

Transport Model for Scotland 2014 (TMfS14)

Transport Scotland

**National Public Transport
Model Development Report**



TMFS14 PUBLIC TRANSPORT MODEL DEVELOPMENT

Description: **National Public Transport
Model Development Report**

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1 INTRODUCTION

1.1 Background

Transport Scotland plays a key role in the assessment of proposed changes to land use and transport networks across Scotland. As part of the planning process, Transport Scotland offers the use of its strategic transport and land use appraisal tools to assess the social, economic, operational, and environmental impacts of different land use options and transport interventions.

These appraisal tools include National integrated land use and transport models which cover the whole of Scotland. These National models include both the Transport Model for Scotland (TMfS) and the Transport, Economic, and Land-use Model of Scotland (TELMoS) which are both developed and maintained under Transport Scotland's Land Use and Transport Integration in Scotland service (LATIS).

For more information regarding the LATIS service and the National Transport and Land Use Models, please visit the LATIS website: www.transport.gov.scot/latis

Transport Scotland requested the development of TMfS14 which is calibrated to transport and land use conditions observed during 2014, with this model being an update of the previous TMfS12. The TMfS14 development was to consider:

During the development of TMfS12 a number of additional data sources became available or were identified as missing, technical challenges were encountered, enhancements proposed and other models developed.

TMfS shall incorporate the new data, technical updates and potentially the proposed enhancements. This model shall also have the specific objective of being suitable for supporting the Outline Business Case for improvements on the Inverness to Aberdeen transport corridor.

This model is to be used to prepare a single (baseline) Forecast Scenario and two Alternative Forecast Scenarios for the future years; 2017 – 2037 at five year intervals.

1.2 Introduction

In summer 2012 SIAS Limited (SIAS) was appointed as a nominated consultant within the Multiple Framework Agreement (MFA) for the Transport Planning, Modelling and Audit Services, Lot 1: Commission for the Maintenance and Enhancement of TMfS, which encompasses the maintenance and enhancement of the existing LATIS models.

The Transport Model for Scotland (TMfS12) was a “light touch” refresh of TMfS07 to 2012 conditions undertaken by SIAS throughout the first half of 2013. TMfS12 and its associated primary forecasts were circulated to all LATIS Framework Participants in the summer of 2013 for use on various applications. The primary focus of TMfS12 was its future application on the A9 Dualling between Perth and Inverness and therefore any updates to the model will also apply to this corridor.

In December 2014 SIAS provided Transport Scotland with an updated programme for the development of TMfS12A, an updated version of TMfS12 utilising the 2011 census travel to work data which had become available from the National Records for Scotland. Following this, Transport Scotland agreed that the demand model structure needs to change to include the ports and other zone disaggregation opportunities would also be included to take advantage of this change to the demand model.



Further TMfS12A scoping discussions took place which concluded on 28 May 2015, where Transport Scotland (TS) requested that SIAS update TMfS12 to create TMfS14. The scope of this commission contains the following elements (*SIAS Ref. 78104, TMfS14 Specification Note, June 2016*):

- Updating TMfS12 to a 2014 base year, thus creating TMfS14
- Establishing TMfS14/TELMoS14 requirements and features
- Incorporating 2011 census travel to work data
- Data collection, collation and assimilation
- Homogenising the zone system between the demand and assignment models
- Establishing a range of forecast scenarios for TMfS14/TELMoS14
- Calibration, validation and realism testing of the demand model
- Calibration and validation of the road and PT assignment models
- Updating the TMfS14 Trip End Model
- Preparing a release version of TMfS14
- Engagement with the LATIS Lot 3 participant David Simmonds Consultancy (Development, Update and Application of the Transport Economic Land-Use Model of Scotland (TELMoS))
- Preparation of updated technical and support documentation

This Report describes the development, calibration, and validation of the TMfS14 National Public Transport Model and is one of a series of documents describing the development, calibration, and validation of the TMfS14 models, as follows:

- *TMfS14 National Road Model Development Report*
- *TMfS14 National Public Transport Model Development Report*
- *TMfS14 Demand Model Development Report*
- *TMfS14 Forecasting Report*



2 KEY FEATURES OF THE MODEL

2.1 Background

The *TMfS14 National Road Model* forms part of the overall TMfS14 model hierarchy, which is shown in Figure 2.1. It is a strategic model which has been prepared with a level of detail commensurate with appraising national policy and strategic land-use and transport interventions and providing a key source of transport supply and demand data.

TMfS14 will also form the starting point for the development of any Sub-Area and Regional models; providing assistance in preparation of model structure, input to base year development and providing a source of forecast travel demand.

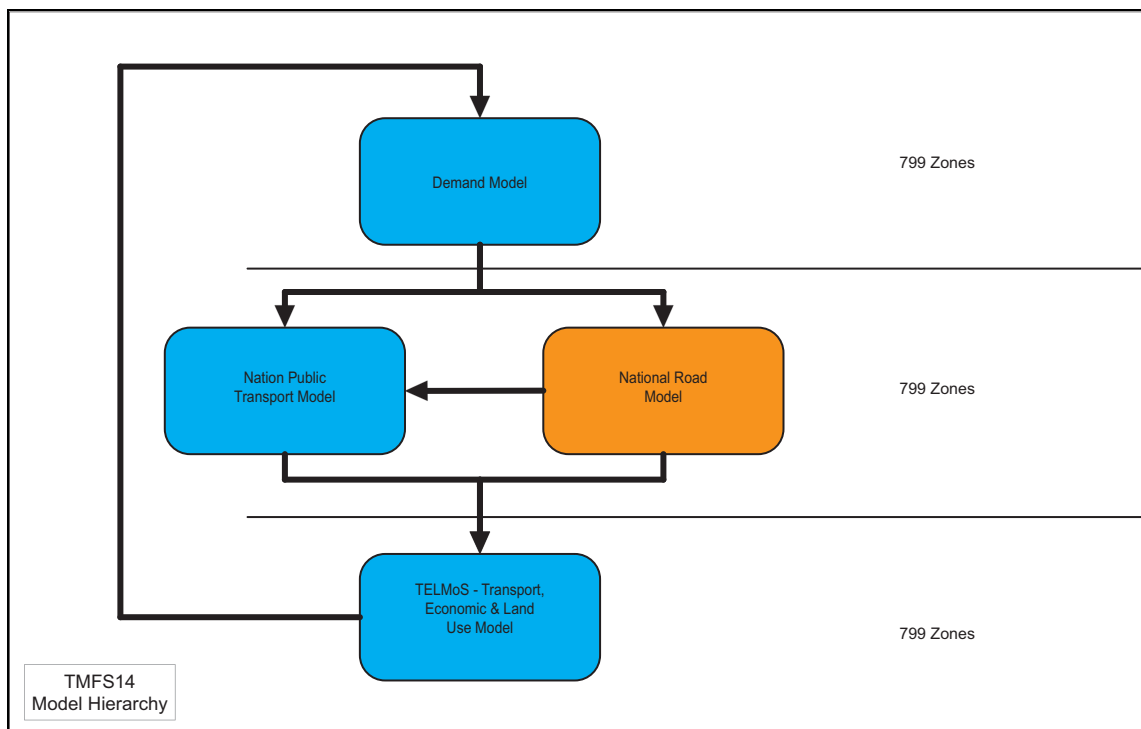


Figure 2.1 : TMfS14 Model Hierarchy, National Public Transport Model Interaction

A set of primary forecast scenarios were developed for the years 2017, 2022, 2027, 2032, and 2037. Further detail can be found in the TMfS14 Forecasting Report.

TMfS14 v1.0 has been developed using the GIS-based software packages MapInfo, QGIS, and Citilabs CUBE Voyager software version 6.1.1.

In this update the TMfS14 Public Transport network is largely based upon the TMfS12 network, however, it was reviewed against available information including Ordnance Survey OpenData Meridian GIS layer, bus/rail timetable data, bus stop/rail station data, local knowledge, and Google Maps. In addition, improvements implemented between 2007 and 2014 that have been represented as forecast schemes in previous versions of TMfS were reviewed against current information.

TMfS14 includes all Scottish Motorways and A-Roads, many strategically-important Scottish B-Roads, a 'skeletal' representation of the road network in England and Wales and ferry crossings around Scotland.



This section covers the following aspects of the model:

- Geographical Coverage
- Zoning System
- Time Periods
- User Classes

2.2 Geographical Coverage

The TMfS14 Public Transport Model Road Based network and geographical coverage for Scotland is shown in Figure 2.2.

Figure 2.3 highlights the TMfS14 Public Transport Model Rail Based network and geographical coverage for Scotland.

Figure 2.4 highlights the TMfS14 Public Transport Model Ferry coverage in the west of Scotland.

Figure 2.7 highlights the TMfS14 Public Transport Model Ferry coverage in the north-east of Scotland.



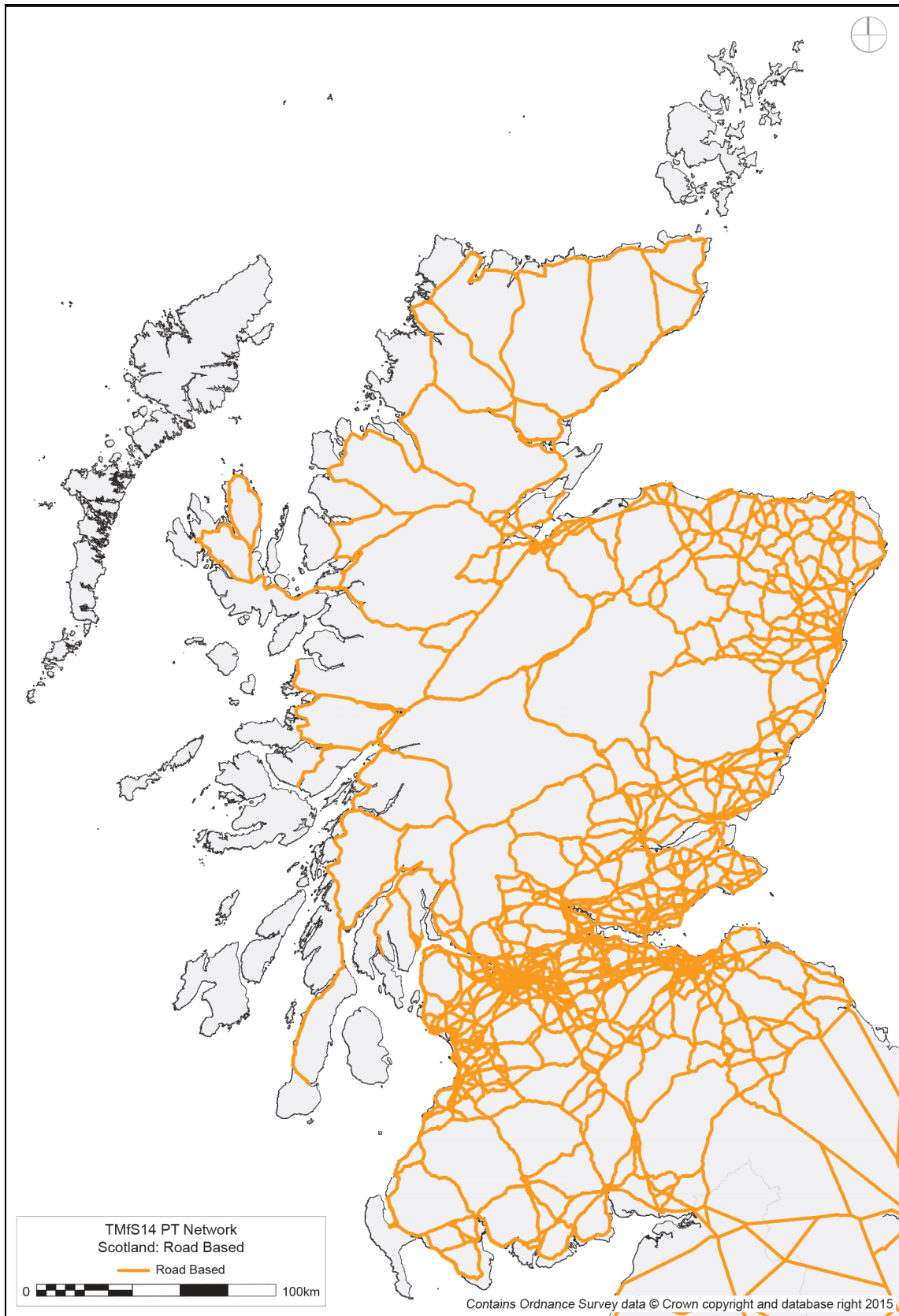


Figure 2.2 : TMfS14 Public Transport Road Based Network, Scotland



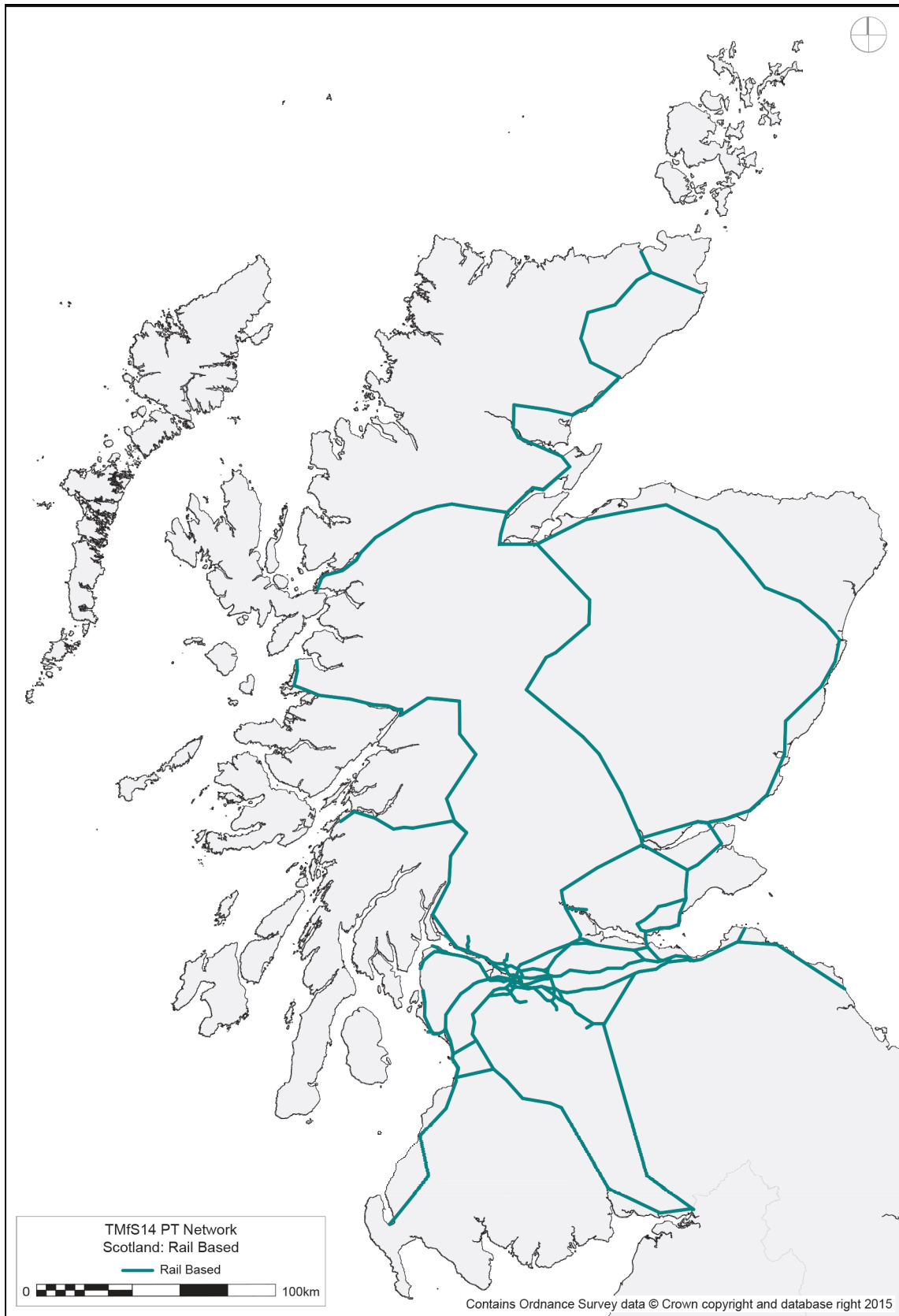


Figure 2.3 : TMfS14 Public Transport Rail Based Network, Scotland



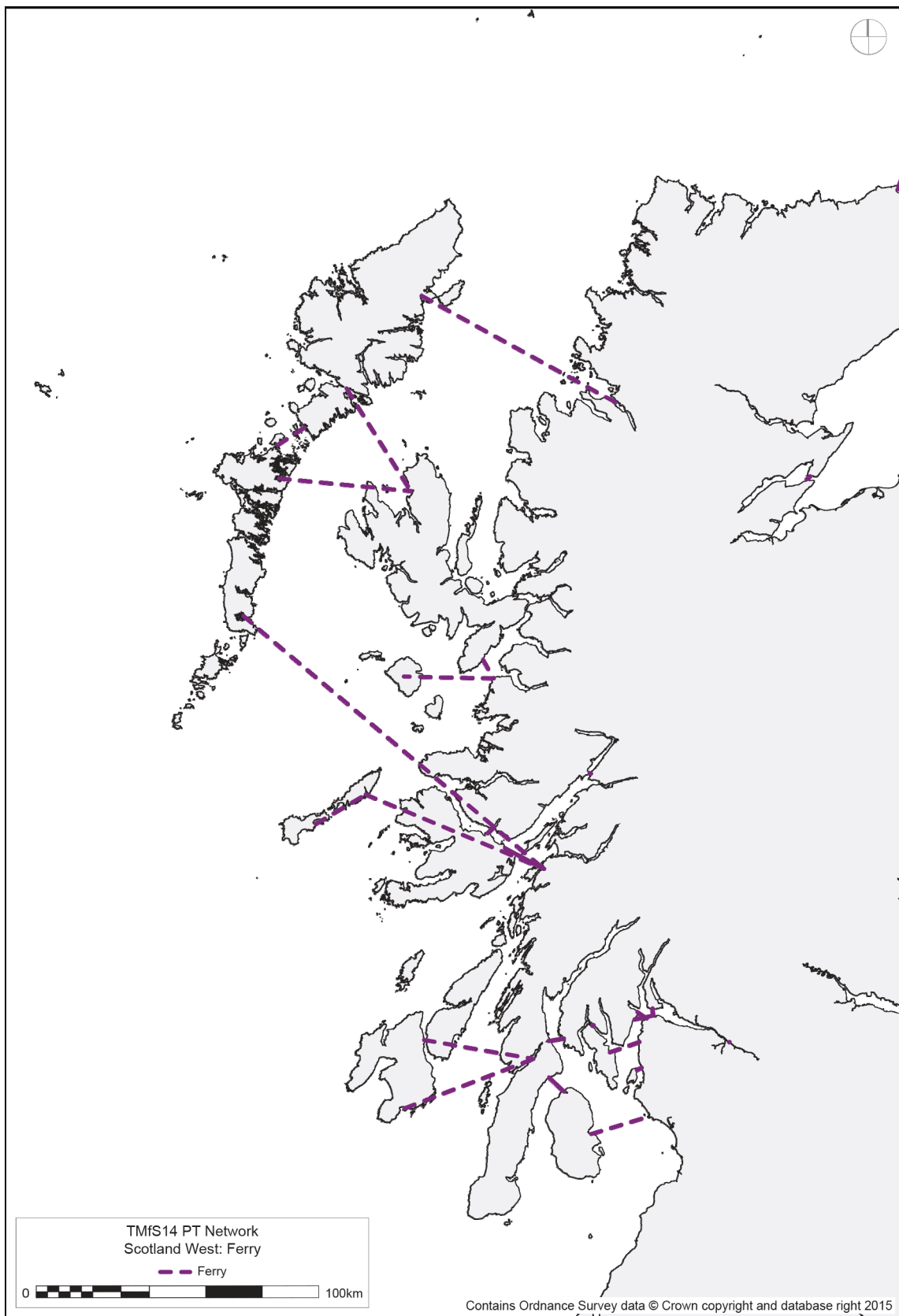


Figure 2.4 : TMfS14 Public Transport Network Ferry Routes, West Scotland



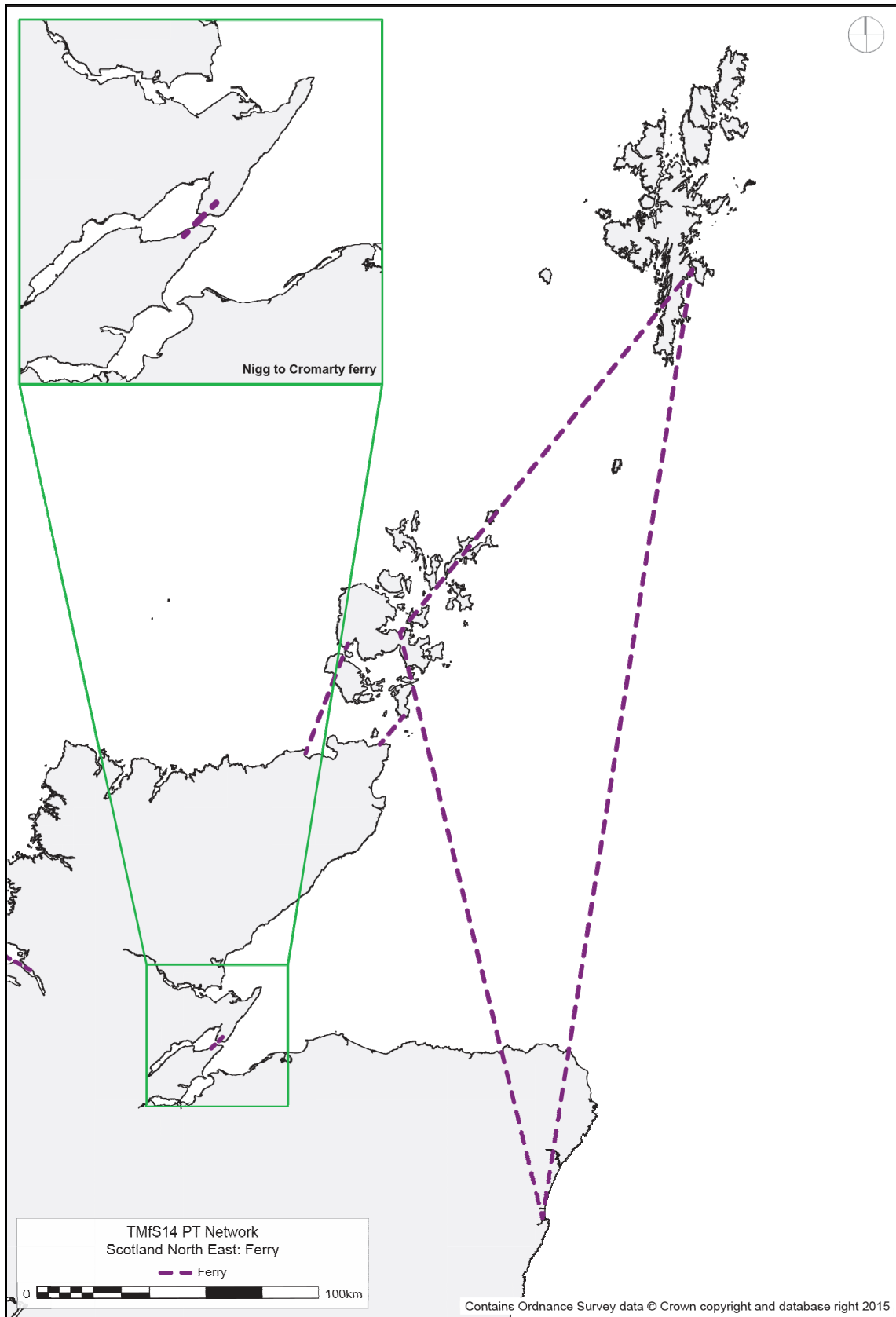


Figure 2.5 : TMfS14 Public Transport Network Ferry Routes, North-East Scotland



Figure 2.6 highlights the TMfS14 PT Model coverage for the Central Belt.

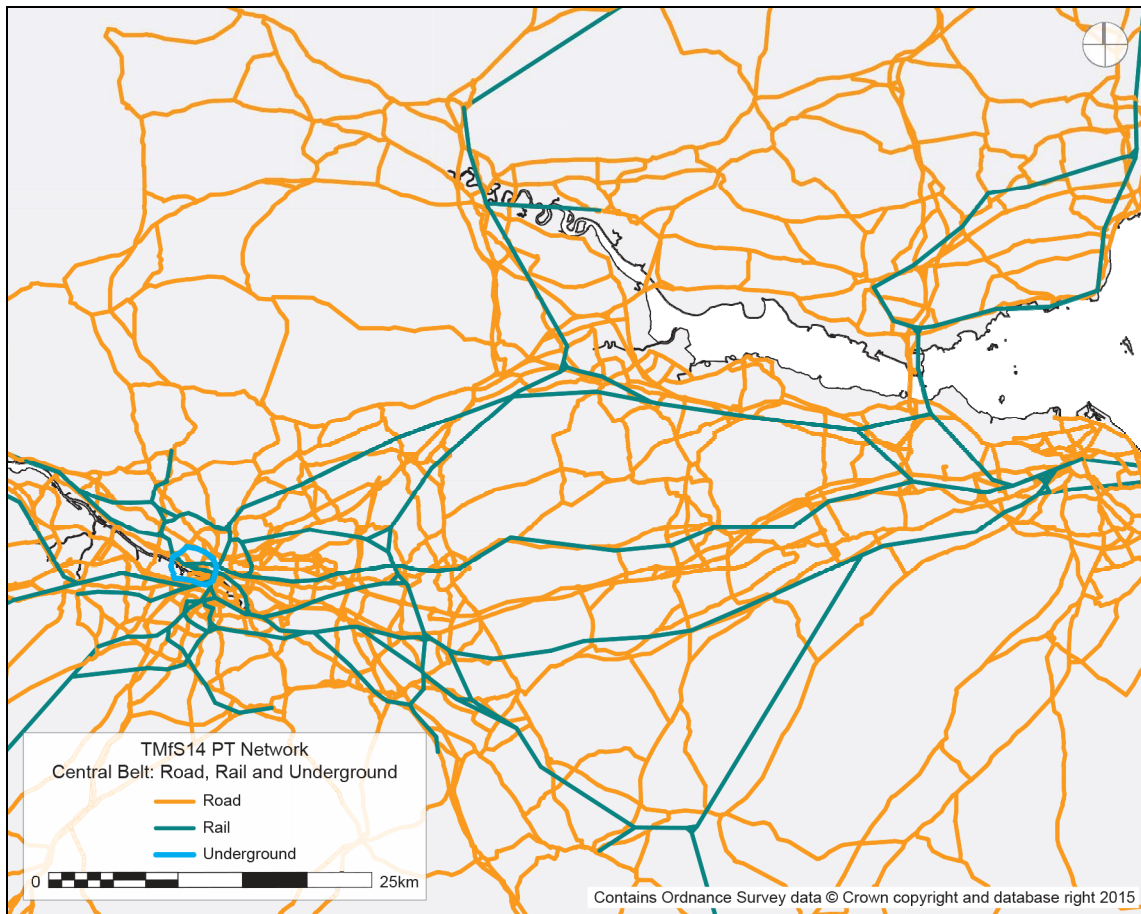


Figure 2.6 : TMfS14 Public Transport Road and Rail Based Network, Central Belt



Figure 2.7 highlights the TMfS14 Public Transport Model geographical coverage for the Perth to Inverness and Inverness to Aberdeen corridors.

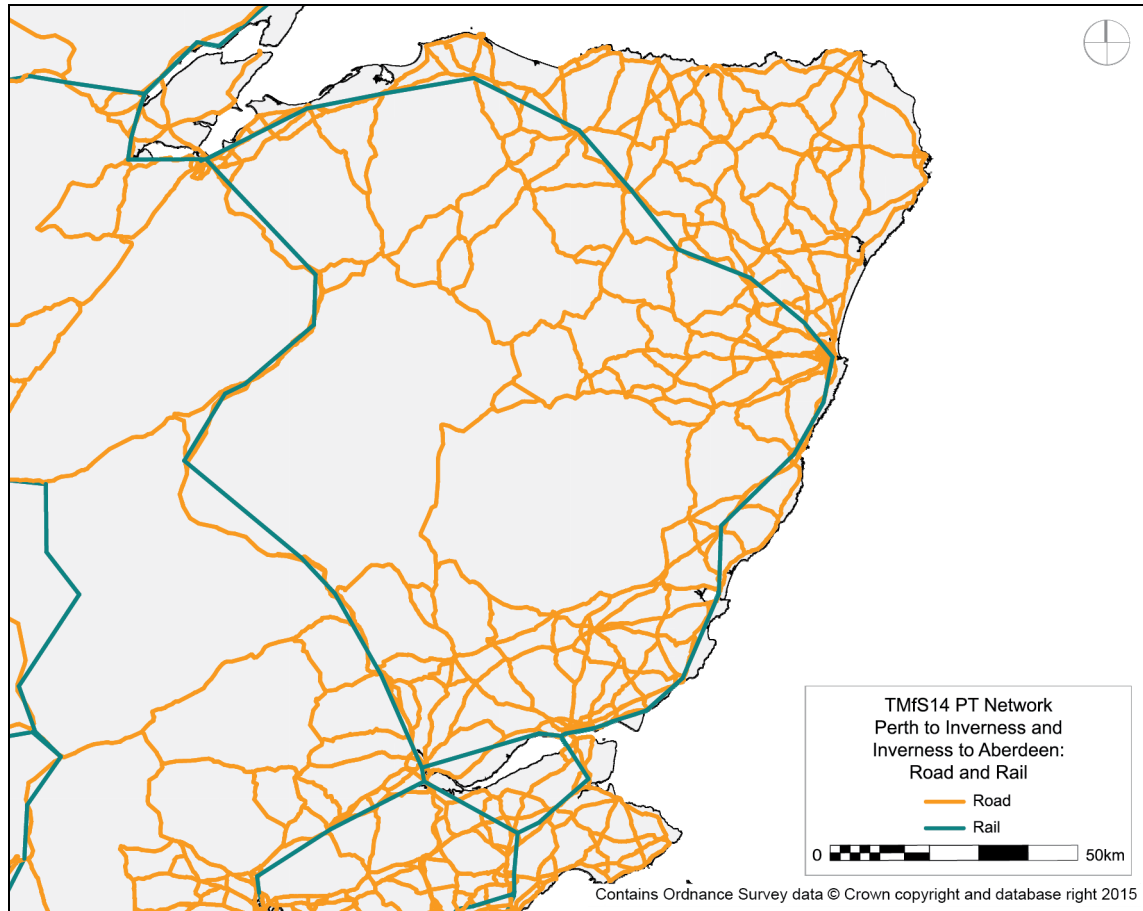


Figure 2.7 : TMfS14 Public Transport Road and Rail Based Network, Perth to Inverness and Inverness to Aberdeen Corridors



2.3 Zoning System

The TMfS14 zone systems are consistent across the model hierarchy at 799 zones. This is to improve consistency between different elements of the TMfS14 suite.

The TMfS14 national model consists of 799 zones, comprising:

- 774 internal zones
- Four Airport Zones
- Five Key Port Zones
- 16 'External' zones covering England and Wales

Previous model audits and input data requirements were taken into consideration and TMfS14 zoning created. Key enhancements are as follows:

- Update in to Census 2011 geography
- Census data zone and local authority boundary compliant
- Operate a unified zoning system (i.e. Demand Model, Assignment Model and the Land-Use model are to use the same system)
- Further disaggregation in Scotland, particularly in the Aberdeen-Inverness corridor
- For improved ferry representation, split the group of islands of Rum, Canna, Eigg, and Muck away from the mainland
- Further Disaggregation in England splitting into Regions, but also to keep boundaries consistent with Census Travel to Work Boundaries
- Ensure that only one Rail station is present per zone (with the exception of Conon Bridge)

Discussions with Transport Scotland, its land-use consultants, the study team and the LATIS Lot 2 consultant leading on the A9 application concluded in agreement that a number of TMfS07 zones should be disaggregated. Details of the disaggregated zones are presented in Appendix A.

The four main airport zones (Glasgow, Edinburgh, Prestwick, and Aberdeen) have been defined separately from their underlying Data Zones. The airport zones are:

- Edinburgh Airport Zone 709
- Prestwick Airport Zone 710
- Glasgow Airport Zone 711
- Aberdeen Airport Zone 712



Figure 2.8 shows the TMfS14 zone system.

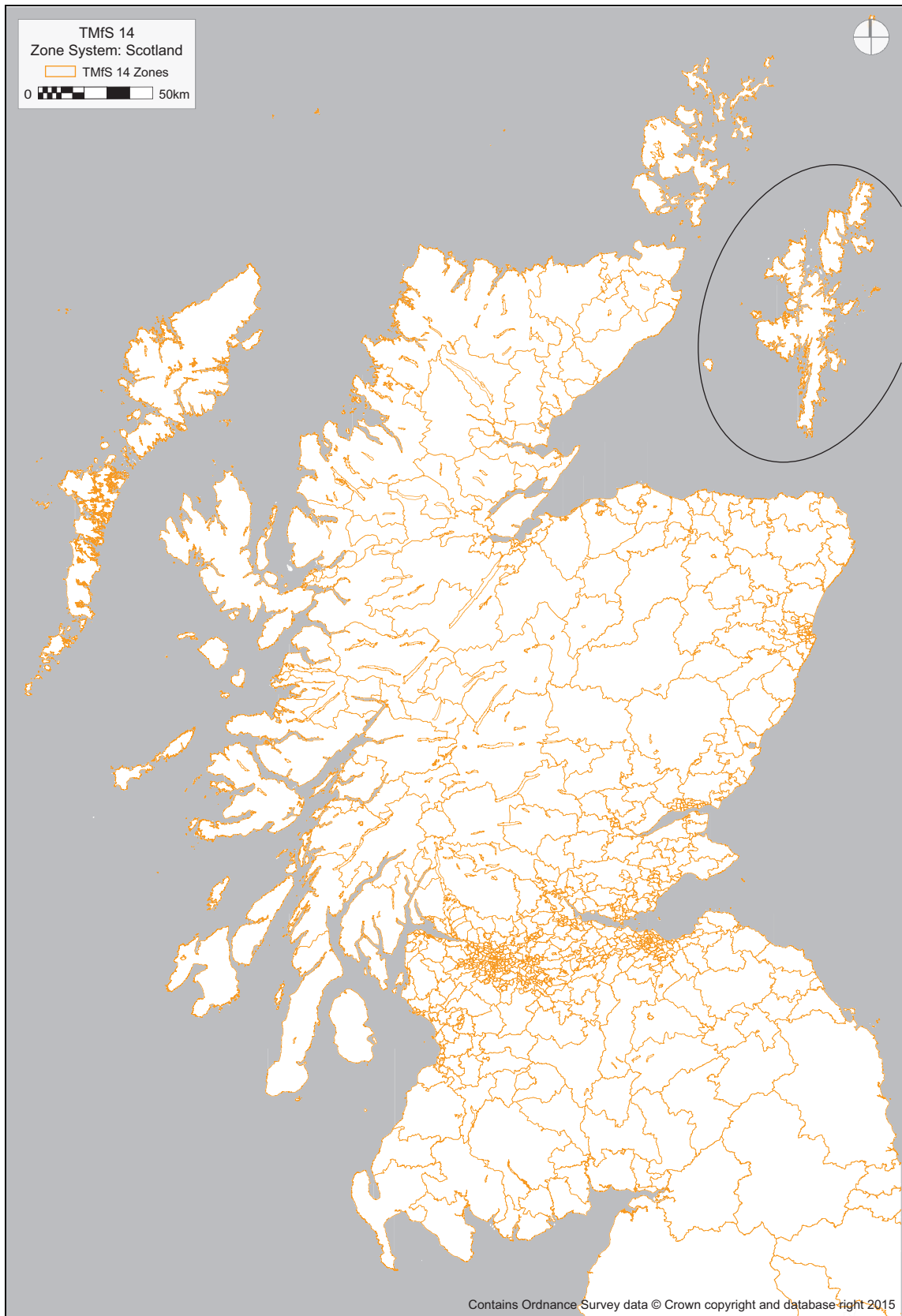


Figure 2.8 : TMfS14 Zone system



Figure 2.9 highlights the zoning in the A9/A96 corridor.

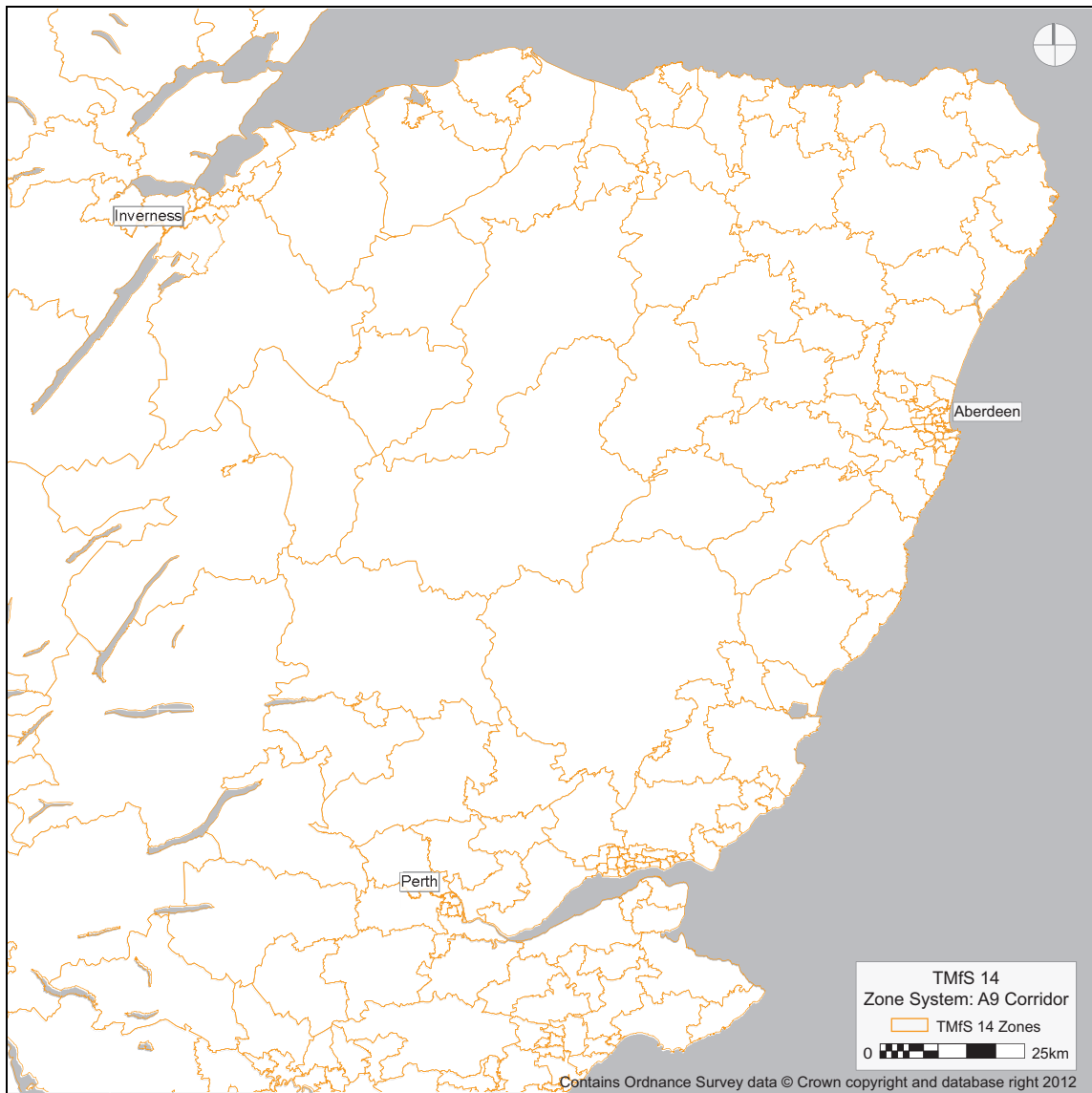


Figure 2.9 : TMfS14 A9/A96 Corridor Zone System



Figure 2.10 highlights the Central Belt zone system more clearly.

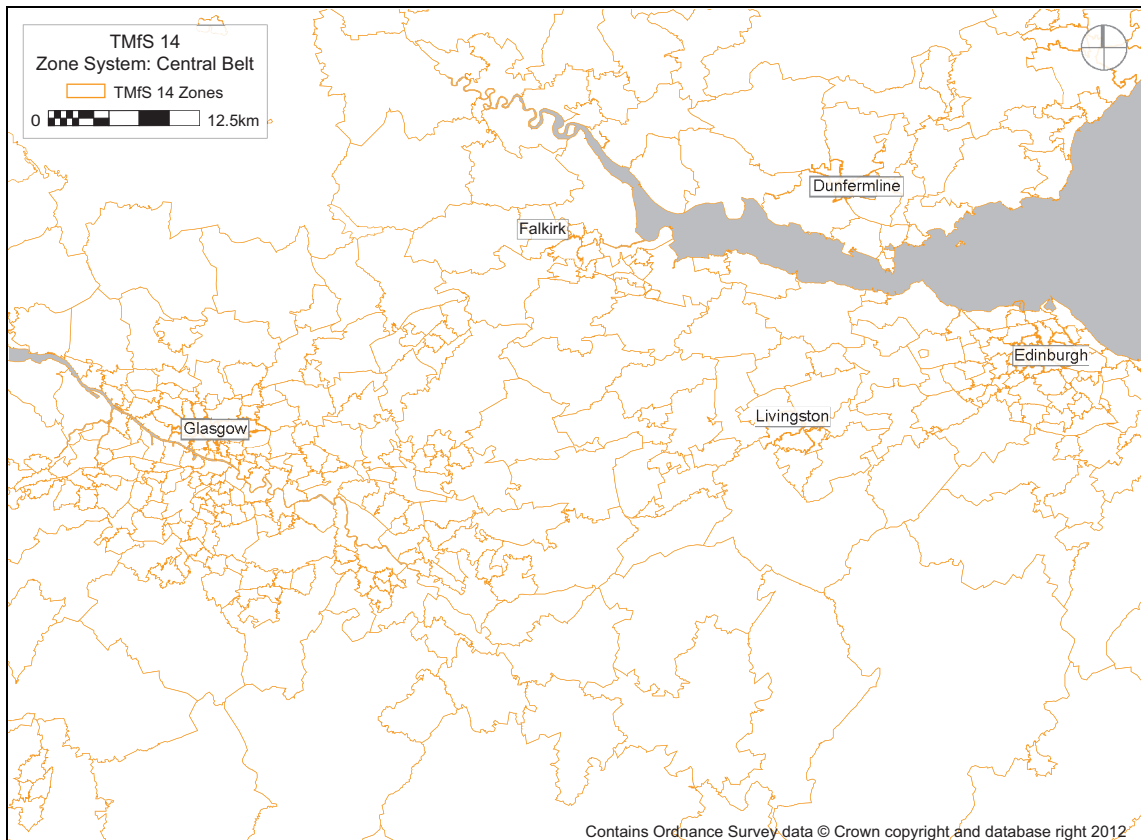


Figure 2.10 : TMfS14 Central Belt Zone System

The TMfS14 zone system is available from Transport Scotland (GIS format) on request. Further technical detail can be obtained in *TMfS14 – Creation of Model Zone System (SIAS, May 2016)* also available on request.

2.4 Time Periods

The model covers three time periods within a ‘typical’ weekday. These are:

- Average AM Peak Hour between 07:00 – 10:00
- Average Inter Peak Hour (1/6 of 10:00 – 16:00)
- Average PM Peak Hour between 16:00 – 19:00

For the peak time periods, the ‘average peak hour’ represents the ‘peak hour’ within the 3hr period. This ‘peak hour’ was calculated using relevant observed traffic count data collected across Scotland, so represents a ‘Scottish Average’ peak hour within the relevant time period.

2.5 User Classes

The public transport model includes three user classes, as follows:

- Person In-Work
- Person Non-Work Commuters
- Person Non-Work Others



2.6 Assignment Model Enhancements

The TMfS14 Public Transport assignment model contains enhancements over its predecessor TMfS12, namely:

- Representing 2014 conditions
- A disaggregated (799) zone system
- Refined model which takes account of the TMfS07 and TMfS12 audits
- Inclusion of 2011 census data
- Inclusion of Perth/Aberdeen to/from Inverness corridor bus and rail interview data





3 MODEL DIMENSIONS

3.1 Time Periods

The model covers three time periods within a 'typical' weekday. These are:

- Average AM Peak Hour between 07:00 – 10:00
- Average Inter Peak Hour (1/6 of 10:00 – 16:00)
- Average PM Peak Hour between 16:00 – 19:00

For the peak time periods, the 'average peak hour' represents the 'peak hour' within the 3hr period. This 'peak hour' was calculated using relevant observed traffic count data collected across Scotland, so represents a 'Scottish Average' peak hour within the relevant time period.

The public transport assignment model reflects conditions in the AM Peak Hour, Average Inter-Peak Hour, and PM Peak Hour.

Peak hour demand data and observed count data has been derived from the 3hr peak period data through application of a peak period to peak hour factor. These factors have been obtained from analysis of the TMfS07 bus occupancy count data and the National Rail Travel Survey (NRTS). The resulting factors were very similar for bus and rail and have been combined into a single set of Public Transport Peak Hour factors. These factors are reported in Table 2.1.

Table 3.1 : Peak Hour Factors

Time Period	Factor
Peak Period to Peak Hour (AM)	0.45
Inter-peak (average of 10:00 - 16:00)	1/6
Peak Period to Peak Hour (PM)	0.44

3.2 User Classes

There are three user classes in the model:

- 'In work' (IW), e.g. trips on employers business
- 'To/from work' (TW), i.e. commuting trips between home and work
- 'Non work' (NW), i.e. all other journey purposes

Demand matrices have been prepared for each user class, which are assigned separately to the public transport network in the model.



3.3 Modes

The MODE control statement defines the characteristics of the public transport modes used by the PT System. Six separate modes have been defined, namely:

- Urban Bus
- Inter-urban bus
- Rail
- Underground
- Ferry
- Tram (not used in the base year, but included to permit the modelling of tram schemes in future year public transport networks)

The Edinburgh Tram opened to the public on 31 May 2014. Although this is within TMfS14 base year, after consideration and consultation with Transport Scotland, it was agreed not to include within TMfS14 base year. This was due to the absence of count data at the time of model development and that the scheme was still in its bedding-in period.



4 PUBLIC TRANSPORT NETWORK

4.1 Introduction

This section describes the development of the network and public transport supply. The TMfS14 National Model has been developed in Cube Voyager.

4.2 Public Transport Network

TMfS14 includes a single modelled network that is used by both the Public Transport assignment model and Road assignment model. This allows for easy and consistent transfer of changes in forecast road traffic delays.

The TMfS12 Public Transport Network was reviewed against the Ordnance Survey (OS) OpenData Meridian GIS Layer, local knowledge, and Google Maps. This platform provides a geographically accurate representation of Scotland's Public Transport network and was developed in CUBE Version 6.1.1.

The modelled network includes the following elements:

- Strategic road network
- Heavy rail/underground
- Ferry links
- Road, rail and ferry zone connectors
- Walk connections between rail/underground/ferry ports and stations, and the road network

The TMfS14 National Road Model Development Report provides a full description of the development and preparation of the TMfS14 network. Table 3.1 provides a summary of the TMfS14 link types relevant to the Public Transport model.

Table 4.1 : Public Transport Network Link Types

Link Type Value	Description
1 to 9	General Road Links
10	Bus Only Links
11	Rail Links
12	Subway Links
13	Tram/LRT/New Mode Links (for future year networks)
18	Rail to Road Connector
19	Zone Rail Connector
22	Zone-Road Connectors
22	Zone-Ferry Connectors
28	Ferry Routes - Banned for HGV
29	Ferry-Road Connectors
30	Ferry Routes-Car and HGV allowed
31	Ferry Routes - Banned for both Car and HGV, ie passanger ferry
32	Rail-Ferry Connector



4.3 Public Transport Lines Data

The development of the public transport lines file is dependent on the input of public transport system and service data. This includes the definition of System Information and the coding of PT services.

System Information contains data for:

- Modes
- Operator definition
- Wait curves
- Crowding curves

The PT lines contain the data for the modelled public transport services including the route the service will take across the modelled transport network.

Public Transport service data contains the following information:

- Mode
- Operating company
- Route type (circular/linear)
- Service type (stopping/express)
- Headway for three modelled time periods
- Fare (generally expressed as a distance-based fare table)
- Short and long text descriptions
- Sequence of nodes along the route

Inter urban bus lines have been coded to stop at all nodes where more than one link is attached to it.



4.4 Lines Coding

4.4.1 Urban Bus

Urban bus services have been defined as those that are wholly within the contiguous Aberdeen, Dundee, Edinburgh, or Glasgow conurbations as shown in Figures 3.1 to 3.4. Services that extend outwith these areas have been defined as Inter Urban Bus.

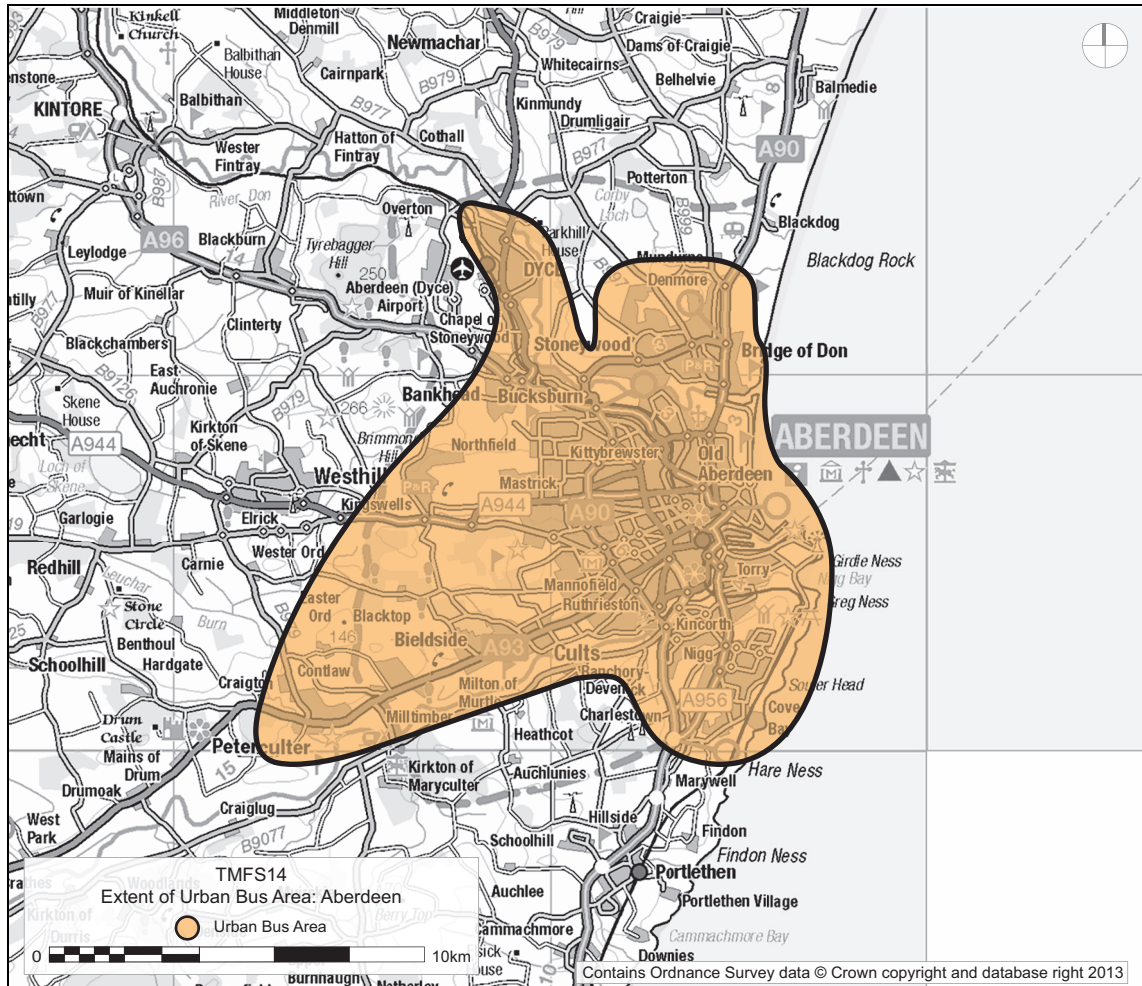


Figure 4.1 : Extent of Urban Area, Aberdeen



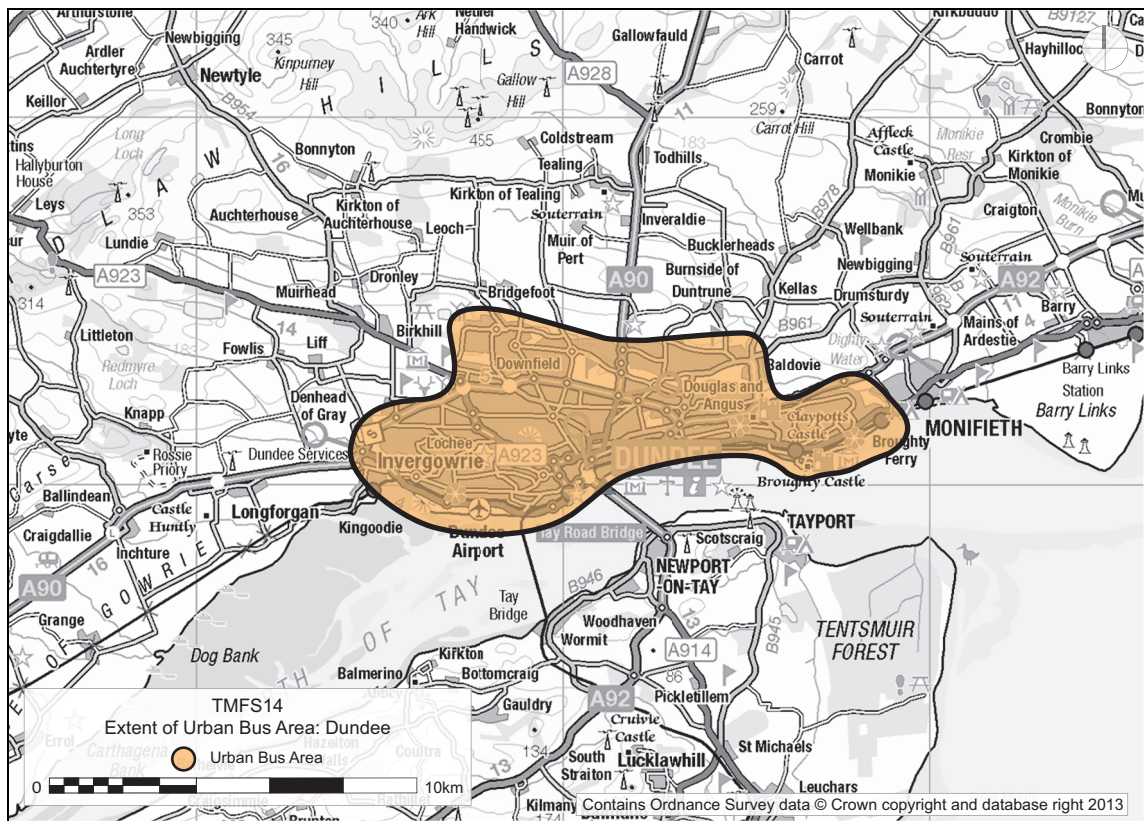


Figure 4.2 : Extent of Urban Area, Dundee



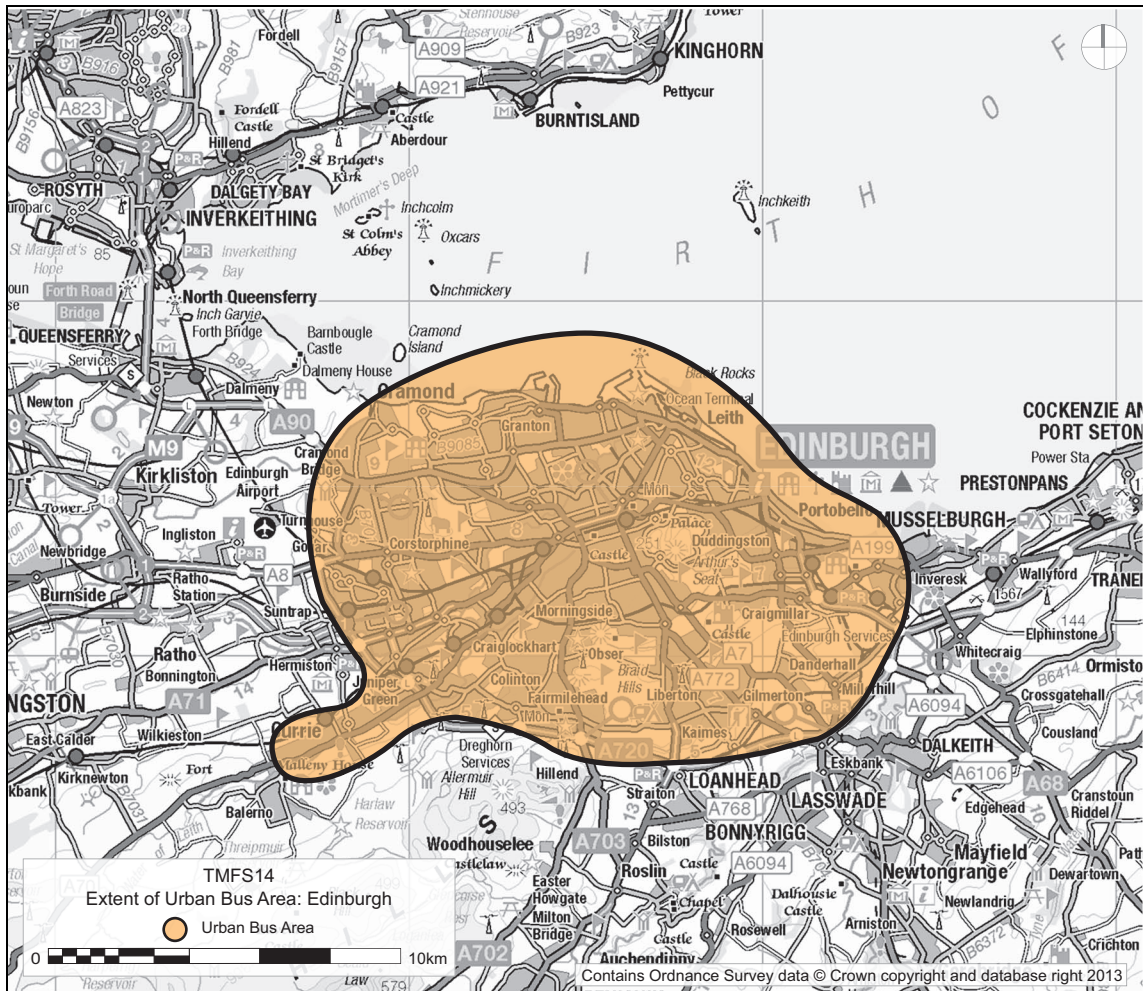


Figure 4.3 : Extent of Urban Area, Edinburgh



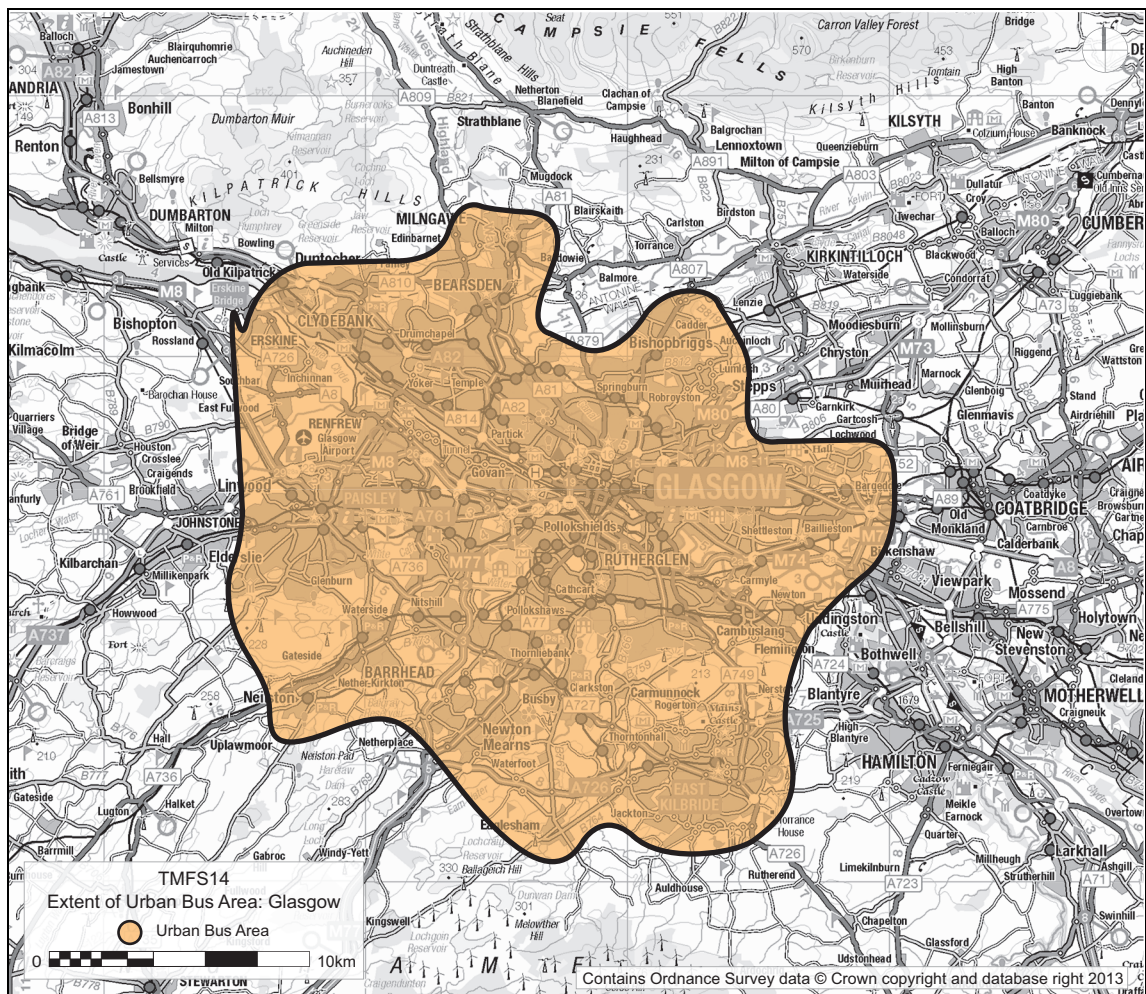


Figure 4.4 : Extent of Urban Area, Glasgow

Urban buses have been coded on a corridor basis with a single line coded in each direction that represents the average frequency along the corridor. This approach was adopted to reduce the need to code large numbers of urban bus routes, while still providing a reasonable representation of urban bus supply within this national strategic model.



