Brunswick Street North	To B	2005	17/05	586	554	-5%	1.3	30	43	42%	2.1	616	596	-3%	0.8
1466	1465	Blackhall Place/ King Street North	From B	2005	17/05	694	790	14%	3.5	30	31	3%	0.2	724	821	13%	3.5
1466	1467	Rosemount Terrace / Stoneybatter / Brunswick Street North	To A	2005	17/05	224	155	-31%	5.0	45	46	3%	0.2	269	201	-25%	4.4
1466	1478	Rosemount Terrace / Stoneybatter / Brunswick Street North	To D	2005	17/05	119	134	13%	1.4	3	19	517%	4.7	122	153	25%	2.6

Additional Count Comparisons not included in the Cordon Analysis

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						HGV				Car				Total				
1467	1466	Rosemount Terrace / Stoneybatter / Brunswick Street North	From A	2005	17/05	852	715	-16%	4.9	45	26	-42%	3.2	897	741	-17%	5.4	
1467	1468		0 from B	2007	19/04	269	192	-29%	5.1	57	45	-22%	1.7	326	237	-27%	5.3	
1467	1473		0 to D	2007	24/04	38	10	-74%	5.7	0	3	#DIV/0!	2.2	38	13	-67%	5.1	
1468	1420		0 to C	2007	19/04	48	58	22%	1.4	9	5	-44%	1.5	57	63	11%	0.8	
1468	1467		0 to B	2007	19/04	649	656	1%	0.3	51	22	-56%	4.7	700	679	-3%	0.8	
1468	1469		0 to A	2007	19/04	222	303	37%	5.0	54	62	14%	1.0	276	365	32%	5.0	
1469	1468		0 from A	2007	19/04	440	307	-30%	6.9	51	10	-80%	7.4	491	317	-35%	8.7	
1473	1467	Stoneybatter / Manor Place / Kirwan Street	From A	2005	17/05	223	43	-81%	15.6	6	1	-84%	2.7	229	44	-81%	15.9	
1474	1461		0 0	2007	24/04	997	1047	5%	1.6	102	208	104%	8.5	1099	1255	14%	4.6	
1478	1466	Rosemount Terrace / Stoneybatter / Brunswick Street North	From D	2005	17/05	316	762	141%	19.2	18	56	213%	6.3	334	818	145%	20.2	
1651	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SE to NW	2005	24/02	633	643	2%	0.4	60	85	42%	2.9	693	728	5%	1.3	
1667	3511	B5	2 S to N	2005	09/11	1527	198	-87%	45.3	249	15	-94%	20.4	1776	212	-88%	49.6	
1675	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SW to NE	2005	24/02	808	402	-50%	16.5	144	84	-42%	5.7	952	485	-49%	17.4	
1676	1651	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NW to SE	2005	24/02	805	602	-25%	7.7	75	63	-17%	1.5	880	665	-24%	7.8	
1676	1675	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NE to SW	2005	24/02	513	719	40%	8.3	66	66	0%	0.0	579	785	36%	7.9	
1676	1819	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SE to NW	2005	24/02	536	204	-62%	17.3	24	4	-84%	5.4	560	207	-63%	18.0	
1711	1851	Whitworth Street	W to E	2005	07/11	573	476	-17%	4.2	48	80	67%	4.0	621	557	-10%	2.7	
1819	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NW to SE	2005	24/02	523	233	-55%	14.9	33	18	-44%	2.9	556	252	-55%	15.1	
1829	1846	B6	2 S to N	2005	23/11	759	89	-88%	32.6	15	17	13%	0.5	774	105	-86%	31.9	
1846	1829	CLONSHAUGH ROAD	1 N to S	2005	23/11	325	188	-42%	8.6	6	5	-20%	0.5	331	192	-42%	8.6	
1851	1411	Drumcondra Road Lower (S)	N to S	2005	07/11	1755	1639	-7%	2.8	111	112	1%	0.1	1866	1751	-6%	2.7	
1851	1711	Whitworth Street	E to W	2005	07/11	174	127	-27%	3.9	105	113	8%	0.8	279	240	-14%	2.4	
1851	1852	DRUMCONDRA ROAD LOWER / WHITWORTH ROAD	S to N	2005	07/11	957	1038	8%	2.6	165	250	52%	5.9	1122	1288	15%	4.8	
1852	1851	Drumcondra Road Lower (N)	N to S	2005	07/11	1222	1219	0%	0.1	69	130	89%	6.1	1291	1349	5%	1.6	
1855	1856	Drumcondra Road Upper	S to N	2005	06/11	804	958	19%	5.2	174	239	37%	4.5	978	1196	22%	6.6	
1856	1855	Drumcondra Road Upper	N to S	2005	06/11	672	1579	135%	27.0	84	75	-11%	1.0	756	1654	119%	25.9	
1859	1861	M1 (A3)	1 S to N	2006	May	914	1418	55%	14.8	243	334	38%	5.4	1157	1752	51%	15.6	
1861	1859	M1 (A3)	2 N to S	2006	May	477	1008	111%	19.5	129	89	-31%	3.9	606	1096	81%	16.8	
1861	1871		0 Nbd	2007	Apr	1060	1165	10%	3.1	117	307	163%	13.1	1177	1472	25%	8.1	
1871	1861		0 Sbd	2007	Apr	815	1006	23%	6.3	60	89	48%	3.3	875	1095	25%	7.0	
1901	1911		0 from A	2007	19/04	194	275	42%	5.3	0	39	#DIV/0!	8.8	194	313	62%	7.5	
1904	1906		0 from A	2007	19/04	445	277	-38%	8.8	24	98	310%	9.5	469	376	-20%	4.5	
1906	1904		0 to A	2007	19/04	775	823	6%	1.7	24	124	415%	11.6	799	946	18%	5.0	
1906	1914		0 from A	2007	19/04	318	188	-41%	8.2	9	22	146%	3.3	327	210	-36%	7.1	
1906	1915		0 from A	2007	17/04	647	483	-25%	6.9	45	43	-4%	0.3	692	526	-24%	6.7	
1908	1911		0 from B	2007	19/04	408	53	-87%	23.4	63	23	-64%	6.1	471	76	-84%	23.9	
1911	1901		0 to A	2007	19/04	69	127	85%	5.9	3	36	1085%	7.4	72	163	126%	8.4	
1911	1908		0 to B	2007	19/04	611	722	18%	4.3	15	77	413%	9.1	626	799	28%	6.5	
1911	1912		0 to C	2007	19/04	376	306	-19%	3.8	63	118	88%	5.8	439	424	-3%	0.7	
1912	1911		0 from C	2007	19/04	454	732	61%	11.4	18	58	222%	6.5	472	790	67%	12.7	
1912	1913		0 from B	2007	19/04	475	357	-25%	5.8	78	131	67%	5.1	553	488	-12%	2.8	
1913	1903		0 to A	2007	19/04	73	102	40%	3.1	6	78	1206%	11.1	79	181	129%	8.9	
1913	1912		0 to B	2007	19/04	584	782	34%	7.6	15	60	302%	7.4	599	843	41%	9.1	

Additional Count Comparisons not included in the Cordon Analysis

AM2 - 08:00 - 09:00

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1913	1914		0	from B	2007	19/04	418	294	-30%	6.6	72	54	-25%	2.3	490	348	-29%	6.9	
1914	1906		0	to A	2007	19/04	118	59	-50%	6.3	9	38	320%	6.0	127	97	-24%	2.9	
1914	1913		0	to B	2007	19/04	516	753	46%	9.4	15	59	290%	7.2	531	811	53%	10.8	
1914	1915	Navan Road	0		2006	Nov	394	296	-25%	5.2	155	71	-54%	7.9	548	367	-33%	8.5	
1914	1917		0	to C	2007	19/04	534	339	-36%	9.3	36	45	24%	1.3	570	384	-33%	8.5	
1915	1906		0	to A	2007	17/04	502	342	-32%	7.8	57	53	-7%	0.5	559	395	-29%	7.5	
1915	1914		0	to B	2007	17/04	814	686	-16%	4.7	42	45	8%	0.5	856	732	-15%	4.4	
1915	1916		0	from B	2007	17/04	521	418	-20%	4.7	75	73	-3%	0.3	596	491	-18%	4.5	
1915	1921	Navan Road / Nephin Road		To D	2005	17/05	199	489	146%	15.7	9	40	349%	6.3	208	530	155%	16.8	
1916	1915	Navan Road / Nephin Road		From A	2005	17/05	949	779	-18%	5.8	93	48	-49%	5.4	1042	826	-21%	7.1	
1916	1918		0	from B	2007	17/04	646	288	-55%	16.6	51	67	31%	2.0	697	355	-49%	14.9	
1917	1914	Old Cabra Road / Cabra Road / Ratoath Road		From D	2005	17/05	381	175	-54%	12.3	81	64	-21%	2.0	462	239	-48%	11.9	
1918	1916		0	to B	2007	17/04	717	250	-65%	21.2	57	47	-18%	1.4	774	297	-62%	20.6	
1918	3421	Navan Road / Ashtown Roundabout		From C	2005	17/05	814	954	17%	4.7	150	79	-47%	6.6	964	1034	7%	2.2	
1919	1920		0	from B	2007	17/04	165	281	70%	7.8	3	62	1957%	10.3	168	343	104%	10.9	
1920	1919	Blackhorse Avenue / Skreen Road		To C	2005	17/05	660	663	0%	0.1	24	38	57%	2.5	684	701	2%	0.6	
1920	1921		0	to C	2007	17/04	202	415	106%	12.1	27	65	142%	5.7	229	481	110%	13.4	
1921	1915		0	from C	2007	17/04	305	431	41%	6.6	15	55	270%	6.8	320	487	52%	8.3	
1921	1920	Blackhorse Avenue / Skreen Road		From A	2005	17/05	749	791	6%	1.5	24	38	58%	2.5	773	828	7%	2.0	
1921	1922		0	to C	2007	17/04	235	337	43%	6.0	15	13	-11%	0.4	250	351	40%	5.8	
1922	1921		0	from C	2007	17/04	1016	647	-36%	12.8	15	6	-61%	2.8	1031	653	-37%	13.0	
1922	3471		0	from B	2007	17/04	112	270	141%	11.5	0	12	#DIV/0!	4.8	112	282	152%	12.1	
2001	1301	O'Connell Bridge		S to N	2005	22/02	670	776	16%	3.9	129	143	11%	1.2	799	919	15%	4.3	
2001	2002			Wbd	2007	Apr	694	290	-58%	18.2	114	515	352%	22.6	808	805	0%	0.1	
2001	2151	D'Olier Street		N to S	2005	22/02	1417	1290	-9%	3.5	159	161	1%	0.2	1576	1451	-8%	3.2	
2004	2005	Wellington Quay		E to W	2005	22/02	724	340	-53%	16.6	552	588	7%	1.5	1276	928	-27%	10.5	
2005	2008	Parliament Street		N to S	2005	22/02	489	544	11%	2.4	165	45	-72%	11.6	654	589	-10%	2.6	
2008	2018	Parliament Street		N to S	2005	22/02	451	451	0%	0.0	204	43	-79%	14.5	655	494	-25%	6.7	
2011	2001		0	S to N	2005	22/02	772	524	-32%	9.8	144	111	-23%	2.9	916	635	-31%	10.1	
2011	2006	Fleet Street		E to W	2005	22/02	79	3	-96%	11.9	24	0	-98%	6.8	103	3	-97%	13.7	
2011	2151		0	W to E	2005	22/02	166	126	-24%	3.3	18	13	-25%	1.1	184	140	-24%	3.5	
2012	2011	Westmoreland Street		S to N	2005	22/02	1015	772	-24%	8.1	176	162	-8%	1.1	1190	933	-22%	7.9	
2012	2013	College Street		N to S	2005	22/02	1236	906	-27%	10.1	99	113	14%	1.4	1335	1019	-24%	9.2	
2013	2012	College Street		S to N	2005	22/02	889	700	-21%	6.7	141	127	-10%	1.2	1030	827	-20%	6.7	
2013	2014	College Green		N to W	2005	22/02	518	518	0%	0.0	54	67	25%	1.7	572	585	2%	0.6	
2013	2081	Grafton Street		N to S	2005	22/02	719	379	-47%	14.5	45	45	-1%	0.1	764	424	-45%	14.0	
2014	2013	College Green		W to N	2005	22/02	889	700	-21%	6.7	141	127	-10%	1.2	1030	827	-20%	6.7	
2014	2015		0	E to W	2005	22/02	510	471	-8%	1.8	65	76	19%	1.4	575	547	-5%	1.2	
2015	2014	Dame St / Anglesea St		To C	2006	17/05	789	642	-19%	5.5	132	109	-17%	2.1	921	752	-18%	5.9	
2015	2016	Dame Street		E to W	2005	22/02	396	301	-24%	5.1	54	68	27%	1.8	450	370	-18%	3.9	
2015	2061	Trinity Street		N to S	2005	22/02	238	499	110%	13.6	36	36	-1%	0.1	274	535	95%	13.0	
2016	2015	Dame Street		W to E	2005	22/02	936	907	-3%	0.9	159	121	-24%	3.2	1095	1029	-6%	2.0	
2016	2017	Dame Street		E to W	2005	22/02	290	418	44%	6.8	45	93	107%	5.8	335	512	53%	8.6	

Additional Count Comparisons not included in the Cordon Analysis

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						AM2											
						HGV				Car				Total			
2016	2041	South Georges Street	N to S	2005	22/02	247	148	-40%	7.1	36	28	-22%	1.4	283	176	-38%	7.1
2017	2016	Dame Street	W to E	2005	22/02	875	900	3%	0.8	171	120	-30%	4.2	1046	1020	-2%	0.8
2017	2018	Dame Street	E to W	2005	22/02	767	418	-45%	14.3	99	93	-6%	0.6	866	512	-41%	13.5
2018	2017	Dame Street	W to E	2005	22/02	365	900	147%	21.3	87	120	38%	3.3	452	1020	126%	20.9
2018	2019	Lord Edward Street	E to W	2005	22/02	951	654	-31%	10.5	123	123	0%	0.0	1074	776	-28%	9.8
2019	2018	Lord Edward Street	W to E	2005	22/02	256	747	192%	21.9	42	108	158%	7.6	298	855	187%	23.2
2031	2043	St Stephen Street Upper	W to E	2005	22/02	310	409	32%	5.2	21	20	-7%	0.3	331	429	29%	5.0
2041	2016	South Georges Street	S to N	2005	22/02	208	274	32%	4.2	21	55	161%	5.5	229	329	44%	6.0
2041	2042	South Georges Street	N to S	2005	22/02	247	148	-40%	7.1	36	28	-22%	1.4	283	176	-38%	7.1
2042	2041	South Georges Street	S to N	2005	22/02	208	274	32%	4.2	21	55	161%	5.5	229	329	44%	6.0
2042	2043		N to S	2005	22/02	240	122	-49%	8.7	26	19	-24%	1.3	266	142	-47%	8.7
2042	2062	Exchequer Street	W to E	2005	22/02	137	69	-50%	6.7	45	10	-78%	6.7	182	79	-57%	9.0
2043	2042		S to N	2005	22/02	347	334	-4%	0.7	72	62	-13%	1.2	419	396	-5%	1.1
2043	2044	Aungier Street	N to S	2005	22/02	252	189	-25%	4.2	18	23	29%	1.1	270	213	-21%	3.7
2043	2065	St Stephen Street Lower	W to E	2005	22/02	269	268	0%	0.0	12	13	10%	0.3	281	281	0%	0.0
2044	2043	Aungier Street	S to N	2005	22/02	312	368	18%	3.0	69	65	-6%	0.5	381	433	14%	2.6
2080	2014	Church Lane	S to N	2005	22/02	150	121	-20%	2.5	27	27	-1%	0.1	177	147	-17%	2.3
2081	2082	Nassau Street	W to E	2005	22/02	719	379	-47%	14.5	45	45	-1%	0.1	764	424	-45%	14.0
2082	2101	Leinster Street	W to E	2005	22/02	1378	720	-48%	20.3	123	118	-4%	0.5	1501	837	-44%	19.4
2083	2082		S to N	2005	22/02	792	324	-59%	19.8	120	41	-66%	8.8	912	366	-60%	21.6
2083	2102	Moles Worth Street	W to E	2005	22/02	636	175	-73%	22.9	60	63	5%	0.4	696	238	-66%	21.2
2084	2083	Dawson Street	S to N	2005	22/02	1436	736	-49%	21.2	132	137	4%	0.4	1568	873	-44%	19.9
2085	2084	Dawson Street	S to N	2005	22/02	1426	715	-50%	21.7	114	98	-14%	1.6	1540	812	-47%	21.2
2101	2102	Kildare Street	N to S	2005	22/02	404	311	-23%	4.9	42	39	-8%	0.5	446	349	-22%	4.8
2101	2131	ANPR Ebd on Leinster St S	Ebd	2006	17/05	816	409	-50%	16.4	75	79	5%	0.5	891	488	-45%	15.4
2102	2083	Moles Worth Street	E to W	2005	22/02	25	61	142%	5.4	6	7	22%	0.5	31	68	119%	5.2
2102	2103	ANPR Sbd on Kildare St	Sbd	2006	17/05	792	332	-58%	19.4	78	82	5%	0.4	870	414	-52%	18.0
2103	2085	St Stephen's Street	E to W	2005	22/02	1589	940	-41%	18.2	48	141	193%	9.5	1637	1081	-34%	15.1
2103	2104	St Stephen's Street	W to E	2005	22/02	882	359	-59%	21.0	105	101	-3%	0.4	987	460	-53%	19.6
2104	2103	St Stephen's Street	E to W	2005	22/02	1589	940	-41%	18.2	48	141	193%	9.5	1637	1081	-34%	15.1
2104	2121	Merrion Row / Ely Pl / Merrion St Upr / Baggot St	Fm B	2006	17/05	768	359	-53%	17.3	78	101	30%	2.5	846	460	-46%	15.1
2105	2104	St Stephens Grn E / Hume St	To A	2006	17/05	1794	940	-48%	23.1	129	141	9%	1.0	1923	1081	-44%	21.7
2106	2105	St Stephens Grn E / Hume St	Fm B	2006	17/05	1467	855	-42%	18.0	102	116	14%	1.4	1569	971	-38%	16.8
2121	2122	Merrion Row / Ely Pl / Merrion St Upr / Baggot St	To D	2006	17/05	1017	606	-40%	14.4	93	104	11%	1.1	1110	710	-36%	13.3
2121	2125	Merrion Sq / Merrion St Upr	Fm B	2006	17/05	47	78	67%	4.0	18	8	-54%	2.7	65	87	33%	2.5
2125	2121	Merrion Sq / Merrion St Upr	To B	2006	17/05	648	408	-37%	10.4	48	35	-28%	2.1	696	443	-36%	10.6
2125	2128	Merrion Sq / Merrion St Upr	To C	2006	17/05	148	246	66%	7.0	3	9	203%	2.5	151	255	69%	7.3
2125	2130	Merrion Sq / Merrion St Upr	To A	2006	17/05	131	196	50%	5.1	18	7	-63%	3.2	149	203	36%	4.1
2128	2125	Merrion Sq / Merrion St Upr	Fm C	2006	17/05	195	321	65%	7.9	9	14	58%	1.5	204	336	65%	8.0
2130	2125	Merrion Sq / Merrion St Upr	Fm A	2006	17/05	685	672	-2%	0.5	42	36	-13%	0.9	727	709	-3%	0.7
2130	2132	Merrion Sq / Clare St	Fm C	2006	17/05	132	205	55%	5.6	18	10	-42%	2.0	150	216	44%	4.9
2131	2132	Merrion Sq / Clare St	Fm B	2006	17/05	392	80	-80%	20.3	24	29	21%	1.0	416	109	-74%	19.0
2131	2141	Lincoln Place	W to E	2005	22/02	679	589	-13%	3.6	51	58	13%	0.9	730	647	-11%	3.2

Additional Count Comparisons not included in the Cordon Analysis

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					AM2															
					HGV				Car				Total							
2132	2130	Merrion Sq / Clare St	To C	2006	17/05	705	775	10%	2.6	51	47	-7%	0.5	756	822	9%	2.4			
2132	2131	Merrion Sq / Clare St	To B	2006	17/05	408	408	0%	0.0	33	25	-24%	1.4	441	433	-2%	0.4			
2132	2133	Merrion Sq / Clare St	To D	2006	17/05	564	263	-53%	14.8	57	48	-15%	1.2	621	312	-50%	14.3			
2133	2132	Merrion Sq / Clare St	Fm D	2006	17/05	119	184	54%	5.3	12	14	19%	0.6	131	198	51%	5.2			
2141	2142		0 W to E	2005	22/02	886	1057	19%	5.5	60	56	-7%	0.6	946	1113	18%	5.2			
2141	2148	Westland Row	S to N	2005	22/02	522	453	-13%	3.1	30	45	51%	2.5	552	498	-10%	2.3			
2142	2132	Merrion Sq / Clare St	Fm A	2006	17/05	1034	979	-5%	1.7	87	67	-23%	2.3	1121	1045	-7%	2.3			
2142	2143		0 W to E	2005	22/02	218	87	-60%	10.6	27	11	-61%	3.8	245	97	-60%	11.3			
2148	2141	Westland Row	N to S	2005	22/02	729	855	17%	4.5	39	37	-4%	0.3	768	892	16%	4.3			
2148	2154	Westland Row	S to N	2005	22/02	541	453	-16%	3.9	21	45	116%	4.2	562	498	-11%	2.8			
2151	2012	Site 2: Pearse Street/D'Olier Street/College Street	E to W	2005	22/02	1742	954	-45%	21.5	182	145	-20%	2.9	1924	1099	-43%	21.2			
2152	2164	Tara Street	S to N	2005	22/02	1977	1849	-6%	2.9	300	282	-6%	1.1	2277	2130	-6%	3.1			
2153	2152	Pearse Street	E to W	2005	22/02	2176	1931	-11%	5.4	312	294	-6%	1.0	2488	2225	-11%	5.4			
2154	2148	Westland Row	N to S	2005	22/02	796	855	7%	2.1	60	37	-38%	3.3	856	892	4%	1.2			
2154	2153		0 E to W	2005	22/02	2139	1937	-9%	4.5	186	265	42%	5.3	2325	2202	-5%	2.6			
2155	2154	Pearse Street	E to W	2005	22/02	1621	1375	-15%	6.4	177	186	5%	0.6	1798	1561	-13%	5.8			
2162	2172	Tara Street	S to N	2005	22/02	1800	1672	-7%	3.1	210	292	39%	5.2	2010	1964	-2%	1.0			
2163	2164	Townsend Street	W to E	2005	22/02	487	508	4%	0.9	45	47	4%	0.2	532	554	4%	1.0			
2164	2162		0 S to N	2005	22/02	1939	1820	-6%	2.8	288	307	7%	1.1	2227	2127	-4%	2.1			
2164	2165	Townsend St / Moss St	Fm B	2006	17/05	366	356	-3%	0.5	51	19	-63%	5.4	417	375	-10%	2.1			
2165	2153	Townsend St / Moss St	To C	2006	17/05	125	44	-65%	8.8	24	35	47%	2.1	149	79	-47%	6.6			
2165	2166	Townsend St / Moss St	To D	2006	17/05	590	942	60%	12.7	57	53	-6%	0.5	647	995	54%	12.1			
2166	2154	Townsend St / Lombard St E	To C	2006	17/05	830	968	17%	4.6	69	70	2%	0.1	899	1038	15%	4.5			
2166	2167	Townsend St / Lombard St E	To D	2006	17/05	788	609	-23%	6.8	51	39	-24%	1.8	839	648	-23%	7.0			
2171	2001		0 E to W	2005	22/02	993	657	-34%	11.7	579	638	10%	2.4	1572	1295	-18%	7.3			
2171	2161	Hawkins Street	N to S	2005	22/02	2	1	-55%	0.9	0	0	#DIV/0!	0.5	2	1	-48%	0.8			
2172	1303	Butt Bridge	S to N	2005	22/02	1341	1357	1%	0.4	108	157	45%	4.3	1449	1514	4%	1.7			
2172	2171	Burgh Quay	E to W	2005	22/02	945	727	-23%	7.6	626	651	4%	1.0	1571	1378	-12%	5.0			
2173	2165	Townsend St / Moss St	Fm A	2006	17/05	339	511	51%	8.3	36	32	-11%	0.7	375	543	45%	7.8			
2173	2172	Georges Quay	E to W	2005	22/02	436	372	-15%	3.2	570	504	-12%	2.8	1006	876	-13%	4.2			
2174	2166	Townsend St / Lombard St E	Fm A	2006	17/05	1028	666	-35%	12.4	63	58	-8%	0.6	1091	724	-34%	12.2			
2202	2213		0 From C	2007	Apr	61	24	-60%	5.6	12	26	118%	3.2	73	51	-31%	2.9			
2211	2213	East Wall Rd / S Bank Rd / Poolbeg Quay	Fm C	2006	18/05	612	760	24%	5.6	135	17	-88%	13.6	747	776	4%	1.1			
2212	1102	East Wall Rd / N Wall Quay / E Link Toll Bridge	Fm C	2006	18/05	529	775	47%	9.6	186	47	-75%	12.9	715	822	15%	3.9			
2212	2213	East Wall Rd / S Bank Rd / Poolbeg Quay	Fm A	2006	18/05	826	900	9%	2.5	237	242	2%	0.3	1063	1142	7%	2.4			
2213	2202		0 To C	2007	Apr	82	31	-63%	6.9	9	125	1294%	14.2	91	156	71%	5.8			
2213	2211	East Wall Rd / S Bank Rd / Poolbeg Quay	To C	2006	18/05	816	902	10%	2.9	252	78	-69%	13.5	1068	980	-8%	2.8			
2213	2212	East Wall Rd / S Bank Rd / Poolbeg Quay	To A	2006	18/05	538	758	41%	8.7	222	49	-78%	14.9	760	807	6%	1.7			
2213	2214		0 To E	2007	Apr	101	95	-6%	0.6	231	236	2%	0.3	332	331	0%	0.1			
2214	2213		0 From E	2007	Apr	34	73	113%	5.3	225	225	0%	0.0	259	298	15%	2.3			
2304	1461		0 0	2007	24/04	270	170	-37%	6.7	12	28	136%	3.6	282	199	-30%	5.4			
2311	2811	Con Colbert Road / Memorial Road	Fm C	2006	Mar	808	1339	66%	16.2	465	568	22%	4.5	1273	1907	50%	15.9			
2326	2338	Emmet Road / South Circular Road	Fm A	2006	Mar	651	871	34%	8.0	57	22	-62%	5.7	708	893	26%	6.5			

Additional Count Comparisons not included in the Cordon Analysis

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						AM2											
						HGV				Car				Total			
2326	2821	Memorial Road / Inchicore Road	Fm C	2006	Mar	466	312	-33%	7.8	39	21	-46%	3.3	505	333	-34%	8.4
2338	2326	Emmet Road / South Circular Road	To A	2006	Mar	610	673	10%	2.5	48	105	118%	6.5	658	778	18%	4.5
2338	2350	Emmet Road / South Circular Road	To C	2006	Mar	741	594	-20%	5.7	69	20	-71%	7.3	810	614	-24%	7.3
2338	2841	Emmet Road / South Circular Road	To B	2006	Mar	576	142	-75%	22.9	21	57	170%	5.7	597	199	-67%	19.9
2350	2338	Emmet Road / South Circular Road	Fm C	2006	Mar	788	598	-24%	7.2	36	99	175%	7.7	824	697	-15%	4.6
2725	4061	Rathfarnham Rd/ Dodder Park Rd	Fm A	2006	Oct	456	333	-27%	6.2	42	27	-35%	2.5	498	360	-28%	6.6
2801	2825	Sarsfield Road / St Laurence Road	Fm A	2006	Mar	175	100	-43%	6.4	6	10	74%	1.5	181	111	-39%	5.8
2811	2311	Con Colbert Road / Memorial Road	To C	2006	Mar	2006	2348	17%	7.3	282	375	33%	5.1	2288	2723	19%	8.7
2811	2812	N4 / Con Colbert Road	Fm C	2006	Mar	1100	1523	38%	11.7	486	579	19%	4.0	1586	2102	33%	12.0
2812	2811	N4 / Con Colbert Road	To C	2006	Mar	1713	2005	17%	6.8	252	305	21%	3.2	1965	2310	18%	7.5
2812	2813	N4 / Con Colbert Road	To A	2006	Mar	650	778	20%	4.8	450	476	6%	1.2	1100	1254	14%	4.5
2812	2823	Sarsfield Road / Con Colbert Road	Fm A	2006	Mar	446	753	69%	12.5	78	106	36%	2.9	524	859	64%	12.7
2813	2812	N4 / Con Colbert Road	Fm A	2006	Mar	1315	1640	25%	8.4	195	227	16%	2.2	1510	1866	24%	8.7
2814	4311	The Oval	O	2006	Nov	1136	1101	-3%	1.0	611	641	5%	1.2	1747	1742	0%	0.1
2819	2825	Sarsfield Road / St Laurence Road	Fm B	2006	Mar	671	619	-8%	2.0	105	123	17%	1.7	776	742	-4%	1.2
2819	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm D	2006	Mar	414	566	37%	6.9	75	88	17%	1.4	489	654	34%	6.9
2820	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm C	2006	Mar	632	433	-31%	8.6	237	208	-12%	2.0	869	641	-26%	8.3
2821	2811	Con Colbert Road / Memorial Road	Fm B	2006	Mar	585	586	0%	0.0	51	91	78%	4.7	636	676	6%	1.6
2821	2822	Memorial Road / Inchicore Road	To B	2006	Mar	292	209	-28%	5.2	12	13	6%	0.2	304	222	-27%	5.0
2822	2821	Memorial Road / Inchicore Road	Fm B	2006	Mar	408	453	11%	2.2	54	82	51%	3.4	462	535	16%	3.3
2822	2842	Sarsfield Road / Grattan Crescent	To B	2006	Mar	799	740	-7%	2.1	24	35	47%	2.1	823	775	-6%	1.7
2823	2812	N4 / Con Colbert Road	Fm B	2006	Mar	375	362	-4%	0.7	78	82	5%	0.5	453	444	-2%	0.4
2823	2822	Sarsfield Road / Con Colbert Road	To C	2006	Mar	559	487	-13%	3.2	24	22	-10%	0.5	583	508	-13%	3.2
2823	2824	Sarsfield Road / Con Colbert Road	To B	2006	Mar	463	754	63%	11.8	84	106	26%	2.3	547	861	57%	11.8
2824	2823	Sarsfield Road / Con Colbert Road	Fm B	2006	Mar	920	870	-5%	1.7	108	105	-3%	0.3	1028	975	-5%	1.7
2824	2825	Sarsfield Road / Landen Road	To A	2006	Mar	399	436	9%	1.8	75	70	-6%	0.5	474	507	7%	1.5
2824	2831	Sarsfield Road / Landen Road	To B	2006	Mar	89	287	223%	14.4	6	34	467%	6.3	95	321	238%	15.7
2825	2801	Sarsfield Road / St Laurence Road	To A	2006	Mar	56	37	-35%	2.9	3	16	443%	4.3	59	53	-11%	0.8
2825	2819	Sarsfield Road / St Laurence Road	To B	2006	Mar	412	539	31%	5.8	72	84	16%	1.3	484	622	29%	5.9
2825	2824	Sarsfield Road / Landen Road	Fm A	2006	Mar	799	770	-4%	1.0	102	100	-2%	0.2	901	871	-3%	1.0
2826	2819	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To D	2006	Mar	716	648	-9%	2.6	156	123	-21%	2.8	872	772	-11%	3.5
2826	2820	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To C	2006	Mar	638	457	-28%	7.7	105	83	-21%	2.3	743	539	-27%	8.0
2826	2827	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To A	2006	Mar	412	199	-52%	12.2	123	125	2%	0.2	535	324	-39%	10.2
2826	2830	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To B	2006	Mar	438	525	20%	4.0	63	77	22%	1.6	501	602	20%	4.3
2827	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm A	2006	Mar	490	165	-66%	18.0	72	43	-41%	3.8	562	207	-63%	18.1
2827	2828	Bally Fermt Road / Le Fanu Road	Fm A	2006	Mar	473	368	-22%	5.1	9	84	833%	11.0	482	452	-6%	1.4
2828	2827	Bally Fermt Road / Le Fanu Road	To A	2006	Mar	287	268	-7%	1.2	18	123	581%	12.5	305	390	28%	4.6
2828	2829	Bally Fermt Road / Le Fanu Road	To B	2006	Mar	364	286	-21%	4.3	60	55	-8%	0.6	424	342	-19%	4.2
2828	2830	Bally Fermt Road / Le Fanu Road	To D	2006	Mar	595	548	-8%	2.0	54	64	18%	1.3	649	612	-6%	1.5
2829	2828	Bally Fermt Road / Le Fanu Road	Fm B	2006	Mar	745	602	-19%	5.5	60	77	28%	2.0	805	679	-16%	4.6
2829	2832	Ballyfermot Road / Clifden Road	To B	2006	Mar	73	240	229%	13.4	12	7	-41%	1.6	85	247	191%	12.6
2829	4380	Ballyfermot Road / Clifden Road	To A	2006	Mar	350	392	12%	2.2	57	57	0%	0.0	407	450	10%	2.1
2830	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm B	2006	Mar	668	718	7%	1.9	63	77	22%	1.6	731	794	9%	2.3

