

Rail Census 2014

Report September 2015

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1: Introduction & background to the Rail Census

1.1 Background to the Census

Iarnród Éireann were commissioned to carry out the annual National Census of Rail patronage on behalf of the National Transport Authority. Boardings and alightings of passengers at every train station in the country are recorded on one day of the year. The 2014 Census is the third national Census. Prior to 2012, the census was carried out in the Greater Dublin Area (Dublin, Meath, Kildare and Wicklow) only.

This report provides an overview of the 2014 National Rail Census and discusses the annual change in rail journeys throughout the country. It also sets out the changes in rail usage in the GDA over the period 2003 to 2014.

The report structure is as follows:

- Section 1 provides a background and also sets out the methodology of the Rail Census. An overview of the rail network in Ireland is also provided.
- Section 2 analyses the trends in rail journeys in the GDA from 2003 to 2014 and also assesses how the findings of the Rail Census compare with other measurements of rail usage.
- Section 3 discusses in detail the findings from the 2014 Rail Census.
- Section 4 presents an analysis of journeys on individual lines, and
- Section 5 discusses patterns of passenger movement in and out of Dublin on a radial corridor basis.

1.2 Methodology and Operating Conditions on the Day of the Census

The annual National Heavy Rail Census captures the number of individuals boarding and alighting at each station in the country on one day of the year. It provides a snapshot of usage and patronage across the country at all stations and on all services on this one date.

It is not intended to represent an accurate picture of overall demand for rail services, which instead is recorded in Iarnród Éireann's passenger journeys data.

While over time the census can help to illustrate trends, each individual year the census data is subject to variation based on a number of factors.

The 2014 census, which took place on 13th November was particularly affected by severe weather, which greatly reduced the levels of discretionary travel. This is best illustrated by DART, which saw peak journeys increase by 3% for essential work and study travel compared to the 2013 census, while off-peak reduced by 8% as non-essential journeys were not made.

Furthermore, a number of weather-related disruptions occurred, including flooding disrupting Cork to Cobh/Midleton peak services, and the Dublin/Belfast line.

Overall, on census day, passenger journeys across the network increased by 1.35%. This compares to the overall annual passenger journeys increase of 3%. The difference between the two again illustrates the effect of the severe weather on journeys. Further care still should be taken in extrapolating conclusions on patterns of demand on individual Intercity and regional routes.

It is important that these clarifications are explicitly made in all presentation of this data, be it the full census document, summary document or media summaries

issued, lest inaccurate conclusions be drawn from the census process.

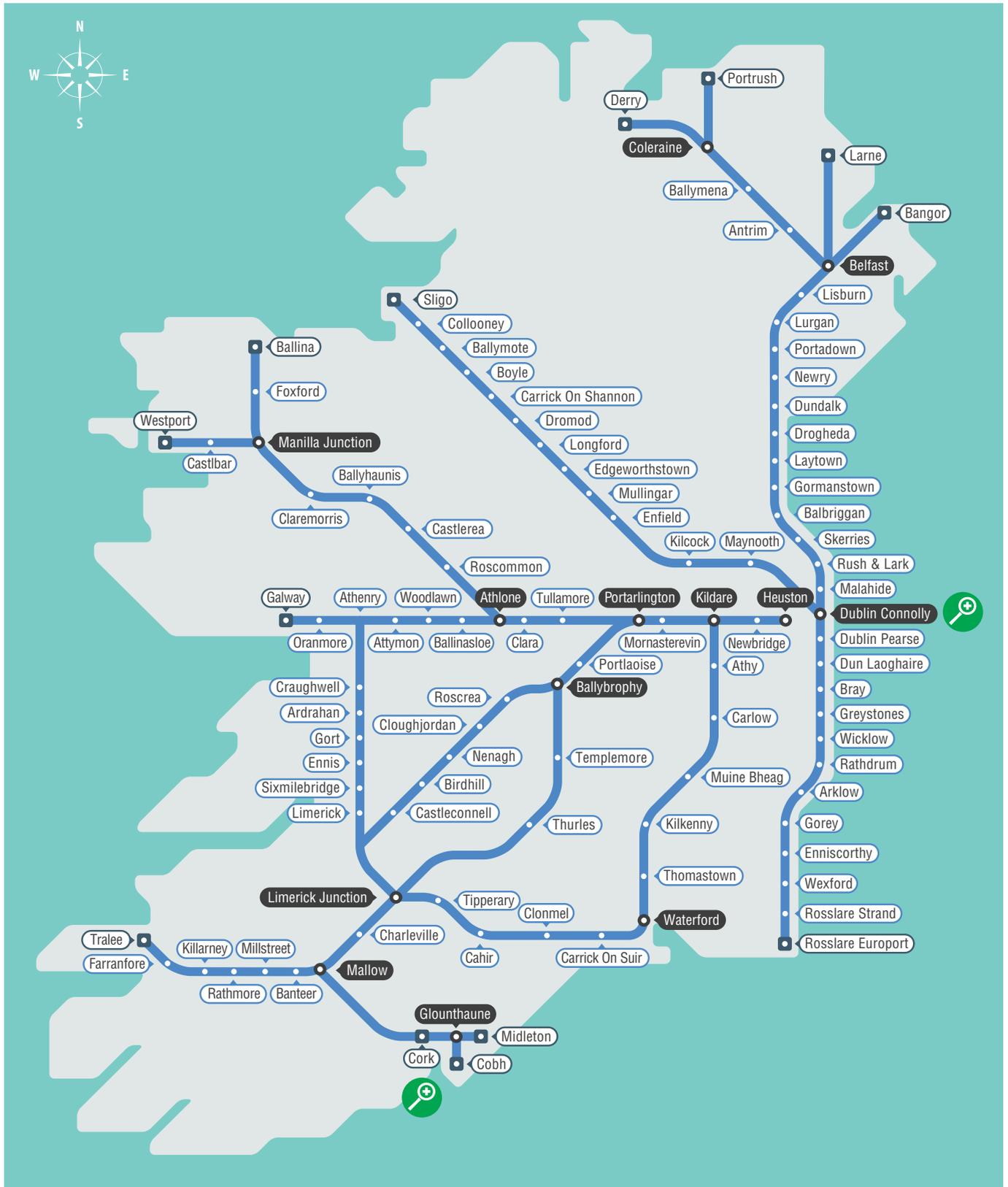
1.3 Overview of rail network

The rail network in Ireland consists of approximately 2,400km of railway track and includes 147 stations. Three distinct categories of service operate on the national rail network; DART, Commuter and Inter City. These service categories share lines at various locations along the network. Table 1 provides a description of the routes within each of the categories as defined by Iarnród Éireann and Figures 1 to 3 show maps of the network.

Table 1 Routes and services in the Iarnród Éireann Network as defined by Iarnród Éireann

Route	Services on Each Route
Inter City	Dublin - Belfast
	Dublin - Sligo
	Dublin - Westport / Ballina
	Dublin - Galway
	Dublin - Limerick
	Dublin - Cork / Limerick / Tralee
	Dublin - Waterford
	Dublin - Kilkenny
	Dublin - Rosslare
	Limerick - Galway
	Limerick - Waterford
Commuter Routes	Dublin - Dundalk Commuter service
	Dublin - Portlaoise Commuter service
	Dublin - Longford Commuter service
	Dublin - Dunboyne / M3 Parkway services
	Dublin - Gorey Southern Commuter service
	Mallow - Cork - Cobh - Midleton Commuter services
DART	Malahide / Howth - Dublin - Bray / Greystones

Figure 1 InterCity Network



Intercity Train Services

 Intercity  Connection  Terminus

Tables 2 to 4 detail the service provision for a sample weekday for Inter City services and key Commuter and DART services. This includes the fastest journey time and the number of services available per weekday in 2014.