4.4.2 Public Transport Modes

Inter-urban buses have been coded based on public timetable information. Where the strategic modelled network does not include the actual road, e.g. diversions to local settlements, used by a service the modelled service has been routed using the nearest equivalent road.

Table 4.2 shows the number of PT lines coded by mode and time period.

Table 4.2 : Number of Public Transport Services by Mode

Mode	AM Peak	Inter Peak	PM Peak
Urban Bus	100	100	100
Inter Urban Bus	885	776	768
Rail	216	205	208
Underground	2	2	2
Ferry	60	60	60
Total	1263	1143	1138

4.4.3 Operating Companies

Fifty-one operating companies were coded, reflecting operators across all modes. Table 4.3 shows the number of PT lines coded by operator and time period.

All routes, frequencies and stopping patterns for all relevant inter-urban public transport services operated by the companies listed in Table 4.3 were inherited from TMfS12.

The PT service headways were coded based on the frequency of services over the period (AM and PM – 3hr and IP 6hr). Effective headways were calculated over the periods using the sum of the square of each individual headway divided by the sum of headways, which allowed for the representation of irregular services. Where there was a single service in a period then a headway of 180 was used for the AM or PM and a headway of 360 for the IP.

Typically, service start times were used to determine the headways and included all services that spanned the time period (i.e. start or end in time period) to derive the average headway.

It should be noted that a degree of judgement was required where services span more than one time period to determine the most appropriate timetable coding and also avoid double counting.

The bus stop coding methodology was kept consistent with TMfS12. This method ensured that services stopped where there was more than one link connected to a node.



Table 4.3 : Number of Services by Operator

Operator No.	Operator	AM Peak	Inter Peak	PM Peak
1	Scotrail - National	71	68	65
2	Scotrail - SPT	111	88	113
3	Scotrail - Highlands	11	14	7
4	Scotrail - Northern Highlands	6	8	5
5	East Coast Intercity Rail	9	14	10
6	West Coast Intercity Rail	8	13	8
11	SPT Subway	2	2	2
15	First Glasgow	113	90	89
16	First Edinburgh	145	112	126
17	National Express	6	6	4
18	Scottish Citylink	55	48	55
19	Stagecoach West	78	74	59
20	Stagecoach Inverness	39	31	23
21	Stagecoach Strathtay	64	57	64
22	Stagecoach Fife	103	92	73
23	Stagecoach Bluebird	64	70	67
24	Stagecoach Perth	8	11	12
25	Watermill Coaches	1	2	3
26	Strathtay Scottish	3	2	2
27	Travel Dundee	2	2	6
28	Rapsons	9	10	5
29	Citylink/Rapsons	4	8	4
30	Scotbus	4	4	1
31	Westerbus	1	1	6
32	Crieff Travel	3	4	5
33	Docherty's Midlands	5	6	4
34	Pegasus Travel	3	2	1
36	Bluebus	1	1	6
37	Mcgills	5	5	18
38	Arriva	24	17	3
39	SPT Subway	1	2	2
40	McKindless	2	1	3
41	Irvines	3	3	62
42	Lothian	61	48	37
43	D&G Various	46	41	26
44	First Borders	30	24	2
45	Arriva Airport	2	2	768
51	Edinburgh Urban Bus	26	26	26
52	Glasgow Urban Bus	44	44	44
53	Aberdeen Urban Bus	16	16	16
54	Dundee Urban Bus	14	14	14
101	SPT Renfrew Ferry	2	2	2
102	Cal Mac Ferries	38	38	38
103	Highland Council	2	2	2
104	Western	2	2	2
105	JOG Ferries	2	2	2
106	Pentland	2	2	2
107	Northlink	8	8	8
108	SPT Kilcreggan Ferry	2	2	2
109	Cromarty Ferry	2	2	2
	Total Services	1263	1143	1906



5 TRIP MATRIX DEVELOPMENT

5.1 Introduction

This section describes the development of the TMfS14 'prior' Public Transport matrices which feed into the calibration process and details the following enhancements:

- Update to the non-work commute matrices with 2011 census travel to work data
- Update to all matrix user classes with up to date bus and rail Inter-Urban survey data for the Perth to Inverness and Inverness to Aberdeen corridors

The methodology adopted for developing the TMfS14 Public Transport matrices involved using the TMfS07 public transport matrices as a starting point and updating them with the above data.

5.2 2011 Census Travel to Work Data

SIAS, on behalf of Transport Scotland, received 2011 Census Travel to Work data from the National Records of Scotland (NRS) and 2012/13 Scottish Household Survey data from The Scottish Government.

This section sets out the methodology used to split the 2011 Census Travel to Work data into peak periods using the Scottish Household Survey (SHS) data and the process used to combine the Census data with the TMfS07 prior Public Transport Non-Work Commute matrices.

The Census Travel to Work data was originally requested in 720 zone format. After consultation with NRS it soon became clear that disclosure issues were present so disclosure criteria was to be applied. The disclosure criterion that every zone should have at least 715 people aged 16 or over in full-time employment was to be applied. The final geography for the provision of Census Travel to Work data was at 686 zones.

The Census Travel to Work data contains the following person trip information for Full Time Students and the working population:

- Work or study mainly at or from home
- Underground subway metro light rail or tram
- Train
- Bus minibuss or coach
- Taxi
- Motorcycle scooter or moped
- Driving a car or van
- Passenger in a car or van
- Bicycle
- On foot
- Other



For the purposes of incorporating the Census data into the Non-Work Commute AM/IP/PM matrices the “Underground subway metro light rail or tram”, “Train” and “Bus minibuss or coach” fields were used for both Full Time Students and Non-Full Time Students. The Census data is considered representative of a 24hr weekday sample and each trip equates to a person travel to work/education trip.

5.3 Scottish Household Survey Data

The SHS data was used to split the 24 hour weekday Census Travel to Work data into the three peak hours modelled in TMfS14, namely the AM, IP, and PM peak. The SHS dataset used in the analysis contains the following relevant fields required for this analysis, namely:

- Main Mode
- Journey Purpose
- Journey Start Time

The SHS data was used to split the 24 hour 2011 Census Travel to Work data into the three peak hours modelled in TMfS14, namely the AM, IP, and PM peak. This was achieved by applying a peak period to 24hr factor at the appropriate aggregation level, e.g. at zone or Local Authority (LA) level. An initial review of the SHS data was undertaken to understand what aggregate level was suitable for disaggregating the Census data.

The SHS data was provided in 720 zone format, consistent with TMfS12, because at the time the request was made, the intention for TMfS12A, as it was titled at the time, was to retain the TMfS12 demand model structure, i.e. 720 zones.

The SHS data was processed at the Local Authority (LA) level of aggregation which produced reasonable peak period to 24hr factors, with 10% of all recorded LA to LA movements containing more than 10 trips (23% more than 5 trips).

The Local Authority aggregation was split between working population & Full Time Students, however, it was noted that the SHS data contained only 94 Full Time Student records observed over the 24hr period, so this could not be used in isolation unless a very aggregate factor was used. For this reason the working population & Full Time Students datasets were combined to derive the peak period factors.

The SHS records were split into the following time periods:

- Whole Day (00:00 – 24:00)
- AM Period (07:00 – 10:00)
- IP Period (10:00 – 16:00)
- PM Period (16:00 – 19:00)
- The remainder of the Day (19:00 – 07:00, used as a checking mechanism)



The following rules were applied at LA level and were used to create the proportions of peak period travel relative to the 24hr period:

- If there are trips in the peak period, divide the peak period value by the 24hr value
- If there are no trips in the peak period, apply the lesser of the LA origin or destination peak hour to 24hr factor
- If there are no trips in the 24hr period, apply the lesser of the total (all LAs combined) origin or destination peak period to 24hr factor

If the sum of the AM, IP, and PM factors was greater than 1 then the factors were reduced proportionally so the maximum sum of the AM, IP, and PM factors was less than or equal to the total AM, IP, and PM records divided by the 24hr period records.

The resulting proportions for Public Transport trips to/from workplace/study are shown in Appendix B.

5.4 Application of SHS factors to Census data

Following the creation of the peak period factors, they were applied to the 24hr Census data to produce the peak period census matrices.

The census matrices were split up by the SHS peak period proportions and adjusted to represent each peak hour by applying the TMfS14 peak hour to peak period factors which are:

- AM Peak 2.222
- Inter Peak 1/6
- PM Peak 2.273

The next factor that was applied to the Census matrices is based upon research undertaken by *Peter Davidson Consultancy Traffic Engineering and Control, Census Matrix Tools Software – An essential data source for transport planning in the UK (February 2006)* which stated that the proportion of census trips made on a typical day was as follows:

- To Work 59.1%
- From Work 54.2%

The final process for producing the TMfS14 Public Transport matrix was identifying where 2011 Census cell values were available and replacing the equivalent TMfS07 prior matrix values with these. The intra-zonal values and cell values that do not have new 2011 Census data remain unchanged from their 2007 values.

The resulting TMfS14 Public Transport matrix was aggregated to Local Authority level and compared to the TMfS07 prior matrix which is underpinned by the 2001 Census data. This growth comparison was compared to the 2001 – 2011 LA to LA Census Travel to Work growth which was independently calculated. Where significant differences between the TMfS14 growth in travel to work were observed, the proportion of census trips made in a day was adjusted so the TMfS14 prior LA growth was more consistent with the 2001 – 2011 LA to LA Census Travel to Work growth. This was only applied at LA level so the trip distribution within each LA was retained.



This approach of replacing the TMfS07 prior matrices with 2011 Census Travel to Work data was agreed with Transport Scotland, as it was acknowledged that the timescales did not permit investigating and removing the 2001 census data from the TMfS07 prior matrices which would have been the preferred approach.

The resulting TMfS14 prior matrix totals are provided in Table 5.1.

Table 5.1 : Census Update Matrix Totals - Non-work Commute (person trips)

Peak	AM Peak	Inter Peak	PM Peak
TMfS14 Non-work Commute (after census update)	84,493	16,045	77,528
TMfS14 Non-work Commute (after census update and PT Interview data)	84,246	16,015	77,219

The matrix totals appear intuitive and are consistent with the growth in Census Travel to Work between 2001 and 2011. The final check was to assign the TMfS14 Public Transport matrices to their respective networks and compare with observed data. This was undertaken and the high level comparisons (i.e. screenline calibration/validation comparisons) were consistent with TMfS07 Public Transport matrices. The matrices were therefore considered sufficiently robust to be taken forward and used as prior matrices for the TMfS14 Public Transport Assignment Model.

It should be noted that the TMfS14 Public Transport matrix totals shown in Table 5.1 do not include the Public Transport data collected between 2007 and 2014. This process is described in the following sections.

5.5 Public Transport Data Processing

This section details the processing of public transport service Interview data collected for the Perth to Inverness and Inverness to Aberdeen corridors for use in the Public Transport trip matrix development within TMfS14. The data used in TMfS14 Matrix Development are as follows:

- Public Transport Interview data between Perth and Inverness (6/7 February 2013)
- Public Transport Interview data between Inverness and Aberdeen (6/7 February 2013)
- ScotRail 2012 Boarding and Alighting Surveys

Each Public Transport interview dataset was 'cleaned' at source to remove or correct records whose origins and destinations appeared illogical. Interview records were mapped by origin and destination using the coordinates for each recorded postcode. Records with an illogical origin or illogical destination were rejected from the datasets.

The resulting records were then used to derive individual sample rates for the site, by journey type (Bus & Rail), by comparing with the surveyed data with the boarding and alighting data collected for each station on the two corridors. Factors were then generated to expand the sampled data for each corridor to meet the observed station boarding and alighting flows.



For the public transport records, the “Purpose” data provided for origin and destination (home, work, etc.) was then used to define the trip purpose for each record. The trip purposes are consistent with TMfS12, namely:

- In-Work (IW)
- Non-Work Commute (NWC)
- Non-Work Other (NWO)

The resulting observed Public Transport data was assigned and the boarding/alighting and loadings were compared to the observed data. Following the conclusion of the matrix development the observed data was combined with the TMfS14 Public Transport matrices with the 2011 census update described in Section 5.4.

The resulting TMfS14 Public Transport matrix totals are provided in Table 5.2.

Table 5.2 : PT Interview Matrix Totals - Non-work Commute (person trips)

Peak	AM Peak	Inter Peak	PM Peak
In-Work	5,845	2,902	4,238
Non-Work Commute	84,246	16,015	77,219
Non-Work Other	60,159	59,255	50,942
Total	150,250	78,171	132,399





6 ASSIGNMENT MODEL DEVELOPMENT

6.1 Introduction

The inputs to the Public Transport Assignment Model for each time period are:

- The strategic transport network
- A 'PT lines file' describing all relevant public transport services
- A 'PT System file' defining operators, wait and crowd curves
- A 'Fares' file
- Hourly public transport travel demand matrices (in person trips)

The Assignment process contains the following procedures:

- Path Building (Route Enumeration and Route Evaluation)
- Crowding
- Bus Speed Factors

6.2 Path Building and Loading

The path building and loading procedures have been developed using the CUBE Voyager public transport assignment model software, with the following models:

- Walk Choice Model
- Service Frequency and Cost Model
- Alternative Alighting Model

The model assignment is split into route enumeration and route evaluation.

Route Enumeration identifies a set of discrete routes between each zone pair, along with the probabilities that passengers will use each route. Routes that fail to meet certain criteria are discarded. The criteria are specified using the Spread Factor and Spread Constant parameters that define the range of routes that will be retained for each zone pair based on their generalised time relative to the minimum generalised time. Fares are not included explicitly at this stage, but a mode specific run-time factor, exclusively used in route enumeration, is used to make a proxy of the impact of fare on generalised costs. Passenger crowding is not considered in this Route Enumeration stage.

Route Evaluation calculates the "probability of use" for each of the enumerated routes between zone pairs, including the impacts of crowding and fares. Further details on the PT assignment processes can be found in the Cube Voyager software help documentation.



6.3 Crowding

Public transport crowding has been included in the TMfS14 PT assignment procedures for the morning and evening peak. Crowding is not considered to be a significant issue outwith the peak periods and, therefore, has not been included in the inter-peak period assignment. This also assists in reducing model run times.

Note that the impact that car park capacity constraints at Park & Ride sites will have on mode and route choice is dealt with by the Park & Ride model, which is described in the main *Demand Model Development Report*.

Modelling PT crowding is an iterative process. The model calculates an initial set of crowding factors and passenger loadings, feeds these back into the model and produces a revised set of passenger loadings and corresponding perceived crowding costs. Convergence of the model is achieved when the public transports loadings (and hence the crowding costs) stop changing significantly between iterations.

The number of iterations is specified by the user. A review of the convergence of the Base Year model suggests that five iterations of the PT crowding loop will generally be sufficient for the TMfS14 PT assignment procedures. Model users should consider reviewing the number of iterations depending on the interventions being tested.

The PT crowding assignment requires the specification of the following data:

- PT crowding curves
- PT line capacities
- passenger and vehicle arrival profiles

Crowding curves are implemented as multiplicative curves in the CUBE Voyager public transport assignment procedures. For each level of utilisation, the free link journey time is multiplied by the appropriate adjustment factor to represent the perceived journey time spent in crowded conditions. It should be noted that all modelled occupants perceive the same crowding on a given section of the route, regardless of where they boarded.

The measure of utilisation is expressed as the percentage of standing passengers as a proportion of the standing capacity. Utilisation is therefore zero until all seats are occupied and standing is necessary. Utilisation is 100% when the vehicle is at crush capacity, i.e. all standing room is taken. The 'crush capacity' is assumed to be 40% above the seated capacity, which is consistent with TMfS12 and corresponds to the version of the Rail Passenger Demand Forecasting Handbook PDFH that was in use when the TMfS07 PT model was developed. This indicated crowding penalties up to 140% load factor for Non-London Commuting, which is considered to be the maximum train loading.

The Rail Passenger Demand Forecasting Handbook (PDFH) Non-London Commuting Rail Crowding curve has been allocated to all rail lines (including the Glasgow Subway) in the TMfS14 Model in the morning and evening peak. The data points for this crowding curve are described in Table 5.1.



Table 6.1 : PDFH Non-London Commuting Rail Crowding

% Seat Capacity	Utilisation	Crowding Factor
100%	0%	1.00
108%	20%	1.09
116%	40%	1.18
124%	60%	1.26
132%	80%	1.35
140%	100%	1.44

Capacities have been coded for all rail lines in the morning and evening peak periods based on rolling stock usage in 2006 derived from the ScotRail survey data. The model framework allows the user to model crowding effects on any new tram services, if required.

No crowding modelling calculations are performed for bus services, as it is assumed that operators will increase the vehicle capacity and/or service frequency on routes where demand regularly exceeds vehicle capacity, so the average load factors are likely to remain broadly constant over time.

The passenger and vehicle arrival profiles have been assumed to be constant throughout the modelled time periods. This is a potential weakness in the crowding procedures applied, as it makes no allowance for varying demand on individual services within the modelled peak hour. Given the non-linear nature of crowding costs, this assumption of constant hourly demand may result in an under-estimation of crowding on busy routes where demand varies significantly across the peak hour.

6.4 Bus Speed Factors

Modelled bus journey times in TMfS14 are based on the assigned congested road speeds with a series of factors applied to adjust the bus link speeds by link class. These factors are common in all three time periods and are based on groupings of link classes, e.g. urban single carriageway. Bus lanes have also been coded in the PT modelled network, and on these links the bus speed is related to the free flow road network. During the calibration process the bus link speed factors were adjusted to better match the timetable data where appropriate. The final bus speed factors are as follows:

- Motorways 95% of congested road speed
- Rural single 85% of congested road speed
- Rural dual 95% of congested road speed
- Urban single 50% of congested road speed
- Urban dual 75% of congested road speed
- Bus lanes 80% of free flow speed

Validation of the modelled bus journey times to timetable data is presented in Section 3.



6.5 Assignment Model Parameters

A range of parameters are available to control the path building process, including:

- Route enumeration fare run-time factors
- Spread factor and spread constant
- Mode specific in-vehicle time weighting factors
- Mode specific wait time weighting factors
- Walk time weighting factors
- Mode specific boarding penalties
- Mode to mode transfer penalties
- Mode specific minimum and maximum wait times

The assignment model parameters, common to peak and inter-peak assignments, are shown in Table 6.2.

The spread parameters were defined based on achieving a reasonable range of enumerated routes for assignment, while maintaining practical model run-times. All other parameters were based on standard ranges used in other studies. The values in Table 5.2 reflect the values used in the final calibration.

Values of time and Generalised Cost were derived using the Values of Time taken from WebTAG (November 2014). Using the average earnings data, a factor was derived and applied to the 2014 Value of Time to produce the value used in the TMfS14 Base year model.



Table 6.2 : Public Transport Assignment Model Parameters

Model Parameter	Value / Factor
Route Enumeration Fare In-vehicle Time Factors:	
- urban bus / inter-urban bus	0.85
- rail / subway / ferry	1.00
Spread Factor	1.25
Spread Constant	5 mins
In-vehicle Time Factors - AM + PM:	
- Urban Bus	1.40
- inter-urban bus	1.30
- rail / subway / ferry	1.00
In-vehicle Time Factors - IP:	
- Urban Bus	1.40
- inter-urban bus	1.20
- rail / subway / ferry	1.00
Walk Time Factor	1.60
Minimum Wait Time	0 mins
Maximum Wait Time	60 mins
Boarding Penalty - AM + PM	10 mins
Boarding Penalty - IP	5 mins
Transfer Penalty:	
- rail to rail	5 mins
- bus to bus	5 mins
- rail / underground / tram to bus	5 mins
Value of time (2014 Base Year):	
- in work	17.64 £/hr
- non work	6.5 £/hr



6.6 Wait Curves

A wait curve derived from PDFH has been implemented for all PT lines in the TMfS14 model. It should be noted that the wait curve calculates the wait time in real time, so no additional wait time factor is applied to the resulting perceived wait-time.

It should be noted that, as indicated in Table 6.3, the maximum perceived wait time will be capped at 60 minutes for all modes.

Table 6.3 : Wait Times

Headway (min)	Perceived Wait Times (min)
5	5
10	10
15	14
20	18
30	23
40	26
60	31
90	39
120	47
180	60



6.7 Fares Model

The Fares Model for the TMfS14 Model is based on a set of flat and distance-based Fare Tables for different PT operators.

The distance-based Fare Tables consist of a set of distances and fares that define points on a curve. For distances between two fixed points in the table, the Fares Model will linearly interpolate to determine the modelled fare. Fare tables for bus and rail have been defined based on analysis of scatter plots showing fare versus distance for each modelled PT operator. Average fare curves were then prepared. For subway and ferry services flat fare tables were derived based on operator data and in the case of ferries a weighted 'average' fare was derived using an estimated proportion of ticket sales. Further details are available on request.

The TMfS12 fare information was utilised as the start point for the development of TMfS14. Equivalent 2015 fares were obtained from operators' online sources and the resulting 2014 TMfS14 fares were calculated by interpolating between the 2013 and 2015 fares.

The modelled rail fares are described in Table 6.4, the modelled Bus Fares in Table 6.5 and the modelled Ferry Fares in Table 6.6.

Table 6.4 : Rail Fares (2014 prices)

Fare Table	Region	AM/PM Peak		IP	
		Distance (km)	Fare (£)	Distance (km)	Fare (£)
1	Scotrail - National	0	0.8	0	0.9
		12	3.8	22	3.9
		140	16.8	120	9.8
		750	132.3	750	104.5
2	Scotrail - SPT	0	0.8	0	0.8
		15	3.7	25	3.3
		750	66.5	750	42.5
3	Scotrail - Highland	0	0.9	0	0.9
		12	3.9	22	3.9
		140	17.1	120	9.8
		260	29.3	225	18.4
		750	91.6	750	79.9
4	ScotRail -Nth Highland	0	2.5	0	2.5
		140	17.8	140	17.8
		750	28.0	750	28.0
11	SPT - Subway	1.32 (Flat Fare)			



Table 6.5 : Bus Fares (2014 prices)

Fare Table	Operator	Distance	Fare (£)
15	First Glasgow	0	0.69
		8	1.75
		30	3.26
		750	21.74
16	First Edinburgh	0	1.17
		750	78.67
17	Citylink	0	1.35
		750	83.31
18	Stagecoach Scotland	0	0.90
		750	90.00
19	Stagecoach Fife	0	0.90
		750	162.00
20	Rapsons	0	0.90
		20	3.60
		750	57.86
21	McGills	0	1.46
		750	64.63
22	Arriva	0	1.37
		750	76.38
23	First Aberdeen	0	1.20
		7	2.10
		18	2.50
24	All Services	0	1.50
		750	83.64
25	Lothian Buses		Flat Fare - 1.50
26	Glasgow Airport Bus		Flat Fare - 6.25



Table 6.6 : Ferry Fares (2014 prices)

Fare Tabl Operator	Fare (£)
101 Renfrew Foot Ferry	1.58
1001 Rhubodach – Colintraive	1.45
1003 Ardgor – Corran	0.00
1005 Feolin – Port Askaig	1.52
1007 Lochaline – Fishnish	3.07
1009 Hunters Quay – Gourock	3.99
1011 Portavadie – Tarbet	3.99
1013 Gourock – Dunoon	3.90
1015 Mallaig – Armadale	4.00
1019 Rothesay – Wemyss Bay	4.36
1021 Berneray – Leverburgh	6.89
1023 Craignure – Oban	4.82
1025 Brodick – Ardrossan	4.28
1027 Uig – Tarbet (Harris)	5.70
1029 Uig – Lochmaddy	5.70
1031 Port Askaig – Kennacraig	6.30
1033 Port Ellen – Kennacraig	6.30
1035 Ullapool – Stornoway	8.40
1037 Lochboisdale – Oban	12.60
1039 John O’Groats – Burwick	16.83
1041 Gills Bay – St Mgrt Hope	13.95
1043 Scrabster – Stromness	17.02
1045 Kirkwall – Lerwick	77.03
1047 Kirkwall – Aberdeen	95.28
1049 Lerwick – Aberdeen	124.68
1051 Largs – Cumbrae	4.30
1053 Gourock – Kilcreggan	2.40
1055 Cromarty – Nigg	3.77
1057 Oban – Coll/Tiree	9.25
1058 Mallaig - Eigg	8.08
1017 Lochranza - Claonaig	4.16





7 MODEL VALIDATION

7.1 Introduction

In this section we describe the validation process undertaken for the assignment of the TMfS14 PT model through detailed analysis of the following:

- Observed and modelled bus and rail loading comparisons on the Perth to Inverness and Inverness to Aberdeen corridors
- Observed and modelled bus and rail loading comparisons across Scotland
- Rail station boarding and alighting comparisons
- Rail Crowding comparisons
- Comparison of timetabled and modelled bus journey times

The validation of the original Public Transport assignment model compares the modelled flows with equivalent observed data across screenlines. As specified in Section 7 of TAG Unit M3.2, the modelled public transport flow should ideally fall within 15% of observed flow across appropriate screenlines.

The analysis of the modelled flows also makes use of a summary statistic known as GEH, which is defined as:

$$\sqrt{\frac{(\textit{Modelled} - \textit{Observed})^2}{(\textit{Modelled} + \textit{Observed})/2}}$$

The GEH value is designed to be more tolerant of large percentage differences at lower flows. For example, one would not normally be concerned about a modelled flow which differed from a count by 40% if the count was only 100, but one would be if the count were 1,000. The reason for introducing such a statistic is the inability of either the absolute difference or the relative difference to reflect differences over the wide range of flows contained in the model.

The GEH statistic is typically used for the validation of road assignment models. It is, however, also a useful indicator for PT assignment model though a greater level of tolerance would be expected due to the higher level of variation of public transport data. In the absence of official guidance it is considered that, for a model of this complexity and size, a GEH of five or less is considered to be excellent.



7.2 Observed Screenline Data Update

The timescales for the development of TMfS14 were condensed and as such there was limited opportunity to collate and incorporate recently collected observed public transport Screenline data. In discussion with Transport Scotland the pragmatic solution for updating the observed public transport flows was to take account of national public transport trends between 2007 and 2014, and apply these to the 2007 dataset.

The national trends were calculated using vehicle kilometres statistics (*Scottish Transport Statistics No 33, Table 2.3a: Vehicle kilometres on local bus services by type of service*) and Passenger Traffic statistics (*Table 7.2 Passenger traffic originating in Scotland: journeys and revenue*) from the Scottish Transport Statistics. The trends between 2007 and 2012 were calculated using the above data with the assumption, in agreement with Transport Scotland, that Public Transport usage remained constant between 2012 and 2014. The conclusion from the analysis was a 10 – 20% decrease in bus usage between 2007 and 2014 and a 21 – 36% increase in rail usage. The resulting factors which were applied to the 2007 observed data are presented in Table 7.1.

Table 7.1 : Public Transport Growth Factors (2007 – 2014)

Peak/Mode	Bus	Rail
AM/PM Peak	0.9	1.21
Inter Peak	0.8	1.36



7.3 Passenger Loading Comparisons

Comparisons have been made between modelled and factored observed flows. It should be noted that the observed data is independent data separate from the data used in matrix development. Due to the high quality of the underlying travel demand information (e.g. NRTS, PT interview, and the Census data), there was no specific procedure undertaken to re-estimate the travel demand matrices to match the independent counts. There is a greater degree of scope for the counts versus modelled flows to differ.

It should be noted that the ScotRail data does not include passenger count information on rail services run by other operators, i.e. Virgin West Coast Mainline, InterCity East Coast, and Arriva Cross Country Services. This includes services that operate between Inverness/Aberdeen/Dundee and England via Edinburgh. For the purposes of the modelled versus observed count comparisons presented the modelled passenger flows on non-ScotRail services have been excluded in order to present a direct comparison.

Appendix C contains a series of Figures that show the location of the public transport survey sites. Table 7.2 provides a summary of the cordon and screenline passenger flow comparisons, Table 7.3 summarises the individual site passenger comparisons for the PT model and Table 7.4 summarises the individual site passenger comparisons where the observed flows are greater than 150 passengers per hour.

Table 7.2 : Summary of PT Cal Val, Cordon Screenlines

Mode	AM		IP		PM	
	No.	%	No.	%	No.	%
Bus within 15%	8	57%	5	36%	6	43%
Bus within 25%	9	64%	8	57%	8	57%
Rail within 15%	3	21%	4	29%	6	43%
Rail within 25%	7	50%	8	57%	7	50%
Multi within 15%	8	57%	9	64%	9	64%
Multi within 25%	11	79%	11	79%	13	93%

Table 7.3 : Summary of PT Cal Val, Individual Sites

Mode	AM	IP	PM
Bus within 25%	47%	53%	47%
Rail within 25%	55%	62%	47%
Bus and Rail within 25%	50%	56%	47%



Table 7.4 : Summary of PT Cal Val, Individual Sites (Greater than 150 Passengers)

Mode	AM	IP	PM
Bus within 25%	27%	46%	34%
Rail within 25%	50%	52%	44%
Bus and Rail within 25%	38%	49%	38%

Appendix D contains the individual count comparisons at the screenlines and cordons and at a selection of strategic locations.

The multi-modal passenger count comparisons for the city cordon totals are generally acceptable. Individual count comparisons are generally satisfactory on the whole.

Overall, it is considered that the key strategic passenger movements are represented appropriately in the TMfS14 Model.

7.4 Rail Passenger Boarding/Alighting Comparisons

ScotRail data provides information on the volume of passengers boarding and alighting at each station for each time period. This data, factored to 2014 using the method outlined in Section 7.2, has been compared with the equivalent modelled data and the comparisons can be found in Appendix E.

Table 7.5 provides a summary of the GEH statistics for all the stations in the TMfS14 model. This indicates that the majority of the boarding and alighting comparisons have a GEH of less than five and nearly all have a GEH of less than 10. The validation against these data is considered to be acceptable.

Table 7.5 : Boarding Alighting Summary

GEH	AM		IP		PM	
	Boarding	Alighting	Boarding	Alighting	Boarding	Alighting
Less than 5	61%	59%	73%	69%	64%	62%
Less than 7	76%	71%	85%	83%	77%	75%
Less than 10	86%	84%	94%	94%	90%	89%

Further examination of the individual station boarding and alighting comparisons in Appendix E indicates reasonable correlation at the global level and is consistent with TMfS12. As expected, there is a greater degree of variability at individual station level.



7.5 Rail Capacities

The PT assignment model includes crowding on rail lines in the morning and evening peak periods.

Appendix F provides further details of the ratio of passengers to seated capacity on the modelled rail lines. Examination of the results indicates that the morning peak is slightly more crowded than the evening peak within the model.

It is evident that there is a sensible trend of crowding i.e. inbound to major conurbations in the AM peak and outbound in PM peak. The most crowded services within the modelled network are:

- Fife Circle and through Fife
- North Berwick
- Glasgow to Lanark and Larkhall

7.6 Comparison of Timetabled and Modelled Bus Journey Times

As modelled bus journey times are based on assigned road speeds, checks have been made to ensure that modelled bus journey times are representative of timetabled bus journey. Again, due to the minimal changes incorporated in the TMfS14 bus coding, these comparisons have been undertaken using the same timetabled information as was used in the original TMfS07 validation exercise to demonstrate general consistency.

In making any comparisons, however, it should be recognised that timetables are not necessarily a true reflection of actual bus journey times, since the former may include some 'slack' to enable the service to recover from higher-than-average delays. Conversely, there may be routes whose timetabled time does not fully reflect current network speeds.

The analysis was undertaken on a sample of the coded services intended to give a representative geographical spread.

Appendix G contains the tables and diagrams presenting the results of this analysis. A summary of the journey time validation can be seen in Table 7.6.

Table 7.6 : Journey Time Validation

		AM		IP		PM	
Within 15% of PT Timetable (DMRB Criteria)	Yes	51	50%	53	52%	58	57%
	No	52	50%	49	48%	43	43%
Within 25% of PT Timetable	Yes	78	76%	75	74%	79	78%
	No	25	24%	27	26%	22	22%

The results show, in general, are consistent with TMfS07 and TMfS12 and are a reasonable match between modelled and timetabled bus journey times although there is some variation in the level of validation. Looking at specific routes between Inverness and Edinburgh and Aberdeen to Inverness, both modelled journey time routes meet the *DMRB* criteria in all peaks.



Where there is a difference between modelled and timetabled, the model is, in most cases quicker. This is due to the strategic nature of the model, and the consequent under-representation of journey times through small towns, villages and hamlets, especially where the services make many stops and also make detours into residential areas that are not modelled.

A small number of bus services have a modelled journey time that is higher than the equivalent timetable data. Further inspection of this has revealed that the underlying road JT validation is reasonable and it is considered that the operator timetables may be underestimating actual journey times.

Depending on the policies being tested, model users should review the bus journey time validation in their area of interest prior to undertaking model tests.

7.7 Perth to Inverness and Inverness to Aberdeen Validation

The Public Transport assignments were compared to the observed data on the Perth to Inverness and Inverness to Aberdeen corridors and the comparisons are presented in Appendix H and the rail boarding and alighting comparisons are presented in Appendix I.

The modelled and observed bus and rail screenline comparisons compare very well, as do the specific rail and bus comparisons given the strategic nature of the model. The modelled boarding/alighting and the departure loadings (i.e. the total volume of passengers on the train as it leaves a station) compare very well with the observed data given the strategic nature of the model.



8 CONCLUSIONS

8.1 Summary

This Report has presented the development of the TMfS14 National Public Transport Model.

The TMfS14 Public Transport Model is similar to TMfS12 with the following enhancements:

- Updated trip matrices utilising observed data collected for the Perth to Inverness and Inverness to Aberdeen corridors
- Updated travel to work trips using the 2011 census.
- Updates to generalised costs in accordance with WebTAG guidance
- An uplift in PT fares to 2014

8.2 Conclusions

It is acknowledged that the observed data does have its shortfalls given the lack of up to date network wide observed data does impact on the confidence in the validation. Collecting good quality observed public transport is extremely difficult and given the time constraints and the data available TMfS14 is considered acceptable for supporting the Business Case development of the Inverness to Aberdeen and Perth to Inverness corridor improvements.

SIAS's view is that the national public transport model has been successfully developed and is fit for its intended purpose which is to be used for the appraisal of major strategic public transport schemes and policy decisions as part of the national LATIS modelling system. It should be noted, however, that there is a degree of local variation in the validation of the model.

The model can also provide a good starting source of public transport supply and demand data for more-detailed sub-area/regional models, provided that relevant checks on the model's robustness in the relevant specific areas are carried out.

All model applications should be preceded by an appropriate review of the robustness of the model validation in the area/corridor of interest.

Looking at the model validation in more detail, the passenger loading validation has been carried out using factored observed passenger counts and the results have generally been satisfactory. The city centre cordons are generally within an acceptable range, though there is some local variation. Overall the individual site count comparisons are also within an acceptable range, however, there are some sites that are less well validated.

Boarding and alighting comparisons also indicate a reasonable level of correlation at the global level, however, there is a greater degree of variability at the individual station level.

Modelled bus journey times are generally quicker than the timetabled journey times, but this can be typical of PT models because of their strategic nature. Overall there is generally a reasonable match between modelled and timetabled bus journey times.

The calibration and validation on the Perth to Inverness and Inverness to Aberdeen corridors has been updated and the key areas where the model is intended to be applied are within acceptable ranges.



Overall the level of validation is considered within an appropriate range for a strategic model of this nature.

8.3 Recommendations

When developing the next version of TMfS it is recommended that the PT matrices are developed from the beginning. This would allow the component parts of the matrices which are synthesised to be recreated which use improved data or estimation techniques.

Time should be set aside for observed public transport data processing in advance of any future model development so that the data is in a form which is ready for use within the model development process. This will reduce the risks to the model development timescale/programme estimates.

It may be beneficial if it is recommended that the PT network is georeferenced, e.g. with the Integrated Transport Network (ITN) Layer, for compatibility and ease of integration with large datasets. It can be beneficial if the networks are fully georeferenced when considering journey time information such as INRIX data and when large volumes of output data is required.

Cognisance of the forecasting process inputs should be taken during the model development programme to ensure that an agreed specification for the Do-Minimum is agreed well in advance of when the forecasting is required. This would reduce risk to the overall delivery programme.

The model development programme should contain a forecasting acceptance phase which considers the emerging Do-Minimum forecasts before they can be considered fit for application. This would ensure that the appropriate checks are undertaken to ensure that the model is responding as it should before being applied.



A ZONE SYSTEM DISAGGREGATION*Table A.1 : TMS14 Scotland Zone Disaggregation*

Original (720 Zone)	Disaggregated to (799 Zone)
Sanquhar/Kirkconnel (7)	Sanquhar (7) Kirkconnel (736)
West Calder (134)	West Calder (134) Addiewell (737)
Ardrossan West (220)	Ardrossan West (220) Ardrossan Harbour (763)
Crainlarich (458)	Crainlarich (458) Possil Park (738) Tyndrum Upper (739)
Aberfeldy (526)	Aberfeldy (526) Tummel (723)
Pitlochry (529)	Pitlochry (529) Ballinluig (724)
Methven (532)	Methven (532) Luncarty (725)
Carnoustie (573)	Carnoustie (573) Carnoustie South (740)
Huntly (581)	Huntly Centre (581) Huntly (727)
Inverurie (593)	Inverurie (593) Outer Inverurie (734)
Forres (635)	Forres North (635) Damaway (718) Forres South (732)
Elgin (638)	Elgin North (638) Elgin South (731)
Fochabers (642)	Lhanbryde (642) Fochabers (719) Outer Fochabers (729) Mosstodloch (730) Outer Lhanbryde (735)
Keith (643)	Keith North (643) Auchlunkart (720) Keith South (728)
Oban (652)	Oban (652) Falls Of Cruachan (783)
Connel (653)	Connel (653) Taynult (741)
Dalmally (656)	Dalmally (656) Loch Awe (742) Bridge Of Orchy (743)
Tarbet (657)	Tarbet (657) Ardlui (762)
Loch Sheil (666)	Loch Sheil (666) Rum Canna Eigg Muck (764)



Table A.2 : TMFS14 Scotland Zone Disaggregation (Cont.)

Original (720 Zone) - Cont.	Disaggregated to (799 Zone) - Cont.
Mallaig (667)	Mallaig (667) Morar (744) Arisaig (745) Beasdale (746) Inverie (747)
Banavie (668)	Banavie (668) Lochailort (748) Glenfinnan (749) Corpach (750) Loch Eil (773) Loch Eil Outward Bound (774)
Kyle Of Localsh (669)	Kyle Of Localsh (669) Duirinish (751) Stromeferry (752) Plockton (753) Duncraig (754) Sheil Bridge (755) Craig (771) Attadale (772) Strathcarron (777)
Spean Bridge (672)	Spean Bridge (672) Roy Bridge (756) Tulloch (769) Corrour (770)
Achnasheen (673)	Achnasheen (673) Garve (757) Achanalt (775) Garve (776)
Loch Ness (674)	Drumnadrochit (674) Fort Augustus (726)
Culrain (677)	Culrain (677) Ardgay (758) Lairg (767) Achvaig (768)
Kingussie (682)	Newtonmore (682) Dalwhinnie (713) Kingussie (714)
Inverness South (684)	Inverness South (684) Essich (721)
Inverness Airport & Ardersier (694)	Inverness Airport (694) Ardersier (715) Croy (716)
Golspie (695)	Golspie (695) Dunrobin (759)
Nairn (698)	Nairn North (698) Blairmore (717) Nairn South (733)
Aviemore (700)	Aviemore (700) Kincaig (722)
Helmsdale & Lybster (701)	Helmsdale & Lybster (701) Kildonan (765) Loch Ascaig (766)
Halkirk (704)	Halkirk (704) Scotscaider (760) Altnabreac (761)



Table A.3 : TMfS14 Key Port Disaggregation

Original (720 Zone)	Disaggregated to (799 Zone)
Stranraer (1)	Stranraer (1) Cainryan Key Port (778)
Grangemouth East (389)	Grangemouth East (389) Grangemouth Key Port (780)
Bogston (440)	Bogston (440) Greenock Key Port (779)
Rosyth (484)	Rosyth (484) Rosyth Key Port (781)
Aberdeen Central (628)	Aberdeen Central (628) Aberdeen Key Port (782)

Table A.4 : TMfS14 External Area Disaggregation

Original (720 Zone)	Renumbered / Disaggregated to (799 Zone)
Wales & Western England (713)	West Midlands (793) South West (797) Wales (798) North West (799)
Cumbria (714)	Cumbria (784) Carlisle (790)
West Northumberland (715)	West Northumberland (785)
Berwick Upon Tweed (716)	Berwick Upon Tweed (786)
East Northumberland (717)	East Northumberland (787)
Newcastle Upon Tyne (718)	Newcastle Upon Tyne (788)
County Durham (719)	County Durham (789)
Eastern England (720)	Yorkshire And The Humber (791) East Midlands (792) East Of England (794) London (795) South East (796)





C BUS AND RAIL COUNT LOCATIONS



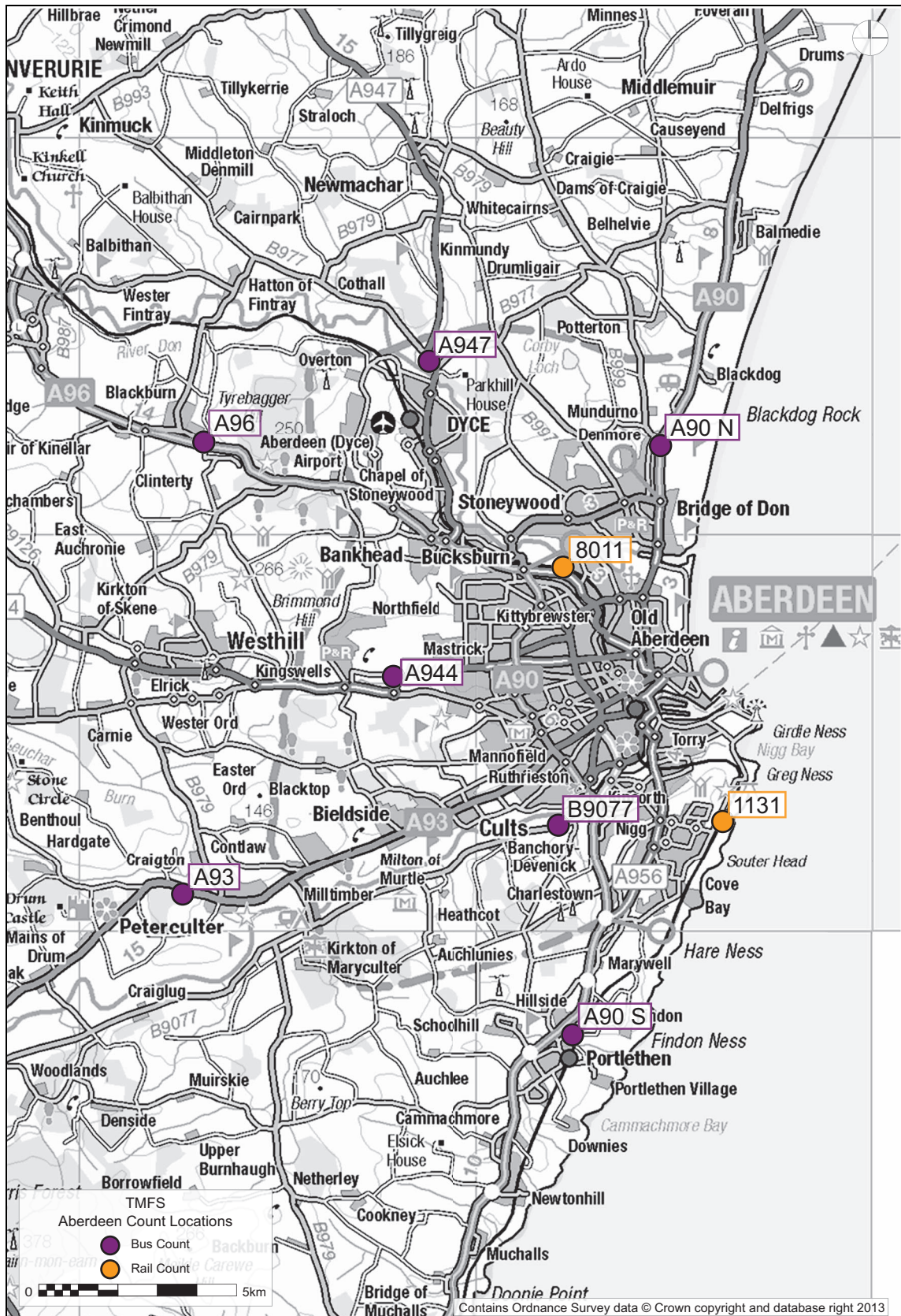


Figure C.1 : Aberdeen Cordon Count Locations



Table C.1 : Aberdeen Cordon Count Locations

Map Ref.	Mode	Station/Road Name
8011	Rail	Aberdeen to Dyce
1131	Rail	Portlethen to Aberdeen
A96	Bus	A96 (at Blackburn)
A947	Bus	A947 (at Dyce Drive)
A90 N	Bus	A90 North (by Denmore)
A90 S	Bus	A90 South (nr A956 Junction)
A93	Bus	A93 (west of Peterculter)
A944	Bus	A944 (by Old Skene Rd)



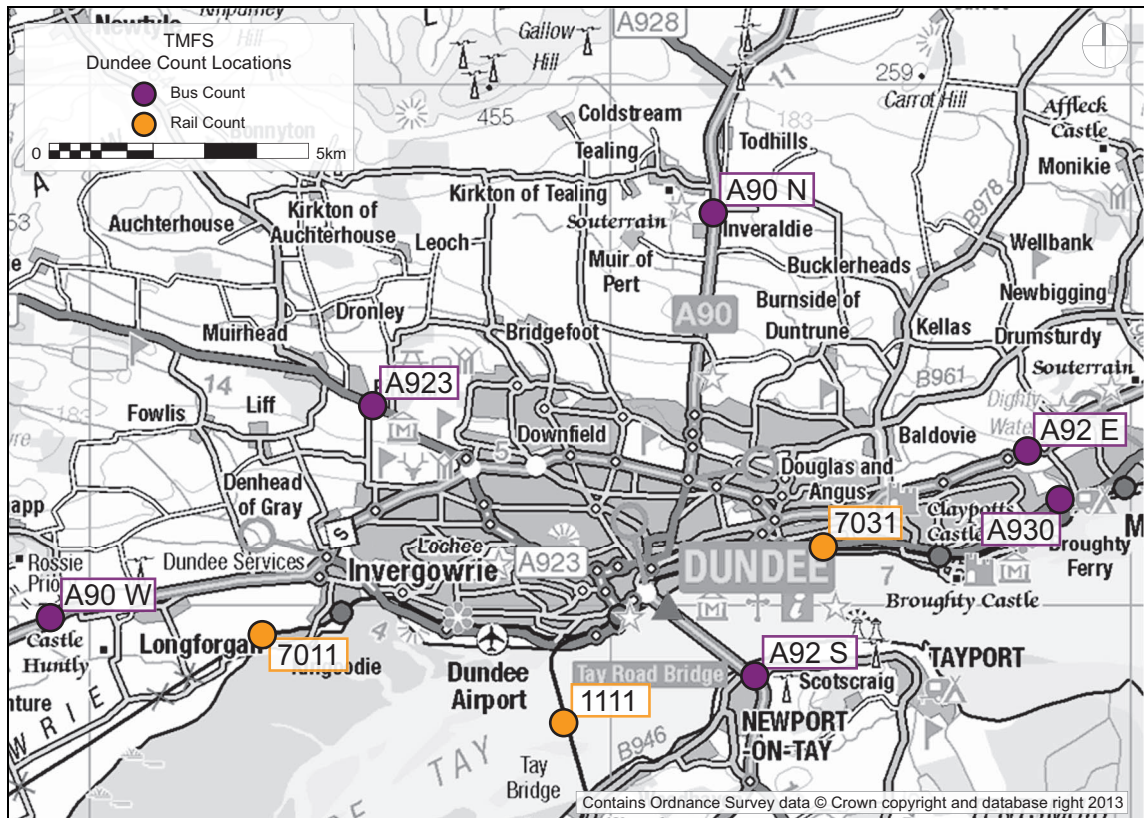


Figure C.2 : Dundee Cordon Count Locations

Table C.2 : Dundee Cordon Count Locations

Map Ref.	Mode	Station/Road Name
7011	Rail	Invergowrie to Dundee
1111	Rail	Leuchars to Dundee
7031	Rail	Balmossie to Monifieth
A90 W	Bus	A90 West
A923	Bus	A923 (East of Birkhill)
A90 N	Bus	A90 North (at Fintry)
A92 E	Bus	A92 East (West of W Grange Rd Roundabout)
A930	Bus	A930 (West of Grange Rd South)
A92 S	Bus	A92 South (Tay Bridge)



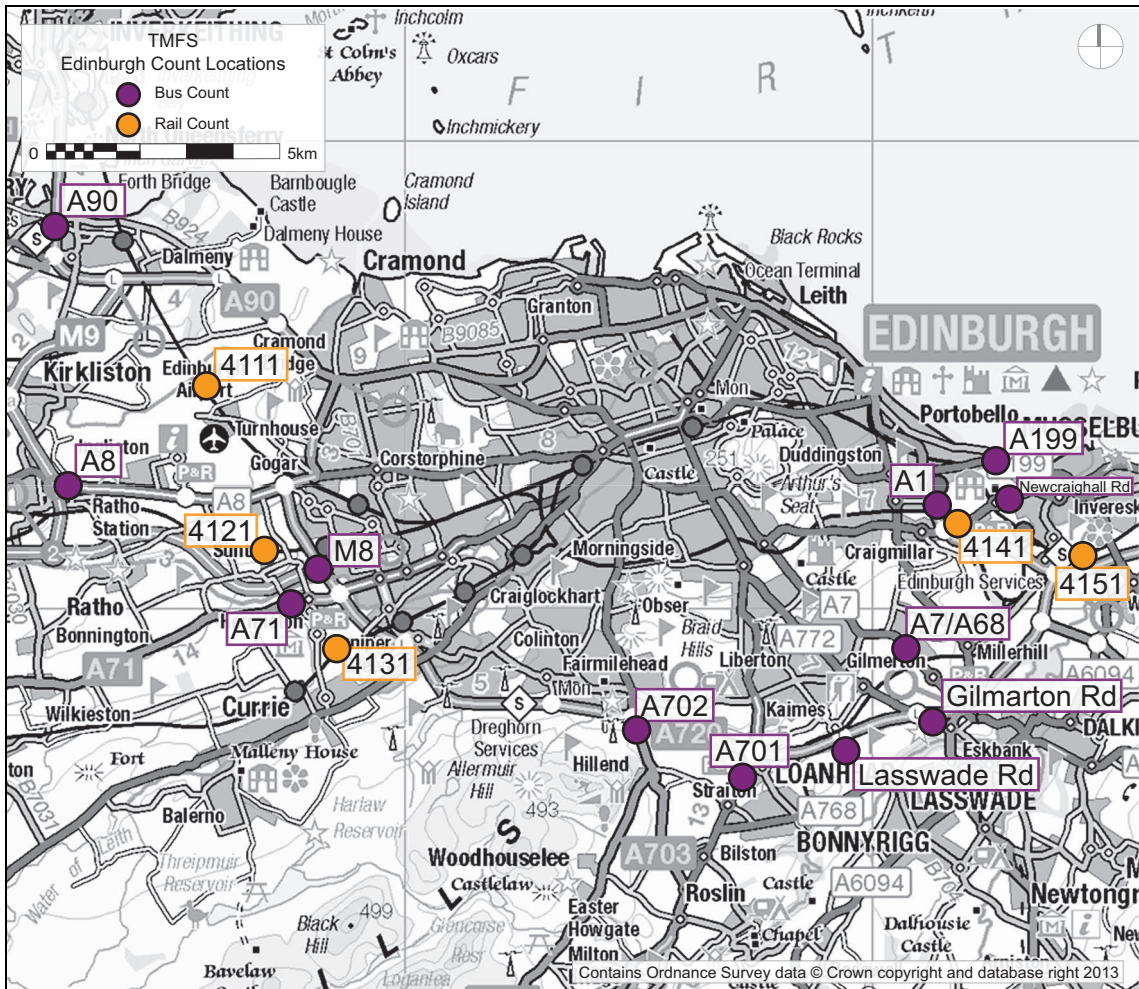


Figure C.3 : Edinburgh Cordon Count Locations



Table C.3 : Edinburgh Cordon Count Locations

Map Ref.	Mode	Station/Road Name
4111	Rail	South Gyle to Dalmeny
4121	Rail	West of Edinburgh Park
4131	Rail	Wester Hailes to Curriehill
4141	Rail	Brunstane to Newcraighall
4151	Rail	West of Musselburgh
A90	Bus	A90 (at South Queensferry)
A8	Bus	A8 (West of Airport)
M8	Bus	M8 (at Hermiston Gait Roundabout)
A71	Bus	A71 (at Hermiston House Rd)
A702	Bus	A702 (South of City Bypass)
A701	Bus	A701 (South of B702 Junction)
Lasswade Rd	Bus	Lasswade Road (South of City Bypass)
Gilmerton Rd	Bus	Gilmerton Road (South of City Bypass)
A7/A68	Bus	A7/A68 (South of Danderhall)
A1	Bus	A1 (South of The Jewel)
Newcraighall Rd	Bus	Newcraighall Road (by Clayknowes Cres)
A199	Bus	A199 (West of B6415 Junction)