Additional Count Comparisons not included in the Cordon Analysis

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2830	2828	Bally Fermot Road / Le Fanu Road	Fm D	2006	Mar	434	416	-4%	0.9	72	69	-4%	0.3	506	485	-4%	0.9
2831	2824	Sarsfield Road / Landen Road	Fm B	2006	Mar	136	8	-94%	15.0	9	0	-96%	4.0	145	9	-94%	15.5
2832	2829	Ballyfermot Road / Clifden Road	Fm B	2006	Mar	151	107	-29%	3.9	9	6	-37%	1.2	160	113	-29%	4.0
2835	2837	Cloverhill Road / Cedar Brook Avenue	To C	2006	Mar	863	841	-3%	0.7	144	158	10%	1.1	1007	999	-1%	0.3
2835	4382	Cloverhill Road / Cedar Brook Avenue	To A	2006	Mar	251	267	6%	1.0	87	76	-13%	1.2	338	343	1%	0.3
2835	4430	Cloverhill Road / Cedar Brook Avenue	To B	2006	Mar	244	187	-23%	3.9	33	5	-85%	6.4	277	192	-31%	5.6
2837	2835	Cloverhill Road / Cedar Brook Avenue	Fm C	2006	Mar	230	270	17%	2.5	27	78	187%	7.0	257	347	35%	5.2
2837	2838	Cedar Brook Avenue / Cherry Orchard	To B	2006	Mar	850	1066	25%	7.0	159	162	2%	0.3	1009	1228	22%	6.5
2838	2837	Cedar Brook Avenue / Cherry Orchard	Fm B	2006	Mar	199	200	0%	0.0	93	78	-17%	1.7	292	277	-5%	0.9
2838	4442	Park West Road / Park West Avenue	To C	2006	Mar	581	663	14%	3.3	141	145	3%	0.3	722	807	12%	3.1
2841	2338	Emmet Road / South Circular Road	Fm B	2006	Mar	289	498	72%	10.5	60	31	-48%	4.2	349	529	52%	8.6
2842	2822	Sarsfield Road / Grattan Crescent	Fm B	2006	Mar	385	529	37%	6.7	51	82	61%	3.8	436	611	40%	7.7
2842	2847	Grattan Crescent / Emmet Road	To C	2006	Mar	754	807	7%	1.9	36	41	13%	0.7	790	848	7%	2.0
2842	2848	Grattan Crescent / Emmet Road	To B	2006	Mar	641	611	-5%	1.2	75	70	-7%	0.6	716	681	-5%	1.3
2847	2842	Grattan Crescent / Emmet Road	Fm C	2006	Mar	423	343	-19%	4.1	66	61	-8%	0.7	489	404	-17%	4.0
2848	2842	Grattan Crescent / Emmet Road	Fm B	2006	Mar	574	861	50%	10.7	48	98	104%	5.8	622	959	54%	12.0
2899	4161	Templeogue Rd / Templeville Rd / Springfield	Fm D	2006	Oct	688	471	-32%	9.0	30	38	28%	1.4	718	509	-29%	8.4
2931	2932		0 Ebd	2007	Apr	506	714	41%	8.4	45	34	-25%	1.8	551	748	36%	7.7
2932	2931		0 Wbd	2007	Apr	501	575	15%	3.2	57	58	2%	0.1	558	633	13%	3.1
2932	2951	MESPIL ROAD (A5)	1 W to E	2006	May	282	615	118%	15.7	54	30	-45%	3.7	336	645	92%	13.9
2951	2932	MESPIL ROAD (A5)	2 E to W	2006	May	366	528	44%	7.7	45	48	7%	0.5	411	576	40%	7.4
2999	3301	Blanchardstown Road south (N)	N to S	2005	22/11	683	372	-45%	13.5	78	57	-27%	2.5	761	430	-44%	13.6
3300	3301	Blanchardstown Road south (S)	S to N	2005	22/11	911	1075	18%	5.2	60	148	146%	8.6	971	1222	26%	7.6
3301	2999	Blanchardstown Road south (N)	S to N	2005	22/11	976	1320	35%	10.2	75	147	96%	6.8	1051	1467	40%	11.7
3301	3300	Blanchardstown Road south (S)	N to S	2005	22/11	382	441	15%	2.9	48	92	92%	5.3	430	533	24%	4.7
3301	3302	Blakestown Way	E to W	2005	22/11	286	167	-42%	7.9	24	4	-85%	5.5	310	171	-45%	9.0
3302	3301	Blakestown Way	W to E	2005	22/11	820	498	-39%	12.5	33	38	16%	0.9	853	536	-37%	12.0
3339	3343	DISWELLSTOWN	1 W to E	2005	22/11	410	340	-17%	3.6	6	4	-26%	0.7	416	345	-17%	3.6
3340	3343	CARPENTERSTOWN ROAD	1 W to E	2005	22/11	376	496	32%	5.8	12	94	680%	11.2	388	590	52%	9.1
3343	3339	B16	2 E to W	2005	22/11	100	534	434%	24.4	12	90	653%	10.9	112	624	457%	26.7
3343	3340	B15	2 E to W	2005	22/11	247	232	-6%	0.9	24	32	34%	1.6	271	265	-2%	0.4
3347	3349	R121	N bd	2006	16/11	333	458	38%	6.3	21	181	764%	15.9	354	640	81%	12.8
3349	3347	R121	S bd	2006	16/11	376	244	-35%	7.5	18	37	104%	3.6	394	280	-29%	6.2
3392	3421	Navan Road / Ashtown Roundabout	From A	2005	17/05	1310	940	-28%	11.0	123	72	-41%	5.1	1433	1012	-29%	12.0
3400	3401	Cappagh Road	W bd	2006	16/11	892	767	-14%	4.3	159	156	-2%	0.3	1051	923	-12%	4.1
3401	3400	CAPPAGH ROAD	1 N to S	2005	24/11	727	729	0%	0.1	108	102	-5%	0.6	835	831	0%	0.1
3411	3421		0 from A	2007	17/04	353	258	-27%	5.4	15	17	15%	0.5	368	275	-25%	5.2
3421	1918	Navan Road / Ashtown Roundabout	To C	2005	17/05	790	453	-43%	13.5	120	49	-59%	7.7	910	502	-45%	15.4
3421	3392	Navan Road / Ashtown Roundabout	To A	2005	17/05	917	1083	18%	5.3	159	123	-23%	3.0	1076	1206	12%	3.9
3421	3411	Navan Road / Ashtown Roundabout	To B	2005	17/05	270	244	-10%	1.6	12	49	310%	6.7	282	293	4%	0.7
3421	3471		0 to C	2007	17/04	957	657	-31%	10.5	12	31	157%	4.1	969	688	-29%	9.8
3471	1922		0 to B	2007	17/04	658	501	-24%	6.5	0	4	#DIV/0!	3.0	658	505	-23%	6.3
3471	3421		0 from C	2007	17/04	399	236	-41%	9.2	15	50	236%	6.2	414	286	-31%	6.8

Additional Count Comparisons not included in the Cordon Analysis

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3471	3472		0 to D	2007	17/04	144	306	112%	10.8	12	8	-36%	1.4	156	313	101%	10.3
3472	3471		0 from D	2007	17/04	593	650	10%	2.3	12	5	-55%	2.3	605	655	8%	2.0
3484	3485	Main Street	E to W	2005	22/11	150	341	127%	12.2	39	22	-44%	3.1	189	363	92%	10.5
3485	3484	Main Street	W to E	2005	22/11	484	294	-39%	9.6	33	25	-25%	1.6	517	318	-38%	9.7
3511	1667	MALAHIDE ROAD	1 N to S	2005	09/11	958	344	-64%	24.1	120	24	-80%	11.2	1078	368	-66%	26.4
3535	3551	Turnapin Nth M01-20M	0	2006	Weekday	2375	2598	9%	4.5	792	812	3%	0.7	3167	3410	8%	4.2
3551	3535	Turnapin Nth M01-20M	0	2006	Weekday	2982	3560	19%	10.1	778	755	-3%	0.8	3760	4315	15%	8.7
3643	3651	Ballymun Nth R108-02	0	2006	Weekday	733	648	-12%	3.2	165	163	-1%	0.2	898	811	-10%	3.0
3651	3643	Ballymun Nth R108-02	0	2006	Weekday	559	459	-18%	4.5	296	245	-17%	3.1	855	704	-18%	5.4
3730	3731	R112	1 N to S	2005	24/11	290	1122	287%	31.3	93	142	52%	4.5	383	1264	230%	30.7
3731	3730	B10	2 S to N	2005	24/11	933	898	-4%	1.2	123	133	8%	0.9	1056	1031	-2%	0.8
3761	3771	Kilshane Rd	W bd	2006	16/11	612	604	-1%	0.3	189	196	4%	0.5	801	800	0%	0.0
3771	3761	Kilshane Rd	E bd	2006	16/11	353	161	-54%	11.9	216	226	5%	0.7	569	387	-32%	8.3
4000	4001	Old Bawn Rd / Seskin View Rd / Old Bawn Way	Fm A	2006	Oct	388	158	-59%	13.9	60	40	-33%	2.8	448	198	-56%	13.9
4000	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	Fm C	2006	Oct	851	1107	30%	8.2	48	54	13%	0.9	899	1161	29%	8.2
4001	4000	Old Bawn Rd / Seskin View Rd / Old Bawn Way	To A	2006	Oct	799	389	-51%	16.8	27	23	-13%	0.7	826	412	-50%	16.6
4001	4002		0 Sbd	2007	Jan	251	220	-12%	2.0	85	43	-49%	5.2	336	264	-22%	4.2
4001	4182	Old Bawn Rd / Seskin View Rd / Old Bawn Way	To D	2006	Oct	258	60	-77%	15.7	6	3	-56%	1.6	264	63	-76%	15.7
4002	4001		0 Nbd	2007	Jan	575	493	-14%	3.6	43	26	-40%	2.9	619	519	-16%	4.2
4002	4003	Old Bawn Rd / Kiltipper Rd	Fm A	2006	Oct	512	164	-68%	18.9	72	68	-5%	0.5	584	232	-60%	17.4
4002	4104	Old Bawn Rd / Firhouse Rd West	To B	2006	Oct	679	474	-30%	8.5	24	22	-8%	0.4	703	496	-29%	8.4
4003	4002	Old Bawn Rd / Kiltipper Rd	To A	2006	Oct	998	585	-41%	14.7	36	32	-12%	0.8	1034	616	-40%	14.5
4003	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	Fm A	2006	Oct	663	392	-41%	11.8	81	79	-3%	0.3	744	471	-37%	11.1
4005	4104		0 Fm B	2007	14 Feb	313	158	-50%	10.1	36	54	49%	2.6	349	211	-39%	8.2
4005	4188	N81 / KILLINARDEN HEIGHTS (EAST)	Fm B	2006	08/06	300	144	-52%	10.5	48	2	-96%	9.3	348	145	-58%	12.9
4011	4012	Springfield / Fairways	To B	2006	Oct	198	218	10%	1.4	15	19	25%	0.9	213	236	11%	1.6
4011	4061		0 From B	2007	6 March	989	795	-20%	6.5	99	53	-47%	5.3	1088	848	-22%	7.7
4011	4161	Springfield / Fairways	To A	2006	Oct	848	823	-3%	0.9	42	42	0%	0.0	890	865	-3%	0.8
4012	4011	Springfield / Fairways	Fm B	2006	Oct	679	363	-47%	13.8	24	14	-43%	2.4	703	377	-46%	14.0
4012	4013	Butterfield Ave / Fairways	To B	2006	Oct	527	408	-23%	5.5	48	32	-33%	2.5	575	440	-23%	6.0
4012	4062	Butterfield Ave / Rathfarnham Rd / Grange Rd	Fm B	2006	Oct	516	868	68%	13.4	51	56	9%	0.6	567	924	63%	13.1
4013	4012	Butterfield Ave / Fairways	Fm B	2006	Oct	703	729	4%	1.0	57	41	-28%	2.3	760	770	1%	0.4
4013	4014	Butterfield Ave / Marian Road	To B	2006	Oct	504	350	-31%	7.5	42	31	-26%	1.8	546	381	-30%	7.7
4013	4031	Butterfield Ave / Marian Road	To C	2006	Oct	62	8	-87%	9.1	18	0	-100%	6.0	80	8	-90%	10.8
4014	4013	Butterfield Ave / Marian Road	Fm B	2006	Oct	509	493	-3%	0.7	63	33	-48%	4.3	572	526	-8%	1.9
4014	4015		0 Wbd	2007	Jan	501	470	-6%	1.4	51	22	-57%	4.8	552	491	-11%	2.6
4014	4031	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave	To C	2006	Oct	353	148	-58%	13.0	33	9	-72%	5.2	386	157	-59%	13.9
4014	4162	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	Fm C	2006	Oct	935	1356	45%	12.4	42	45	8%	0.5	977	1401	43%	12.3
4015	4014	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave	Fm B	2006	Oct	717	723	1%	0.3	80	17	-79%	9.1	796	740	-7%	2.0
4015	4016	Firhouse Rd / Knocklyon Rd	To B	2006	Oct	482	537	11%	2.4	61	21	-65%	6.2	543	558	3%	0.6
4015	4032	Firhouse Rd / Knocklyon Rd	To C	2006	Oct	271	232	-15%	2.5	6	6	-2%	0.0	277	238	-14%	2.5
4016	4015		0 Ebd	2007	Jan	558	365	-35%	9.0	57	10	-83%	8.3	615	374	-39%	10.8
4016	4163	Tallaght Rd / Wellington Lane / Spawell Rd	Fm C	2006	Oct	1004	1143	14%	4.2	36	17	-53%	3.7	1040	1159	11%	3.6

Additional Count Comparisons not included in the Cordon Analysis

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4017	4019	Firhouse Rd / Delaford Ave	To B	2006	Oct	442	708	60%	11.1	24	27	14%	0.6	466	735	58%	11.0
4017	4033	Firhouse Rd / Delaford Ave	To C	2006	Oct	304	40	-87%	20.1	3	2	-35%	0.7	307	42	-86%	20.0
4019	4017	Firhouse Rd / Delaford Ave	Fm B	2006	Oct	837	929	11%	3.1	21	17	-19%	0.9	858	946	10%	2.9
4019	4020	Firhouse Rd / Ballycullen Rd / Mt Carmel Pk	To B	2006	Oct	308	412	34%	5.5	27	24	-11%	0.6	335	436	30%	5.1
4019	4041		0 Sbd	2007	Jan	165	113	-31%	4.3	6	1	-87%	2.9	171	114	-33%	4.8
4020	4019	Firhouse Rd / Ballycullen Rd / Mt Carmel Pk	Fm B	2006	Oct	517	649	25%	5.5	18	12	-31%	1.4	535	661	24%	5.2
4020	4021	Firhouse Rd / Ballycullen Drive	To B	2006	Oct	296	509	72%	10.6	21	29	39%	1.6	317	538	70%	10.7
4020	4041	Ballycullen Drive / Ballycullen Rd	Fm B	2006	Oct	303	119	-61%	12.7	3	22	636%	5.4	306	141	-54%	11.0
4021	4003	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To A	2006	Oct	1112	732	-34%	12.5	42	36	-15%	1.0	1154	768	-33%	12.5
4021	4020	Firhouse Rd / Ballycullen Drive	Fm B	2006	Oct	454	473	4%	0.9	24	31	28%	1.3	478	504	5%	1.2
4021	4022	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To B	2006	Oct	75	450	500%	23.2	30	25	-18%	1.0	105	475	352%	21.7
4021	4043	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To C	2006	Oct	457	290	-36%	8.6	81	80	-1%	0.1	538	371	-31%	7.9
4022	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	Fm B	2006	Oct	406	452	11%	2.2	57	35	-38%	3.2	463	488	5%	1.1
4031	4013	Butterfield Ave / Marian Road	Fm C	2006	Oct	233	228	-2%	0.3	6	8	36%	0.8	239	236	-1%	0.2
4031	4014	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave	Fm C	2006	Oct	490	617	26%	5.4	27	13	-53%	3.2	517	630	22%	4.7
4032	4015	Firhouse Rd / Knocklyon Rd	Fm C	2006	Oct	358	165	-54%	11.9	6	9	51%	1.1	364	175	-52%	11.5
4032	4035	Knocklyon Rd / Templeroan Rd	To C	2006	Oct	232	157	-32%	5.4	0	4	#DIV/0!	3.0	232	161	-31%	5.0
4033	4017	Firhouse Rd / Delaford Ave	Fm C	2006	Oct	241	290	20%	3.0	0	9	#DIV/0!	4.2	241	299	24%	3.5
4033	4034	Knocklyon Rd / Scholarstown Rd	To B	2006	Oct	337	290	-14%	2.7	15	6	-63%	2.9	352	296	-16%	3.1
4034	4033	Knocklyon Rd / Scholarstown Rd	Fm B	2006	Oct	220	237	8%	1.1	9	21	132%	3.1	229	257	12%	1.8
4034	4092	R113 / Scholarstown Rd / Orlagh Grove	To B	2006	Oct	976	1419	45%	12.8	33	54	64%	3.2	1009	1474	46%	13.2
4035	4032	Knocklyon Rd / Templeroan Rd	Fm C	2006	Oct	328	127	-61%	13.3	12	9	-27%	1.0	340	136	-60%	13.2
4035	4051	Scholarstown Rd / Templeroan Rd / Ballyboden Way	To C	2006	Oct	153	83	-46%	6.5	0	16	#DIV/0!	5.6	153	99	-35%	4.8
4035	4066	Scholarstown Rd / Templeroan Rd / Ballyboden Way	To D	2006	Oct	477	170	-64%	17.1	48	9	-81%	7.3	525	179	-66%	18.4
4041	4019		0 Nbd	2007	Jan	239	279	17%	2.5	14	5	-68%	3.1	253	283	12%	1.9
4041	4020	Firhouse Rd / Ballycullen Drive	Fm C	2006	Oct	69	128	86%	6.0	3	7	125%	1.7	72	135	88%	6.2
4041	4042	Killininny Rd / Ballycullen Rd / St Colmcille's Way	Fm A	2006	Oct	490	658	34%	7.0	9	27	198%	4.2	499	685	37%	7.6
4042	4041	Killininny Rd / Ballycullen Rd / St Colmcille's Way	To A	2006	Oct	322	506	57%	9.0	6	17	191%	3.3	328	523	59%	9.5
4042	4043	Killininny Rd / Ballycullen Rd / St Colmcille's Way	To B	2006	Oct	489	499	2%	0.4	33	33	1%	0.1	522	532	2%	0.4
4042	4090	R113 / M50 Interchange West Rdbt	Fm B	2006	Oct	962	1257	31%	8.8	177	182	3%	0.4	1139	1438	26%	8.3
4043	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	Fm C	2006	Oct	715	723	1%	0.3	36	38	5%	0.3	751	760	1%	0.3
4043	4042	Killininny Rd / Ballycullen Rd / St Colmcille's Way	Fm B	2006	Oct	275	122	-56%	10.9	63	8	-88%	9.3	338	130	-62%	13.6
4051	4035	Scholarstown Rd / Templeroan Rd / Ballyboden Way	Fm C	2006	Oct	327	412	26%	4.4	42	44	5%	0.3	369	456	24%	4.3
4061	2725	Rathfarnham Rd / Dodder Park Rd	To A	2006	Oct	1078	907	-16%	5.4	51	46	-10%	0.7	1129	953	-16%	5.5
4061	4011	Springfield Avenue	West	2005	Jan	496	426	-14%	3.2	18	30	67%	2.4	514	456	-11%	2.6
4061	4062		0 To C	2007	6 March	417	363	-13%	2.7	9	19	116%	2.8	426	383	-10%	2.1
4061	5102	Rathfarnham Rd / Dodder Park Rd	To D	2006	Oct	930	540	-42%	14.4	51	37	-27%	2.0	981	578	-41%	14.4
4062	4012	Butterfield Ave / Rathfarnham Rd / Grange Rd	To B	2006	Oct	614	593	-3%	0.8	36	41	13%	0.7	650	634	-2%	0.6
4062	4061	Rathfarnham Rd / Dodder Park Rd	Fm C	2006	Oct	743	713	-4%	1.1	36	24	-32%	2.1	779	737	-5%	1.5
4062	4063	Butterfield Ave / Rathfarnham Rd / Grange Rd	To C	2006	Oct	653	763	17%	4.1	63	56	-11%	0.9	716	819	14%	3.7
4063	4062	Butterfield Ave / Rathfarnham Rd / Grange Rd	Fm C	2006	Oct	677	836	23%	5.8	45	46	2%	0.1	722	882	22%	5.6
4063	4064	Willbrook Rd / Grange Rd	To B	2006	Oct	224	273	22%	3.1	3	11	265%	3.0	227	284	25%	3.6
4063	4081	Willbrook Rd / Grange Rd	To C	2006	Oct	641	660	3%	0.7	75	48	-36%	3.4	716	708	-1%	0.3

Additional Count Comparisons not included in the Cordon Analysis

AM2 - 08:00 - 09:00

						AM2											
						HGV				Car				Total			
4064	4063	Willbrook Rd / Grange Rd	Fm B	2006	Oct	317	315	-1%	0.1	21	8	-61%	3.4	338	323	-4%	0.8
4064	4065		0 South Bnd	2007	31 May	317	256	-19%	3.6	27	10	-62%	3.9	344	266	-23%	4.5
4065	4066	Ballyboden Rd	West Bnd	2006	May	426	391	-8%	1.7	15	15	-1%	0.0	441	406	-8%	1.7
4066	4035	Scholarstown Rd / Templeroan Rd / Ballyboden Way	Fm D	2006	Oct	381	576	51%	8.9	24	19	-21%	1.1	405	595	47%	8.5
4066	4065	Ballyboden Rd	East Bnd	2006	May	869	778	-11%	3.2	21	25	19%	0.8	890	803	-10%	3.0
4081	4063	Willbrook Rd / Grange Rd	Fm C	2006	Oct	571	752	32%	7.0	36	43	21%	1.2	607	795	31%	7.1
4090	4042	R113 / M50 Interchange West Rdbt	To B	2006	Oct	472	173	-63%	16.6	111	83	-25%	2.9	583	256	-56%	15.9
4090	4091	M50 Nbd On slip / R133 INTERCHANGE	Nbd	2006	31/05	1214	1367	13%	4.3	135	163	21%	2.3	1349	1530	13%	4.8
4090	4092	R113 /M50 Interchange East Rdbt	Fm B	2006	Oct	603	483	-20%	5.2	87	32	-63%	7.1	690	515	-25%	7.1
4091	4092	M50 Sbd Off slip / R133 INTERCHANGE	Sbd	2006	31/05	297	243	-18%	3.3	87	90	3%	0.3	384	333	-13%	2.7
4092	4034	R113 / Scholarstown Rd / Orlagh Grove	Fm B	2006	Oct	328	129	-61%	13.2	57	25	-56%	5.0	385	154	-60%	14.1
4092	4090	R113 /M50 Interchange East Rdbt	To B	2006	Oct	834	881	6%	1.6	105	119	13%	1.3	939	1000	6%	2.0
4092	4093	M50 Sbd On slip / R133 INTERCHANGE	Sbd	2006	31/05	792	926	17%	4.6	78	39	-50%	5.2	870	964	11%	3.1
4093	4090	M50 Nbd Off slip / R133 INTERCHANGE	Nbd	2006	31/05	425	30	-93%	26.2	87	2	-98%	12.9	512	31	-94%	29.2
4100	4113		0 Fm A	2007	14 Feb	564	458	-19%	4.7	114	83	-28%	3.2	678	541	-20%	5.6
4101	4102		0 Fm A	2007	14 Feb	1292	1116	-14%	5.1	192	200	4%	0.6	1484	1316	-11%	4.5
4102	4101		0 To A	2007	14 Feb	990	624	-37%	12.9	177	217	22%	2.8	1167	840	-28%	10.3
4102	4105		0 To B	2007	14 Feb	650	444	-32%	8.8	63	82	30%	2.2	713	525	-26%	7.5
4102	4107		0 To C	2007	14 Feb	783	1212	55%	13.6	225	149	-34%	5.5	1008	1362	35%	10.3
4104	4002	Old Bawn Rd / Firhouse Rd West	Fm B	2006	Oct	413	170	-59%	14.2	30	47	56%	2.7	443	217	-51%	12.4
4104	4005		0 To B	2007	14 Feb	547	265	-52%	14.0	48	14	-70%	6.0	595	279	-53%	15.1
4104	4186		0 To A	2007	14 Feb	721	468	-35%	10.4	57	20	-65%	5.9	778	488	-37%	11.5
4105	4102		0 Fm B	2007	14 Feb	521	651	25%	5.4	144	54	-63%	9.1	665	704	6%	1.5
4106	4113		0 Fm B	2007	14 Feb	831	548	-34%	10.8	66	64	-3%	0.2	897	613	-32%	10.3
4107	4102		0 Fm C	2007	14 Feb	610	521	-15%	3.8	129	187	45%	4.6	739	708	-4%	1.2
4112	4114		0 To D	2007	13 Feb	290	758	161%	20.4	189	82	-56%	9.1	479	840	75%	14.1
4112	4120		0 To A	2007	13 Feb	605	503	-17%	4.3	123	187	52%	5.2	728	691	-5%	1.4
4112	4132		0 To C	2007	13 Feb	934	993	6%	1.9	174	233	34%	4.1	1108	1226	11%	3.5
4113	4100		0 To A	2007	14 Feb	689	691	0%	0.1	156	68	-56%	8.3	845	759	-10%	3.0
4113	4106		0 To B	2007	14 Feb	298	204	-32%	5.9	54	36	-34%	2.7	352	239	-32%	6.5
4113	4140		0 To C	2007	14 Feb	727	514	-29%	8.6	78	72	-7%	0.6	805	586	-27%	8.3
4114	4112		0 Fm D	2007	13 Feb	341	434	27%	4.7	105	124	18%	1.7	446	558	25%	5.0
4120	4112		0 Fm A	2007	13 Feb	711	1296	82%	18.5	189	150	-21%	3.0	900	1446	61%	15.9
4121	4122	Tymon Rd / Tallaght Rd	from C	2005	Jan	838	580	-31%	9.7	36	37	2%	0.1	874	617	-29%	9.4
4122	4121	Tymon Rd / Tallaght Rd	to C	2005	Jan	578	86	-85%	27.0	66	21	-68%	6.9	644	107	-83%	27.7
4122	4123	Tymon Rd / Tallaght Rd	to A	2005	Jan	671	255	-62%	19.3	39	13	-68%	5.2	710	268	-62%	20.0
4122	4127	Tymon Rd / Tallaght Rd	to B	2005	Jan	507	259	-49%	12.7	18	9	-49%	2.4	525	268	-49%	12.9
4123	4122	Tymon Rd / Tallaght Rd	from A	2005	Jan	380	77	-80%	20.0	33	12	-63%	4.4	413	90	-78%	20.4
4123	4124	Greenhills Road (N)	N toS	2005	19/04	879	754	-14%	4.4	102	80	-22%	2.3	981	834	-15%	4.9
4123	4275	GREENHILLS ROAD	1 W to E	2005	15/11	1154	1042	-10%	3.4	63	94	49%	3.5	1217	1136	-7%	2.4
4124	4123	Greenhills Road (N)	S to N	2005	19/04	904	876	-3%	0.9	114	86	-24%	2.8	1018	963	-5%	1.8
4124	4125	Greenhills Road (S)	N toS	2005	19/04	722	490	-32%	9.4	81	65	-20%	1.9	803	555	-31%	9.5
4124	4131	Mayberry Road	E to W	2005	19/04	366	234	-36%	7.6	54	52	-3%	0.2	420	286	-32%	7.1