Table 2 Inter City Journey Times and Service Frequency 2014

Route	Fastest journey time 2014	Number of services per weekday
Dublin - Cork	02:30	29
Dublin - Belfast	02:05	16
Dublin - Galway	02:18	19
Dublin - Westport	03:02	9
Dublin - Sligo	03:01	14
Dublin - Tralee	03:52	15
Dublin - Limerick	01:59	34
Dublin - Waterford	02:05	16
Dublin - Rosslare	02:46	8

Table 3 Key Commuter Journey Times and Service Frequency 2014

Route	Fastest journey time 2014	Number of services per weekday
Dublin - Portlaoise	00:42	70
Dublin - Maynooth	00:29	80
Dublin - Dundalk	00:52	30
Dublin - Drogheda	00:30	65
Cork - Mallow	00:19	44
Cork - Midleton	00:23	44
Cork - Cobh	00:24	46

Table 4 DART Journey Times and Service Frequency 2014

Route	Fastest journey time 2014	Number of services per weekday
Malahide - Greystones	01:15	69
Bray - Howth	01:08	78

Changes to Rail Services in 2014

In 2014, the Authority approved some minor changes to rail services. These included adjustments to the running times on the Dublin to Tralee service, a revised timetable to facilitate the refurbishment of rolling stock on the Dublin - Belfast Enterprise service and the introduction of an extra train between Waterford and Dublin on Fridays and Saturdays.

2: Trends in Daily Rail Patronage, 2003 – 2014

2.1 Key Events since 2003

Rail usage is a derived demand, dependent, amongst other factors, on levels of economic activity. Since 2003 trends in rail patronage have closely followed economic performance.

At the start of the period, the demand for rail usage increased steadily. This increase in demand necessitated investment in the rail network and fleet and major rehabilitation works, in addition to service improvements. Between 2000 and 2010, for example, service levels on the Inter City, Commuter and DART networks were approximately doubled. Following an upgrade in 2006, capacity on the DART increased. Station improvements were carried out and platforms were lengthened in order to accommodate longer, higher capacity trains.

Investments over the past decade include the following:

- The Kildare Route Project – this involved the development of a four-track rail line between Cherry Orchard and Hazelhatch on the Heuston to Kildare line. This allowed for the separation of Inter City and Commuter services. The speed and capacity of all services on the line was improved as well as facilitating the running of more frequent services on Inter City and Commuter routes.



- The Dunboyne Rail Line - This involved the development of 7.5km of railway, branching off the Maynooth line at Clonsilla and terminating at the M3 interchange at Pace. Three new stations on the route were also developed: Hansfield, Dunboyne and Pace. The station at Pace (M3 Parkway) has a 1,200 space car park facility. A new station at Docklands was also built to accommodate some of the services on this line.
- Cork Commuter Rail - this involved the reopening of the Cork - Middleton line in 2009.
- Limerick to Galway Services - This included the reinstatement of the line from Ennis to Athenry and the construction of five new stations: Sixmilebridge, Gort, Ardahan, Craughwell and Oranmore.

Table 5 shows daily rail journeys in the GDA since 2003, defined as the number of boardings. The number of rail journeys in the GDA increased year on year up to its peak of approximately 144,000 in 2007. This was followed by a period of decline in patronage from 2008 to 2010. Since then, the number of daily journeys within the GDA has remained relatively static. However the overall increase in patronage between 2013 and 2014 represents the most significant increase in patronage since the period of decline. A slight decline in DART patronage in the past year is negated by increases in the Commuter and Inter City services.

Charts 1 and 2 show the proportional contribution each section of the rail network makes to daily rail patronage within the GDA. There has been a change in the contribution of each line since 2003. DART journeys have declined from 63% in 2003 to 53% in 2014. This represents a decline of over 13,000 daily journeys.

Table 5 Daily passenger journeys by network section 2003 - 2014

Year	DART	Dundalk - Gorey	Longford - Dublin - Bray	Dublin - Carlow/ Athlone/ Portlaoise	Total
2003	68,152	19,446	11,642	8,246	107,486
2004	64,435	20,419	13,614	9,219	107,687
2006	81,560	23,305	21,966	11,349	138,180
2007	83,618	24,624	23,836	11,722	143,800
2008	75,753	22,191	22,678	11,145	131,767
2009	63,559	18,037	19,992	9,760	111,348
2010	55,929	17,446	18,770	9,042	101,187
2011	55,629	17,611	18,531	9,455	101,226
2012	56,835	17,895	17,915	8,490	101,135
2013	55,921	17,801	17,100	9,283	102,101
2014	55,003	18,780	19,097	11,371	104,251

2.2 Historic Trends in the Greater Dublin Area (GDA)

Prior to 2012 the rail census was undertaken for the GDA only. As such, historical trends over the past decade can be examined across the following sections of the network:

- DART Line
- Longford - Dublin - Bray (Gorey) line
- Dundalk - Bray line
- Dublin - Carlow/Athlone/Portlaoise line

While the proportional contribution of the other lines has remained relatively stable over the same period; in the past year there has been moderate growth on the Longford - Dublin - Bray and Dundalk - Gorey lines with patronage growing by some 5% and 12% respectively. Patronage on lines operating through Heuston (the Carlow, Athlone and Portlaoise lines) have experienced significant growth increasing by over 20% in the past year. While patronage on these lines has almost returned to 2007 levels, they still account for only 11% of all GDA rail patronage.

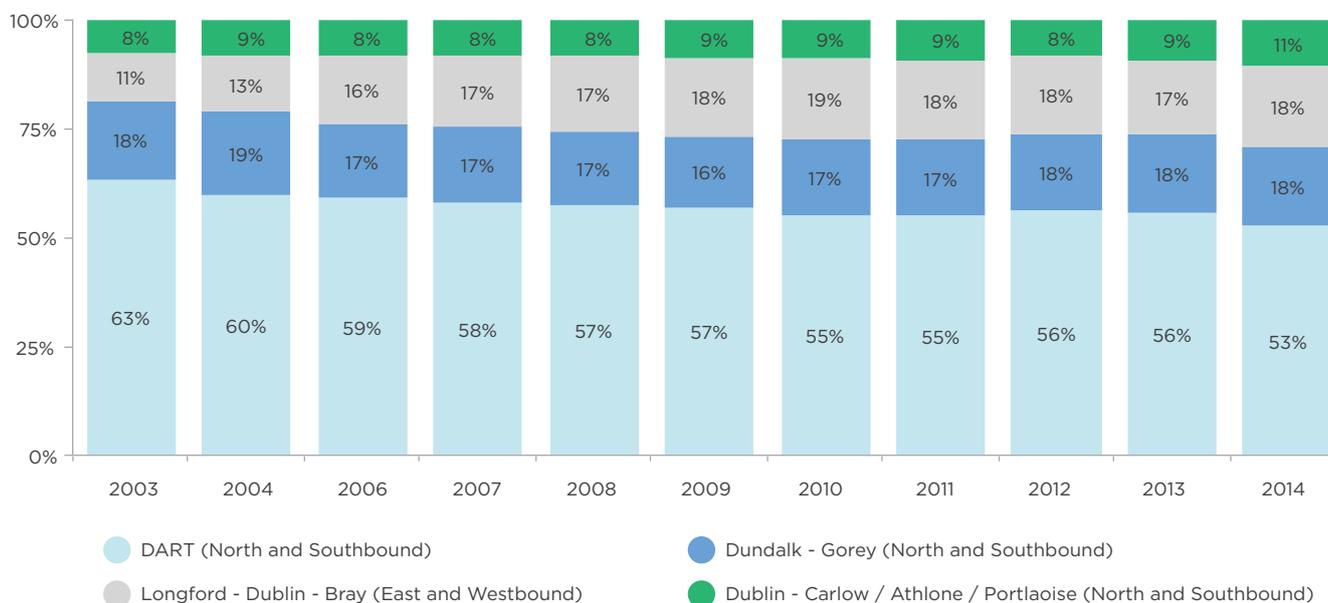
Chart 1 Composition of daily GDA rail patronage, 2003 - 2014