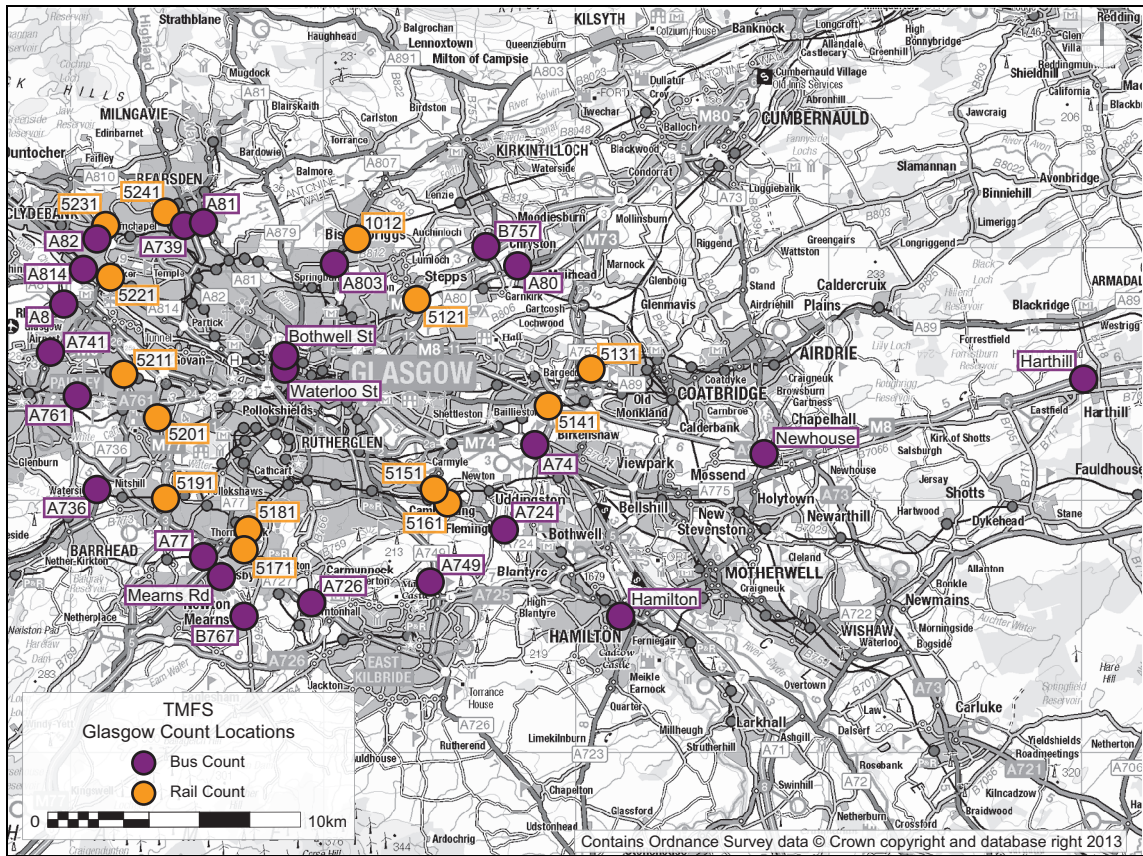


Figure C.4 : Glasgow Cordon Count Locations



Table C.4 : Glasgow Cordon Count Locations

Map Ref.	Mode	Station Name
1012	Rail	West of Bishopbriggs
5121	Rail	Springburn to Stepps
5131	Rail	Easterhouse to Blairhill
5141	Rail	Baillieston to Bargeddie
5151	Rail	Cambuslang to Newton
5161	Rail	Kirkhill to Newton
5171	Rail	Giffnock to Clarkston
5181	Rail	Muirend to Williamwood
5191	Rail	Kennishead to Priesthill & Darnley
5201	Rail	Mosspark to Crookston
5211	Rail	Hillington East to Hillington West
5221	Rail	Garscadden to Yorker
5231	Rail	Drumchapel to Drumry
5241	Rail	Westerton to Bearsden
A803	Bus	A803 (North of Colston Rd)
B757	Bus	B757 (South of Lenzie)
A80	Bus	A80 (East of Crowwood Roundabout)
A89	Bus	A89 (West of Bargeddie)
A74	Bus	A74 (North of B7001 Junction)
A724	Bus	A724 (Manse Brae)
A749	Bus	A749 (at Neilston Southbound Offslip)
A726	Bus	A726 (West of Phillipshill)
B767	Bus	B767 (North of Waterfoot)
Mearns Rd	Bus	Mearns Road
A77	Bus	A77 Ayr Rd at The Loaning
A736	Bus	A736 (At Salterland Rd Junction)
A761	Bus	A761 (Oldshaw Rd, Barshaw)
A741	Bus	A741 (at Arkleston Rd)
A8	Bus	A8 (Inchinnan Rd at Argyll Avenue)
A814	Bus	A814 (at Dock St, Yoker)
A82	Bus	A82 (East of Drumry Rail Station)
A739	Bus	A739 (South of Canniesburn Toll)
A81	Bus	A81 (South of Canniesburn Toll)
Bothwell St	Bus	Bothwell Street (for M8 west + M77 buses)
Waterloo St	Bus	Bothwell Street (for M8 west + M77 buses)
Harthill	Bus	M8 at Harthill
Newhouse	Bus	B7066 at Newhouse
Hamilton	Bus	At Hamilton Bus Station
Motherwell	Bus	A723 Hamilton Road near Airbles Road



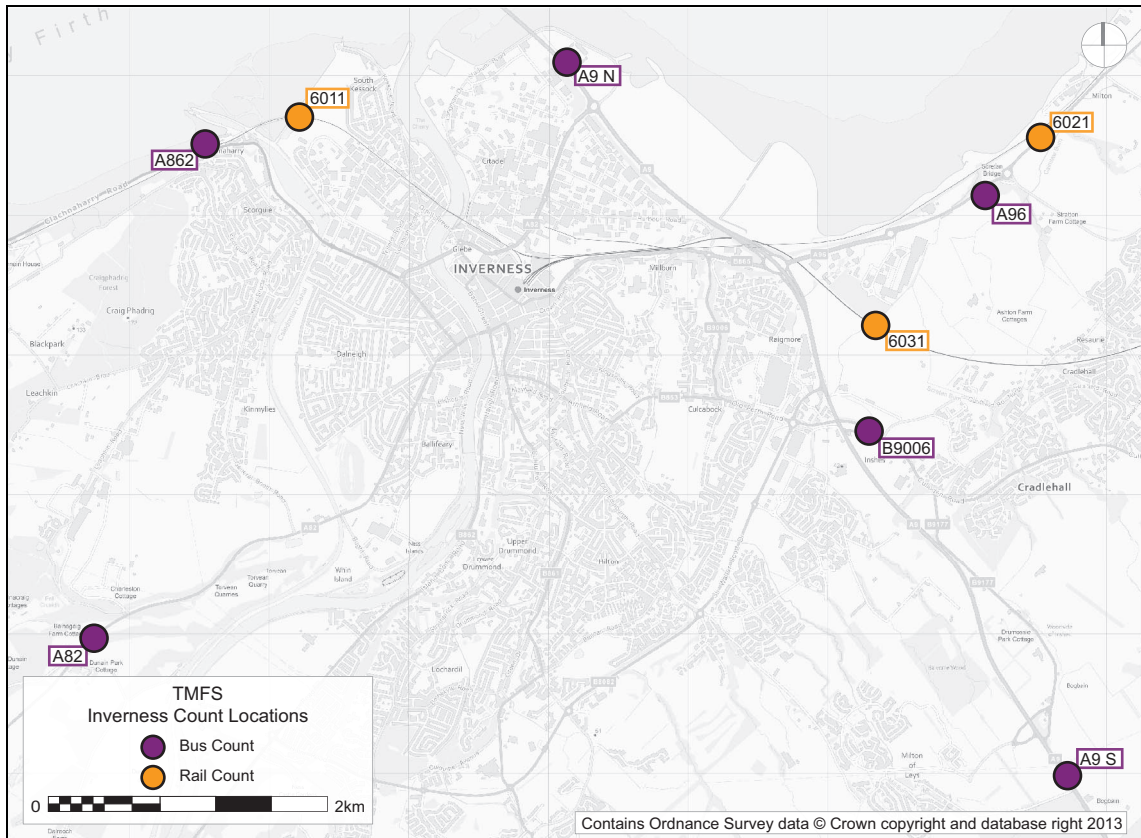


Figure C.5 : Inverness Cordon Count Locations

Table C.5 : Inverness Cordon Count Locations

Map Ref.	Mode	Station/Road Name
6011	Rail	Beauly to Inverness
6021	Rail	Nairn to Inverness
6031	Rail	Carrbridge to Inverness
A862	Bus	A862 (West of Mid St/High St)
A9 N	Bus	A9 North (Kessock Bridge)
A96	Bus	A96 (West of Inverness Retail Park)
B9006	Bus	B9006 (Over A9)
A9 S	Bus	A9 South (South of Raigmore Interchange)
A82	Bus	A82 (South of General Booth Rd)





D TMFS14 PASSENGER LOADING COMPARISONS (CORDONS)**D.1 AM Peak***Table D.1 : Aberdeen Cordon Inbound Passengers (excludes Non ScotRail Services)*

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
Aberdeen to Dyce	8011	Rail	S	I	335	210	-125	-37%	7.6
Portlethen to Aberdeen	1131	Rail	N	I	351	347	-4	-1%	0.2
A96 (at Greenburn Rd)	8031	Bus	E	I	144	166	22	15%	1.8
A947 (at Stoneywood Terrace)	8041	Bus	S	I	17	49	32	185%	5.5
A90 North (by Denmore)	8051	Bus	S	I	250	265	15	6%	0.9
A90 South(North of Portlethen)	8061	Bus	N	I	140	183	43	31%	3.4
A93(West of Peterculter)	8081	Bus	E	I	25	68	43	171%	6.3
A944 (by Old Skene Rd)	8091	Bus	E	I	138	88	-50	-36%	4.7
Total - Rail					686	556	-129	-19%	5.2
Total - Bus					714	819	105	15%	3.8
Total					1399	1375	-24	-2%	0.7

Table D.2 : Aberdeen Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
Aberdeen to Dyce	8012	Rail	N	O	160	124	-35	-22%	3.0
Portlethen to Aberdeen	1132	Rail	S	O	128	119	-10	-7%	0.9
A96 (at Greenburn Rd)	8032	Bus	W	O	51	63	11	22%	1.5
A947 (at Stoneywood Terrace)	8042	Bus	N	O	10	55	45	451%	7.9
A90 North (by Denmore)	8052	Bus	N	O	81	100	19	24%	2.0
A90 South(North of Portlethen)	8062	Bus	S	O	98	130	32	32%	3.0
A93(West of Peterculter)	8082	Bus	W	O	14	27	13	90%	2.8
A944 (by Old Skene Rd)	8092	Bus	W	O	72	87	15	22%	1.7
Total - Rail					288	243	-45	-16%	2.8
Total - Bus					327	462	135	41%	6.8
Total					615	705	90	15%	3.5



Table D.3 : Dundee Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
Invergowrie to Dundee	7011	Rail	E	I	165	236	72	44%	5.1
Leuchars to Dundee	1111	Rail	N	I	151	409	258	171%	15.4
Balmossie to Monifieth	7031	Rail	W	I	304	304	0	0%	0.0
A90 West	7041	Bus	E	I	89	89	0	0%	0.0
A923 (East of Birkhill)	7051	Bus	E	I	99	94	-5	-5%	0.5
A90 North (at Fintry)	7061	Bus	S	I	269	370	101	37%	5.6
A92 East (West of W Grange Rd Roundabout)	7071	Bus	W	I	36	43	7	19%	1.1
A930 (West of Grange Rd South)	7081	Bus	W	I	196	188	-8	-4%	0.6
A92 South (Tay Bridge)	7091	Bus	N	I	404	345	-59	-15%	3.1
Total - Rail					620	950	330	53%	11.8
Total - Bus					1093	1129	35	3%	1.1
Total					1713	2078	365	21%	8.4

Table D.4 : Dundee Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
Invergowrie to Dundee	7012	Rail	W	O	185	249	64	35%	4.4
Leuchars to Dundee	1112	Rail	S	O	157	190	32	21%	2.5
Balmossie to Monifieth	7032	Rail	E	O	152	339	187	123%	11.9
A90 West	7042	Bus	W	O	148	193	46	31%	3.5
A923 (East of Birkhill)	7052	Bus	W	O	25	25	0	0%	0.0
A90 North (at Fintry)	7062	Bus	N	O	44	134	90	203%	9.5
Roundabout	7072	Bus	E	O	18	43	25	140%	4.6
A930 (West of Grange Rd South)	7082	Bus	E	O	29	60	31	107%	4.6
A92 South (Tay Bridge)	7092	Bus	S	O	119	99	-20	-17%	1.9
Total - Rail					495	778	284	57%	11.2
Total - Bus					383	554	171	45%	7.9
Total					878	1332	455	52%	13.7



Table D.5 : Edinburgh Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
South Gyle to Dalmeny	4111	Rail	E	I	1946	2126	180	9%	4.0
West of Edinburgh Park	4121	Rail	E	I	2906	3032	125	4%	2.3
Wester Hailes to Curriehill	4131	Rail	E	I	214	571	357	166%	18.0
Brunstane to Newcraighall	4141	Rail	W	I	103	118	15	15%	1.5
West of Musselburgh	4151	Rail	W	I	645	509	-136	-21%	5.7
A90 (at South Queensferry)	4161	Bus	S	I	403	313	-90	-22%	4.8
A8 (West of Airport)	4171	Bus	E	I	782	803	21	3%	0.7
M8 (at Hermiston Gait Roundabout)	4181	Bus	E	I	65	103	38	59%	4.2
A71 (at Hermiston House Rd)	4191	Bus	E	I	309	582	273	88%	12.9
A702 (South of City Bypass)	4201	Bus	N	I	73	286	213	292%	15.9
A701 (South of B702 Junction)	4211	Bus	N	I	621	249	-372	-60%	17.8
Lasswade Road (South of City Bypass)	4221	Bus	N	I	199	180	-19	-9%	1.4
Gilmerton Road (South of City Bypass)	4241	Bus	W	I	442	391	-51	-12%	2.5
A7/A68 (South of Danderhall)	4251	Bus	W	I	513	477	-36	-7%	1.6
A1 (South of The Jewel)	4261	Bus	N	I	384	213	-171	-45%	9.9
Nevcraighall Road (by Clayknowes Cres)	4271	Bus	W	I	144	167	23	16%	1.8
A199 (West of B6415 Junction)	4281	Bus	W	I	800	1371	570	71%	17.3
Total - Rail					5814	6355	541	9%	6.9
Total - Bus					4735	5134	399	8%	5.7
Total					10549	11490	941	9%	9.0



Table D.6 : Edinburgh Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
South Gyle to Dalmeny	4112	Rail	E	O	387	589	202	52%	9.2
West of Edinburgh Park	4122	Rail	E	O	1153	1256	103	9%	3.0
Wester Hailes to Curriehill	4132	Rail	E	O	29	282	253	870%	20.3
Brunstane to Newcraighall	4142	Rail	W	O	4	17	13	360%	4.1
West of Musselburgh	4152	Rail	W	O	23	200	177	769%	16.7
A90 (at South Queensferry)	4162	Bus	S	O	81	63	-18	-22%	2.1
A8 (West of Airport)	4172	Bus	E	O	382	204	-177	-46%	10.4
M8 (at Hermiston Gait Roundabout)	4182	Bus	E	O	0	2	2	#DIV/0!	1.8
A71 (at Hermiston House Rd)	4192	Bus	E	O	126	445	319	253%	18.9
A702 (South of City Bypass)	4202	Bus	N	O	76	45	-30	-40%	3.9
A701 (South of B702 Junction)	4212	Bus	N	O	219	130	-89	-41%	6.7
Lasswade Road (South of City Bypass)	4222	Bus	N	O	69	31	-38	-55%	5.4
Gilmerton Road (South of City Bypass)	4242	Bus	W	O	229	110	-119	-52%	9.1
A7/A68 (South of Danderhall)	4252	Bus	W	O	142	250	108	76%	7.7
A1 (South of The Jewel)	4262	Bus	N	O	25	20	-5	-21%	1.1
Nevcraighall Road (by Clayknowes Cres)	4272	Bus	W	O	194	164	-30	-15%	2.2
A199 (West of B6415 Junction)	4282	Bus	W	O	336	555	219	65%	10.4
Total - Rail					1596	2343	747	47%	16.8
Total - Bus					1878	2019	140	7%	3.2
Total					3474	4362	887	26%	14.2



Table D.7 : Glasgow Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
West of Bishopbriggs	1012	Rail	W	I	2804	2313	-491	-18%	9.7
Springburn to Stepps	5121	Rail	W	I	340	329	-11	-3%	0.6
Easterhouse to Blairhill	5131	Rail	W	I	1054	1242	189	18%	5.6
Baillieston to Bargeddie	5141	Rail	W	I	180	59	-122	-67%	11.1
Cambuslang to Newton	5151	Rail	W	I	2207	2045	-162	-7%	3.5
Kirkhill to Newton	5161	Rail	W	I	70	47	-24	-34%	3.1
Giffnock to Clarkston	5171	Rail	N	I	866	471	-396	-46%	15.3
Muirhead to Williamwood	5181	Rail	N	I	486	380	-106	-22%	5.1
Kennishead to Priesthill & Darnley	5191	Rail	E	I	528	855	327	62%	12.4
Mosspark to Crookston	5201	Rail	E	I	232	60	-173	-74%	14.3
Hillington East to Hillington West	5211	Rail	E	I	3336	3034	-301	-9%	5.3
Garscadden to Yorker	5221	Rail	E	I	944	797	-147	-16%	5.0
Drumchapel to Drumry	5231	Rail	E	I	644	601	-43	-7%	1.7
Westerton to Bearsden	5241	Rail	S	I	547	775	228	42%	8.9
A803 (North of Colston Rd)	5251	Bus	S	I	307	864	557	182%	23.0
B757 (South of Lenzie)	5261	Bus	S	I	298	739	441	148%	19.4
A80 (East of Crowwood Rbt)	5271	Bus	W	I	951	323	-628	-66%	24.9
A89 (West of Bargeddie)	5281	Bus	W	I	50	166	116	229%	11.1
A74 (North of B7001 Junction)	5291	Bus	W	I	207	410	203	98%	11.6
A724 (Manse Brae)	5311	Bus	W	I	145	216	71	49%	5.3
A749 (at Neilston Southbound offslip)	5321	Bus	N	I	293	546	252	86%	12.3
A726 (West of Phillipshill)	5331	Bus	N	I	215	502	286	133%	15.1
B767 (North of Waterfoot)	5341	Bus	N	I	64	60	-4	-6%	0.5
A77 (Ayr Rd at the Loaning)	5351	Bus	N	I	121	155	35	29%	3.0
A736 (at Salterland Rd Junction)	5361	Bus	N	I	74	145	71	96%	6.8
A761 (Oldshaw Rd, Barshaw)	5371	Bus	E	I	342	693	351	103%	15.4
A741 (at Arkleston Rd)	5381	Bus	E	I	397	294	-103	-26%	5.5
A8 (Inchinnan Rd at Argyll Avenue)	5391	Bus	E	I	85	166	81	96%	7.3
A814 (at Dock Street, Yoker)	5401	Bus	E	I	331	196	-135	-41%	8.3
A82 (East of Drumry Rail Station)	5411	Bus	E	I	134	451	317	236%	18.5
A739 (South of Canniesburn Toll)	5421	Bus	S	I	111	0	-111	-100%	14.9
A81 (South of Canniesburn Toll)	5431	Bus	S	I	453	186	-267	-59%	15.0
Bothwell Street (for M8 West)	5441	Bus	S	I	874	1113	239	27%	7.6
M8 at Harthill & B7066 at Newhouse	5451	Bus	S	I	281	90	-191	-68%	14.0
Motherwell)	5461	Bus	S	I	162	970	808	499%	34.0
Total - Rail					14238	13007	-1231	-9%	10.5
Total - Bus					5894	8284	2390	41%	28.4
Total					20132	21292	1159	6%	8.1



Table D.8 : Glasgow Cordon Outbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
West of Bishopbriggs	1012	Rail	W	I	2804	2313	-491	-18%	9.7
Springburn to Stepps	5121	Rail	W	I	340	329	-11	-3%	0.6
Easterhouse to Blairhill	5131	Rail	W	I	1054	1242	189	18%	5.6
Baillieston to Bargeddie	5141	Rail	W	I	180	59	-122	-67%	11.1
Cambuslang to Newton	5151	Rail	W	I	2207	2045	-162	-7%	3.5
Kirkhill to Newton	5161	Rail	W	I	70	47	-24	-34%	3.1
Giffnock to Clarkston	5171	Rail	N	I	866	471	-396	-46%	15.3
Muirhead to Williamwood	5181	Rail	N	I	486	380	-106	-22%	5.1
Kennishead to Priesthill & Darnley	5191	Rail	E	I	528	855	327	62%	12.4
Mosspark to Crookston	5201	Rail	E	I	232	60	-173	-74%	14.3
Hillington East to Hillington West	5211	Rail	E	I	3336	3034	-301	-9%	5.3
Garscadden to Yorker	5221	Rail	E	I	944	797	-147	-16%	5.0
Drumchapel to Drumry	5231	Rail	E	I	644	601	-43	-7%	1.7
Westerton to Bearsden	5241	Rail	S	I	547	775	228	42%	8.9
A803 (North of Colston Rd)	5251	Bus	S	I	307	864	557	182%	23.0
B757 (South of Lenzie)	5261	Bus	S	I	298	739	441	148%	19.4
A80 (East of Crowwood Rbt)	5271	Bus	W	I	951	323	-628	-66%	24.9
A89 (West of Bargeddie)	5281	Bus	W	I	50	166	116	229%	11.1
A74 (North of B7001 Junction)	5291	Bus	W	I	207	410	203	98%	11.6
A724 (Manse Brae)	5311	Bus	W	I	145	216	71	49%	5.3
A749 (at Neilston Southbound offslip)	5321	Bus	N	I	293	546	252	86%	12.3
A726 (West of Phillipshill)	5331	Bus	N	I	215	502	286	133%	15.1
B767 (North of Waterfoot)	5341	Bus	N	I	64	60	-4	-6%	0.5
A77 (Ayr Rd at the Loaning)	5351	Bus	N	I	121	155	35	29%	3.0
A736 (at Salterland Rd Junction)	5361	Bus	N	I	74	145	71	96%	6.8
A761 (Oldshaw Rd, Barshaw)	5371	Bus	E	I	342	693	351	103%	15.4
A741 (at Arkleston Rd)	5381	Bus	E	I	397	294	-103	-26%	5.5
A8 (Inchinnan Rd at Argyll Avenue)	5391	Bus	E	I	85	166	81	96%	7.3
A814 (at Dock Street, Yoker)	5401	Bus	E	I	331	196	-135	-41%	8.3
A82 (East of Drumry Rail Station)	5411	Bus	E	I	134	451	317	236%	18.5
A739 (South of Canniesburn Toll)	5421	Bus	S	I	111	0	-111	-100%	14.9
A81 (South of Canniesburn Toll)	5431	Bus	S	I	453	186	-267	-59%	15.0
Bothwell Street (for M8 West)	5441	Bus	S	I	874	1113	239	27%	7.6
M8 at Harthill & B7066 at Newhouse	5451	Bus	S	I	281	90	-191	-68%	14.0
Motherwell)	5461	Bus	S	I	162	970	808	499%	34.0
Total - Rail					14238	13007	-1231	-9%	10.5
Total - Bus					5894	8284	2390	41%	28.4
Total					20132	21292	1159	6%	8.1



Table D.9 : Inverness Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
Beauly to Inverness	6011	Rail	E	I	96	68	-28	-29%	3.1
Nairn to Inverness	6021	Rail	W	I	77	150	73	94%	6.8
Carrbridge to Inverness	6031	Rail	W	I	74	82	8	11%	0.9
A862 (West of Mid St/High St)	6041	Bus	E	I	6	0	-6	-100%	3.5
A9 North (Kessock Bridge)	6051	Bus	S	I	204	340	136	66%	8.2
A96 (West of Inverness Retail Park)	6061	Bus	W	I	275	278	3	1%	0.2
B9006 (Over A9)	6071	Bus	W	I	177	85	-92	-52%	8.0
A9 South (South of Raigmore Interchange)	6081	Bus	N	I	37	41	4	12%	0.7
A82 (South of General Booth Rd)	6091	Bus	E	I	13	43	30	241%	5.8
Total - Rail					247	300	53	21%	3.2
Total - Bus					712	787	75	11%	2.8
Total					959	1087	128	13%	4.0

Table D.10 : Inverness Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
Beauly to Inverness	6012	Rail	W	O	25	35	9	37%	1.7
Nairn to Inverness	6022	Rail	E	O	50	62	12	24%	1.6
Carrbridge to Inverness	6032	Rail	E	O	54	134	80	148%	8.3
A862 (West of Mid St/High St)	6042	Bus	W	O	3	0	-3	-100%	2.5
A9 North (Kessock Bridge)	6052	Bus	N	O	107	73	-34	-32%	3.6
A96 (West of Inverness Retail Park)	6062	Bus	E	O	111	44	-67	-60%	7.6
B9006 (Over A9)	6072	Bus	E	O	77	50	-28	-36%	3.5
A9 South (South of Raigmore Interchange)	6082	Bus	S	O	54	24	-30	-56%	4.9
A82 (South of General Booth Rd)	6092	Bus	W	O	5	21	17	374%	4.7
Total - Rail					130	231	101	78%	7.6
Total - Bus					357	212	-145	-41%	8.6
Total					486	443	-44	-9%	2.0



Table D.11 : Lower Forth Crossing Inbound Passengers (excludes Non ScotRail Services)

NORTHBOUND Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed	Modelled			
Forth Bridge	1071	Rail	N	328	572	244	74%	11.5
A90 (at South Queensferry)	4162	Bus	N	81	63	-18	-22%	2.1
Total				409	634	225	55%	9.9

Table D.12 : Lower Forth Crossing Outbound Passengers (excludes Non ScotRail Services)

SOUTHBOUND Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed	Modelled			
Forth Bridge	1072	Rail	S	1821	2004	183	10%	4.2
A90 (at South Queensferry)	4161	Bus	S	403	313	-90	-22%	4.8
Total				2224	2317	93	4%	1.9

Table D.13 : Lower Tay Crossing Inbound Passengers (excludes Non ScotRail Services)

NORTHBOUND Station/Road Name	ID	Mode	Dir	Observed	Modelled	Diff	% Diff	GEH
				Hour	Hour			
Tay Bridge	1111	Rail	N	151	409	258	171%	15.4
A92 South (Tay Bridge)	7091	Bus	N	489	345	-144	-29%	7.1
Total				640	754	114	18%	4.3

Table D.14 : Lower Tay Crossing Outbound Passengers (excludes Non ScotRail Services)

SOUTHBOUND Station/Road Name	ID	Mode	Dir	Observed	Modelled	Diff	% Diff	GEH
				Hour	Hour			
Tay Bridge	1112	Rail	S	157	190	32	21%	2.5
A92 South (Tay Bridge)	7092	Bus	S	107	99	-8	-8%	0.8
Total				264	288	24	9%	1.4



Table D.15 : Other Key Links Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
West of Bishopbriggs	1011	Rail	E	0	1238	986	-252	-20%	7.5
Btw. Falkirk High and Polmont	1021	Rail	E	0	1192	886	-306	-26%	9.5
Btw. Larbert and Stirling	1031	Rail	N	0	479	572	93	19%	4.0
Btw. Livingston and Uphall	1041	Rail	E	0	578	1043	464	80%	16.3
East of Edinburgh Waverley	1051	Rail	E	0	30	262	232	765%	19.2
West of Edinburgh Haymarket	1061	Rail	E	0	4720	5495	775	16%	10.8
Forth Bridge	1071	Rail	N	0	328	572	244	74%	11.5
Btw. Inverkeithing and Rosyth	1081	Rail	E	0	598	782	184	31%	7.0
Btw. Inverkeithing and Dalgety Bay	1091	Rail	E	0	154	495	341	222%	18.9
Btw. Markinch and Ladybank	1101	Rail	N	0	215	505	290	135%	15.3
Tay Bridge	1111	Rail	N	0	151	409	258	171%	15.4
Btw. Dundee and Broughty Ferry	1121	Rail	E	0	152	341	189	124%	12.0
Btw. Aberdeen and Portlethen	1131	Rail	N	0	351	347	-4	-1%	0.2
Btw. Port Glasgow and Woodhall	1141	Rail	E	0	795	804	9	1%	0.3
Btw. Ayr and Newton-On-Ayr	1151	Rail	N	0	338	535	198	59%	9.5
Btw. Dalry and Kilwinning	1161	Rail	N	0	1402	2157	755	54%	17.9
Btw. Paisley and Hillington West	1171	Rail	E	0	3352	3042	-309	-9%	5.5
Between Partick and Hyndland	1181	Rail	E	0	3148	3094	-55	-2%	1.0
Btw. High Street and Bellgrove	1191	Rail	E	0	317	958	641	202%	25.4
Btw. Argyle Street and Bridgeton	1201	Rail	E	0	451	676	224	50%	9.5
Btw. Crosshill and Mount Florida	1211	Rail	N	0	1325	1264	-61	-5%	1.7
Btw. Maxwell Park and Pollokshields West	1221	Rail	N	0	404	381	-23	-6%	1.2
Btw. Crossmyloof and Pollokshaws West	1231	Rail	N	0	1514	1554	40	3%	1.0
Btw. Hamilton West and Hamilton Central	1241	Rail	N	0	448	550	102	23%	4.6
Btw. Shotts and Fauldhouse	1251	Rail	E	0	47	354	307	650%	21.7
Btw. Coatdyke and Airdrie	1261	Rail	E	0	63	666	603	959%	31.6
Btw. Dumbarton East and Dumbarton Central	1271	Rail	E	0	999	1192	193	19%	5.8
Narirn to Forres	1281	Rail	E	0	38	60	23	61%	3.3
Kingussie to Aviemore	1291	Rail	N	0	29	87	58	200%	7.6
Ardlui to Crianlarich	1301	Rail	N	0	45	49	4	9%	0.6
Oban to Connel Ferry	1311	Rail	E	0	21	41	21	100%	3.7
Invergordon to Fearn	1321	Rail	N	0	10	26	16	168%	3.9
Lochluichart to Garve	1331	Rail	E	0	4	0	-4	-100%	2.7



Table D.16 : Other Key Links Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	AM	AM	Diff	% Diff	GEH
					Observed	Modelled			
West of Bishopbriggs	1012	Rail	W	0	2804	2313	-491	-18%	9.7
Btw. Falkirk High and Polmont	1022	Rail	W	0	1054	988	-66	-6%	2.1
Btw. Larbert and Stirling	1032	Rail	S	0	822	998	176	21%	5.8
Btw. Livingston and Uphall	1042	Rail	W	0	110	444	334	303%	20.1
East of Edinburgh Waverley	1052	Rail	W	0	845	816	-29	-3%	1.0
West of Edinburgh Haymarket	1062	Rail	W	0	1673	2336	663	40%	14.8
Forth Bridge	1072	Rail	S	0	1821	2004	183	10%	4.2
Btw. Inverkeithing and Rosyth	1082	Rail	W	0	126	212	86	69%	6.6
Btw. Inverkeithing and Dalgety Bay	1092	Rail	W	0	675	1143	468	69%	15.5
Btw. Markinch and Ladybank	1102	Rail	S	0	196	493	297	152%	16.0
Tay Bridge	1112	Rail	S	0	157	190	32	21%	2.5
Btw. Dundee and Broughty Ferry	1122	Rail	W	0	304	317	14	5%	0.8
Btw. Aberdeen and Portlethen	1132	Rail	S	0	128	119	-10	-7%	0.9
Btw. Port Glasgow and Woodhall	1142	Rail	W	0	281	557	277	99%	13.5
Btw. Ayr and Newton-On-Ayr	1152	Rail	S	0	221	417	195	88%	10.9
Btw. Dalry and Kilwinning	1162	Rail	S	0	303	1470	1168	386%	39.2
Btw. Paisley and Hillington West	1172	Rail	W	0	567	1094	526	93%	18.3
Btw. Partick and Hyndland	1182	Rail	W	0	854	1211	356	42%	11.1
Btw. High Street and Bellgrove	1192	Rail	W	0	1929	2052	124	6%	2.8
Btw. Argyle Street and Bridgeton	1202	Rail	W	0	2379	1879	-500	-21%	10.8
Btw. Crosshill and Mount Florida	1212	Rail	S	0	166	288	122	74%	8.1
Btw. Maxwell Park and Pollokshields West	1222	Rail	S	0	45	59	14	31%	2.0
Btw. Crossmyloof and Pollokshaws West	1232	Rail	S	0	229	379	151	66%	8.6
Btw. Hamilton West and Hamilton Central	1242	Rail	S	0	127	251	124	97%	9.0
Btw. Shotts and Fauldhouse	1252	Rail	W	0	50	297	247	499%	18.8
Btw. Coatdyke and Airdrie	1262	Rail	W	0	536	985	449	84%	16.3
Btw. Dumbarton East and Dumbarton Central	1272	Rail	W	0	220	293	72	33%	4.5
Forres to Nairn	1282	Rail	W	0	61	93	32	53%	3.7
Aviemore to Kingussie	1292	Rail	S	0	29	137	108	372%	11.8
Crianlarich to Ardlui	1302	Rail	S	0	79	54	-24	-31%	3.0
Connel Ferry to Oban	1312	Rail	W	0	0	18	18	#DIV/0!	5.9
Fearn to Invergordon	1322	Rail	S	0	39	31	-7	-19%	1.2
Garve to Lochluichart	1332	Rail	W	0	34	11	-22	-66%	4.7



Table D.17 : Central Scotland, East West Screenline Passengers (excludes Non ScotRail Services)

EASTBOUND Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed	Modelled			
				Hour	Hour			
East of Camelon Station	2011	Rail	E	479	584	105	22%	4.5
West of Falkirk High Station	2021	Rail	E	1027	723	-304	-30%	10.3
East of Shotts Station	1251	Rail	E	47	354	307	650%	21.7
East of Carstairs Junction	2041	Rail	E	30	26	-4	-15%	0.8
Total				1584	1687	103	6%	2.5

Table D.18 : Central Scotland, East West Screenline Passengers (excludes Non ScotRail Services)

WESTBOUND Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed	Modelled			
				Hour	Hour			
East of Camelon Station	2012	Rail	E	250	375	125	50%	7.0
West of Falkirk High Station	2022	Rail	E	1192	991	-201	-17%	6.1
East of Shotts Station	1252	Rail	E	50	297	247	499%	18.8
East of Carstairs Junction	2042	Rail	E	1	6	5	353%	2.5
Total				1493	1669	176	12%	4.4

Table D.19 : Central Scotland, Forth Screenline Passengers (excludes Non ScotRail Services)

NORTHBOUND Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed	Modelled			
				Hour	Hour			
Forth Bridge	1071	Rail	N	328	572	244	74%	11.5
North of Stirling Station	3021	Rail	N	218	331	113	52%	6.8
Total				546	902	356	65%	13.2



Table D.20 : Central Scotland, Forth Screenline Passengers (excludes Non ScotRail Services)

SOUTHBOUND				AM	AM			
Station/Road Name	ID	Mode	Dir	Observed	Modelled	Diff	% Diff	GEH
				Hour	Hour			
Forth Bridge	1072	Rail	S	1821	2004	183	10%	4.2
North of Stirling Station	3022	Rail	S	486	662	176	36%	7.3
Total				2307	2667	359	16%	7.2



D.2 IP Peak*Table D.21 : Aberdeen Cordon Inbound Passengers (excludes Non ScotRail Services)*

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
Aberdeen to Dyce	8011	Rail	S	I	105	93	-12	-11%	1.2
Portlethen to Aberdeen	1131	Rail	N	I	155	172	17	11%	1.3
A96 (at Greenburn Rd)	8031	Bus	E	I	45	73	28	63%	3.7
A947 (at Stonewood Terrace)	8041	Bus	S	I	9	31	22	243%	4.9
A90 North (by Denmore)	8051	Bus	S	I	58	100	43	74%	4.8
A90 South(North of Portlethen)	8061	Bus	N	I	85	75	-10	-11%	1.1
A93(West of Peterculter)	8081	Bus	E	I	6	35	28	443%	6.3
A944 (by Old Skene Rd)	8091	Bus	E	I	22	60	38	170%	5.9
Total - Rail					260	265	5	2%	0.3
Total - Bus					225	375	150	67%	8.6
Total					485	640	155	32%	6.5

Table D.22 : Aberdeen Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
Aberdeen to Dyce	8012	Rail	N	O	103	92	-10	-10%	1.1
Portlethen to Aberdeen	1132	Rail	S	O	188	132	-56	-30%	4.4
A96 (at Greenburn Rd)	8032	Bus	W	O	41	58	17	41%	2.4
A947 (at Stonewood Terrace)	8042	Bus	N	O	8	20	12	146%	3.1
A90 North (by Denmore)	8052	Bus	N	O	100	110	10	10%	1.0
A90 South(North of Portlethen)	8062	Bus	S	O	74	70	-4	-5%	0.5
A93(West of Peterculter)	8082	Bus	W	O	11	31	20	178%	4.3
A944 (by Old Skene Rd)	8092	Bus	W	O	23	59	36	154%	5.6
Total - Rail					290	224	-66	-23%	4.1
Total - Bus					257	348	91	35%	5.2
Total					547	572	25	4%	1.0



Table D.23 : Dundee Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
Invergowrie to Dundee	7011	Rail	E	I	131	128	-3	-2%	0.3
Leuchars to Dundee	1111	Rail	N	I	99	209	110	110%	8.8
Balmossie to Monifieth	7031	Rail	W	I	201	227	26	13%	1.8
A90 West	7041	Bus	E	I	58	76	18	32%	2.2
A923 (East of Birkhill)	7051	Bus	E	I	29	120	91	316%	10.6
A90 North (at Fintry)	7061	Bus	S	I	94	189	95	100%	8.0
A92 East (West of W Grange Rd Roundabout)	7071	Bus	W	I	39	33	-7	-17%	1.1
A930 (West of Grange Rd South)	7081	Bus	W	I	94	130	36	38%	3.4
A92 South (Tay Bridge)	7091	Bus	N	I	193	125	-68	-35%	5.4
Total - Rail					431	563	132	31%	5.9
Total - Bus					507	673	165	33%	6.8
Total					939	1236	298	32%	9.0

Table D.24 : Dundee Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
Invergowrie to Dundee	7012	Rail	W	O	141	117	-24	-17%	2.2
Leuchars to Dundee	1112	Rail	S	O	129	159	29	23%	2.5
Balmossie to Monifieth	7032	Rail	E	O	181	236	55	30%	3.8
A90 West	7042	Bus	W	O	93	54	-39	-42%	4.5
A923 (East of Birkhill)	7052	Bus	W	O	37	25	-12	-33%	2.2
A90 North (at Fintry)	7062	Bus	N	O	95	193	97	102%	8.1
Roundabout	7072	Bus	E	O	34	23	-11	-33%	2.1
A930 (West of Grange Rd South)	7082	Bus	E	O	70	60	-11	-15%	1.3
A92 South (Tay Bridge)	7092	Bus	S	O	156	82	-74	-47%	6.7
Total - Rail					452	511	60	13%	2.7
Total - Bus					486	437	-49	-10%	2.3
Total					937	948	11	1%	0.4



Table D.25 : Edinburgh Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
South Gyle to Dalmeny	4111	Rail	E	I	420	472	51	12%	2.4
West of Edinburgh Park	4121	Rail	E	I	782	862	80	10%	2.8
Wester Hailes to Curriehill	4131	Rail	E	I	38	125	87	229%	9.6
Brunstane to Newcraighall	4141	Rail	W	I	15	15	0	2%	0.1
West of Musselburgh	4151	Rail	W	I	57	96	38	67%	4.4
A90 (at South Queensferry)	4161	Bus	S	I	114	87	-27	-24%	2.7
A8 (West of Airport)	4171	Bus	E	I	233	226	-7	-3%	0.5
M8 (at Hermiston Gait Roundabout)	4181	Bus	E	I	2	1	-1	-66%	1.0
A71 (at Hermiston House Rd)	4191	Bus	E	I	55	128	73	131%	7.6
A702 (South of City Bypass)	4201	Bus	N	I	51	105	54	105%	6.1
A701 (South of B702 Junction)	4211	Bus	N	I	129	135	7	5%	0.6
Lasswade Road (South of City Bypass)	4221	Bus	N	I	46	78	32	71%	4.1
Gilmerton Road (South of City Bypass)	4241	Bus	W	I	111	197	85	77%	6.9
A7/A68 (South of Danderhall)	4251	Bus	W	I	148	199	51	34%	3.9
A1 (South of The Jewel)	4261	Bus	N	I	63	44	-19	-30%	2.6
Nevcraighall Road (by Clayknowes Cres)	4271	Bus	W	I	162	84	-78	-48%	7.0
A199 (West of B6415 Junction)	4281	Bus	W	I	356	478	122	34%	6.0
Total - Rail					1312	1570	257	20%	6.8
Total - Bus					1470	1761	292	20%	7.3
Total					2782	3331	549	20%	9.9



Table D.26 : Edinburgh Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
South Gyle to Dalmeny	4112	Rail	E	O	367	518	151	41%	7.2
West of Edinburgh Park	4122	Rail	E	O	725	815	90	12%	3.2
Wester Hailes to Curriehill	4132	Rail	E	O	42	103	61	145%	7.2
Brunstane to Newcraighall	4142	Rail	W	O	30	10	-20	-65%	4.3
West of Musselburgh	4152	Rail	W	O	72	107	35	49%	3.7
A90 (at South Queensferry)	4162	Bus	S	O	114	53	-62	-54%	6.8
A8 (West of Airport)	4172	Bus	E	O	204	191	-13	-6%	0.9
M8 (at Hermiston Gait Roundabout)	4182	Bus	E	O	0	0	0	#DIV/0!	0.9
A71 (at Hermiston House Rd)	4192	Bus	E	O	94	126	32	34%	3.0
A702 (South of City Bypass)	4202	Bus	N	O	54	35	-19	-35%	2.9
A701 (South of B702 Junction)	4212	Bus	N	O	154	161	7	5%	0.6
Lasswade Road (South of City Bypass)	4222	Bus	N	O	52	77	25	48%	3.1
Gilmerton Road (South of City Bypass)	4242	Bus	W	O	121	127	6	5%	0.6
A7/A68 (South of Danderhall)	4252	Bus	W	O	154	176	23	15%	1.8
A1 (South of The Jewel)	4262	Bus	N	O	71	31	-40	-56%	5.6
Nevcraighall Road (by Clayknowes Cres)	4272	Bus	W	O	110	116	6	5%	0.6
A199 (West of B6415 Junction)	4282	Bus	W	O	390	416	26	7%	1.3
Total - Rail					1236	1554	318	26%	8.5
Total - Bus					1517	1508	-9	-1%	0.2
Total					2753	3062	309	11%	5.7



Table D.27 : Glasgow Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
West of Bishopbriggs	1012	Rail	W	I	817	620	-197	-24%	7.4
Springburn to Stepps	5121	Rail	W	I	54	27	-27	-50%	4.2
Easterhouse to Blairhill	5131	Rail	W	I	286	425	140	49%	7.4
Baillieston to Bargeddie	5141	Rail	W	I	49	20	-29	-58%	4.9
Cambuslang to Newton	5151	Rail	W	I	409	429	20	5%	1.0
Kirkhill to Newton	5161	Rail	W	I	12	7	-6	-47%	1.9
Giffnock to Clarkston	5171	Rail	N	I	165	81	-83	-51%	7.5
Muirhead to Williamwood	5181	Rail	N	I	99	45	-54	-55%	6.4
Kennishead to Priesthill & Darnley	5191	Rail	E	I	97	272	175	182%	12.9
Mossspark to Crookston	5201	Rail	E	I	65	16	-49	-75%	7.7
Hillington East to Hillington West	5211	Rail	E	I	857	923	67	8%	2.2
Garscadden to Yorker	5221	Rail	E	I	190	224	34	18%	2.3
Drumchapel to Drumry	5231	Rail	E	I	233	203	-30	-13%	2.0
Westerton to Bearsden	5241	Rail	S	I	121	271	150	124%	10.7
A803 (North of Colston Rd)	5251	Bus	S	I	185	211	26	14%	1.9
B757 (South of Lenzie)	5261	Bus	S	I	90	159	68	76%	6.1
A80 (East of Crowwood Rbt)	5271	Bus	W	I	232	138	-94	-40%	6.9
A89 (West of Bargeddie)	5281	Bus	W	I	11	58	47	420%	8.0
A74 (North of B7001 Junction)	5291	Bus	W	I	96	182	86	89%	7.3
A724 (Manse Brae)	5311	Bus	W	I	54	108	53	98%	5.9
A749 (at Neilston Southbound offslip)	5321	Bus	N	I	142	199	57	40%	4.4
A726 (West of Phillipshill)	5331	Bus	N	I	86	178	92	108%	8.0
B767 (North of Waterfoot)	5341	Bus	N	I	17	22	5	30%	1.1
A77 (Ayr Rd at the Loaning)	5351	Bus	N	I	117	110	-7	-6%	0.7
A736 (at Salterland Rd Junction)	5361	Bus	N	I	20	78	58	290%	8.3
A761 (Oldshaw Rd, Barshaw)	5371	Bus	E	I	182	168	-13	-7%	1.0
A741 (at Arkleston Rd)	5381	Bus	E	I	258	147	-111	-43%	7.8
A8 (Inchinnan Rd at Argyll Avenue)	5391	Bus	E	I	94	120	25	27%	2.4
A814 (at Dock Street, Yoker)	5401	Bus	E	I	162	73	-88	-55%	8.1
A82 (East of Drumry Rail Station)	5411	Bus	E	I	146	219	73	50%	5.4
A739 (South of Canniesburn Toll)	5421	Bus	S	I	34	0	-34	-100%	8.3
A81 (South of Canniesburn Toll)	5431	Bus	S	I	173	52	-121	-70%	11.4
Bothwell Street (for M8 West)	5441	Bus	S	I	274	134	-140	-51%	9.8
M8 at Harthill & B7066 at Newhouse	5451	Bus	S	I	130	15	-116	-89%	13.6
Motherwell)	5461	Bus	S	I	70	461	391	562%	24.0
Total - Rail					3454	3565	111	3%	1.9
Total - Bus					2572	2829	257	10%	5.0
Total					6026	6394	368	6%	4.7



Table D.28 : Glasgow Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
West of Bishopbriggs	1011	Rail	E	O	857	697	-160	-19%	5.8
Springburn to Stepps	5122	Rail	E	O	56	41	-15	-27%	2.1
Easterhouse to Blairhill	5132	Rail	E	O	175	365	189	108%	11.5
Baillieston to Bargeddie	5142	Rail	E	O	38	18	-20	-53%	3.8
Cambuslang to Newton	5152	Rail	E	O	333	431	98	29%	5.0
Kirkhill to Newton	5162	Rail	E	O	12	8	-4	-35%	1.3
Giffnock to Clarkston	5172	Rail	S	O	152	78	-74	-49%	6.9
Muirhead to Williamwood	5182	Rail	S	O	73	54	-20	-27%	2.5
Kennishead to Priesthill & Darnley	5192	Rail	W	O	158	238	80	51%	5.7
Mossspark to Crookston	5202	Rail	W	O	52	32	-20	-39%	3.1
Hillington East to Hillington West	5212	Rail	W	O	487	872	385	79%	14.8
Garscadden to Yorker	5222	Rail	W	O	184	280	97	53%	6.4
Drumchapel to Drumry	5232	Rail	W	O	190	169	-21	-11%	1.6
Westerton to Bearsden	5242	Rail	N	O	135	243	108	80%	7.9
A803 (North of Colston Rd)	5252	Bus	N	O	196	173	-23	-12%	1.7
B757 (South of Lenzie)	5262	Bus	N	O	88	186	98	112%	8.4
A80 (East of Crowwood Rbt)	5272	Bus	E	O	188	169	-19	-10%	1.4
A89 (West of Bargeddie)	5282	Bus	E	O	31	48	17	54%	2.7
A74 (North of B7001 Junction)	5292	Bus	E	O	79	163	84	106%	7.6
A724 (Manse Brae)	5312	Bus	E	O	53	66	13	25%	1.7
A749 (at Neilston Southbound offslip)	5322	Bus	S	O	73	122	50	68%	5.0
A726 (West of Phillipshill)	5332	Bus	S	O	80	156	76	95%	7.0
B767 (North of Waterfoot)	5342	Bus	S	O	18	27	9	53%	2.0
A77 (Ayr Rd at the Loaning)	5352	Bus	S	O	105	69	-36	-34%	3.9
A736 (at Salterland Rd Junction)	5362	Bus	S	O	22	73	52	240%	7.5
A761 (Oldshaw Rd, Barshaw)	5372	Bus	W	O	256	202	-54	-21%	3.6
A741 (at Arkleston Rd)	5382	Bus	W	O	259	168	-91	-35%	6.2
A8 (Inchinnan Rd at Argyll Avenue)	5392	Bus	W	O	103	111	8	8%	0.8
A814 (at Dock Street, Yoker)	5402	Bus	W	O	154	113	-42	-27%	3.6
A82 (East of Drumry Rail Station)	5412	Bus	W	O	118	161	43	37%	3.7
A739 (South of Canniesburn Toll)	5422	Bus	N	O	39	0	-39	-100%	8.9
A81 (South of Canniesburn Toll)	5432	Bus	N	O	186	30	-156	-84%	15.0
Bothwell Street (for M8 West)	5442	Bus	N	O	168	162	-6	-4%	0.5
M8 at Harthill & B7066 at Newhouse)	5452	Bus	N	O	102	23	-79	-78%	10.0
Motherwell)	5462	Bus	N	O	46	267	220	475%	17.6
Total - Rail					2902	3525	623	21%	11.0
Total - Bus					2364	2490	126	5%	2.5
Total					5266	6015	749	14%	10.0



Table D.29 : Inverness Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
Beauly to Inverness	6011	Rail	E	I	12	33	21	171%	4.4
Nairn to Inverness	6021	Rail	W	I	53	79	26	49%	3.2
Carrbridge to Inverness	6031	Rail	W	I	65	91	26	40%	3.0
A862 (West of Mid St/High St)	6041	Bus	E	I	3	0	-3	-100%	2.6
A9 North (Kessock Bridge)	6051	Bus	S	I	77	141	64	84%	6.2
A96 (West of Inverness Retail Park)	6061	Bus	W	I	142	95	-46	-33%	4.2
B9006 (Over A9)	6071	Bus	W	I	54	41	-13	-25%	1.9
A9 South (South of Raigmore Interchange)	6081	Bus	N	I	35	19	-16	-45%	3.0
A82 (South of General Booth Rd)	6091	Bus	E	I	8	21	13	165%	3.4
Total - Rail					131	204	73	56%	5.7
Total - Bus					319	318	-1	0%	0.1
Total					450	522	72	16%	3.3

Table D.30 : Inverness Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
Beauly to Inverness	6012	Rail	W	O	32	27	-5	-15%	0.9
Nairn to Inverness	6022	Rail	E	O	41	57	16	38%	2.3
Carrbridge to Inverness	6032	Rail	E	O	57	94	37	65%	4.3
A862 (West of Mid St/High St)	6042	Bus	W	O	3	0	-3	-100%	2.4
A9 North (Kessock Bridge)	6052	Bus	N	O	111	111	0	0%	0.0
A96 (West of Inverness Retail Park)	6062	Bus	E	O	103	53	-50	-48%	5.7
B9006 (Over A9)	6072	Bus	E	O	67	64	-4	-5%	0.5
A9 South (South of Raigmore Interchange)	6082	Bus	S	O	36	21	-15	-42%	2.9
A82 (South of General Booth Rd)	6092	Bus	W	O	15	20	5	30%	1.1
Total - Rail					131	179	48	37%	3.9
Total - Bus					336	268	-68	-20%	3.9
Total					466	447	-20	-4%	0.9



Table D.31 : Lower Forth Crossing Inbound Passengers (excludes Non ScotRail Services)

NORTHBOUND				IP	IP			
Station/Road Name	ID	Mode	Dir	Observed	Modelled	Diff	% Diff	GEH
				Hour	Hour			
Forth Bridge	1071	Rail	N	311	507	196	63%	9.7
A90 (at South Queensferry)	4162	Bus	N	114	53	-62	-54%	6.8
Total				426	560	134	31%	6.0

Table D.32 : Lower Forth Crossing Outbound Passengers (excludes Non ScotRail Services)

SOUTHBOUND				IP	IP			
Station/Road Name	ID	Mode	Dir	Observed	Modelled	Diff	% Diff	GEH
				Hour	Hour			
Forth Bridge	1072	Rail	S	424	462	38	9%	1.8
A90 (at South Queensferry)	4161	Bus	S	114	87	-27	-24%	2.7
Total				538	549	11	2%	0.5

Table D.33 : Lower Tay Crossing Inbound Passengers (excludes Non ScotRail Services)

NORTHBOUND				Observed	Modelled			
Station/Road Name	ID	Mode	Dir	Hour	Hour	Diff	% Diff	GEH
Tay Bridge	1111	Rail	N	99	209	110	110%	8.8
A92 South (Tay Bridge)	7091	Bus	N	262	125	-138	-52%	9.9
Total				362	334	-28	-8%	1.5

Table D.34 : Lower Tay Crossing Outbound Passengers (excludes Non ScotRail Services)

SOUTHBOUND				Observed	Modelled			
Station/Road Name	ID	Mode	Dir	Hour	Hour	Diff	% Diff	GEH
Tay Bridge	1112	Rail	S	129	159	29	23%	2.5
A92 South (Tay Bridge)	7092	Bus	S	125	82	-42	-34%	4.2
Total				254	241	-13	-5%	0.8



Table D.35 : Other Key Links Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
West of Bishopbriggs	1011	Rail	E		857	697	-160	-19%	5.8
Btw. Falkirk High and Polmont	1021	Rail	E		496	427	-70	-14%	3.3
Btw. Larbert and Stirling	1031	Rail	N		310	356	46	15%	2.5
Btw. Livingston and Uphall	1041	Rail	E		110	287	177	160%	12.5
East of Edinburgh Waverley	1051	Rail	E		121	137	16	14%	1.4
West of Edinburgh Haymarket	1061	Rail	E		1240	1419	179	14%	4.9
Forth Bridge	1071	Rail	N		311	507	196	63%	9.7
Btw. Inverkeithing and Rosyth	1081	Rail	E		99	157	58	58%	5.1
Btw. Inverkeithing and Dalgety Bay	1091	Rail	E		112	400	288	258%	18.0
Btw. Markinch and Ladybank	1101	Rail	N		136	322	186	137%	12.3
Tay Bridge	1111	Rail	N		99	209	110	110%	8.8
Btw. Dundee and Broughty Ferry	1121	Rail	E		181	236	55	30%	3.8
Btw. Aberdeen and Portlethen	1131	Rail	N		155	172	17	11%	1.3
Btw. Port Glasgow and Woodhall	1141	Rail	E		276	354	78	28%	4.4
Btw. Ayr and Newton-On-Ayr	1151	Rail	N		147	252	105	72%	7.4
Btw. Dalry and Kilwinning	1161	Rail	N		326	761	435	133%	18.6
Btw. Paisley and Hillington West	1171	Rail	E		853	919	67	8%	2.2
Between Partick and Hyndland	1181	Rail	E		676	1041	365	54%	12.5
Btw. High Street and Bellgrove	1191	Rail	E		302	545	243	80%	11.8
Btw. Argyle Street and Bridgeton	1201	Rail	E		385	455	70	18%	3.4
Btw. Crosshill and Mount Florida	1211	Rail	N		190	212	22	11%	1.5
Btw. Maxwell Park and Pollokshields West	1221	Rail	N		57	50	-7	-13%	1.0
Btw. Crossmyloof and Pollokshaws West	1231	Rail	N		279	390	111	40%	6.1
Btw. Hamilton West and Hamilton Central	1241	Rail	N		132	177	45	34%	3.7
Btw. Shotts and Fauldhouse	1251	Rail	E		24	109	84	344%	10.3
Btw. Coatdyke and Airdrie	1261	Rail	E		90	325	236	263%	16.4
Btw. Dumbarton East and Dumbarton Central	1271	Rail	E		227	298	71	31%	4.4
Nairn to Forres	1281	Rail	E		41	47	6	15%	0.9
Kingussie to Aviemore	1291	Rail	N		38	95	57	150%	7.0
Ardlui to Crianlarich	1301	Rail	N		35	56	21	59%	3.1
Oban to Connel Ferry	1311	Rail	E		12	20	8	63%	1.9
Invergordon to Fearn	1321	Rail	N		5	11	5	101%	1.9
Lochluichart to Garve	1331	Rail	E		4	5	1	26%	0.5