Additional Count Comparisons not included in the Cordon Analysis

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						AM2												
						HGV				Car				Total				
4125	4124	Greenhills Road (S)	S to N	2005	19/04	504	236	-53%	13.9	105	41	-61%	7.6	609	277	-55%	15.8	
4125	4133		0 Fm D	2007	13 Feb	394	244	-38%	8.4	87	30	-66%	7.5	481	274	-43%	10.7	
4127	4122	Tymon Rd / Tallaght Rd	from B	2005	Jan	538	4	-99%	32.4	54	0	-99%	10.3	592	5	-99%	34.0	
4131	4124	Mayberry Rd (petrol st)	East Bnd	2006	May	391	321	-18%	3.7	60	60	1%	0.1	451	382	-15%	3.4	
4131	4132	Mayberry Rd (parking bay)	West Bnd	2006	May	570	292	-49%	13.4	36	54	51%	2.7	606	346	-43%	11.9	
4132	4112		0 Fm C	2007	13 Feb	622	542	-13%	3.3	155	237	53%	5.9	777	779	0%	0.1	
4132	4131		0 To C	2007	13 Feb	352	192	-45%	9.7	63	56	-11%	0.9	415	248	-40%	9.2	
4132	4133		0 To B	2007	13 Feb	861	596	-31%	9.8	105	47	-55%	6.7	966	642	-33%	11.4	
4133	4125		0 To D	2007	13 Feb	753	131	-83%	29.6	84	3	-96%	12.2	837	135	-84%	31.9	
4133	4132		0 Fm B	2007	13 Feb	495	559	13%	2.8	141	110	-22%	2.8	636	668	5%	1.3	
4133	4134		0 To C	2007	13 Feb	783	346	-56%	18.4	84	24	-71%	8.2	867	370	-57%	20.0	
4134	4133		0 Fm C	2007	13 Feb	1110	574	-48%	18.5	126	48	-62%	8.4	1236	622	-50%	20.1	
4134	4135		0 To C	2007	13 Feb	376	244	-35%	7.5	51	41	-20%	1.5	427	285	-33%	7.5	
4134	4141		0 Fm C	2007	14 Feb	614	35	-94%	32.2	126	0	-100%	15.8	740	35	-95%	35.8	
4135	4134		0 Fm C	2007	13 Feb	612	1040	70%	14.9	60	51	-16%	1.3	672	1091	62%	14.1	
4135	4185		0 To C	2007	13 Feb	326	245	-25%	4.8	39	41	5%	0.3	365	286	-22%	4.4	
4136	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	Fm A	2006	Oct	139	28	-80%	12.2	6	2	-74%	2.3	145	30	-80%	12.4	
4140	4113		0 Fm C	2007	14 Feb	321	405	26%	4.4	105	27	-74%	9.6	426	432	1%	0.3	
4140	4141		0 Fm A	2007	14 Feb	668	448	-33%	9.3	77	65	-15%	1.4	745	513	-31%	9.2	
4141	4134		0 To C	2007	14 Feb	368	299	-19%	3.8	69	12	-83%	9.0	437	311	-29%	6.5	
4141	4140		0 To A	2007	14 Feb	372	146	-61%	14.0	55	22	-59%	5.2	426	168	-61%	15.0	
4141	4142	Belgard Square West	N to S	2005	15/11	167	193	15%	1.9	9	35	291%	5.6	176	228	29%	3.6	
4142	4141		0 To A	2007	14 Feb	924	629	-32%	10.6	141	38	-73%	10.9	1065	666	-37%	13.5	
4142	4186	Belgard Square East	W to E	2005	15/11	171	90	-47%	7.1	6	2	-64%	1.9	177	92	-48%	7.3	
4147	4189	N81 / COOKSTOWN ROAD	Fm A	2006	08/06	774	683	-12%	3.4	48	116	141%	7.5	822	799	-3%	0.8	
4151	4257		0 West Bnd	2007	28 March	798	646	-19%	5.6	54	41	-23%	1.8	852	688	-19%	5.9	
4153	4191	N81 / FORTUNESTOWN ROAD	Fm A	2006	08/06	345	11	-97%	25.0	3	8	157%	2.0	348	19	-95%	24.3	
4161	2899	Templeogue Rd / Templeville Rd / Springfield	To D	2006	Oct	672	659	-2%	0.5	48	53	11%	0.7	720	713	-1%	0.3	
4161	4011	Springfield / Fairways	Fm A	2006	Oct	764	776	2%	0.4	48	67	39%	2.4	812	842	4%	1.0	
4161	4162		0 from D	2007	6 March	463	737	59%	11.2	33	44	33%	1.8	496	781	57%	11.3	
4161	4284	Templeogue Rd / Templeville Rd / Springfield	To A	2006	Oct	479	499	4%	0.9	33	28	-17%	1.0	512	527	3%	0.6	
4162	4014		0 to C	2007	6 March	599	658	10%	2.4	54	58	8%	0.6	653	716	10%	2.4	
4162	4161	Templeogue Rd / Templeville Rd / Springfield	Fm B	2006	Oct	447	508	14%	2.8	48	48	0%	0.0	495	556	12%	2.6	
4162	4163	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	To B	2006	Oct	1139	1871	64%	18.9	75	79	6%	0.5	1214	1950	61%	18.5	
4162	4284	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	To A	2006	Oct	738	777	5%	1.4	60	39	-36%	3.0	798	816	2%	0.6	
4163	4016	Tallaght Rd / Wellington Lane / Spawell Rd	To C	2006	Oct	260	223	-14%	2.4	51	7	-86%	8.1	311	231	-26%	4.9	
4163	4162	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	Fm B	2006	Oct	842	843	0%	0.0	96	106	10%	1.0	938	948	1%	0.3	
4163	4286	Tallaght Rd / Wellington Lane / Spawell Rd	To A	2006	Oct	1007	483	-52%	19.2	48	18	-62%	5.2	1055	501	-53%	19.9	
4174	4292	Tymon M50-17 (2005 data)	0	2006	Weekday	3355	2974	-11%	6.8	915	400	-56%	20.1	4270	3374	-21%	14.5	
4177	4174	M 50 North Bound On-Slip	North Bd	2006	05/12	1254	648	-48%	19.7	141	17	-88%	13.9	1395	665	-52%	22.7	
4180	4189	N81 / COOKSTOWN ROAD	Fm B	2006	08/06	1105	1170	6%	1.9	150	182	21%	2.5	1255	1352	8%	2.7	
4180	4190	N81 / KILLINARDEN HEIGHTS (WEST)	Fm C	2006	08/06	727	541	-26%	7.4	168	106	-37%	5.3	895	646	-28%	9.0	
4182	4001	Old Bawn Rd / Seskin View Rd / Old Bawn Way	Fm D	2006	Oct	202	1	-99%	19.9	12	0	-99%	4.8	214	1	-99%	20.5	

Additional Count Comparisons not included in the Cordon Analysis

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						AM2											
						HGV				Car				Total			
4183	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	Fm D	2006	Oct	1563	1535	-2%	0.7	183	222	21%	2.7	1746	1756	1%	0.2
4184	4000	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To C	2006	Oct	428	393	-8%	1.7	60	65	9%	0.7	488	458	-6%	1.4
4184	4136	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To A	2006	Oct	410	100	-76%	19.4	9	3	-65%	2.4	419	104	-75%	19.5
4184	4183	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To D	2006	Oct	1265	1073	-15%	5.6	207	249	20%	2.8	1472	1322	-10%	4.0
4184	4185	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To B	2006	Oct	2026	1941	-4%	1.9	204	216	6%	0.8	2230	2157	-3%	1.6
4185	4135		0 Fm C	2007	13 Feb	1419	1036	-27%	10.9	57	50	-11%	0.9	1476	1087	-26%	10.9
4185	4184		0 To C	2007	13 Feb	1276	850	-33%	13.1	216	246	14%	2.0	1492	1096	-27%	11.0
4185	4186		0 Fm D	2007	14 Feb	1196	1171	-2%	0.7	186	181	-3%	0.4	1382	1353	-2%	0.8
4186	4104		0 Fm A	2007	14 Feb	427	76	-82%	22.2	78	5	-94%	11.4	505	80	-84%	24.8
4186	4142		0 To A	2007	14 Feb	509	520	2%	0.5	108	17	-84%	11.4	617	537	-13%	3.3
4186	4185		0 To D	2007	14 Feb	1347	873	-35%	14.2	207	219	6%	0.8	1554	1092	-30%	12.7
4186	4187		0 To B	2007	14 Feb	1226	1109	-10%	3.4	156	179	15%	1.8	1382	1289	-7%	2.6
4187	4186		0 Fm B	2007	14 Feb	1253	886	-29%	11.2	195	215	10%	1.4	1448	1101	-24%	9.7
4187	4188	N81 / KILLINARDEN HEIGHTS (EAST)	Fm C	2006	08/06	1117	1228	10%	3.2	222	213	-4%	0.6	1339	1441	8%	2.7
4188	4005	N81 / KILLINARDEN HEIGHTS (EAST)	To B	2006	08/06	445	22	-95%	27.7	39	2	-95%	8.2	484	24	-95%	28.9
4188	4187	N81 / KILLINARDEN HEIGHTS (EAST)	To C	2006	08/06	1601	1744	9%	3.5	204	246	20%	2.8	1805	1990	10%	4.2
4188	4189	N81 / KILLINARDEN HEIGHTS (EAST)	To A	2006	08/06	1088	1087	0%	0.0	219	207	-6%	0.8	1307	1294	-1%	0.4
4189	4147	N81 / COOKSTOWN ROAD	To A	2006	08/06	482	427	-11%	2.6	54	62	16%	1.1	536	489	-9%	2.1
4189	4180	N81 / COOKSTOWN ROAD	To B	2006	08/06	746	780	5%	1.2	177	228	29%	3.6	923	1008	9%	2.7
4189	4188	N81 / KILLINARDEN HEIGHTS (EAST)	Fm A	2006	08/06	1739	1730	-1%	0.2	186	210	13%	1.7	1925	1940	1%	0.3
4190	4180	N81 / KILLINARDEN HEIGHTS (WEST)	To C	2006	08/06	1081	1170	8%	2.6	183	182	-1%	0.1	1264	1352	7%	2.4
4190	4191	N81 / KILLINARDEN HEIGHTS (WEST)	To A	2006	08/06	849	623	-27%	8.3	168	215	28%	3.4	1017	838	-18%	5.9
4191	4153	N81 / FORTUNESTOWN ROAD	To A	2006	08/06	194	106	-46%	7.2	6	37	514%	6.7	200	142	-29%	4.4
4191	4190	N81 / KILLINARDEN HEIGHTS (WEST)	Fm A	2006	08/06	1051	985	-6%	2.1	159	176	11%	1.3	1210	1161	-4%	1.4
4191	4195	N81 / FORTUNESTOWN ROAD	To B	2006	08/06	669	433	-35%	10.0	174	182	5%	0.6	843	616	-27%	8.4
4195	4191	N81 / FORTUNESTOWN ROAD	Fm B	2006	08/06	720	770	7%	1.8	156	63	-60%	8.9	876	832	-5%	1.5
4233	4242	R113 Belgard Road	S bd	2006	16/11	1137	1153	1%	0.5	237	241	2%	0.2	1374	1394	1%	0.5
4242	4233	R113 Belgard Road	N bd	2006	16/11	1004	613	-39%	13.7	198	197	0%	0.1	1202	810	-33%	12.3
4256	4257		0 East Bnd	2007	28 March	640	924	44%	10.2	78	95	21%	1.8	718	1019	42%	10.2
4257	4151		0 East Bnd	2007	28 March	1057	853	-19%	6.6	78	89	14%	1.2	1135	942	-17%	6.0
4257	4256		0 West Bnd	2007	28 March	717	703	-2%	0.5	36	57	58%	3.1	753	760	1%	0.3
4273	4293	Ballymount	Wbd	2006	16/11	384	872	127%	19.5	324	317	-2%	0.4	708	1190	68%	15.6
4275	4123	B24	2 E to W	2005	15/11	678	754	11%	2.8	96	89	-7%	0.7	774	844	9%	2.4
4284	4161	Templeogue Rd / Templeville Rd / Springfield	Fm A	2006	Oct	543	804	48%	10.1	48	59	23%	1.5	591	864	46%	10.1
4284	4162		0 from A	2007	6 March	419	386	-8%	1.6	24	18	-25%	1.3	443	404	-9%	1.9
4284	4287		0 North Bnd	2007	31 May	534	365	-32%	8.0	57	16	-72%	6.8	591	381	-36%	9.5
4286	4163	Tallaght Rd / Wellington Lane / Spawell Rd	Fm A	2006	Oct	706	337	-52%	16.1	18	28	58%	2.2	724	366	-49%	15.3
4287	4284		0 South Bnd	2007	31 May	419	282	-33%	7.3	24	20	-15%	0.8	443	303	-32%	7.3
4292	4174	Tymon M50-17 (2005 data)	0	2006	Weekday	2348	1910	-19%	9.5	697	519	-26%	7.2	3044	2429	-20%	11.8
4293	4273	BALLYMONT	1 W to E	2005	15/11	1694	1421	-16%	6.9	168	173	3%	0.4	1862	1594	-14%	6.4
4311	2814	The Oval	W to E	2006	Nov	1724	2005	16%	6.5	287	282	-2%	0.3	2010	2286	14%	6.0
4314	4396	LiffeyValley Approach Road	E bd	2006	16/11	646	555	-14%	3.7	87	88	1%	0.1	733	643	-12%	3.4
4315	4386	Fonthill Road (N)	3 N to W	2005	17/11	709	950	34%	8.4	219	211	-4%	0.6	928	1161	25%	7.2

Additional Count Comparisons not included in the Cordon Analysis

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						AM2															
						HGV				Car				Total							
4323	4327	Dead Mans Inn N04-40	0	2006	Weekday	1765	2863	62%	22.8	654	599	-9%	2.2	2419	3462	43%	19.2				
4332	4333	Lucan Road	W to E	2005	17/11	867	315	-64%	22.7	15	16	6%	0.2	882	330	-63%	22.4				
4333	4331	Ballyfermot Road	W to E	2005	17/11	571	948	66%	13.7	45	137	204%	9.6	616	1085	76%	16.1				
4333	4334	Fonthill Road (S)	N to S	2005	17/11	713	357	-50%	15.4	279	155	-44%	8.4	992	512	-48%	17.5				
4333	4336	Fonthill Road (N)	S to N	2005	17/11	1095	203	-81%	35.0	267	131	-51%	9.6	1362	334	-75%	35.3				
4334	4333	Fonthill Road (S)	S to N	2005	17/11	924	1042	13%	3.8	252	215	-15%	2.4	1176	1257	7%	2.3				
4336	4333	Fonthill Road (N)	N to S	2005	17/11	547	131	-76%	22.6	273	221	-19%	3.3	820	353	-57%	19.3				
4377	4383	NEILSTOWN ROAD	Nbd	2006	01/06	323	294	-9%	1.6	33	32	-3%	0.2	356	326	-8%	1.6				
4378	4382	Coldcut Road / Cloverhill Road	Fm C	2006	Mar	589	680	15%	3.6	93	55	-41%	4.4	682	734	8%	2.0				
4379	4381	Ballyfermot Road / Coldcut Road	Fm A	2006	Mar	467	670	44%	8.5	54	15	-72%	6.6	521	685	32%	6.7				
4380	2829	Ballyfermot Road / Clifden Road	Fm A	2006	Mar	518	804	55%	11.1	57	84	47%	3.2	575	888	54%	11.6				
4380	4381	Ballyfermot Road / Coldcut Road	Fm C	2006	Mar	360	476	32%	5.7	57	60	5%	0.4	417	536	29%	5.4				
4381	4379	Ballyfermot Road / Coldcut Road	To A	2006	Mar	522	380	-27%	6.7	60	40	-34%	2.9	582	420	-28%	7.3				
4381	4380	Ballyfermot Road / Coldcut Road	To C	2006	Mar	703	850	21%	5.3	81	90	11%	1.0	784	939	20%	5.3				
4382	2835	Cloverhill Road / Cedar Brook Avenue	Fm A	2006	Mar	602	653	8%	2.0	96	63	-34%	3.7	698	716	3%	0.7				
4382	4378	Coldcut Road / Cloverhill Road	To C	2006	Mar	757	801	6%	1.6	104	81	-23%	2.4	861	882	2%	0.7				
4382	4395	Liffey Valley Access/Coldcut Rd	From C	2006	16/11	476	462	-3%	0.6	111	96	-13%	1.4	587	558	-5%	1.2				
4383	4377	Neilstown Road	N to S	2005	17/11	266	214	-20%	3.4	12	46	281%	6.3	278	260	-7%	1.1				
4383	4394	Coldcut Road (W)	E to W	2005	17/11	377	487	29%	5.3	87	71	-18%	1.8	464	558	20%	4.2				
4383	4395	Liffey Valley Access/Coldcut Rd	From B	2006	16/11	790	723	-8%	2.4	60	77	28%	2.0	850	799	-6%	1.8				
4385	4430	Station Road / Newlands Road	Fm A	2006	Mar	752	1004	34%	8.5	54	45	-16%	1.2	806	1050	30%	8.0				
4386	4315	Fonthill Road (N)	S to N	2005	17/11	908	845	-7%	2.1	249	162	-35%	6.1	1157	1008	-13%	4.5				
4386	4387	Fonthill Road (S)	N to S	2005	17/11	566	314	-45%	12.0	189	194	3%	0.4	755	508	-33%	9.8				
4386	4393	Coldcut Road (E)	W to E	2005	17/11	381	768	101%	16.1	51	59	15%	1.1	432	827	91%	15.7				
4387	4386	Fonthill Road (S)	S to N	2005	17/11	1066	535	-50%	18.8	198	142	-28%	4.3	1264	677	-46%	18.8				
4387	4410	Newlands Rd / Foxdene Av	from C	2005	Jan	267	294	10%	1.6	27	166	515%	14.1	294	460	57%	8.6				
4393	4386	Coldcut Road (E)	E to W	2005	17/11	362	436	20%	3.7	87	67	-23%	2.3	449	503	12%	2.5				
4394	4383	Coldcut Road (W)	W to E	2005	17/11	366	733	100%	15.7	57	58	2%	0.1	423	791	87%	14.9				
4395	4382	Liffey Valley Access/Coldcut Rd	To C	2006	16/11	1198	992	-17%	6.2	93	104	11%	1.1	1291	1095	-15%	5.7				
4395	4383	Liffey Valley Access/Coldcut Rd	To B	2006	16/11	395	393	0%	0.1	90	103	15%	1.3	485	496	2%	0.5				
4395	4396	Liffey Valley Access/Coldcut Rd	To A	2006	16/11	152	1	-100%	17.3	36	0	-100%	8.4	188	1	-100%	19.3				
4396	4314	LiffeyValley Approach Road	W bd	2006	16/11	149	23	-85%	13.6	42	32	-25%	1.7	191	55	-71%	12.3				
4396	4395	Liffey Valley Access/Coldcut Rd	From A	2006	16/11	479	307	-36%	8.7	48	6	-87%	8.1	527	314	-41%	10.4				
4410	4387	Newlands Rd / Foxdene Av	to C	2005	Jan	1442	1462	1%	0.5	45	88	95%	5.3	1487	1550	4%	1.6				
4410	4411	Newlands Rd / Foxdene Av	to A	2005	Jan	257	265	3%	0.5	27	75	178%	6.7	284	340	20%	3.2				
4411	4410	Newlands Rd / Foxdene Av	from A	2005	Jan	1393	1395	0%	0.1	45	73	63%	3.7	1438	1468	2%	0.8				
4430	2835	CLOVERHILL ROAD	1 W to E	2005	17/11	581	389	-33%	8.7	36	22	-40%	2.7	617	411	-33%	9.1				
4430	4385	Station Road / Newlands Road	To A	2006	Mar	165	329	100%	10.5	60	45	-26%	2.1	225	374	66%	8.6				
4430	4444	Station Road / Newlands Road	To B	2006	Mar	571	828	45%	9.7	84	70	-16%	1.6	655	898	37%	8.7				
4442	2838	Park West Road / Park West Avenue	Fm C	2006	Mar	547	191	-65%	18.5	108	76	-30%	3.4	655	267	-59%	18.1				
4442	4443	Park West Avenue / Nangor Road	To B	2006	Mar	523	507	-3%	0.7	153	274	79%	8.3	676	781	16%	3.9				
4443	4442	R134 / NANGOR ROAD	1 W to E	2005	17/11	1022	1190	16%	5.1	93	92	-1%	0.1	1115	1283	15%	4.8				
4443	4444	Newlands Road / Nangor Road	Fm D	2006	Mar	397	599	51%	9.1	174	126	-27%	3.9	571	726	27%	6.1				

Additional Count Comparisons not included in the Cordon Analysis

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						AM2											
						HGV				Car				Total			
4444	4430	Station Road / Newlands Road	Fm B	2006	Mar	503	585	16%	3.5	108	102	-6%	0.6	611	687	12%	3.0
4444	4443	Newlands Road / Nangor Road	To D	2006	Mar	867	1199	38%	10.3	192	74	-61%	10.2	1059	1273	20%	6.3
4444	4445	Newlands Road / Nangor Road	To B	2006	Mar	430	611	42%	7.9	174	101	-42%	6.3	604	712	18%	4.2
4444	4471	Newlands Road / Nangor Road	To C	2006	Mar	398	314	-21%	4.5	60	47	-22%	1.8	458	361	-21%	4.8
4445	4444	Newlands Road / Nangor Road	Fm B	2006	Mar	921	1052	14%	4.2	183	61	-67%	11.0	1104	1114	1%	0.3
4471	4444	Newlands Road / Nangor Road	Fm C	2006	Mar	309	233	-25%	4.6	84	63	-25%	2.4	393	296	-25%	5.2
5014	5015	Junction N11	0	2006	Nov	1242	1130	-9%	3.2	66	75	13%	1.0	1308	1205	-8%	2.9
5015	5014	Junction N11	S to N	2006	Nov	2630	1992	-24%	13.3	80	130	64%	5.0	2709	2122	-22%	11.9
5019	5020	STILLORGAN RD / LOWER KILMACUD RD	To D	2005	06/04	503	371	-26%	6.3	42	15	-64%	5.0	545	386	-29%	7.4
5019	5021	STILLORGAN RD / LOWER KILMACUD RD	To C	2005	06/04	1122	1158	3%	1.1	144	60	-59%	8.4	1266	1218	-4%	1.4
5019	5180	THE HILL / LOWER KILMACUD RD / DUBLIN RD	Fm D	2005	06/04	480	869	81%	15.0	33	69	111%	5.1	513	938	83%	15.8
5020	5019	STILLORGAN RD / LOWER KILMACUD RD	Fm D	2005	06/04	433	634	46%	8.7	15	54	260%	6.6	448	688	54%	10.1
5021	5019	STILLORGAN RD / LOWER KILMACUD RD	Fm C	2005	06/04	1047	2198	110%	28.6	102	96	-6%	0.6	1149	2294	100%	27.6
5034	5049	Newtownpark Avenue	W to E	2005	19/01	531	247	-54%	14.4	15	21	41%	1.5	546	268	-51%	13.8
5036	5037		0 To B	2007	17/01	422	149	-65%	16.2	66	41	-37%	3.4	488	190	-61%	16.2
5036	5050	Deans Grange Road	S to N	2005	19/01	464	277	-40%	9.7	42	49	17%	1.1	506	326	-36%	8.8
5036	5051	Deans Grange Road (S)	W to E	2005	19/01	197	190	-4%	0.5	3	10	236%	2.8	200	200	0%	0.0
5037	5036	Abbey Road	S to N	2005	19/01	620	414	-33%	9.1	69	59	-14%	1.2	689	473	-31%	9.0
5037	5052	Kill Lane	W to E	2005	19/01	591	344	-42%	11.4	45	55	21%	1.4	636	399	-37%	10.4
5038	5053	Pottery Road	S to N	2005	19/01	364	148	-59%	13.5	12	13	7%	0.2	376	161	-57%	13.1
5038	5055	Johnstown Road	W to E	2005	19/01	466	380	-18%	4.2	21	10	-54%	2.9	487	390	-20%	4.7
5048	5049		0 To B	2007	17/01	606	377	-38%	10.4	108	116	8%	0.8	714	493	-31%	9.0
5048	5081	Monkstown Road	N to E	2005	19/01	534	447	-16%	3.9	18	42	131%	4.3	552	489	-11%	2.8
5049	5034		0 To B	2007	17/01	684	217	-68%	22.0	27	31	15%	0.8	711	248	-65%	21.1
5049	5048	Stradbrook Road	S to NE	2005	19/01	856	786	-8%	2.4	69	80	15%	1.2	925	866	-6%	2.0
5049	5050		0 To C	2007	17/01	650	291	-55%	16.5	102	87	-14%	1.5	752	378	-50%	15.7
5050	5036		0 To B	2007	17/01	297	73	-75%	16.5	57	36	-37%	3.1	354	109	-69%	16.1
5050	5049		0 Fm C	2007	17/01	1114	744	-33%	12.1	75	58	-23%	2.1	1189	802	-33%	12.3
5050	5051	Stradbrook Road (E)	W to E	2005	19/01	413	262	-37%	8.2	15	52	248%	6.4	428	314	-27%	5.9
5051	5036	Deans Grange Road (S)	E to W	2005	19/01	255	93	-64%	12.3	3	4	27%	0.4	258	96	-63%	12.1
5051	5050		0 Fm C	2007	17/01	672	579	-14%	3.7	39	8	-79%	6.3	711	587	-17%	4.8
5051	5052	Abbey Road (S)	N to S	2005	19/01	337	207	-38%	7.9	21	50	138%	4.9	358	257	-28%	5.7
5051	5061		0 To E	2007	17/01	591	469	-21%	5.3	30	27	-9%	0.5	621	496	-20%	5.3
5052	5037	Kill Lane	E to W	2005	19/01	725	480	-34%	10.0	54	51	-5%	0.4	779	531	-32%	9.7
5052	5051		0 Fm C	2007	17/01	553	481	-13%	3.1	36	16	-55%	3.9	589	498	-16%	3.9
5052	5053	Rochestown Avenue	N to S	2005	19/01	545	416	-24%	5.9	33	56	69%	3.4	578	471	-18%	4.7
5052	5062	Kill Avenue	W to E	2005	19/01	427	308	-28%	6.2	39	26	-33%	2.3	466	334	-28%	6.6
5053	5038	Pottery Road	N to S	2005	19/01	224	51	-77%	14.7	6	6	-7%	0.2	230	57	-75%	14.5
5053	5052	Rochestown Avenue	S to N	2005	19/01	928	860	-7%	2.3	48	53	9%	0.6	976	912	-7%	2.1
5053	5054	Rochestown Avenue (SE)	W to SE	2005	19/01	326	232	-29%	5.6	27	16	-42%	2.5	353	248	-30%	6.1
5054	5053	Rochestown Avenue (SE)	SE to W	2005	19/01	581	442	-24%	6.2	27	19	-30%	1.7	608	461	-24%	6.4
5054	5055		0 To B	2007	16/01	267	236	-11%	1.9	63	18	-72%	7.1	330	254	-23%	4.4
5054	5063	Sallynogin Road	W to E	2005	19/01	307	119	-61%	12.8	0	3	#DIV/0!	2.6	307	123	-60%	12.6

Additional Count Comparisons not included in the Cordon Analysis

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						AM2											
						HGV				Car				Total			
5055	5038		0 To B	2007	16/01	383	406	6%	1.2	33	10	-68%	4.8	416	417	0%	0.0
5055	5054	Rochestown Avenue (S)	S to N	2005	19/01	657	647	-1%	0.4	33	10	-71%	5.1	690	657	-5%	1.3
5055	5056		0 To C	2007	16/01	379	301	-21%	4.2	57	5	-92%	9.4	436	306	-30%	6.8
5056	5055		0 Fm C	2007	16/01	495	452	-9%	2.0	48	1	-97%	9.4	543	454	-16%	4.0
5056	5057		0 To C	2007	16/01	970	805	-17%	5.5	120	96	-20%	2.3	1090	901	-17%	6.0
5056	5063	R 118	S to N	2005	19/01	779	709	-9%	2.6	30	30	-2%	0.1	809	738	-9%	2.5
5056	5066	Avondale road	NW to NE	2005	19/01	712	263	-63%	20.4	9	9	-5%	0.2	721	271	-62%	20.2
5057	5056	Church Road	S to N	2005	19/01	1539	1224	-20%	8.5	42	40	-4%	0.3	1581	1264	-20%	8.4
5061	5051		0 Fm E	2007	17/01	479	218	-54%	14.0	42	9	-77%	6.4	521	228	-56%	15.2
5061	5062		0 To C	2007	17/01	160	145	-9%	1.2	6	10	67%	1.4	166	155	-7%	0.9
5061	5071	Monkstown Avenue	S to E	2005	19/01	643	680	6%	1.4	0	20	#DIV/0!	6.4	643	700	9%	2.2
5062	5052	Kill Avenue	E to W	2005	19/01	435	218	-50%	12.0	51	21	-58%	4.9	486	239	-51%	13.0
5062	5061		0 Fm C	2007	17/01	343	339	-1%	0.2	30	2	-94%	7.0	373	341	-9%	1.7
5063	5054	Sallynogin Road	E to W	2005	19/01	204	63	-69%	12.2	15	8	-49%	2.2	219	70	-68%	12.4
5063	5056		0 Fm A	2007	16/01	363	434	20%	3.5	90	91	1%	0.1	453	525	16%	3.2
5066	5056	Avondale road	NE to NW	2005	19/01	643	271	-58%	17.4	24	3	-86%	5.6	667	275	-59%	18.1
5070	5071	Carrickbrennan Road (N)	N to S	2005	19/01	272	202	-26%	4.6	3	13	340%	3.6	275	215	-22%	3.9
5070	5081	Carrickbrennan Road	S to N	2005	19/01	546	894	64%	13.0	6	21	258%	4.2	552	916	66%	13.4
5071	5061		0 To B	2007	17/01	303	161	-47%	9.3	21	12	-43%	2.2	324	173	-47%	9.6
5071	5070	Carrickbrennan Road (N)	S to N	2005	19/01	688	844	23%	5.7	0	20	#DIV/0!	6.3	688	864	26%	6.3
5071	5072	Mountown Upper	S to E	2005	19/01	367	240	-35%	7.3	3	5	70%	1.0	370	245	-34%	7.2
5072	5071		0 Fm D	2007	17/01	323	335	4%	0.7	15	2	-87%	4.5	338	337	0%	0.0
5072	5082	York Road	S to N	2005	16/11	206	621	201%	20.4	21	19	-8%	0.4	227	640	182%	19.8
5073	5084	Glenageary Road	S to N	2005	16/11	264	185	-30%	5.3	18	7	-60%	3.0	282	192	-32%	5.8
5079	5082	Cumberland Street	W to E	2005	16/11	252	70	-72%	14.3	6	8	31%	0.7	258	78	-70%	13.9
5080	5081	Monistown Crescent	E to W	2005	19/01	156	522	235%	19.9	12	26	115%	3.2	168	548	226%	20.1
5081	5048	Monkstown Road	E to N	2005	19/01	619	937	51%	11.4	12	34	185%	4.6	631	971	54%	12.0
5081	5070		0 To C	2007	17/01	255	216	-15%	2.5	9	13	48%	1.3	264	230	-13%	2.2
5081	5080	Monistown Crescent	W to E	2005	19/01	294	211	-28%	5.2	12	43	262%	6.0	306	255	-17%	3.1
5081	5093	To Longford Terrace	S to N	2005	19/01	47	571	1114%	29.8	3	28	844%	6.4	50	599	1098%	30.5
5082	5072	York Road	N to S	2005	16/11	139	157	13%	1.5	42	61	45%	2.6	181	218	21%	2.6
5082	5079	Cumberland Street	E to W	2005	16/11	176	645	267%	23.2	30	18	-39%	2.4	206	664	222%	21.9
5082	5094	Clarence Street	S to N	2005	16/11	182	158	-13%	1.9	18	4	-80%	4.4	200	161	-19%	2.9
5083	5082	Georges Street Lower	E to W	2005	16/11	105	186	77%	6.7	21	2	-91%	5.6	126	188	49%	4.9
5083	5095	Marine Road	S to N	2005	16/11	122	12	-90%	13.5	24	22	-8%	0.4	146	34	-77%	11.8
5083	5097	George Street Upper	W to E	2005	16/11	143	200	40%	4.4	39	31	-22%	1.4	182	231	27%	3.4
5084	5073	Glenageary Road	N to S	2005	16/11	98	61	-38%	4.1	18	29	62%	2.3	116	90	-22%	2.5
5084	5095	Queens Road	E to W	2005	16/11	601	433	-28%	7.4	21	11	-49%	2.6	622	443	-29%	7.7
5084	5098	George's Street Upper	E to W	2005	16/11	326	672	106%	15.5	24	24	-1%	0.0	350	696	99%	15.1
5084	5099	Summerhill Road	W to E	2005	16/11	88	63	-28%	2.8	12	12	-2%	0.1	100	75	-25%	2.7
5094	5082	Clarence Street	N to S	2005	16/11	109	84	-22%	2.5	57	54	-6%	0.4	166	138	-17%	2.2
5095	5083	Marine Road	N to S	2005	16/11	173	198	14%	1.8	42	30	-28%	2.0	215	228	6%	0.9
5095	5084	Queens Road	W to E	2005	16/11	335	36	-89%	22.0	15	11	-28%	1.2	350	46	-87%	21.6