Daily Journeys



Chart 2 % Composition of daily GDA rail patronage, 2003 - 2014

% Daily Journeys



2.3 Analysis of Mode Share from the Canal Cordon Count

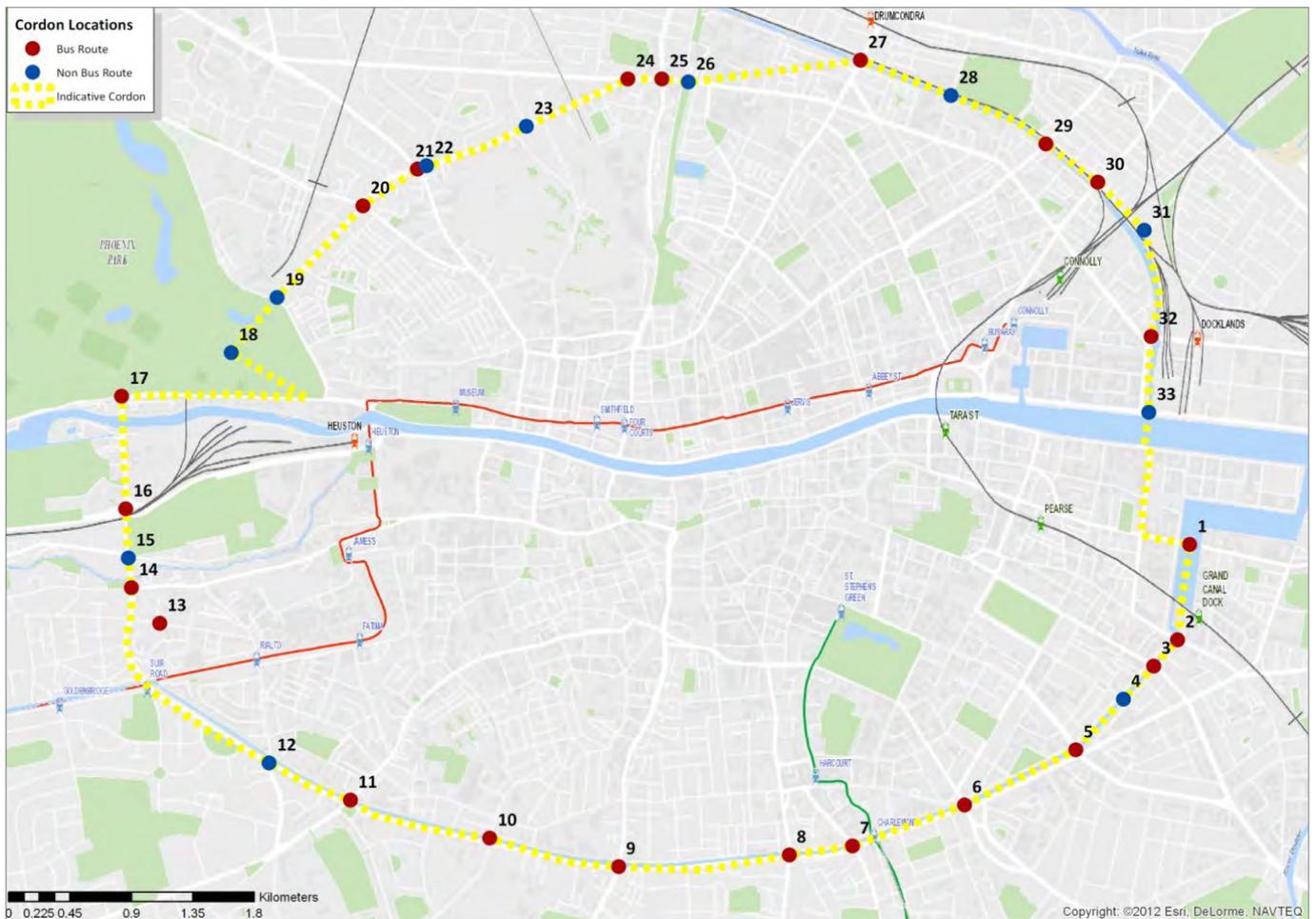
The 'Canal Cordon Count' is an annual count of people crossing the Canal Cordon (i.e. a perimeter around Dublin City Centre formed by the Royal and Grand Canals) in the morning peak between 7:00 and 10:00 averaged over two days in November each year.¹ Figure 4 shows the location of the Canal Cordon and the 33 points on the Cordon where information on the movement of people is collated.

This count provides data on numbers of people entering Dublin city by all modes of transport including rail, bus, taxi, cycling, walking, and car or goods vehicle and allows for an analysis of mode share and shift from 2006 to 2014. Table 6 details the number of people crossing the canal cordon by mode in 2013 and 2014, and Chart 3 shows the mode share of journeys in to the city centre.

Table 6 Number of People Crossing the Canal Cordon by Mode in 2013 and 2014

Mode	2013	2014	Annual % Change
Bus	56,177	56,671	1%
Rail	24,969	24,866	0%
LUAS	10,835	11,670	8%
Car	68,072	64,169	-6%
Taxi	3,111	2,775	-11%
Walk	17,495	19,711	13%
Cycle	9,061	10,349	14%
Commercial Vehicle	1,045	1,087	4%
Motor Bike	1,423	1,372	-4%
Total	192,188	192,670	0%

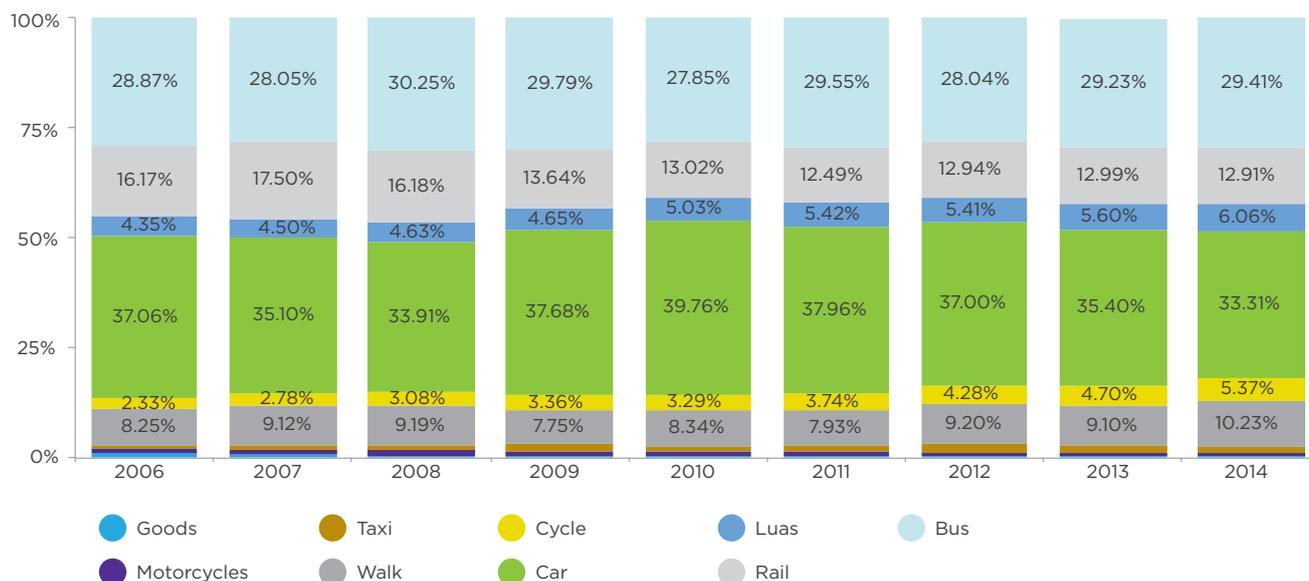
Figure 4 Canal Cordon and 33 Count Locations



¹ The counts refer to movements of people in one direction only (i.e. inbound into the city centre) across the various cordon points.