Table D.36 : Other Key Links Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	In/Out	IP	IP	Diff	% Diff	GEH
					Observed Hour	Modelled Hour			
West of Bishopbriggs	1012	Rail	W		817	620	-197	-24%	7.4
Btw. Falkirk High and Polmont	1022	Rail	W		460	351	-108	-24%	5.4
Btw. Larbert and Stirling	1032	Rail	S		333	370	36	11%	1.9
Btw. Livingston and Uphall	1042	Rail	W		102	271	169	166%	12.4
East of Edinburgh Waverley	1052	Rail	W		80	152	71	89%	6.6
West of Edinburgh Haymarket	1062	Rail	W		1133	1390	257	23%	7.2
Forth Bridge	1072	Rail	S		424	462	38	9%	1.8
Btw. Inverkeithing and Rosyth	1082	Rail	W		152	191	39	25%	2.9
Btw. Inverkeithing and Dalgety Bay	1092	Rail	W		257	377	120	47%	6.7
Btw. Markinch and Ladybank	1102	Rail	S		227	301	74	33%	4.6
Tay Bridge	1112	Rail	S		129	159	29	23%	2.5
Btw. Dundee and Broughty Ferry	1122	Rail	W		201	227	25	13%	1.7
Btw. Aberdeen and Portlethen	1132	Rail	S		188	132	-56	-30%	4.4
Btw. Port Glasgow and Woodhall	1142	Rail	W		219	295	76	35%	4.7
Btw. Ayr and Newton-On-Ayr	1152	Rail	S		162	195	33	20%	2.5
Btw. Dalry and Kilwinning	1162	Rail	S		423	767	344	81%	14.1
Btw. Paisley and Hillington West	1172	Rail	W		492	876	383	78%	14.7
Btw. Partick and Hyndland	1182	Rail	W		619	978	360	58%	12.7
Btw. High Street and Bellgrove	1192	Rail	W		385	525	140	36%	6.5
Btw. Argyle Street and Bridgeton	1202	Rail	W		434	419	-15	-4%	0.7
Btw. Crosshill and Mount Florida	1212	Rail	S		216	278	62	29%	3.9
Btw. Maxwell Park and Pollokshields West	1222	Rail	S		61	56	-6	-9%	0.7
Btw. Crossmyloof and Pollokshaws West	1232	Rail	S		326	323	-3	-1%	0.2
Btw. Hamilton West and Hamilton Central	1242	Rail	S		131	199	68	52%	5.3
Btw. Shotts and Fauldhouse	1252	Rail	W		23	85	62	270%	8.5
Btw. Coatdyke and Airdrie	1262	Rail	W		121	320	199	164%	13.4
Btw. Dumbarton East and Dumbarton Central	1272	Rail	W		188	382	195	104%	11.5
Forres to Nairn	1282	Rail	W		30	73	43	144%	6.0
Aviemore to Kingussie	1292	Rail	S		72	103	31	43%	3.3
Crianlarich to Ardlui	1302	Rail	S		24	46	21	88%	3.6
Connel Ferry to Oban	1312	Rail	W		26	24	-2	-6%	0.3
Fearn to Invergordon	1322	Rail	S		10	17	7	77%	2.0
Garve to Lochluichart	1332	Rail	W		3	8	5	189%	2.2



Table D.37 : Central Scotland, East West Screenline Passengers (excludes Non ScotRail Services)

EASTBOUND				IP	IP			
Station/Road Name	ID	Mode	Dir	Observed Hour	Modelled Hour	Diff	% Diff	GEH
East of Camelon Station	2011	Rail	E	103	194	90	87%	7.4
West of Falkirk High Station	2021	Rail	E	520	375	-145	-28%	6.8
East of Shotts Station	1251	Rail	E	24	109	84	344%	10.3
East of Carstairs Junction	2041	Rail	E	2	10	7	313%	3.0
Total				650	687	37	6%	1.4

Table D.38 : Central Scotland, East West Screenline Passengers (excludes Non ScotRail Services)

WESTBOUND				IP	IP			
Station/Road Name	ID	Mode	Dir	Observed Hour	Modelled Hour	Diff	% Diff	GEH
East of Camelon Station	2012	Rail	E	98	151	53	54%	4.8
West of Falkirk High Station	2022	Rail	E	468	326	-142	-30%	7.1
East of Shotts Station	1252	Rail	E	23	85	62	270%	8.5
East of Carstairs Junction	2042	Rail	E	1	0	-1	-100%	1.4
Total				590	563	-27	-5%	1.1

Table D.39 : Central Scotland, Forth Screenline Passengers (excludes Non ScotRail Services)

NORTHBOUND				IP	IP			
Station/Road Name	ID	Mode	Dir	Observed Hour	Modelled Hour	Diff	% Diff	GEH
Forth Bridge	1071	Rail	N	311	507	196	63%	9.7
North of Stirling Station	3021	Rail	N	201	245	44	22%	2.9
Total				513	752	240	47%	9.5



Table D.40 : Central Scotland, Forth Screenline Passengers (excludes Non ScotRail Services)

SOUTHBOUND				IP	IP			
Station/Road Name	ID	Mode	Dir	Observed Hour	Modelled Hour	Diff	% Diff	GEH
Forth Bridge	1072	Rail	S	424	462	38	9%	1.8
North of Stirling Station	3022	Rail	S	216	257	41	19%	2.7
Total				641	720	79	12%	3.0



D.3 PM Peak*Table D.41 : Aberdeen Cordon Inbound Passengers (excludes Non ScotRail Services)*

INBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Aberdeen to Dyce	8011	Rail	S	127	180	54	42%	4.3
Portlethen to Aberdeen	1131	Rail	N	218	198	-19	-9%	1.3
A96 (at Greenburn Rd)	8031	Bus	E	70	50	-21	-29%	2.7
A947 (at Stoneywood Terrace)	8041	Bus	S	9	43	34	386%	6.7
A90 North (by Denmore)	8051	Bus	S	87	121	34	39%	3.3
A90 South(North of Portlethen)	8061	Bus	N	118	112	-6	-5%	0.5
A93(West of Peterculter)	8081	Bus	E	12	26	14	120%	3.2
A944 (by Old Skene Rd)	8091	Bus	E	43	84	41	94%	5.1
Total - Rail				345	379	34	10%	1.8
Total - Bus				339	436	97	28%	4.9
Total				684	814	131	19%	4.8

Table D.42 : Aberdeen Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Aberdeen to Dyce	8012	Rail	N	263	274	11	4%	0.6
Portlethen to Aberdeen	1132	Rail	S	394	447	52	13%	2.5
A96 (at Greenburn Rd)	8032	Bus	W	144	183	39	27%	3.0
A947 (at Stoneywood Terrace)	8042	Bus	N	17	64	47	281%	7.4
A90 North (by Denmore)	8052	Bus	N	356	394	38	11%	2.0
A90 South(North of Portlethen)	8062	Bus	S	131	179	48	37%	3.9
A93(West of Peterculter)	8082	Bus	W	78	99	21	27%	2.2
A944 (by Old Skene Rd)	8092	Bus	W	97	167	70	72%	6.1
Total - Rail				658	720	63	10%	2.4
Total - Bus				823	1087	263	32%	8.5
Total				1481	1807	326	22%	8.0



Table D.43 : Dundee Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Invergowrie to Dundee	7011	Rail	E	202	262	60	30%	3.9
Leuchars to Dundee	1111	Rail	N	167	233	66	39%	4.7
Balmossie to Monifieth	7031	Rail	W	230	350	120	52%	7.1
A90 West	7041	Bus	E	74	145	71	96%	6.8
A923 (East of Birkhill)	7051	Bus	E	9	44	35	389%	6.8
A90 North (at Fintry)	7061	Bus	S	65	162	97	150%	9.1
A92 East (West of W Grange Rd Roundabout)	7071	Bus	W	32	69	38	120%	5.3
A930 (West of Grange Rd South)	7081	Bus	W	97	94	-3	-3%	0.3
A92 South (Tay Bridge)	7091	Bus	N	99	104	5	5%	0.5
Total - Rail				599	845	246	41%	9.2
Total - Bus				375	619	243	65%	10.9
Total				974	1463	489	50%	14.0

Table D.44 : Dundee Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Invergowrie to Dundee	7012	Rail	W	117	237	119	102%	9.0
Leuchars to Dundee	1112	Rail	S	250	374	124	49%	7.0
Balmossie to Monifieth	7032	Rail	E	344	393	50	14%	2.6
A90 West	7042	Bus	W	140	149	9	7%	0.8
A923 (East of Birkhill)	7052	Bus	W	102	78	-24	-23%	2.5
A90 North (at Fintry)	7062	Bus	N	184	311	128	70%	8.1
Roundabout)	7072	Bus	E	92	59	-33	-36%	3.8
A930 (West of Grange Rd South)	7082	Bus	E	272	178	-94	-35%	6.3
A92 South (Tay Bridge)	7092	Bus	S	400	273	-127	-32%	6.9
Total - Rail				711	1004	293	41%	10.0
Total - Bus				1188	1048	-140	-12%	4.2
Total				1900	2052	153	8%	3.4



Table D.45 : Edinburgh Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
South Gyle to Dalmeny	4111	Rail	E	471	530	59	13%	2.6
West of Edinburgh Park	4121	Rail	E	1279	1324	45	4%	1.3
Wester Hailes to Curriehill	4131	Rail	E	40	246	206	515%	17.2
Brunstane to Newcraighall	4141	Rail	W	5	21	16	330%	4.5
West of Musselburgh	4151	Rail	W	33	182	149	458%	14.4
A90 (at South Queensferry)	4161	Bus	S	95	109	14	15%	1.4
A8 (West of Airport)	4171	Bus	E	499	225	-273	-55%	14.4
M8 (at Hermiston Gait Roundabout)	4181	Bus	E	18	0	-18	-100%	6.0
A71 (at Hermiston House Rd)	4191	Bus	E	209	375	167	80%	9.7
A702 (South of City Bypass)	4201	Bus	N	35	114	79	225%	9.1
A701 (South of B702 Junction)	4211	Bus	N	339	203	-137	-40%	8.3
Lasswade Road (South of City Bypass)	4221	Bus	N	67	56	-10	-15%	1.3
Gilmerton Road (South of City Bypass)	4241	Bus	W	231	185	-47	-20%	3.2
A7/A68 (South of Danderhall)	4251	Bus	W	176	321	145	83%	9.2
A1 (South of The Jewel)	4261	Bus	N	109	52	-57	-52%	6.4
Nevcraighall Road (by Clayknowes Cres)	4271	Bus	W	179	121	-58	-33%	4.8
A199 (West of B6415 Junction)	4281	Bus	W	578	645	67	12%	2.7
Total - Rail				1827	2302	475	26%	10.5
Total - Bus				2534	2406	-128	-5%	2.6
Total				4362	4709	347	8%	5.2



Table D.46 : Edinburgh Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
South Gyle to Dalmeny	4112	Rail	E	1677	2055	378	23%	8.8
West of Edinburgh Park	4122	Rail	E	2793	2753	-39	-1%	0.7
Wester Hailes to Curriehill	4132	Rail	E	227	494	266	117%	14.0
Brunstane to Newcraighall	4142	Rail	W	106	84	-22	-21%	2.3
West of Musselburgh	4152	Rail	W	559	703	144	26%	5.7
A90 (at South Queensferry)	4162	Bus	S	329	232	-97	-30%	5.8
A8 (West of Airport)	4172	Bus	E	801	671	-130	-16%	4.8
M8 (at Hermiston Gait Roundabout)	4182	Bus	E	0	103	103	#DIV/0!	14.4
A71 (at Hermiston House Rd)	4192	Bus	E	302	458	156	52%	8.0
A702 (South of City Bypass)	4202	Bus	N	89	34	-55	-62%	7.1
A701 (South of B702 Junction)	4212	Bus	N	778	447	-331	-43%	13.4
Lasswade Road (South of City Bypass)	4222	Bus	N	227	221	-6	-3%	0.4
Gilmerton Road (South of City Bypass)	4242	Bus	W	581	465	-116	-20%	5.1
A7/A68 (South of Danderhall)	4252	Bus	W	627	606	-21	-3%	0.9
A1 (South of The Jewel)	4262	Bus	N	382	167	-215	-56%	13.0
Nevcraighall Road (by Clayknowes Cres)	4272	Bus	W	167	171	3	2%	0.3
A199 (West of B6415 Junction)	4282	Bus	W	832	1277	445	54%	13.7
Total - Rail				5363	6090	728	14%	9.6
Total - Bus				5116	4852	-264	-5%	3.7
Total				10478	10942	464	4%	4.5



Table D.47 : Glasgow Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
West of Bishopbriggs	1012	Rail	W	1395	863	-532	-38%	15.8
Springburn to Steps	5121	Rail	W	50	46	-4	-8%	0.6
Easterhouse to Blairhill	5131	Rail	W	252	951	699	278%	28.5
Baillieston to Bargeddie	5141	Rail	W	40	26	-14	-34%	2.4
Cambuslang to Newton	5151	Rail	W	473	873	400	85%	15.4
Kirkhill to Newton	5161	Rail	W	15	35	20	139%	4.1
Giffnock to Clarkston	5171	Rail	N	186	138	-48	-26%	3.8
Muirhead to Williamwood	5181	Rail	N	85	43	-41	-49%	5.2
Kennishead to Priesthill & Darnley	5191	Rail	E	155	274	120	77%	8.2
Mosspark to Crookston	5201	Rail	E	75	47	-28	-38%	3.6
Hillington East to Hillington West	5211	Rail	E	892	1230	338	38%	10.4
Garscadden to Yorker	5221	Rail	E	195	351	156	80%	9.5
Drumchapel to Drumry	5231	Rail	E	280	428	148	53%	7.9
Westerton to Bearsden	5241	Rail	S	137	226	89	65%	6.6
A803 (North of Colston Rd)	5251	Bus	S	245	340	95	39%	5.5
B757 (South of Lenzie)	5261	Bus	S	75	94	19	25%	2.1
A80 (East of Crowwood Rbt)	5271	Bus	W	248	114	-135	-54%	10.0
A89 (West of Bargeddie)	5281	Bus	W	33	45	11	34%	1.8
A74 (North of B7001 Junction)	5291	Bus	W	104	172	69	67%	5.9
A724 (Manse Brae)	5311	Bus	W	118	73	-44	-38%	4.5
offslip)	5321	Bus	N	235	177	-58	-25%	4.1
A726 (West of Phillipshill)	5331	Bus	N	185	208	23	13%	1.7
B767 (North of Waterfoot)	5341	Bus	N	14	18	5	36%	1.2
A77 (Ayr Rd at the Loaning)	5351	Bus	N	162	122	-40	-25%	3.3
A736 (at Salterland Rd Junction)	5361	Bus	N	30	22	-8	-27%	1.6
A761 (Oldshaw Rd, Barshaw)	5371	Bus	E	311	214	-98	-31%	6.0
A741 (at Arkleston Rd)	5381	Bus	E	551	239	-312	-57%	15.7
A8 (Inchinnan Rd at Argyll Avenue)	5391	Bus	E	242	60	-182	-75%	14.8
A814 (at Dock Street, Yoker)	5401	Bus	E	171	62	-109	-64%	10.1
A82 (East of Drumry Rail Station)	5411	Bus	E	196	268	72	36%	4.7
A739 (South of Canniesburn Toll)	5421	Bus	S	62	0	-62	-100%	11.1
A81 (South of Canniesburn Toll)	5431	Bus	S	264	52	-211	-80%	16.8
Bothwell Street (for M8 West)	5441	Bus	S	258	42	-216	-84%	17.7
M8 at Harthill & B7066 at Newhouse	5451	Bus	S	126	99	-27	-22%	2.6
Motherwell)	5461	Bus	S	35	172	137	391%	13.5
Total - Rail				4228	5531	1303	31%	18.7
Total - Bus				3664	2592	-1072	-29%	19.2
Total				7892	8123	231	3%	2.6



Table D.48 : Glasgow Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
West of Bishopbriggs	1011	Rail	E	2673	2163	-510	-19%	10.4
Springburn to Steps	5122	Rail	E	301	251	-50	-17%	3.0
Easterhouse to Blairhill	5132	Rail	E	895	1301	406	45%	12.2
Baillieston to Bargeddie	5142	Rail	E	184	89	-95	-51%	8.1
Cambuslang to Newton	5152	Rail	E	1775	2172	397	22%	8.9
Kirkhill to Newton	5162	Rail	E	67	31	-36	-54%	5.2
Giffnock to Clarkston	5172	Rail	S	759	648	-111	-15%	4.2
Muirhead to Williamwood	5182	Rail	S	449	297	-151	-34%	7.8
Kennishead to Priesthill & Darnley	5192	Rail	W	548	699	151	28%	6.0
Mosspark to Crookston	5202	Rail	W	238	190	-48	-20%	3.3
Hillington East to Hillington West	5212	Rail	W	1983	2811	828	42%	16.9
Garscadden to Yorker	5222	Rail	W	951	949	-2	0%	0.1
Drumchapel to Drumry	5232	Rail	W	617	467	-150	-24%	6.5
Westerton to Bearsden	5242	Rail	N	594	960	366	62%	13.1
A803 (North of Colston Rd)	5252	Bus	N	459	545	86	19%	3.8
B757 (South of Lenzie)	5262	Bus	N	266	817	552	208%	23.7
A80 (East of Crowwood Rbt)	5272	Bus	E	690	591	-99	-14%	3.9
A89 (West of Bargeddie)	5282	Bus	E	88	77	-11	-12%	1.2
A74 (North of B7001 Junction)	5292	Bus	E	238	416	179	75%	9.9
A724 (Manse Brae)	5312	Bus	E	167	159	-9	-5%	0.7
A749 (at Neilston Southbound offslip)	5322	Bus	S	347	436	89	25%	4.5
A726 (West of Phillipshill)	5332	Bus	S	189	364	175	92%	10.5
B767 (North of Waterfoot)	5342	Bus	S	28	60	32	115%	4.8
A77 (Ayr Rd at the Loaning)	5352	Bus	S	231	136	-96	-41%	7.1
A736 (at Salterland Rd Junction)	5362	Bus	S	80	228	148	185%	11.9
A761 (Oldshaw Rd, Barshaw)	5372	Bus	W	700	681	-19	-3%	0.7
A741 (at Arkleston Rd)	5382	Bus	W	598	179	-419	-70%	21.2
A8 (Inchinnan Rd at Argyll Avenue)	5392	Bus	W	183	161	-22	-12%	1.7
A814 (at Dock Street, Yoker)	5402	Bus	W	317	203	-114	-36%	7.1
A82 (East of Drumry Rail Station)	5412	Bus	W	109	524	415	381%	23.3
A739 (South of Canniesburn Toll)	5422	Bus	N	125	0	-125	-100%	15.8
A81 (South of Canniesburn Toll)	5432	Bus	N	635	117	-518	-82%	26.7
Bothwell Street (for M8 West)	5442	Bus	N	397	914	517	130%	20.2
Newhouse)	5452	Bus	N	150	79	-72	-48%	6.7
Motherwell)	5462	Bus	N	88	771	683	774%	32.9
Total - Rail				12035	13029	994	8%	8.9
Total - Bus				6086	7457	1372	23%	16.7
Total				18120	20486	2366	13%	17.0



Table D.49 : Inverness Cordon Inbound Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Beauly to Inverness	6011	Rail	E	27	31	4	15%	0.8
Nairn to Inverness	6021	Rail	W	37	54	17	46%	2.5
Carrbridge to Inverness	6031	Rail	W	28	110	82	297%	9.9
A862 (West of Mid St/High St)	6041	Bus	E	7	0	-7	-100%	3.9
A9 North (Kessock Bridge)	6051	Bus	S	92	62	-29	-32%	3.4
A96 (West of Inverness Retail Park)	6061	Bus	W	111	34	-77	-70%	9.1
B9006 (Over A9)	6071	Bus	W	36	47	11	29%	1.6
A9 South (South of Raigmore Interchange)	6081	Bus	N	37	21	-16	-43%	2.9
A82 (South of General Booth Rd)	6091	Bus	E	7	28	21	289%	5.0
Total - Rail				91	195	103	113%	8.6
Total - Bus				290	192	-99	-34%	6.4
Total				381	386	5	1%	0.2

Table D.50 : Inverness Cordon Outbound Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Beauly to Inverness	6012	Rail	W	107	45	-62	-58%	7.1
Nairn to Inverness	6022	Rail	E	61	130	69	113%	7.0
Carrbridge to Inverness	6032	Rail	E	59	59	0	0%	0.0
A862 (West of Mid St/High St)	6042	Bus	W	12	0	-12	-100%	4.9
A9 North (Kessock Bridge)	6052	Bus	N	176	286	109	62%	7.2
A96 (West of Inverness Retail Park)	6062	Bus	E	272	180	-92	-34%	6.1
B9006 (Over A9)	6072	Bus	E	153	105	-48	-31%	4.2
A9 South (South of Raigmore Interchange)	6082	Bus	S	87	38	-50	-57%	6.3
A82 (South of General Booth Rd)	6092	Bus	W	16	40	24	148%	4.5
Total - Rail				227	234	7	3%	0.5
Total - Bus				717	649	-68	-9%	2.6
Total				944	883	-61	-6%	2.0



Table D.51 : Lower Forth Crossing Inbound Passengers (excludes Non ScotRail Services)

NORTHBOUND				PM	PM			
Station/Road Name	ID	Mode	Dir	Observed Hour	Modelled Hour	Diff	% Diff	GEH
Forth Bridge	1071	Rail	N	1780	1931	151	9%	3.5
A90 (at South Queensferry)	4162	Bus	N	329	232	-97	-30%	5.8
Total				2109	2164	54	3%	1.2

Table D.52 : Lower Forth Crossing Outbound Passengers (excludes Non ScotRail Services)

SOUTHBOUND				PM	PM			
Station/Road Name	ID	Mode	Dir	Observed Hour	Modelled Hour	Diff	% Diff	GEH
Forth Bridge	1072	Rail	S	424	503	80	19%	3.7
A90 (at South Queensferry)	4161	Bus	S	95	109	14	15%	1.4
Total				519	612	93	18%	3.9

Table D.53 : Lower Tay Crossing Inbound Passengers (excludes Non ScotRail Services)

NORTHBOUND				Observed	Modelled			
Station/Road Name	ID	Mode	Dir	Hour	Hour	Diff	% Diff	GEH
Tay Bridge	1111	Rail	N	167	233	66	39%	4.7
A92 South (Tay Bridge)	7091	Bus	N	120	104	-16	-13%	1.5
Total				287	337	50	17%	2.8

Table D.54 : Lower Tay Crossing Outbound Passengers (excludes Non ScotRail Services)

SOUTHBOUND				Observed	Modelled			
Station/Road Name	ID	Mode	Dir	Hour	Hour	Diff	% Diff	GEH
Tay Bridge	1112	Rail	S	250	374	124	49%	7.0
A92 South (Tay Bridge)	7092	Bus	S	360	273	-87	-24%	4.9
Total				610	647	37	6%	1.5



Table D.55 : Other Key Links Passengers (excludes Non ScotRail Services)

INBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
West of Bishopbriggs	1011	Rail	E	2673	2163	-510	-19%	10.4
Btw. Falkirk High and Polmont	1021	Rail	E	1008	827	-181	-18%	6.0
Btw. Larbert and Stirling	1031	Rail	N	855	910	55	6%	1.8
Btw. Livingston and Uphall	1041	Rail	E	126	538	412	327%	22.6
East of Edinburgh Waverley	1051	Rail	E	720	889	169	23%	6.0
West of Edinburgh Haymarket	1061	Rail	E	1886	2254	368	19%	8.1
Forth Bridge	1071	Rail	N	1780	1931	151	9%	3.5
Btw. Inverkeithing and Rosyth	1081	Rail	E	111	174	63	56%	5.3
Btw. Inverkeithing and Dalgety Bay	1091	Rail	E	553	1037	484	87%	17.2
Btw. Markinch and Ladybank	1101	Rail	N	363	453	90	25%	4.4
Tay Bridge	1111	Rail	N	167	233	66	39%	4.7
Btw. Dundee and Broughty Ferry	1121	Rail	E	348	399	50	14%	2.6
Btw. Aberdeen and Portlethen	1131	Rail	N	218	198	-19	-9%	1.3
Btw. Port Glasgow and Woodhall	1141	Rail	E	280	570	291	104%	14.1
Btw. Ayr and Newton-On-Ayr	1151	Rail	N	209	374	164	78%	9.6
Btw. Dalry and Kilwinning	1161	Rail	N	442	1280	838	190%	28.6
Btw. Paisley and Hillington West	1171	Rail	E	857	1165	309	36%	9.7
Between Partick and Hyndland	1181	Rail	E	944	1711	767	81%	21.1
Btw. High Street and Bellgrove	1191	Rail	E	1520	2277	757	50%	17.4
Btw. Argyle Street and Bridgeton	1201	Rail	E	1928	2375	448	23%	9.7
Btw. Crosshill and Mount Florida	1211	Rail	N	219	366	147	67%	8.6
Btw. Maxwell Park and Pollokshields West	1221	Rail	N	68	68	0	0%	0.0
Btw. Crossmyloof and Pollokshaws West	1231	Rail	N	356	428	72	20%	3.7
Btw. Hamilton West and Hamilton Central	1241	Rail	N	167	228	61	36%	4.3
Btw. Shotts and Fauldhouse	1251	Rail	E	62	231	170	275%	14.0
Btw. Coatdyke and Airdrie	1261	Rail	E	427	1021	594	139%	22.1
Btw. Dumbarton East and Dumbarton Central	1271	Rail	E	226	408	182	80%	10.2
Narim to Forres	1281	Rail	E	81	79	-2	-3%	0.3
Kingussie to Aviemore	1291	Rail	N	87	121	34	39%	3.4
Ardlui to Crianlarich	1301	Rail	N	0	36	36	#DIV/0!	8.5
Oban to Connel Ferry	1311	Rail	E	22	6	-16	-75%	4.4
Invergordon to Fearn	1321	Rail	N	21	22	1	5%	0.2
Lochluichart to Garve	1331	Rail	E	6	10	4	64%	1.4



Table D.56 : Other Key Links Passengers (excludes Non ScotRail Services)

OUTBOUND Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
West of Bishopbriggs	1012	Rail	W	1395	863	-532	-38%	15.8
Btw. Falkirk High and Polmont	1022	Rail	W	1302	678	-624	-48%	19.8
Btw. Larbert and Stirling	1032	Rail	S	586	619	33	6%	1.4
Btw. Livingston and Uphall	1042	Rail	W	528	1130	602	114%	20.9
East of Edinburgh Waverley	1052	Rail	W	42	272	229	541%	18.3
West of Edinburgh Haymarket	1062	Rail	W	4533	5096	563	12%	8.1
Forth Bridge	1072	Rail	S	424	503	80	19%	3.7
Btw. Inverkeithing and Rosyth	1082	Rail	W	795	813	18	2%	0.6
Btw. Inverkeithing and Dalgety Bay	1092	Rail	W	249	413	164	66%	9.0
Btw. Markinch and Ladybank	1102	Rail	S	261	420	159	61%	8.6
Tay Bridge	1112	Rail	S	250	374	124	49%	7.0
Btw. Dundee and Broughty Ferry	1122	Rail	W	230	350	120	52%	7.1
Btw. Aberdeen and Portlethen	1132	Rail	S	394	447	52	13%	2.5
Btw. Port Glasgow and Woodhall	1142	Rail	W	692	850	158	23%	5.7
Btw. Ayr and Newton-On-Ayr	1152	Rail	S	340	520	180	53%	8.7
Btw. Dalry and Kilwinning	1162	Rail	S	1325	1779	454	34%	11.5
Btw. Paisley and Hillington West	1172	Rail	W	2005	2820	815	41%	16.6
Btw. Partick and Hyndland	1182	Rail	W	2860	3351	491	17%	8.8
Btw. High Street and Bellgrove	1192	Rail	W	417	1141	724	173%	25.9
Btw. Argyle Street and Bridgeton	1202	Rail	W	524	674	150	29%	6.1
Btw. Crosshill and Mount Florida	1212	Rail	S	1273	1168	-105	-8%	3.0
Btw. Maxwell Park and Pollokshields West	1222	Rail	S	409	308	-101	-25%	5.4
Btw. Crossmyloof and Pollokshaws West	1232	Rail	S	1473	1626	154	10%	3.9
Btw. Hamilton West and Hamilton Central	1242	Rail	S	424	687	264	62%	11.2
Btw. Shotts and Fauldhouse	1252	Rail	W	98	278	180	184%	13.1
Btw. Coatdyke and Airdrie	1262	Rail	W	109	806	698	641%	32.6
Btw. Dumbarton East and Dumbarton Central	1272	Rail	W	876	1063	187	21%	6.0
Forres to Nairn	1282	Rail	W	27	54	28	104%	4.4
Aviemore to Kingussie	1292	Rail	S	50	60	10	21%	1.4
Crianlarich to Ardlui	1302	Rail	S	0	25	25	#DIV/0!	7.1
Connel Ferry to Oban	1312	Rail	W	0	16	16	#DIV/0!	5.7
Fearn to Invergordon	1322	Rail	S	0	22	22	#DIV/0!	6.6
Garve to Lochluichart	1332	Rail	W	0	0	0	#DIV/0!	#DIV/0!



Table D.57 : Central Scotland, East West Screenline Passengers (excludes Non ScotRail Services)

EASTBOUND				PM	PM			
Station/Road Name	ID	Mode	Dir	Observed	Modelled	Diff	% Diff	GEH
				Hour	Hour			
East of Camelon Station	2011	Rail	E	278	371	92	33%	5.1
West of Falkirk High Station	2021	Rail	E	1102	852	-250	-23%	8.0
East of Shotts Station	1251	Rail	E	62	231	170	275%	14.0
East of Carstairs Junction	2041	Rail	E	1	5	4	419%	2.4
Total				1443	1459	16	1%	0.4

Table D.58 : Central Scotland, East West Screenline Passengers (excludes Non ScotRail Services)

WESTBOUND				PM	PM			
Station/Road Name	ID	Mode	Dir	Observed	Modelled	Diff	% Diff	GEH
				Hour	Hour			
East of Camelon Station	2012	Rail	E	378	536	158	42%	7.4
West of Falkirk High Station	2022	Rail	E	1133	560	-573	-51%	19.7
East of Shotts Station	1252	Rail	E	98	278	180	184%	13.1
East of Carstairs Junction	2042	Rail	E	41	16	-25	-60%	4.6
Total				1649	1390	-259	-16%	6.6

Table D.59 : Central Scotland, Forth Screenline Passengers (excludes Non ScotRail Services)

NORTHBOUND				PM	PM			
Station/Road Name	ID	Mode	Dir	Observed	Modelled	Diff	% Diff	GEH
				Hour	Hour			
Forth Bridge	1071	Rail	N	1780	1931	151	9%	3.5
North of Stirling Station	3021	Rail	N	560	597	36	6%	1.5
North of Stirling Station				2340	2528	188	8%	3.8



Table D.60 : Central Scotland, Forth Screenline Passengers (excludes Non ScotRail Services)

SOUTHBOUND				PM	PM			
Station/Road Name	ID	Mode	Dir	Observed Hour	Modelled Hour	Diff	% Diff	GEH
Forth Bridge	1072	Rail	S	424	503	80	19%	3.7
North of Stirling Station	3022	Rail	S	293	362	69	24%	3.8
Total				716	865	149	21%	5.3



E TMFS14 RAIL BOARDINGS AND ALIGHTINGS

E.1 Comparison of Boardings and Alightings: AM Peak (Passengers)



Table E.1 : Comparison of Boardings and Alightings, AM Peak (Passengers)

Station	Node	Scotrail		TmfS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Aberdeen	100048	253	426	181	494	-72	69	28%	16%	4.9	3.2
Aberdour	100314	56	4	100	28	44	24	79%	660%	5.0	6.1
Achanalt	100022	0	0	1	1	1	1	0%	0%	1.0	1.0
Achnasheen	100021	0	0	1	1	1	1	0%	0%	1.1	1.2
Achnashellach	100020	0	0	0	0	0	0	0%	0%	0.8	0.6
Addiewell	100295	4	0	43	6	39	6	1079%	0%	8.1	3.4
Airbles	100266	45	28	44	44	-1	16	1%	57%	0.1	2.7
Airdrie	100277	444	63	406	143	-38	80	9%	127%	1.8	7.9
Alexandra Parade	100251	67	15	82	64	15	49	23%	340%	1.8	7.9
Alexandria	100145	150	34	155	50	5	16	3%	48%	0.4	2.5
Alness	100031	8	1	3	5	-6	4	66%	325%	2.4	2.2
Altnabreac	100008	0	0	3	0	3	0	0%	0%	2.6	0.6
Anderston	100219	47	494	172	1299	125	806	264%	163%	11.9	26.9
Annan	100339	24	8	58	31	34	23	140%	272%	5.3	5.1
Anniesland	100218	294	289	370	402	76	112	26%	39%	4.2	6.0
Arbroath	100098	105	36	94	108	-11	72	11%	198%	1.1	8.5
Ardgay	100032	1	0	7	2	6	2	513%	0%	3.0	2.1
Ardlui	100069	1	2	1	2	-1	-1	49%	29%	0.6	0.5
Ardrossan Harbour	100111	10	0	0	0	-10	0	100%	0%	4.4	0.0
Beach	100369	80	15	141	40	61	26	76%	177%	5.8	4.9
Ardrossan Town	100109	22	13	12	0	-10	-13	45%	100%	2.4	5.2
Argyle Street	100217	108	704	119	244	11	-460	10%	65%	1.0	21.1
Arisaig	100049	1	0	3	5	2	5	126%	0%	1.1	3.0
Arrochar & Tarbet	100068	4	2	15	10	12	7	325%	310%	3.8	3.0
Ashfield	100216	16	5	82	39	67	35	423%	715%	9.5	7.4
Attadale	100018	0	0	0	0	0	0	0%	0%	0.4	0.6
Auchinleck	100363	18	0	127	42	109	42	602%	0%	12.8	9.2
Aviemore	100036	13	5	12	14	-1	9	11%	189%	0.4	3.0
Ayr	100130	322	207	481	455	159	248	49%	120%	7.9	13.6
Baillieston	100250	31	5	24	31	-7	26	23%	544%	1.4	6.2
Balloch	100147	208	48	273	65	65	16	31%	34%	4.2	2.2
Balmossie	100094	0	0	0	0	0	0	0%	0%	0.0	0.0
Banavie	100065	0	0	12	78	12	78	0%	0%	4.8	12.5
Barassie	100365	74	13	91	10	17	-3	23%	26%	1.9	1.0
Bargeddie	100276	40	10	17	5	-23	-5	59%	52%	4.4	1.9
Barnhill	100249	29	23	9	26	-20	3	70%	14%	4.7	0.7
Barrhead	100153	288	65	209	84	-79	19	28%	29%	5.0	2.2
Barrhill	100337	0	0	11	4	11	4	0%	0%	4.8	3.0
Barry Links	100097	0	0	0	0	0	0	0%	0%	0.0	0.0
Bathgate	100294	316	50	321	141	5	92	2%	185%	0.3	9.4
Bearsden	100225	159	44	140	76	-18	33	12%	75%	1.5	4.2
Beasdale	100053	0	0	1	2	1	2	0%	0%	1.5	1.9
Beaully	100025	22	4	57	20	35	17	163%	463%	5.6	4.8
Bellgrove	100248	162	104	210	75	48	-29	30%	28%	3.5	3.1
Bellshill	100275	206	79	264	150	58	72	28%	91%	3.8	6.7
Bishopbriggs	100253	500	82	145	42	-354	-40	71%	49%	19.7	5.1
Bishopton	100166	219	31	177	115	-42	84	19%	266%	3.0	9.8
Blair Atholl	100080	0	0	2	3	2	3	0%	0%	2.2	2.6
Blairhill	100274	218	82	111	95	-107	12	49%	15%	8.4	1.3
Blantyre	100229	178	23	108	23	-70	0	40%	1%	5.9	0.1



Table E.2 : Comparison of Boardings and Alightings, AM Peak (Passengers)(Cont.)

Station	Node	Scotrail		TmfS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Bogston	100370	7	6	49	31	42	25	574%	414%	7.9	5.8
Bowling	100165	17	5	27	17	10	12	58%	247%	2.1	3.6
Branchton	100123	22	15	159	94	137	80	631%	549%	14.4	10.8
Breich	100293	0	0	2	0	2	0	0%	0%	1.9	0.7
Bridge of Allan	100281	83	74	108	52	24	-22	29%	30%	2.5	2.8
Bridge of Orchy	100073	0	0	0	0	0	0	0%	0%	0.5	0.4
Bridgeton	100247	92	103	74	105	-18	2	20%	2%	2.0	0.2
Brora	100005	2	0	3	8	0	8	20%	0%	0.3	4.1
Broughty Ferry	100093	0	0	18	6	18	6	0%	0%	6.1	3.6
Brunstane	100347	98	5	189	46	91	41	93%	849%	7.6	8.2
Burnside	100246	140	23	103	43	-38	20	27%	87%	3.4	3.5
Burntisland	100322	54	4	133	16	78	13	144%	350%	8.1	4.0
Busby	100176	75	6	77	19	2	13	3%	216%	0.2	3.7
Cambuslang	100245	381	76	260	109	-122	33	32%	43%	6.8	3.4
Camelon	100390	50	17	144	63	95	46	191%	271%	9.6	7.3
Cardenden	100325	18	0	261	84	242	84	1336%	0%	20.5	13.0
Cardonald	100215	56	38	29	33	-27	-5	49%	13%	4.2	0.8
Cardross	100143	120	8	69	10	-50	1	42%	16%	5.2	0.5
Carfin	100265	27	0	76	4	49	4	184%	0%	6.9	2.9
Carluke	100286	121	16	263	81	142	65	118%	414%	10.3	9.4
Carmyle	100244	53	24	88	29	35	4	66%	18%	4.2	0.9
Carnoustie	100096	46	4	78	6	32	3	69%	79%	4.0	1.3
Carntyne	100243	88	27	93	29	5	3	6%	10%	0.5	0.5
Carrbridge	100037	1	1	0	0	-1	-1	85%	81%	1.2	1.2
Carstairs	100359	0	0	64	52	64	52	0%	0%	11.3	10.2
Cartsdyke	100122	36	12	42	21	5	9	14%	73%	0.8	2.2
Cathcart	100214	242	34	378	113	136	79	56%	234%	7.7	9.2
Charing Cross (Glasgow)	100213	152	1154	285	919	133	-235	87%	20%	9.0	7.3
Chatelherault	100256	12	4	15	2	3	-2	23%	47%	0.8	1.0
Clarkston	100175	201	36	153	34	-48	-2	24%	5%	3.6	0.3
Cleland	100285	29	1	31	88	2	86	6%	7136%	0.3	13.0
Clydebank	100164	92	76	37	68	-55	-8	59%	11%	6.8	1.0
Coatbridge Central	100273	4	1	88	60	84	59	2311%	4861%	12.4	10.6
Coatbridge Sunnyside	100272	198	48	241	249	43	201	22%	415%	2.9	16.5
Coatdyke	100271	152	41	136	99	-16	58	10%	140%	1.3	6.9
Connel Ferry	100056	2	0	5	19	3	19	108%	0%	1.4	6.1
Corkerhill	100212	33	75	10	7	-23	-68	71%	90%	5.0	10.6
Corpach	100061	0	0	8	34	8	34	0%	0%	3.9	8.3
Corrour	100074	0	0	0	0	0	0	0%	0%	0.4	0.0
Cowdenbeath	100316	53	10	173	74	119	64	224%	666%	11.2	10.0
Craigendoran	100387	54	59	74	20	19	-39	36%	66%	2.4	6.2
Crianlarich	100386	0	0	1	1	1	1	0%	0%	1.0	1.6
Croftfoot	100242	79	5	50	10	-29	5	37%	104%	3.6	1.8
Crookston	100211	45	44	13	13	-32	-30	70%	69%	5.9	5.7
Crosshill	100210	94	121	149	90	55	-31	58%	26%	5.0	3.0
Crossmyloof	100209	174	93	135	61	-39	-32	22%	35%	3.1	3.7
Croy	100280	1134	103	455	207	-679	104	60%	101%	24.1	8.4
Culrain	100029	0	0	7	2	7	2	0%	0%	3.6	1.9
Cumbernauld	100279	126	17	39	35	-87	18	69%	104%	9.5	3.5
Cupar	100088	58	22	104	134	46	112	80%	514%	5.1	12.7



Table E.3 : Comparison of Boardings and Alightings, AM Peak (Passengers)(Cont.)

Station	Node	Scotrail		Tmfs14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Curriehill	100305	28	4	16	14	-12	11	43%	299%	2.6	3.6
Dalgety Bay	100313	123	18	172	20	49	2	39%	10%	4.0	0.4
Dalmally	100063	1	0	16	17	15	17	1212%	0%	5.0	5.9
Dalmarnock	100241	22	33	92	68	70	36	321%	109%	9.3	5.0
Dalmeny	100308	160	80	198	52	38	-28	24%	35%	2.9	3.4
Dalmuir	100163	341	163	374	188	33	25	10%	15%	1.7	1.9
Dalreoch	100388	97	144	148	89	51	-55	53%	38%	4.6	5.1
Dalry	100108	99	8	111	25	12	17	12%	198%	1.2	4.1
Dalwhinnie	100077	0	0	3	0	3	0	0%	0%	2.5	0.0
Dingwall	100384	23	12	12	7	-11	-5	49%	41%	2.7	1.6
Drem	100332	45	2	93	11	48	9	108%	362%	5.8	3.4
Drumchapel	100224	108	50	125	31	17	-18	16%	37%	1.6	2.9
Drumfrochar	100121	15	8	101	51	86	43	594%	502%	11.4	7.8
Drumgelloch	100270	98	6	189	65	91	59	92%	968%	7.6	9.9
Drumry	100223	93	18	153	323	60	305	64%	1678%	5.4	23.3
Duirinish	100015	0	0	0	3	0	3	0%	0%	0.0	2.3
Duke Street	100240	27	11	53	35	26	24	99%	218%	4.2	5.0
Dumbarton Central	100141	260	120	323	120	63	0	24%	0%	3.7	0.0
Dumbarton East	100162	125	42	89	29	-36	-14	29%	32%	3.5	2.3
Dumbreck	100208	39	15	29	37	-10	22	26%	153%	1.7	4.4
Dumfries	100338	53	10	176	108	122	99	230%	1018%	11.4	12.8
Dunbar	100342	0	0	13	5	13	5	0%	0%	5.1	3.0
Dunblane	100078	226	23	171	42	-55	19	24%	82%	3.9	3.3
Duncraig	100017	0	0	0	1	0	1	0%	0%	0.0	1.0
Dundee	100091	235	333	370	553	135	220	57%	66%	7.8	10.5
Dunfermline Queen Margaret	100312	16	0	128	108	112	108	713%	0%	13.2	14.7
Dunfermline Town	100302	317	30	411	238	94	207	30%	686%	4.9	17.9
Dunkeld & Birnam	100083	6	1	4	3	-2	1	30%	122%	0.8	1.1
Dunlop	100151	25	5	51	6	26	1	101%	24%	4.2	0.5
Dunrobin Castle	100002	0	0	0	0	0	0	0%	0%	0.0	0.0
Dyce	100047	40	182	39	116	-1	-65	3%	36%	0.2	5.3
East Kilbride	100228	371	51	76	23	-296	-28	80%	55%	19.8	4.6
Easterhouse	100239	184	50	253	116	69	66	38%	133%	4.7	7.3
Edinburgh	100320	1244	3821	1396	3665	152	-156	12%	4%	4.2	2.5
Edinburgh Park	100307	77	292	66	489	-12	198	15%	68%	1.4	10.0
Elgin	100042	47	12	66	26	19	14	40%	118%	2.5	3.3
Exhibition Centre	100207	75	357	34	188	-41	-169	55%	47%	5.6	10.3
Fairlie	100113	12	1	13	4	1	3	7%	250%	0.2	1.8
Falkirk Grahamston	100289	114	80	283	186	169	106	149%	133%	12.0	9.2
Falkirk High	100287	397	56	329	163	-68	107	17%	193%	3.6	10.3
Falls of Cruachan	100058	0	0	0	0	0	0	0%	0%	0.3	1.0
Fauldhouse	100292	13	2	65	9	51	6	385%	262%	8.2	2.7
Fearn	100039	10	0	3	1	-7	1	68%	0%	2.6	1.0
Forres	100041	28	4	36	7	8	4	28%	105%	1.4	1.6
Forsinard	100004	0	0	19	32	19	32	0%	0%	6.2	8.0
Fort Matilda	100120	91	10	118	97	27	87	30%	904%	2.6	12.0
Fort William	100385	1	12	100	8	99	-4	8149%	36%	13.9	1.4
Garelochhead	100126	4	0	94	100	91	100	2496%	0%	13.0	14.2



Table E.4 : Comparison of Boardings and Alightings, AM Peak (Passengers)(Cont.)

Station	Node	Scotrail		Tmfs14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Garrowhill	100238	259	28	232	39	-27	11	10%	39%	1.7	1.9
Garscadden	100206	126	17	288	42	162	25	129%	145%	11.3	4.5
Gartcosh	100267	44	2	134	11	91	8	208%	345%	9.6	3.3
Garve	100024	27	1	2	1	-24	0	92%	30%	6.4	0.4
Georgemas Junction	100010	0	0	98	11	98	11	0%	0%	14.0	4.7
Giffnock	100174	104	41	101	51	-3	9	3%	23%	0.3	1.4
Gilshochill	100205	24	6	38	5	14	-1	56%	16%	2.4	0.4
Girvan	100336	0	0	105	27	105	27	0%	0%	14.5	7.3
Glasgow Central	100204	1931	9756	3643	8869	1712	-887	89%	9%	32.4	9.2
Glasgow Queen Street	100203	1019	4178	2186	5377	1167	1198	115%	29%	29.2	17.3
Gleneagles	100081	8	1	27	13	19	11	221%	947%	4.4	4.4
Glenfinnan	100055	0	0	3	5	3	5	0%	0%	2.4	3.1
Glengarnock	100135	125	17	198	48	73	31	59%	183%	5.8	5.5
Glenrothes With Thornton	100374	0	0	100	102	100	102	0%	0%	14.1	14.3
Golf Street	100095	0	0	0	0	0	0	0%	0%	0.0	0.0
Golspie	100040	25	1	6	23	-19	22	75%	1824%	4.8	6.3
Gourock	100119	214	28	324	142	110	114	51%	410%	6.7	12.4
Greenfaulds	100278	51	10	46	53	-4	43	9%	448%	0.6	7.7
Greenock Central	100118	87	75	104	259	17	184	19%	246%	1.7	14.3
Greenock West	100117	138	111	84	211	-54	99	39%	89%	5.1	7.8
Gretna Green	100362	7	0	39	18	31	18	432%	0%	6.6	6.0
Hairmyres	100227	283	71	219	98	-64	27	23%	38%	4.0	2.9
Hamilton Central	100264	236	91	281	305	45	215	19%	236%	2.8	15.2
Hamilton West	100263	252	128	160	272	-92	143	37%	112%	6.4	10.1
Hartwood	100284	8	0	61	12	52	12	616%	0%	8.9	4.9
Hawkhead	100159	59	17	4	12	-56	-5	94%	27%	9.9	1.2
Haymarket	100348	730	2142	1198	2642	469	500	64%	23%	15.1	10.2
Helensburgh Central	100125	334	47	242	50	-92	3	27%	5%	5.4	0.4
Helensburgh Upper	100124	22	0	37	33	15	33	68%	0%	2.7	8.1
Helmsdale	100007	0	0	39	9	39	9	0%	0%	8.8	4.2
High Street (Glasgow)	100202	70	307	208	212	138	-95	197%	31%	11.7	5.9
Hillfoot	100222	120	16	354	69	234	54	196%	341%	15.2	8.2
Hillington East	100201	64	52	49	16	-15	-36	23%	69%	2.0	6.2
Hillington West	100200	56	138	21	86	-35	-52	63%	38%	5.6	4.9
Holytown	100262	58	4	131	83	73	79	125%	2182%	7.5	12.0
Howwood (Renfrewshire)	100136	29	1	21	4	-8	3	28%	254%	1.6	1.9
Huntly	100044	25	7	27	3	1	-4	5%	57%	0.3	1.8
Hyndland	100199	534	351	469	419	-65	68	12%	19%	2.9	3.5
IBM	100116	13	83	18	12	5	-72	35%	86%	1.2	10.4
Insch	100045	33	1	49	2	17	1	51%	104%	2.6	0.9
Invergordon	100034	11	2	3	3	-8	1	75%	38%	3.1	0.5
Invergowrie	100089	0	2	3	0	3	-2	0%	100%	2.3	2.2
Inverkeithing	100371	476	75	341	167	-134	92	28%	123%	6.7	8.4
Inverkip	100115	24	5	45	25	21	20	85%	421%	3.5	5.3
Inverness	100447	79	182	231	300	152	119	194%	65%	12.2	7.6
Invershin	100028	0	0	14	3	14	3	0%	0%	5.3	2.6
Inverurie	100046	45	11	41	9	-4	-2	9%	16%	0.6	0.5
Irvine	100132	293	81	244	84	-48	3	17%	4%	3.0	0.4



Table E.5 : Comparison of Boardings and Alightings, AM Peak (Passengers)(Cont.)

Station	Node	Scotrail		TmfS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Johnstone	100158	480	71	314	65	-166	-6	35%	9%	8.3	0.8
Jordanhill	100198	128	96	302	507	174	412	136%	431%	11.9	23.7
Keith	100043	25	5	30	5	5	0	19%	6%	0.9	0.1
Kelvindale	100177	21	10	6	40	-15	31	71%	316%	4.0	6.1
Kennishead	100197	18	10	28	6	10	-4	56%	40%	2.1	1.4
Kildonan	100006	0	0	0	0	0	0	0%	0%	0.0	0.0
Kilmarnock	100366	127	35	394	234	267	199	210%	567%	16.5	17.1
Kilmaurs	100150	11	6	237	262	226	256	2080%	4237%	20.3	22.1
Kilpatrick	100161	56	8	51	15	-5	7	9%	81%	0.7	2.0
Kilwinning	100448	346	99	414	157	67	58	19%	58%	3.5	5.1
Kinbrace	100003	0	0	0	0	0	0	0%	0%	0.0	0.0
Kinghorn	100321	47	2	96	84	49	81	103%	3363%	5.8	12.4
Kings Park	100196	64	13	112	35	48	22	75%	165%	5.1	4.4
Kingsknowe	100318	11	0	4	3	-7	3	67%	0%	2.7	2.4
Kingussie	100033	5	5	10	5	5	0	100%	8%	1.8	0.2
Kirkcaldy	100323	273	88	435	344	161	255	59%	289%	8.6	17.4
Kirkconnel	100255	10	0	25	5	16	5	162%	0%	3.7	3.0
Kirkhill	100237	64	10	28	15	-36	5	57%	52%	5.4	1.4
Kirknewton	100304	19	4	3	4	-16	1	83%	18%	4.8	0.3
Kirkwood	100269	64	5	32	7	-32	2	50%	37%	4.6	0.7
Kyle of Lochalsh	100013	0	0	0	6	0	6	0%	0%	0.0	3.5
Ladybank	100377	16	4	169	26	154	23	977%	626%	16.0	5.9
Lairg	100000	1	0	23	6	22	6	1800%	0%	6.3	3.6
Lanark	100282	128	12	148	125	20	113	16%	934%	1.7	13.6
Langbank	100140	28	6	11	13	-17	7	60%	118%	3.8	2.3
Langside	100195	110	15	123	15	13	0	12%	3%	1.2	0.1
Larbert	100288	213	39	355	100	142	62	67%	159%	8.4	7.4
Largs	100112	75	50	150	8	75	-42	100%	84%	7.1	7.8
Larkhall	100257	131	28	263	121	132	93	101%	333%	9.4	10.8
Lenzie	100252	681	85	290	26	-392	-59	57%	70%	17.8	8.0
Leuchars (for St Andrews)	100090	27	24	110	63	83	39	312%	162%	10.1	5.9
Linlithgow	100301	589	54	486	91	-104	37	18%	68%	4.5	4.3
Livingston North	100299	283	90	210	91	-73	2	26%	2%	4.7	0.2
Livingston South	100298	111	15	183	67	72	53	64%	363%	5.9	8.2
Loch Awe	100062	0	0	2	1	2	1	0%	0%	1.8	1.4
Loch Eil Outward Bound	100060	0	0	1	2	1	2	0%	0%	1.0	1.8
Lochailort	100052	0	0	17	6	17	6	0%	0%	5.9	3.5
Locheilside	100057	0	0	5	8	5	8	0%	0%	3.1	4.1
Lochgelly	100315	27	2	154	87	128	84	480%	3482%	13.4	12.6
Lochluichart	100023	0	0	1	0	1	0	0%	0%	1.1	0.9
Lochwinnoch	100134	57	18	87	9	31	-9	54%	52%	3.6	2.6
Lockerbie	100340	0	0	0	0	0	0	0%	0%	0.0	0.0
Longniddry	100331	96	4	61	4	-34	1	36%	15%	3.9	0.3
Mallaig	100051	0	2	9	16	9	14	0%	573%	4.2	4.5
Markinch	100085	42	13	189	42	146	28	346%	212%	13.6	5.4
Maryhill	100194	25	10	50	81	25	71	97%	734%	4.0	10.6
Maxwell Park	100193	48	61	29	22	-20	-39	41%	64%	3.2	6.0
Maybole	100103	0	0	55	53	55	53	0%	0%	10.5	10.3
Merryton	100258	54	1	133	20	79	18	145%	1519%	8.2	5.7
Milliken Park	100157	74	17	81	42	7	25	10%	148%	0.8	4.6



Table E.6 : Comparison of Boardings and Alightings, AM Peak (Passengers)(Cont.)

Station	Node	Scotrail		Tmfs14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Milngavie	100221	290	59	316	69	25	10	9%	16%	1.5	1.2
Monifieth	100092	0	0	0	0	0	0	0%	0%	0.0	0.0
Montrose	100099	109	13	121	41	12	28	11%	212%	1.1	5.4
Morar	100050	0	0	2	4	2	4	0%	0%	2.2	2.9
Mossspark	100192	52	6	4	42	-48	36	92%	596%	9.1	7.4
Motherwell	100261	261	113	345	315	83	202	32%	179%	4.8	13.8
Mount Florida	100191	300	134	380	190	80	55	27%	41%	4.3	4.4
Mount Vernon	100236	23	5	17	10	-6	5	25%	102%	1.3	1.8
Muir of Ord	100026	21	2	58	11	37	9	181%	361%	5.9	3.4
Muirend	100173	190	8	101	12	-89	3	47%	38%	7.4	1.0
Musselburgh	100329	139	6	55	43	-84	37	60%	604%	8.5	7.4
Naim	100038	30	4	69	13	39	10	128%	271%	5.5	3.4
Neilston	100152	292	21	188	14	-104	-6	36%	30%	6.7	1.5
New Cumnock	100226	6	0	54	13	48	13	799%	0%	8.8	5.0
Newcraighall	100344	103	4	118	17	15	13	15%	360%	1.5	4.1
Newton (Lanarkshire)	100235	214	24	201	47	-13	23	6%	95%	0.9	3.9
Newtonmore	100079	1	0	10	0	9	0	709%	0%	3.7	0.9
Newton-on-Ayr	100129	21	17	202	244	182	227	883%	1341%	17.2	19.9
Nitshill	100190	21	15	114	56	94	42	455%	286%	11.4	7.0
North Berwick	100333	144	11	158	46	14	35	10%	319%	1.1	6.5
North Queensferry	100310	69	11	49	9	-20	-2	29%	17%	2.6	0.6
Oban	100054	21	0	41	18	21	18	100%	0%	3.7	5.9
Paisley Canal	100156	161	52	52	51	-109	-1	68%	2%	10.6	0.2
Paisley Gilmour Street	100155	822	761	765	1070	-56	309	7%	41%	2.0	10.2
Paisley St James	100154	15	12	14	81	-1	69	4%	567%	0.1	10.1
Partick	100189	731	837	669	1061	-62	223	8%	27%	2.3	7.3
Patterton	100172	0	17	57	47	57	30	0%	176%	10.7	5.3
Perth	100378	142	85	291	212	149	127	106%	150%	10.2	10.4
Pitlochry	100082	6	1	19	5	13	4	213%	296%	3.6	2.1
Plockton	100014	1	0	0	1	-1	1	100%	0%	1.6	1.6
Pollokshaws East	100188	119	21	108	30	-11	10	9%	48%	1.0	2.0
Pollokshaws West	100187	36	28	172	84	136	56	375%	200%	13.3	7.5
Pollokshields East	100186	99	27	53	65	-46	38	46%	144%	5.3	5.7
Pollokshields West	100185	50	24	31	15	-19	-10	37%	39%	2.9	2.2
Polmont	100389	334	39	489	65	155	26	46%	68%	7.6	3.7
Port Glasgow	100139	212	44	249	146	37	102	18%	234%	2.5	10.5
Portlethen	100101	22	1	1	6	-21	5	96%	398%	6.2	2.5
Possilpark & Parkhouse	100184	5	17	35	11	30	-6	617%	33%	6.7	1.5
Prestonpans	100327	102	2	109	36	7	33	7%	1372%	0.7	7.6
Prestwick International Airport	100128	33	67	88	60	55	-6	168%	10%	7.1	0.8
Prestwick Town	100127	105	23	193	54	88	31	83%	135%	7.2	5.0
Priesthill & Darnley	100183	46	6	62	98	16	91	35%	1512%	2.2	12.7
Queens Park (Glasgow)	100182	154	25	164	40	11	14	7%	56%	0.8	2.5
Rannoch	100076	4	0	0	0	-4	0	100%	0%	2.7	0.0
Renton	100138	41	17	65	53	24	36	57%	213%	3.2	6.1
Rogart	100001	1	0	6	1	4	1	362%	0%	2.4	1.7
Rosyth	100309	116	34	164	58	48	25	41%	72%	4.0	3.6
Roy Bridge	100067	0	0	4	2	4	2	0%	0%	2.7	2.1
Rutherglen	100234	240	111	207	136	-33	24	14%	22%	2.2	2.2



Table E.7 : Comparison of Boardings and Alightings, AM Peak (Passengers)(Cont.)