Additional Count Comparisons not included in the Cordon Analysis

AM2 - 08:00 - 09:00

						AM2											
						HGV				Car				Total			
5095	5096	Crofton Road	E to W	2005	16/11	637	444	-30%	8.3	33	33	-1%	0.0	670	477	-29%	8.1
5096	5095	Crofton Road	W to E	2005	16/11	458	233	-49%	12.1	42	41	-3%	0.2	500	274	-45%	11.5
5097	5083	George Street Upper	E to W	2005	16/11	287	198	-31%	5.7	24	24	0%	0.0	311	222	-29%	5.4
5098	5084	George's Street Upper	W to E	2005	16/11	134	89	-34%	4.3	30	30	0%	0.0	164	119	-28%	3.8
5099	5084	Summerhill Road	E to W	2005	16/11	241	940	290%	28.8	12	28	133%	3.6	253	968	283%	28.9
5102	4061		0 From D	2007	6 March	639	438	-32%	8.7	51	43	-17%	1.2	690	480	-30%	8.7
5109	5125	HAROLDS GRANGE ROAD	1 N to S	2005	16/11	638	109	-83%	27.4	27	4	-86%	5.9	665	113	-83%	28.0
5125	5109	B32	2 S to N	2005	16/11	397	305	-23%	4.9	18	13	-27%	1.2	415	318	-23%	5.0
5127	5128	SANDYFORD RD / WYCKHAM WAY	to B	2005	05/04	682	930	36%	8.7	54	56	5%	0.3	736	986	34%	8.5
5127	5134	SANDYFORD RD / WYCKHAM WAY	to A	2005	05/04	177	82	-54%	8.3	27	5	-81%	5.4	204	87	-57%	9.7
5127	5135	SANDYFORD ROAD / BALALLY ROAD	Fm A	2005	05/04	469	383	-18%	4.2	60	64	7%	0.5	529	447	-16%	3.7
5127	5146	SANDYFORD RD / WYCKHAM WAY	to D	2005	05/04	732	778	6%	1.7	9	48	433%	7.3	741	826	12%	3.0
5128	5127	SANDYFORD RD / WYCKHAM WAY	fm B	2005	05/04	908	832	-8%	2.6	78	86	11%	0.9	986	918	-7%	2.2
5128	5148	DUNDRUM BYPASS / WYCKHAM WAY	to C	2005	05/04	544	281	-48%	13.0	90	62	-31%	3.2	634	343	-46%	13.2
5128	5149	DUNDRUM BYPASS / WYCKHAM WAY	to D	2005	05/04	786	433	-45%	14.3	78	33	-57%	6.0	864	466	-46%	15.4
5134	5127	Sandyford Road (N)	N to S	2006	21/03	160	231	44%	5.1	3	20	575%	5.1	163	251	54%	6.1
5135	5127	SANDYFORD ROAD / BALALLY ROAD	To A	2005	05/04	718	908	26%	6.7	63	55	-13%	1.1	781	963	23%	6.2
5135	5142	SANDYFORD ROAD / BALALLY ROAD	To B	2005	05/04	542	317	-42%	10.9	75	62	-18%	1.6	617	378	-39%	10.7
5136	5142	SANDYFORD ROAD / BLACKTHORN DRIVE	To A	2005	05/04	620	450	-27%	7.3	36	48	33%	1.8	656	498	-24%	6.6
5136	5169	SANDYFORD ROAD / BLACKTHORN DRIVE	To C	2005	05/04	830	97	-88%	34.1	63	3	-95%	10.4	893	100	-89%	35.6
5142	5135	SANDYFORD ROAD / BALALLY ROAD	Fm B	2005	05/04	639	645	1%	0.2	54	49	-8%	0.6	693	694	0%	0.0
5142	5136	Sandyford Road (N)	N to S	2006	21/03	522	397	-24%	5.8	27	28	4%	0.2	549	425	-23%	5.6
5144	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm B	2005	06/04	823	758	-8%	2.3	57	37	-35%	2.9	880	795	-10%	2.9
5146	5127	Wyckham Way Extension	E to W	2006	21/03	366	204	-44%	9.6	9	11	21%	0.6	375	215	-43%	9.3
5148	5128	DUNDRUM BYPASS / WYCKHAM WAY	fm C	2005	05/04	956	483	-49%	17.6	93	66	-29%	3.1	1049	549	-48%	17.7
5149	5128	DUNDRUM BYPASS / WYCKHAM WAY	fm D	2005	05/04	637	152	-76%	24.4	75	57	-24%	2.2	712	209	-71%	23.4
5164	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm A	2005	06/04	444	500	13%	2.6	24	31	29%	1.3	468	531	13%	2.8
5165	5144	MOUNT ANVILLE RD / LOWER KILMACUD RD	To B	2005	06/04	558	406	-27%	6.9	57	60	6%	0.4	615	466	-24%	6.4
5165	5164	MOUNT ANVILLE RD / LOWER KILMACUD RD	To A	2005	06/04	393	684	74%	12.6	27	31	15%	0.7	420	715	70%	12.4
5165	5166	MOUNT ANVILLE RD / LOWER KILMACUD RD	To C	2005	06/04	683	506	-26%	7.3	60	25	-59%	5.4	743	530	-29%	8.4
5165	5172	MOUNT ANVILLE RD / LOWER KILMACUD RD	To D	2005	06/04	822	678	-18%	5.3	54	29	-45%	3.8	876	708	-19%	6.0
5166	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm C	2005	06/04	717	815	14%	3.5	63	58	-8%	0.6	780	873	12%	3.2
5166	5176	EDEN PARK RD / LOWER KILMACUD RD	To D	2005	06/04	675	348	-48%	14.5	45	14	-69%	5.8	720	361	-50%	15.4
5168	9571	DRUMMARTIN ROAD	1 N to S	2005	16/11	1491	660	-56%	25.3	129	341	165%	13.9	1620	1002	-38%	17.1
5169	5136	Blackthorn Drive	E to W	2006	21/03	324	14	-96%	23.8	36	3	-92%	7.5	360	17	-95%	25.0
5172	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm D	2005	06/04	472	269	-43%	10.6	54	22	-60%	5.2	526	290	-45%	11.7
5176	5166	EDEN PARK RD / LOWER KILMACUD RD	Fm D	2005	06/04	566	70	-88%	27.8	33	17	-47%	3.1	599	87	-85%	27.6
5179	5180	THE HILL / LOWER KILMACUD RD / DUBLIN RD	Fm B	2005	06/04	631	174	-72%	22.8	51	13	-75%	6.8	682	187	-73%	23.7
5180	5019	THE HILL / LOWER KILMACUD RD / DUBLIN RD	To D	2005	06/04	515	666	29%	6.2	51	47	-8%	0.6	566	713	26%	5.8
5180	5179	THE HILL / LOWER KILMACUD RD / DUBLIN RD	To B	2005	06/04	623	341	-45%	12.9	63	45	-28%	2.4	686	386	-44%	13.0
9568	9577	B37	2 S to N	2005	16/11	694	1072	54%	12.7	162	15	-90%	15.6	856	1087	27%	7.4
9571	5168	B36	2 S to N	2005	16/11	324	642	98%	14.5	81	12	-85%	10.1	405	654	62%	10.8
9577	9568	LEOPARDSTOWN ROAD	1 N to S	2005	16/11	2648	430	-84%	56.5	111	119	7%	0.7	2759	548	-80%	54.4

Additional Count Comparisons not included in the Cordon Analysis

AM3 - 09:00 - 10:00

						AM3											
A Node	B Node	Location	Direction	Year	Date	HGV				Car				Total			
						Count	Model	% Diff	GEH	Count	Model	% Diff	GEH	Count	Model	% Diff	GEH
1101	1306	North Wall Quay	E to W	2006	Nov	270	314	16%	2.6	362	355	-2%	0.3	632	669	6%	1.5
1102	2212	East Wall Rd / N Wall Quay / E Link Toll Bridge	To C	2006	18/05	757	578	-24%	6.9	348	179	-49%	10.4	1105	757	-31%	11.4
1103	1309	Sheriff St Upper	E to W	2006	Nov	449	488	9%	1.8	122	237	95%	8.6	571	724	27%	6.0
1105	1106	East Wall Rd / Tolka Quay	To C	2006	18/05	198	142	-28%	4.3	267	273	2%	0.3	465	415	-11%	2.4
1105	1121	East Wall Rd / Tolka Quay	To A	2006	18/05	385	553	44%	7.7	411	449	9%	1.8	796	1002	26%	6.9
1106	1105	East Wall Rd / Tolka Quay	Fm C	2006	18/05	87	100	14%	1.3	714	682	-4%	1.2	801	782	-2%	0.7
1113	1131	Ossory Road	N to S	2006	Nov	122	50	-59%	7.8	3	0	-100%	2.4	125	50	-60%	8.1
1121	1105	East Wall Rd / Tolka Quay	Fm A	2006	18/05	443	537	21%	4.3	270	272	1%	0.1	713	809	14%	3.5
1131	1113	Ossory Road	0	2006	Nov	94	53	-43%	4.7	2	0	-100%	1.7	96	53	-44%	4.9
1301	1302	Eden Quay	W to E	2005	22/02	758	574	-24%	7.1	399	438	10%	1.9	1157	1013	-12%	4.4
1301	1361	O'Connell Street	S to N	2005	22/02	615	823	34%	7.8	111	7	-94%	13.5	726	830	14%	3.7
1301	2001	O'Connell Bridge	N to S	2005	22/02	834	1138	36%	9.7	75	73	-2%	0.2	909	1211	33%	9.3
1302	1303		0 W to E	2005	22/02	791	470	-41%	12.8	420	441	5%	1.0	1211	911	-25%	9.2
1302	1351	Marlborough St / Abbey St Lwr	Fm C	2006	17/05	43	107	149%	7.4	0	0	#DIV/0!	0.7	43	107	149%	7.4
1303	1304		0 W to E	2005	22/02	819	401	-51%	16.9	432	476	10%	2.1	1251	877	-30%	11.5
1303	1311	Abbey St Lwr / Beresford Pl	Fm C	2006	17/05	1207	1469	22%	7.2	69	144	109%	7.3	1276	1613	26%	8.9
1306	1101	North Wall Quay	0	2006	Nov	64	81	27%	2.0	414	419	1%	0.3	478	501	5%	1.0
1309	1103	Sheriff St Upper	0	2006	Nov	206	377	84%	10.1	60	122	104%	6.5	266	500	88%	12.0
1312	1313	Abbey St Lwr / Beresford Pl	To D	2006	17/05	571	1475	158%	28.3	66	149	125%	8.0	637	1624	155%	29.3
1312	1341	Abbey St Lwr / Beresford Pl	To A	2006	17/05	773	1042	35%	8.9	48	62	29%	1.9	821	1103	34%	9.1
1333	1334	NORTH CIRCULAR ROAD (A4)	2 E to W	2006	May	495	414	-16%	3.8	171	112	-35%	5.0	666	526	-21%	5.7
1334	1333	NORTH CIRCULAR ROAD (A4)	1 W to E	2006	May	701	785	12%	3.1	129	184	43%	4.4	830	969	17%	4.6
1334	1394	North Circular Road (E)	E to W	2005	07/11	310	496	60%	9.3	120	117	-2%	0.3	430	614	43%	8.0
1346	1393	Gardiner Street Upper	E to W	2005	07/11	315	395	25%	4.2	72	43	-41%	3.9	387	438	13%	2.5
1351	1302	Marlborough St / Abbey St Lwr	To C	2006	17/05	85	0	-100%	13.0	30	0	-100%	7.7	115	0	-100%	15.1
1351	1311	Marlborough St / Abbey St Lwr	To D	2006	17/05	152	2	-99%	17.1	42	0	-99%	9.1	194	2	-99%	19.4
1352	1351	Marlborough St / Abbey St Lwr	Fm A	2006	17/05	192	271	41%	5.2	54	0	-100%	10.4	246	271	10%	1.5
1359	1392	Temple Street	E to W	2005	07/11	174	379	118%	12.4	9	11	19%	0.6	183	390	113%	12.2
1361	1301	O'Connell Street	N to S	2005	22/02	406	826	103%	16.9	33	48	44%	2.3	439	873	99%	17.0
1367	1391	North Frederick Street	E to W	2005	07/11	36	58	60%	3.2	9	1	-84%	3.3	45	59	31%	1.9
1372	1390	Granby Row	E to W	2005	07/11	234	159	-32%	5.4	51	1	-98%	9.8	285	160	-44%	8.4
1373	1301	BACHELOR'S WALK (A1)	1 E to W	2006	May	984	806	-18%	6.0	375	314	-16%	3.3	1359	1120	-18%	6.8
1382	1377		0 W to E	2005	22/02	1398	1055	-25%	9.8	366	314	-14%	2.8	1764	1370	-22%	10.0
1382	2005	Capel Street Bridge	N to S	2005	22/02	497	725	46%	9.2	87	67	-23%	2.2	584	793	36%	8.0
1383	1382	Capel Street	N to S	2005	22/02	521	746	43%	9.0	119	72	-39%	4.8	639	818	28%	6.6
1384	1383	Capel Street	N to S	2005	22/02	302	641	112%	15.6	72	73	1%	0.1	374	714	91%	14.6
1389	1390	Dorset Street Upper (S)	S to N	2005	07/11	458	232	-49%	12.2	72	73	2%	0.1	530	305	-43%	11.0
1390	1391	Dorset Street Upper (N)	S to N	2005	07/11	543	242	-55%	15.2	84	77	-8%	0.8	627	319	-49%	14.1
1390	1406	St. Mary's Place	E to W	2005	07/11	136	351	158%	13.8	33	34	2%	0.1	169	385	128%	13.0
1391	1390	Dorset Street Upper (N)	N to S	2005	07/11	718	534	-26%	7.4	117	94	-20%	2.3	835	627	-25%	7.7
1391	1392	Dorset Street Lower (N)	S to N	2005	07/11	632	309	-51%	14.9	117	115	-2%	0.2	749	424	-43%	13.4
1392	1391	Dorset Street Lower (N)	N to S	2005	07/11	719	442	-38%	11.5	90	92	2%	0.2	809	534	-34%	10.6
1392	1393	Dorset Street Lower (N)	S to N	2005	07/11	697	545	-22%	6.1	129	130	1%	0.1	826	675	-18%	5.5

Additional Count Comparisons not included in the Cordon Analysis

AM3 - 09:00 - 10:00

AM3																			
								HGV				Car				Total			
1392	1417	Eccles Street	E to W	2005	07/11	208	475	128%	14.4	18	16	-10%	0.4	226	491	117%	14.0		
1393	1346	Gardiner Street Upper	W to E	2005	07/11	554	655	18%	4.1	147	32	-78%	12.1	701	687	-2%	0.5		
1393	1392	Dorset Street Lower (N)	N to S	2005	07/11	856	846	-1%	0.3	108	100	-7%	0.8	964	947	-2%	0.6		
1393	1394	Dorset Street Lower (N)	S to N	2005	07/11	888	729	-18%	5.6	180	151	-16%	2.3	1068	880	-18%	6.0		
1393	1409	Synott Place	E to W	2005	07/11	141	275	95%	9.3	6	23	282%	4.5	147	298	103%	10.1		
1394	1334	North Circular Road (E)	W to E	2005	07/11	366	979	168%	23.6	162	151	-7%	0.9	528	1130	114%	20.9		
1394	1393	Dorset Street Lower (N)	N to S	2005	07/11	1250	913	-27%	10.3	210	110	-47%	7.9	1460	1023	-30%	12.4		
1394	1413	North Circular Road (W)	E to W	2005	07/11	297	317	7%	1.1	123	109	-11%	1.3	420	426	1%	0.3		
1395	1382	Ormond Quay	W to E	2005	22/02	1370	1043	-24%	9.4	318	309	-3%	0.5	1688	1351	-20%	8.6		
1396	1383	Marys Street	W to E	2005	22/02	130	76	-41%	5.3	27	2	-92%	6.6	157	78	-50%	7.3		
1407	1391	Blessington Street	W to E	2005	07/11	190	102	-46%	7.3	51	39	-23%	1.7	241	141	-41%	7.2		
1408	1415		0 from B	2007	19/04	106	185	75%	6.6	6	7	14%	0.3	112	192	71%	6.5		
1409	1393	Synott Place	W to E	2005	07/11	188	655	248%	22.7	51	25	-51%	4.2	239	680	185%	20.6		
1410	1411	Dorset Street Lower (N)	S to N	2005	07/11	957	758	-21%	6.8	264	215	-19%	3.2	1221	973	-20%	7.5		
1411	1410	Dorset Street Lower (N)	N to S	2005	07/11	1537	1500	-2%	1.0	315	236	-25%	4.8	1852	1735	-6%	2.8		
1411	1851	Drumcondra Road Lower (S)	S to N	2005	07/11	971	1002	3%	1.0	264	235	-11%	1.9	1235	1236	0%	0.0		
1413	1394	North Circular Road (W)	W to E	2005	07/11	277	399	44%	6.6	150	60	-60%	8.8	427	459	7%	1.5		
1414	1415		0 from A	2007	19/04	452	608	34%	6.8	84	122	45%	3.7	536	730	36%	7.7		
1415	1408		0 to B	2007	19/04	500	400	-20%	4.7	30	2	-92%	6.8	530	403	-24%	5.9		
1415	1414		0 to A	2007	19/04	545	960	76%	15.1	69	87	26%	2.0	614	1047	70%	15.0		
1415	1416		0 to C	2007	19/04	513	703	37%	7.7	75	128	70%	5.2	588	831	41%	9.1		
1416	1415		0 from C	2007	19/04	1000	1300	30%	8.9	84	90	7%	0.6	1084	1390	28%	8.7		
1416	1428		0 from B	2007	19/04	539	703	30%	6.6	69	128	85%	5.9	608	831	37%	8.3		
1417	1392	Eccles Street	W to E	2005	07/11	264	425	61%	8.7	60	12	-80%	8.0	324	437	35%	5.8		
1420	1468		0 from C	2007	19/04	245	436	78%	10.4	9	31	240%	4.9	254	467	84%	11.2		
1427	1428		0 from C	2007	19/04	510	573	12%	2.7	54	107	98%	5.9	564	680	21%	4.6		
1428	1416		0 to B	2007	19/04	925	1300	41%	11.2	60	90	49%	3.4	985	1390	41%	11.7		
1428	1427		0 to C	2007	19/04	660	1162	76%	16.6	45	95	112%	6.0	705	1258	78%	17.6		
1428	1431		0 Wbd	2007	Apr	576	533	-7%	1.8	66	123	86%	5.8	642	656	2%	0.6		
1431	1428		0 Ebd	2007	Apr	777	1108	43%	10.8	72	80	12%	1.0	849	1189	40%	10.6		
1454	1464	Blackhall Place/ Blackhall Street	From C	2005	17/05	272	187	-31%	5.6	27	10	-62%	3.9	299	197	-34%	6.5		
1460	1465	Blackhall Place/ King Street North	From A	2005	17/05	472	303	-36%	8.6	108	74	-31%	3.6	580	377	-35%	9.3		
1461	1451		0 0	2007	24/04	1015	1011	0%	0.1	129	286	121%	10.9	1144	1297	13%	4.4		
1461	1462		0 0	2007	24/04	402	171	-58%	13.7	51	64	26%	1.7	453	235	-48%	11.8		
1463	1464		0 from C	2007	24/04	347	171	-51%	10.9	54	64	19%	1.3	401	235	-41%	9.3		
1464	1460	Blackhall Place/ Blackhall Street	To B	2005	17/05	481	319	-34%	8.1	105	74	-29%	3.3	586	393	-33%	8.7		
1464	1463	Blackhall Place/ Blackhall Street	To A	2005	17/05	218	36	-83%	16.1	18	2	-92%	5.3	236	38	-84%	16.9		
1465	1455	Blackhall Place/ King Street North	To C	2005	17/05	638	863	35%	8.2	81	54	-34%	3.3	719	916	27%	6.9		
1465	1466	Blackhall Place/ King Street North	To B	2005	17/05	336	333	-1%	0.2	69	77	12%	0.9	405	410	1%	0.2		
1466	1456	Rosemount Terrace / Stoneybatter / Brunswick Street North	To B	2005	17/05	498	608	22%	4.7	42	47	13%	0.8	540	656	21%	4.7		
1466	1465	Blackhall Place/ King Street North	From B	2005	17/05	562	796	42%	9.0	54	52	-4%	0.3	616	848	38%	8.6		
1466	1467	Rosemount Terrace / Stoneybatter / Brunswick Street North	To A	2005	17/05	256	182	-29%	5.0	51	68	34%	2.2	307	250	-18%	3.4		
1466	1478	Rosemount Terrace / Stoneybatter / Brunswick Street North	To D	2005	17/05	135	85	-37%	4.8	6	9	51%	1.1	141	94	-33%	4.3		

Additional Count Comparisons not included in the Cordon Analysis

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						AM3											
						HGV				Car				Total			
1467	1466	Rosemount Terrace / Stoneybatter / Brunswick Street North	From A	2005	17/05	840	735	-12%	3.7	81	55	-33%	3.2	921	790	-14%	4.5
1467	1468		0 from B	2007	19/04	302	205	-32%	6.1	57	71	24%	1.7	359	275	-23%	4.7
1467	1473		0 to D	2007	24/04	49	14	-71%	6.2	0	0	#DIV/0!	#DIV/0!	49	14	-71%	6.2
1468	1420		0 to C	2007	19/04	79	89	12%	1.1	9	2	-81%	3.1	88	91	3%	0.3
1468	1467		0 to B	2007	19/04	752	676	-10%	2.9	66	54	-18%	1.6	818	730	-11%	3.2
1468	1469		0 to A	2007	19/04	229	289	26%	3.7	48	90	88%	5.1	277	380	37%	5.7
1469	1468		0 from A	2007	19/04	513	337	-34%	8.6	57	33	-42%	3.6	570	369	-35%	9.3
1473	1467	Stoneybatter / Manor Place / Kirwan Street	From A	2005	17/05	169	54	-68%	10.8	6	0	-98%	3.4	175	55	-69%	11.2
1474	1461		0 0	2007	24/04	1125	1054	-6%	2.2	165	296	79%	8.6	1290	1350	5%	1.7
1478	1466	Rosemount Terrace / Stoneybatter / Brunswick Street North	From D	2005	17/05	302	769	155%	20.2	12	58	383%	7.8	314	827	163%	21.5
1651	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SE to NW	2005	24/02	602	661	10%	2.4	57	69	20%	1.5	659	730	11%	2.7
1667	3511	B5	2 S to N	2005	09/11	1243	226	-82%	37.5	249	39	-84%	17.5	1492	265	-82%	41.4
1675	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SW to NE	2005	24/02	689	376	-45%	13.6	150	83	-45%	6.2	839	459	-45%	14.9
1676	1651	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NW to SE	2005	24/02	645	520	-19%	5.2	81	87	7%	0.6	726	606	-16%	4.6
1676	1675	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NE to SW	2005	24/02	832	667	-20%	6.0	192	155	-20%	2.8	1024	822	-20%	6.7
1676	1819	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	SE to NW	2005	24/02	480	126	-74%	20.3	48	1	-97%	9.4	528	128	-76%	22.1
1711	1851	Whitworth Street	W to E	2005	07/11	473	466	-1%	0.3	165	124	-25%	3.4	638	590	-8%	1.9
1819	1676	Ardlea Rd/Malahide Rd/Brookwood Av/Malahide Rd	NW to SE	2005	24/02	440	234	-47%	11.2	48	14	-71%	6.1	488	248	-49%	12.5
1829	1846	B6	2 S to N	2005	23/11	441	115	-74%	19.6	15	46	207%	5.6	456	161	-65%	16.8
1846	1829	CLONSHAUGH ROAD	1 N to S	2005	23/11	199	286	44%	5.6	18	24	36%	1.4	217	311	43%	5.8
1851	1411	Drumcondra Road Lower (S)	N to S	2005	07/11	1569	1474	-6%	2.4	291	236	-19%	3.4	1860	1710	-8%	3.6
1851	1711	Whitworth Street	E to W	2005	07/11	162	140	-14%	1.8	93	106	14%	1.3	255	246	-4%	0.6
1851	1852	DRUMCONDRA ROAD LOWER / WHITWORTH ROAD	S to N	2005	07/11	844	1041	23%	6.4	210	223	6%	0.9	1054	1264	20%	6.2
1852	1851	Drumcondra Road Lower (N)	N to S	2005	07/11	1140	1047	-8%	2.8	165	203	23%	2.8	1305	1250	-4%	1.5
1855	1856	Drumcondra Road Upper	S to N	2005	06/11	711	947	33%	8.2	111	249	124%	10.3	822	1196	46%	11.8
1856	1855	Drumcondra Road Upper	N to S	2005	06/11	865	1415	64%	16.3	153	163	7%	0.8	1018	1578	55%	15.5
1859	1861	M1 (A3)	1 S to N	2006	May	725	1484	105%	22.8	258	333	29%	4.4	983	1817	85%	22.3
1861	1859	M1 (A3)	2 N to S	2006	May	616	602	-2%	0.6	147	109	-26%	3.4	763	710	-7%	1.9
1861	1871		0 Nbd	2007	Apr	904	1114	23%	6.6	120	318	165%	13.4	1024	1432	40%	11.6
1871	1861		0 Sbd	2007	Apr	1049	601	-43%	15.6	90	109	21%	1.9	1139	710	-38%	14.1
1901	1911		0 from A	2007	19/04	129	271	110%	10.1	6	32	432%	6.0	135	303	125%	11.4
1904	1906		0 from A	2007	19/04	449	296	-34%	7.9	39	49	26%	1.5	488	345	-29%	7.0
1906	1904		0 to A	2007	19/04	649	805	24%	5.8	33	116	252%	9.6	682	921	35%	8.4
1906	1914		0 from A	2007	19/04	395	180	-55%	12.7	3	44	1355%	8.4	398	223	-44%	9.9
1906	1915		0 from A	2007	17/04	517	466	-10%	2.3	72	83	16%	1.3	589	549	-7%	1.7
1908	1911		0 from B	2007	19/04	366	139	-62%	14.3	60	44	-27%	2.3	426	182	-57%	14.0
1911	1901		0 to A	2007	19/04	73	131	79%	5.7	12	38	220%	5.3	85	169	99%	7.5
1911	1908		0 to B	2007	19/04	591	812	37%	8.3	63	36	-42%	3.8	654	848	30%	7.1
1911	1912		0 to C	2007	19/04	327	353	8%	1.4	54	88	64%	4.1	381	442	16%	3.0
1912	1911		0 from C	2007	19/04	496	792	60%	11.7	63	19	-70%	6.9	559	811	45%	9.6
1912	1913		0 from B	2007	19/04	384	441	15%	2.8	72	94	30%	2.4	456	534	17%	3.5
1913	1903		0 to A	2007	19/04	48	104	117%	6.5	3	34	1036%	7.2	51	138	171%	9.0
1913	1912		0 to B	2007	19/04	648	882	36%	8.5	60	20	-66%	6.3	708	902	27%	6.8

Additional Count Comparisons not included in the Cordon Analysis

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						AM3												
						HGV				Car				Total				
1913	1914		0	from B	2007	19/04	358	389	9%	1.6	72	67	-7%	0.6	430	456	6%	1.2
1914	1906		0	to A	2007	19/04	87	45	-49%	5.2	0	77	#DIV/0!	12.4	87	121	40%	3.4
1914	1913		0	to B	2007	19/04	573	804	40%	8.8	60	16	-74%	7.2	633	820	29%	6.9
1914	1915	Navan Road	0		2006	Nov	331	311	-6%	1.1	183	72	-61%	9.9	514	383	-26%	6.2
1914	1917		0	to C	2007	19/04	558	402	-28%	7.1	63	53	-16%	1.3	621	455	-27%	7.1
1915	1906		0	to A	2007	17/04	546	344	-37%	9.6	117	53	-54%	6.9	663	398	-40%	11.5
1915	1914		0	to B	2007	17/04	829	742	-11%	3.1	99	8	-92%	12.5	928	750	-19%	6.2
1915	1916		0	from B	2007	17/04	509	405	-20%	4.9	60	75	25%	1.8	569	480	-16%	3.9
1915	1921	Navan Road / Nephin Road		To D	2005	17/05	157	489	212%	18.5	15	77	415%	9.2	172	566	229%	20.5
1916	1915	Navan Road / Nephin Road		From A	2005	17/05	907	902	-1%	0.2	177	6	-97%	17.8	1084	909	-16%	5.6
1916	1918		0	from B	2007	17/04	584	358	-39%	10.4	63	74	17%	1.3	647	432	-33%	9.3
1917	1914	Old Cabra Road / Cabra Road / Ratoath Road		From D	2005	17/05	317	122	-61%	13.1	99	93	-6%	0.6	416	215	-48%	11.3
1918	1916		0	to B	2007	17/04	856	156	-82%	31.1	90	6	-94%	12.2	946	162	-83%	33.3
1918	3421	Navan Road / Ashtown Roundabout		From C	2005	17/05	640	822	28%	6.7	168	80	-52%	7.9	808	902	12%	3.2
1919	1920		0	from B	2007	17/04	111	270	143%	11.5	6	71	1076%	10.4	117	341	191%	14.8
1920	1919	Blackhorse Avenue / Skreen Road		To C	2005	17/05	484	600	24%	5.0	36	72	100%	4.9	520	672	29%	6.2
1920	1921		0	to C	2007	17/04	127	369	191%	15.4	9	75	736%	10.2	136	445	227%	18.1
1921	1915		0	from C	2007	17/04	219	403	84%	10.4	6	56	827%	8.9	225	459	104%	12.6
1921	1920	Blackhorse Avenue / Skreen Road		From A	2005	17/05	527	749	42%	8.8	30	72	141%	5.9	557	821	47%	10.1
1921	1922		0	to C	2007	17/04	197	309	57%	7.0	3	21	593%	5.2	200	329	65%	8.0
1922	1921		0	from C	2007	17/04	714	596	-17%	4.6	12	2	-87%	4.0	726	598	-18%	5.0
1922	3471		0	from B	2007	17/04	64	250	290%	14.8	3	21	593%	5.2	67	271	304%	15.7
2001	1301	O'Connell Bridge		S to N	2005	22/02	702	883	26%	6.4	123	150	22%	2.3	825	1032	25%	6.8
2001	2002			Wbd	2007	Apr	766	364	-52%	16.9	162	431	166%	15.6	928	795	-14%	4.5
2001	2151	D'Olier Street		N to S	2005	22/02	1334	1306	-2%	0.8	129	82	-37%	4.6	1463	1387	-5%	2.0
2004	2005	Wellington Quay		E to W	2005	22/02	769	439	-43%	13.4	504	449	-11%	2.5	1273	888	-30%	11.7
2005	2008	Parliament Street		N to S	2005	22/02	486	590	21%	4.5	168	52	-69%	11.1	654	642	-2%	0.5
2008	2018	Parliament Street		N to S	2005	22/02	428	436	2%	0.4	186	52	-72%	12.3	614	488	-20%	5.4
2011	2001		0	S to N	2005	22/02	733	595	-19%	5.4	123	145	18%	1.9	856	740	-14%	4.1
2011	2006	Fleet Street		E to W	2005	22/02	108	7	-94%	13.4	24	0	-99%	6.8	132	7	-95%	15.0
2011	2151		0	W to E	2005	22/02	134	129	-4%	0.4	30	6	-81%	5.8	164	135	-18%	2.4
2012	2011	Westmoreland Street		S to N	2005	22/02	982	870	-11%	3.7	192	151	-21%	3.1	1174	1021	-13%	4.6
2012	2013	College Street		N to S	2005	22/02	1259	1021	-19%	7.1	42	74	76%	4.2	1301	1095	-16%	6.0
2013	2012	College Street		S to N	2005	22/02	806	743	-8%	2.3	192	149	-23%	3.3	998	891	-11%	3.5
2013	2014	College Green		N to W	2005	22/02	563	719	28%	6.2	21	51	143%	5.0	584	770	32%	7.1
2013	2081	Grafton Street		N to S	2005	22/02	652	302	-54%	16.0	21	23	10%	0.4	673	325	-52%	15.6
2014	2013	College Green		W to N	2005	22/02	806	743	-8%	2.3	192	149	-23%	3.3	998	891	-11%	3.5
2014	2015		0	E to W	2005	22/02	588	640	9%	2.1	57	52	-9%	0.7	645	691	7%	1.8
2015	2014	Dame St / Anglesea St		To C	2006	17/05	581	661	14%	3.2	138	145	5%	0.6	719	806	12%	3.1
2015	2016	Dame Street		E to W	2005	22/02	458	563	23%	4.6	56	53	-5%	0.4	514	615	20%	4.3
2015	2061	Trinity Street		N to S	2005	22/02	303	489	61%	9.4	60	11	-82%	8.2	363	500	38%	6.6
2016	2015	Dame Street		W to E	2005	22/02	868	969	12%	3.3	200	155	-23%	3.4	1067	1123	5%	1.7
2016	2017	Dame Street		E to W	2005	22/02	357	551	54%	9.1	72	82	13%	1.1	429	632	47%	8.8