Chart 3 Mode Share of Journeys into the City Centre, 2006 - 2014

Mode Share



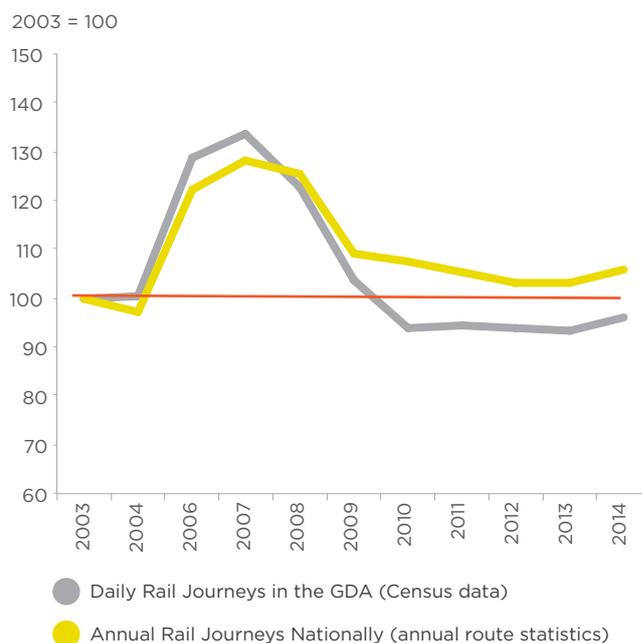
This shows a number of changes in mode share since 2006:

- The share of rail journeys into the city centre in the morning peak have fallen from a peak of over 17% in 2007 to 13% in 2014.
- Since 2010, the rail mode share has stabilised at around 13%.
- There has been an increase in the proportion of journeys travelling into the city centre by bicycle from 2% to over 5%. From 2013 to 2014 alone, bicycle mode share grew by 15%.
- Bus mode share has shown a moderate increase of almost 2% over the period 2006 to 2014 and has experienced year on year growth in mode share since 2012; a trend that continues in 2014.
- The private car mode share continues to decline and is down over 10% since 2006. Car mode share has experienced year on year decline since a peak of almost 40% in 2010.
- At 48%, the mode share for public transport is now 15% greater than that for private car. This is the highest that the mode share for public transport has been relative to private car since 2008.
- The walk mode share has returned to growth since 2013 and is now over 10%.
- The remaining modes - commercial vehicle, motor bike and taxi remain largely unchanged since 2006.

2.4 Comparison of Census Data and Annual Rail Statistics

Iarnród Éireann also produces statistics on the number of journeys taken nationally on the rail network on an annual basis. Chart 4 compares the daily rail journeys taken in the GDA (from the Rail Census) with the number of annual journeys nationally, using 2003 as a baseline.

Chart Daily Rail Journeys in the GDA compared to Annual Rail Journeys 2003 - 2014²



² Source for annual rail journeys: Iarnród Éireann Annual Report, 2014 - 37.8m journeys

The trends in both annual and daily rail journeys have followed similar trajectories over the past 11 years. This suggests that the Rail Census could be considered representative of annual rail patronage and therefore could be considered a reasonable proxy for annual trends.

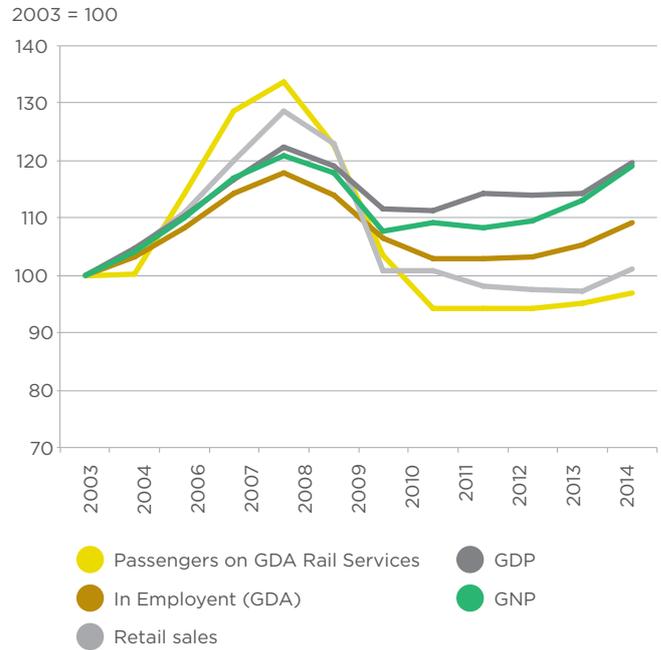
The sharper decline in GDA patronage since 2008 can be explained by differences in rail coverage in the GDA region relative to the rest of Ireland. Daily rail journeys in the GDA will also be heavily influenced by the decline in DART patronage.

Since 2010 patronage trends both in the GDA region and nationally have remained relatively flat, however in the period 2013-2014, both national and GDA patronage have shown moderate growth. This represents an increase in over a million rail journeys made over the entire network in the period 2013 - 2014.

2.5 Rail Usage in the GDA and Economic Trends

Given that rail usage is a derived demand, it is useful to understand the relationship between rail patronage and other indicators of economic activity. In doing so, it may assist in anticipating future trends in rail demand, and aid service planning. Chart 5 compares the evolution of rail patronage in the GDA with key national economic indicators and the numbers In Employment in the GDA. A relationship is clearly evident, as increases and decreases in economic activity are reflected in rail passenger numbers. The greater volatility in passenger numbers relative to activity is due to the lower propensity to undertake non-essential leisure travel during times of economic contraction.

Chart 5 Rail Journeys in the GDA Key Economic Indicators Indexed to 2003)



3: Rail Patronage

3.1 National and Greater Dublin Area

The total patronage on the rail network on Census day was just over 124,000. Total patronage has increased slightly since 2013 and is close to 2012 levels. Table 7 shows the total rail patronage both within and outside the GDA, along with the relative change since 2013. The GDA comprises the counties of Dublin, Kildare, Meath and Wicklow.

Of the total number of rail journeys undertaken in 2014, 83% were within the GDA. This remains unchanged since 2012. There is a decline in patronage outside of the GDA. This is in contrast with the growth inside the GDA.

Table 7 Rail Patronage - GDA and National

	GDA	% Change on previous year	Outside GDA	% Change on previous year
Patronage	103,318	0.8%	20,739	-1.6%



3.2 Rail Usage according to Service Categories

Table 8 shows the total number of journeys taken on the day of the Census, according to service category.

Table 8 Journeys taken by service category

	Passenger Journeys Taken	% Change on previous year
DART	55,003	-1.6%
Commuter	41,424	0%
Inter City	28,634	9%

3.3 Rail Usage on Individual Lines

Table 9 shows the number of journeys on each of the lines on Census day 2014

Table 9 Journeys by direction and by line, 2014

Line	Route	Journeys	Annual % change
DART Northbound	Greystones/Bray - Howth / Malahide	27,330	-3%
DART Southbound	Malahide/Howth - Greystones/Bray	27,673	0%
Connolly - Northbound	Rosslare - Dundalk	9,663	0%
Connolly - Southbound	Dundalk - Rosslare	10,427	0%
Connolly - Eastbound	Sligo - Longford - Bray	10,027	1%
Connolly - Westbound	Bray - Longford - Sligo	9,786	7%
Heuston - Northbound	Kildare/Newbridge/Athlone/Carlow/Portlaoise/ Cork/Limerick/Galway/Wesport/Waterford/Tralee to Heuston	11,773	5%
Heuston - Southbound	Heuston to Kildare/Newbridge/Athlone/Carlow/ Portlaoise/Cork/Limerick/Galway/Wesport/ Waterford/Tralee	11,492	5%
Cork Regional Northbound	Cobh - Cork - Mallow, or Cork - Mallow - Tralee	1,968	-25% ³
Cork Regional Southbound	Cork to Cobh and from Tralee - Mallow - Cork	1,774	-28% ³
Regional Northbound	Limerick to Galway/Ballybrophy/Limerick junction, Waterford to Limerick junction	1,313	64%
Regional Southbound	Galway/Ballybrophy/Limerick junction to Limerick, Limerick junction to Waterford	1,115	2%

3.4 Busiest stations

Table 10 overleaf illustrates the Top 10 busiest stations in 2014 in terms of boardings and alightings. A comparison with the station ranking in 2013 is also provided.