Station	Node	Scotrail		Tmfs14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Saltcoats	100106	85	38	58	15	-27	-23	32%	61%	3.2	4.5
Sanquhar	100254	13	4	29	5	16	2	121%	44%	3.5	0.8
Scotscalder	100009	0	0	3	0	3	0	0%	0%	2.4	0.6
Scotstounhill	100181	157	30	246	78	88	48	56%	159%	6.2	6.5
Shawlands	100180	77	13	57	21	-20	7	26%	55%	2.5	1.8
Shettleston	100233	261	76	250	74	-11	-3	4%	4%	0.7	0.3
Shieldmuir	100260	18	6	78	91	60	85	332%	1412%	8.7	12.2
Shotts	100283	105	15	181	43	76	28	72%	194%	6.4	5.3
Singer	100160	129	244	92	191	-38	-54	29%	22%	3.6	3.6
Slateford	100352	2	21	9	36	6	15	251%	73%	2.6	2.8
South Gyle	100306	82	358	2	12	-80	-346	98%	97%	12.4	25.5
Spean Bridge	100066	0	0	11	2	11	2	0%	0%	4.7	1.9
Springburn	100232	69	109	119	125	50	17	73%	15%	5.2	1.5
Springfield	100087	0	0	7	3	7	3	0%	0%	3.6	2.5
Steps	100231	125	10	70	9	-54	-1	44%	6%	5.5	0.2
Stevenston	100105	50	4	67	19	17	15	34%	422%	2.2	4.6
Stewarton	100149	121	5	155	67	34	62	28%	1290%	2.9	10.4
Stirling	100383	438	300	502	449	64	149	15%	50%	2.9	7.7
Stonehaven	100100	133	7	81	19	-52	12	39%	161%	5.0	3.2
Stranraer	100335	0	0	27	21	27	21	0%	0%	7.3	6.6
Strathcarron	100019	0	0	4	4	4	4	0%	0%	2.7	3.0
Stromeferry	100016	0	0	0	1	0	1	0%	0%	1.0	1.2
Summerston	100179	39	5	42	7	3	2	8%	39%	0.5	0.8
Tain	100035	15	5	13	12	-2	8	14%	155%	0.5	2.6
Taynuilt	100059	0	0	1	4	1	4	0%	0%	1.3	2.8
Thornliebank	100171	62	13	109	57	48	43	77%	325%	5.1	7.3
Thorntonhall	100170	16	1	17	1	1	0	8%	15%	0.3	0.2
Thurso	100011	0	0	61	187	61	187	0%	0%	11.0	19.3
Troon	100131	225	36	380	224	155	188	69%	518%	8.9	16.5
Tulloch	100075	0	0	4	1	4	1	0%	0%	2.7	1.5
Tyndrum Lower	100072	0	0	0	4	0	4	0%	0%	0.5	2.8
Uddingston	100230	304	88	257	91	-46	3	15%	3%	2.8	0.3
Uphall	100300	114	25	210	97	96	71	85%	281%	7.6	9.1
Upper Tyndrum	100071	0	0	0	1	0	1	0%	0%	0.9	1.3
Wallyford	100326	98	4	105	8	7	5	7%	131%	0.7	1.9
Wemyss Bay	100102	47	4	76	17	28	13	60%	359%	3.6	4.1
West Calder	100297	46	6	63	60	17	54	36%	894%	2.3	9.4
West Kilbride	100104	57	6	84	8	27	2	48%	25%	3.2	0.6
Wester Hailes	100303	6	4	23	6	17	2	276%	62%	4.4	1.0
Westerton	100395	321	81	212	95	-109	14	34%	17%	6.7	1.5
Whifflet	100268	85	17	64	85	-21	68	24%	404%	2.4	9.6
Whinhill	100114	23	6	56	71	33	65	143%	1080%	5.2	10.5
Whitecraigs	100169	144	10	90	20	-54	10	37%	104%	5.0	2.6
Wick	100012	0	0	73	73	73	73	0%	0%	12.1	12.1
Williamwood	100168	125	94	106	51	-19	-44	15%	46%	1.8	5.2
Wishaw	100422	114	12	251	63	137	51	121%	424%	10.2	8.3
Woodhall	100137	22	7	158	65	136	57	624%	790%	14.3	9.6
Yoker	100178	63	25	25	5	-38	-21	60%	81%	5.7	5.3



E.2 Comparison of Boardings and Alightings: IP Peak (Passengers)

Table E.8 : Comparison of Boardings and Alightings, IP Peak (Passengers)

Station	Node	Scotrail		TmS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Aberdeen	100048	256	235	192	234	-63	-2	25%	1%	4.2	0.1
Aberdour	100314	10	7	30	25	21	18	218%	271%	4.7	4.6
Achanalt	100022	0	0	1	2	1	2	0%	0%	1.2	1.8
Achnasheen	100021	0	0	1	2	1	2	0%	0%	1.3	2.0
Achnashellach	100020	0	0	0	0	0	0	0%	0%	0.9	0.8
Addiewell	100295	1	0	6	12	5	12	335%	0%	2.4	4.8
Airbles	100266	20	12	33	28	13	16	64%	129%	2.5	3.5
Airdrie	100277	113	80	128	121	15	41	14%	51%	1.4	4.1
Alexandra Parade	100251	18	8	23	34	5	26	30%	313%	1.2	5.6
Alexandria	100145	35	30	45	56	10	26	27%	87%	1.5	4.0
Alness	100031	1	1	5	4	3	3	241%	206%	1.9	1.7
Altnabreac	100008	0	0	1	2	1	2	0%	0%	1.7	2.0
Anderston	100219	29	23	163	264	134	240	470%	1040%	13.7	20.1
Annan	100339	12	7	39	35	26	28	215%	419%	5.2	6.2
Anniesland	100218	109	92	215	194	106	101	97%	110%	8.3	8.5
Arbroath	100098	37	39	100	67	63	27	172%	69%	7.6	3.7
Ardgay	100032	0	0	2	4	2	4	0%	0%	2.1	2.7
Ardlui	100069	1	0	0	1	-1	1	73%	0%	1.1	1.7
Harbour	100111	7	14	0	0	-7	-14	100%	100%	3.7	5.2
Beach	100369	16	11	41	43	25	32	152%	297%	4.6	6.2
Ardrossan Town	100109	7	18	13	6	6	-12	90%	68%	2.0	3.5
Argyle Street	100217	190	197	62	105	-128	-92	67%	47%	11.4	7.5
Arisaig	100049	3	0	3	3	0	3	1%	0%	0.0	2.4
Arrochar & Tarbet	100068	1	3	8	10	7	7	494%	264%	3.1	2.9
Ashfield	100216	11	10	15	28	4	18	41%	192%	1.2	4.2
Attadale	100018	0	1	0	0	0	-1	0%	90%	0.6	1.4
Auchinleck	100363	5	4	48	53	42	49	776%	1191%	8.2	9.1
Aviemore	100036	14	12	18	13	4	1	30%	5%	1.0	0.2
Ayr	100130	160	173	255	194	94	21	59%	12%	6.5	1.6
Baillieston	100250	7	7	5	6	-2	-1	22%	11%	0.6	0.3
Balloch	100147	52	37	60	86	8	49	16%	133%	1.1	6.2
Balmossie	100094	0	0	0	0	0	0	0%	0%	0.0	0.0
Banavie	100065	0	0	5	4	5	4	0%	0%	3.3	3.0
Barassie	100365	18	12	13	28	-5	15	26%	126%	1.2	3.5
Bargeddie	100276	7	8	3	4	-4	-4	52%	45%	1.6	1.5
Barnhill	100249	11	5	6	10	-5	5	45%	83%	1.7	1.6
Barrhead	100153	54	52	99	72	45	20	82%	39%	5.1	2.6
Barrhill	100337	0	0	6	5	6	5	0%	0%	3.4	3.2
Barry Links	100097	0	0	0	0	0	0	0%	0%	0.0	0.0
Bathgate	100294	80	69	117	107	37	38	46%	55%	3.7	4.0
Bearsden	100225	42	39	66	52	24	12	57%	31%	3.3	1.8
Beasdale	100053	0	0	1	1	1	1	0%	0%	1.5	1.5
Beaully	100025	3	3	27	25	24	22	877%	812%	6.2	6.0
Bellgrove	100248	42	39	54	55	12	16	28%	40%	1.7	2.3
Bellshill	100275	53	50	66	72	13	22	25%	43%	1.7	2.8
Bishopbriggs	100253	106	101	18	27	-88	-74	83%	74%	11.2	9.3
Bishopton	100166	48	56	45	52	-3	-3	6%	6%	0.4	0.5
Blair Atholl	100080	0	1	8	15	8	13	0%	980%	3.9	4.7
Blairhill	100274	121	49	64	40	-57	-8	47%	17%	5.9	1.3
Blantyre	100229	37	33	36	24	-1	-8	3%	25%	0.2	1.5



Table E.9 : Comparison of Boardings and Alightings, IP Peak (Passengers)(Cont.)

Station	Node	Scotrail			TMfS14			Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A		
Bogston	100370	1	4	17	22	15	18	1125%	445%	5.1	5.0		
Bowling	100165	5	8	8	9	2	1	45%	10%	0.9	0.3		
Branchton	100123	10	11	52	66	42	55	445%	502%	7.6	8.8		
Breich	100293	0	0	23	22	23	22	0%	0%	6.8	6.7		
Bridge of Allan	100281	14	16	44	35	30	19	220%	114%	5.6	3.7		
Bridge of Orchy	100073	1	1	0	0	-1	-1	100%	93%	1.6	1.5		
Bridgeton	100247	35	26	22	64	-13	38	38%	147%	2.5	5.7		
Brora	100005	0	1	0	1	0	0	0%	26%	0.9	0.3		
Broughty Ferry	100093	0	0	0	0	0	0	0%	0%	0.0	0.8		
Brunstane	100347	10	14	41	20	31	6	328%	46%	6.2	1.5		
Burnside	100246	26	35	21	21	-5	-15	18%	42%	0.9	2.8		
Burntisland	100322	15	15	34	49	19	34	127%	230%	3.8	6.1		
Busby	100176	14	10	18	23	5	13	34%	140%	1.2	3.3		
Cambuslang	100245	54	64	75	75	20	11	37%	17%	2.5	1.3		
Camelon	100390	8	7	35	45	27	38	331%	561%	5.8	7.5		
Cardenden	100325	10	7	61	115	52	108	546%	1586%	8.7	13.8		
Cardonald	100215	16	12	24	16	8	4	49%	32%	1.8	1.0		
Cardross	100143	11	16	24	27	13	10	122%	63%	3.2	2.2		
Carfin	100265	8	4	3	5	-5	1	60%	32%	2.1	0.6		
Carluke	100286	19	12	85	73	66	61	347%	495%	9.2	9.3		
Carmyle	100244	14	14	18	19	4	5	32%	37%	1.1	1.3		
Carmoustie	100096	10	8	22	9	12	1	131%	13%	3.1	0.4		
Carntyne	100243	22	22	23	27	2	5	7%	25%	0.3	1.1		
Carrbridge	100037	0	0	0	0	0	0	0%	0%	0.6	0.8		
Carstairs	100359	0	0	8	19	8	19	0%	0%	4.0	6.2		
Cartsdyke	100122	12	16	20	25	8	9	66%	54%	2.0	1.9		
Cathcart	100214	34	50	63	103	29	53	85%	104%	4.1	6.0		
Charing Cross (Glasgow)	100213	133	144	206	235	73	91	55%	63%	5.6	6.6		
Chatelherault	100256	7	5	15	4	8	-1	120%	24%	2.5	0.6		
Clarkston	100175	39	34	37	29	-2	-5	6%	15%	0.4	0.9		
Cleland	100285	5	5	41	19	36	13	663%	242%	7.4	3.8		
Clydebank	100164	35	44	21	16	-14	-27	39%	63%	2.6	5.0		
Coatbridge Central	100273	0	0	37	41	37	41	0%	0%	8.6	9.0		
Coatbridge Sunnyside	100272	65	53	130	94	64	41	98%	77%	6.5	4.8		
Coatdyke	100271	37	33	62	56	26	23	70%	71%	3.6	3.5		
Connel Ferry	100056	0	1	2	3	2	2	0%	157%	1.8	1.4		
Corkerhill	100212	42	34	5	11	-37	-23	89%	68%	7.7	4.9		
Corpach	100061	0	0	1	3	1	3	0%	0%	1.7	2.5		
Corrour	100074	0	3	0	0	0	-3	0%	96%	0.0	2.2		
Cowdenbeath	100316	20	20	33	59	13	38	61%	187%	2.4	6.1		
Craigendoran	100387	27	15	25	21	-3	6	10%	38%	0.5	1.4		
Crianlarich	100386	5	4	2	0	-4	-4	67%	90%	1.9	2.5		
Croftfoot	100242	12	16	5	8	-7	-9	60%	53%	2.5	2.5		
Crookston	100211	29	16	5	5	-23	-11	81%	67%	5.6	3.3		
Crosshill	100210	73	18	56	56	-18	38	24%	215%	2.2	6.3		
Crossmyloof	100209	37	18	35	26	-2	8	6%	48%	0.3	1.8		
Croy	100280	148	128	125	96	-23	-32	16%	25%	2.0	3.0		
Culrain	100029	1	1	2	3	1	2	49%	114%	0.5	1.1		
Cumbernauld	100279	19	14	13	11	-6	-2	31%	16%	1.5	0.6		
Cupar	100088	22	19	76	35	54	16	250%	86%	7.8	3.1		



Table E.10 : Comparison of Boardings and Alightings, IP Peak (Passengers)(Cont.)

Station	Node	Scotrail		TMS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Curriehill	100305	4	3	3	4	-1	1	32%	48%	0.7	0.7
Dalgety Bay	100313	18	19	24	44	7	25	37%	130%	1.4	4.4
Dalmally	100063	1	0	20	16	19	16	1371%	0%	5.7	5.7
Dalmarnock	100241	8	5	37	51	28	46	348%	840%	6.0	8.6
Dalmeny	100308	22	26	20	22	-2	-4	8%	15%	0.4	0.8
Dalmuir	100163	110	99	168	138	58	39	53%	39%	4.9	3.6
Dalreoch	100388	60	33	64	72	4	39	7%	120%	0.5	5.4
Dalry	100108	16	11	22	57	6	47	34%	428%	1.3	8.0
Dalwhinnie	100077	1	0	3	2	2	2	121%	0%	1.1	2.0
Dingwall	100384	4	8	8	6	4	-2	100%	26%	1.6	0.8
Drem	100332	7	5	11	32	4	27	63%	495%	1.4	6.2
Drumchapel	100224	42	31	51	36	9	4	21%	14%	1.3	0.7
Drumfrochar	100121	10	5	45	46	36	40	373%	743%	6.8	8.0
Drumgelloch	100270	12	15	67	60	55	45	446%	302%	8.7	7.4
Drumry	100223	19	27	89	105	70	78	366%	287%	9.5	9.6
Duirinish	100015	0	0	1	1	1	1	0%	0%	1.2	1.7
Duke Street Dumbarton Central	100240	8	7	10	21	2	14	27%	203%	0.7	3.7
100141	82	75	88	94	6	19	8%	26%	0.7	2.1	
Dumbarton East	100162	34	41	34	36	0	-5	0%	12%	0.0	0.8
Dumbreck	100208	18	11	12	17	-6	6	32%	53%	1.5	1.6
Dumfries	100338	45	41	84	66	39	25	87%	62%	4.9	3.5
Dunbar	100342	0	0	53	61	53	61	0%	0%	10.3	11.0
Dunblane	100078	45	42	61	45	16	3	36%	7%	2.2	0.4
Duncraig	100017	0	0	0	0	0	0	0%	0%	0.7	0.7
Dundee	100091	159	133	246	298	87	165	55%	123%	6.1	11.2
Dunfermline Queen Margaret	100312	0	0	44	56	44	56	0%	0%	9.3	10.6
Dunfermline Town	100302	48	45	89	100	41	55	86%	123%	5.0	6.5
Dunkeld & Birnam	100083	3	1	3	3	0	2	7%	113%	0.1	1.1
Dunlop	100151	5	7	9	17	3	10	59%	153%	1.2	3.0
Dunrobin Castle	100002	0	0	0	0	0	0	0%	0%	0.0	0.0
Dyce	100047	29	27	36	31	8	4	27%	15%	1.4	0.8
East Kilbride	100228	78	52	22	16	-55	-35	71%	68%	7.8	6.0
Easterhouse	100239	38	65	83	113	45	47	117%	73%	5.7	5.0
Edinburgh	100320	1031	1121	840	865	-191	-256	19%	23%	6.2	8.1
Edinburgh Park	100307	34	24	91	89	57	64	166%	262%	7.2	8.5
Elgin	100042	18	19	32	24	14	5	80%	28%	2.8	1.1
Exhibition Centre	100207	49	46	59	43	10	-3	20%	7%	1.4	0.5
Fairlie	100113	4	4	6	7	2	2	38%	60%	0.7	1.1
Falkirk											
Grahamston	100289	49	33	58	93	9	60	19%	184%	1.3	7.6
Falkirk High	100287	58	63	119	92	60	30	103%	48%	6.4	3.4
Falls of Cruachan	100058	0	0	0	0	0	0	0%	0%	0.3	0.4
Fauldhouse	100292	4	4	23	22	19	18	475%	442%	5.2	5.0
Fearn	100039	0	0	0	0	0	0	0%	0%	0.4	1.0
Forres	100041	12	7	21	17	9	10	70%	144%	2.1	2.9
Forsinard	100004	0	0	14	11	14	11	0%	0%	5.3	4.8
Fort Matilda	100120	19	16	83	62	64	46	337%	283%	9.0	7.4
Fort William	100385	12	27	5	10	-7	-17	56%	64%	2.3	4.1
Garelochhead	100126	0	0	55	57	55	57	0%	0%	10.5	10.6



Table E.11 : Comparison of Boardings and Alightings, IP Peak (Passengers)(Cont.)

Station	Node	Scotrail		Tmfs14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Garrowhill	100238	37	45	41	75	4	30	11%	66%	0.6	3.8
Garscadden	100206	23	23	57	109	34	86	147%	370%	5.4	10.5
Gartcosh	100267	7	5	16	27	9	22	134%	399%	2.7	5.4
Garve	100024	1	0	2	5	0	5	27%	0%	0.3	3.1
Georgemas Junction	100010	0	0	12	25	12	25	0%	0%	4.9	7.0
Giffnock	100174	26	27	25	32	-1	5	3%	18%	0.2	0.9
Gilshochill	100205	8	7	5	21	-4	14	44%	207%	1.4	3.8
Girvan	100336	8	0	45	61	37	61	448%	0%	7.1	11.0
Glasgow Central	100204	1894	2063	2317	2333	423	270	22%	13%	9.2	5.8
Glasgow Queen Street	100203	1064	1087	1650	1455	587	369	55%	34%	15.9	10.3
Gleneagles	100081	1	0	16	9	14	9	1045%	0%	4.9	4.1
Glenfinnan	100055	1	0	3	2	1	2	102%	0%	1.0	1.9
Glengarnock	100135	27	24	70	53	43	29	159%	117%	6.2	4.6
Glenrothes With Thornton	100374	0	0	71	49	71	49	0%	0%	12.0	9.9
Golf Street	100095	0	0	0	0	0	0	0%	0%	0.0	0.0
Golspie	100040	1	7	10	2	8	-4	613%	64%	3.5	2.0
Gourock	100119	75	56	142	126	67	70	89%	125%	6.4	7.3
Greenfaulds	100278	7	7	34	26	27	19	396%	280%	6.0	4.7
Greenock Central	100118	52	53	94	72	43	19	83%	35%	5.0	2.4
Greenock West	100117	90	67	94	59	4	-7	5%	11%	0.5	0.9
Gretna Green	100362	4	7	7	19	3	12	68%	177%	1.2	3.4
Hairmyres	100227	37	35	39	46	3	10	7%	29%	0.4	1.6
Hamilton Central	100264	64	65	153	135	89	70	140%	107%	8.6	7.0
Hamilton West	100263	71	46	133	95	63	49	88%	105%	6.2	5.8
Hartwood	100284	1	1	15	25	13	24	967%	1762%	4.7	6.6
Hawkhead	100159	14	12	2	5	-11	-7	84%	58%	4.1	2.4
Haymarket	100348	350	369	707	726	358	357	102%	97%	15.6	15.3
Helensburgh Central	100125	73	79	61	74	-13	-5	17%	6%	1.5	0.5
Helensburgh Upper	100124	3	3	24	24	22	21	800%	770%	5.9	5.8
Helmsdale	100007	0	1	5	5	5	3	0%	233%	3.0	1.8
High Street (Glasgow)	100202	57	86	93	83	36	-2	63%	3%	4.1	0.2
Hillfoot	100222	24	23	116	93	92	70	375%	301%	10.9	9.2
Hillington East	100201	22	12	8	9	-14	-3	63%	28%	3.6	1.1
Hillington West	100200	30	20	22	14	-8	-7	27%	32%	1.6	1.6
Holytown	100262	8	10	43	53	35	44	432%	459%	6.9	7.8
Howwood (Renfrewshire)	100136	4	5	13	7	9	2	223%	28%	3.1	0.6
Huntly	100044	5	7	21	10	15	3	282%	45%	4.2	1.1
Hyndland	100199	188	147	327	310	139	163	74%	111%	8.7	10.8
IBM	100116	3	5	3	5	0	-1	9%	11%	0.1	0.3
Insch	100045	7	3	10	14	3	11	44%	415%	1.0	3.9
Invergordon	100034	1	4	2	2	1	-2	67%	59%	0.7	1.4
Invergowrie	100089	0	0	2	0	2	0	0%	0%	2.0	0.3
Inverkeithing	100371	58	68	147	128	88	60	151%	88%	8.7	6.1
Inverkip	100115	7	7	9	9	2	2	36%	34%	0.9	0.8
Inverness	100447	122	94	179	204	56	110	46%	117%	4.6	9.0
Invershin	100028	0	0	4	6	4	6	0%	0%	2.7	3.6
Inverurie	100046	12	20	9	10	-3	-11	24%	53%	0.9	2.8
Irvine	100132	53	65	52	53	-1	-12	2%	18%	0.2	1.6



Table E.12 : Comparison of Boardings and Alightings, IP Peak (Passengers)(Cont.)

Station	Node	Scotrail		TMFS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Johnstone	100158	92	88	77	92	-15	3	16%	4%	1.6	0.3
Jordanhill	100198	52	37	263	131	212	94	410%	256%	16.9	10.3
Keith	100043	4	3	15	10	10	8	256%	286%	3.4	3.0
Kelvindale	100177	16	5	21	5	5	0	30%	3%	1.1	0.1
Kennishead	100197	5	5	5	4	-1	-1	10%	22%	0.3	0.5
Kildonan	100006	0	0	0	0	0	0	0%	0%	0.0	0.0
Kilmarnock	100366	58	52	226	211	168	159	287%	308%	14.1	13.9
Kilmaurs	100150	5	5	160	145	155	139	2847%	2557%	17.0	16.1
Kilpatrick	100161	7	15	10	29	3	14	47%	95%	1.1	3.0
Kilwinning	100448	94	98	132	117	38	19	40%	19%	3.6	1.8
Kinbrace	100003	0	0	0	0	0	0	0%	0%	0.0	0.0
Kinghorn	100321	16	11	68	28	52	17	317%	159%	8.0	3.9
Kings Park	100196	11	8	22	19	11	11	101%	136%	2.7	3.0
Kingsknowe	100318	3	3	0	0	-3	-3	100%	99%	2.3	2.3
Kingussie	100033	4	4	5	7	1	3	14%	63%	0.3	1.1
Kirkcaldy	100323	97	86	184	176	88	91	91%	106%	7.4	7.9
Kirkconnel	100255	3	1	9	15	6	14	213%	1007%	2.4	4.8
Kirkhill	100237	8	12	10	5	2	-7	23%	61%	0.6	2.6
Kirknewton	100304	1	3	0	0	-1	-2	92%	90%	1.5	2.0
Kirkwood	100269	18	12	8	19	-9	6	53%	52%	2.6	1.6
Kyle of Lochalsh	100013	5	19	3	5	-3	-14	48%	76%	1.3	4.2
Ladybank	100377	10	3	31	65	22	63	227%	2307%	4.8	10.7
Lairg	100000	0	1	7	10	7	9	0%	648%	3.7	3.7
Lanark	100282	22	19	79	59	57	40	262%	212%	8.0	6.5
Langbank	100140	14	10	5	6	-8	-3	60%	36%	2.6	1.2
Langside	100195	12	24	15	20	2	-5	20%	19%	0.7	1.0
Larbert	100288	35	35	71	79	35	43	100%	123%	4.8	5.8
Largs	100112	61	37	31	49	-30	12	49%	33%	4.4	1.8
Larkhall	100257	34	29	123	97	89	69	262%	241%	10.1	8.7
Lenzie	100252	137	91	39	44	-99	-47	72%	52%	10.5	5.7
Leuchars (for St Andrews)	100090	24	27	33	45	8	17	33%	64%	1.5	2.9
Linlithgow	100301	73	76	124	123	51	47	69%	62%	5.1	4.7
Livingston North	100299	53	56	74	64	21	9	40%	15%	2.6	1.1
Livingston South	100298	18	16	35	45	18	29	100%	178%	3.4	5.2
Loch Awe	100062	0	0	2	1	2	1	0%	0%	1.8	1.7
Loch Eil Outward Bound	100060	0	0	0	1	0	1	0%	0%	0.7	1.1
Lochailort	100052	0	0	5	9	5	9	0%	0%	3.1	4.3
Locheilside	100057	0	0	5	3	5	3	0%	0%	3.1	2.4
Lochgelly	100315	7	4	51	35	44	31	648%	764%	8.2	7.0
Lochluichart	100023	0	0	1	2	1	2	0%	0%	1.1	1.7
Lochwinnoch	100134	7	7	13	31	6	24	94%	355%	2.0	5.6
Lockerbie	100340	0	0	0	0	0	0	0%	0%	0.0	0.0
Longniddry	100331	8	5	14	14	6	9	78%	158%	1.9	2.8
Mallaig	100051	7	0	9	11	3	11	39%	0%	0.9	4.6
Markinch	100085	19	15	95	74	76	59	399%	395%	10.1	8.9
Maryhill	100194	4	5	33	43	29	38	707%	697%	6.7	7.7
Maxwell Park	100193	29	10	14	11	-15	2	51%	21%	3.1	0.6
Maybole	100103	0	0	43	34	43	34	0%	0%	9.3	8.3
Merryton	100258	8	14	30	56	22	42	265%	310%	5.0	7.2
Milliken Park	100157	19	18	33	30	14	12	75%	70%	2.8	2.5



Table E.13 : Comparison of Boardings and Alightings, IP Peak (Passengers)(Cont.)

Station	Node	Scotrail			TMS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A	
Milngavie	100221	67	63	121	131	55	68	82%	109%	5.7	6.9	
Monifieth	100092	0	0	0	0	0	0	0%	0%	0.0	0.0	
Montrose	100099	34	29	57	82	23	53	69%	186%	3.5	7.2	
Morar	100050	1	0	2	2	1	2	73%	0%	0.7	2.0	
Mosspark	100192	15	14	6	6	-9	-8	59%	57%	2.7	2.5	
Motherwell	100261	67	63	137	172	71	110	106%	175%	7.0	10.1	
Mount Florida	100191	64	58	111	126	47	68	73%	116%	5.0	7.1	
Mount Vernon	100236	4	4	8	10	4	6	98%	149%	1.6	2.3	
Muir of Ord	100026	3	1	19	23	16	21	589%	1574%	4.9	6.2	
Muirend	100173	23	44	15	20	-8	-24	33%	55%	1.7	4.3	
Musselburgh	100329	8	12	6	21	-2	8	23%	69%	0.7	2.1	
Nairn	100038	8	11	16	19	8	9	95%	78%	2.2	2.2	
Neilston	100152	22	84	12	52	-10	-32	45%	38%	2.4	3.9	
New Cumnock	100226	5	1	22	29	17	27	309%	2001%	4.5	7.0	
Newcraighall	100344	15	30	15	10	0	-19	2%	65%	0.1	4.3	
Newton (Lanarkshire)	100235	33	30	25	34	-7	4	22%	14%	1.3	0.7	
Newtonmore	100079	0	0	2	0	2	0	0%	0%	2.2	0.9	
Newton-on-Ayr	100129	7	7	96	90	89	83	1312%	1221%	12.4	11.9	
Nitshill	100190	8	8	22	24	14	16	175%	196%	3.7	4.0	
North Berwick North	100333	26	20	43	47	17	27	67%	131%	3.0	4.6	
Queensferry	100310	12	18	15	23	3	5	26%	28%	0.9	1.1	
Oban	100054	12	26	20	24	8	-2	63%	6%	1.9	0.3	
Paisley Canal	100156	33	27	13	26	-19	-2	60%	6%	4.1	0.3	
Paisley Gilmour Street	100155	385	321	458	443	73	122	19%	38%	3.6	6.2	
Paisley St James	100154	11	8	11	27	0	19	2%	230%	0.1	4.5	
Partick	100189	279	290	436	396	157	106	56%	37%	8.3	5.7	
Patterton	100172	64	16	42	33	-22	16	34%	100%	3.0	3.3	
Perth	100378	120	95	178	155	58	60	48%	63%	4.8	5.4	
Pitlochry	100082	11	8	16	15	5	7	46%	86%	1.4	2.0	
Plockton	100014	3	1	1	1	-2	-1	73%	51%	1.5	0.7	
Pollokshaws East	100188	14	23	9	16	-4	-8	31%	33%	1.2	1.7	
Pollokshaws West	100187	12	11	65	44	53	33	434%	305%	8.5	6.3	
Pollokshields East	100186	20	24	21	13	0	-12	2%	49%	0.1	2.8	
Pollokshields West	100185	15	15	4	4	-11	-11	75%	75%	3.7	3.6	
Polmont	100389	46	34	95	147	49	113	105%	332%	5.8	11.9	
Port Glasgow	100139	56	52	101	109	45	57	81%	110%	5.1	6.4	
Portlethen	100101	1	0	0	0	-1	0	76%	0%	1.1	0.6	
Possilpark & Parkhouse	100184	1	5	8	18	7	12	493%	224%	3.1	3.6	
Prestonpans	100327	8	12	42	18	34	6	414%	50%	6.8	1.6	
Prestwick International Airport	100128	67	73	29	34	-37	-40	56%	54%	5.4	5.4	
Prestwick Town	100127	23	26	63	61	40	35	173%	135%	6.1	5.3	
Priesthill & Darnley	100183	8	8	33	31	25	22	301%	275%	5.4	5.1	
Queens Park (Glasgow)	100182	24	30	25	29	1	-1	3%	4%	0.2	0.2	
Rannoch	100076	7	0	0	0	-7	0	100%	0%	3.7	0.0	
Renton	100138	14	12	12	20	-1	8	10%	64%	0.4	2.0	
Rogart	100001	0	0	2	3	2	3	0%	0%	1.7	2.6	
Rosyth	100309	12	11	32	43	20	32	161%	292%	4.2	6.1	
Roy Bridge	100067	1	0	1	1	-1	1	51%	0%	0.7	1.0	
Rutherglen	100234	48	56	67	76	19	20	40%	36%	2.5	2.4	



Table E.14 : Comparison of Boardings and Alightings, IP Peak (Passengers)(Cont.)

Station	Node	Scotrail			TMS14		Difference			% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A		
Saltcoats	100106	41	45	20	19	-21	-26	51%	58%	3.7	4.6		
Sanquhar	100254	1	1	9	16	8	15	574%	1113%	3.4	5.1		
Scotscalder	100009	0	0	1	0	1	0	0%	0%	1.1	0.6		
Scotstounhill	100181	35	38	65	87	29	49	83%	129%	4.1	6.2		
Shawlands	100180	8	11	13	12	5	1	57%	7%	1.4	0.2		
Shettleston	100233	58	46	82	72	23	26	40%	56%	2.8	3.4		
Shieldmuir	100260	0	1	9	8	9	7	0%	501%	4.2	3.1		
Shotts	100283	30	20	53	80	23	59	78%	290%	3.6	8.4		
Singer	100160	78	80	112	46	34	-34	44%	43%	3.5	4.3		
Slateford	100352	4	1	5	1	1	0	28%	30%	0.5	0.4		
South Gyle	100306	29	24	3	2	-25	-22	88%	91%	6.3	6.1		
Spean Bridge	100066	1	0	2	2	1	2	60%	0%	0.6	2.0		
Springburn	100232	39	26	53	52	13	26	34%	101%	2.0	4.2		
Springfield	100087	0	0	95	74	95	74	0%	0%	13.8	12.2		
Stepps	100231	19	18	8	7	-11	-11	56%	63%	2.9	3.2		
Stevenston	100105	16	16	34	27	18	11	110%	65%	3.6	2.3		
Stewarton	100149	12	10	69	63	57	54	465%	565%	8.9	8.9		
Stirling	100383	215	209	250	246	35	37	16%	17%	2.3	2.4		
Stonehaven	100100	30	27	26	21	-4	-6	13%	23%	0.7	1.3		
Stranraer	100335	7	0	14	11	7	11	110%	0%	2.3	4.8		
Strathcarron	100019	1	1	6	4	5	2	347%	171%	2.4	1.5		
Stromeferry	100016	1	0	1	1	-1	1	59%	0%	0.8	1.0		
Summerston	100179	15	14	9	10	-6	-4	40%	26%	1.7	1.0		
Tain	100035	1	1	7	5	5	3	398%	242%	2.7	1.9		
Taynult	100059	1	1	0	1	-1	-1	75%	49%	1.1	0.7		
Thornliebank	100171	12	11	40	25	28	14	226%	126%	5.4	3.3		
Thorntonhall	100170	1	1	0	1	-1	0	64%	13%	0.9	0.2		
Thurso	100011	0	0	49	32	49	32	0%	0%	9.9	8.0		
Troon	100131	42	50	142	164	100	114	237%	226%	10.4	11.0		
Tulloch	100075	0	0	2	2	2	2	0%	0%	1.8	2.1		
Tyndrum Lower	100072	1	1	0	2	-1	1	70%	73%	1.0	0.7		
Uddingston	100230	63	39	65	60	2	21	4%	53%	0.3	2.9		
Uphall	100300	29	23	92	92	64	69	222%	300%	8.2	9.1		
Upper Tyndrum	100071	1	0	2	0	0	0	24%	0%	0.3	0.8		
Wallyford	100326	5	7	15	11	10	5	180%	66%	3.1	1.5		
Wemyss Bay	100102	14	12	20	22	7	10	51%	81%	1.7	2.4		
West Calder	100297	8	5	19	14	11	9	133%	156%	2.9	2.7		
West Kilbride	100104	15	22	21	35	6	13	39%	59%	1.4	2.4		
Wester Hailes	100303	3	3	0	2	-2	-1	86%	42%	1.9	0.8		
Westerton	100395	71	69	84	99	14	29	19%	42%	1.5	3.2		
Whifflet	100268	29	18	55	60	26	42	92%	239%	4.1	6.8		
Whinhill	100114	11	7	15	14	4	7	37%	100%	1.1	2.1		
Whitecraigs	100169	19	19	24	10	5	-9	25%	45%	1.0	2.3		
Wick	100012	10	14	16	16	7	2	72%	18%	1.9	0.6		
Williamwood	100168	50	20	25	17	-25	-3	50%	16%	4.1	0.8		
Wishaw	100422	19	14	52	43	33	30	171%	219%	5.5	5.6		
Woodhall	100137	7	5	71	53	64	48	937%	873%	10.2	8.8		
Yoker	100178	11	14	3	4	-8	-10	73%	72%	3.0	3.3		



E.3 Comparison of Boardings and Alightings: PM Peak (Passengers)

Table E.15 : Comparison of Boardings and Alightings: PM Peak (Passengers)

Station	Node	Scotrail		TMfS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Aberdeen	100048	488	323	629	287	141	-36	29%	11%	6.0	2.0
Aberdour	100314	5	40	34	98	29	58	599%	146%	6.6	7.0
Achanalt	100022	0	0	1	1	1	1	0%	0%	1.0	1.1
Achnasheen	100021	0	0	1	1	1	1	0%	0%	1.2	1.1
Achnashellach	100020	0	0	0	0	0	0	0%	0%	0.5	0.9
Addiewell	100295	0	5	13	42	13	37	0%	771%	5.0	7.7
Airbles	100266	35	44	51	94	16	50	45%	116%	2.4	6.1
Airdrie	100277	97	330	165	365	68	34	70%	10%	5.9	1.8
Alexandra Parade	100251	15	45	47	174	33	129	226%	288%	5.9	12.3
Alexandria	100145	29	106	75	191	46	84	160%	79%	6.4	6.9
Alness	100031	2	2	7	9	4	6	184%	267%	2.1	2.7
Altnabreac	100008	0	0	1	3	1	3	0%	0%	1.6	2.3
Anderston	100219	362	96	1432	161	1071	65	296%	68%	35.7	5.8
Annan	100339	11	30	35	71	25	41	226%	136%	5.1	5.8
Anniesland	100218	293	286	452	465	159	179	54%	63%	8.2	9.3
Arbroath	100098	35	94	113	128	78	33	222%	35%	9.1	3.2
Ardgay	100032	0	2	2	5	2	2	0%	89%	1.9	1.2
Ardlui	100069	0	0	1	1	1	1	0%	0%	1.3	1.2
Harbour	100111	12	0	0	0	-12	0	100%	0%	4.9	0.0
Beach	100369	18	80	34	148	15	68	85%	85%	3.0	6.4
Ardrossan Town	100109	6	21	9	24	3	4	49%	18%	1.1	0.8
Argyle Street	100217	621	219	206	235	-415	16	67%	7%	20.4	1.0
Arisaig	100049	1	1	6	3	5	2	412%	150%	2.6	1.2
Arrochar & Tarbet	100068	0	0	8	9	8	9	0%	0%	4.1	4.3
Ashfield	100216	0	18	31	187	31	169	0%	931%	7.9	16.7
Attadale	100018	0	0	0	0	0	0	0%	0%	0.6	0.4
Auchinleck	100363	1	21	47	87	46	66	3773%	322%	9.3	9.0
Aviemore	100036	4	21	5	17	2	-4	46%	18%	0.8	0.8
Ayr	100130	230	342	437	498	207	156	90%	46%	11.3	7.6
Baillieston	100250	7	35	11	28	4	-7	54%	20%	1.3	1.2
Balloch	100147	61	132	98	217	37	85	62%	64%	4.2	6.4
Balmossie	100094	0	0	0	0	0	0	0%	0%	0.0	0.0
Banavie	100065	1	0	10	10	8	10	686%	0%	3.6	4.5
Barassie	100365	12	54	10	52	-3	-3	21%	5%	0.8	0.4
Bargeddie	100276	17	36	5	21	-12	-16	73%	43%	3.8	2.9
Barnhill	100249	19	18	26	17	6	-1	33%	7%	1.3	0.3
Barrhead	100153	70	221	72	243	2	21	3%	10%	0.2	1.4
Barrhill	100337	0	0	3	9	3	9	0%	0%	2.5	4.1
Barry Links	100097	0	0	0	0	0	0	0%	0%	0.0	0.0
Bathgate	100294	70	267	146	327	76	59	108%	22%	7.3	3.4
Bearsden	100225	62	229	87	202	25	-27	40%	12%	2.9	1.8
Beasdale	100053	0	0	2	1	2	1	0%	0%	2.2	1.5
Beaully	100025	1	21	22	45	21	25	1727%	119%	6.1	4.3
Bellgrove	100248	126	152	99	190	-27	38	22%	25%	2.6	2.9
Bellshill	100275	67	203	187	276	120	72	181%	36%	10.7	4.7
Bishopbriggs	100253	136	431	33	232	-103	-198	76%	46%	11.2	10.9
Bishopton	100166	80	208	109	191	29	-17	36%	8%	3.0	1.2
Blair Atholl	100080	2	1	4	10	1	9	54%	726%	0.7	3.7
Blairhill	100274	57	240	60	101	3	-139	5%	58%	0.4	10.6
Blantyre	100229	47	146	37	134	-10	-12	22%	8%	1.6	1.0



Table E.16 : Comparison of Boardings and Alightings, PM Peak (Passengers)(Cont.)

Station	Node	Scotrail		TMFS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Bogston	100370	8	8	27	43	19	34	223%	407%	4.5	6.8
Bowling	100165	10	21	19	57	10	36	99%	175%	2.5	5.8
Branchton	100123	28	21	88	125	60	105	215%	510%	7.9	12.3
Breich	100293	0	0	0	2	0	2	0%	0%	0.8	1.9
Bridge of Allan	100281	31	97	55	97	24	0	75%	0%	3.6	0.0
Bridge of Orchy	100073	0	0	0	0	0	0	0%	0%	0.0	0.2
Bridgeton	100247	80	102	95	181	15	79	19%	78%	1.6	6.6
Brora	100005	0	0	7	3	7	3	0%	0%	3.8	2.3
Broughty Ferry	100093	1	4	1	6	-1	2	51%	62%	0.7	1.0
Brunstane	100347	18	82	69	101	51	19	279%	23%	7.7	2.0
Burnside	100246	40	128	43	109	3	-19	7%	15%	0.4	1.7
Burntisland	100322	6	57	20	129	14	72	228%	126%	3.8	7.4
Busby	100176	70	58	18	100	-52	42	74%	72%	7.8	4.7
Cambuslang	100245	82	263	162	378	80	116	97%	44%	7.2	6.5
Camelon	100390	8	51	41	147	33	96	387%	189%	6.6	9.7
Cardenden	100325	5	18	68	237	63	218	1306%	1203%	10.5	19.4
Cardonald	100215	33	54	51	47	18	-8	55%	14%	2.8	1.1
Cardross	100143	13	98	15	83	2	-15	15%	16%	0.5	1.6
Carfin	100265	5	48	11	100	6	51	133%	106%	2.3	6.0
Carluke	100286	22	68	92	255	71	187	324%	276%	9.3	14.7
Carmyle	100244	29	45	37	69	8	24	27%	53%	1.4	3.2
Carnoustie	100096	4	39	12	85	9	46	239%	118%	3.1	5.8
Carntyne	100243	35	85	34	99	-1	14	2%	17%	0.1	1.5
Carrbridge	100037	0	0	1	0	1	0	0%	0%	1.5	0.1
Carstairs	100359	0	0	32	74	32	74	0%	0%	8.0	12.2
Cartsdyke	100122	16	40	31	44	15	4	98%	9%	3.2	0.6
Cathcart	100214	45	183	112	328	67	145	150%	80%	7.6	9.1
Charing Cross (Glasgow)	100213	1128	240	916	343	-212	103	19%	43%	6.6	6.1
Chatelherault	100256	1	4	3	17	1	13	115%	366%	1.0	4.1
Clarkston	100175	27	207	40	214	14	7	51%	3%	2.4	0.5
Cleland	100285	5	38	60	26	56	-11	1147%	30%	9.7	2.0
Clydebank	100164	53	125	108	47	54	-78	102%	63%	6.1	8.4
Coatbridge	100273	2	12	56	71	54	59	2231%	486%	10.0	9.1
Coatbridge Sunnyside	100272	85	202	200	261	115	59	136%	29%	9.7	3.9
Coatdyke	100271	51	125	115	149	64	24	126%	20%	7.0	2.1
Connel Ferry	100056	0	0	1	6	1	6	0%	0%	1.4	3.4
Corkerhill	100212	87	57	7	25	-80	-32	92%	56%	11.7	5.0
Corpach	100061	0	0	7	7	7	7	0%	0%	3.7	3.8
Corrour	100074	0	0	0	0	0	0	0%	0%	0.0	0.2
Cowdenbeath	100316	12	51	46	157	34	107	278%	210%	6.3	10.4
Craigendoran	100387	68	62	26	77	-42	16	62%	25%	6.2	1.9
Crianlarich	100386	0	0	0	0	0	0	0%	0%	0.8	0.8
Croftfoot	100242	18	94	19	52	0	-42	2%	45%	0.1	5.0
Crookston	100211	21	70	13	17	-7	-53	36%	76%	1.8	8.0
Crosshill	100210	48	94	77	150	28	55	58%	59%	3.6	5.0
Crossmyloof	100209	44	120	65	149	21	29	48%	25%	2.9	2.5
Croy	100280	208	1030	178	399	-30	-630	15%	61%	2.2	23.6
Culrain	100029	0	0	2	4	2	4	0%	0%	1.8	2.8
Cumbernauld	100279	18	92	32	32	14	-60	79%	65%	2.8	7.6
Cupar	100088	27	75	81	55	54	-20	203%	26%	7.4	2.5



Table E.17 : Comparison of Boardings and Alightings, PM Peak (Passengers)(Cont.)

Station	Node	Scotrail		TMs14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Curriehill	100305	8	18	13	10	5	-8	55%	47%	1.4	2.3
Dalgety Bay	100313	18	100	28	161	10	60	53%	60%	2.0	5.3
Dalmally	100063	0	0	1	12	1	12	0%	0%	1.0	4.9
Dalmarnock	100241	23	22	79	146	56	124	244%	571%	7.8	13.6
Dalmeny	100308	79	128	60	191	-19	63	24%	49%	2.3	5.0
Dalmuir	100163	145	317	238	264	93	-53	64%	17%	6.7	3.1
Dalreoch	100388	136	137	71	88	-64	-49	47%	36%	6.3	4.6
Dalry	100108	21	102	23	111	2	9	12%	9%	0.5	0.9
Dalwhinnie	100077	0	0	1	0	1	0	0%	0%	1.6	1.0
Dingwall	100384	7	24	9	9	1	-15	19%	63%	0.5	3.7
Drem	100332	4	42	18	115	14	72	393%	171%	4.3	8.2
Drumchapel	100224	51	106	45	83	-6	-24	11%	22%	0.8	2.5
Drumfrochar	100121	17	24	45	103	28	79	167%	325%	5.1	9.9
Drumgelloch	100270	29	71	43	209	14	138	48%	193%	2.3	11.6
Drumry	100223	30	93	112	108	82	15	272%	16%	9.7	1.5
Duirinish	100015	0	0	2	0	2	0	0%	0%	1.8	0.0
Duke Street Dumbarton Central	100240	16	27	22	82	7	55	42%	206%	1.5	7.5
Dumbarton East	100141	115	296	146	263	31	-34	27%	11%	2.7	2.0
Dumbreck	100162	51	186	44	131	-7	-56	13%	30%	0.9	4.4
Dumfries	100208	15	52	19	41	4	-11	29%	21%	1.0	1.6
Dunbar	100338	30	68	109	132	79	64	261%	95%	9.4	6.4
Dunblane	100342	0	0	117	33	117	33	0%	0%	15.3	8.1
Duncraig	100078	69	200	88	174	19	-25	27%	13%	2.1	1.9
Dundee	100017	0	0	0	0	0	0	0%	0%	0.9	0.0
Dunfermline Queen Margaret Dunfermline Town Dunkeld & Birnam	100091	384	242	530	365	146	123	38%	51%	6.8	7.1
Dunfermline Queen Margaret	100312	0	22	91	127	91	106	0%	484%	13.5	12.2
Dunfermline Town	100302	39	255	175	433	137	178	353%	70%	13.2	9.6
Dunkeld & Birnam	100083	4	6	2	4	-2	-2	57%	27%	1.3	0.7
Dunlop	100151	7	18	6	45	-1	27	17%	150%	0.5	4.8
Dunrobin Castle	100002	0	0	0	0	0	0	0%	0%	0.0	0.0
Dyce	100047	151	33	160	70	9	37	6%	113%	0.7	5.2
East Kilbride	100228	71	324	31	111	-40	-214	56%	66%	5.6	14.5
Easterhouse	100239	47	177	142	240	95	63	201%	36%	9.7	4.4
Edinburgh	100320	3797	1422	3826	1203	29	-218	1%	15%	0.5	6.0
Edinburgh Park	100307	259	81	469	89	210	8	81%	10%	11.0	0.9
Elgin	100042	22	70	37	60	15	-10	69%	14%	2.8	1.3
Exhibition Centre	100207	278	94	182	81	-96	-13	35%	14%	6.3	1.4
Fairlie	100113	17	15	10	22	-7	7	42%	51%	1.9	1.7
Falkirk Grahamston	100289	93	104	128	250	35	146	38%	140%	3.4	11.0
Falkirk High	100287	99	375	110	253	11	-122	11%	33%	1.0	6.9
Falls of Cruachan	100058	0	0	0	0	0	0	0%	0%	0.0	0.3
Fauldhouse	100292	1	18	15	58	14	39	1116%	218%	4.8	6.4
Fearn	100039	0	5	1	4	1	-1	0%	23%	1.4	0.5
Forres	100041	4	22	17	46	14	24	381%	111%	4.3	4.2
Forsinard	100004	0	0	30	13	30	13	0%	0%	7.7	5.1
Fort Matilda	100120	22	63	68	133	47	70	214%	111%	6.9	7.1
Fort William	100385	5	5	11	13	6	8	117%	164%	2.0	2.7
Garelochhead	100126	0	0	131	96	131	96	0%	0%	16.2	13.9



Table E.18 : Comparison of Boardings and Alightings, PM Peak (Passengers)(Cont.)

Station	Node	Scotrail		TfS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Garrowhill	100238	41	194	47	223	6	29	14%	15%	0.9	2.0
Garscadden	100206	25	86	95	210	70	124	274%	145%	9.0	10.2
Gartcosh	100267	11	44	11	107	0	64	2%	146%	0.1	7.3
Garve	100024	1	0	1	3	0	3	34%	0%	0.4	2.4
Georgemas Junction	100010	0	0	10	62	10	62	0%	0%	4.5	11.2
Giffnock	100174	28	104	35	158	7	54	26%	52%	1.3	4.7
Gilshochill	100205	6	31	4	34	-3	2	42%	7%	1.2	0.4
Girvan	100336	0	29	26	81	26	52	0%	180%	7.3	7.0
Glasgow Central	100204	8988	2470	8825	4112	-163	1643	2%	67%	1.7	28.6
Glasgow Queen Street	100203	3877	1822	5983	2190	2106	368	54%	20%	30.0	8.2
Gleneagles	100081	0	8	15	63	15	54	0%	641%	5.4	9.1
Glenfinnan	100055	0	0	3	3	3	3	0%	0%	2.5	2.3
Glengarnock	100135	27	133	58	149	32	16	119%	12%	4.9	1.3
Glenrothes With Thornton	100374	0	0	101	100	101	100	0%	0%	14.2	14.1
Golf Street	100095	0	0	0	0	0	0	0%	0%	0.0	0.0
Golspie	100040	0	0	12	5	12	5	0%	0%	4.8	3.2
Gourock	100119	44	198	146	324	102	125	235%	63%	10.5	7.8
Greenfaulds	100278	10	40	46	98	36	58	374%	144%	6.9	7.0
Greenock Central	100118	71	93	229	82	157	-11	220%	12%	12.8	1.2
Greenock West	100117	96	111	180	77	84	-34	88%	31%	7.2	3.5
Gretna Green	100362	1	6	11	31	10	25	803%	411%	3.9	5.8
Hairmyres	100227	65	203	111	283	45	80	69%	39%	4.8	5.1
Hamilton Central	100264	109	203	334	371	225	168	206%	83%	15.1	9.9
Hamilton West	100263	128	223	355	204	227	-18	177%	8%	14.6	1.2
Hartwood	100284	1	13	13	46	12	32	983%	243%	4.4	6.0
Hawkhead	100159	28	51	6	21	-22	-29	78%	58%	5.3	4.9
Haymarket	100348	1906	693	2180	1344	274	650	14%	94%	6.1	20.4
Helensburgh Central	100125	85	293	70	207	-14	-86	17%	29%	1.6	5.4
Helensburgh Upper	100124	0	0	24	37	24	37	0%	0%	7.0	8.6
Helmsdale	100007	0	0	10	30	10	30	0%	0%	4.4	7.7
High Street (Glasgow)	100202	275	86	248	223	-26	137	10%	159%	1.6	11.0
Hillfoot	100222	39	145	81	427	42	282	109%	194%	5.5	16.7
Hillington East	100201	53	64	19	64	-35	0	65%	0%	5.8	0.0
Hillington West	100200	92	34	96	22	4	-12	4%	36%	0.4	2.3
Holytown	100262	8	54	76	107	67	52	794%	96%	10.4	5.8
Howwood (Renfrewshire)	100136	4	36	37	39	33	2	906%	7%	7.3	0.4
Huntly	100044	11	15	5	41	-6	27	51%	185%	1.9	5.1
Hyndland	100199	476	485	421	522	-54	37	11%	8%	2.6	1.6
IBM	100116	56	16	11	9	-45	-7	80%	42%	7.7	1.9
Insch	100045	8	31	11	64	2	32	27%	103%	0.7	4.7
Invergordon	100034	0	6	3	3	3	-3	0%	56%	2.3	1.6
Invergowrie	100089	1	0	3	0	2	0	186%	0%	1.5	0.9
Inverkeithing	100371	127	457	123	277	-4	-181	3%	40%	0.4	9.4
Inverkip	100115	22	18	16	51	-6	33	28%	183%	1.4	5.6
Inverness	100447	271	99	233	193	-38	94	14%	95%	2.4	7.8
Invershin	100028	0	0	3	8	3	8	0%	0%	2.5	4.0
Inverurie	100046	16	53	13	63	-2	10	15%	19%	0.6	1.3
Irvine	100132	80	195	89	143	9	-52	12%	27%	1.0	4.0



Table E.19 : Comparison of Boardings and Alightings, PM Peak (Passengers)(Cont.)

Station	Node	Scotrail		TMfS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Johnstone	100158	99	430	93	299	-6	-130	6%	30%	0.7	6.8
Jordanhill	100198	74	133	464	216	390	83	528%	62%	23.8	6.3
Keith	100043	10	27	5	23	-4	-4	43%	14%	1.5	0.7
Kelvindale	100177	5	16	18	5	14	-11	280%	71%	4.0	3.5
Kennishead	100197	5	16	6	10	1	-6	21%	37%	0.4	1.6
Kildonan	100006	0	0	0	0	0	0	0%	0%	0.0	0.0
Kilmarnock	100366	53	122	273	298	219	176	412%	144%	17.2	12.1
Kilmaurs	100150	0	22	191	185	191	164	0%	751%	19.5	16.1
Kilpatrick	100161	17	50	70	67	53	17	313%	35%	8.1	2.3
Kilwinning	100448	106	330	170	327	64	-3	60%	1%	5.4	0.2
Kinbrace	100003	0	0	0	0	0	0	0%	0%	0.0	0.0
Kinghorn	100321	7	61	48	104	41	43	559%	72%	7.7	4.8
Kings Park	100196	13	69	36	135	23	66	173%	96%	4.6	6.5
Kingsknowe	100318	7	12	3	5	-5	-7	62%	60%	2.0	2.5
Kingussie	100033	0	4	4	8	4	5	0%	131%	2.9	1.9
Kirkcaldy	100323	86	259	323	281	237	22	276%	9%	16.6	1.4
Kirkconnel	100255	1	8	3	17	2	9	137%	104%	1.2	2.5
Kirkhill	100237	8	61	13	24	4	-36	52%	60%	1.3	5.5
Kirknewton	100304	2	24	3	1	0	-23	14%	94%	0.2	6.4
Kirkwood	100269	7	64	6	43	-1	-21	11%	32%	0.3	2.8
Kyle of Lochalsh	100013	5	0	6	0	1	0	27%	0%	0.6	0.0
Ladybank	100377	2	12	25	120	23	108	948%	892%	6.2	13.3
Lairg	100000	0	0	5	14	5	14	0%	0%	3.2	5.3
Lanark	100282	21	80	93	124	73	44	354%	55%	9.6	4.3
Langbank	100140	5	30	20	28	15	-2	311%	6%	4.3	0.3
Langside	100195	6	97	19	89	13	-8	220%	8%	3.7	0.8
Larbert	100288	54	223	120	311	65	89	120%	40%	7.0	5.4
Largs	100112	36	96	52	101	16	5	43%	5%	2.4	0.5
Larkhall	100257	22	106	101	254	79	148	364%	139%	10.1	11.0
Lenzie	100252	171	598	72	256	-99	-342	58%	57%	8.9	16.6
Leuchars (for St Andrews)	100090	35	53	54	90	19	37	53%	69%	2.8	4.3
Linlithgow	100301	91	489	148	421	58	-68	63%	14%	5.3	3.2
Livingston North	100299	92	290	107	195	15	-96	17%	33%	1.5	6.2
Livingston South	100298	21	115	62	194	41	79	201%	68%	6.4	6.3
Loch Awe	100062	0	1	0	1	0	0	0%	6%	0.3	0.1
Loch Eil Outward Bound	100060	0	0	0	1	0	1	0%	0%	1.0	1.3
Lochailort	100052	0	2	11	7	11	5	0%	197%	4.7	2.2
Locheilside	100057	0	0	5	4	5	4	0%	0%	3.2	2.9
Lochgelly	100315	1	12	46	110	45	98	3682%	813%	9.2	12.6
Lochluichart	100023	0	0	0	1	0	1	0%	0%	0.8	1.1
Lochwinnoch	100134	15	47	10	61	-5	14	34%	29%	1.4	1.9
Lockerbie	100340	0	0	0	0	0	0	0%	0%	0.0	0.0
Longniddry	100331	6	96	7	55	1	-40	20%	42%	0.5	4.7
Mallaig	100051	7	24	25	11	18	-13	245%	54%	4.4	3.1
Markinch	100085	16	69	49	193	33	124	212%	180%	5.9	10.8
Maryhill	100194	11	24	78	48	67	24	615%	100%	10.1	4.0
Maxwell Park	100193	28	48	15	36	-12	-12	44%	25%	2.7	1.9
Maybole	100103	0	0	24	44	24	44	0%	0%	6.9	9.4
Merryton	100258	5	46	25	96	20	50	409%	109%	5.2	6.0
Milliken Park	100157	24	96	32	95	8	-1	34%	1%	1.5	0.1



Table E.20 : Comparison of Boardings and Alightings, PM Peak (Passengers)(Cont.)