Additional Count Comparisons not included in the Cordon Analysis

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						HGV			Car			Total					
2016	2041	South Georges Street	N to S	2005	22/02	249	285	15%	2.2	30	20	-34%	2.1	279	305	9%	1.5
2017	2016	Dame Street	W to E	2005	22/02	745	962	29%	7.4	186	154	-17%	2.5	931	1116	20%	5.8
2017	2018	Dame Street	E to W	2005	22/02	606	551	-9%	2.3	138	82	-41%	5.4	744	632	-15%	4.3
2018	2017	Dame Street	W to E	2005	22/02	427	962	125%	20.3	168	154	-9%	1.1	595	1116	88%	17.8
2018	2019	Lord Edward Street	E to W	2005	22/02	771	683	-11%	3.3	144	123	-15%	1.8	915	806	-12%	3.7
2019	2018	Lord Edward Street	W to E	2005	22/02	313	796	154%	20.5	108	140	30%	2.9	421	936	122%	19.8
2031	2043	St Stephen Street Upper	W to E	2005	22/02	321	413	29%	4.8	42	57	36%	2.2	363	470	29%	5.2
2041	2016	South Georges Street	S to N	2005	22/02	267	282	6%	0.9	42	50	18%	1.1	309	331	7%	1.3
2041	2042	South Georges Street	N to S	2005	22/02	249	285	15%	2.2	30	20	-34%	2.1	279	305	9%	1.5
2042	2041	South Georges Street	S to N	2005	22/02	267	282	6%	0.9	42	50	18%	1.1	309	331	7%	1.3
2042	2043		N to S	2005	22/02	229	246	7%	1.1	29	20	-31%	1.8	258	265	3%	0.5
2042	2062	Exchequer Street	W to E	2005	22/02	190	147	-23%	3.3	30	0	-100%	7.7	220	147	-33%	5.4
2043	2042		S to N	2005	22/02	475	414	-13%	2.9	80	49	-38%	3.8	554	463	-16%	4.0
2043	2044	Aungier Street	N to S	2005	22/02	228	137	-40%	6.7	30	15	-51%	3.2	258	152	-41%	7.4
2043	2065	St Stephen Street Lower	W to E	2005	22/02	258	454	76%	10.4	27	53	96%	4.1	285	506	78%	11.1
2044	2043	Aungier Street	S to N	2005	22/02	412	469	14%	2.7	75	40	-47%	4.6	487	509	4%	1.0
2080	2014	Church Lane	S to N	2005	22/02	167	211	27%	3.2	45	1	-98%	9.3	212	212	0%	0.0
2081	2082	Nassau Street	W to E	2005	22/02	650	302	-54%	15.9	21	23	10%	0.4	671	325	-52%	15.5
2082	2101	Leinster Street	W to E	2005	22/02	1227	685	-44%	17.5	135	93	-31%	4.0	1362	778	-43%	17.9
2083	2082		S to N	2005	22/02	698	343	-51%	15.6	140	71	-49%	6.7	837	414	-51%	16.9
2083	2102	Moles Worth Street	W to E	2005	22/02	536	170	-68%	19.5	51	53	4%	0.3	587	223	-62%	18.1
2084	2083	Dawson Street	S to N	2005	22/02	1279	697	-46%	18.5	141	124	-12%	1.5	1420	821	-42%	17.9
2085	2084	Dawson Street	S to N	2005	22/02	1278	669	-48%	19.5	120	123	3%	0.3	1398	793	-43%	18.3
2101	2102	Kildare Street	N to S	2005	22/02	380	243	-36%	7.7	45	24	-47%	3.6	425	267	-37%	8.4
2101	2131	ANPR Ebd on Leinster St S	Ebd	2006	17/05	707	442	-37%	11.1	66	69	4%	0.3	773	511	-34%	10.4
2102	2083	Moles Worth Street	E to W	2005	22/02	44	40	-8%	0.5	12	0	-100%	4.9	56	40	-28%	2.2
2102	2103	ANPR Sbd on Kildare St	Sbd	2006	17/05	779	301	-61%	20.6	90	76	-15%	1.5	869	377	-57%	19.7
2103	2085	St Stephen's Street	E to W	2005	22/02	1391	954	-31%	12.8	66	123	87%	5.9	1457	1077	-26%	10.7
2103	2104	St Stephen's Street	W to E	2005	22/02	792	331	-58%	19.5	93	77	-17%	1.7	885	408	-54%	18.8
2104	2103	St Stephen's Street	E to W	2005	22/02	1391	954	-31%	12.8	66	123	87%	5.9	1457	1077	-26%	10.7
2104	2121	Merrion Row / Ely Pl / Merrion St Upr / Baggot St	Fm B	2006	17/05	692	331	-52%	16.0	69	77	12%	1.0	761	408	-46%	14.6
2105	2104	St Stephens Grn E / Hume St	To A	2006	17/05	1624	954	-41%	18.7	186	123	-34%	5.0	1810	1077	-40%	19.3
2106	2105	St Stephens Grn E / Hume St	Fm B	2006	17/05	1287	852	-34%	13.3	159	123	-23%	3.0	1446	975	-33%	13.5
2121	2122	Merrion Row / Ely Pl / Merrion St Upr / Baggot St	To D	2006	17/05	889	586	-34%	11.2	93	112	21%	1.9	982	698	-29%	9.8
2121	2125	Merrion Sq / Merrion St Upr	Fm B	2006	17/05	66	49	-25%	2.2	3	0	-99%	2.4	69	49	-29%	2.6
2125	2121	Merrion Sq / Merrion St Upr	To B	2006	17/05	619	405	-35%	9.5	54	35	-35%	2.9	673	440	-35%	9.9
2125	2128	Merrion Sq / Merrion St Upr	To C	2006	17/05	199	196	-2%	0.2	12	13	12%	0.4	211	209	-1%	0.1
2125	2130	Merrion Sq / Merrion St Upr	To A	2006	17/05	118	186	57%	5.5	0	14	#DIV/0!	5.3	118	200	69%	6.5
2128	2125	Merrion Sq / Merrion St Upr	Fm C	2006	17/05	216	336	56%	7.2	15	10	-30%	1.3	231	347	50%	6.8
2130	2125	Merrion Sq / Merrion St Upr	Fm A	2006	17/05	654	631	-3%	0.9	48	48	-1%	0.0	702	679	-3%	0.9
2130	2132	Merrion Sq / Clare St	Fm C	2006	17/05	126	201	60%	5.9	0	14	#DIV/0!	5.3	126	215	71%	6.8
2131	2132	Merrion Sq / Clare St	Fm B	2006	17/05	356	85	-76%	18.3	24	24	-1%	0.0	380	109	-71%	17.3
2131	2141	Lincoln Place	W to E	2005	22/02	603	733	22%	5.0	51	75	46%	3.0	654	808	24%	5.7

Additional Count Comparisons not included in the Cordon Analysis

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						AM3											
						HGV				Car				Total			
2132	2130	Merrion Sq / Clare St	To C	2006	17/05	671	743	11%	2.7	51	48	-7%	0.5	722	791	10%	2.5
2132	2131	Merrion Sq / Clare St	To B	2006	17/05	397	509	28%	5.2	15	29	93%	3.0	412	537	30%	5.8
2132	2133	Merrion Sq / Clare St	To D	2006	17/05	500	248	-50%	13.0	42	40	-6%	0.4	542	287	-47%	12.5
2133	2132	Merrion Sq / Clare St	Fm D	2006	17/05	171	268	57%	6.6	12	15	26%	0.9	183	283	55%	6.6
2141	2142		0 W to E	2005	22/02	840	966	15%	4.2	75	70	-7%	0.6	915	1036	13%	3.9
2141	2148	Westland Row	S to N	2005	22/02	459	653	42%	8.2	39	55	41%	2.3	498	708	42%	8.6
2142	2132	Merrion Sq / Clare St	Fm A	2006	17/05	915	947	3%	1.0	72	63	-12%	1.1	987	1010	2%	0.7
2142	2143		0 W to E	2005	22/02	227	69	-70%	13.0	21	13	-37%	1.9	248	82	-67%	12.9
2148	2141	Westland Row	N to S	2005	22/02	696	786	13%	3.3	63	49	-22%	1.9	759	835	10%	2.7
2148	2154	Westland Row	S to N	2005	22/02	490	636	30%	6.2	24	53	122%	4.7	514	690	34%	7.2
2151	2012	Site 2: Pearse Street/D'Olier Street/College Street	E to W	2005	22/02	1754	1127	-36%	16.5	146	73	-50%	6.9	1899	1200	-37%	17.7
2152	2164	Tara Street	S to N	2005	22/02	1777	1953	10%	4.1	207	202	-3%	0.4	1984	2154	9%	3.7
2153	2152	Pearse Street	E to W	2005	22/02	2061	2039	-1%	0.5	231	211	-9%	1.4	2292	2250	-2%	0.9
2154	2148	Westland Row	N to S	2005	22/02	749	786	5%	1.3	66	49	-26%	2.2	815	835	3%	0.7
2154	2153		0 E to W	2005	22/02	1876	2071	10%	4.4	168	219	30%	3.7	2044	2290	12%	5.3
2155	2154	Pearse Street	E to W	2005	22/02	1413	1237	-12%	4.8	150	145	-3%	0.4	1563	1383	-12%	4.7
2162	2172	Tara Street	S to N	2005	22/02	1733	1797	4%	1.5	189	201	7%	0.9	1922	1999	4%	1.7
2163	2164	Townsend Street	W to E	2005	22/02	493	381	-23%	5.3	45	15	-67%	5.5	538	396	-26%	6.5
2164	2162		0 S to N	2005	22/02	1796	1958	9%	3.7	204	203	0%	0.1	2000	2161	8%	3.5
2164	2165	Townsend St / Moss St	Fm B	2006	17/05	300	210	-30%	5.6	63	14	-78%	7.9	363	224	-38%	8.1
2165	2153	Townsend St / Moss St	To C	2006	17/05	193	59	-70%	12.0	21	1	-95%	6.0	214	60	-72%	13.2
2165	2166	Townsend St / Moss St	To D	2006	17/05	381	757	99%	15.8	57	82	44%	3.0	438	839	92%	15.9
2166	2154	Townsend St / Lombard St E	To C	2006	17/05	697	1054	51%	12.1	60	78	29%	2.1	757	1131	49%	12.2
2166	2167	Townsend St / Lombard St E	To D	2006	17/05	564	500	-11%	2.8	57	75	32%	2.3	621	575	-7%	1.9
2171	2001		0 E to W	2005	22/02	1083	827	-24%	8.3	465	446	-4%	0.9	1548	1273	-18%	7.3
2171	2161	Hawkins Street	N to S	2005	22/02	9	0	-100%	4.2	0	0	#DIV/0!	#DIV/0!	9	0	-100%	4.2
2172	1303	Butt Bridge	S to N	2005	22/02	1261	1408	12%	4.0	84	166	98%	7.4	1345	1574	17%	6.0
2172	2171	Burgh Quay	E to W	2005	22/02	1085	920	-15%	5.2	429	446	4%	0.8	1514	1365	-10%	3.9
2173	2165	Townsend St / Moss St	Fm A	2006	17/05	282	520	84%	11.9	18	71	295%	8.0	300	591	97%	13.8
2173	2172	Georges Quay	E to W	2005	22/02	606	500	-17%	4.5	288	445	55%	8.2	894	946	6%	1.7
2174	2166	Townsend St / Lombard St E	Fm A	2006	17/05	880	829	-6%	1.8	60	71	18%	1.3	940	900	-4%	1.3
2202	2213		0 From C	2007	Apr	62	20	-69%	6.7	3	72	2305%	11.3	65	92	41%	3.0
2211	2213	East Wall Rd / S Bank Rd / Poolbeg Quay	Fm C	2006	18/05	501	800	60%	11.7	207	101	-51%	8.5	708	901	27%	6.8
2212	1102	East Wall Rd / N Wall Quay / E Link Toll Bridge	Fm C	2006	18/05	569	754	33%	7.2	186	67	-64%	10.5	755	821	9%	2.4
2212	2213	East Wall Rd / S Bank Rd / Poolbeg Quay	Fm A	2006	18/05	763	536	-30%	8.9	342	178	-48%	10.2	1105	713	-35%	13.0
2213	2202		0 To C	2007	Apr	61	13	-79%	8.0	0	131	#DIV/0!	16.2	61	144	136%	8.2
2213	2211	East Wall Rd / S Bank Rd / Poolbeg Quay	To C	2006	18/05	771	575	-25%	7.5	282	106	-62%	12.6	1053	681	-35%	12.6
2213	2212	East Wall Rd / S Bank Rd / Poolbeg Quay	To A	2006	18/05	451	808	79%	14.2	183	76	-59%	9.4	634	883	39%	9.1
2213	2214		0 To E	2007	Apr	80	38	-52%	5.4	297	304	2%	0.4	377	342	-9%	1.9
2214	2213		0 From E	2007	Apr	54	39	-29%	2.3	285	285	0%	0.0	339	324	-5%	0.8
2304	1461		0 0	2007	24/04	238	162	-32%	5.4	15	64	324%	7.7	253	226	-11%	1.8
2311	2811	Con Colbert Road / Memorial Road	Fm C	2006	Mar	592	1232	108%	21.2	429	605	41%	7.7	1021	1837	80%	21.6
2326	2338	Emmet Road / South Circular Road	Fm A	2006	Mar	593	822	39%	8.6	45	37	-17%	1.2	638	859	35%	8.1

Additional Count Comparisons not included in the Cordon Analysis

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						AM3											
						HGV				Car				Total			
2326	2821	Memorial Road / Inchicore Road	Fm C	2006	Mar	385	236	-39%	8.5	30	24	-21%	1.2	415	260	-37%	8.5
2338	2326	Emmet Road / South Circular Road	To A	2006	Mar	685	675	-1%	0.4	33	128	287%	10.6	718	803	12%	3.1
2338	2350	Emmet Road / South Circular Road	To C	2006	Mar	643	610	-5%	1.3	39	31	-22%	1.4	682	641	-6%	1.6
2338	2841	Emmet Road / South Circular Road	To B	2006	Mar	515	118	-77%	22.3	54	50	-8%	0.6	569	167	-71%	20.9
2350	2338	Emmet Road / South Circular Road	Fm C	2006	Mar	850	566	-33%	10.7	60	126	110%	6.9	910	692	-24%	7.7
2725	4061	Rathfarnham Rd/ Dodder Park Rd	Fm A	2006	Oct	336	375	12%	2.1	54	25	-54%	4.7	390	399	2%	0.5
2801	2825	Sarsfield Road / St Laurence Road	Fm A	2006	Mar	164	110	-33%	4.6	3	10	234%	2.8	167	120	-28%	3.9
2811	2311	Con Colbert Road / Memorial Road	To C	2006	Mar	1856	2383	28%	11.4	408	507	24%	4.6	2264	2890	28%	12.3
2811	2812	N4 / Con Colbert Road	Fm C	2006	Mar	858	1383	61%	15.7	444	619	39%	7.6	1302	2002	54%	17.2
2812	2811	N4 / Con Colbert Road	To C	2006	Mar	1578	1904	21%	7.8	384	410	7%	1.3	1962	2313	18%	7.6
2812	2813	N4 / Con Colbert Road	To A	2006	Mar	531	692	30%	6.5	384	452	18%	3.3	915	1144	25%	7.1
2812	2823	Sarsfield Road / Con Colbert Road	Fm A	2006	Mar	328	691	111%	16.1	102	167	63%	5.6	430	858	100%	16.9
2813	2812	N4 / Con Colbert Road	Fm A	2006	Mar	1291	1537	19%	6.5	345	347	1%	0.1	1636	1884	15%	5.9
2814	4311	The Oval	O	2006	Nov	843	919	9%	2.5	537	566	5%	1.3	1380	1485	8%	2.8
2819	2825	Sarsfield Road / St Laurence Road	Fm B	2006	Mar	587	671	14%	3.4	120	123	3%	0.3	707	794	12%	3.2
2819	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm D	2006	Mar	345	482	40%	6.7	135	105	-22%	2.8	480	586	22%	4.6
2820	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm C	2006	Mar	513	449	-12%	2.9	201	132	-34%	5.3	714	581	-19%	5.2
2821	2811	Con Colbert Road / Memorial Road	Fm B	2006	Mar	544	634	17%	3.7	39	108	177%	8.0	583	742	27%	6.2
2821	2822	Memorial Road / Inchicore Road	To B	2006	Mar	250	164	-34%	6.0	9	21	137%	3.2	259	186	-28%	4.9
2822	2821	Memorial Road / Inchicore Road	Fm B	2006	Mar	379	524	38%	6.8	33	101	206%	8.3	412	625	52%	9.4
2822	2842	Sarsfield Road / Grattan Crescent	To B	2006	Mar	655	699	7%	1.7	27	58	116%	4.8	682	757	11%	2.8
2823	2812	N4 / Con Colbert Road	Fm B	2006	Mar	273	367	34%	5.3	60	62	4%	0.3	333	429	29%	4.9
2823	2822	Sarsfield Road / Con Colbert Road	To C	2006	Mar	460	477	4%	0.8	48	35	-26%	2.0	508	512	1%	0.2
2823	2824	Sarsfield Road / Con Colbert Road	To B	2006	Mar	363	686	89%	14.1	114	167	46%	4.5	477	853	79%	14.6
2824	2823	Sarsfield Road / Con Colbert Road	Fm B	2006	Mar	751	846	13%	3.4	141	98	-30%	3.9	892	945	6%	1.7
2824	2825	Sarsfield Road / Landen Road	To A	2006	Mar	332	413	24%	4.2	99	97	-2%	0.2	431	510	18%	3.6
2824	2831	Sarsfield Road / Landen Road	To B	2006	Mar	76	218	186%	11.7	9	70	676%	9.7	85	288	238%	14.8
2825	2801	Sarsfield Road / St Laurence Road	To A	2006	Mar	56	48	-14%	1.1	3	32	962%	6.9	59	80	36%	2.5
2825	2819	Sarsfield Road / St Laurence Road	To B	2006	Mar	329	470	43%	7.1	102	104	2%	0.2	431	575	33%	6.4
2825	2824	Sarsfield Road / Landen Road	Fm A	2006	Mar	684	754	10%	2.6	144	96	-34%	4.4	828	849	3%	0.7
2826	2819	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To D	2006	Mar	536	728	36%	7.6	126	123	-2%	0.3	662	851	29%	6.9
2826	2820	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To C	2006	Mar	531	466	-12%	2.9	156	50	-68%	10.5	687	515	-25%	7.0
2826	2827	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To A	2006	Mar	292	115	-61%	12.4	108	75	-30%	3.4	400	190	-52%	12.2
2826	2830	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	To B	2006	Mar	520	455	-13%	3.0	75	98	31%	2.5	595	553	-7%	1.8
2827	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm A	2006	Mar	484	152	-69%	18.6	60	33	-45%	3.9	544	185	-66%	18.8
2827	2828	Bally Fermt Road / Le Fanu Road	Fm A	2006	Mar	363	272	-25%	5.1	24	129	437%	12.0	387	400	3%	0.7
2828	2827	Bally Fermt Road / Le Fanu Road	To A	2006	Mar	219	235	7%	1.0	30	139	363%	11.8	249	374	50%	7.1
2828	2829	Bally Fermt Road / Le Fanu Road	To B	2006	Mar	475	349	-27%	6.2	66	77	17%	1.3	541	426	-21%	5.2
2828	2830	Bally Fermt Road / Le Fanu Road	To D	2006	Mar	565	506	-10%	2.6	84	70	-17%	1.6	649	575	-11%	3.0
2829	2828	Bally Fermt Road / Le Fanu Road	Fm B	2006	Mar	651	554	-15%	4.0	96	103	8%	0.7	747	657	-12%	3.4
2829	2832	Ballyfermot Road / Clifden Road	To B	2006	Mar	128	163	27%	2.9	21	2	-92%	5.7	149	164	10%	1.2
2829	4380	Ballyfermot Road / Clifden Road	To A	2006	Mar	402	312	-22%	4.8	54	78	44%	2.9	456	390	-15%	3.2
2830	2826	Ballyfermot Rd/Kylemore Rd (Ballyfermot Rdbt)	Fm B	2006	Mar	537	698	30%	6.5	69	73	6%	0.5	606	771	27%	6.3

Additional Count Comparisons not included in the Cordon Analysis

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						AM3											
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2830	2828	Bally Fermot Road / Le Fanu Road	Fm D	2006	Mar	410	378	-8%	1.6	72	97	35%	2.7	482	475	-1%	0.3
2831	2824	Sarsfield Road / Landen Road	Fm B	2006	Mar	98	25	-75%	9.3	0	2	#DIV/0!	1.9	98	27	-73%	9.1
2832	2829	Ballyfermot Road / Clifden Road	Fm B	2006	Mar	154	114	-26%	3.4	18	0	-98%	5.9	172	115	-33%	4.8
2835	2837	Cloverhill Road / Cedar Brook Avenue	To C	2006	Mar	603	753	25%	5.8	123	144	17%	1.8	726	897	24%	6.0
2835	4382	Cloverhill Road / Cedar Brook Avenue	To A	2006	Mar	310	243	-22%	4.0	162	140	-14%	1.8	472	383	-19%	4.3
2835	4430	Cloverhill Road / Cedar Brook Avenue	To B	2006	Mar	198	93	-53%	8.7	75	2	-98%	11.9	273	95	-65%	13.2
2837	2835	Cloverhill Road / Cedar Brook Avenue	Fm C	2006	Mar	207	155	-25%	3.8	102	142	39%	3.6	309	297	-4%	0.7
2837	2838	Cedar Brook Avenue / Cherry Orchard	To B	2006	Mar	617	786	27%	6.4	117	146	24%	2.5	734	931	27%	6.8
2838	2837	Cedar Brook Avenue / Cherry Orchard	Fm B	2006	Mar	223	153	-31%	5.1	165	142	-14%	1.9	388	295	-24%	5.1
2838	4442	Park West Road / Park West Avenue	To C	2006	Mar	436	655	50%	9.4	147	212	44%	4.8	583	866	49%	10.5
2841	2338	Emmet Road / South Circular Road	Fm B	2006	Mar	242	501	107%	13.4	24	46	92%	3.7	266	547	105%	13.9
2842	2822	Sarsfield Road / Grattan Crescent	Fm B	2006	Mar	358	577	61%	10.1	33	102	210%	8.4	391	679	74%	12.5
2842	2847	Grattan Crescent / Emmet Road	To C	2006	Mar	654	744	14%	3.4	42	67	59%	3.3	696	810	16%	4.2
2842	2848	Grattan Crescent / Emmet Road	To B	2006	Mar	493	605	23%	4.8	75	74	-1%	0.1	568	679	20%	4.5
2847	2842	Grattan Crescent / Emmet Road	Fm C	2006	Mar	328	311	-5%	0.9	60	45	-24%	2.0	388	357	-8%	1.6
2848	2842	Grattan Crescent / Emmet Road	Fm B	2006	Mar	572	921	61%	12.8	66	140	112%	7.3	638	1061	66%	14.5
2899	4161	Templeogue Rd / Templeville Rd / Springfield	Fm D	2006	Oct	565	478	-15%	3.8	24	42	75%	3.1	589	520	-12%	2.9
2931	2932		0 Ebd	2007	Apr	499	679	36%	7.4	48	74	55%	3.4	547	753	38%	8.1
2932	2931		0 Wbd	2007	Apr	472	606	28%	5.8	51	101	99%	5.8	523	707	35%	7.4
2932	2951	MESPIL ROAD (A5)	1 W to E	2006	May	263	597	127%	16.1	57	65	14%	1.0	320	662	107%	15.4
2951	2932	MESPIL ROAD (A5)	2 E to W	2006	May	370	540	46%	8.0	66	90	36%	2.7	436	630	44%	8.4
2999	3301	Blanchardstown Road south (N)	N to S	2005	22/11	558	403	-28%	7.1	96	109	14%	1.3	654	512	-22%	5.9
3300	3301	Blanchardstown Road south (S)	S to N	2005	22/11	837	992	19%	5.1	69	216	213%	12.3	906	1208	33%	9.3
3301	2999	Blanchardstown Road south (N)	S to N	2005	22/11	702	1165	66%	15.1	102	216	112%	9.0	804	1380	72%	17.4
3301	3300	Blanchardstown Road south (S)	N to S	2005	22/11	323	360	12%	2.0	60	197	228%	12.1	383	557	46%	8.0
3301	3302	Blakestown Way	E to W	2005	22/11	284	215	-24%	4.4	27	3	-87%	6.0	311	218	-30%	5.7
3302	3301	Blakestown Way	W to E	2005	22/11	777	344	-56%	18.3	12	91	659%	11.0	789	435	-45%	14.3
3339	3343	DISWELLSTOWN	1 W to E	2005	22/11	322	159	-51%	10.5	6	3	-55%	1.6	328	162	-51%	10.6
3340	3343	CARPENTERSTOWN ROAD	1 W to E	2005	22/11	339	360	6%	1.1	3	74	2351%	11.4	342	434	27%	4.6
3343	3339	B16	2 E to W	2005	22/11	257	433	68%	9.5	12	177	1373%	17.0	269	610	127%	16.2
3343	3340	B15	2 E to W	2005	22/11	241	200	-17%	2.8	24	37	55%	2.4	265	237	-10%	1.7
3347	3349	R121	N bd	2006	16/11	343	420	22%	3.9	24	331	1278%	23.0	367	750	104%	16.2
3349	3347	R121	S bd	2006	16/11	301	197	-35%	6.6	33	102	210%	8.4	334	299	-10%	1.9
3392	3421	Navan Road / Ashtown Roundabout	From A	2005	17/05	1364	838	-39%	15.8	201	203	1%	0.2	1565	1042	-33%	14.5
3400	3401	Cappagh Road	W bd	2006	16/11	641	728	14%	3.3	123	123	0%	0.0	764	851	11%	3.1
3401	3400	CAPPAGH ROAD	1 N to S	2005	24/11	604	818	35%	8.0	171	155	-10%	1.3	775	972	25%	6.7
3411	3421		0 from A	2007	17/04	237	281	19%	2.7	12	15	28%	0.9	249	296	19%	2.9
3421	1918	Navan Road / Ashtown Roundabout	To C	2005	17/05	919	361	-61%	22.1	174	8	-95%	17.4	1093	369	-66%	26.8
3421	3392	Navan Road / Ashtown Roundabout	To A	2005	17/05	733	1033	41%	10.1	183	173	-5%	0.7	916	1206	32%	8.9
3421	3411	Navan Road / Ashtown Roundabout	To B	2005	17/05	261	137	-48%	8.8	21	3	-84%	5.1	282	140	-50%	9.8
3421	3471		0 to C	2007	17/04	680	579	-15%	4.0	21	73	248%	7.6	701	653	-7%	1.9
3471	1922		0 to B	2007	17/04	423	460	9%	1.8	12	1	-88%	4.1	435	462	6%	1.3
3471	3421		0 from C	2007	17/04	408	182	-55%	13.2	9	12	31%	0.9	417	194	-54%	12.8