Stations in Dublin dominate the list of busiest stations for boardings and alightings throughout the rail network. This is reflected in overall trends of rail usage. Outside of Dublin - Kent station in Cork City and Bray in Wicklow also feature in the top ten busiest stations in terms of passenger traffic. Dublin Pearse station has overtaken Dublin Connolly as the busiest station in terms of boardings in the Country.

Similar to 2013, the top ten stations for boarding represent almost 47% of total boardings in the country on census day. Continuing the trend since 2012, the share of total alightings accounted for by the top ten stations fell to 47% from 48% and 53% in 2013 and 2012 respectively.

³ Significant service disruptions and some sections of line closed due to flooding on Census day in Cork

Table 10 Top 10 stations by number of boardings and alightings, 2014 (and rank in 2013)

Boardings			Alightings	
1	Pearse (2)	13,560	Connolly (1)	12,944
2	Connolly (1)	12,053	Pearse (2)	12,021
3	Heuston (3)	9,394	Heuston (3)	9,273
4	Tara Street (4)	6,746	Tara Street (4)	7,513
5	Cork (6)	3,188	Grand Canal Dock (8)	3,355
6	Lansdowne Road (9)	2,868	Cork (6)	3,087
7	Grand Canal Dock (8)	2,712	Bray (9)	2,997
8	Blackrock (12)	2,699	Blackrock (10)	2,764
9	Dún Laoghaire (5)	2,610	Lansdowne Road (5)	2,722
10	Bray (7)	2,573	Dún Laoghaire (7)	2,633

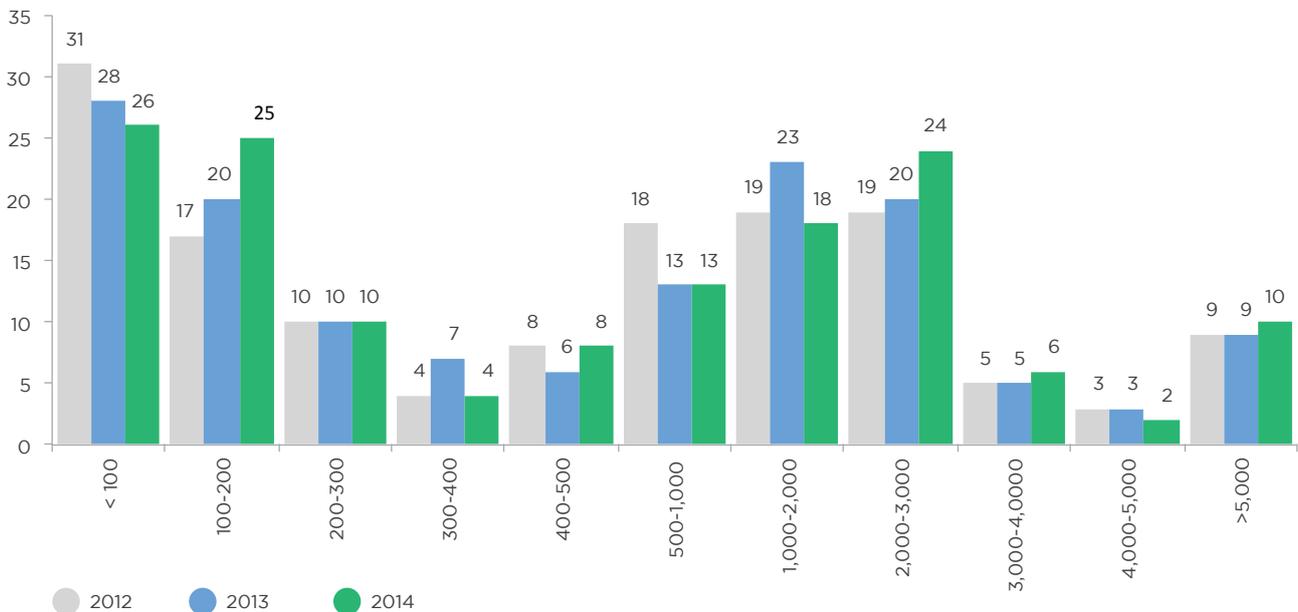
3.5 Variation in station usage across the network

Chart 6 shows the number of daily journeys to and from each station from 2012 to 2014. The number of daily journeys has been derived by adding the number of boardings and alightings at each station.

The number of stations in the country experiencing less than 100 journeys declined in 2014 as in 2013 and is now at 26. Meanwhile the number of stations experiencing between 100 to 200 journeys has increased in the past year from 20 to 25. At the opposite end of the scale 10 stations generated in excess of 5,000 journeys, up from 9 in 2013. Although there has been some variation in the bands in 2014 as in 2013, 60 stations on the network experience more than 1,000 journeys per day.

Chart 6 Variations in Station Usage

Number of Stations





4: Patronage by Line

4.1 DART

Services Included:

Malahide / Howth - Bray / Greystones

The number of total daily journeys on the DART line in 2014 was just over 55,000, down by nearly 1,000 journeys or 1.6% on 2013 levels. This is the same percentage decline as was experienced between 2012 and 2013.

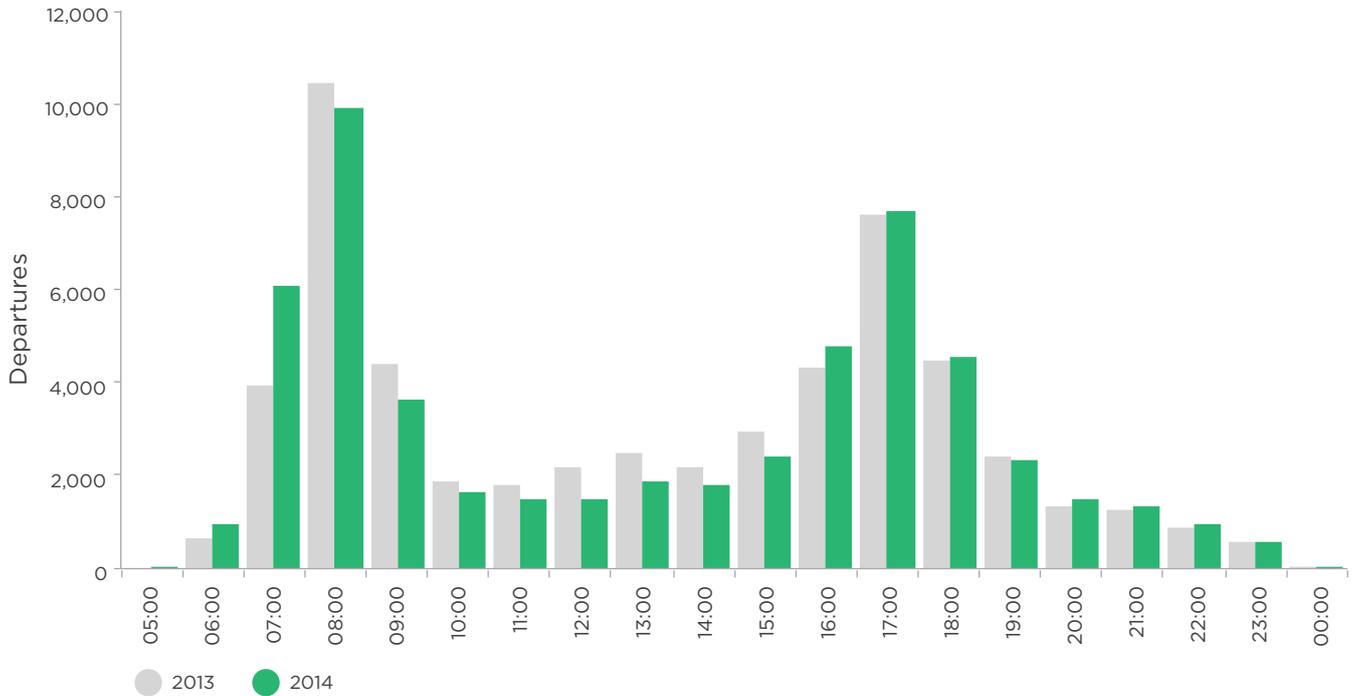
Table 11 Total daily patronage on DART lines, 2014

Line	2013	2014
DART Northbound	28,152	27,330
DART Southbound	27,769	27,673
Total	55,921	55,003

4.1.1 Hourly profile of demand

Chart 7 shows variations in demand throughout the day on the DART line in 2013 and 2014. This is based on passenger numbers boarding services.