Station	Node	Scotrail		TMfS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Milngavie	100221	71	319	97	369	25	49	35%	15%	2.8	2.7
Monifieth	100092	0	0	0	0	0	0	0%	0%	0.0	0.0
Montrose	100099	22	103	68	185	46	83	211%	80%	6.9	6.9
Morar	100050	1	2	6	3	4	0	355%	12%	2.3	0.2
Mossspark	100192	12	58	13	10	1	-48	7%	83%	0.2	8.3
Motherwell	100261	142	184	386	424	245	240	173%	130%	15.1	13.8
Mount Florida	100191	120	324	245	379	125	55	105%	17%	9.3	2.9
Mount Vernon	100236	4	16	9	28	6	12	160%	76%	2.3	2.6
Muir of Ord	100026	2	22	12	38	9	16	390%	75%	3.5	3.0
Muirend	100173	21	144	13	98	-7	-46	36%	32%	1.8	4.2
Musselburgh	100329	5	133	82	99	77	-34	1592%	26%	11.7	3.2
Nairn	100038	6	15	12	64	6	50	104%	343%	2.1	7.9
Neilston	100152	17	142	18	154	1	13	5%	9%	0.2	1.0
New Cumnock	100226	7	25	10	35	2	10	33%	39%	0.8	1.8
Newcraighall	100344	5	106	21	84	16	-22	330%	21%	4.5	2.3
Newton (Lanarkshire)	100235	29	191	80	308	51	117	176%	61%	6.9	7.4
Newtonmore	100079	0	2	4	3	4	1	0%	23%	2.9	0.3
Newton-on-Ayr	100129	10	24	136	134	126	110	1301%	455%	14.8	12.4
Nitshill	100190	15	16	61	86	46	70	320%	444%	7.6	9.8
North Berwick North	100333	19	154	82	160	62	6	321%	4%	8.8	0.5
Queensferry	100310	16	47	25	36	9	-11	58%	23%	2.0	1.7
Oban	100054	22	0	6	16	-16	16	75%	0%	4.4	5.7
Paisley Canal	100156	34	138	42	166	8	28	24%	21%	1.3	2.3
Paisley Gilmour Street	100155	622	808	1022	858	400	50	64%	6%	14.0	1.7
Paisley St James	100154	11	16	58	66	47	51	429%	322%	8.0	7.9
Partick	100189	822	789	926	662	105	-127	13%	16%	3.5	4.7
Patterton	100172	12	82	44	77	32	-5	261%	6%	6.0	0.6
Perth	100378	161	183	182	208	21	25	13%	14%	1.6	1.8
Pitlochry	100082	4	17	12	12	9	-5	236%	30%	3.0	1.3
Plockton	100014	0	1	1	0	1	-1	0%	100%	1.5	1.6
Pollokshaws East	100188	25	93	30	64	5	-29	18%	31%	0.9	3.3
Pollokshaws West	100187	19	41	98	153	79	112	406%	272%	10.3	11.4
Pollokshields East	100186	29	91	59	46	30	-44	104%	49%	4.6	5.4
Pollokshields West	100185	13	77	8	24	-6	-54	41%	70%	1.7	7.6
Polmont	100389	56	295	64	354	8	59	14%	20%	1.0	3.3
Port Glasgow	100139	71	166	131	200	60	34	84%	20%	5.9	2.5
Portlethen	100101	0	12	2	12	2	0	0%	2%	1.8	0.1
Possilpark & Parkhouse	100184	5	11	9	27	4	16	89%	149%	1.6	3.7
Prestonpans	100327	4	87	45	202	42	114	1153%	131%	8.4	9.5
Prestwick International Airport	100128	85	53	40	44	-45	-9	53%	17%	5.7	1.3
Prestwick Town	100127	22	68	76	152	54	84	248%	124%	7.7	8.0
Priesthill & Darnley	100183	5	30	108	64	103	34	2128%	111%	13.7	4.9
Queens Park (Glasgow)	100182	39	162	56	122	17	-40	44%	25%	2.5	3.3
Rannoch	100076	0	0	0	0	0	0	0%	0%	0.0	0.0
Renton	100138	18	56	17	59	-1	3	4%	6%	0.2	0.5
Rogart	100001	0	0	2	3	2	3	0%	0%	2.1	2.6
Rosyth	100309	38	88	56	184	18	96	48%	108%	2.6	8.2
Roy Bridge	100067	0	0	1	1	1	1	0%	0%	1.2	1.6
Rutherglen	100234	120	215	126	311	6	96	5%	45%	0.6	5.9



Table E.21 : Comparison of Boardings and Alightings, PM Peak (Passengers)(Cont.)

Station	Node	Scotrail		TMFS14		Difference		% Difference		GEH	
		B	A	B	A	B	A	B	A	B	A
Saltcoats	100106	38	105	25	61	-12	-45	33%	42%	2.2	4.9
Sanquhar	100254	0	17	4	18	4	1	0%	8%	2.8	0.3
Scotscalder	100009	0	0	1	2	1	2	0%	0%	1.0	2.1
Scotstounhill	100181	35	149	165	196	129	47	369%	32%	13.0	3.6
Shawlands	100180	10	52	17	40	7	-12	75%	23%	2.0	1.8
Shettleston	100233	69	227	86	245	17	18	24%	8%	1.9	1.2
Shieldmuir	100260	6	11	114	99	108	88	1782%	807%	13.9	11.9
Shotts	100283	21	119	42	138	21	20	104%	17%	3.8	1.7
Singer	100160	250	115	186	71	-64	-44	26%	38%	4.3	4.6
Slateford	100352	15	5	25	3	11	-1	75%	28%	2.4	0.7
South Gyle	100306	221	76	12	5	-210	-71	95%	93%	19.4	11.1
Spean Bridge	100066	0	0	2	4	2	4	0%	0%	1.8	2.7
Springburn	100232	82	64	129	163	47	99	57%	155%	4.6	9.3
Springfield	100087	0	1	4	9	4	8	0%	672%	2.9	3.5
Stepps	100231	13	125	16	47	3	-77	20%	62%	0.7	8.3
Stevenston	100105	12	51	33	89	21	39	176%	76%	4.5	4.6
Stewarton	100149	23	67	62	138	39	72	170%	108%	6.0	7.1
Stirling	100383	462	471	509	527	47	56	10%	12%	2.1	2.5
Stonehaven	100100	27	182	12	98	-14	-83	54%	46%	3.2	7.0
Stranraer	100335	0	8	21	26	21	17	0%	202%	6.5	4.2
Strathcarron	100019	2	0	3	3	1	3	42%	0%	0.6	2.5
Stromeferry	100016	0	0	1	0	1	0	0%	0%	1.2	0.5
Summerston	100179	8	38	7	54	-1	16	15%	43%	0.5	2.4
Tain	100035	0	7	8	15	8	7	0%	101%	3.9	2.2
Taynult	100059	1	2	0	1	-1	-1	83%	54%	1.2	1.0
Thornliebank	100171	8	50	51	132	42	83	498%	167%	7.8	8.7
Thorntonhall	100170	2	13	7	9	4	-4	174%	31%	2.0	1.2
Thurso	100011	0	0	137	40	137	40	0%	0%	16.5	8.9
Troon	100131	41	168	186	289	145	121	352%	72%	13.6	8.0
Tulloch	100075	0	0	1	3	1	3	0%	0%	1.7	2.4
Tyndrum Lower	100072	0	0	5	2	5	2	0%	0%	3.1	2.2
Uddingston	100230	54	267	120	241	65	-27	120%	10%	7.0	1.7
Uphall	100300	56	110	119	221	63	110	113%	100%	6.7	8.6
Upper Tyndrum	100071	0	0	1	4	1	4	0%	0%	1.7	3.0
Wallyford	100326	13	85	34	159	21	74	157%	88%	4.3	6.7
Wemyss Bay	100102	17	98	24	73	7	-25	40%	26%	1.5	2.7
West Calder	100297	8	39	69	58	60	20	713%	51%	9.7	2.8
West Kilbride	100104	13	86	20	83	6	-3	49%	3%	1.6	0.3
Wester Hailes	100303	5	11	7	50	2	39	35%	362%	0.7	7.1
Westerton	100395	155	332	95	265	-60	-66	39%	20%	5.4	3.8
Whifflet	100268	27	98	108	148	82	50	306%	51%	9.9	4.5
Whinhill	100114	25	31	38	49	13	18	50%	57%	2.3	2.8
Whitecraigs	100169	18	133	27	49	9	-84	48%	63%	1.8	8.8
Wick	100012	7	0	43	61	36	61	493%	0%	7.1	11.0
Williamwood	100168	34	114	28	90	-6	-24	18%	21%	1.1	2.4
Wishaw	100422	24	103	96	236	72	133	299%	129%	9.3	10.2
Woodhall	100137	17	21	53	117	36	96	214%	466%	6.1	11.6
Yoker	100178	11	59	12	29	1	-31	9%	51%	0.3	4.6



F TMFS14 RAIL PASSENGER LOADING COMPARISONS (LOADING VS CAP)

Table F.1 : Loading versus Capacity, AM Peak (Passengers)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity / hr	Max TMFS Loading	Loading/ Capacity
1000b	GLASGOW QS->HAYMARKET	30	384	2.00	768	589	77%
1000f	GLASGOW QS->EDINBURGH	30	384	2.00	768	516	67%
1001f	EDINBURGH->GLASGOW QS	30	384	2.00	768	662	86%
1001g	EDINBURGH->GLASGOW QS	30	384	2.00	768	494	64%
1006ED	EDINBURGH->DUNBLANE	30	136	2.00	272	292	107%
1009a	DUNBLANE->EDINBURGH	30	136	2.00	272	427	157%
1009b	DUNBLANE->EDINBURGH	180	136	0.33	45	50	111%
1010	HAYMARKET->NEW CRAIGHALL	180	136	0.33	45	6	13%
1011	PERTH->EDINBURGH	180	272	0.33	91	113	125%
1012	STIRLING->EDINBURGH	180	136	0.33	45	78	173%
1015aNC	FIFE CIRCLE	54	192	1.11	213	309	145%
1016NC	FIFE CIRCLE	56	192	1.07	206	384	187%
1017a	EDINBURGH->COW DEN BEATH	60	192	1.00	192	96	50%
1018	EDINBURGH->MARKINCH	60	192	1.00	192	51	27%
1020a	DUNF QM->EDINBURGH	180	192	0.33	64	106	165%
1021a	GLENROTHES->EDINBURGH	180	192	0.33	64	130	203%
1021b	KIRKCALDY->EDINBURGH	180	192	0.33	64	133	207%
1023b	MARKINCH->EDINBURGH	180	192	0.33	64	87	136%
1025	GLASGOW QS->STIRLING	90	192	0.67	128	67	53%
1025ALLOA	GLASGOW QS->ALLOA	60	192	1.00	192	103	54%
1026	GLASGOW QS->DUNBLANE	180	382	0.33	127	34	27%
1027GLA	GLASGOW QS->DUNDEE	120	192	0.50	96	27	28%
1028	STIRLING->GLASGOW QS	180	192	0.33	64	72	112%
1028ALLOA	ALLOA->GLASGOW QS	45	192	1.33	256	302	118%
1029	DUNBLANE->GLASGOW QS	90	384	0.67	256	185	72%
1030	PERTH->GLASGOW QS	180	408	0.33	136	95	70%
1030_DU	DUNDEE->GLASGOW QS	180	408	0.33	136	95	70%
1031	EDINBURGH->PERTH	180	192	0.33	64	19	29%
1032	PERTH->EDINBURGH	180	272	0.33	91	67	74%
1033	PERTH->EDINBURGH	180	272	0.33	91	127	140%
1034	GLASGOW QS->FALKIRK GRAHAMSTON	60	192	1.00	192	40	21%
1036	FALKIRK GRAHAMSTON->GLASGOW QS	61	192	0.98	189	168	89%
1037	GLASGOW QS->CUMBERNAULD	60	192	1.00	192	28	15%
1038	CUMBERNAULD->GLASGOW QS	60	192	1.00	192	116	60%
1040	DUNDEE->NEW CRAIGHALL	180	192	0.33	64	87	136%
1041a	EDINBURGH->NORTH BERWICK	180	252	0.33	84	18	21%
1041b	EDINBURGH->NORTH BERWICK	180	252	0.33	84	13	16%
1042a	GLASGOW C->NORTH BERWICK	180	252	0.33	84	63	75%
1043	HAYMARKET->NORTH BERWICK	180	252	0.33	84	21	25%
1044	NORTH BERWICK->EDINBURGH	100	252	0.60	151	263	174%
1045	NORTH BERWICK->HAYMARKET	180	252	0.33	84	131	156%
1046b	NORTH BERWICK->GLASGOW C	180	252	0.33	84	115	137%
1047_SEM	GLASGOW C->EDINBURGH	60	290	1.00	290	369	127%
1047a	GLASGOW C->EDINBURGH	180	145	0.33	48	58	120%
1047b	GLASGOW C->EDINBURGH	149	290	0.40	117	78	67%
1048a	WEST CALDER->EDINBURGH	180	145	0.33	48	28	57%
1048b	WEST CALDER->EDINBURGH	180	145	0.33	48	28	57%
1049_SEM	EDINBURGH->GLASGOW C	60	290	1.00	290	264	91%
1049a	EDINBURGH->GLASGOW C	61	290	0.98	285	218	76%
1049b	EDINBURGH->GLASGOW C	180	145	0.33	48	45	93%
1052aEXP	EDINBURGH->ABERDEEN	180	192	0.33	64	45	70%
1052bEXP	EDINBURGH->ABERDEEN	180	192	0.33	64	54	84%
1052EDDU	EDINBURGH->DUNDEE	90	192	0.67	128	163	127%
1052EDDU	EDINBURGH->DUNDEE	180	192	0.33	64	84	131%
1053aEXP	EDINBURGH->DYCE	180	192	0.33	64	64	100%
1057aEXP	ABERDEEN->EDINBURGH	180	192	0.33	64	77	120%
1057DUED	DUNDEE->EDINBURGH	90	192	0.67	128	153	119%
1057DUED	DUNDEE->EDINBURGH	180	192	0.33	64	79	123%
1059	DUNDEE->BERWICK	180	400	0.33	133	131	98%
1060	DUNDEE->EDINBURGH	180	136	0.33	45	64	142%
1063	EDINBURGH->PERTH	180	192	0.33	64	19	29%



Table F.2 : Loading versus Capacity, AM Peak (Passengers) (Cont.)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity / hr	Max TMfs Loading	Loading/ Capacity	
1078 a	ABERDEEN->GLASGOW QS	180	136	0.33	45	55	122%	
1079	DYCE->GLASGOW QS	180	192	0.33	64	53	83%	
1079 a LAU	FDYCE->GLASGOW QS	180		192	0.33	64	69	108%
1080	GLASGOW C->CARLISLE	84	400	0.71	286	230	80%	
1081	GLASGOW C->CARLISLE	180	400	0.33	133	136	102%	
1083	GLASGOW C->CARLISLE	180	400	0.33	133	97	73%	
1085	CARLISLE->GLASGOW C	180	400	0.33	133	114	86%	
1086	CARLISLE->GLASGOW C	88	400	0.68	273	175	64%	
1100	INVERNESS->WICK	180	136	0.33	45	120	265%	
1102	INVERNESS->INVERGORDON	180	136	0.33	45	10	22%	
1103 b	WICK->INVERNESS	180	136	0.33	45	112	246%	
1104	LAIRG->INVERNESS	180	136	0.33	45	51	112%	
1107	INVERNESS->KYLE OF LOCHALSH	119	136	0.50	69	24	35%	
1110	GLASGOW QS->MALLAIG	180	145	0.33	48	61	126%	
1111	FT WILLIAM->MALLAIG	180	145	0.33	48	50	102%	
1112	MALLAIG->GLASGOW QS	180	145	0.33	48	49	101%	
1113 a	ARR AND TAR->GLASGOW QS	180	145	0.33	48	36	75%	
1114	GLASGOW QS->OBAN	180	145	0.33	48	82	170%	
1115	OBAN->GLASGOW QS	180	145	0.33	48	62	128%	
1120	GLASGOW C->CARLISLE	90	145	0.67	97	111	115%	
1121	CARLISLE->GLASGOW C	90	290	0.67	193	283	146%	
1123	GIRVAN->CARLISLE	180	145	0.33	48	52	108%	
1124	DUMFRIES->CARLISLE	180	145	0.33	48	36	74%	
1127	GLASGOW C->GIRVAN	90	145	0.67	97	77	80%	
1129 a	KILMARNOCK->STRANRAER	180	145	0.33	48	21	44%	
1130	STRANRAER->GLASGOW C	90	145	0.67	97	136	141%	
1134	GLASGOW C->STRANRAER	180	145	0.33	48	45	92%	
1137	GLASGOW->WHIFFLET	30	145	2.00	290	56	19%	
1138	WHIFFLET->GLASGOW	30	145	2.00	290	150	52%	
1140	GLASGOW Q S->ANNIESLAND	30	145	2.00	290	118	41%	
1141	GLASGOW Q S->ANNIESLAND	30	145	2.00	290	131	45%	
1145	GLASGOW->BERWICK UPON TWEED	120	400	0.50	200	120	60%	
1145 b	GLASGOW->BERWICK UPON TWEED	130	400	0.46	185	36	20%	
1146 a	DUNBAR->GLASGOW	180	400	0.33	133	14	10%	
1146 c	BERWICK UPON TWEED->GLASGOW	76	400	0.79	316	321	102%	
1147 a	EDINBURGH->NEWCASTLE	150	400	0.40	160	51	32%	
1148 b	NEWCASTLE->EDINBURGH	80	400	0.75	300	229	76%	
1150 a	GLASGOW C->NEILSTON	26	212	2.31	489	175	36%	
1150 b	GLASGOW C->NEILSTON X	180	212	0.33	71	6	9%	
1151 a	GLASGOW C->NEWTON VQP	46	212	1.30	277	69	25%	
1151 b	GLASGOW C->NEWTON VMP	60	212	1.00	212	24	11%	
1152 a	NEILSTON->GLASGOW C	24	212	2.50	530	803	151%	
1152 b	NEILSTON X->GLASGOW C	180	212	0.33	71	58	82%	
1153 a	NEWTON VQP->GLASGOW C	48	212	1.25	265	282	106%	
1153 b	NEWTON VMP->GLASGOW C	50	212	1.20	254	186	73%	
1154	CATHCART OUTER	42	212	1.43	303	216	71%	
1155	CATHCART INNER	42	212	1.43	303	351	116%	
1156	GLASGOW C->BARRHEAD	30	145	2.00	290	162	56%	
1157 a	GLASGOW C->E KILBRIDE	54	290	1.11	322	72	22%	
1157 b	GLASGOW C->E KILBRIDE	65	290	0.92	268	58	22%	
1159	KILMARNOCK->GLASGOW C	90	290	0.67	193	176	91%	
1160	BARRHEAD->GLASGOW C	30	145	2.00	290	348	120%	
1161 a	E KILBRIDE->GLASGOW C	44	290	1.36	395	364	92%	
1161 b	E KILBRIDE->GLASGOW C	60	145	1.00	145	219	151%	
1161 c	E KILBRIDE->GLASGOW C	180	290	0.33	97	72	75%	
1161 d	HAIRM YRES->GLASGOW C	180	290	0.33	97	37	39%	
1165 a	GLASGOW C->LARGS	180	366	0.33	122	41	33%	
1166 a	GLASGOW C->AYR	180	458	0.33	153	58	38%	
1166 b	GLASGOW C->AYR	30	458	2.00	916	351	38%	
1168	GLASGOW C->ARDROSSAN SOUTH BEA	180	219	0.33	73	20	27%	
1171 a	AYR->GLASGOW C	120	458	0.50	229	265	116%	



Table F.3 : Loading versus Capacity, AM Peak (Passengers) (Cont.)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity / hr	Max TMfs Loading	Loading/ Capacity
1172c	LARGS->GLASGOW C	180	366	0.33	122	146	119%
1172d	LARGS->GLASGOW C	60	183	1.00	183	315	172%
1173b	ARDROSSAN HARBOUR->GLASGOW C	180	183	0.33	61	97	159%
1174	ARDROSSAN TOWN->GLASGOW C	180	183	0.33	61	99	162%
1177	GLASGOW C->PAISLEY CANAL	30	218	2.00	436	107	25%
1178	PSY CNL->GLA C	30	218	2.00	436	61	14%
1179a	GOUROCK->GLASGOW C	41	366	1.46	536	281	53%
1179b	GOUROCK->GLASGOW C	68	366	0.88	323	201	62%
1179c	GOUROCK->GLASGOW C	180	366	0.33	122	61	50%
1179d	GOUROCK->GLASGOW C	180	366	0.33	122	71	58%
1180a	WEMYSS BAY->GLASGOW C	180	366	0.33	122	67	55%
1180b	WEMYSS BAY->GLASGOW C	180	366	0.33	122	66	54%
1180c	WEMYSS BAY->GLA C	60	366	1.00	366	215	59%
1181a	GLASGOW C->GOUROCK	30	366	2.00	732	338	46%
1181b	GLASGOW C->GOUROCK	60	366	1.00	366	141	39%
1181c	GLASGOW C->GOUROCK	180	366	0.33	122	60	49%
1182a	GLASGOW C->WEYMSS BAY	180	366	0.33	122	50	41%
1182b	GLASGOW C->WEYMSS BAY	60	366	1.00	366	126	34%
1200	DALMUIR->LANARK	55	183	1.09	200	193	96%
1201a	MILNGAVIE->LANARK	60	219	1.00	219	234	107%
1203	DALMUIR->MOTHERWELL	73	219	0.82	180	123	69%
1204a	MILNGAVIE->MOTHERWELL	51	183	1.18	215	255	119%
1204b	MILNGAVIE->MOTHERWELL	180	183	0.33	61	69	112%
1205	ANDERSTON->MOTHERWELL	180	219	0.33	73	13	18%
1207	MOTHERWELL->CUMBERNAULD	60	145	1.00	145	100	69%
1208aAB	HELENSBURGH->EDIN	180	230	0.33	77	80	105%
1208bAB	HELENSBURGH->EDIN	60	230	1.00	230	290	126%
1208cAB	HELENSBURGH->EDIN	180	230	0.33	77	103	134%
1208dAB	HELENSBURGH->EDIN	180	230	0.33	77	98	128%
1209	DALMUIR->SPRINGBURN	42	230	1.43	329	298	91%
1210a	BALLOCH->SPRINGBURN	180	230	0.33	77	78	102%
1211	GARSCADDEN->SPRINGBURN	180	230	0.33	77	64	83%
1212	MILNGAVIE->SPRINGBURN	180	460	0.33	153	52	34%
1214a	DALMUIR->LARKHALL	30	183	2.00	366	384	105%
1216	BALLOCH->AIRDRIE	39	230	1.54	354	507	143%
1217	HELENSBURGH->AIRDRIE	180	230	0.33	77	74	96%
1219AB	MILNGAVIE->EDINBURGH	40	230	1.50	345	518	150%
1220	HELENSBURGH->HIGH STREET	180	230	0.33	77	97	126%
1221	DALMUIR->HIGH STREET	180	230	0.33	77	59	77%
1222	CARDROSS->GLASGOW QS	180	145	0.33	48	10	22%
1240AB	EDIN->HELENS C	30	230	2.00	460	596	130%
1244	AIRDRIE->BALLOCH	30	230	2.00	460	597	130%
1245a	LANARK->DALMUIR	124	219	0.48	106	152	143%
1245b	LANARK->DALMUIR	180	219	0.33	73	98	135%
1246	SPRINGBURN->DALMUIR	30	230	2.00	460	415	90%
1247	MOTHERWELL->DALMUIR	45	183	1.33	244	317	130%
1248a	LARKHALL->DALMUIR	60	183	1.00	183	225	123%
1248b	LARKHALL->DALMUIR	180	183	0.33	61	79	130%
1248c	LARKHALL->DALMUIR	180	183	0.33	61	78	129%
1249	MOTHERWELL->MILNGAVIE	47	219	1.28	280	380	136%
1250	LANARK->MILNGAVIE	60	219	1.00	219	305	139%
1251	CUMBERNAULD->MILNGAVIE	180	366	0.33	122	101	83%
1252AB	EDINBURGH->MILNGAVIE	30	230	2.00	460	568	124%
1253	BELLGROVE->MILNGAVIE	30	460	2.00	920	119	13%
1255	CUMBERNAULD->MOTHERWELL	61	145	0.98	143	85	60%
1256	MOTHERWELL->GLASGOW C	180	366	0.33	122	38	31%
1257a	LANARK->PARTICK	180	219	0.33	73	115	157%
1257b	LANARK->PARTICK	180	219	0.33	73	105	144%
1258	CARSTAIRS->PARTICK	180	219	0.33	73	98	134%
1260	EDINBURGH->CARLISLE	135	400	0.44	178	161	91%
1261	EDINBURGH->CARLISLE	180	400	0.33	133	36	27%



Table F.4 : Loading versus Capacity, Inter Peak (Passengers)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity / hr	Max TMfs Loading	Loading/ Capacity
1000b	GLASGOW QS->HAYMARKET	30	384	2.00	768	246	32%
1000f	GLASGOW QS->EDINBURGH	30	384	2.00	768	181	24%
1001f	EDINBURGH->GLASGOW QS	30	384	2.00	768	194	25%
1001g	EDINBURGH->GLASGOW QS	30	384	2.00	768	167	22%
1006ED	EDINBURGH->DUNBLANE	30	136	2.00	272	216	79%
1009a	DUNBLANE->EDINBURGH	30	136	2.00	272	224	82%
1015aNC	FIFE CIRCLE	58	192	1.03	199	100	50%
1016NC	FIFE CIRCLE	58	192	1.03	199	130	66%
1017a	EDINBURGH->COWDEN BEATH	60	192	1.00	192	91	48%
1018	EDINBURGH->MARKINCH	60	192	1.00	192	52	27%
1022	COWDEN BEATH->EDINBURGH	60	192	1.00	192	59	31%
1023a	MARKINCH->EDINBURGH	60	192	1.00	192	54	28%
1025	GLASGOW QS->STIRLING	120	192	0.50	96	20	21%
1025ALLOA	GLASGOW QS->ALLOA	60	192	1.00	192	46	24%
1026	GLASGOW QS->DUNBLANE	180	382	0.33	127	14	11%
1027	GLASGOW QS->PERTH	180	192	0.33	64	18	29%
1028	STIRLING->GLASGOW QS	180	192	0.33	64	17	26%
1028ALLOA	ALLOA->GLASGOW QS	60	192	1.00	192	56	29%
1029	DUNBLANE->GLASGOW QS	90	384	0.67	256	42	16%
1030_DU	DUNDEE->GLASGOW QS	180	408	0.33	136	22	16%
1031	EDINBURGH->PERTH	360	192	0.17	32	8	26%
1032	PERTH->EDINBURGH	360	272	0.17	45	11	25%
1034	GLASGOW QS->FALKIRK GRAHAMSTON	60	192	1.00	192	33	17%
1035	GLASGOW QS->FALKIRK GRAHAMSTON	360	192	0.17	32	5	15%
1036	FALKIRK GRAHAMSTON->GLASGOW QS	60	192	1.00	192	22	12%
1037	GLASGOW QS->CUMBERNAULD	60	192	1.00	192	24	13%
1038	CUMBERNAULD->GLASGOW QS	60	192	1.00	192	18	9%
1041a	EDINBURGH->NORTH BERWICK	60	252	1.00	252	78	31%
1042b	GLASGOW C->NORTH BERWICK	360	252	0.17	42	21	49%
1043	HAYMARKET->NORTH BERWICK	306	252	0.20	49	16	32%
1044	NORTH BERWICK->EDINBURGH	90	252	0.67	168	65	39%
1045	NORTH BERWICK->HAYMARKET	180	252	0.33	84	30	36%
1047_SEM	GLASGOW C->EDINBURGH	60	290	1.00	290	91	32%
1047b	GLASGOW C->EDINBURGH	60	290	1.00	290	89	31%
1048a	WEST CALDER->EDINBURGH	360	145	0.17	24	2	8%
1049_SEM	EDINBURGH->GLASGOW C	60	290	1.00	290	77	26%
1049a	EDINBURGH->GLASGOW C	60	290	1.00	290	56	19%
1052aEXP	EDINBURGH->ABERDEEN	360	192	0.17	32	11	36%
1052bEXP	EDINBURGH->ABERDEEN	360	192	0.17	32	14	43%
1052cEXP	EDINBURGH->ABERDEEN	360	192	0.17	32	12	37%
1052dEXP	EDINBURGH->ABERDEEN	120	192	0.50	96	40	42%
1052EDDU	EDINBURGH->DUNDEE	60	192	1.00	192	113	59%
1053bEXP	EDINBURGH->DYCE	120	192	0.50	96	36	37%
1057aEXP	ABERDEEN->EDINBURGH	360	192	0.17	32	9	29%
1057bEXP	ABERDEEN->EDINBURGH	119	192	0.50	97	36	38%
1057cEXP	ABERDEEN->EDINBURGH	360	192	0.17	32	10	32%
1057dEXP	ABERDEEN->EDINBURGH	360	192	0.17	32	10	31%
1057DUED	DUNDEE->EDINBURGH	60	192	1.00	192	115	60%
1058aEXP	DYCE->EDINBURGH	360	192	0.17	32	15	48%
1058bEXP	DYCE->EDINBURGH	360	192	0.17	32	14	43%
1063	EDINBURGH->PERTH	360	192	0.17	32	8	26%
1066	PERTH->EDINBURGH	360	192	0.17	32	11	35%
1067b	GLASGOW QS->ABERDEEN	360	192	0.17	32	18	57%
1067c	GLASGOW QS->ABERDEEN	90	192	0.67	128	67	52%
1067dLAUF	GLASGOW QS->ABERDEEN	360	192	0.17	32	19	60%
1067e	GLASGOW QS->ABERDEEN	360	192	0.17	32	18	58%
1067fLAUF	GLASGOW QS->ABERDEEN	360	192	0.17	32	19	58%
1067g	GLASGOW QS->ABERDEEN	360	192	0.17	32	18	57%
1077	DUNDEE->GLASGOW QS	360	192	0.17	32	16	50%
1078a	ABERDEEN->GLASGOW QS	101	136	0.59	81	67	83%
1078b	ABERDEEN->GLASGOW QS	360	192	0.17	32	20	61%



Table F.5 : Loading versus Capacity, Inter Peak (Passengers) (Cont.)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity / hr	Max TMfS Loading	Loading/ Capacity
1086	CARLISLE->GLASGOW C	88	400	0.68	273	21	8%
1087	CARLISLE->GLASGOW C	360	400	0.17	67	29	43%
1088	CARLISLE->GLASGOW C	300	400	0.20	80	35	44%
1089	CARLISLE->GLASGOW C	360	400	0.17	67	25	37%
1100	INVERNESS->WICK	205	136	0.29	40	24	61%
1102	INVERNESS->INVERGORDON	162	136	0.37	50	5	9%
1103a	WICK->INVERNESS	360	136	0.17	23	18	77%
1103b	WICK->INVERNESS	360	136	0.17	23	17	76%
1105	INVERGORDON->INVERNESS	150	136	0.40	54	10	19%
1107	INVERNESS->KYLE OF LOCHALSH	119	136	0.50	69	9	14%
1110	GLASGOW QS->MALLAIG	240	145	0.25	36	42	116%
1112	MALLAIG->GLASGOW QS	360	145	0.17	24	19	78%
1113b	ARR AND TAR->GLASGOW QS	240	145	0.25	36	23	63%
1114	GLASGOW QS->OBAN	240	145	0.25	36	74	205%
1115	OBAN->GLASGOW QS	285	145	0.21	31	61	199%
1120	GLASGOW C->CARLISLE	90	145	0.67	97	103	107%
1121	CARLISLE->GLASGOW C	90	290	0.67	193	90	47%
1122	STRANRAER->CARLISLE	360	145	0.17	24	16	67%
1125	CARLISLE->STRANRAER	360	145	0.17	24	15	61%
1127	GLASGOW C->GIRVAN	180	145	0.33	48	28	58%
1128	KILMARNOCK->GIRVAN	360	145	0.17	24	9	39%
1129a	KILMARNOCK->STRANRAER	360	145	0.17	24	14	57%
1130	STRANRAER->GLASGOW C	180	145	0.33	48	37	76%
1131	STRANRAER->GLASGOW C	360	145	0.17	24	17	71%
1132a	GIRVAN->KILMARNOCK	180	145	0.33	48	18	37%
1132b	GIRVAN->KILMARNOCK	360	145	0.17	24	5	23%
1133	STRANRAER->KILMARNOCK	360	145	0.17	24	8	32%
1134	GLASGOW C->STRANRAER	360	145	0.17	24	14	59%
1137	GLASGOW->WHIFFLET	30	145	2.00	290	40	14%
1138	WHIFFLET->GLASGOW	30	145	2.00	290	39	13%
1140	GLASGOW Q S->ANNIESLAND	30	145	2.00	290	37	13%
1141	GLASGOW Q S->ANNIESLAND	30	145	2.00	290	66	23%
1145	GLASGOW->BERWICK UPON TWEED	120	400	0.50	200	61	30%
1145b	GLASGOW->BERWICK UPON TWEED	240	400	0.25	100	3	3%
1146b	BERWICK UPON TWEED->GLASGOW	106	400	0.57	226	83	37%
1146c	BERWICK UPON TWEED->GLASGOW	360	400	0.17	67	29	43%
1146d	BERWICK UPON TWEED->GLASGOW	299	400	0.20	80	28	35%
1147a	EDINBURGH->NEWCASTLE	137	400	0.44	175	31	18%
1148a	NEWCASTLE->EDINBURGH	360	400	0.17	67	0	0%
1148b	NEWCASTLE->EDINBURGH	360	400	0.17	67	23	34%
1150a	GLASGOW C->NEILSTON	29	212	2.07	439	183	42%
1151a	GLASGOW C->NEWTON VQP	60	212	1.00	212	57	27%
1151b	GLASGOW C->NEWTON VMP	60	212	1.00	212	29	14%
1152a	NEILSTON->GLASGOW C	31	212	1.94	410	140	34%
1153a	NEWTON VQP->GLASGOW C	58	212	1.03	219	53	24%
1153b	NEWTON VMP->GLASGOW C	60	212	1.00	212	25	12%
1154	CATHCART OUTER	55	212	1.09	231	74	32%
1155	CATHCART INNER	60	212	1.00	212	59	28%
1156	GLASGOW C->BARRHEAD	34	145	1.76	256	82	32%
1157a	GLASGOW C->E KILBRIDE	58	290	1.03	300	47	16%
1157b	GLASGOW C->E KILBRIDE	60	290	1.00	290	44	15%
1158a	GLASGOW C->KILMARNOCK	90	145	0.67	97	59	61%
1158b	GLASGOW C->KILMARNOCK	180	145	0.33	48	27	55%
1159	KILMARNOCK->GLASGOW C	60	290	1.00	290	84	29%
1160	BARRHEAD->GLASGOW C	30	145	2.00	290	111	38%
1161a	E KILBRIDE->GLASGOW C	59	290	1.02	295	58	19%
1161b	E KILBRIDE->GLASGOW C	60	145	1.00	145	57	39%
1165b	GLASGOW C->LARGS	84	219	0.71	156	109	70%
1165c	GLASGOW C->LARGS	360	366	0.17	61	26	43%
1166a	GLASGOW C->AYR	60	458	1.00	458	173	38%
1166c	GLASGOW C->AYR	240	458	0.25	115	33	29%



Table F.6 : Loading versus Capacity, Inter Peak (Passengers) (Cont.)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity / hr	Max TMfs Loading	Loading/ Capacity
1171d	AYR->GLASGOW C	60	458	1.00	458	160	35%
1171e	AYR->GLASGOW C	360	458	0.17	76	22	28%
1172d	LARGS->GLASGOW C	80	183	0.75	137	100	73%
1173b	ARDROSSAN HARBOUR->GLASGOW C	360	183	0.17	31	18	58%
1173c	ARDROSSAN HARBOUR->GLASGOW C	360	183	0.17	31	18	60%
1174	ARDROSSAN TOWN->GLASGOW C	90	183	0.67	122	73	60%
1177	GLASGOW C->PAISLEY CANAL	30	218	2.00	436	39	9%
1178	PSY CNL->GLA C	30	218	2.00	436	22	5%
1179a	GOUROCK->GLASGOW C	30	366	2.00	732	187	26%
1179b	GOUROCK->GLASGOW C	63	366	0.95	349	100	29%
1180c	WEMYSS BAY->GLA C	59	366	1.02	372	100	27%
1181a	GLASGOW C->GOUROCK	30	366	2.00	732	158	22%
1181b	GLASGOW C->GOUROCK	60	366	1.00	366	78	21%
1182a	GLASGOW C->WEYMSS BAY	360	366	0.17	61	17	27%
1182b	GLASGOW C->WEYMSS BAY	60	366	1.00	366	102	28%
1200	DALMUIR->LANARK	77	183	0.78	143	85	59%
1201a	MILNGAVIE->LANARK	84	219	0.71	156	65	42%
1201b	MILNGAVIE->LANARK	360	219	0.17	37	15	42%
1203	DALMUIR->MOTHERWELL	58	219	1.03	227	92	40%
1204a	MILNGAVIE->MOTHERWELL	56	183	1.07	196	79	40%
1207	MOTHERWELL->CUMBERNAULD	60	145	1.00	145	38	26%
1208bAB	HELENSBURGH->EDIN	30	230	2.00	460	154	33%
1209	DALMUIR->SPRINGBURN	30	230	2.00	460	147	32%
1214a	DALMUIR->LARKHALL	30	183	2.00	366	149	41%
1216	BALLOCH->AIRDRIE	30	230	2.00	460	144	31%
1218	MILNGAVIE->AIRDRIE	30	230	2.00	460	97	21%
1219AB	MILNGAVIE->EDINBURGH	30	230	2.00	460	168	37%
1223	MILNGAVIE->WHIFFLET	30	230	2.00	460	147	32%
1240AB	EDIN->HELENS C	30	230	2.00	460	150	33%
1244	AIRDRIE->BALLOCH	30	230	2.00	460	205	45%
1245a	LANARK->DALMUIR	60	219	1.00	219	92	42%
1246	SPRINGBN->DALMUIR	30	230	2.00	460	220	48%
1247	MOTHERWELL->DALMUIR	58	183	1.03	189	78	41%
1248a	LARKHALL->DALMUIR	30	183	2.00	366	170	46%
1249	MOTHERWELL->MILNGAVIE	56	219	1.07	235	97	41%
1250	LANARK->MILNGAVIE	60	219	1.00	219	97	44%
1252AB	EDINBURGH->MILNGAVIE	30	230	2.00	460	185	40%
1253	BELGROVE->MILNGAVIE	30	460	2.00	920	107	12%
1255	CUMBERNAULD->MOTHERWELL	60	145	1.00	145	57	39%
1260	EDINBURGH->CARLISLE	120	400	0.50	200	114	57%
1261	EDINBURGH->CARLISLE	360	400	0.17	67	13	20%
1262	EDINBURGH->CARLISLE	119	400	0.50	202	118	59%
1263	CARLISLE->EDINBURGH	240	400	0.25	100	74	74%
1264	CARLISLE->EDINBURGH	108	400	0.56	222	175	79%
1290a	ABERDEEN->BERWICK UPON TWEED	360	400	0.17	67	34	52%
1290b	ABERDEEN->NEWCASTLE	118	400	0.51	203	75	37%
1290c	ABERDEEN->BERWICK UPON TWEED	360	400	0.17	67	31	47%
1291a	BERWICK UPON TWEED->ABERDEEN	360	400	0.17	67	26	39%
1291b	NEWCASTLE->ABERDEEN	360	400	0.17	67	11	17%
1291c	BERWICK UPON TWEED->ABERDEEN	360	400	0.17	67	28	43%
2000hd	-Aberdeen-Dyce-Inverurie	360	136	0.17	23	1	6%
2001hd	-Aberdeen-Dyce-Inverurie-Insch	107	384	0.56	215	79	37%
2006	-Edinburgh-Haymarket-Inverkeit	360	192	0.17	32	26	81%
2009	-Edinburgh-Haymarket-Kirkcaldy	360	192	0.17	32	30	94%
2011	-Edinburgh-Haymarket-Leuchars-	360	192	0.17	32	14	45%
2012	-Edinburgh-Haymarket-Leuchars-	360	192	0.17	32	11	34%
2013	-Edinburgh-Haymarket-Leuchars-	360	192	0.17	32	12	38%
2017	-Glasgow Queen Street-Stirling	360	192	0.17	32	19	59%
2018	-Glasgow Queen Street-Stirling	360	192	0.17	32	19	60%
2019	-Glasgow Queen Street-Stirling	360	192	0.17	32	19	61%
2021	-Inverness-Aviemore-Kingussie-	360	192	0.17	32	29	90%



Table F.7 : Loading versus Capacity, PM Peak (Passengers)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity / hr	Max TMs Loading	Loading/ Capacity
1000b	GLASGOW QS->HAYMARKET	30	384	2.00	768	510	66%
1000f	GLASGOW QS->EDINBURGH	30	384	2.00	768	455	59%
1001f	EDINBURGH->GLASGOW QS	30	384	2.00	768	507	66%
1001g	EDINBURGH->GLASGOW QS	30	384	2.00	768	390	51%
1006ED	EDINBURGH->DUNBLANE	30	136	2.00	272	522	192%
1007	EDINBURGH->DUNBLANE	180	192	0.33	64	71	111%
1009a	DUNBLANE->EDINBURGH	30	136	2.00	272	291	107%
1015aNC	FIFE CIRCLE	93	192	0.65	124	210	170%
1015b	FIFE CIRCLE	180	192	0.33	64	130	202%
1016NC	FIFE CIRCLE	52	192	1.15	222	306	138%
1017a	EDINBURGH->COWDEN BEATH	60	192	1.00	192	338	176%
1017b	EDINBURGH->COWDEN BEATH	180	192	0.33	64	101	158%
1018	EDINBURGH->MARKINCH	61	192	0.98	189	256	135%
1019	EDINBURGH->PERTH	180	192	0.33	64	124	194%
1022	COWDEN BEATH->EDINBURGH	60	192	1.00	192	63	33%
1023a	MARKINCH->EDINBURGH	60	192	1.00	192	56	29%
1025	GLASGOW QS->STIRLING	180	192	0.33	64	71	111%
1025ALLOA	GLASGOW QS->ALLOA	60	192	1.00	192	233	122%
1026	GLASGOW QS->DUNBLANE	90	382	0.67	255	152	60%
1027	GLASGOW QS->PERTH	59	192	1.02	195	153	78%
1027GLA	GLASGOW QS->DUNDEE	120	192	0.50	96	91	94%
1028	STIRLING->GLASGOW QS	90	192	0.67	128	65	51%
1028ALLOA	ALLOA->GLASGOW QS	60	192	1.00	192	102	53%
1029	DUNBLANE->GLASGOW QS	90	384	0.67	256	73	28%
1030	PERTH->GLASGOW QS	180	408	0.33	136	37	27%
1034	GLASGOW QS->FALKIRK GRAHAMSTON	60	192	1.00	192	173	90%
1035	GLASGOW QS->FALKIRK GRAHAMSTON	180	192	0.33	64	60	95%
1036	FALKIRK GRAHAMSTON->GLASGOW QS	60	192	1.00	192	50	26%
1037	GLASGOW QS->CUMBERNAULD	60	192	1.00	192	129	67%
1038	CUMBERNAULD->GLASGOW QS	60	192	1.00	192	31	16%
1041a	EDINBURGH->NORTH BERWICK	180	252	0.33	84	110	131%
1042b	GLASGOW C->NORTH BERWICK	180	252	0.33	84	152	181%
1043	HAYMARKET->NORTH BERWICK	66	252	0.91	229	441	192%
1044	NORTH BERWICK->EDINBURGH	50	252	1.20	302	95	31%
1045	NORTH BERWICK->HAYMARKET	60	252	1.00	252	71	28%
1046a	NORTH BERWICK->GLASGOW C	180	252	0.33	84	42	50%
1047_SEM	GLASGOW C->EDINBURGH	60	290	1.00	290	231	80%
1047b	GLASGOW C->EDINBURGH	90	290	0.67	193	166	86%
1047c	GLASGOW C->EDINBURGH	180	290	0.33	97	86	89%
1049_SEM	EDINBURGH->GLASGOW C	60	290	1.00	290	284	98%
1049a	EDINBURGH->GLASGOW C	60	290	1.00	290	165	57%
1049c	EDINBURGH->GLASGOW C	180	145	0.33	48	56	116%
1052EDDU	EDINBURGH->DUNDEE	90	192	0.67	128	171	134%
1052EDDU	EDINBURGH->DUNDEE	180	192	0.33	64	90	141%
1053bEXP	EDINBURGH->DYCE	180	192	0.33	64	50	78%
1053cEXP	EDINBURGH->DYCE	180	192	0.33	64	46	73%
1053dEXP	EDINBURGH->DYCE	180	192	0.33	64	49	76%
1054EXP	EDINBURGH->INVERURIE	180	192	0.33	64	48	75%
1057dEXP	ABERDEEN->EDINBURGH	180	192	0.33	64	39	61%
1057DUED	DUNDEE->EDINBURGH	90	192	0.67	128	136	106%
1057DUED	DUNDEE->EDINBURGH	180	192	0.33	64	71	110%
1057eEXP	ABERDEEN->EDINBURGH	180	192	0.33	64	35	54%
1057fEXP	ABERDEEN->EDINBURGH	180	192	0.33	64	39	60%
1058bEXP	DYCE->EDINBURGH	180	192	0.33	64	56	87%
1058cEXP	DYCE->EDINBURGH	180	192	0.33	64	44	69%
1067a	GLASGOW QS->ABERDEEN	180	192	0.33	64	53	82%
1067c	GLASGOW QS->ABERDEEN	180	192	0.33	64	55	86%
1067fLAUR	GLASGOW QS->ABERDEEN	180	192	0.33	64	60	93%
1067g	GLASGOW QS->ABERDEEN	180	192	0.33	64	55	85%
1067h	GLASGOW QS->ABERDEEN	180	192	0.33	64	47	73%
1078a	ABERDEEN->GLASGOW QS	58	136	1.03	141	120	85%



Table F.8 : Loading versus Capacity, PM Peak (Passengers) (Cont.)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity / hr	Max TMs Loading	Loading/ Capacity
1084	CARLISLE->GLASGOW C	80	400	0.75	300	155	52%
1088	CARLISLE->GLASGOW C	180	400	0.33	133	100	75%
1100	INVERNESS->WICK	180	136	0.33	45	86	189%
1101	INVERNESS->ARDGAY	180	136	0.33	45	17	37%
1103a	WICK->INVERNESS	180	136	0.33	45	86	191%
1105	INVERGORDON->INVERNESS	180	136	0.33	45	14	30%
1110	GLASGOW QS->MALLAIG	180	145	0.33	48	57	118%
1112	MALLAIG->GLASGOW QS	180	145	0.33	48	82	170%
1114	GLASGOW QS->OBAN	180	145	0.33	48	72	149%
1115	OBAN->GLASGOW QS	180	145	0.33	48	70	145%
1120	GLASGOW C->CARLISLE	90	145	0.67	97	177	183%
1121	CARLISLE->GLASGOW C	90	290	0.67	193	102	53%
1124	DUMFRIES->CARLISLE	180	145	0.33	48	20	42%
1125	CARLISLE->STRANRAER	180	145	0.33	48	76	157%
1126	CARLISLE->DUMFRIES	180	145	0.33	48	24	49%
1128	KILMARNOCK->GIRVAN	180	145	0.33	48	55	114%
1131	STRANRAER->GLASGOW C	180	145	0.33	48	53	111%
1137	GLASGOW->WHIFFLET	30	145	2.00	290	194	67%
1138	WHIFFLET->GLASGOW	30	145	2.00	290	64	22%
1140	GLASGOW Q S->ANNIESLAND	30	145	2.00	290	253	87%
1141	GLASGOW Q S->ANNIESLAND	30	145	2.00	290	102	35%
1145b	GLASGOW->BERWICK UPON TWEED	120	400	0.50	200	9	5%
1145c	GLASGOW->BERWICK UPON TWEED	180	400	0.33	133	161	121%
1146b	BERWICK UPON TWEED->GLASGOW	106	400	0.57	226	104	46%
1146d	BERWICK UPON TWEED->GLASGOW	101	400	0.59	238	101	42%
1147b	EDINBURGH->NEWCASTLE	180	400	0.33	133	104	78%
1148a	NEWCASTLE->EDINBURGH	134	400	0.45	179	0	0%
1150a	GLASGOW C->NEILSTON	24	212	2.50	530	783	148%
1150b	GLASGOW C->NEILSTON X	180	212	0.33	71	48	68%
1151a	GLASGOW C->NEWTON VQP	51	212	1.18	249	285	114%
1151b	GLASGOW C->NEWTON VMP	60	212	1.00	212	171	81%
1152a	NEILSTON->GLASGOW C	31	212	1.94	410	215	52%
1152c	NEILSTON->GLASGOW C	180	212	0.33	71	30	42%
1153a	NEWTON VQP->GLASGOW C	60	212	1.00	212	84	40%
1153b	NEWTON VMP->GLASGOW C	60	212	1.00	212	32	15%
1153c	NEWTON X->GLASGOW C	180	212	0.33	71	19	27%
1154	CATHCART OUTER	52	212	1.15	245	274	112%
1155	CATHCART INNER	54	212	1.11	236	158	67%
1156	GLASGOW C->BARRHEAD	41	145	1.46	212	249	117%
1157a	GLASGOW C->E KILBRIDE	41	290	1.46	424	376	89%
1157b	GLASGOW C->E KILBRIDE	26	290	2.31	669	569	85%
1157c	GLASGOW C->E KILBRIDE	180	290	0.33	97	44	46%
1158c	GLASGOW C->KILMARNOCK	90	290	0.67	193	165	85%
1158d	GLASGOW C->KILMARNOCK	90	290	0.67	193	158	82%
1159	KILMARNOCK->GLASGOW C	45	290	1.33	387	110	28%
1160	BARRHEAD->GLASGOW C	30	145	2.00	290	171	59%
1161a	E KILBRIDE->GLASGOW C	60	290	1.00	290	82	28%
1161b	E KILBRIDE->GLASGOW C	60	145	1.00	145	78	54%
1165b	GLASGOW C->LARGS	60	219	1.00	219	286	130%
1165c	GLASGOW C->LARGS	180	366	0.33	122	113	93%
1165d	GLASGOW C->LARGS	180	366	0.33	122	108	89%
1165e	GLASGOW C->LARGS	180	366	0.33	122	101	83%
1166a	GLASGOW C->AYR	60	458	1.00	458	344	75%
1166e	GLASGOW C->AYR	60	458	1.00	458	296	65%
1166f	GLASGOW C->AYR	180	458	0.33	153	121	79%
1166g	GLASGOW C->AYR	180	458	0.33	153	98	64%
1166h	GLASGOW C->AYR	180	458	0.33	153	92	60%
1166i	GLASGOW C->AYR	180	458	0.33	153	117	77%
1169	GLASGOW C->ARDROSSAN TOWN	118	183	0.51	93	127	137%
1170b	GLASGOW C->ARDROSSAN HARBOUR	180	366	0.33	122	95	78%
1171a	AYR->GLASGOW C	180	458	0.33	153	97	63%



Table F.9 : Loading versus Capacity, PM Peak (Passengers) (Cont.)