Additional Count Comparisons not included in the Cordon Analysis

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						AM3												
						HGV				Car				Total				
3471	3472		0	to D	2007	17/04	83	276	233%	14.4	9	21	134%	3.1	92	298	223%	14.7
3472	3471		0	from D	2007	17/04	418	701	68%	12.0	6	5	-21%	0.5	424	706	66%	11.9
3484	3485	Main Street		E to W	2005	22/11	295	254	-14%	2.5	69	33	-53%	5.1	364	287	-21%	4.3
3485	3484	Main Street		W to E	2005	22/11	488	288	-41%	10.1	42	10	-75%	6.2	530	299	-44%	11.4
3511	1667	MALAHIDE ROAD		1 N to S	2005	09/11	831	325	-61%	21.0	237	74	-69%	13.0	1068	400	-63%	24.7
3535	3551	Turnapin Nth M01-20M		0	2006	Weekday	2132	2750	29%	12.5	872	807	-7%	2.3	3005	3557	18%	9.6
3551	3535	Turnapin Nth M01-20M		0	2006	Weekday	2731	2808	3%	1.5	910	801	-12%	3.8	3641	3609	-1%	0.5
3643	3651	Ballymun Nth R108-02		0	2006	Weekday	621	539	-13%	3.4	254	180	-29%	5.0	875	719	-18%	5.5
3651	3643	Ballymun Nth R108-02		0	2006	Weekday	531	347	-35%	8.8	303	330	9%	1.5	834	678	-19%	5.7
3730	3731	R112		1 N to S	2005	24/11	229	1006	339%	31.3	141	196	39%	4.2	370	1201	225%	29.7
3731	3730	B10		2 S to N	2005	24/11	662	834	26%	6.3	123	116	-6%	0.7	785	950	21%	5.6
3761	3771	Kilshane Rd		W bd	2006	16/11	520	537	3%	0.7	288	279	-3%	0.5	808	816	1%	0.3
3771	3761	Kilshane Rd		E bd	2006	16/11	215	225	4%	0.7	285	286	0%	0.1	500	511	2%	0.5
4000	4001	Old Bawn Rd / Seskin View Rd / Old Bawn Way		Fm A	2006	Oct	317	223	-30%	5.8	18	12	-32%	1.5	335	235	-30%	5.9
4000	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village		Fm C	2006	Oct	757	962	27%	7.0	39	38	-2%	0.1	796	1000	26%	6.8
4001	4000	Old Bawn Rd / Seskin View Rd / Old Bawn Way		To A	2006	Oct	712	397	-44%	13.4	24	15	-38%	2.0	736	411	-44%	13.5
4001	4002		0	Sbd	2007	Jan	311	361	16%	2.7	97	14	-86%	11.2	408	375	-8%	1.7
4001	4182	Old Bawn Rd / Seskin View Rd / Old Bawn Way		To D	2006	Oct	235	1	-100%	21.5	9	0	-99%	4.2	244	1	-100%	21.9
4002	4001		0	Nbd	2007	Jan	458	510	11%	2.4	33	15	-53%	3.5	491	525	7%	1.5
4002	4003	Old Bawn Rd / Kiltipper Rd		Fm A	2006	Oct	486	322	-34%	8.2	60	62	4%	0.3	546	384	-30%	7.5
4002	4104	Old Bawn Rd / Firhouse Rd West		To B	2006	Oct	560	417	-26%	6.5	54	60	10%	0.8	614	476	-22%	5.9
4003	4002	Old Bawn Rd / Kiltipper Rd		To A	2006	Oct	888	486	-45%	15.3	57	65	13%	1.0	945	550	-42%	14.4
4003	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd		Fm A	2006	Oct	592	533	-10%	2.5	66	64	-3%	0.2	658	597	-9%	2.4
4005	4104		0	Fm B	2007	14 Feb	353	236	-33%	6.8	87	63	-27%	2.8	440	299	-32%	7.3
4005	4188	N81 / KILLINARDEN HEIGHTS (EAST)		Fm B	2006	08/06	283	136	-52%	10.2	66	3	-95%	10.6	349	139	-60%	13.4
4011	4012	Springfield / Fairways		To B	2006	Oct	153	184	20%	2.4	21	15	-31%	1.5	174	198	14%	1.8
4011	4061		0	From B	2007	6 March	633	748	18%	4.4	48	46	-4%	0.3	681	794	17%	4.2
4011	4161	Springfield / Fairways		To A	2006	Oct	586	636	8%	2.0	36	40	10%	0.6	622	675	9%	2.1
4012	4011	Springfield / Fairways		Fm B	2006	Oct	531	353	-34%	8.5	18	8	-56%	2.8	549	361	-34%	8.8
4012	4013	Butterfield Ave / Fairways		To B	2006	Oct	293	339	16%	2.6	69	52	-25%	2.2	362	391	8%	1.5
4012	4062	Butterfield Ave / Rathfarnham Rd / Grange Rd		Fm B	2006	Oct	485	748	54%	10.6	87	98	13%	1.1	572	846	48%	10.3
4013	4012	Butterfield Ave / Fairways		Fm B	2006	Oct	680	683	0%	0.1	81	85	5%	0.4	761	768	1%	0.2
4013	4014	Butterfield Ave / Marian Road		To B	2006	Oct	296	272	-8%	1.4	78	51	-35%	3.4	374	323	-14%	2.7
4013	4031	Butterfield Ave / Marian Road		To C	2006	Oct	64	15	-76%	7.8	6	0	-100%	3.4	70	15	-78%	8.4
4014	4013	Butterfield Ave / Marian Road		Fm B	2006	Oct	567	417	-26%	6.8	84	85	1%	0.1	651	502	-23%	6.2
4014	4015		0	Wbd	2007	Jan	419	410	-2%	0.4	39	13	-66%	5.1	458	423	-8%	1.7
4014	4031	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave		To C	2006	Oct	238	167	-30%	5.0	27	16	-41%	2.4	265	183	-31%	5.5
4014	4162	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd		Fm C	2006	Oct	560	1112	99%	19.1	33	93	180%	7.5	593	1205	103%	20.4
4015	4014	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave		Fm B	2006	Oct	588	608	3%	0.8	59	27	-55%	4.9	646	634	-2%	0.5
4015	4016	Firhouse Rd / Knocklyon Rd		To B	2006	Oct	388	437	13%	2.4	45	6	-87%	7.7	433	443	2%	0.5
4015	4032	Firhouse Rd / Knocklyon Rd		To C	2006	Oct	326	228	-30%	5.9	24	8	-66%	3.9	350	237	-32%	6.6
4016	4015		0	Ebd	2007	Jan	409	321	-22%	4.6	48	21	-56%	4.6	457	342	-25%	5.8
4016	4163	Tallaght Rd / Wellington Lane / Spawell Rd		Fm C	2006	Oct	679	776	14%	3.6	75	4	-95%	11.3	754	780	3%	0.9

Additional Count Comparisons not included in the Cordon Analysis

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4017	4019	Firhouse Rd / Delaford Ave	To B	2006	Oct	445	605	36%	7.0	27	17	-36%	2.1	472	622	32%	6.4
4017	4033	Firhouse Rd / Delaford Ave	To C	2006	Oct	121	16	-87%	12.7	18	0	-99%	5.9	139	16	-89%	14.0
4019	4017	Firhouse Rd / Delaford Ave	Fm B	2006	Oct	579	571	-1%	0.3	18	17	-8%	0.3	597	587	-2%	0.4
4019	4020	Firhouse Rd / Ballycullen Rd / Mt Carmel Pk	To B	2006	Oct	361	209	-42%	9.0	15	15	3%	0.1	376	224	-40%	8.8
4019	4041		0 Sbd	2007	Jan	74	72	-2%	0.2	5	0	-97%	3.1	79	72	-8%	0.8
4020	4019	Firhouse Rd / Ballycullen Rd / Mt Carmel Pk	Fm B	2006	Oct	485	298	-38%	9.4	15	16	7%	0.3	500	314	-37%	9.2
4020	4021	Firhouse Rd / Ballycullen Drive	To B	2006	Oct	304	345	14%	2.3	12	34	184%	4.6	316	379	20%	3.4
4020	4041	Ballycullen Drive / Ballycullen Rd	Fm B	2006	Oct	294	146	-50%	10.0	12	25	104%	2.9	306	170	-44%	8.8
4021	4003	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To A	2006	Oct	1000	693	-31%	10.6	57	79	38%	2.6	1057	772	-27%	9.4
4021	4020	Firhouse Rd / Ballycullen Drive	Fm B	2006	Oct	398	438	10%	2.0	18	41	125%	4.2	416	479	15%	3.0
4021	4022	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To B	2006	Oct	104	454	336%	20.9	54	38	-30%	2.4	158	492	211%	18.5
4021	4043	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	To C	2006	Oct	455	399	-12%	2.7	69	70	1%	0.1	524	469	-11%	2.5
4022	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	Fm B	2006	Oct	405	430	6%	1.2	45	47	4%	0.3	450	477	6%	1.2
4031	4013	Butterfield Ave / Marian Road	Fm C	2006	Oct	179	186	4%	0.5	6	1	-90%	2.9	185	187	1%	0.1
4031	4014	Firhouse Rd / Ballyroan Rd / Old Br Rd / Butterfield Ave	Fm C	2006	Oct	337	469	39%	6.6	21	31	45%	1.9	358	500	40%	6.8
4032	4015	Firhouse Rd / Knocklyon Rd	Fm C	2006	Oct	315	126	-60%	12.7	15	6	-60%	2.8	330	132	-60%	13.0
4032	4035	Knocklyon Rd / Templeroan Rd	To C	2006	Oct	242	188	-22%	3.7	9	8	-10%	0.3	251	196	-22%	3.7
4033	4017	Firhouse Rd / Delaford Ave	Fm C	2006	Oct	192	133	-31%	4.6	24	6	-76%	4.7	216	139	-36%	5.8
4033	4034	Knocklyon Rd / Scholarstown Rd	To B	2006	Oct	360	173	-52%	11.5	12	4	-67%	2.8	372	177	-53%	11.8
4034	4033	Knocklyon Rd / Scholarstown Rd	Fm B	2006	Oct	214	145	-32%	5.1	21	25	17%	0.7	235	170	-28%	4.6
4034	4092	R113 / Scholarstown Rd / Orlagh Grove	To B	2006	Oct	866	1103	27%	7.5	30	18	-41%	2.5	896	1120	25%	7.1
4035	4032	Knocklyon Rd / Templeroan Rd	Fm C	2006	Oct	227	84	-63%	11.5	15	6	-60%	2.8	242	90	-63%	11.8
4035	4051	Scholarstown Rd / Templeroan Rd / Ballyboden Way	To C	2006	Oct	128	44	-66%	9.0	18	15	-19%	0.8	146	59	-60%	8.6
4035	4066	Scholarstown Rd / Templeroan Rd / Ballyboden Way	To D	2006	Oct	422	334	-21%	4.5	87	51	-42%	4.4	509	385	-24%	5.9
4041	4019		0 Nbd	2007	Jan	118	123	5%	0.5	11	0	-98%	4.6	129	123	-4%	0.5
4041	4020	Firhouse Rd / Ballycullen Drive	Fm C	2006	Oct	180	137	-24%	3.4	3	19	526%	4.8	183	155	-15%	2.1
4041	4042	Killininny Rd / Ballycullen Rd / St Colmcille's Way	Fm A	2006	Oct	568	646	14%	3.2	27	27	1%	0.0	595	673	13%	3.1
4042	4041	Killininny Rd / Ballycullen Rd / St Colmcille's Way	To A	2006	Oct	370	467	26%	4.7	3	28	819%	6.3	373	495	33%	5.8
4042	4043	Killininny Rd / Ballycullen Rd / St Colmcille's Way	To B	2006	Oct	451	230	-49%	12.0	66	41	-38%	3.5	517	270	-48%	12.4
4042	4090	R113 / M50 Interchange West Rdbt	Fm B	2006	Oct	860	1189	38%	10.3	195	87	-55%	9.1	1055	1276	21%	6.5
4043	4021	Firhouse Rd / Old Bawn Way / Killinny Rd / Bohernabreena Rd	Fm C	2006	Oct	630	726	15%	3.7	69	84	22%	1.7	699	810	16%	4.1
4043	4042	Killininny Rd / Ballycullen Rd / St Colmcille's Way	Fm B	2006	Oct	353	204	-42%	8.9	63	58	-9%	0.7	416	262	-37%	8.4
4051	4035	Scholarstown Rd / Templeroan Rd / Ballyboden Way	Fm C	2006	Oct	143	188	32%	3.5	51	6	-88%	8.4	194	194	0%	0.0
4061	2725	Rathfarnham Rd/ Dodder Park Rd	To A	2006	Oct	870	862	-1%	0.3	54	49	-10%	0.7	924	911	-1%	0.4
4061	4011	Springfield Avenue	West	2005	Jan	333	345	3%	0.6	39	33	-17%	1.1	372	377	1%	0.3
4061	4062		0 To C	2007	6 March	389	345	-11%	2.3	33	22	-33%	2.1	422	367	-13%	2.8
4061	5102	Rathfarnham Rd/ Dodder Park Rd	To D	2006	Oct	840	606	-28%	8.7	48	33	-32%	2.4	888	639	-28%	9.0
4062	4012	Butterfield Ave / Rathfarnham Rd / Grange Rd	To B	2006	Oct	384	500	30%	5.5	72	58	-20%	1.7	456	558	22%	4.5
4062	4061	Rathfarnham Rd/ Dodder Park Rd	Fm C	2006	Oct	741	649	-12%	3.5	51	14	-72%	6.5	792	663	-16%	4.8
4062	4063	Butterfield Ave / Rathfarnham Rd / Grange Rd	To C	2006	Oct	507	676	33%	6.9	102	110	8%	0.8	609	786	29%	6.7
4063	4062	Butterfield Ave / Rathfarnham Rd / Grange Rd	Fm C	2006	Oct	747	732	-2%	0.5	111	62	-44%	5.2	858	795	-7%	2.2
4063	4064	Willbrook Rd / Grange Rd	To B	2006	Oct	206	315	53%	6.8	9	25	175%	3.8	215	340	58%	7.5
4063	4081	Willbrook Rd / Grange Rd	To C	2006	Oct	503	530	5%	1.2	111	92	-17%	1.9	614	622	1%	0.3

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4064	4063	Willbrook Rd / Grange Rd	Fm B	2006	Oct	342	281	-18%	3.5	33	1	-97%	7.7	375	282	-25%	5.1
4064	4065		0 South Bnd	2007	31 May	292	293	0%	0.1	12	24	103%	2.9	304	317	4%	0.8
4065	4066	Ballyboden Rd	West Bnd	2006	May	457	411	-10%	2.2	36	37	4%	0.2	493	448	-9%	2.1
4066	4035	Scholarstown Rd / Templeroan Rd / Ballyboden Way	Fm D	2006	Oct	498	426	-14%	3.3	54	15	-73%	6.7	552	441	-20%	5.0
4066	4065	Ballyboden Rd	East Bnd	2006	May	541	578	7%	1.6	63	33	-48%	4.3	604	611	1%	0.3
4081	4063	Willbrook Rd / Grange Rd	Fm C	2006	Oct	599	648	8%	2.0	87	70	-19%	1.9	686	718	5%	1.2
4090	4042	R113 / M50 Interchange West Rdbt	To B	2006	Oct	540	445	-18%	4.3	186	106	-43%	6.6	726	551	-24%	6.9
4090	4091	M50 Nbd On slip / R133 INTERCHANGE	Nbd	2006	31/05	600	1206	101%	20.2	84	37	-56%	6.1	684	1242	82%	18.0
4090	4092	R113 / M50 Interchange East Rdbt	Fm B	2006	Oct	661	728	10%	2.5	96	84	-12%	1.2	757	812	7%	2.0
4091	4092	M50 Sbd Off slip / R133 INTERCHANGE	Sbd	2006	31/05	201	350	74%	9.0	96	90	-6%	0.6	297	440	48%	7.5
4092	4034	R113 / Scholarstown Rd / Orlagh Grove	Fm B	2006	Oct	463	400	-14%	3.0	96	78	-19%	2.0	559	478	-14%	3.6
4092	4090	R113 / M50 Interchange East Rdbt	To B	2006	Oct	750	815	9%	2.3	135	52	-62%	8.6	885	867	-2%	0.6
4092	4093	M50 Sbd On slip / R133 INTERCHANGE	Sbd	2006	31/05	599	958	60%	12.9	63	70	11%	0.9	662	1028	55%	12.6
4093	4090	M50 Nbd Off slip / R133 INTERCHANGE	Nbd	2006	31/05	223	380	70%	9.0	72	89	24%	1.9	295	469	59%	8.9
4100	4113		0 Fm A	2007	14 Feb	498	416	-16%	3.8	96	61	-36%	4.0	594	477	-20%	5.0
4101	4102		0 Fm A	2007	14 Feb	1261	872	-31%	11.9	336	407	21%	3.7	1597	1279	-20%	8.4
4102	4101		0 To A	2007	14 Feb	762	556	-27%	8.0	207	227	10%	1.4	969	783	-19%	6.3
4102	4105		0 To B	2007	14 Feb	552	413	-25%	6.3	147	61	-59%	8.4	699	474	-32%	9.3
4102	4107		0 To C	2007	14 Feb	810	844	4%	1.2	294	437	49%	7.5	1104	1280	16%	5.1
4104	4002	Old Bawn Rd / Firhouse Rd West	Fm B	2006	Oct	449	272	-39%	9.3	42	59	41%	2.4	491	331	-33%	7.9
4104	4005		0 To B	2007	14 Feb	493	168	-66%	17.9	63	11	-82%	8.5	556	179	-68%	19.6
4104	4186		0 To A	2007	14 Feb	616	358	-42%	11.7	72	56	-23%	2.1	688	414	-40%	11.7
4105	4102		0 Fm B	2007	14 Feb	378	476	26%	4.7	132	148	12%	1.3	510	624	22%	4.8
4106	4113		0 Fm B	2007	14 Feb	533	395	-26%	6.4	78	136	75%	5.6	611	531	-13%	3.3
4107	4102		0 Fm C	2007	14 Feb	485	469	-3%	0.7	180	166	-8%	1.1	665	635	-4%	1.2
4112	4114		0 To D	2007	13 Feb	217	581	168%	18.2	216	208	-4%	0.6	433	789	82%	14.4
4112	4120		0 To A	2007	13 Feb	570	435	-24%	6.0	180	166	-8%	1.1	750	601	-20%	5.7
4112	4132		0 To C	2007	13 Feb	795	833	5%	1.3	167	342	105%	11.0	961	1175	22%	6.5
4113	4100		0 To A	2007	14 Feb	474	497	5%	1.1	186	148	-21%	3.0	660	645	-2%	0.6
4113	4106		0 To B	2007	14 Feb	280	178	-36%	6.7	30	44	47%	2.3	310	222	-28%	5.4
4113	4140		0 To C	2007	14 Feb	582	407	-30%	7.9	96	40	-58%	6.8	678	447	-34%	9.7
4114	4112		0 Fm D	2007	13 Feb	306	407	33%	5.3	105	43	-59%	7.3	411	449	9%	1.9
4120	4112		0 Fm A	2007	13 Feb	795	910	14%	3.9	288	446	55%	8.3	1083	1356	25%	7.8
4121	4122	Tymon Rd / Tallaght Rd	from C	2005	Jan	739	577	-22%	6.3	57	61	7%	0.5	796	639	-20%	5.9
4122	4121	Tymon Rd / Tallaght Rd	to C	2005	Jan	398	75	-81%	21.0	48	25	-48%	3.8	446	100	-77%	20.9
4122	4123	Tymon Rd / Tallaght Rd	to A	2005	Jan	448	207	-54%	13.3	45	22	-51%	3.9	493	229	-53%	13.9
4122	4127	Tymon Rd / Tallaght Rd	to B	2005	Jan	458	226	-51%	12.5	27	8	-72%	4.7	485	234	-52%	13.3
4123	4122	Tymon Rd / Tallaght Rd	from A	2005	Jan	313	90	-71%	15.8	48	32	-33%	2.5	361	122	-66%	15.4
4123	4124	Greenhills Road (N)	N to S	2005	19/04	839	587	-30%	9.4	120	113	-5%	0.6	959	701	-27%	9.0
4123	4275	GREENHILLS ROAD	1 W to E	2005	15/11	919	868	-5%	1.7	87	150	72%	5.8	1006	1018	1%	0.4
4124	4123	Greenhills Road (N)	S to N	2005	19/04	721	759	5%	1.4	174	131	-25%	3.5	895	890	-1%	0.2
4124	4125	Greenhills Road (S)	N to S	2005	19/04	666	345	-48%	14.3	105	82	-22%	2.4	771	427	-45%	14.1
4124	4131	Mayberry Road	E to W	2005	19/04	359	133	-63%	14.4	54	52	-4%	0.3	413	185	-55%	13.2

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						HGV				Car				Total				
4125	4124	Greenhills Road (S)	S to N	2005	19/04	440	198	-55%	13.6	126	70	-44%	5.6	566	268	-53%	14.6	
4125	4133		0 Fm D	2007	13 Feb	411	200	-51%	12.1	111	40	-64%	8.1	522	240	-54%	14.4	
4127	4122	Tymon Rd / Tallaght Rd	from B	2005	Jan	252	2	-99%	22.2	15	1	-97%	5.2	267	2	-99%	22.8	
4131	4124	Mayberry Rd (petrol st)	East Bnd	2006	May	421	251	-40%	9.3	63	80	27%	2.0	484	331	-32%	7.6	
4131	4132	Mayberry Rd (parking bay)	West Bnd	2006	May	552	150	-73%	21.5	81	53	-35%	3.4	633	203	-68%	21.0	
4132	4112		0 Fm C	2007	13 Feb	629	523	-17%	4.4	188	236	25%	3.3	817	758	-7%	2.1	
4132	4131		0 To C	2007	13 Feb	412	170	-59%	14.2	78	79	2%	0.2	490	249	-49%	12.5	
4132	4133		0 To B	2007	13 Feb	995	635	-36%	12.6	234	126	-46%	8.0	1229	761	-38%	14.8	
4133	4125		0 To D	2007	13 Feb	493	121	-75%	21.2	96	30	-69%	8.3	589	151	-74%	22.8	
4133	4132		0 Fm B	2007	13 Feb	599	575	-4%	1.0	186	123	-34%	5.1	785	697	-11%	3.2	
4133	4134		0 To C	2007	13 Feb	984	426	-57%	21.0	144	41	-71%	10.7	1128	468	-59%	23.4	
4134	4133		0 Fm C	2007	13 Feb	825	603	-27%	8.3	123	94	-24%	2.8	948	696	-27%	8.8	
4134	4135		0 To C	2007	13 Feb	585	284	-51%	14.4	87	88	1%	0.1	672	372	-45%	13.1	
4134	4141		0 Fm C	2007	14 Feb	569	37	-93%	30.5	168	1	-99%	18.2	737	38	-95%	35.5	
4135	4134		0 Fm C	2007	13 Feb	448	824	84%	14.9	81	122	51%	4.1	529	947	79%	15.4	
4135	4185		0 To C	2007	13 Feb	450	284	-37%	8.6	75	88	17%	1.4	525	372	-29%	7.2	
4136	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	Fm A	2006	Oct	160	19	-88%	14.9	15	0	-100%	5.5	175	19	-89%	15.9	
4140	4113		0 Fm C	2007	14 Feb	310	273	-12%	2.2	132	33	-75%	10.9	442	306	-31%	7.0	
4140	4141		0 Fm A	2007	14 Feb	411	332	-19%	4.1	48	35	-28%	2.1	459	367	-20%	4.5	
4141	4134		0 To C	2007	14 Feb	379	295	-22%	4.6	90	72	-20%	2.1	469	367	-22%	5.0	
4141	4140		0 To A	2007	14 Feb	333	85	-75%	17.2	58	27	-53%	4.7	391	112	-71%	17.6	
4141	4142	Belgard Square West	N to S	2005	15/11	218	180	-18%	2.7	9	15	67%	1.7	227	195	-14%	2.2	
4142	4141		0 To A	2007	14 Feb	805	477	-41%	13.0	162	107	-34%	4.7	967	584	-40%	13.7	
4142	4186	Belgard Square East	W to E	2005	15/11	218	116	-47%	7.9	9	1	-89%	3.6	227	117	-48%	8.4	
4147	4189	N81 / COOKSTOWN ROAD	Fm A	2006	08/06	708	681	-4%	1.0	78	81	4%	0.4	786	763	-3%	0.8	
4151	4257		0 West Bnd	2007	28 March	592	555	-6%	1.5	108	55	-49%	5.8	700	610	-13%	3.5	
4153	4191	N81 / FORTUNESTOWN ROAD	Fm A	2006	08/06	659	28	-96%	34.0	288	13	-95%	22.4	947	41	-96%	40.8	
4161	2899	Templeogue Rd / Templeville Rd / Springfield	To D	2006	Oct	581	641	10%	2.4	36	54	51%	2.7	617	695	13%	3.1	
4161	4011	Springfield / Fairways	Fm A	2006	Oct	677	730	8%	2.0	57	61	7%	0.5	734	791	8%	2.1	
4161	4162		0 from D	2007	6 March	474	640	35%	7.0	54	55	3%	0.2	528	695	32%	6.8	
4161	4284	Templeogue Rd / Templeville Rd / Springfield	To A	2006	Oct	342	419	23%	4.0	27	28	2%	0.1	369	447	21%	3.8	
4162	4014		0 to C	2007	6 March	413	694	68%	12.0	39	110	182%	8.2	452	804	78%	14.1	
4162	4161	Templeogue Rd / Templeville Rd / Springfield	Fm B	2006	Oct	476	465	-2%	0.5	30	53	76%	3.5	506	518	2%	0.5	
4162	4163	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	To B	2006	Oct	873	1638	88%	21.6	66	126	90%	6.1	939	1764	88%	22.4	
4162	4284	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	To A	2006	Oct	675	748	11%	2.7	51	49	-4%	0.3	726	797	10%	2.6	
4163	4016	Tallaght Rd / Wellington Lane / Spawell Rd	To C	2006	Oct	332	365	10%	1.8	54	14	-75%	7.0	386	379	-2%	0.4	
4163	4162	Templeogue Rd / Old Bridge Rd / Cypress Grove Rd	Fm B	2006	Oct	973	771	-21%	6.8	75	150	101%	7.1	1048	922	-12%	4.0	
4163	4286	Tallaght Rd / Wellington Lane / Spawell Rd	To A	2006	Oct	736	421	-43%	13.1	66	27	-59%	5.7	802	449	-44%	14.1	
4174	4292	Tymon M50-17 (2005 data)	0	2006	Weekday	2627	2958	13%	6.3	1024	346	-66%	25.9	3651	3305	-9%	5.9	
4177	4174	M 50 North Bound On-Slip	North Bd	2006	05/12	954	563	-41%	14.2	165	21	-87%	15.0	1119	584	-48%	18.3	
4180	4189	N81 / COOKSTOWN ROAD	Fm B	2006	08/06	979	1083	11%	3.2	270	255	-6%	0.9	1249	1338	7%	2.5	
4180	4190	N81 / KILLINARDEN HEIGHTS (WEST)	Fm C	2006	08/06	679	494	-27%	7.6	258	214	-17%	2.9	937	708	-24%	8.0	
4182	4001	Old Bawn Rd / Seskin View Rd / Old Bawn Way	Fm D	2006	Oct	231	0	-100%	21.5	9	0	-100%	4.2	240	0	-100%	21.9	

Additional Count Comparisons not included in the Cordon Analysis

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						AM3											
						HGV				Car				Total			
4183	4184	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	Fm D	2006	Oct	1457	1466	1%	0.2	282	277	-2%	0.3	1739	1743	0%	0.1
4184	4000	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To C	2006	Oct	338	564	67%	10.7	18	27	49%	1.9	356	591	66%	10.8
4184	4136	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To A	2006	Oct	385	71	-82%	20.8	21	6	-70%	4.0	406	77	-81%	21.2
4184	4183	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To D	2006	Oct	1153	1089	-6%	1.9	285	271	-5%	0.9	1438	1360	-5%	2.1
4184	4185	N81 Tallaght ByPass / Old Bawn Rd / Tallaght Village	To B	2006	Oct	1844	1661	-10%	4.4	303	280	-8%	1.3	2147	1941	-10%	4.6
4185	4135		0 Fm C	2007	13 Feb	1401	823	-41%	17.3	132	122	-7%	0.9	1533	945	-38%	16.7
4185	4184		0 To C	2007	13 Feb	1315	944	-28%	11.0	306	263	-14%	2.6	1621	1207	-26%	11.0
4185	4186		0 Fm D	2007	14 Feb	1144	1051	-8%	2.8	300	213	-29%	5.5	1444	1263	-13%	4.9
4186	4104		0 Fm A	2007	14 Feb	361	54	-85%	21.3	93	1	-99%	13.5	454	55	-88%	25.0
4186	4142		0 To A	2007	14 Feb	428	502	17%	3.4	129	42	-67%	9.4	557	544	-2%	0.6
4186	4185		0 To D	2007	14 Feb	1447	872	-40%	16.9	222	230	4%	0.5	1669	1103	-34%	15.2
4186	4187		0 To B	2007	14 Feb	1134	986	-13%	4.5	234	224	-4%	0.7	1368	1210	-12%	4.4
4187	4186		0 Fm B	2007	14 Feb	1299	851	-34%	13.7	219	226	3%	0.5	1518	1077	-29%	12.3
4187	4188	N81 / KILLINARDEN HEIGHTS (EAST)	Fm C	2006	08/06	962	1071	11%	3.4	288	265	-8%	1.4	1250	1336	7%	2.4
4188	4005	N81 / KILLINARDEN HEIGHTS (EAST)	To B	2006	08/06	334	93	-72%	16.5	51	4	-92%	8.9	385	97	-75%	18.6
4188	4187	N81 / KILLINARDEN HEIGHTS (EAST)	To C	2006	08/06	1455	1665	14%	5.3	327	334	2%	0.4	1782	1999	12%	5.0
4188	4189	N81 / KILLINARDEN HEIGHTS (EAST)	To A	2006	08/06	1001	990	-1%	0.3	330	270	-18%	3.5	1331	1260	-5%	2.0
4189	4147	N81 / COOKSTOWN ROAD	To A	2006	08/06	470	346	-26%	6.1	96	44	-54%	6.2	566	390	-31%	8.0
4189	4180	N81 / COOKSTOWN ROAD	To B	2006	08/06	675	736	9%	2.3	249	239	-4%	0.6	924	975	6%	1.7
4189	4188	N81 / KILLINARDEN HEIGHTS (EAST)	Fm A	2006	08/06	1543	1668	8%	3.1	333	320	-4%	0.7	1876	1988	6%	2.5
4190	4180	N81 / KILLINARDEN HEIGHTS (WEST)	To C	2006	08/06	965	1083	12%	3.7	264	255	-4%	0.6	1229	1338	9%	3.0
4190	4191	N81 / KILLINARDEN HEIGHTS (WEST)	To A	2006	08/06	747	528	-29%	8.7	282	311	10%	1.7	1029	839	-18%	6.2
4191	4153	N81 / FORTUNESTOWN ROAD	To A	2006	08/06	158	91	-42%	6.0	27	66	143%	5.7	185	157	-15%	2.2
4191	4190	N81 / KILLINARDEN HEIGHTS (WEST)	Fm A	2006	08/06	925	831	-10%	3.2	309	250	-19%	3.5	1234	1081	-12%	4.5
4191	4195	N81 / FORTUNESTOWN ROAD	To B	2006	08/06	591	362	-39%	10.5	279	137	-51%	9.9	870	499	-43%	14.2
4195	4191	N81 / FORTUNESTOWN ROAD	Fm B	2006	08/06	659	705	7%	1.8	288	66	-77%	16.7	947	771	-19%	6.0
4233	4242	R113 Belgard Road	S bd	2006	16/11	1084	938	-13%	4.6	381	407	7%	1.3	1465	1346	-8%	3.2
4242	4233	R113 Belgard Road	N bd	2006	16/11	700	522	-25%	7.2	255	262	3%	0.4	955	784	-18%	5.8
4256	4257		0 East Bnd	2007	28 March	754	812	8%	2.1	213	96	-55%	9.4	967	908	-6%	1.9
4257	4151		0 East Bnd	2007	28 March	903	729	-19%	6.1	183	91	-50%	7.9	1086	820	-24%	8.6
4257	4256		0 West Bnd	2007	28 March	396	588	49%	8.7	48	65	36%	2.3	444	653	47%	8.9
4273	4293	Ballymount	Wbd	2006	16/11	426	627	47%	8.8	309	299	-3%	0.6	735	926	26%	6.6
4275	4123	B24	2 E to W	2005	15/11	695	580	-17%	4.6	96	142	48%	4.2	791	722	-9%	2.5
4284	4161	Templeogue Rd / Templeville Rd / Springfield	Fm A	2006	Oct	528	779	48%	9.8	63	65	3%	0.2	591	844	43%	9.4
4284	4162		0 from A	2007	6 March	362	390	8%	1.4	33	28	-14%	0.8	395	418	6%	1.1
4284	4287		0 North Bnd	2007	31 May	515	300	-42%	10.6	39	28	-27%	1.8	554	329	-41%	10.7
4286	4163	Tallaght Rd / Wellington Lane / Spawell Rd	Fm A	2006	Oct	692	378	-45%	13.6	18	26	46%	1.7	710	404	-43%	12.9
4287	4284		0 South Bnd	2007	31 May	391	302	-23%	4.8	57	26	-54%	4.8	448	329	-27%	6.1
4292	4174	Tymon M50-17 (2005 data)	0	2006	Weekday	2262	1962	-13%	6.5	925	677	-27%	8.8	3187	2639	-17%	10.2
4293	4273	BALLYMONT	1 W to E	2005	15/11	1528	970	-37%	15.8	333	312	-6%	1.2	1861	1282	-31%	14.6
4311	2814	The Oval	W to E	2006	Nov	1602	1962	22%	8.5	392	373	-5%	0.9	1994	2335	17%	7.3
4314	4396	LiffeyValley Approach Road	E bd	2006	16/11	879	517	-41%	13.7	108	110	2%	0.2	987	628	-36%	12.6
4315	4386	Fonthill Road (N)	3 N to W	2005	17/11	706	752	7%	1.7	339	144	-57%	12.5	1045	896	-14%	4.8