Chart 7 Hourly profile of demand on DART 2013 and 2014



4.1.2 Profile of Demand by Station

Chart 8 shows the daily build-up of passengers along the route of the DART Northbound line from Greystones to Howth Junction, where the train then splits into the Howth and Malahide branches. The change in the cumulative number of passengers on board at each station is the net impact of the number of passengers alighting and boarding trains. Chart 9 shows the profile of demand in the southbound direction which, as would be expected, mirrored the northbound profile.

Chart 8 Profile of Demand by Station, DART Northbound, 2013 and 2014⁴

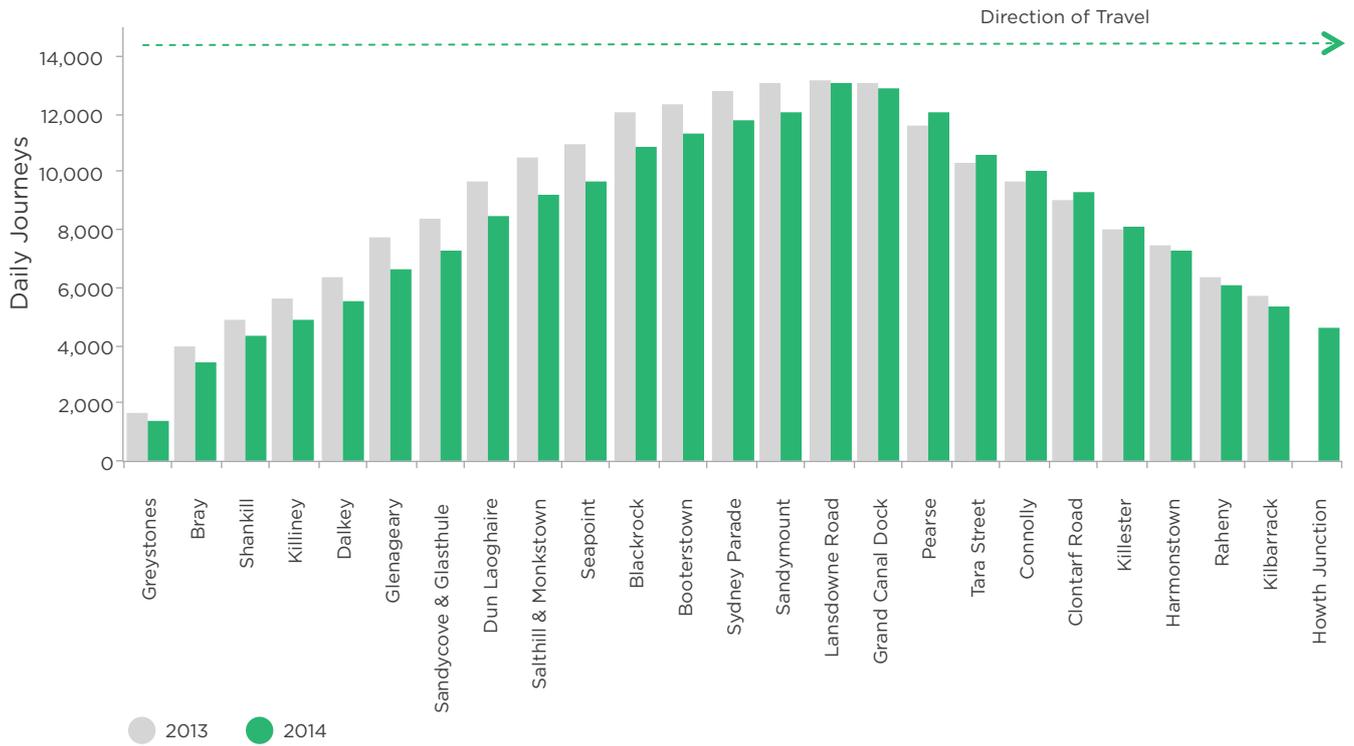
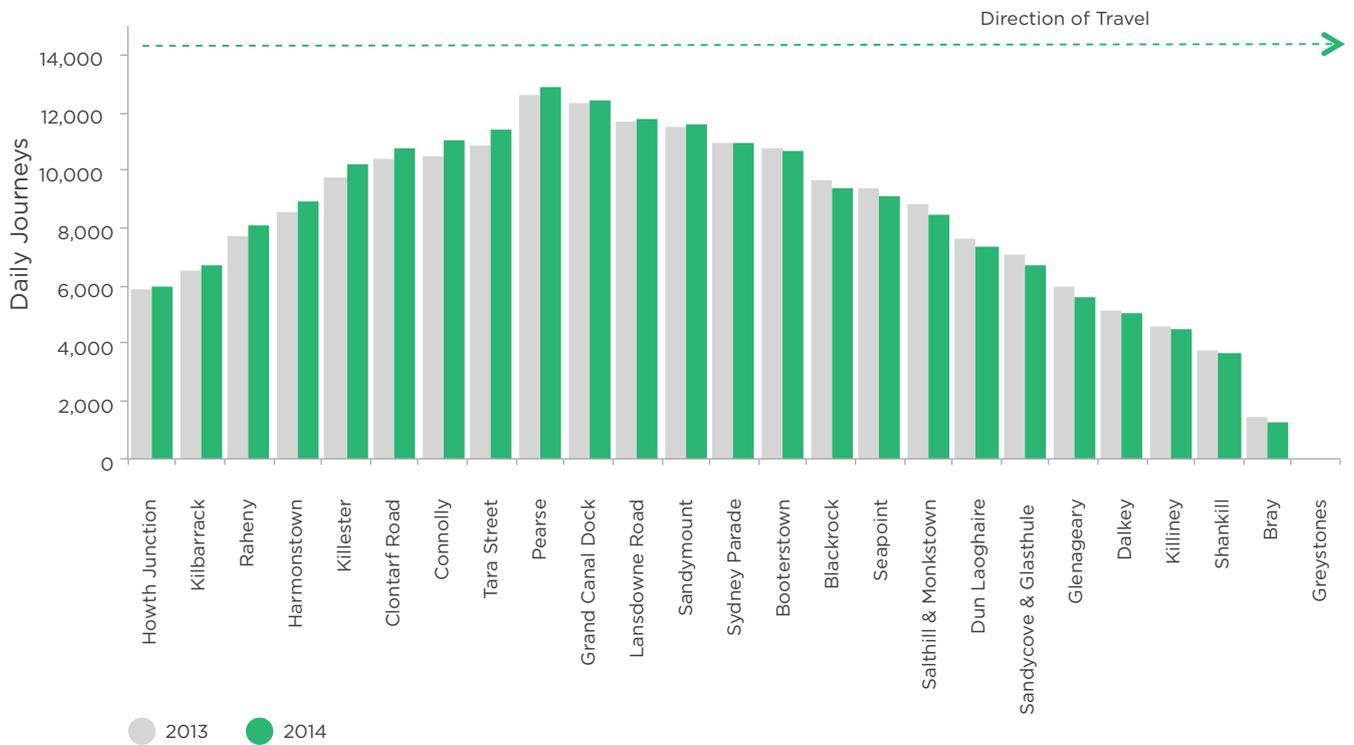


Chart 9 Profile of Demand by Station, DART Southbound, 2013 and 2014⁵



4 Note passenger movements for Malahide, Portmarnock, Clongriffin, Howth, Sutton, and Bayside are included at Howth Junction

5 Note passenger movements for Malahide, Portmarnock, Clongriffin, Howth, Sutton, and Bayside are included at Howth Junction

4.2 Dundalk - Rosslare line

Services included:

- Intercity Dublin - Rosslare / Wexford
- Commuter Dublin - Gorey
- Commuter Dublin - Dundalk / Drogheda
- Intercity Dublin - Belfast

4.2.2 Profile of Demand by Station

Charts 11 and 12 show the demand profile of patronage on the Dundalk - Rosslare section of the network.