Name	Description	Headway	Coded Capacity	Services per Hour	Capacity /hr	Max TMfs Loading	Loading/ Capacity
1173a	ARDROSSAN HARBOUR->GLASGOW C	180	366	0.33	122	31	26%
1173c	ARDROSSAN HARBOUR->GLASGOW C	180	183	0.33	61	33	53%
1174	ARDROSSAN TOWN->GLASGOW C	180	183	0.33	61	31	51%
1175	ARDROSSAN SOUTH BEACH->GLASGOW	180	183	0.33	61	8	13%
1176	GIRVAN->AYR	180	145	0.33	48	12	24%
1177	GLASGOW C->PAISLEY CANAL	30	218	2.00	436	233	53%
1178	PSY CNL->GLA C	30	218	2.00	436	57	13%
1179a	GOUROCK->GLASGOW C	31	366	1.94	708	389	55%
1179b	GOUROCK->GLASGOW C	180	366	0.33	122	59	48%
1179e	GOUROCK->GLASGOW C	180	366	0.33	122	65	53%
1180c	WEMYSS BAY->GLA C	60	366	1.00	366	151	41%
1181a	GLASGOW C->GOUROCK	32	366	1.88	686	464	68%
1181b	GLASGOW C->GOUROCK	100	366	0.60	220	155	71%
1181d	GLASGOW C->GOUROCK	180	366	0.33	122	87	71%
1182a	GLASGOW C->WEYMSS BAY	180	366	0.33	122	89	73%
1182b	GLASGOW C->WEYMSS BAY	180	366	0.33	122	90	74%
1182c	GLASGOW C->WEYMSS BAY	180	366	0.33	122	88	72%
1182d	GLASGOW C->WEYMSS BAY	180	366	0.33	122	92	75%
1200	DALMUIR->LANARK	180	183	0.33	61	125	205%
1201a	MILNGAVIE->LANARK	180	219	0.33	73	74	101%
1202a	ANDERSTON->LANARK	71	219	0.85	185	252	136%
1202b	ANDERSTON->LANARK	180	438	0.33	146	115	79%
1203	DALMUIR->MOTHERWELL	50	219	1.20	263	391	149%
1204a	MILNGAVIE->MOTHERWELL	30	183	2.00	366	414	113%
1207	MOTHERWELL->CUMBERNAULD	60	145	1.00	145	78	53%
1208bAB	HELENSBURGH->EDIN	30	230	2.00	460	585	127%
1208e	HELENSBURGH->DRUMGELLOCH	180	230	0.33	77	87	113%
1209	DALMUIR->SPRINGBURN	30	230	2.00	460	393	85%
1210b	BALLOCH->SPRINGBURN	180	230	0.33	77	48	62%
1214a	DALMUIR->LARKHALL	60	183	1.00	183	235	128%
1214b	DALMUIR->LARKHALL	180	183	0.33	61	83	135%
1215	MILNGAVIE->LARKHALL	30	366	2.00	732	398	54%
1216	BALLOCH->AIRDRIE	30	230	2.00	460	493	107%
1218	MILNGAVIE->AIRDRIE	30	230	2.00	460	199	43%
1219AB	MILNGAVIE->EDINBURGH	30	230	2.00	460	503	109%
1223	MILNGAVIE->WHIFFLET	30	230	2.00	460	432	94%
1224	DALMUIR->WHIFFLET	180	230	0.33	77	81	106%
1225	DALMUIR->CARSTAIRS	180	230	0.33	77	93	121%
1240AB	EDIN->HELENS C	30	230	2.00	460	480	104%
1241	BELGROVE->HELENS C	180	230	0.33	77	73	96%
1242	AIRDRIE->HELENS C	180	366	0.33	122	96	79%
1243	BELGROVE->BALLOCH	180	230	0.33	77	86	112%
1244	AIRDRIE->BALLOCH	40	230	1.50	345	460	133%
1245a	LANARK->DALMUIR	50	219	1.20	263	182	69%
1246	SPRINGBN->DALMUIR	30	230	2.00	460	552	120%
1247	MOTHERWELL->DALMUIR	60	183	1.00	183	97	53%
1248a	LARKHALL->DALMUIR	35	183	1.71	314	168	54%
1248b	LARKHALL->DALMUIR	180	183	0.33	61	32	53%
1249	MOTHERWELL->MILNGAVIE	54	219	1.11	243	228	94%
1250	LANARK->MILNGAVIE	60	219	1.00	219	209	96%
1252AB	EDINBURGH->MILNGAVIE	30	230	2.00	460	687	149%
1253	BELGROVE->MILNGAVIE	30	460	2.00	920	393	43%
1254	LARKHALL->MILNGAVIE	180	183	0.33	61	66	108%
1255	CUMBERNAULD->MOTHERWELL	60	145	1.00	145	97	67%
1262	EDINBURGH->CARLISLE	60	400	1.00	400	320	80%
1263	CARLISLE->EDINBURGH	125	400	0.48	192	101	53%
1264	CARLISLE->EDINBURGH	100	400	0.60	240	136	57%
1290c	ABERDEEN->BERWICK UPON TWEED	180	400	0.33	133	166	124%
1291a	BERWICK UPON TWEED->ABERDEEN	180	400	0.33	133	136	102%
1291b	NEWCASTLE->ABERDEEN	180	400	0.33	133	86	64%
1291d	NEWCASTLE->ABERDEEN	180	400	0.33	133	134	101%





G TMFS14 TIMETABLED AND MODELLED BUS JOURNEY TIME COMPARISONS

Table G.1 : Bus Journey Time Comparisons, AM Peak (min)

Line No	AM Peak Period Operator	Service No.	Route Description	Timetabled JT	Modelled JT	Diff	% Diff	Within 15% (DMRB)	Within 25%
721	Scottish CityLink	916	Uig - Glasgow	452	381	-71	-16%	No	Yes
720	Scottish CityLink	916	Glasgow - Uig	410	375	-35	-9%	Yes	Yes
309c	Stagecoach Inverness	10	Aberdeen - Inverness	245	241	-4	-2%	Yes	Yes
310a	Stagecoach Inverness	10	Inverness - Aberdeen	241	244	3	1%	Yes	Yes
697	Scottish CityLink	M10	Glasgow - Inverness	203	236	33	16%	No	Yes
760	Scottish CityLink	973	Dundee - Oban	208	213	5	2%	Yes	Yes
933a	First Borders	X95	Carlisle - Edinburgh	205	177	-28	-14%	Yes	Yes
932a	First Borders	X95	Edinburgh - Carlisle	202	169	-33	-16%	No	Yes
714	Scottish CityLink	976	Oban - Glasgow	175	180	5	3%	Yes	Yes
713	Scottish CityLink	976	Glasgow - Oban	170	173	3	2%	Yes	Yes
775	MacEwan's	100	Dumfries - Edinburgh	155	177	22	14%	Yes	Yes
511f	Stagecoach Fife	X58/X60	St Andrews - Edinburgh	152	184	32	21%	No	Yes
512c	Stagecoach Fife	X58/X60	Edinburgh - St Andrews	154	177	23	15%	Yes	Yes
249b	Stagecoach Fife	X54	Edinburgh - Dundee	143	137	-6	-4%	Yes	Yes
248a	Stagecoach Fife	X54	Dundee - Edinburgh	142	139	-3	-2%	Yes	Yes
567b	Stagecoach West	246	Dumfries - Ayr	137	123	-14	-11%	Yes	Yes
568d	Stagecoach West	246	Ayr - Dumfries	136	123	-13	-10%	Yes	Yes
797	Stagecoach West	500	Stranraer - Dumfries	137	116	-21	-15%	No	Yes
796	Stagecoach West	500	Dumfries - Stranraer	139	115	-24	-17%	No	Yes
919b	First Borders	62	Edinburgh - Melrose	136	126	-10	-7%	Yes	Yes
694a	Scottish CityLink	M8	Dundee - Glasgow	142	159	17	12%	Yes	Yes
693a	Scottish CityLink	M8	Glasgow - Dundee	145	167	22	15%	No	Yes
302a	Stagecoach Inverness	25	Tain - Inverness	120	72	-48	-40%	No	No
300a	Stagecoach Inverness	25	Inverness - Tain	146	68	-78	-54%	No	No
564a	Stagecoach West	585	Ayr - Greenock	125	145	20	16%	No	Yes
563a	Stagecoach West	585	Greenock - Ayr	125	140	15	12%	Yes	Yes
667	Stagecoach West	X74	Glasgow - Dumfries	125	118	-7	-6%	Yes	Yes
668	Stagecoach West	X74	Dumfries - Glasgow	125	119	-6	-5%	Yes	Yes
914a	First Borders	60	Galashiels - Tweedmouth	114	76	-38	-33%	No	No
915a	First Borders	60	Tweedmouth - Galashiels	105	76	-29	-27%	No	No
115b	Stagecoach Bluebird	X7	Montrose - Aberdeen	111	81	-30	-27%	No	No
502b	Stagecoach Fife	X27	Kirkcaldy - Glasgow	105	122	17	16%	No	Yes
832	Lothian	15A	Tranent - Penicuik	109	87	-22	-20%	No	Yes
833	Lothian	15A	Penicuik - Tranent	107	90	-17	-16%	No	Yes
728a	First Glasgow	216	Glasgow - Helensburgh	106	78	-28	-27%	No	No
729a	First Glasgow	216	Helensburgh - Glasgow	95	79	-16	-17%	No	Yes
726a	First Glasgow	215	Glasgow - Lomond Shores	103	80	-23	-22%	No	Yes
712a	Scottish CityLink	901	Largs - Glasgow	99	116	17	18%	No	Yes
711a	Scottish CityLink	901	Glasgow - Largs	98	108	10	11%	Yes	Yes
863	First Edinburgh	124	North Berwick - Edinburgh	94	82	-12	-13%	Yes	Yes
862	First Edinburgh	124	Edinburgh - North Berwick	93	75	-18	-20%	No	Yes
766a	Stagecoach Cumberland	79	Dumfries - Carlisle	96	43	-53	-55%	No	No
767a	Stagecoach Cumberland	79	Carlisle - Dumfries	90	43	-47	-52%	No	No
636a	Stagecoach West	X44	Ardrossan - Glasgow	95	90	-5	-6%	Yes	Yes
731	First Glasgow	24	Stirling - Glasgow	90	100	10	12%	Yes	Yes
730a	First Glasgow	24	Glasgow - Stirling	83	100	17	20%	No	Yes
661a	First Glasgow	240	Glasgow - Pather	89	97	8	9%	Yes	Yes
662a	First Glasgow	240	Pather - Glasgow	87	108	21	24%	No	Yes
824	Lothian	30	Clovenstone - Musselburgh	90	62	-28	-31%	No	No
825	Lothian	30	Musselburgh - Clovenstone	84	64	-20	-24%	No	Yes
753a	McGills	904	Helensburgh - Glasgow	89	82	-7	-8%	Yes	Yes
752a	McGills	904	Glasgow - Helensburgh	85	77	-8	-9%	Yes	Yes
659a	First Glasgow	255	Glasgow - Newarthill	88	69	-19	-21%	No	Yes
660a	First Glasgow	255	Newarthill - Glasgow	79	78	-1	-1%	Yes	Yes
732	First Glasgow	27	Glasgow - Falkirk	85	76	-9	-10%	Yes	Yes
733	First Glasgow	27	Falkirk - Glasgow	90	79	-11	-13%	Yes	Yes
613b	Scottish Citylink	900	Edinburgh - Glasgow	81	85	4	5%	Yes	Yes
612a	Scottish Citylink	900	Glasgow - Edinburgh	83	88	5	6%	Yes	Yes
692a	First Glasgow	X39	Stirling - Glasgow	82	66	-16	-19%	No	Yes
691	First Glasgow	X39	Glasgow - Stirling	83	64	-19	-23%	No	Yes



Table G.2 : Bus Journey Time Comparisons, AM Peak (min) (Cont.)

Line No	AM Peak Period		Route Description	Timetabled	Modelled		% Diff	Within 15% (DMRB)	Within 25%
	Operator	Service No.		JT	JT	Diff			
551	Stagecoach West	11	Kilmarnock - Ardrossan	74	76	2	3%	Yes	Yes
101a	Stagecoach Bluebird	263	Peterhead - Aberdeen	75	75	0	0%	Yes	Yes
100a	Stagecoach Bluebird	263	Aberdeen - Peterhead	69	66	-3	-4%	Yes	Yes
600a	First Glasgow	X1	Hillhouse - Glasgow (George Square)	62	37	-25	-40%	No	No
741a	Arriva	36	Kilbarchan - Glasgow	71	51	-20	-28%	No	No
740b	Arriva	36	Glasgow - Kilbarchan	68	48	-20	-30%	No	No
750a	Arriva	23A	Glasgow (Renfield St) - Erskine Harbour	64	39	-25	-39%	No	No
616	First Edinburgh	15A	Glasgow - Livingston	71	47	-24	-33%	No	No
615	First Edinburgh	15A	Livingston - Glasgow	68	51	-17	-25%	No	No
242a	Stagecoach Strathtay	73A	Carnoustie - Ninewells	64	59	-5	-8%	Yes	Yes
241c	Stagecoach Strathtay	73A	Ninewells - Carnoustie	62	57	-5	-9%	Yes	Yes
566a	Stagecoach West	X77	Glasgow - Ayr	60	57	-3	-5%	Yes	Yes
565a	Stagecoach West	X77	Ayr - Glasgow	61	60	-1	-1%	Yes	Yes
643	First Glasgow	85	Glasgow - Campsie Glen	58	43	-15	-26%	No	No
644	First Glasgow	85	Campsie Glen - Glasgow	58	49	-9	-16%	No	Yes
844	First Edinburgh	8	Livingston - Whitburn	54	45	-9	-17%	No	Yes
845	First Edinburgh	8	Whitburn - Livingston	54	49	-5	-10%	Yes	Yes
610	First Glasgow	X11	Newmains - Glasgow	57	66	9	16%	No	Yes
611	First Glasgow	X11	Glasgow - Newmains	51	59	8	16%	No	Yes
736	McKindless	80	Glasgow - Harestanes	53	42	-11	-20%	No	Yes
737	McKindless	80	Harestanes - Glasgow	52	48	-4	-8%	Yes	Yes
413a	First Edinburgh	59	Stirling - Callander	45	27	-18	-41%	No	No
414a	First Edinburgh	59	Callander - Stirling	47	27	-20	-42%	No	No
554	Stagecoach West	10	Kilmarnock - Troon	46	40	-6	-12%	Yes	Yes
555a	Stagecoach West	10	Troon - Kilmarnock	43	39	-4	-10%	Yes	Yes
676	First Glasgow	FX4	Abronhill - Glasgow	45	52	7	15%	Yes	Yes
664	First Glasgow	213	Bargeddie - Glasgow	46	22	-24	-52%	No	No
663	First Glasgow	213	Glasgow - Bargeddie	43	23	-20	-46%	No	No
860	First Edinburgh	121	North Berwick - Haddington	43	30	-13	-31%	No	No
861	First Edinburgh	121	Haddington - North Berwick	43	28	-15	-34%	No	No
400	First Edinburgh	60	Stirling - Clackmannan	39	28	-11	-28%	No	No
402	First Edinburgh	60	Clackmannan - Stirling	37	30	-7	-18%	No	Yes
703a	Scottish Citylink	M91	Edinburgh - Inverness via Perth	275	274	-1	0%	Yes	Yes
704a	Scottish Citylink	M91	Inverness to Edinburgh via Perth	280	278	-2	-1%	Yes	Yes



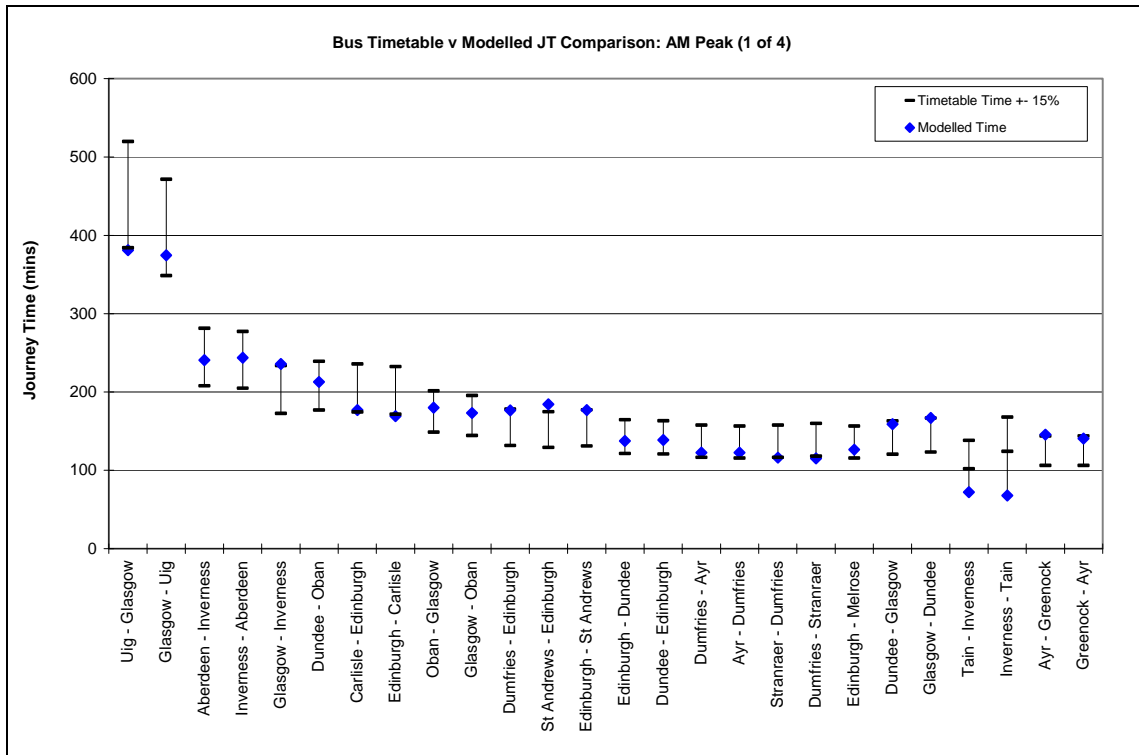


Figure G.1 : Bus Journey Time Comparisons, AM Peak (1 of 4)

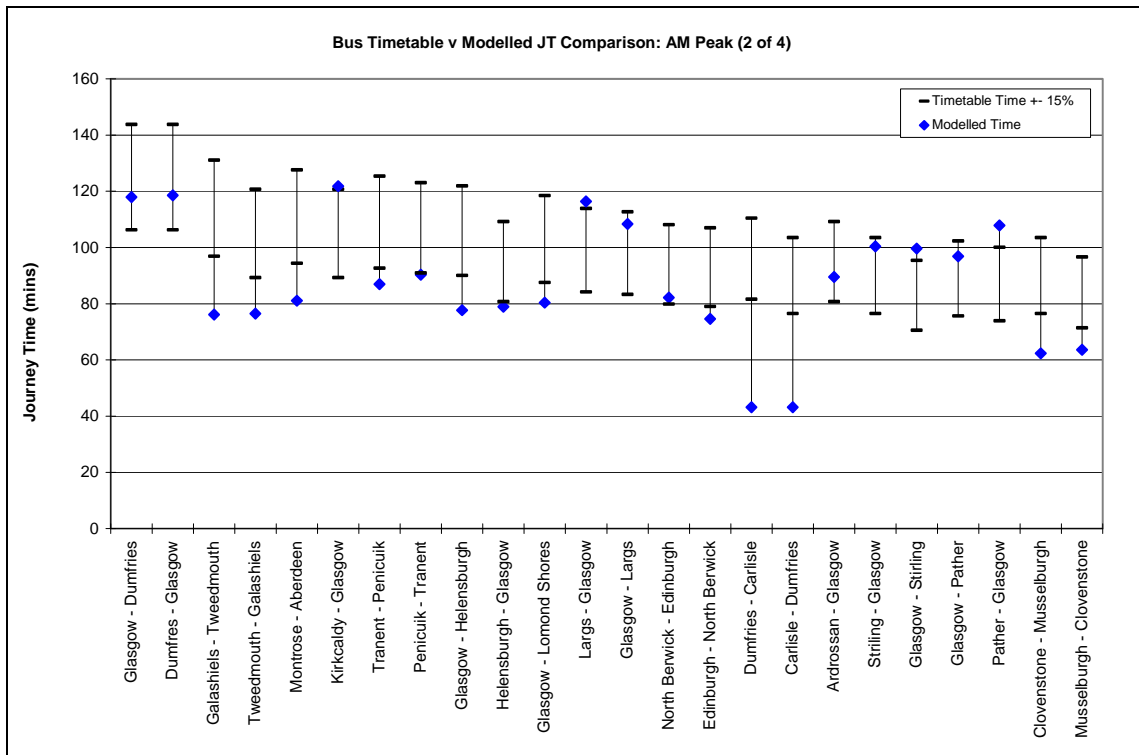


Figure G.2 : Bus Journey Time Comparisons, AM Peak (2 of 4)



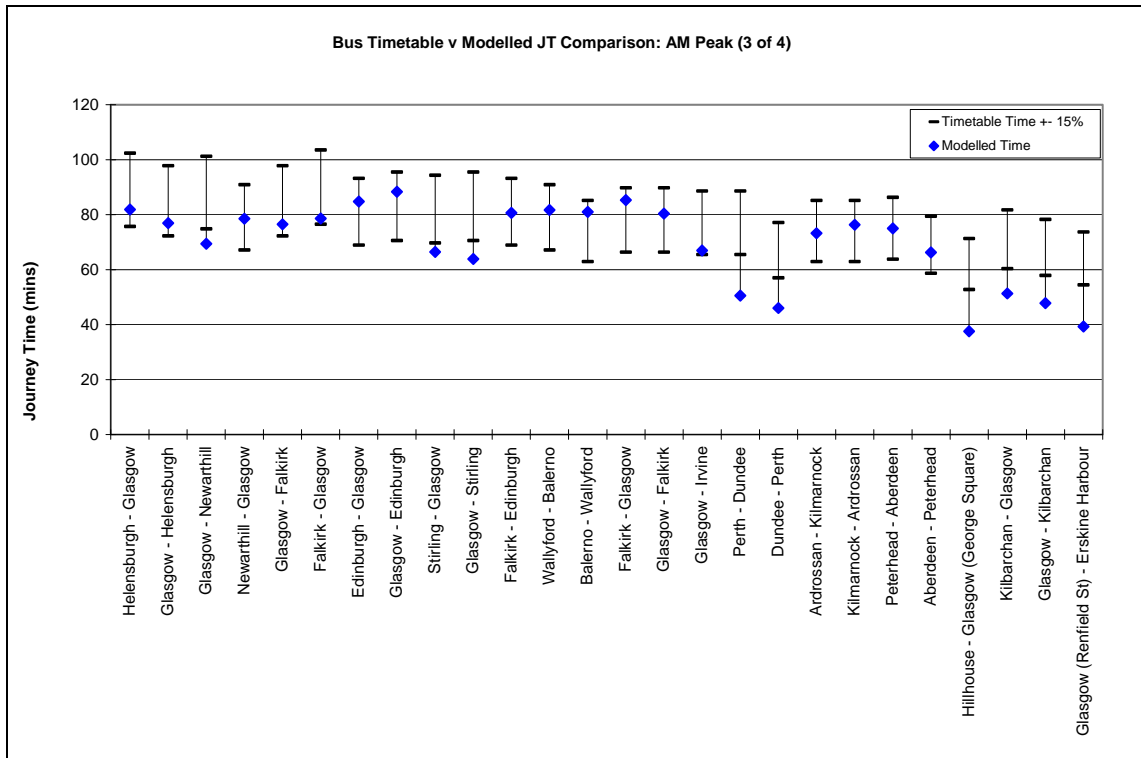


Figure G.3 : Bus Journey Time Comparisons, AM Peak (3 of 4)

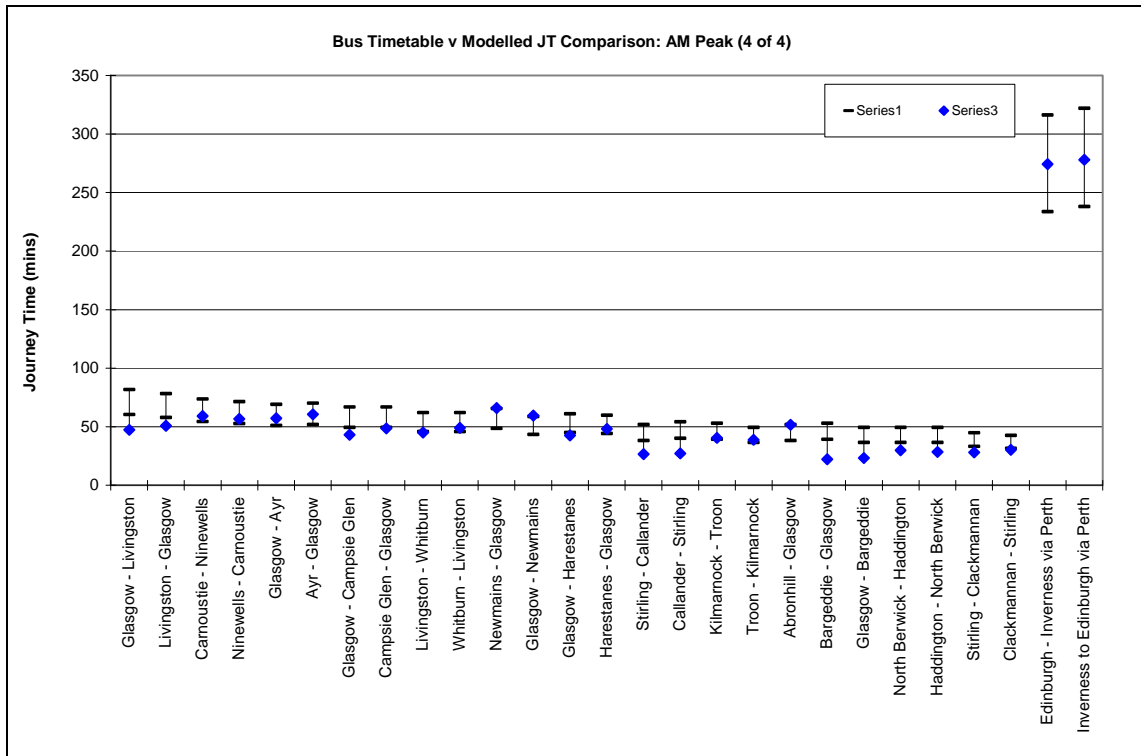


Figure G.4 : Bus Journey Time Comparisons, AM Peak (4 of 4)



Table G.3 : Bus Journey Time Comparisons, Inter Peak (min)

Line No	IP Peak Period		Route Description	Timetabled	Modelled	Diff	% Diff	Within 15% (DMRB)	Within 25%
	Operator	Service No.		JT	JT				
721	Scottish CityLink	916	Uig - Glasgow	446	372	-74	-17%	No	Yes
720	Scottish CityLink	916	Glasgow - Uig	425	372	-53	-13%	Yes	Yes
309c	Stagecoach Inverness	10	Aberdeen - Inverness	245	231	-14	-6%	Yes	Yes
310a	Stagecoach Inverness	10	Inverness - Aberdeen	236	224	-12	-5%	Yes	Yes
697	Scottish CityLink	M10	Glasgow - Inverness	203	227	24	12%	Yes	Yes
760	Scottish CityLink	973	Dundee - Oban	208	210	2	1%	Yes	Yes
933a	First Borders	X95	Carlisle - Edinburgh	203	167	-36	-18%	No	Yes
932a	First Borders	X95	Edinburgh - Carlisle	202	168	-34	-17%	No	Yes
714	Scottish CityLink	976	Oban - Glasgow	178	171	-7	-4%	Yes	Yes
713	Scottish CityLink	976	Glasgow - Oban	175	169	-6	-3%	Yes	Yes
775	MacEwan's	100	Dumfries - Edinburgh	155	165	10	6%	Yes	Yes
776	MacEwan's	100	Edinburgh - Dumfries	150	164	14	10%	Yes	Yes
511f	Stagecoach Fife	X58/X60	St Andrews - Edinburgh	152	163	11	7%	Yes	Yes
512c	Stagecoach Fife	X58/X60	Edinburgh - St Andrews	153	167	14	9%	Yes	Yes
249b	Stagecoach Fife	X54	Edinburgh - Dundee	143	119	-24	-17%	No	Yes
248a	Stagecoach Fife	X54	Dundee - Edinburgh	142	114	-28	-20%	No	Yes
567b	Stagecoach West	246	Dumfries - Ayr	141	121	-20	-14%	Yes	Yes
568d	Stagecoach West	246	Ayr - Dumfries	136	121	-15	-11%	Yes	Yes
797	Stagecoach West	500	Stranraer - Dumfries	137	115	-22	-16%	No	Yes
796	Stagecoach West	500	Dumfries - Stranraer	131	115	-16	-12%	Yes	Yes
918a	First Borders	62	Melrose - Edinburgh	138	127	-11	-8%	Yes	Yes
919b	First Borders	62	Edinburgh - Melrose	136	125	-11	-8%	Yes	Yes
694a	Scottish CityLink	M8	Dundee - Glasgow	142	150	8	6%	Yes	Yes
693a	Scottish CityLink	M8	Glasgow - Dundee	143	153	10	7%	Yes	Yes
302a	Stagecoach Inverness	25	Tain - Inverness	144	67	-77	-53%	No	No
300a	Stagecoach Inverness	25	Inverness - Tain	127	65	-62	-49%	No	No
564a	Stagecoach West	585	Ayr - Greenock	125	141	16	13%	Yes	Yes
563a	Stagecoach West	585	Greenock - Ayr	123	137	14	12%	Yes	Yes
667	Stagecoach West	X74	Glasgow - Dumfries	125	117	-8	-7%	Yes	Yes
668	Stagecoach West	X74	Dumfries - Glasgow	125	113	-12	-9%	Yes	Yes
914a	First Borders	60	Galashiels - Tweedmouth	109	75	-34	-31%	No	No
915a	First Borders	60	Tweedmouth - Galashiels	108	75	-33	-30%	No	No
503b	Stagecoach Fife	X27	Glasgow - Kirkcaldy	110	110	0	0%	Yes	Yes
502b	Stagecoach Fife	X27	Kirkcaldy - Glasgow	105	112	7	7%	Yes	Yes
832	Lothian	15A	Tranent - Penicuik	108	80	-28	-26%	No	No
833	Lothian	15A	Penicuik - Tranent	106	82	-24	-23%	No	Yes
728a	First Glasgow	216	Glasgow - Helensburgh	104	74	-30	-28%	No	No
729a	First Glasgow	216	Helensburgh - Glasgow	94	72	-22	-23%	No	Yes
726a	First Glasgow	215	Glasgow - Lomond Shores	103	77	-26	-26%	No	No
727a	First Glasgow	215	Lomond Shores - Glasgow	92	75	-17	-19%	No	Yes
712a	Scottish CityLink	901	Largs - Glasgow	99	101	2	2%	Yes	Yes
711a	Scottish CityLink	901	Glasgow - Largs	98	105	7	7%	Yes	Yes
863	First Edinburgh	124	North Berwick - Edinburgh	96	75	-21	-22%	No	Yes
862	First Edinburgh	124	Edinburgh - North Berwick	94	75	-19	-20%	No	Yes
766a	Stagecoach Cumberland	79	Dumfries - Carlisle	95	42	-53	-56%	No	No
767a	Stagecoach Cumberland	79	Carlisle - Dumfries	93	42	-51	-55%	No	No
731	First Glasgow	24	Stirling - Glasgow	92	95	3	3%	Yes	Yes
730a	First Glasgow	24	Glasgow - Stirling	83	95	12	15%	Yes	Yes
661a	First Glasgow	240	Glasgow - Pather	89	92	3	3%	Yes	Yes
662a	First Glasgow	240	Pather - Glasgow	87	96	9	10%	Yes	Yes
824	Lothian	30	Clovenstone - Musselburgh	89	57	-32	-36%	No	No
825	Lothian	30	Musselburgh - Clovenstone	84	56	-28	-34%	No	No
753a	McGills	904	Helensburgh - Glasgow	89	72	-17	-19%	No	Yes
752a	McGills	904	Glasgow - Helensburgh	86	72	-14	-17%	No	Yes
659a	First Glasgow	255	Glasgow - Newarthill	88	67	-21	-24%	No	Yes
660a	First Glasgow	255	Newarthill - Glasgow	79	72	-7	-8%	Yes	Yes
732	First Glasgow	27	Glasgow - Falkirk	85	72	-13	-16%	No	Yes
733	First Glasgow	27	Falkirk - Glasgow	85	72	-13	-15%	Yes	Yes
613b	Scottish Citylink	900	Edinburgh - Glasgow	86	76	-10	-12%	Yes	Yes
612a	Scottish Citylink	900	Glasgow - Edinburgh	83	74	-9	-11%	Yes	Yes



Table G.4 : Bus Journey Time Comparisons, Inter Peak (min) (Cont.)

Line No	IP Peak Period		Route Description	Timetabled	Modelled	Diff	%Diff	Within 15% (DVRB)	Within 25%
	Operator	Service No.		JT	JT				
266b	Stagecoach Strathtay	16	Dundee - Perth	68	44	-24	-35%	No	No
550	Stagecoach West	11	Ardrossan - Kilmarnock	74	70	-4	-5%	Yes	Yes
551	Stagecoach West	11	Kilmarnock - Ardrossan	74	73	-1	-1%	Yes	Yes
101a	Stagecoach Bluebird	263	Peterhead - Aberdeen	70	65	-5	-7%	Yes	Yes
100a	Stagecoach Bluebird	263	Aberdeen - Peterhead	70	65	-5	-7%	Yes	Yes
601b	First Glasgow	X1	Glasgow (George Square) - Hillhouse	70	28	-42	-59%	No	No
600a	First Glasgow	X1	Hillhouse - Glasgow (George Square)	60	31	-29	-48%	No	No
741a	Arriva	36	Kilbarchan - Glasgow	71	45	-26	-36%	No	No
740b	Arriva	36	Glasgow - Kilbarchan	68	46	-22	-32%	No	No
751	Arriva 23A	Erskine	Harbour - Glasgow (Renfield St.)	69	36	-33	-48%	No	No
242a	Stagecoach Strathtay	73A	Carnoustie - Ninewells	64	55	-9	-14%	Yes	Yes
241c	Stagecoach Strathtay	73A	Ninewells - Carnoustie	62	55	-7	-11%	Yes	Yes
566a	Stagecoach West	X77	Glasgow - Ayr	59	53	-6	-10%	Yes	Yes
565a	Stagecoach West	X77	Ayr - Glasgow	59	53	-6	-10%	Yes	Yes
844	First Edinburgh	8	Livingston - Whitburn	54	44	-10	-18%	No	Yes
845	First Edinburgh	8	Whitburn - Livingston	54	45	-9	-16%	No	Yes
610	First Glasgow	X11	Newmains - Glasgow	51	57	6	12%	Yes	Yes
611	First Glasgow	X11	Glasgow - Newmains	51	57	6	13%	Yes	Yes
736	McKindless	80	Glasgow - Harestanes	53	41	-12	-22%	No	Yes
413a	First Edinburgh	59	Stirling - Callander	47	26	-21	-44%	No	No
414a	First Edinburgh	59	Callander - Stirling	44	26	-18	-40%	No	No
554	Stagecoach West	10	Kilmarnock - Troon	46	39	-7	-16%	No	Yes
555a	Stagecoach West	10	Troon - Kilmarnock	44	37	-7	-16%	No	Yes
676	First Glasgow	FX4	Abronhill - Glasgow	45	48	3	6%	Yes	Yes
675	First Glasgow	FX4	Glasgow - Abronhill	43	37	-6	-13%	Yes	Yes
664	First Glasgow	213	Bargeddie - Glasgow	44	21	-23	-53%	No	No
663	First Glasgow	213	Glasgow - Bargeddie	43	23	-20	-47%	No	No
860	First Edinburgh	121	North Berwick - Haddington	43	29	-14	-32%	No	No
861	First Edinburgh	121	Haddington - North Berwick	42	28	-14	-33%	No	No
400	First Edinburgh	60	Stirling - Clackmannan	39	27	-12	-30%	No	No
402	First Edinburgh	60	Clackmannan - Stirling	37	27	-10	-27%	No	No
703a	Scottish Citylink	M91	Edinburgh - Inverness via Perth	275	258	-17	-6%	Yes	Yes
704a	Scottish Citylink	M91	Inverness to Edinburgh via Perth	278	259	-19	-7%	Yes	Yes



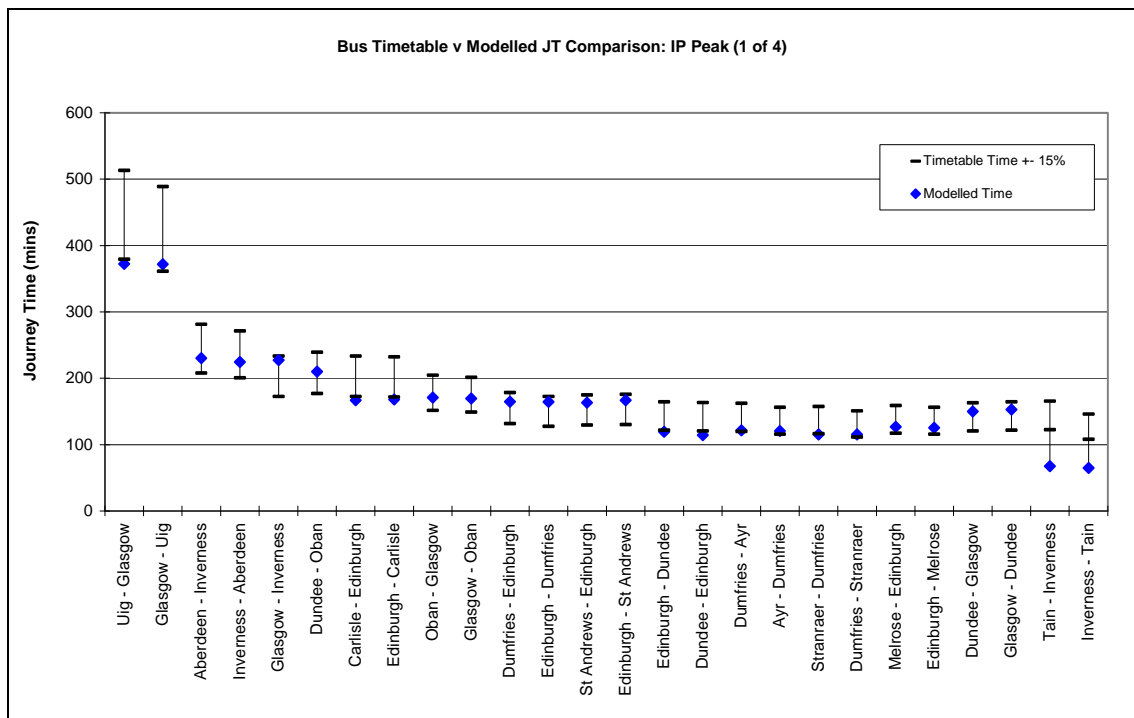


Figure G.5 : Bus Journey Time Comparisons, Inter Peak (1 of 4)

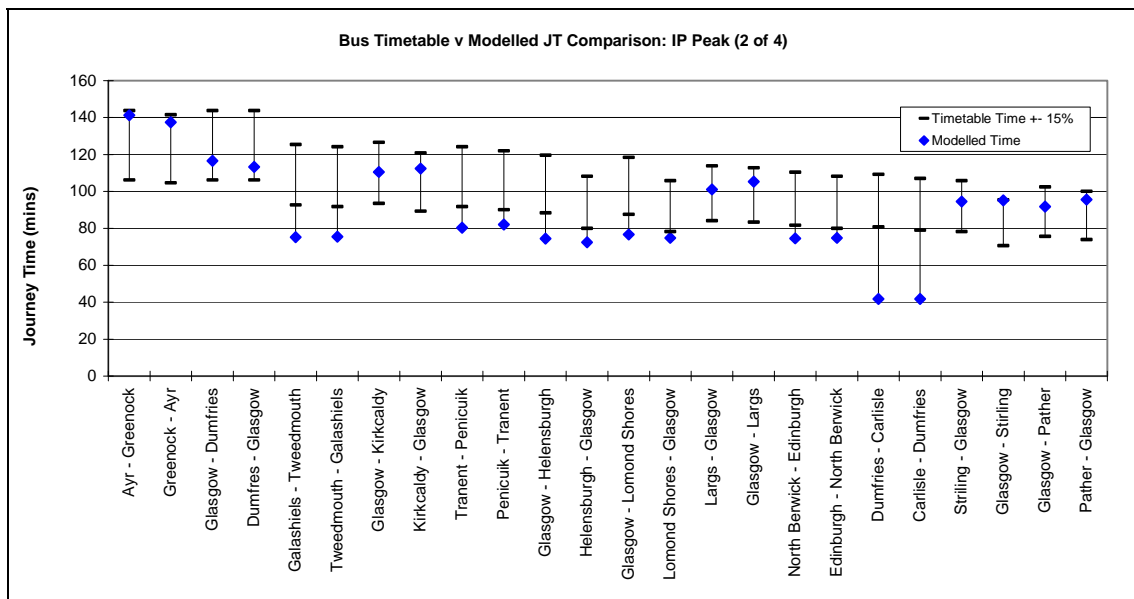


Figure G.6 : Bus Journey Time Comparisons, Inter Peak (2 of 4)



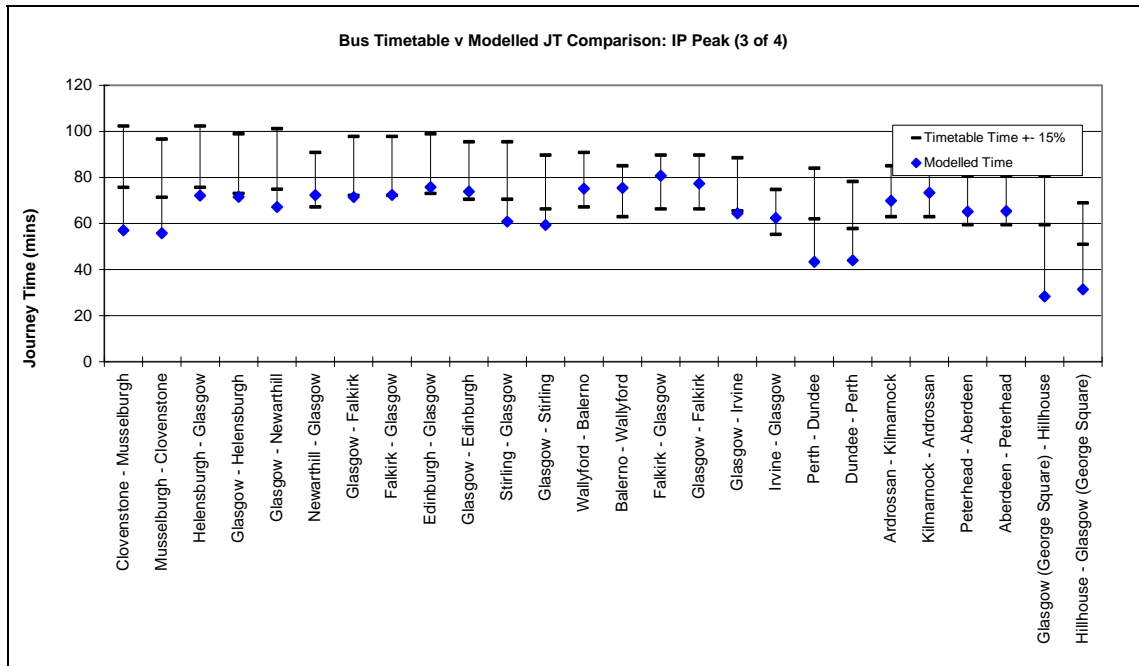


Figure G.7 : Bus Journey Time Comparisons, Inter Peak (3 of 4)

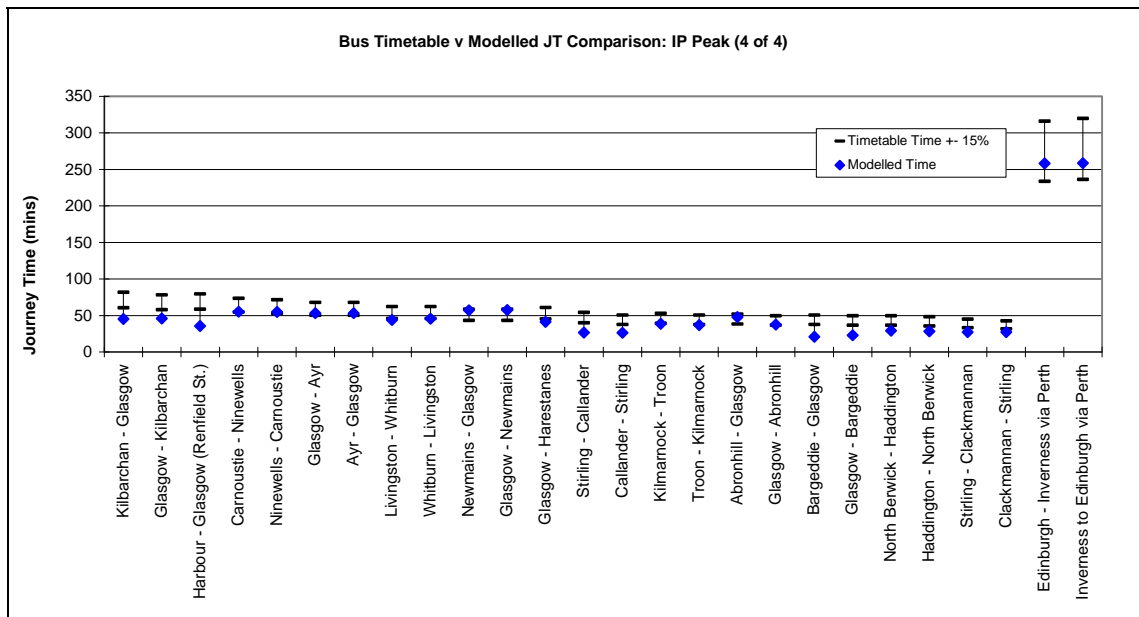


Figure G.8 : Bus Journey Time Comparisons, Inter Peak (4 of 4)



Table G.5 : Bus Journey Time Comparisons, PM Peak (min)

Line No	PM Peak Period		Route Description	Timetabled	Modelled	Diff	% Diff	Within 15% (DMRB)	Within 25%
	Operator	Service No.		JT	JT				
721	Scottish CityLink	916	Uig - Glasgow	446	380	-66	-15%	Yes	Yes
720	Scottish CityLink	916	Glasgow - Uig	440	384	-56	-13%	Yes	Yes
309c	Stagecoach Inverness	10	Aberdeen - Inverness	235	253	18	8%	Yes	Yes
310a	Stagecoach Inverness	10	Inverness - Aberdeen	241	238	-3	-1%	Yes	Yes
697	Scottish CityLink	M10	Glasgow - Inverness	203	237	34	17%	No	Yes
760	Scottish CityLink	973	Dundee - Oban	215	218	3	2%	Yes	Yes
933a	First Borders	X95	Carlisle - Edinburgh	203	175	-28	-14%	Yes	Yes
932a	First Borders	X95	Edinburgh - Carlisle	202	183	-19	-9%	Yes	Yes
714	Scottish CityLink	976	Oban - Glasgow	175	178	3	2%	Yes	Yes
713	Scottish CityLink	976	Glasgow - Oban	170	182	12	7%	Yes	Yes
775	MacEwan's	100	Dumfries - Edinburgh	155	171	16	10%	Yes	Yes
511f	Stagecoach Fife	X58/X60	St Andrews - Edinburgh	150	177	27	18%	No	Yes
512c	Stagecoach Fife	X58/X60	Edinburgh - St Andrews	154	195	41	27%	No	No
249b	Stagecoach Fife	X54	Edinburgh - Dundee	139	152	13	9%	Yes	Yes
248a	Stagecoach Fife	X54	Dundee - Edinburgh	143	132	-11	-8%	Yes	Yes
567b	Stagecoach West	246	Dumfries - Ayr	145	123	-22	-15%	Yes	Yes
568d	Stagecoach West	246	Ayr - Dumfries	136	123	-13	-9%	Yes	Yes
797	Stagecoach West	500	Stranraer - Dumfries	141	117	-24	-17%	No	Yes
796	Stagecoach West	500	Dumfries - Stranraer	123	118	-5	-4%	Yes	Yes
919b	First Borders	62	Edinburgh - Melrose	138	141	3	2%	Yes	Yes
694a	Scottish CityLink	M8	Dundee - Glasgow	142	163	21	15%	Yes	Yes
693a	Scottish CityLink	M8	Glasgow - Dundee	148	168	20	13%	Yes	Yes
302a	Stagecoach Inverness	25	Tain - Inverness	128	71	-57	-45%	No	No
300a	Stagecoach Inverness	25	Inverness - Tain	111	72	-39	-35%	No	No
564a	Stagecoach West	585	Ayr - Greenock	125	147	22	17%	No	Yes
563a	Stagecoach West	585	Greenock - Ayr	121	144	23	19%	No	Yes
667	Stagecoach West	X74	Glasgow - Dumfries	125	127	2	2%	Yes	Yes
668	Stagecoach West	X74	Dumfries - Glasgow	125	119	-6	-5%	Yes	Yes
914a	First Borders	60	Galashiels - Tweedmouth	110	77	-33	-30%	No	No
915a	First Borders	60	Tweedmouth - Galashiels	110	77	-33	-30%	No	No
115b	Stagecoach Bluebird	X7	Montrose - Aberdeen	110	74	-36	-33%	No	No
502b	Stagecoach Fife	X27	Kirkcaldy - Glasgow	110	122	12	11%	Yes	Yes
832	Lothian	15A	Tranent - Penicuik	105	94	-11	-11%	Yes	Yes
833	Lothian	15A	Penicuik - Tranent	107	94	-13	-12%	Yes	Yes
728a	First Glasgow	216	Glasgow - Helensburgh	104	83	-21	-21%	No	Yes
729a	First Glasgow	216	Helensburgh - Glasgow	102	78	-24	-24%	No	Yes
726a	First Glasgow	215	Glasgow - Lomond Shores	93	87	-6	-6%	Yes	Yes
712a	Scottish CityLink	901	Largs - Glasgow	104	107	3	3%	Yes	Yes
711a	Scottish CityLink	901	Glasgow - Largs	92	121	29	31%	No	No
863	First Edinburgh	124	North Berwick - Edinburgh	98	78	-20	-21%	No	Yes
862	First Edinburgh	124	Edinburgh - North Berwick	98	86	-12	-12%	Yes	Yes
766a	Stagecoach Cumberland	79	Dumfries - Carlisle	97	44	-53	-55%	No	No
767a	Stagecoach Cumberland	79	Carlisle - Dumfries	94	44	-50	-54%	No	No
636a	Stagecoach West	X44	Ardrossan - Glasgow	95	85	-10	-11%	Yes	Yes
731	First Glasgow	24	Stirling - Glasgow	91	101	10	11%	Yes	Yes
730a	First Glasgow	24	Glasgow - Stirling	92	105	13	14%	Yes	Yes
661a	First Glasgow	240	Glasgow - Pather	87	106	19	22%	No	Yes
662a	First Glasgow	240	Pather - Glasgow	93	106	13	14%	Yes	Yes
824	Lothian	30	Clovenstone - Musselburgh	86	68	-18	-21%	No	Yes
825	Lothian	30	Musselburgh - Clovenstone	89	67	-22	-24%	No	Yes
753a	McGills	904	Helensburgh - Glasgow	84	79	-5	-5%	Yes	Yes
752a	McGills	904	Glasgow - Helensburgh	89	83	-6	-6%	Yes	Yes
659a	First Glasgow	255	Glasgow - Newarthill	86	77	-9	-10%	Yes	Yes
660a	First Glasgow	255	Newarthill - Glasgow	89	78	-11	-12%	Yes	Yes
732	First Glasgow	27	Glasgow - Falkirk	75	80	5	7%	Yes	Yes
733	First Glasgow	27	Falkirk - Glasgow	93	79	-14	-15%	Yes	Yes
613b	Scottish Citylink	900	Edinburgh - Glasgow	85	91	6	7%	Yes	Yes
612a	Scottish Citylink	900	Glasgow - Edinburgh	87	84	-3	-4%	Yes	Yes
692a	First Glasgow	X39	Stirling - Glasgow	83	67	-16	-20%	No	Yes
691	First Glasgow	X39	Glasgow - Stirling	80	68	-12	-15%	No	Yes



Table G.6 : Bus Journey Time Comparisons, PM Peak (min) (Cont.)

Line No	IP Peak Period		Route Description	Timetabled	Modelled	Diff	%Diff	Within 15% (DMRB)	Within 25%
	Operator	Service No.		JT	JT				
551	Stagecoach West	11	Kilmarnock - Ardrossan	74	78	4	5%	Yes	Yes
101a	Stagecoach Bluebird	263	Peterhead - Aberdeen	70	68	-2	-3%	Yes	Yes
100a	Stagecoach Bluebird	263	Aberdeen - Peterhead	74	77	3	4%	Yes	Yes
600a	First Glasgow	X1	Hillhouse - Glasgow (George Square)	73	36	-37	-51%	No	No
741a	Arriva	36	Kilbarchan - Glasgow	60	49	-11	-18%	No	Yes
740b	Arriva	36	Glasgow - Kilbarchan	72	53	-19	-27%	No	No
750a	Arriva	23A	Glasgow (Renfield St) - Erskine Harbour	68	42	-26	-38%	No	No
616	First Edinburgh	15A	Glasgow - Livingston	70	49	-21	-30%	No	No
615	First Edinburgh	15A	Livingston - Glasgow	61	53	-8	-14%	Yes	Yes
242a	Stagecoach Strathtay	73A	Carnoustie - Ninewells	61	59	-2	-4%	Yes	Yes
241c	Stagecoach Strathtay	73A	Ninewells - Carnoustie	64	62	-2	-4%	Yes	Yes
566a	Stagecoach West	X77	Glasgow - Ayr	62	65	3	4%	Yes	Yes
565a	Stagecoach West	X77	Ayr - Glasgow	58	59	1	1%	Yes	Yes
643	First Glasgow	85	Glasgow - Campsie Glen	58	50	-8	-13%	Yes	Yes
644	First Glasgow	85	Campsie Glen - Glasgow	58	45	-13	-22%	No	Yes
844	First Edinburgh	8	Livingston - Whitburn	51	50	-1	-1%	Yes	Yes
845	First Edinburgh	8	Whitburn - Livingston	54	47	-7	-13%	Yes	Yes
610	First Glasgow	X11	Newmains - Glasgow	54	64	10	18%	No	Yes
611	First Glasgow	X11	Glasgow - Newmains	51	69	18	35%	No	No
736	McKindless	80	Glasgow - Harestanes	55	50	-5	-10%	Yes	Yes
737	McKindless	80	Harestanes - Glasgow	53	46	-7	-13%	Yes	Yes
413a	First Edinburgh	59	Stirling - Callander	52	28	-24	-46%	No	No
414a	First Edinburgh	59	Callander - Stirling	45	27	-18	-40%	No	No
554	Stagecoach West	10	Kilmarnock - Troon	45	41	-4	-8%	Yes	Yes
555a	Stagecoach West	10	Troon - Kilmarnock	45	39	-6	-13%	Yes	Yes
676	First Glasgow	FX4	Abrohill - Glasgow	44	51	7	16%	No	Yes
664	First Glasgow	213	Bargeddie - Glasgow	42	21	-21	-49%	No	No
663	First Glasgow	213	Glasgow - Bargeddie	43	25	-18	-42%	No	No
860	First Edinburgh	121	North Berwick - Haddington	42	30	-12	-29%	No	No
861	First Edinburgh	121	Haddington - North Berwick	43	30	-13	-31%	No	No
400	First Edinburgh	60	Stirling - Clackmannan	40	31	-9	-23%	No	Yes
402	First Edinburgh	60	Clackmannan - Stirling	37	31	-6	-16%	No	Yes
703a	Scottish Citylink	M91	Edinburgh - Inverness via Perth	275	287	12	4%	Yes	Yes
704a	Scottish Citylink	M91	Inverness to Edinburgh via Perth	278	276	-2	-1%	Yes	Yes



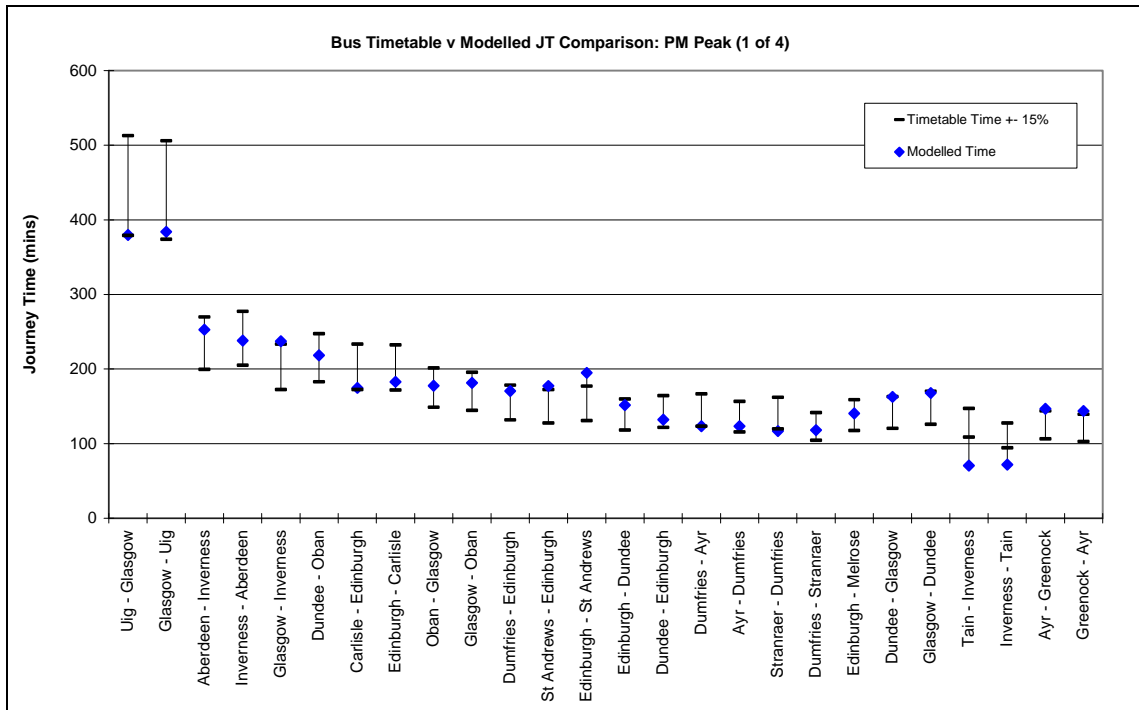


Figure G.9 : Bus Journey Time Comparisons, PM Peak (1 of 4)

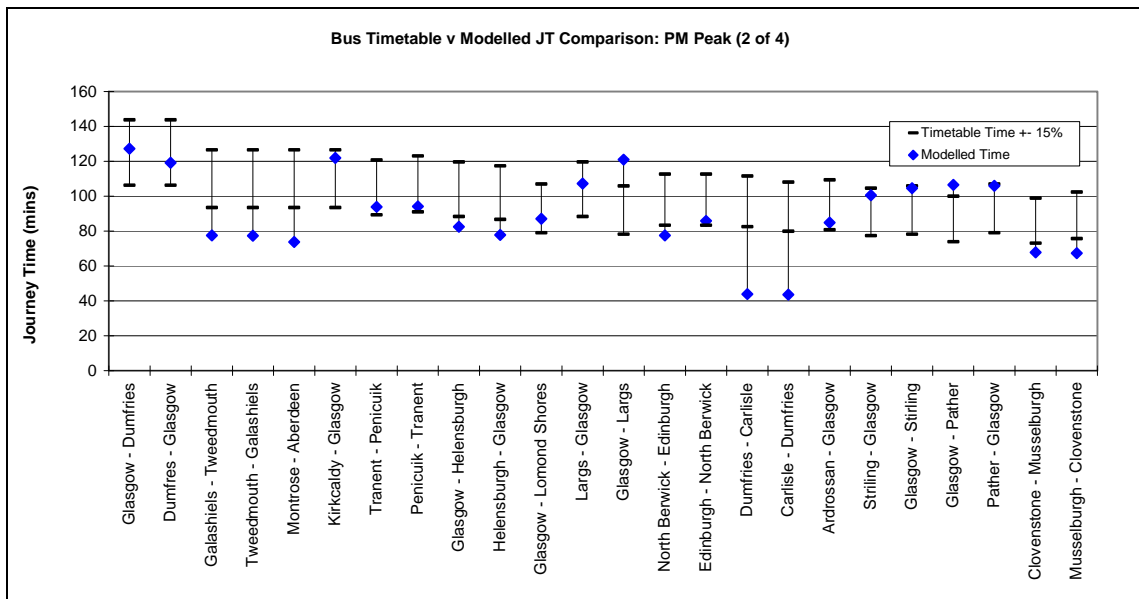


Figure G.10 : Bus Journey Time Comparisons, PM Peak (2 of 4)