Additional Count Comparisons not included in the Cordon Analysis

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						AM3													
						HGV				Car				Total					
4323	4327	Dead Mans Inn N04-40	0	2006	Weekday	1681	2693	60%	21.6	753	754	0%	0.0	2434	3448	42%	18.7		
4332	4333	Lucan Road	W to E	2005	17/11	790	366	-54%	17.6	30	29	-3%	0.2	820	395	-52%	17.2		
4333	4331	Ballyfermot Road	W to E	2005	17/11	508	957	88%	16.6	54	114	111%	6.5	562	1070	90%	17.8		
4333	4334	Fonthill Road (S)	N to S	2005	17/11	673	423	-37%	10.7	339	29	-91%	22.8	1012	453	-55%	20.7		
4333	4336	Fonthill Road (N)	S to N	2005	17/11	928	78	-92%	37.9	345	0	-100%	26.3	1273	78	-94%	46.0		
4334	4333	Fonthill Road (S)	S to N	2005	17/11	693	986	42%	10.1	297	114	-62%	12.8	990	1100	11%	3.4		
4336	4333	Fonthill Road (N)	N to S	2005	17/11	536	108	-80%	23.8	330	0	-100%	25.7	866	108	-87%	34.3		
4377	4383	NEILSTOWN ROAD	Nbd	2006	01/06	346	320	-8%	1.4	18	96	432%	10.3	364	415	14%	2.6		
4378	4382	Coldcut Road / Cloverhill Road	Fm C	2006	Mar	636	615	-3%	0.9	112	85	-24%	2.7	749	700	-6%	1.8		
4379	4381	Ballyfermot Road / Coldcut Road	Fm A	2006	Mar	504	559	11%	2.4	69	20	-71%	7.4	573	579	1%	0.3		
4380	2829	Ballyfermot Road / Clifden Road	Fm A	2006	Mar	467	566	21%	4.3	63	103	63%	4.4	530	668	26%	5.7		
4380	4381	Ballyfermot Road / Coldcut Road	Fm C	2006	Mar	389	377	-3%	0.6	90	79	-13%	1.2	479	456	-5%	1.1		
4381	4379	Ballyfermot Road / Coldcut Road	To A	2006	Mar	441	389	-12%	2.6	84	34	-60%	6.5	525	423	-19%	4.7		
4381	4380	Ballyfermot Road / Coldcut Road	To C	2006	Mar	755	638	-15%	4.4	66	105	58%	4.2	821	743	-10%	2.8		
4382	2835	Cloverhill Road / Cedar Brook Avenue	Fm A	2006	Mar	503	532	6%	1.3	135	96	-29%	3.7	638	627	-2%	0.4		
4382	4378	Coldcut Road / Cloverhill Road	To C	2006	Mar	639	730	14%	3.5	81	124	54%	4.3	720	855	19%	4.8		
4382	4395	Liffey Valley Access/Coldcut Rd	From C	2006	16/11	481	402	-16%	3.8	189	189	0%	0.0	670	592	-12%	3.1		
4383	4377	Neilstown Road	N to S	2005	17/11	295	180	-39%	7.5	30	38	25%	1.3	325	217	-33%	6.5		
4383	4394	Coldcut Road (W)	E to W	2005	17/11	339	316	-7%	1.3	126	127	1%	0.1	465	443	-5%	1.0		
4383	4395	Liffey Valley Access/Coldcut Rd	From B	2006	16/11	827	834	1%	0.2	159	152	-4%	0.5	986	987	0%	0.0		
4385	4430	Station Road / Newlands Road	Fm A	2006	Mar	622	830	33%	7.7	102	112	9%	0.9	724	942	30%	7.5		
4386	4315	Fonthill Road (N)	S to N	2005	17/11	700	722	3%	0.8	285	215	-25%	4.4	985	937	-5%	1.6		
4386	4387	Fonthill Road (S)	N to S	2005	17/11	515	227	-56%	15.0	240	96	-60%	11.1	755	323	-57%	18.6		
4386	4393	Coldcut Road (E)	W to E	2005	17/11	430	681	58%	10.6	81	79	-2%	0.2	511	760	49%	9.9		
4387	4386	Fonthill Road (S)	S to N	2005	17/11	809	542	-33%	10.3	207	125	-40%	6.4	1016	666	-34%	12.1		
4387	4410	Newlands Rd / Foxdene Av	from C	2005	Jan	377	403	7%	1.3	66	165	151%	9.2	443	568	28%	5.6		
4393	4386	Coldcut Road (E)	E to W	2005	17/11	350	335	-4%	0.8	132	122	-8%	0.9	482	457	-5%	1.2		
4394	4383	Coldcut Road (W)	W to E	2005	17/11	431	666	55%	10.0	87	51	-41%	4.3	518	717	38%	8.0		
4395	4382	Liffey Valley Access/Coldcut Rd	To C	2006	16/11	1025	857	-16%	5.5	204	185	-9%	1.3	1229	1042	-15%	5.5		
4395	4383	Liffey Valley Access/Coldcut Rd	To B	2006	16/11	361	341	-6%	1.1	120	171	43%	4.2	481	512	7%	1.4		
4395	4396	Liffey Valley Access/Coldcut Rd	To A	2006	16/11	369	0	-100%	27.1	90	0	-100%	13.4	459	1	-100%	30.2		
4396	4314	LiffeyValley Approach Road	W bd	2006	16/11	212	29	-86%	16.7	108	101	-6%	0.6	320	130	-59%	12.7		
4396	4395	Liffey Valley Access/Coldcut Rd	From A	2006	16/11	447	212	-53%	13.0	66	6	-91%	10.0	513	218	-58%	15.4		
4410	4387	Newlands Rd / Foxdene Av	to C	2005	Jan	886	1197	35%	9.6	96	219	128%	9.8	982	1416	44%	12.5		
4410	4411	Newlands Rd / Foxdene Av	to A	2005	Jan	373	365	-2%	0.4	63	83	32%	2.3	436	448	3%	0.6		
4411	4410	Newlands Rd / Foxdene Av	from A	2005	Jan	855	1137	33%	8.9	93	165	78%	6.4	948	1303	37%	10.6		
4430	2835	CLOVERHILL ROAD	1 W to E	2005	17/11	422	414	-2%	0.4	57	19	-66%	6.1	479	433	-10%	2.1		
4430	4385	Station Road / Newlands Road	To A	2006	Mar	302	354	17%	2.9	48	76	57%	3.5	350	429	23%	4.0		
4430	4444	Station Road / Newlands Road	To B	2006	Mar	627	584	-7%	1.7	150	160	7%	0.8	777	744	-4%	1.2		
4442	2838	Park West Road / Park West Avenue	Fm C	2006	Mar	605	259	-57%	16.6	162	163	1%	0.1	767	422	-45%	14.1		
4442	4443	Park West Avenue / Nangor Road	To B	2006	Mar	483	336	-30%	7.2	213	236	11%	1.5	696	572	-18%	4.9		
4443	4442	R134 / NANGOR ROAD	1 W to E	2005	17/11	780	942	21%	5.5	132	127	-4%	0.4	912	1069	17%	5.0		
4443	4444	Newlands Road / Nangor Road	Fm D	2006	Mar	385	364	-5%	1.1	171	166	-3%	0.4	556	530	-5%	1.1		

Additional Count Comparisons not included in the Cordon Analysis

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						AM3											
						HGV				Car				Total			
4444	4430	Station Road / Newlands Road	Fm B	2006	Mar	577	590	2%	0.5	117	155	32%	3.3	694	745	7%	1.9
4444	4443	Newlands Road / Nangor Road	To D	2006	Mar	717	1039	45%	10.9	264	164	-38%	6.9	981	1202	23%	6.7
4444	4445	Newlands Road / Nangor Road	To B	2006	Mar	362	341	-6%	1.1	219	113	-48%	8.2	581	454	-22%	5.6
4444	4471	Newlands Road / Nangor Road	To C	2006	Mar	377	151	-60%	13.9	51	91	79%	4.8	428	243	-43%	10.1
4445	4444	Newlands Road / Nangor Road	Fm B	2006	Mar	773	941	22%	5.7	246	132	-46%	8.3	1019	1073	5%	1.7
4471	4444	Newlands Road / Nangor Road	Fm C	2006	Mar	277	233	-16%	2.8	93	65	-30%	3.2	370	297	-20%	4.0
5014	5015	Junction N11	0	2006	Nov	943	810	-14%	4.5	86	88	3%	0.3	1028	898	-13%	4.2
5015	5014	Junction N11	S to N	2006	Nov	2514	1896	-25%	13.1	89	106	20%	1.8	2602	2003	-23%	12.5
5019	5020	STILLORGAN RD / LOWER KILMACUD RD	To D	2005	06/04	410	456	11%	2.2	33	42	29%	1.5	443	499	13%	2.6
5019	5021	STILLORGAN RD / LOWER KILMACUD RD	To C	2005	06/04	1014	809	-20%	6.8	174	155	-11%	1.5	1188	964	-19%	6.8
5019	5180	THE HILL / LOWER KILMACUD RD / DUBLIN RD	Fm D	2005	06/04	374	596	59%	10.1	24	45	88%	3.6	398	641	61%	10.7
5020	5019	STILLORGAN RD / LOWER KILMACUD RD	Fm D	2005	06/04	431	461	7%	1.4	9	2	-81%	3.1	440	463	5%	1.1
5021	5019	STILLORGAN RD / LOWER KILMACUD RD	Fm C	2005	06/04	1410	1775	26%	9.1	117	115	-2%	0.2	1527	1890	24%	8.8
5034	5049	Newtownpark Avenue	W to E	2005	19/01	591	171	-71%	21.5	30	10	-67%	4.5	621	181	-71%	22.0
5036	5037		0 To B	2007	17/01	365	112	-69%	16.4	72	3	-95%	11.2	437	115	-74%	19.4
5036	5050	Deans Grange Road	S to N	2005	19/01	350	215	-39%	8.0	60	62	4%	0.3	410	278	-32%	7.1
5036	5051	Deans Grange Road (S)	W to E	2005	19/01	172	192	12%	1.5	0	13	#DIV/0!	5.2	172	206	20%	2.5
5037	5036	Abbey Road	S to N	2005	19/01	506	387	-24%	5.6	66	76	15%	1.2	572	463	-19%	4.8
5037	5052	Kill Lane	W to E	2005	19/01	650	289	-56%	16.7	84	78	-7%	0.7	734	367	-50%	15.6
5038	5053	Pottery Road	S to N	2005	19/01	315	173	-45%	9.1	27	12	-57%	3.5	342	185	-46%	9.7
5038	5055	Johnstown Road	W to E	2005	19/01	453	321	-29%	6.7	36	27	-24%	1.5	489	349	-29%	6.8
5048	5049		0 To B	2007	17/01	560	333	-41%	10.7	90	87	-3%	0.3	650	421	-35%	9.9
5048	5081	Monkstown Road	N to E	2005	19/01	525	383	-27%	6.7	21	60	185%	6.1	546	443	-19%	4.6
5049	5034		0 To B	2007	17/01	434	203	-53%	12.9	27	25	-8%	0.4	461	228	-51%	12.5
5049	5048	Stradbroke Road	S to NE	2005	19/01	890	671	-25%	7.8	96	130	36%	3.2	986	801	-19%	6.2
5049	5050		0 To C	2007	17/01	647	245	-62%	19.0	126	68	-46%	5.9	773	313	-59%	19.7
5050	5036		0 To B	2007	17/01	269	39	-85%	18.5	63	3	-96%	10.5	332	42	-87%	21.2
5050	5049		0 Fm C	2007	17/01	872	620	-29%	9.2	102	99	-3%	0.3	974	719	-26%	8.8
5050	5051	Stradbroke Road (E)	W to E	2005	19/01	365	243	-33%	7.0	0	66	#DIV/0!	11.5	365	309	-15%	3.0
5051	5036	Deans Grange Road (S)	E to W	2005	19/01	186	87	-53%	8.5	15	1	-95%	5.1	201	88	-56%	9.4
5051	5050		0 Fm C	2007	17/01	516	486	-6%	1.3	42	37	-12%	0.8	558	523	-6%	1.5
5051	5052	Abbey Road (S)	N to S	2005	19/01	268	186	-31%	5.4	6	48	695%	8.0	274	234	-15%	2.5
5051	5061		0 To E	2007	17/01	460	410	-11%	2.4	30	42	39%	2.0	490	452	-8%	1.8
5052	5037	Kill Lane	E to W	2005	19/01	495	386	-22%	5.2	90	61	-32%	3.4	585	447	-24%	6.1
5052	5051		0 Fm C	2007	17/01	440	452	3%	0.6	45	44	-3%	0.2	485	495	2%	0.5
5052	5053	Rochestown Avenue	N to S	2005	19/01	515	307	-40%	10.3	51	49	-4%	0.3	566	356	-37%	9.8
5052	5062	Kill Avenue	W to E	2005	19/01	543	214	-61%	16.9	63	56	-11%	0.9	606	270	-55%	16.0
5053	5038	Pottery Road	N to S	2005	19/01	181	35	-81%	14.1	15	4	-76%	3.7	196	38	-80%	14.6
5053	5052	Rochestown Avenue	S to N	2005	19/01	828	721	-13%	3.8	81	75	-8%	0.7	909	796	-12%	3.9
5053	5054	Rochestown Avenue (SE)	W to SE	2005	19/01	344	159	-54%	11.7	36	18	-51%	3.5	380	176	-54%	12.2
5054	5053	Rochestown Avenue (SE)	SE to W	2005	19/01	519	374	-28%	6.9	48	21	-57%	4.7	567	394	-30%	7.9
5054	5055		0 To B	2007	16/01	282	179	-36%	6.8	45	12	-73%	6.1	327	191	-41%	8.4
5054	5063	Sallynogin Road	W to E	2005	19/01	366	73	-80%	19.8	0	20	#DIV/0!	6.4	366	93	-75%	18.0

Additional Count Comparisons not included in the Cordon Analysis

AM3 - 09:00 - 10:00

						AM3											
						HGV				Car				Total			
5055	5038		0 To B	2007	16/01	323	263	-18%	3.5	42	4	-91%	8.0	365	267	-27%	5.5
5055	5054	Rochestown Avenue (S)	S to N	2005	19/01	602	503	-16%	4.2	33	27	-17%	1.0	635	530	-16%	4.3
5055	5056		0 To C	2007	16/01	404	195	-52%	12.1	45	5	-90%	8.1	449	200	-55%	13.8
5056	5055		0 Fm C	2007	16/01	498	393	-21%	5.0	51	0	-99%	10.0	549	394	-28%	7.2
5056	5057		0 To C	2007	16/01	1021	740	-28%	9.5	138	130	-6%	0.7	1159	869	-25%	9.1
5056	5063	R 118	S to N	2005	19/01	750	625	-17%	4.8	33	14	-57%	3.9	783	639	-18%	5.4
5056	5066	Avondale road	NW to NE	2005	19/01	466	197	-58%	14.8	15	58	287%	7.1	481	255	-47%	11.8
5057	5056	Church Road	S to N	2005	19/01	1381	1028	-26%	10.2	54	74	37%	2.5	1435	1102	-23%	9.3
5061	5051		0 Fm E	2007	17/01	355	211	-40%	8.5	21	3	-86%	5.2	376	214	-43%	9.4
5061	5062		0 To C	2007	17/01	214	110	-49%	8.2	27	8	-71%	4.6	241	118	-51%	9.2
5061	5071	Monkstown Avenue	S to E	2005	19/01	618	552	-11%	2.7	6	12	100%	2.0	624	564	-10%	2.4
5062	5052	Kill Avenue	E to W	2005	19/01	333	188	-44%	9.0	60	33	-44%	3.9	393	221	-44%	9.8
5062	5061		0 Fm C	2007	17/01	276	267	-3%	0.5	24	2	-94%	6.3	300	269	-10%	1.8
5063	5054	Sallynogin Road	E to W	2005	19/01	190	40	-79%	14.0	45	2	-95%	8.8	235	43	-82%	16.3
5063	5056		0 Fm A	2007	16/01	460	373	-19%	4.2	81	124	53%	4.2	541	497	-8%	1.9
5066	5056	Avondale road	NE to NW	2005	19/01	448	259	-42%	10.1	33	2	-95%	7.5	481	260	-46%	11.5
5070	5071	Carrickbrennan Road (N)	N to S	2005	19/01	277	305	10%	1.6	9	9	2%	0.1	286	314	10%	1.6
5070	5081	Carrickbrennan Road	S to N	2005	19/01	619	864	40%	9.0	15	14	-8%	0.3	634	878	38%	8.9
5071	5061		0 To B	2007	17/01	309	180	-42%	8.2	18	3	-82%	4.5	327	183	-44%	9.0
5071	5070	Carrickbrennan Road (N)	S to N	2005	19/01	620	839	35%	8.1	6	13	124%	2.4	626	852	36%	8.3
5071	5072	Mountown Upper	S to E	2005	19/01	352	192	-45%	9.7	9	7	-27%	0.9	361	199	-45%	9.7
5072	5071		0 Fm D	2007	17/01	283	351	24%	3.8	15	1	-90%	4.7	298	353	18%	3.0
5072	5082	York Road	S to N	2005	16/11	253	211	-17%	2.8	45	6	-87%	7.7	298	217	-27%	5.0
5073	5084	Glenageary Road	S to N	2005	16/11	301	164	-46%	9.0	54	18	-67%	6.1	355	181	-49%	10.6
5079	5082	Cumberland Street	W to E	2005	16/11	268	83	-69%	14.0	24	3	-89%	5.8	292	86	-71%	15.0
5080	5081	Monistown Crescent	E to W	2005	19/01	157	299	90%	9.4	12	13	6%	0.2	169	312	84%	9.2
5081	5048	Monkstown Road	E to N	2005	19/01	686	699	2%	0.5	21	17	-18%	0.9	707	716	1%	0.4
5081	5070		0 To C	2007	17/01	267	321	20%	3.1	24	9	-62%	3.6	291	330	13%	2.2
5081	5080	Monistown Crescent	W to E	2005	19/01	295	237	-20%	3.6	18	25	41%	1.6	313	262	-16%	3.0
5081	5093	To Longford Terrace	S to N	2005	19/01	52	455	775%	25.3	3	44	1383%	8.5	55	499	808%	26.7
5082	5072	York Road	N to S	2005	16/11	146	180	23%	2.7	27	33	21%	1.0	173	213	23%	2.9
5082	5079	Cumberland Street	E to W	2005	16/11	210	190	-9%	1.4	95	8	-92%	12.1	305	198	-35%	6.7
5082	5094	Clarence Street	S to N	2005	16/11	191	134	-30%	4.5	60	5	-92%	9.6	251	139	-44%	8.0
5083	5082	Georges Street Lower	E to W	2005	16/11	123	113	-8%	0.9	15	7	-53%	2.4	138	120	-13%	1.6
5083	5095	Marine Road	S to N	2005	16/11	195	25	-87%	16.2	51	44	-14%	1.0	246	69	-72%	14.1
5083	5097	George Street Upper	W to E	2005	16/11	148	167	13%	1.5	39	44	12%	0.7	187	211	13%	1.7
5084	5073	Glenageary Road	N to S	2005	16/11	95	40	-58%	6.7	21	31	47%	2.0	116	71	-39%	4.7
5084	5095	Queens Road	E to W	2005	16/11	520	296	-43%	11.1	54	9	-83%	7.9	574	306	-47%	12.8
5084	5098	George's Street Upper	E to W	2005	16/11	282	566	101%	13.8	137	56	-59%	8.2	419	623	49%	8.9
5084	5099	Summerhill Road	W to E	2005	16/11	96	40	-59%	6.9	18	2	-87%	4.9	114	42	-63%	8.2
5094	5082	Clarence Street	N to S	2005	16/11	147	97	-34%	4.5	30	30	0%	0.0	177	127	-28%	4.0
5095	5083	Marine Road	N to S	2005	16/11	193	166	-14%	2.0	162	43	-73%	11.7	355	210	-41%	8.6
5095	5084	Queens Road	W to E	2005	16/11	306	15	-95%	23.0	36	1	-99%	8.3	342	15	-96%	24.5

Additional Count Comparisons not included in the Cordon Analysis

AM3 - 09:00 - 10:00

						AM3											
						HGV				Car				Total			
5095	5096	Crofton Road	E to W	2005	16/11	251	322	28%	4.2	128	53	-58%	7.8	379	375	-1%	0.2
5096	5095	Crofton Road	W to E	2005	16/11	441	181	-59%	14.7	48	44	-9%	0.6	489	225	-54%	14.0
5097	5083	George Street Upper	E to W	2005	16/11	383	139	-64%	15.1	51	51	0%	0.0	434	190	-56%	13.8
5098	5084	George's Street Upper	W to E	2005	16/11	143	65	-55%	7.7	33	33	0%	0.0	176	97	-45%	6.7
5099	5084	Summerhill Road	E to W	2005	16/11	262	699	167%	19.9	30	48	60%	2.9	292	747	156%	20.0
5102	4061		0 From D	2007	6 March	458	391	-15%	3.2	63	52	-18%	1.5	521	443	-15%	3.5
5109	5125	HAROLDS GRANGE ROAD	1 N to S	2005	16/11	519	71	-86%	26.1	21	6	-70%	4.0	540	77	-86%	26.4
5125	5109	B32	2 S to N	2005	16/11	402	152	-62%	15.0	18	18	-1%	0.1	420	170	-60%	14.6
5127	5128	SANDYFORD RD / WYCKHAM WAY	to B	2005	05/04	694	774	12%	3.0	48	53	10%	0.7	742	827	11%	3.0
5127	5134	SANDYFORD RD / WYCKHAM WAY	to A	2005	05/04	239	53	-78%	15.4	18	8	-58%	2.9	257	61	-76%	15.6
5127	5135	SANDYFORD ROAD / BALALLY ROAD	Fm A	2005	05/04	348	303	-13%	2.5	36	42	17%	1.0	384	346	-10%	2.0
5127	5146	SANDYFORD RD / WYCKHAM WAY	to D	2005	05/04	534	632	18%	4.1	24	41	71%	3.0	558	673	21%	4.6
5128	5127	SANDYFORD RD / WYCKHAM WAY	fm B	2005	05/04	694	594	-14%	3.9	45	59	31%	2.0	739	653	-12%	3.3
5128	5148	DUNDRUM BYPASS / WYCKHAM WAY	to C	2005	05/04	515	504	-2%	0.5	84	81	-4%	0.4	599	585	-2%	0.6
5128	5149	DUNDRUM BYPASS / WYCKHAM WAY	to D	2005	05/04	640	446	-30%	8.3	75	30	-61%	6.3	715	476	-33%	9.8
5134	5127	Sandyford Road (N)	N to S	2006	21/03	134	99	-26%	3.2	3	12	284%	3.2	137	111	-19%	2.4
5135	5127	SANDYFORD ROAD / BALALLY ROAD	To A	2005	05/04	678	790	17%	4.1	54	60	11%	0.8	732	850	16%	4.2
5135	5142	SANDYFORD ROAD / BALALLY ROAD	To B	2005	05/04	394	241	-39%	8.6	33	42	27%	1.4	427	282	-34%	7.7
5136	5142	SANDYFORD ROAD / BLACKTHORN DRIVE	To A	2005	05/04	618	363	-41%	11.5	30	60	99%	4.4	648	423	-35%	9.7
5136	5169	SANDYFORD ROAD / BLACKTHORN DRIVE	To C	2005	05/04	472	191	-60%	15.4	84	17	-80%	9.5	556	208	-63%	17.8
5142	5135	SANDYFORD ROAD / BALALLY ROAD	Fm B	2005	05/04	617	524	-15%	3.9	57	60	5%	0.4	674	584	-13%	3.6
5142	5136	Sandyford Road (N)	N to S	2006	21/03	392	293	-25%	5.3	36	28	-23%	1.5	428	321	-25%	5.5
5144	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm B	2005	06/04	693	658	-5%	1.4	84	31	-63%	7.0	777	688	-11%	3.3
5146	5127	Wyckham Way Extension	E to W	2006	21/03	298	280	-6%	1.0	15	12	-21%	0.8	313	292	-7%	1.2
5148	5128	DUNDRUM BYPASS / WYCKHAM WAY	fm C	2005	05/04	811	496	-39%	12.3	108	53	-51%	6.2	919	549	-40%	13.7
5149	5128	DUNDRUM BYPASS / WYCKHAM WAY	fm D	2005	05/04	638	275	-57%	17.0	63	63	0%	0.0	701	338	-52%	15.9
5164	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm A	2005	06/04	350	321	-8%	1.6	45	53	18%	1.1	395	374	-5%	1.1
5165	5144	MOUNT ANVILLE RD / LOWER KILMACUD RD	To B	2005	06/04	547	436	-20%	5.0	72	30	-58%	5.8	619	467	-25%	6.5
5165	5164	MOUNT ANVILLE RD / LOWER KILMACUD RD	To A	2005	06/04	403	676	68%	11.7	24	44	84%	3.5	427	720	69%	12.2
5165	5166	MOUNT ANVILLE RD / LOWER KILMACUD RD	To C	2005	06/04	481	283	-41%	10.2	57	49	-14%	1.1	538	331	-38%	9.9
5165	5172	MOUNT ANVILLE RD / LOWER KILMACUD RD	To D	2005	06/04	672	671	0%	0.0	69	27	-61%	6.1	741	698	-6%	1.6
5166	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm C	2005	06/04	697	893	28%	6.9	51	47	-7%	0.5	748	940	26%	6.6
5166	5176	EDEN PARK RD / LOWER KILMACUD RD	To D	2005	06/04	576	265	-54%	15.2	54	15	-72%	6.7	630	280	-56%	16.4
5168	9571	DRUMMARTIN ROAD	1 N to S	2005	16/11	977	646	-34%	11.6	165	424	157%	15.1	1142	1070	-6%	2.2
5169	5136	Blackthorn Drive	E to W	2006	21/03	372	53	-86%	21.9	42	36	-15%	1.0	414	89	-79%	20.5
5172	5165	MOUNT ANVILLE RD / LOWER KILMACUD RD	Fm D	2005	06/04	363	302	-17%	3.3	42	21	-51%	3.8	405	323	-20%	4.3
5176	5166	EDEN PARK RD / LOWER KILMACUD RD	Fm D	2005	06/04	508	130	-74%	21.2	51	7	-87%	8.3	559	137	-76%	22.6
5179	5180	THE HILL / LOWER KILMACUD RD / DUBLIN RD	Fm B	2005	06/04	511	158	-69%	19.3	69	49	-29%	2.6	580	207	-64%	18.8
5180	5019	THE HILL / LOWER KILMACUD RD / DUBLIN RD	To D	2005	06/04	438	582	33%	6.4	48	55	16%	1.0	486	637	31%	6.4
5180	5179	THE HILL / LOWER KILMACUD RD / DUBLIN RD	To B	2005	06/04	595	151	-75%	23.0	57	3	-95%	9.9	652	154	-76%	24.8
9568	9577	B37	2 S to N	2005	16/11	735	671	-9%	2.4	162	110	-32%	4.5	897	781	-13%	4.0
9571	5168	B36	2 S to N	2005	16/11	290	559	93%	13.1	81	39	-52%	5.5	371	598	61%	10.3
9577	9568	LEOPARDSTOWN ROAD	1 N to S	2005	16/11	2012	490	-76%	43.0	210	210	0%	0.0	2222	700	-68%	39.8

APPENDIX F

NOTES ON LUAS CALIBRATION JUNE 2009

Date 4th June 2009
 From Serbjeet Kohli
 Project DTO AM Peak Model Calibration Project No. 22044501

Subject Response to DTO DSEG comments on assignment model calibration results

Introduction

This note addresses the queries raised in the 21st May, 2009 DSEG meeting regarding the AM peak model calibration results. These were specifically related to:

- Luas Red line outbound direction patronage being under predicted by the model, and
- the inability of the PT assignment model to reflect impacts of integrated ticketing appropriately.

The table below shows overall observed and modelled boarding's by line during the AM period (07:00-10:00).

Table 1: Luas Line Level Calibration

Luas Line	Boarding & Alighting Passengers		
	Observed	Modelled	% Diff
Green Inbound	7,290	8,163	12%
Green Outbound	4,604	4,187	-9%
Red Inbound	7,098	8,072	14%
Red Outbound	5,175	3,644	-30%
Total	24,167	24,066	0%

Three key reasons are considered to be the cause of model discrepancies, especially on Luas Red in the outbound direction:

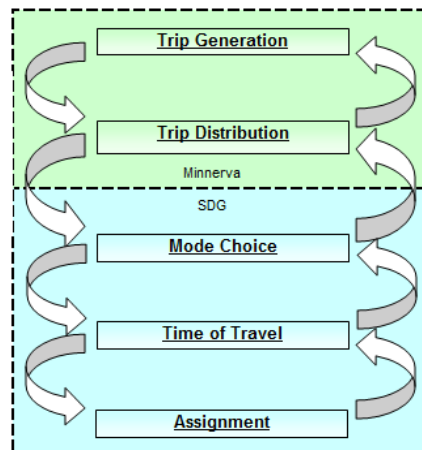
- Inconsistencies between model inputs at different stages in the modelling process;
- Underestimation of non-work and non-education trip purposes in the demand matrices; and
- Inability of the PT assignment model to represent integrated ticketing resulting in Luas demand for intra city centre movements being allocated to walk only movement by the model.

Overleaf we explain the cause of these issues and provide recommendations on how they might be addressed in the future.

Inconsistencies between inputs at different stages

Prior to discussing the details of the issues listed above it is important to recall that the assignment model calibration process is a downstream process in the overall AM peak model update exercise. In other words it is lower down the process and uses inputs from the trip attraction/generation (TAGM) and trip distribution (TDM) stages as shown in the figure below.

Figure 1: DTO AM peak Model Calibration Process



Thus the matrices used in the assignment stages are almost ‘pre-decided’ at the TAGM/TDM stages and then factored into modes (PT or highway) and time periods (by arrival hour) using existing factors. In order to improve the calibration of the assignment models there input matrices have been factored at a global level to obtain good matches against total counts. This process has been fully documented in our “HW and PT Assignment Model Report” dated May 2009.

In many modelling exercises where there are inconsistencies between observed information being used at different levels of model calibration. The model accuracy at one of the stages often suffers at the cost of another. In the case of DTO AM peak model, predictions for Luas have been shown to have a relatively poor fit with observed data, especially for Luas Red in the outbound direction. As the PT matrices are pre-defined at the TAGM/TDM stages and then adjusted using aggregate level PT counts the inconsistency is seen to arise in part from the difference between the factors used in the TAGM/TDM stages, and Luas specific observed travel patterns.

In general terms it is difficult to avoid all such inconsistencies as different model stages use different inputs for calibration. However it is advisable that whenever such inconsistencies are identified they are highlighted and reported and mitigation measures investigated to align different parts of the model. For example in case of the DTO AM period model the highway calibration analysis showed that there was a shortfall in outbound movements from the city centre to rest of the Dublin area and from inside M50 to outside M50 area. However this issue was not identified in the TAGM/TDM stage. A resolution of this issue at the TAGM/TDM stage could have limited the requirement of matrix estimation carried out at the assignment stage.

Luas Red Line Outbound Demand Analysis - Under-reporting of non work and non education trips

To understand the under prediction on Luas Red line in the outbound direction the line flow patterns for each of the three individual modelled hour in the AM period have been analysed. Table 2 below shows the comparison of total modelled and observed boarding for each individual AM peak hours for both of the Luas lines.

Table 2: Luas AM Period Boarding Calibration

LUAS	07:00-08:00			08:00-09:00			09:00-10:00		
	Observed	Modelled	% Diff	Observed	Modelled	% Diff	Observed	Modelled	% Diff
Green IN	932	1,771	90%	3,768	4,614	22%	2,084	1,778	-15%
Green Out	1,050	1,065	1%	2,516	2,229	-11%	929	894	-4%
Green Total	1,982	2,836	43%	6,284	6,843	9%	3,013	2,672	-11%
Red In	1,451	1,685	16%	3,337	4,180	25%	2,000	2,207	10%
Red Out	1,170	893	-24%	2,206	2,050	-7%	1,527	701	-54%
Red Total	2,621	2,578	-2%	5,543	6,230	12%	3,527	2,907	-18%
LUAS Total	6,585	8,249	25%	11,827	13,073	11%	9,553	8,251	-14%

It can be seen from the table above that it is modelled flows on Luas Red line in outbound direction which show most under prediction across the three modelled AM peak hours. Further detailed analysis has been carried out to understand the reason causing this under prediction.