4.2.1 Hourly profile of demand

As with the DART, the peak hours on this line also occurred at 08:00 - 09:00 and 17:00 - 18:00. The peak 'shoulders' also carried a large percentage of passengers. Outside of these times the number of hourly boardings on the line were relatively small (see Chart 10), indicating a more peaked profile for this Commuter line than for the DART. This would be expected as the DART is likely to be used for a greater variety of trip purposes more broadly spread throughout the day.

Chart 10 Hourly profile of demand, Dundalk - Rosslare, 2013 and 2014

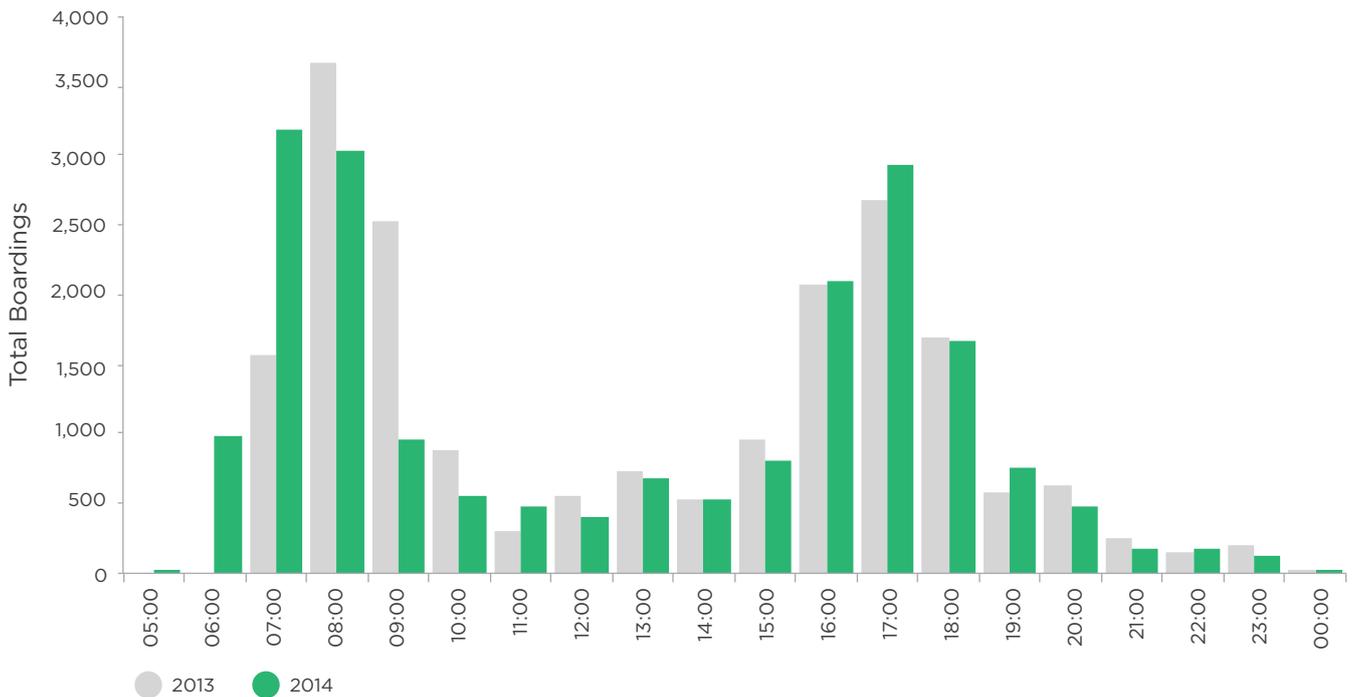


Chart 11 Profile of Demand by Station, Dundalk – Rosslare (Northbound), 2013 and 2014