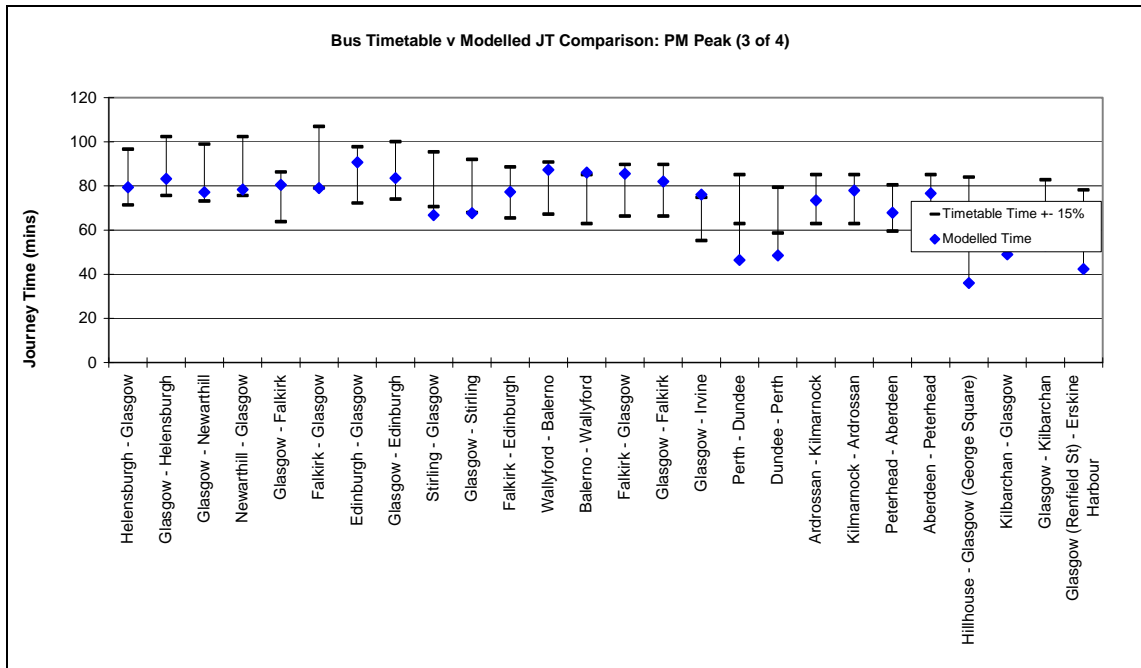


Figure G.11 : Bus Journey Time Comparisons, PM Peak (3 of 4)

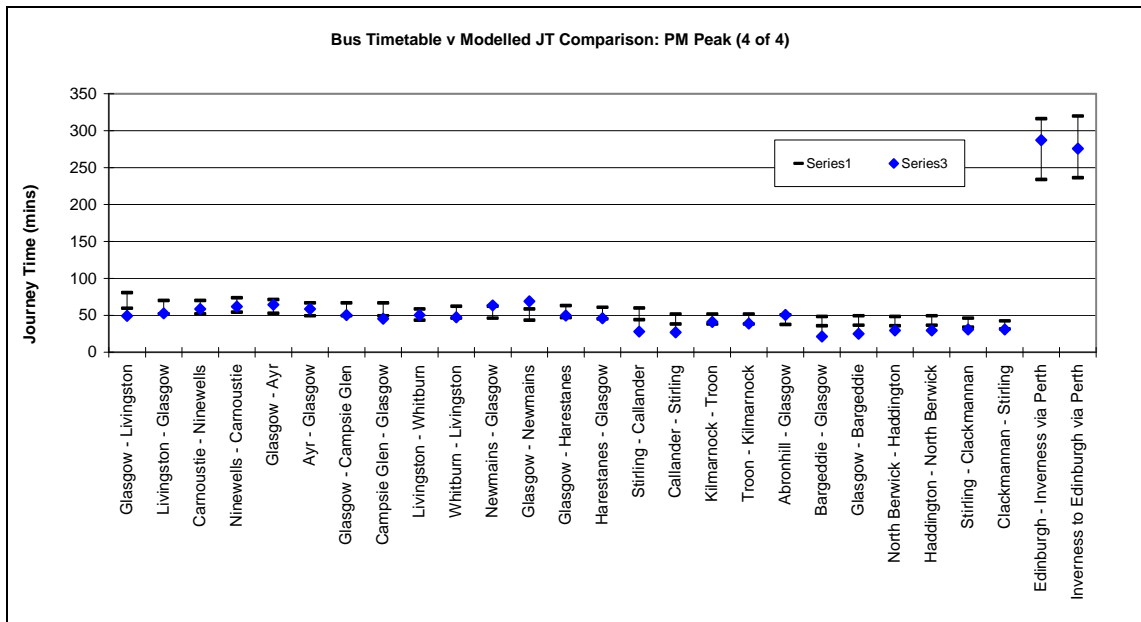


Figure G.12 : Bus Journey Time Comparisons, PM Peak (4 of 4)



H A9/A96 PT SCREENLINE SUMMARY

Table H.1 : North of Aberdeen (excludes Non Scotrail services) AM

Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Dyce to Aberdeen	8011	Rail	S	335	210	-125	-37%	7.6
A96 Chapel Of Stoneywood Road	101	Bus	E	95	166	72	75%	6.3
Screenline Total				430	376	-54	-13%	2.7
Aberdeen to Dyce	8012	Rail	N	160	124	-35	-22%	3.0
A96 Chapel Of Stoneywood Road	102	Bus	W	72	63	-9	-13%	1.2
Screenline Total				232	187	-45	-19%	3.1

Table H.2 : North of Aberdeen (excludes Non Scotrail services) IP

Station/Road Name	ID	Mode	Dir	IP	IP	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Dyce to Aberdeen	8011	Rail	S	105	93	-12	-11%	1.2
A96 Chapel Of Stoneywood Road	101	Bus	E	68	73	5	7%	0.6
Screenline Total				173	167	-7	-4%	0.5
Aberdeen to Dyce	8012	Rail	N	103	92	-10	-10%	1.1
A96 Chapel Of Stoneywood Road	102	Bus	W	46	58	11	24%	1.6
Screenline Total				149	150	1	1%	0.1

Table H.3 : North of Aberdeen (excludes Non Scotrail services) PM

Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Dyce to Aberdeen	8011	Rail	S	127	180	54	42%	4.3
A96 Chapel Of Stoneywood Road	101	Bus	E	86	50	-36	-42%	4.4
Screenline Total				213	230	17	8%	1.2
Aberdeen to Dyce	8012	Rail	N	263	274	11	4%	0.6
A96 Chapel Of Stoneywood Road	102	Bus	W	85	183	98	115%	8.5
Screenline Total				348	457	109	31%	5.4



Table H.4 : East of Inverness (excludes Non Scotrail services) AM

Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Nairn to Inverness	6021	Rail	W	77	150	73	94%	6.8
A96 (West of Inverness Retail Park)	201	Bus	W	159	278	119	75%	8.1
Screenline Total				236	428	192	81%	10.5
Inverness to Nairn	6022	Rail	E	50	62	12	24%	1.6
A96 (West of Inverness Retail Park)	6062	Bus	E	23	44	21	89%	3.6
Screenline Total				74	106	33	44%	3.4

Table H.5 : East of Inverness (excludes Non Scotrail services) IP

Station/Road Name	ID	Mode	Dir	IP	IP	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Nairn to Inverness	6021	Rail	W	53	79	26	49%	3.2
A96 (West of Inverness Retail Park)	201	Bus	W	81	95	15	18%	1.6
Screenline Total				134	175	41	31%	3.3
Inverness to Nairn	6022	Rail	E	41	57	16	38%	2.3
A96 (West of Inverness Retail Park)	6062	Bus	E	56	53	-3	-6%	0.4
Screenline Total				98	110	13	13%	1.2

Table H.6 : East of Inverness (excludes Non Scotrail services) PM

Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Nairn to Inverness	6021	Rail	W	37	54	17	46%	2.5
A96 (West of Inverness Retail Park)	201	Bus	W	35	34	-2	-5%	0.3
Screenline Total				72	87	15	21%	1.7
Inverness to Nairn	6022	Rail	E	61	130	69	113%	7.0
A96 (West of Inverness Retail Park)	6062	Bus	E	163	180	17	11%	1.3
Screenline Total				224	310	86	38%	5.3



Table H.7 : South of Inverness (excludes Non Scotrail services) AM

Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Inverness to Carrbridge	6032	Rail	S	54	134	80	148%	8.3
A9 B9177 Raigmore Hospital				34	30	-4	-12%	0.7
B9006 Culloden Rd Tesco	203	Bus	S	19	39	20	103%	3.6
Screenline Total				107	202	96	90%	7.7
Carrbridge to Inverness	6031	Rail	N	74	82	8	11%	0.9
Inverness to Carrbridge				100	59	-42	-41%	4.7
B9006 Culloden Rd Tesco	204	Bus	W	33	69	35	106%	4.9
Screenline Total				208	210	2	1%	0.1

Table H.8 : South of Inverness (excludes Non Scotrail services) IP

Station/Road Name	ID	Mode	Dir	IP	IP	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Inverness to Carrbridge	6032	Rail	S	57	94	37	65%	4.3
A9 B9177 Raigmore Hospital				35	45	10	29%	1.6
B9006 Culloden Rd Tesco	203	Bus	S	17	44	27	156%	4.9
Screenline Total				109	183	74	68%	6.1
Carrbridge to Inverness	6031	Rail	N	65	91	26	40%	3.0
Inverness to Carrbridge				18	25	7	39%	1.5
B9006 Culloden Rd Tesco	204	Bus	W	13	36	23	177%	4.6
Screenline Total				96	152	56	58%	5.0

Table H.9 : South of Inverness (excludes Non Scotrail services) PM

Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Inverness to Carrbridge	6032	Rail	S	59	59	0	0%	0.0
A9 B9177 Raigmore Hospital				27	80	54	201%	7.3
B9006 Culloden Rd Tesco	203	Bus	S	18	59	41	225%	6.6
Screenline Total				104	198	94	91%	7.7
Carrbridge to Inverness	6031	Rail	N	28	110	82	297%	9.9
Inverness to Carrbridge				35	31	-4	-12%	0.7
B9006 Culloden Rd Tesco	204	Bus	W	9	35	26	307%	5.7
Screenline Total				71	176	105	147%	9.4



Table H.10 : North of Perth (excludes Non Scotrail services) AM

Station/Road Name	ID	Mode	Dir	AM	AM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Dunkeld to Perth		Rail	S	62	162	101	163%	9.5
A912 Dunkeld Road		Bus	S	61	94	33	54%	3.8
Screenline Total				122	256	134	109%	9.7
Perth to Dunkeld		Rail	N	69	81	11	17%	1.3
A912 Dunkeld Road		Bus	N	13	35	22	163%	4.4
Screenline Total				83	116	33	40%	3.3

Table H.11 : North of Perth (excludes Non Scotrail services) IP

Station/Road Name	ID	Mode	Dir	IP	IP	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Dunkeld to Perth		Rail	S	74	111	37	50%	3.8
A912 Dunkeld Road		Bus	S	44	43	-1	-3%	0.2
Screenline Total				118	154	36	30%	3.1
Perth to Dunkeld		Rail	N	74	110	36	49%	3.8
A912 Dunkeld Road		Bus	N	38	50	12	33%	1.9
Screenline Total				112	160	49	44%	4.2

Table H.12 : North of Perth (excludes Non Scotrail services) PM

Station/Road Name	ID	Mode	Dir	PM	PM	Diff	% Diff	GEH
				Observed Hour	Modelled Hour			
Dunkeld to Perth		Rail	S	95	62	-33	-35%	3.7
A912 Dunkeld Road		Bus	S	11	44	33	298%	6.3
Screenline Total				106	105	0	0%	0.0
Perth to Dunkeld		Rail	N	77	134	58	75%	5.6
A912 Dunkeld Road		Bus	N	58	87	29	50%	3.4
Screenline Total				135	222	87	64%	6.5



I TMFS14 A9/A96 BOARDING AND ALIGHTING COMPARISONS

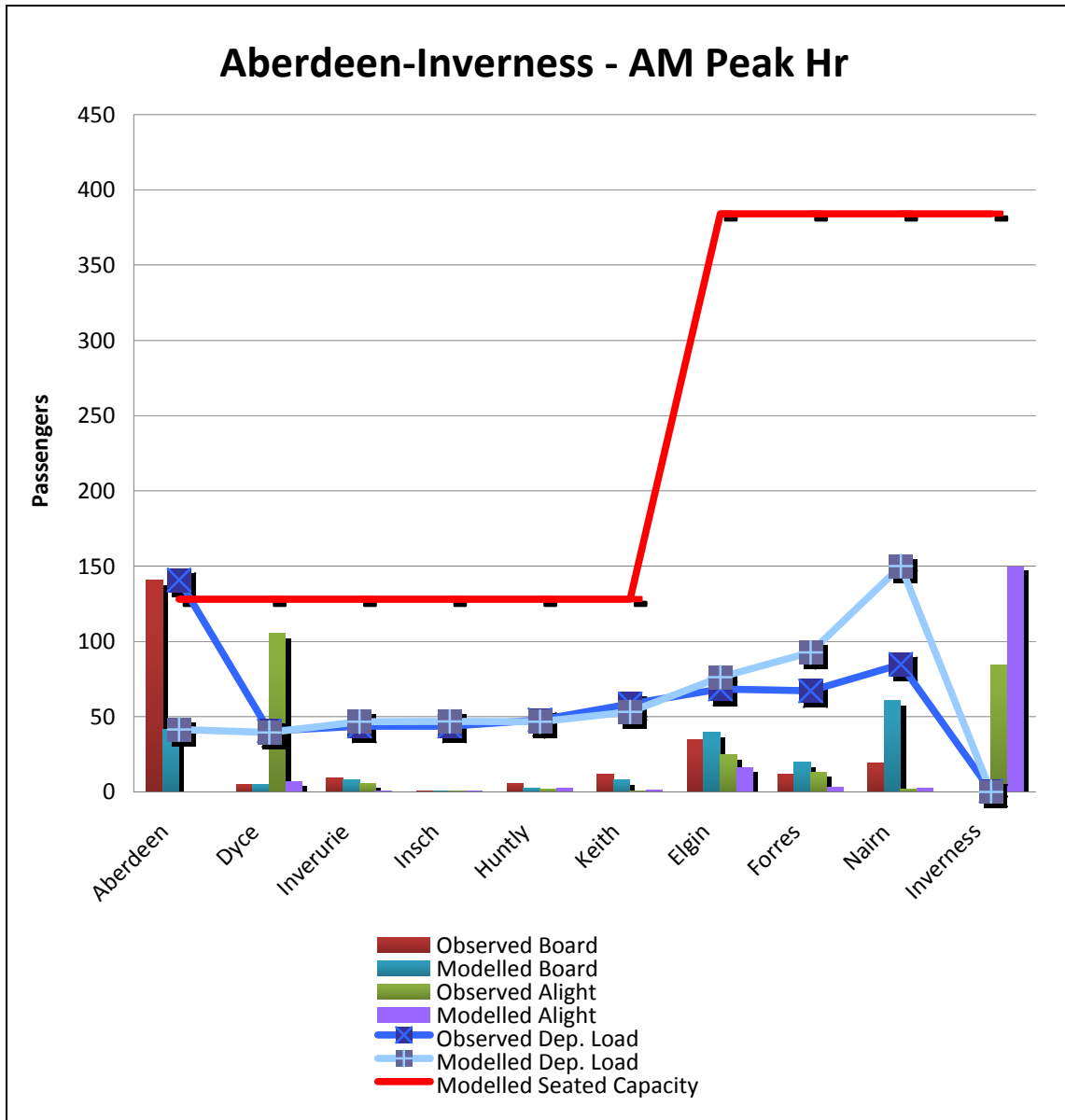


Figure I.1 : Rail boarding and Alighting, Aberdeen to Inverness, AM



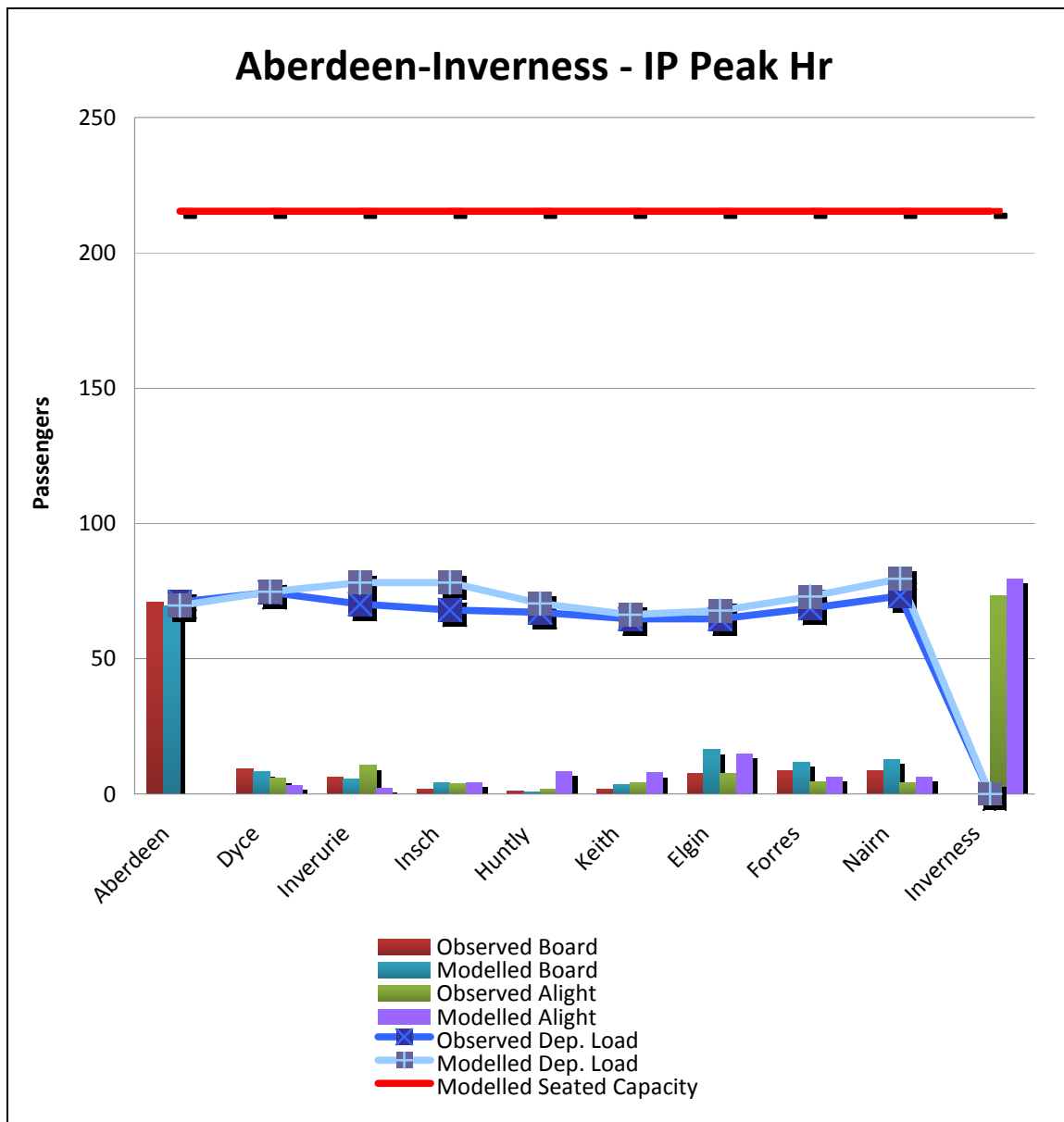


Figure I.2 : Rail boarding and Alighting, Aberdeen to Inverness, IP



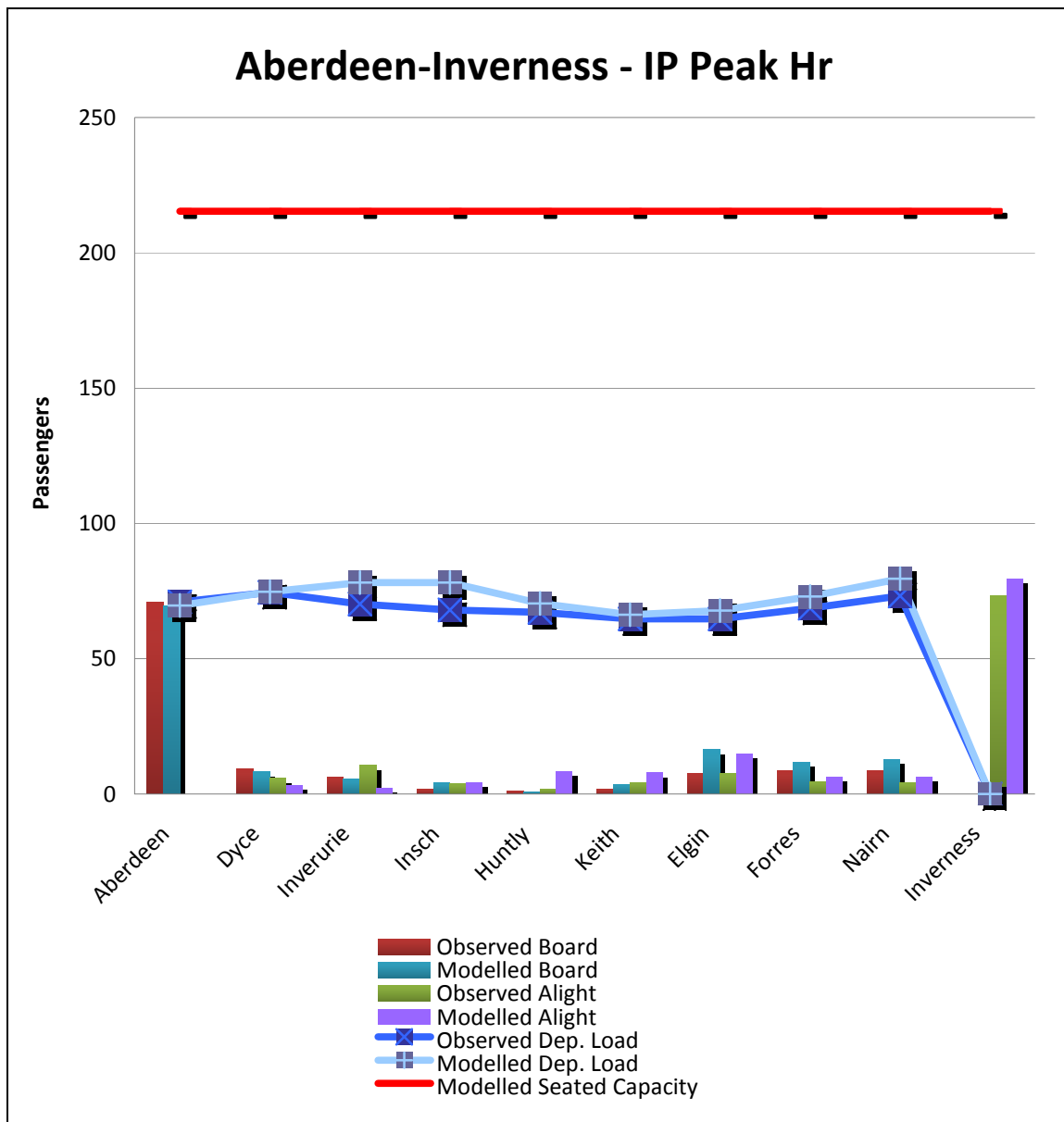


Figure I.3 : Rail boarding and Alighting, Aberdeen to Inverness, PM



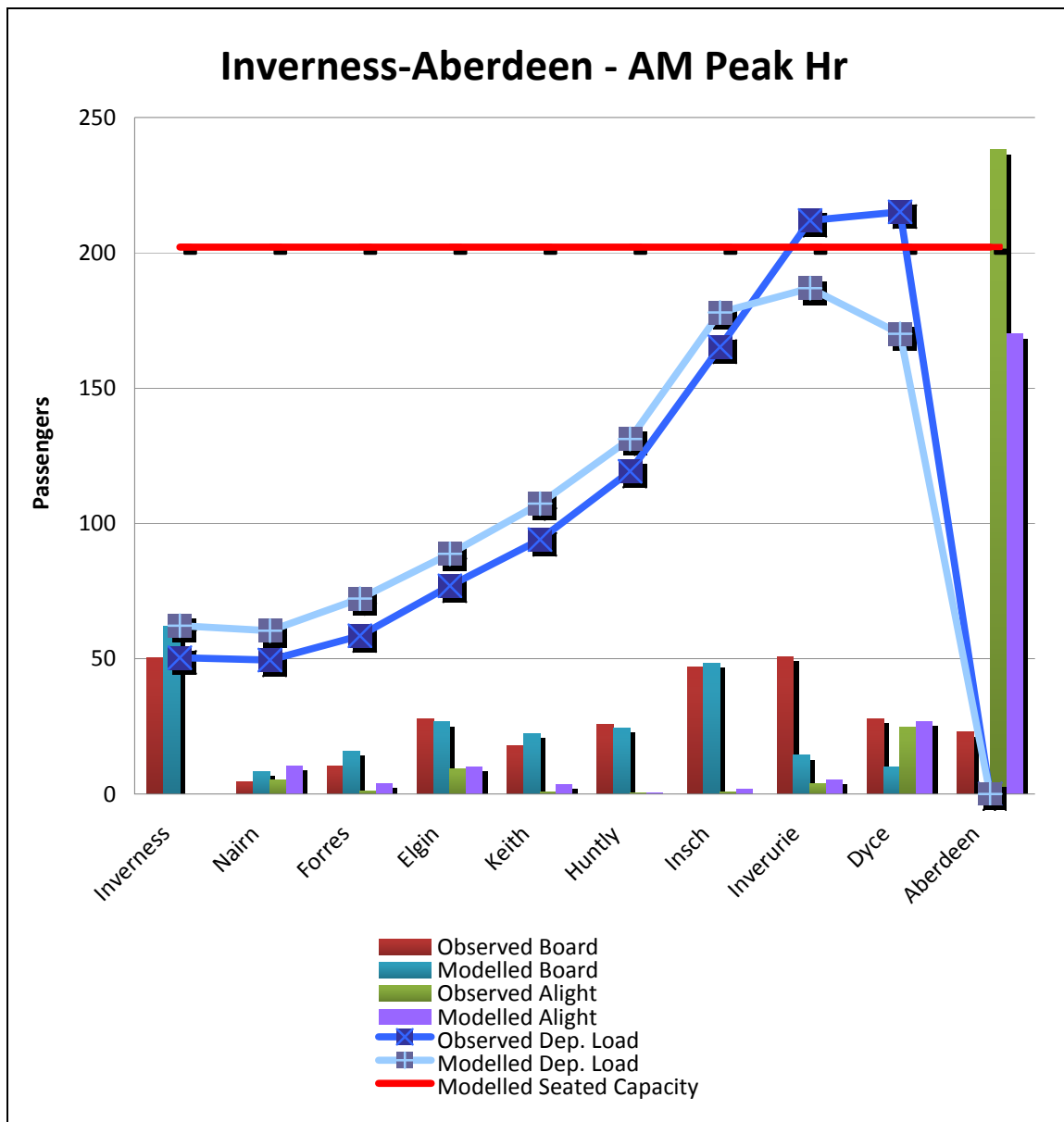


Figure I.4 : Rail boarding and Alighting, Inverness to Aberdeen, AM



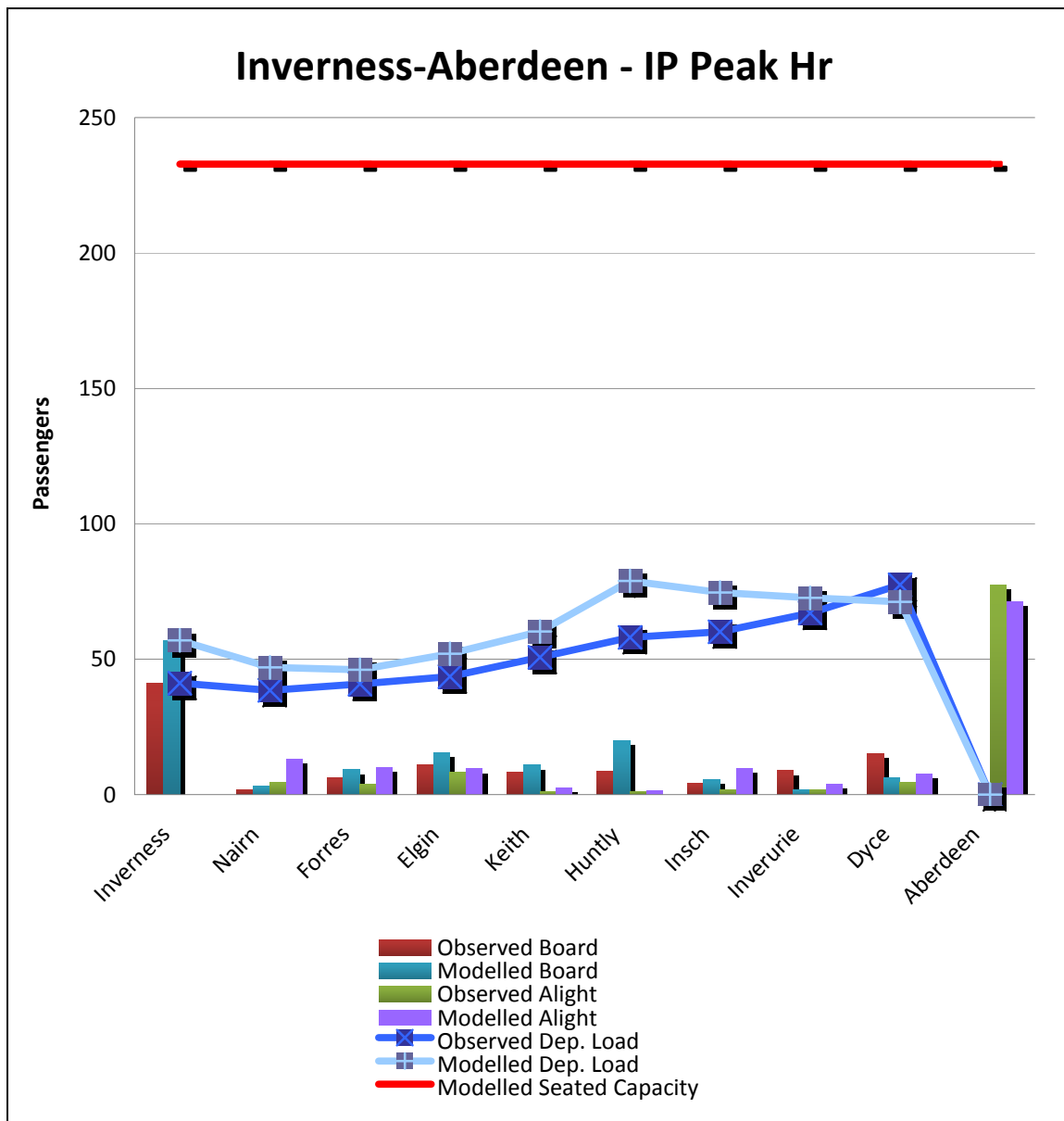


Figure I.5 : Rail boarding and Alighting, Inverness to Aberdeen, IP



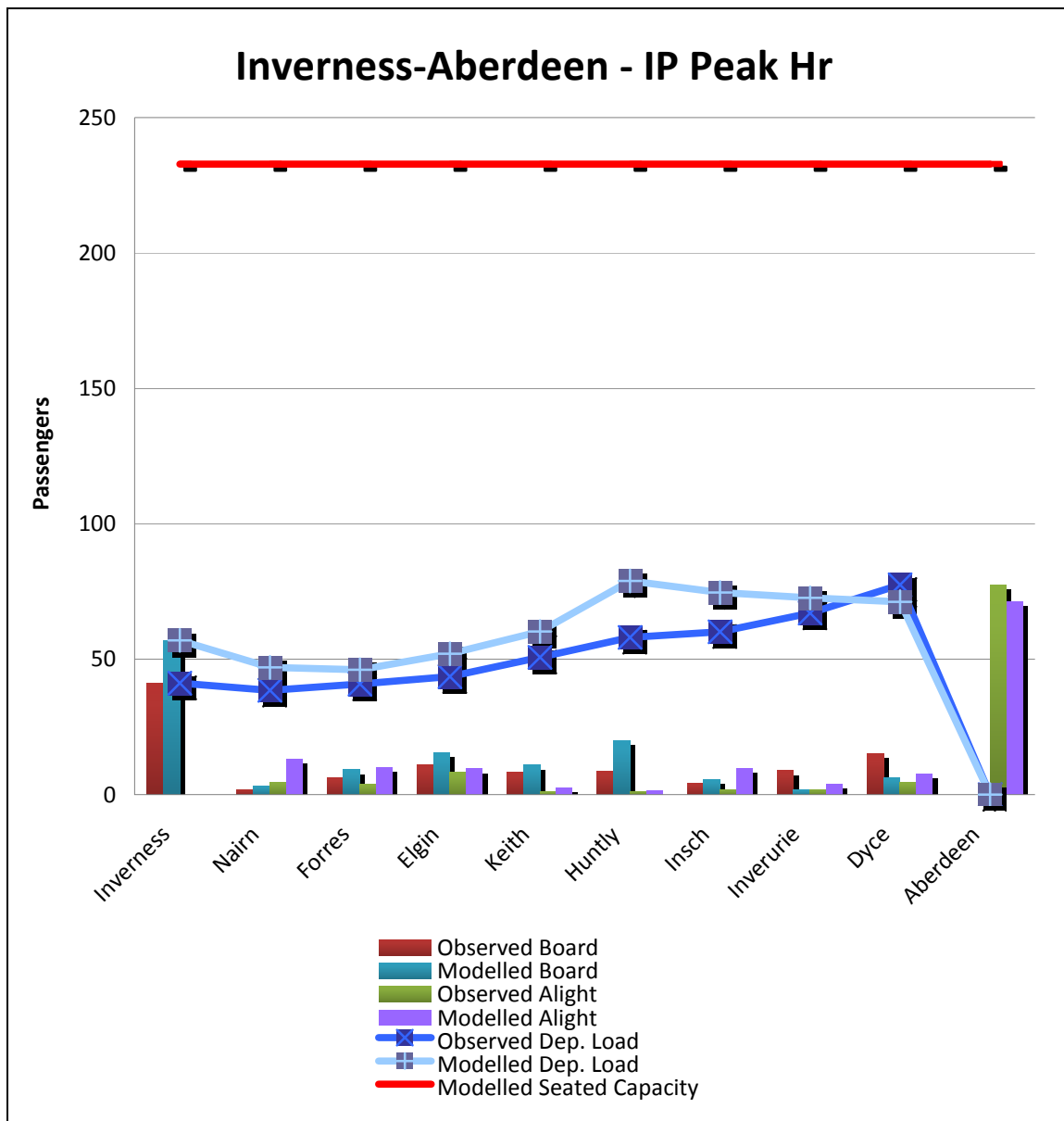


Figure I.6 : Rail boarding and Alighting, Inverness to Aberdeen, PM



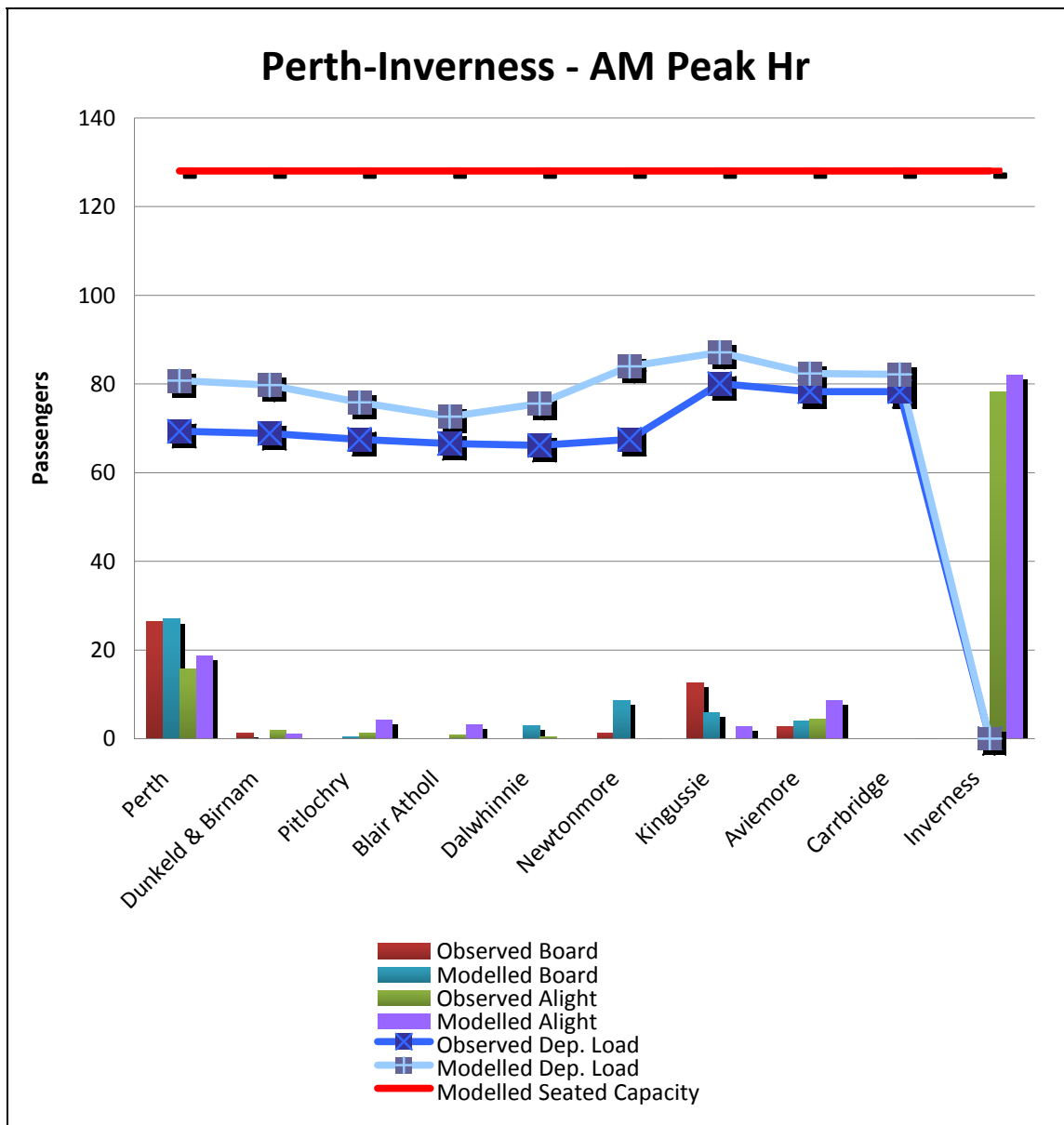


Figure I.7 : Rail boarding and Alighting, Perth to Inverness, AM



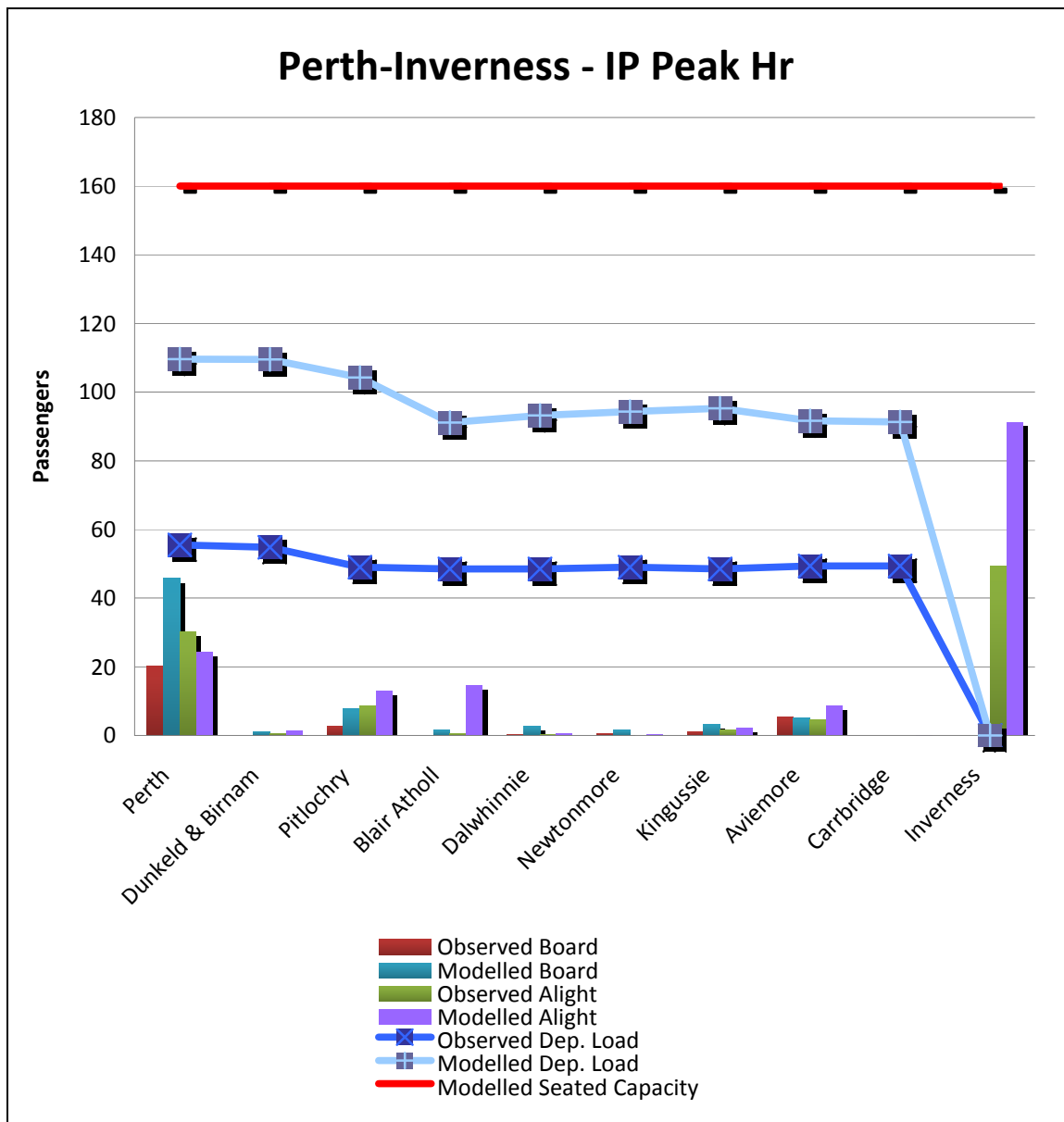


Figure I.8 : Rail boarding and Alighting, Perth to Inverness, IP



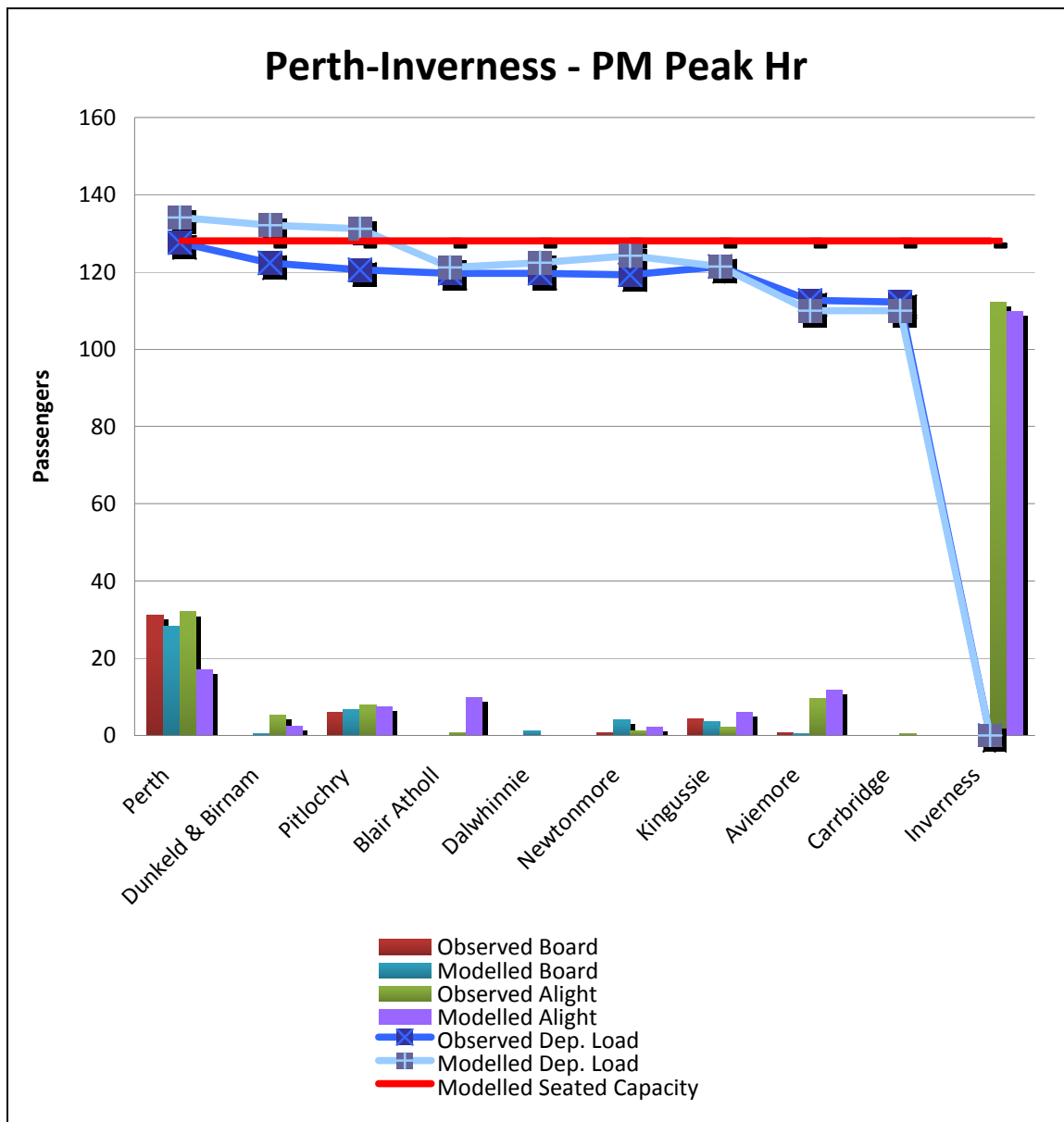


Figure I.9 : Rail boarding and Alighting, Perth to Inverness, PM



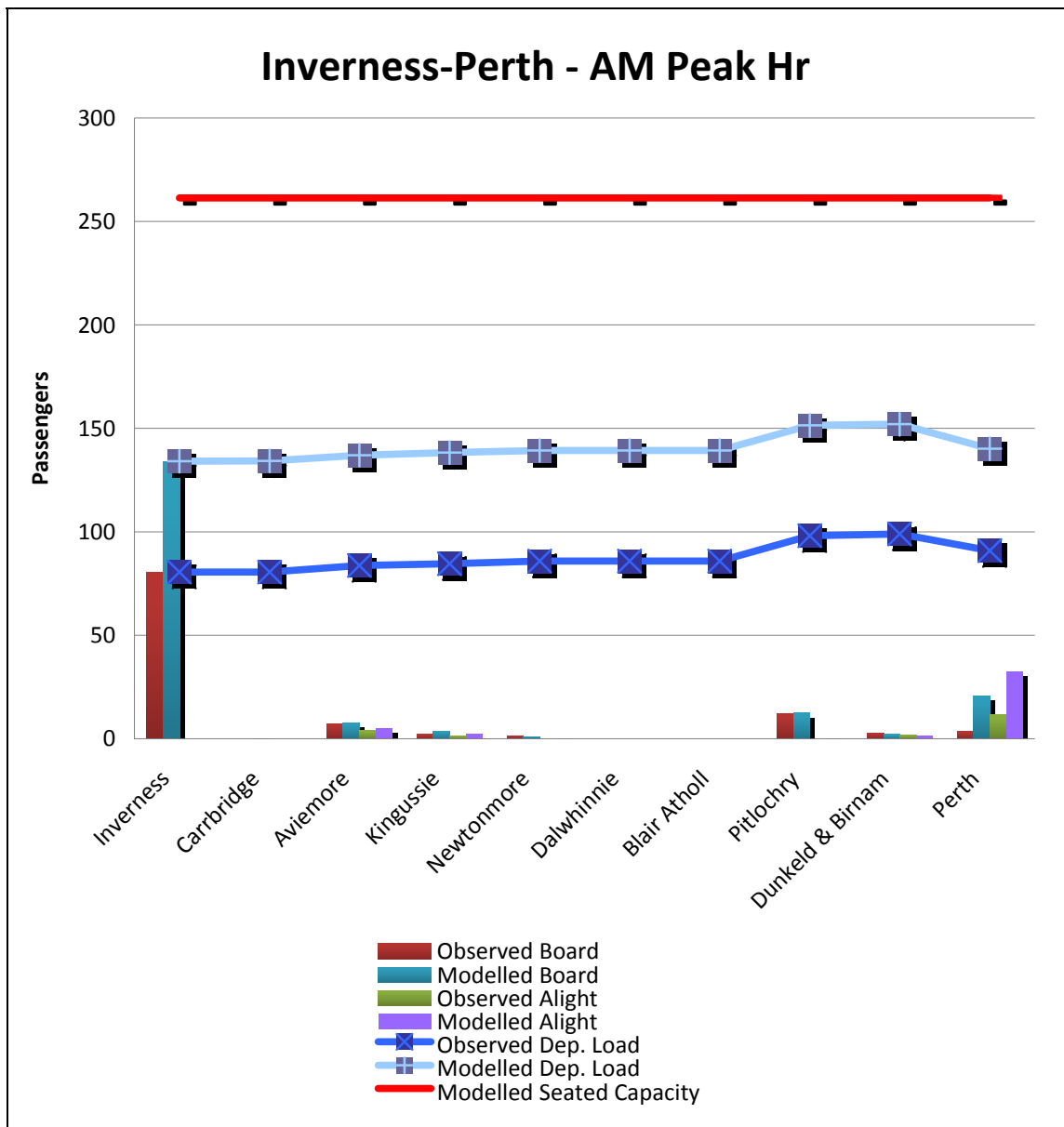


Figure I.10 : Rail boarding and Alighting, Inverness to Perth, AM



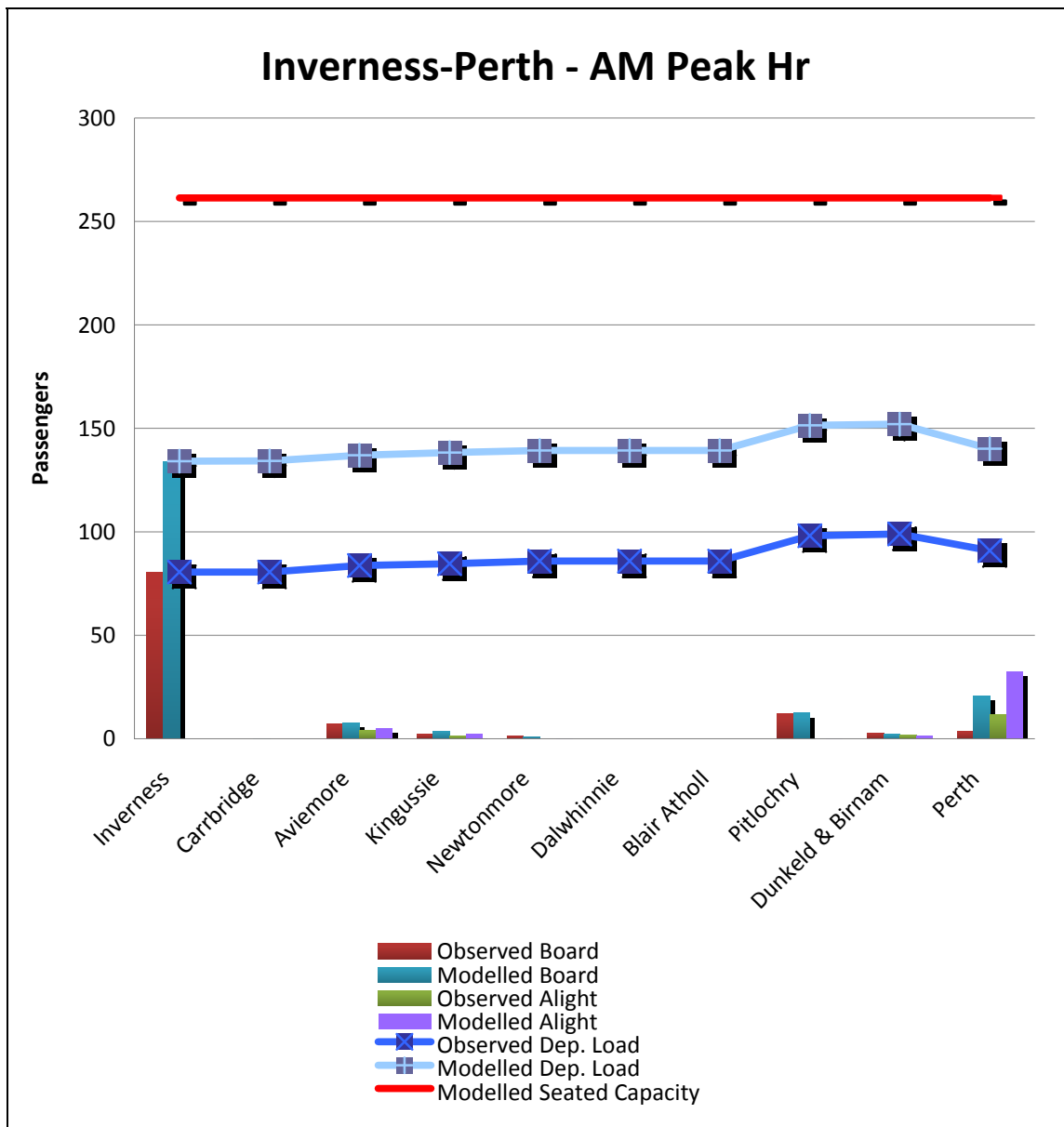


Figure I.11 : Rail boarding and Alighting, Inverness to Perth, IP



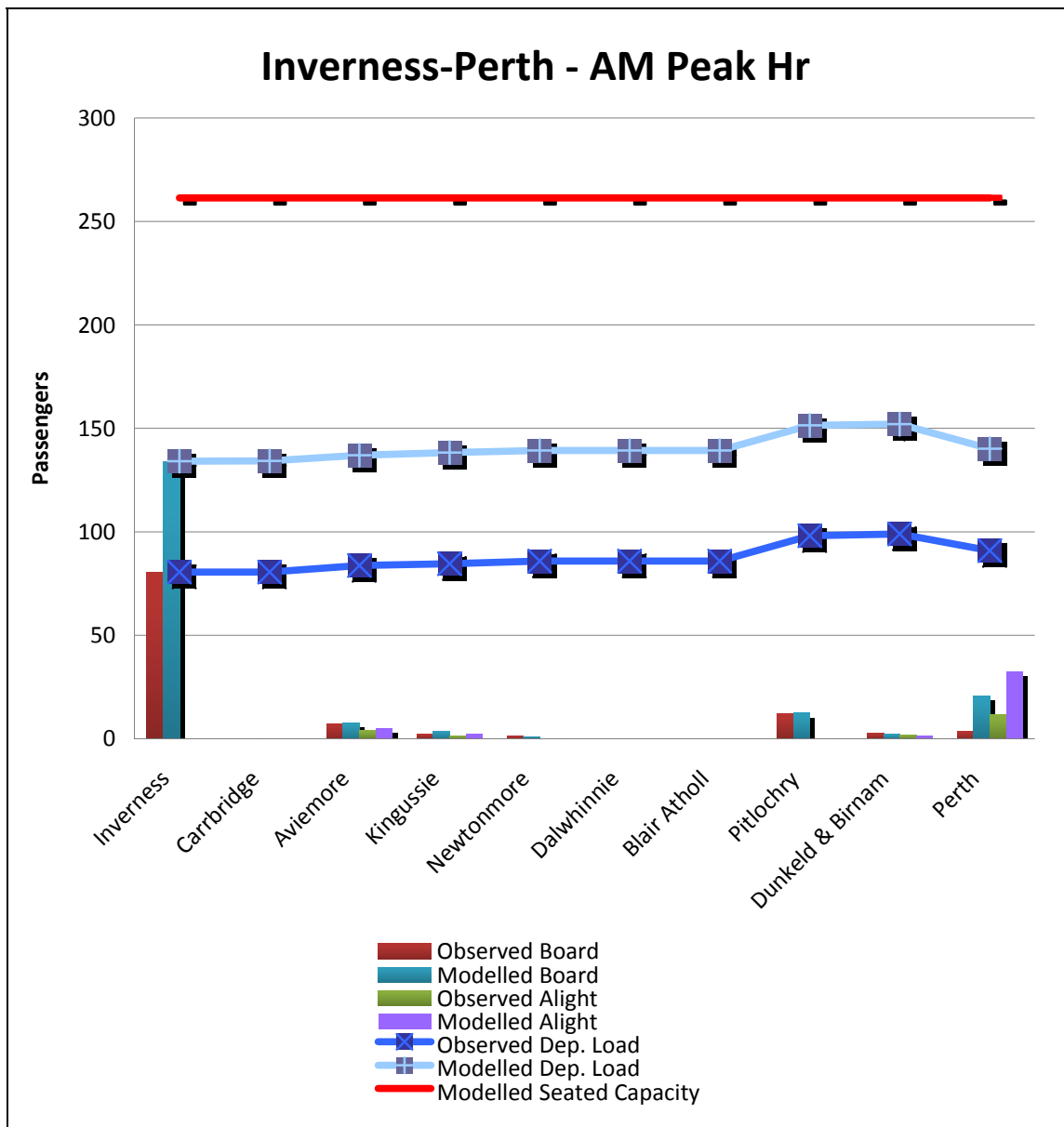


Figure I.12 : Rail boarding and Alighting, Inverness to Perth, PM