Figure 2, Figure 3 and Figure 4 below show the line flow and boarding/alighting by station for both modelled and observed volumes on Luas Red line in outbound direction. Obvious inconsistencies between modelled and observed data have been highlighted.

Figure 2: Luas Red line Outbound Direction AM period 07:00-08:00

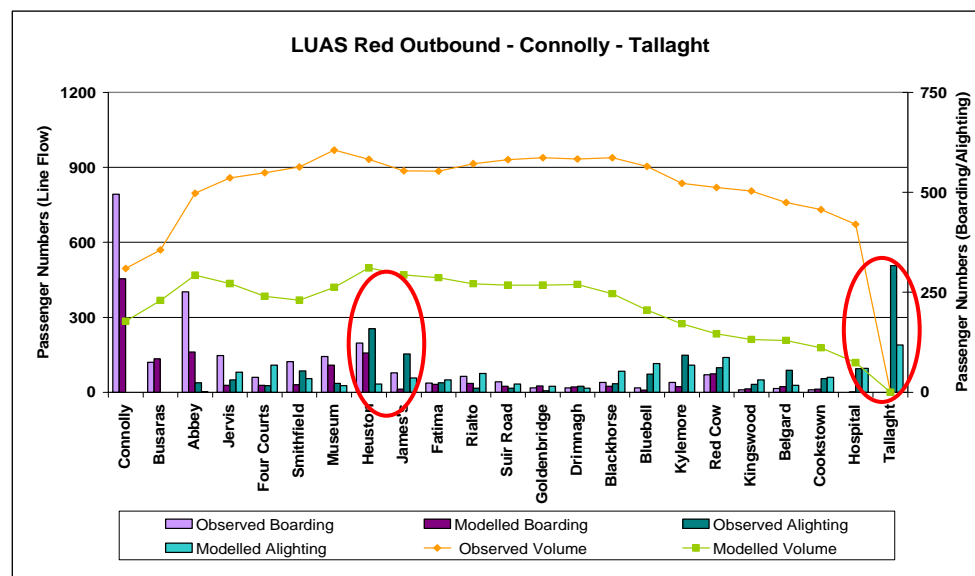


Figure 3: Luas Red line Outbound Direction AM period 08:00-09:00

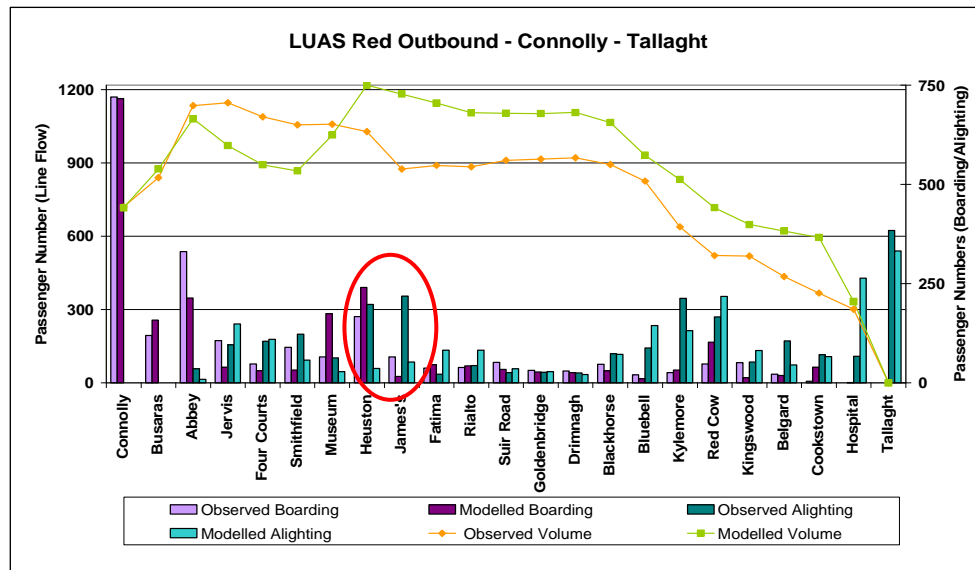
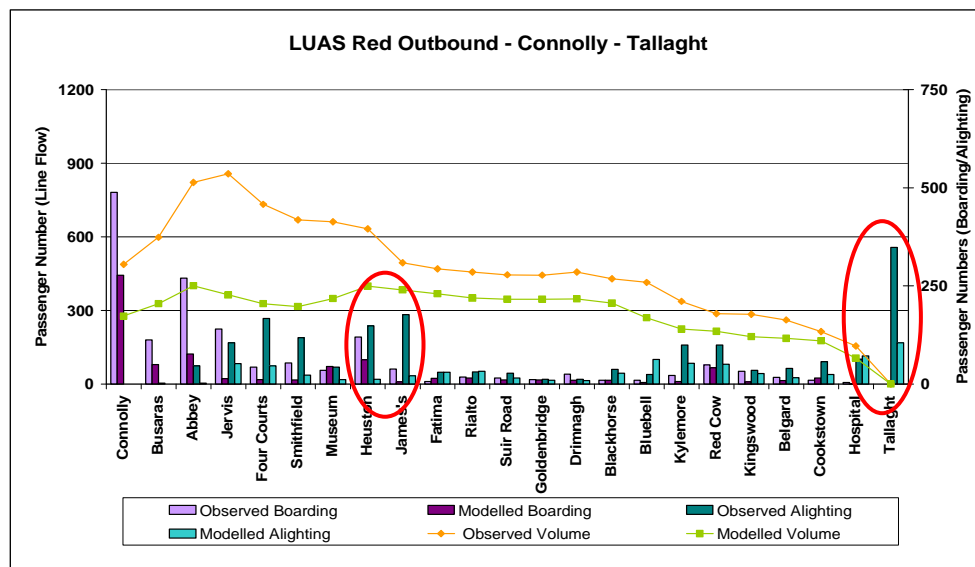


Figure 4: Luas Red line Outbound Direction AM period 09:00-10:00



The modelled line flows on Luas Red line in the outbound direction for the pre-peak (07:00-08:00) and post-peak (09:00-10:00) show a poorer fit as compared to the peak hour (08:00-09:00) itself. In both these periods there is a modelled shortfall in demand all across the line. Further detailed examination indicates that the majority of the modelled vs. observed error in each period arises from a lack of passengers alighting in the model at three stations in particular: Heuston, James's and Tallaght.

Note that in the model, Tallaght centre and Hospital stops are located very close to each other in adjacent zones and effectively serve common destinations in particular the Tallaght Hospital.

Corresponding to the shortfall of modelled passengers alighting at these three stations is a shortfall of modelled passengers boarding at Conolly and Abbey stations. The observed information shows a significant number of passengers alighting at Heuston and James's station who are boarding Luas Red line from city centre locations such as Conolly and Abbey stations. We believe that part of the reason for this under prediction is that intra city centre trips are being assigned to walk only paths instead of Luas Red line in the model. The reason for this is discussed in the next section.

The other reason for the shortfall is linked to the demand data used in the model. To understand the nature of demand patterns in the catchments area of Luas Red line the demand matrices were analysed at a time period and trip purpose levels for all zones in the area of Heuston/James's and Tallaght/Hospital. The tables below show the breakdown of demand for zones corresponding to these destinations by journey purpose and arrival hour.

Table 3: Total Destinations for Zones¹ around Tallaght & Hospital Stations

DESTINATION Zones around - Tallaght + Hospital					
Trip Purpose	PT			TOTAL	% of total
	07:00-08:00	08:00-09:00	09:00-10:00		
H2W	354	499	172	1025	79%
W2H	9	11	5	24	2%
H2E	2	10	3	15	1%
E2H	0	0	0	0	0%
H2S	13	27	52	92	7%
S2H	2	3	2	7	1%
H2O	9	11	8	28	2%
O2H	3	4	2	8	1%
H2B	15	20	6	41	3%
B2H	1	0	1	2	0%
NHBB	4	4	2	10	1%
NHBO	8	27	11	47	4%
TOTAL	419	616	264	1300	

Total Other Purpose (H2O, O2H, NHBO) Trips	20	43	21	83
Other Purpose Trips (H2O, O2H, NHBO) as % of all Trips	5%	7%	8%	6%

¹ For Tallaght/Hospital stations zones covering Tallaght Centre, Tallaght Hospital and Virginia Heights were selected. Zones covering St. James's Hospital, St. Patrick's Hospital and St. James's Gate Brewery were chosen for Heuston/James's stations.

Table 4: Total Destinations for Zones around Heuston & James's Stations

DESTINATION Zones around - Heuston + James's					
Trip Purpose	PT			TOTAL	% of total
	07:00-08:00	08:00-09:00	09:00-10:00		
H2W	365	511	192	1068	87%
W2H	3	4	2	8	1%
H2E	0	0	0	0	0%
E2H	0	0	0	0	0%
H2S	1	2	3	5	0%
S2H	1	1	1	3	0%
H2O	14	20	23	57	5%
O2H	0	1	1	2	0%
H2B	11	14	5	29	2%
B2H	0	0	1	1	0%
NHBB	1	1	0	3	0%
NHBO	6	25	17	48	4%
TOTAL	401	577	245	1223	

Total Other Purpose (H2O, O2H, NHBO) Trips	21	46	41	108
Other Purpose Trips (H2O, O2H, NHBO) as % of all Trips	5%	8%	17%	9%

It can be seen from the tables that a vast majority of trips with these areas as a destination are work trips. Despite the presence of significant 'non-work' trip attractors such as the Tallaght Hospital and St. James's Hospital, the total number of other purpose trips (H2O, O2H and NHBO) is very small. Note that even as a proportion of all trips the other purpose share is lower than the share of other purpose trips in the overall AM period (07:00-10:00) matrix which is 10%. Due to the location of such large hospitals these destinations should attract large numbers of other purpose trips, such as out patient visits and other medical appointments. Therefore we would expect that the proportion of other trip purposes would be higher than the average for zones in this area. However the demand matrices developed for DTO AM period model show an underestimation of other purpose trips for such destinations.

The lack of other purpose trips in the TAGM/TDM demand matrices is therefore believed to be one of the primary reasons for under prediction on Luas Red line in the outbound direction as it serves a number of key destinations that attract other purpose trips.

It is likely that a similar under prediction of other purpose trips is affecting bus demand on certain corridors however since no outbound count information is available at the canal cordon level it is not possible to validate the model results.

To address this issue, other trip purposes in the TAGM models (H2O, O2H, NBHO) will require further refinements using any observed information that is available from such key destinations e.g. hospitals. This observed information could be total in and out counts of people accessing these destinations by different modes. This refinement process should ensure that the total attractions to different zones reflect the unique nature of such destinations.

Modelling of Integrated Ticketing

As mentioned earlier, part of the reason for Luas Red line outbound direction under prediction is considered to be the lack of representation in the model of integrated ticketing between rail, Luas and bus modes. The figure overleaf shows the Luas Red line outbound direction modelled and observed flow comparisons aggregated across all three model periods.

The majority of the Luas Red line outbound under prediction occurs for intra-city centre movements i.e. between Connolly and Heuston with the modelled number of alighting passengers at Heuston and James's stations being about 80% lower than that of the observed alighting. In fact the under prediction of passengers alighting across all stations within the Dublin city centre canal cordon on outbound Luas Red accounts for 73% of the total under prediction across the whole of Luas Red in the outbound direction during the AM period. The table overleaf illustrates this in more detail.

Figure 5: Luas Red line Outbound Direction AM period 07:00-10:00

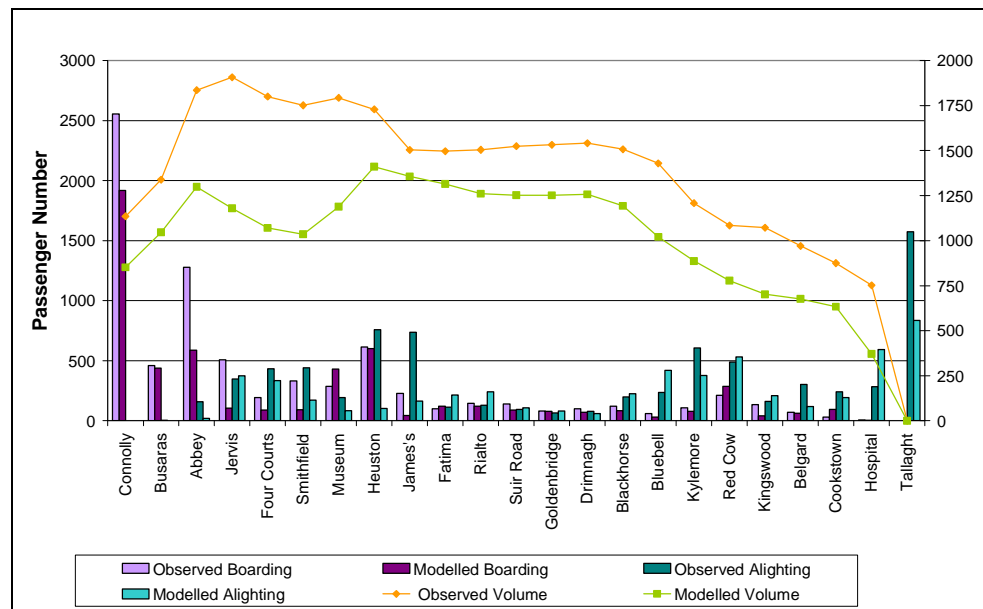


Table 5: Luas Red Outbound Direction Modelled and Observed Alighting

Location	Sation Name	Observed Alighting	Modelled Alighting
Cordon	Connolly	0	0
Cordon	Busaras	2	0
Cordon	Abbey	106	13
Cordon	Jervis	232	250
Cordon	Four Courts	289	224
Cordon	Smithfield	294	115
Cordon	Museum	128	56
Cordon	Heuston	505	69
Cordon	James's	492	110
Cordon	Fatima	76	143
Cordon	Rialto	85	162
Cordon Crossing	Suir Road	63	72
Outer	Goldenbridge	43	54
Outer	Drimnagh	52	40
Outer	Blackhorse	132	151
Outer	Bluebell	157	279
Outer	Kylemore	405	252
Outer	Red Cow	326	355
Outer	Kingswood	108	140
Outer	Belgard	201	79
Outer	Cookstown	162	128
Outer	Hospital	189	395
Outer	Tallaght	1049	556
	Total	5,096	3,644
Difference across the entire line (A)			1,452
Difference at Canal Cordon Stations (B)			1,067
B as % of A			73%

In reality rail ticket holders are given a rebate (~50%) when purchasing Luas tickets. However in the current version of the PT assignment model such a mechanism does not exist. In other words the model applies a full Luas fare to passengers transferring from heavy rail to Luas. The result of this is that for city centre destinations, the overall generalised cost of a heavy rail + Luas trip is artificially higher than a heavy rail + walk trip. Hence the model allocates transferring trips from rail to walk and Luas is under predicted. Table 6 below illustrates this in more detail taking Connolly to Heuston as an example.

Table 6: Generalised Cost Comparison for a Rail Trip from Connolly to Heuston

Connolly to Heuston	By Luas		By Foot	
	Un-weighted	Weighted	Un-weighted	Weighted
Transfer Penalty (Rail to Luas)	8 minutes	8 minutes		
Boarding Penalty	30 seconds	30 seconds		
Waiting Time	3 minutes	4.5 minutes		
In-vehicle Time	14 minutes	14 minutes		
Walking Time			40 minutes	60 minutes
Fare	€ 1.60			
VOT	8.10 euro/hour			
Overall Generalised Cost (Euros)		€ 9.23		€ 8.10

A similar under prediction in the intra-city centre movements is not apparent in the inbound direction on Luas Red. This is because there aren't any additional boarding or waiting penalties as in the outbound direction as inbound passengers have already boarded Luas from a station close to their origin location, outside the city centre. Also the incremental fare of travelling further from Heuston to Connolly is very small hence the option of continuing to travel on Luas in the inbound direction is more attractive than alighting from Luas and walking to the final destination in generalised cost terms.

Although this explains the base year calibration results the issue of modelling integrated ticketing accurately still remains. This issue can be addressed by restructuring the PT assignment model within TRIPS.

The TRIPS software is not well suited to the modelling of integrated fares. This is partly because it is 30 years old so developed at a time when fares integration was less prevalent than it is now. There is a possible short term solution that will not produce perfect results, but will offer a significant improvement over the current set up. We have applied this in a previous project in Manchester for GMPTE when faced with the same problem. It involves some initial restructuring of the fares representation with appropriate model runs to ensure no errors are introduced.

The solution involves switching on the "REDF" function in TRIPS which enables one to specify a discount to be applied to the combined fares of a two leg trip. For example, if there is a two-leg bus-LUAS trip where the bus leg costs £1 and the LUAS leg costs £1.50 then the model at present would assume the full trip is £2.50. However, if the REDF is defined for bus-LUAS trips as 50p then the two-leg fare would only cost £2 while the fares for single leg trips would be unaffected.

However there is a problem which is the reason why more work is involved in this restructure of the model than might be expected. The REDF function can only be applied to fares which were defined using the FBOARD function (i.e. fixed fares per board regardless of trip length), not to distance based fares tables. So it would be necessary to introduce an FBOARD element into the fares modelling to enable the REDF function to be used.

Hence the work required to model integrated ticketing in the current DTO model involves amending the model so that fares are based on FBOARD as well as distance fare tables, where both fare elements are added together. If implemented correctly, the results will be identical as the FBOARD element is constant. For example, if an FBOARD boarding fare is defined for bus at 50p, then the existing distance-based bus fare table needs to be lowered by 50p for all trip distances to compensate.

It is recommend that the introduction of the FBOARD element is carried out and the model rerun to ensure the results are identical **BEFORE** any REDF discounts are introduced.

APPENDIX G

UPDATES TO LUAS CALIBRATION JULY 2009

Date 16 July 2009

From Ambarene Saddique

Project DTO AM Peak Model Calibration Project No. 22044501

Subject Updated Matrices

Summary

This note gives detailed results of a test that has been carried out using the AM Peak model. The test involved a demand matrix which contained additional hospital trips to James and Tallaght, the two hospital zones served directly by LUAS red. Our calibration work, undertaken between September 2008 and May 2009 showed an under prediction of outbound trips on LUAS Red during AM Period 07:00-10:00. This is illustrated in our calibration work together with the technical note issued on 4th June 2009.

The discrepancy in the model is mainly due to an underestimation of non-work and non-education trip purposes in the demand matrices. The hospitals located in the James and Tallaght zones are major attractor of morning peak trips, and these trips were not accounted for in the TAGM matrices.

Further the inability of the PT assignment model to reflect the impact of integrated ticketing in the city centre has been a second source of error in the Luas calibration. This issue was discussed in detail in our technical note issued in June.

To address the issue related to underestimation of non-work and non-education trip purposes in the demand matrices, DTO reviewed household survey data and provided information about the number of trips which were expected to be attracted to such hospitals in James and Tallaght in the AM peak.

Table 1 below shows the results of our assignment and compares observed and modelled boarding's by line during the AM period (07:00-10:00). There has been a significant improvement to the Luas calibration, particularly in the outbound direction on the red line.

TABLE 1 LUAS LINE LEVEL CALIBRATION

Luas Line	Boarding & Alighting Passengers		
	Observed	Modelled	% Diff
Green Inbound	7,290	8,253	13%
Green Outbound	4,604	4,188	-9%
Red Inbound	7,098	8,131	15%
Red Outbound	5,175	4,373	-16%
Total	24,167	24,944	3%

In the remainder of this note, we explain how the new trip distributions to James and Tallaght zones has been applied to the model and report the results of our tests.

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Hospital Trips Distribution to James and Tallaght

The data provided by DTO comprised likely AM peak distribution of hospital trips to two hospital zones i.e. James and Tallaght. These two zones are directly served by the Luas Red line. The trip distribution gave a total number of trips for all modes from each zone to James and Tallaght, individually for the hours: 07:00-08:00, 08:00-09:00 and 09:00-10:00.

For each modelled hour, mode splits were prepared for the James and Tallaght zones separately, using the original base year calibrated matrices. The PT trips could then be identified and added to the AM Peak base matrices. This resulted in a revised PT matrix which included the hospital trips.

The new total for public transport matrices assigned to the model is shown in Table 2 below. We show the additional trips for each hospital separately together with the airport trips that had previously been added.

TABLE 2 PUBLIC TRANSPORT MATRIX TOTAL

	7 to 8	8 to 9	9 to 10	7 to 10
Base Year Calibrated Matrices	47,331	98,192	42,168	187,690
Airport Matrices	719	835	1,279	2,833
Hospital Trips from James	64	412	460	936
Hospital Trips from Tallaght	61	372	336	768
Total	48,174	99,811	44,242	192,227

Updated Luas Calibration Results

The result the new assignment using these revised matrices shows an overall increase in Luas line flow as shown in Table 3. There has been little impact on Luas Green, but a significant change on Luas Red.

Outbound flows on Luas Red have been particularly improved since this line serves both hospitals in James and Tallaght. This confirms that one of the reasons behind the original under prediction of Luas Red in our calibration work was a direct result of Non-work and Non-education trips being omitted from the original matrices.

TABLE 3 LUAS UPDATED MATRICES - AM PERIOD BOARDING CALIBRATION

LUAS	07:00-08:00			08:00-09:00			09:00-10:00		
	Observed	Modelled	% Diff	Observed	Modelled	% Diff	Observed	Modelled	% Diff
Green IN	1,522	1,775	17%	3,684	4,657	26%	2,084	1,821	-13%
Green Out	1,449	1,065	-27%	2,226	2,229	0%	929	894	-4%
Green Total	2,971	2,839	-4%	5,910	6,886	17%	3,013	2,715	-10%
Red In	1,713	1,689	-1%	3,385	4,204	24%	2,000	2,239	12%
Red Out	1,525	944	-38%	2,123	2,340	10%	1,527	1,089	-29%
Red Total	3,238	2,633	-19%	5,508	6,544	19%	3,527	3,327	-6%
LUAS Total	6,209	5,472	-12%	11,418	13,430	18%	6,540	6,042	-8%

As in our original work, we have undertaken crowding analysis on Luas Red in the outbound direction for all three time periods. Previous analysis showed that the base year calibrated model was under predicting passengers boarding at Connolly and Abbey stations. It should also be noted that in the model Tallaght and Hospital stops are in adjacent zones, located very close to each other. Due to this, these two stops in fact serve common destinations, in particular the Tallaght Hospital.

Figure1, Figure2 and Figure3 show the 07:00-08:00, 08:00-09:00 and 09:00-10:00 line flow and boarding/alighting by station for both modelled and observed volumes on Luas Red in the outbound direction for our latest assignment.

Figure 1: Updated Matrices - LUAS Red line Outbound Direction AM period 07:00-08:00

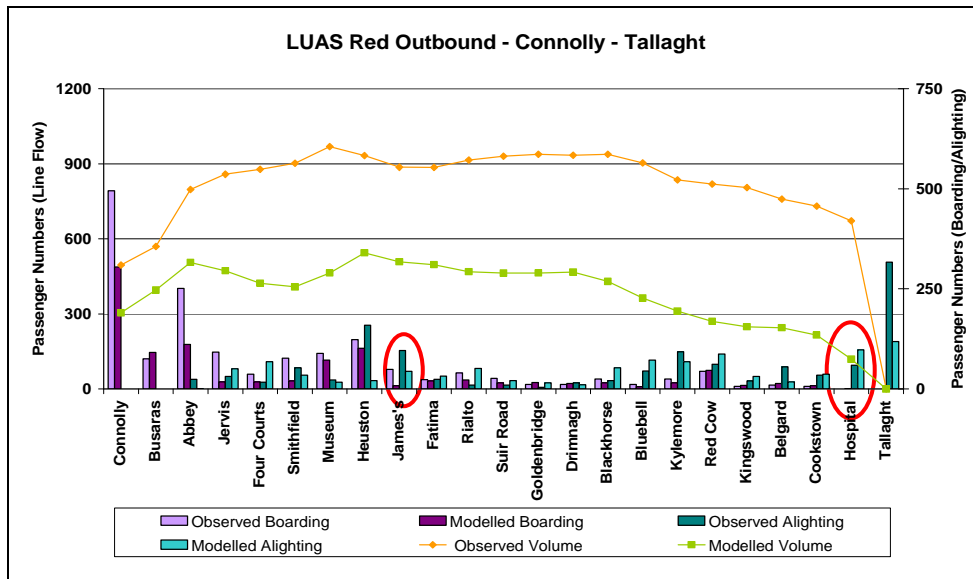


Figure 2: Updated Matrices - LUAS Red line Outbound Direction AM period 08:00-09:00

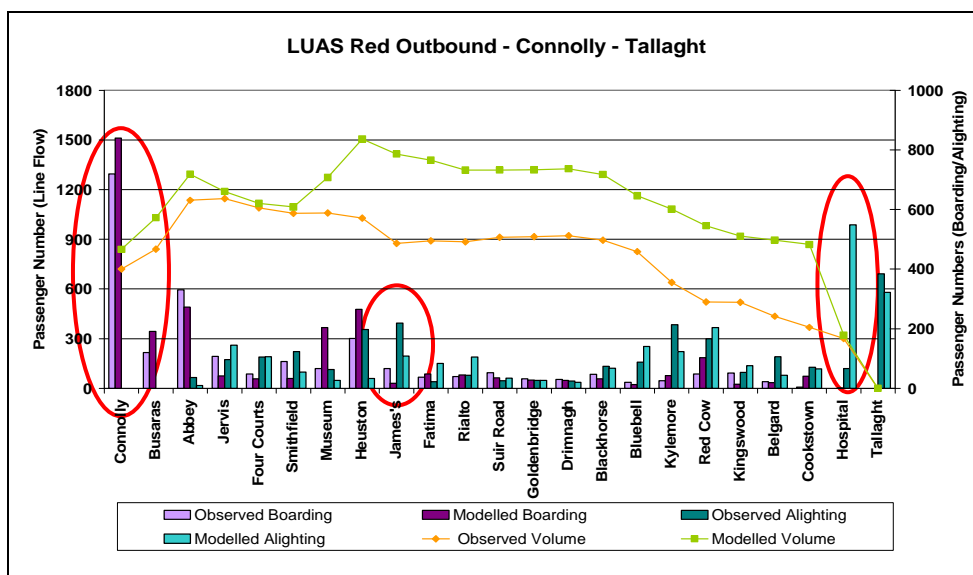


Figure 3: Updated Matrices - LUAS Red line Outbound Direction AM period 09:00-10:00

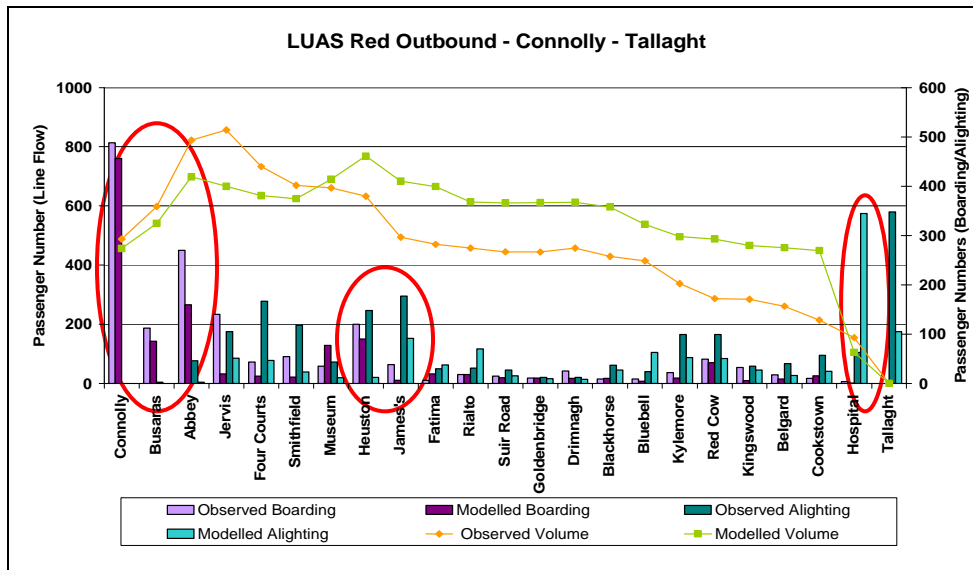


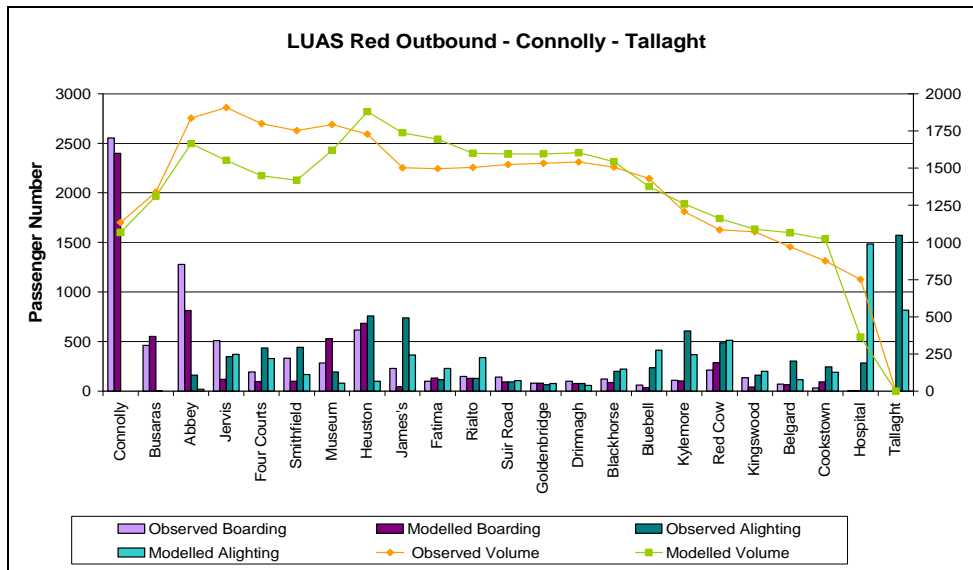
Figure1 shows a very small change in flow for 07:00-08:00, as the number of additional trips included in this period is relatively low. However, there is a slight increase in the number of trips ending in the James and Hospital stations as highlighted in Figure 1.

Figure 2 shows a significant increase in the modelled flow due to an increase in boardings. Also highlighted are the additional alighters at James's and Hospital stations resulting in an improved model fit.

As shown in Table 2, the time period 09:00-10:00 has the largest number of additional hospital trips. This is further illustrated in Figure 3 which shows again an increase in passenger alighting at James's and Hospital stations.

Finally in Figure 4 we display the overall 07:00-10:00 line flow and boarding/alighting profiles for Luas Red. The results show an improved fit compared to that achieved in the base year calibration results (shown in our previous technical note). There is a significant increase in passenger alightings at James's and Hospital stations resulting in an improved level of calibration.

Figure 4: Updated Matrices - LUAS Red line Outbound Direction AM period 07:00-10:00



There are still some discrepancies in the model, as some shortfall still exists at Heuston which shows lower number of alighting passengers. As suggested from analysis of the base year model, this shortfall is due to discounted ticketing issues which have been discussed with DTO previously.

CONTROL SHEET

Project/Proposal Name: DTO MODEL CALIBRATION

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