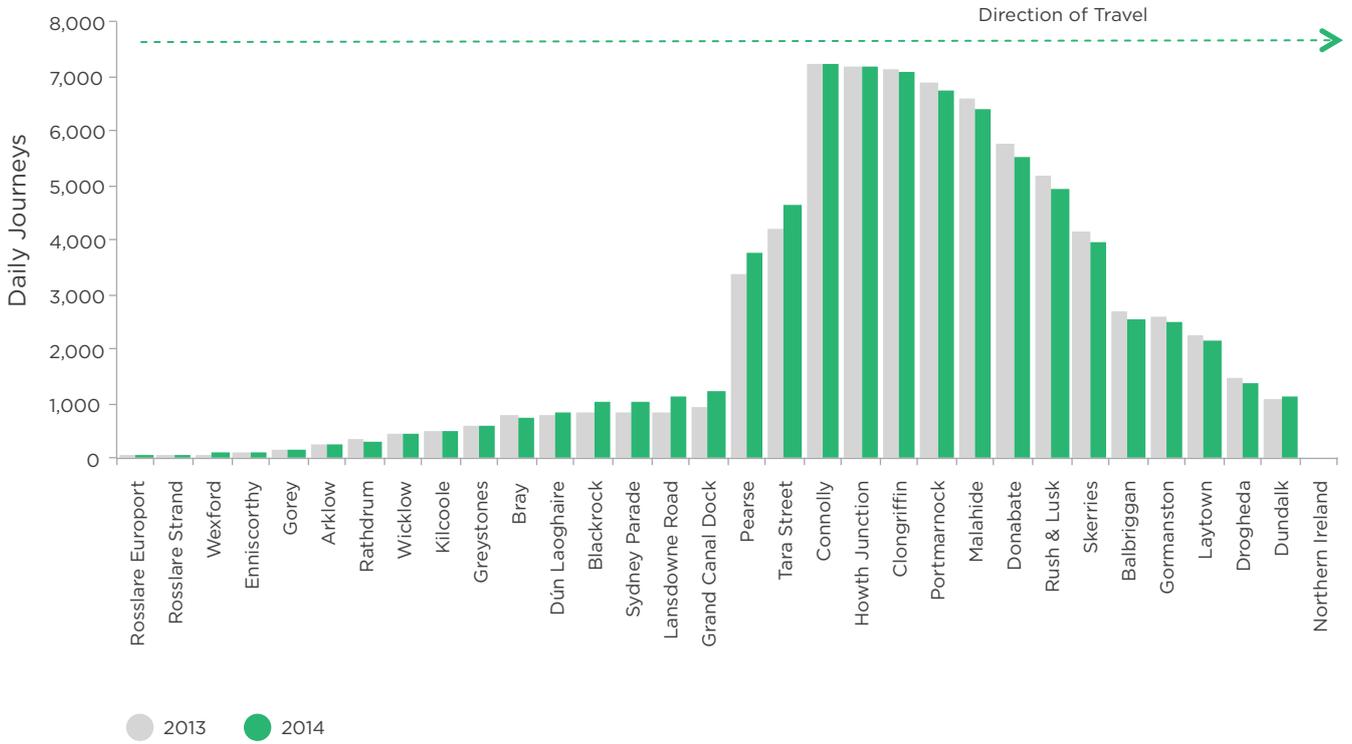
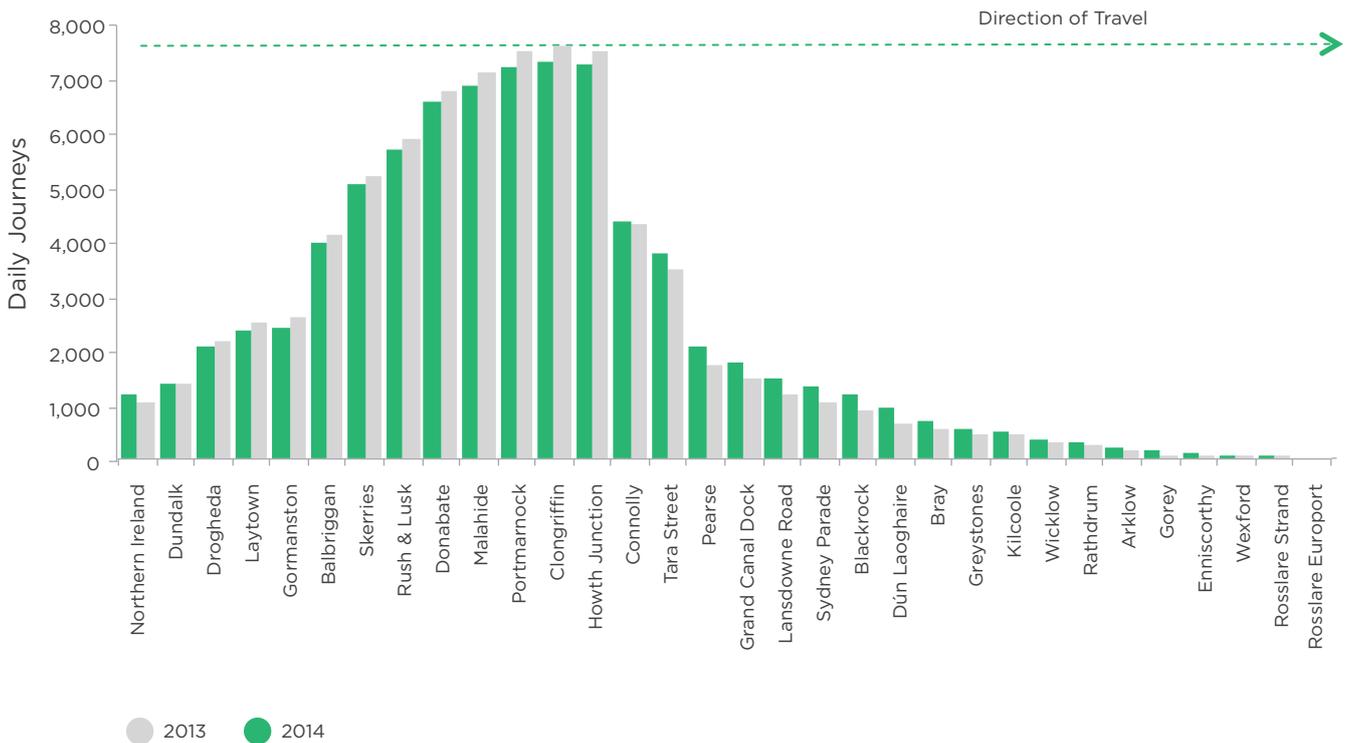


Chart 12 Profile of Demand by Station, Dundalk – Rosslare (Southbound), 2013 and 2014



4.3 Dublin - Belfast line

Services included:

Intercity Dublin - Belfast

The Rail Census also captures the total number of passengers on services operating between Northern Ireland and the Republic of Ireland. There was a moderate increase in cross boarder trips from 2013 to 2014 (approximately 11%).

Table 12 Number of Boardings and Alightings on the Northern Ireland Service

Northern Ireland	2013	2014
Boardings	1,047	1,167
Alightings	1,000	1,126

4.4 Sligo - Longford - Bray

Services included:

- Intercity Dublin - Sligo
- Commuter Dublin - Maynooth/Longford
- Commuter Dublin - M3 Parkway
- Commuter Bray - Dublin (excluding DART)
- Commuter Bray - Maynooth

4.4.1 Hourly profile of demand

This line encompasses both InterCity and Commuter services which stretch from Bray to Dublin city centre and on to Longford and Sligo. As with the Dundalk - Rosslare line, the vast majority of services operate to and from the city centre with few through services to Bray.

M3 Parkway services join/leave the line at Clonsilla and again at Broombridge where they use a separate line to the Docklands. These arrangements are illustrated in Figure 2.

As illustrated in Chart 13, the morning peak hour (08:00 to 09:00) accounted for the largest number of hourly boardings on this line, with the number of boardings decreasing substantially between 10:00 and 14:00. From 15:00 the number of boardings began to increase again in the run up to the evening peak hour (17:00 to 18:00). The peak shoulder in the evening was important for this line also.

Chart 13 Hourly Profile of Demand, Sligo - Longford - Bray, 2013 and 2014

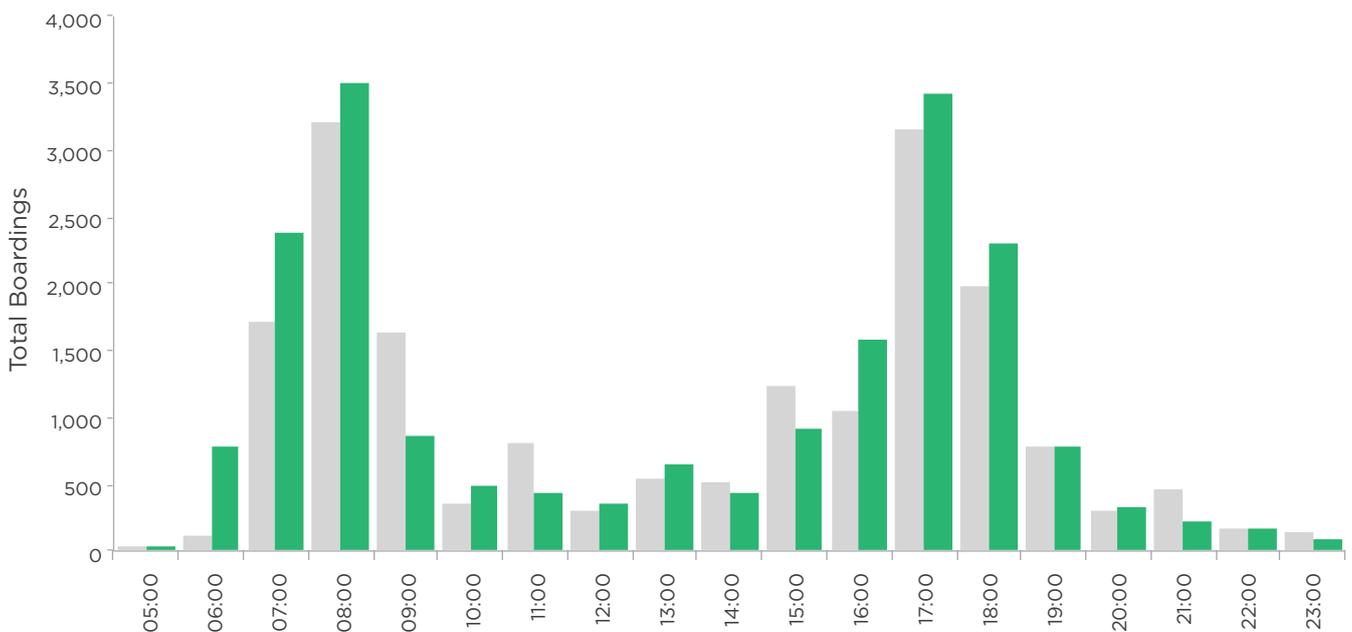


Chart 14 Profile of Demand by Station, Bray - Dublin - Sligo (Westbound), 2013 and 2014

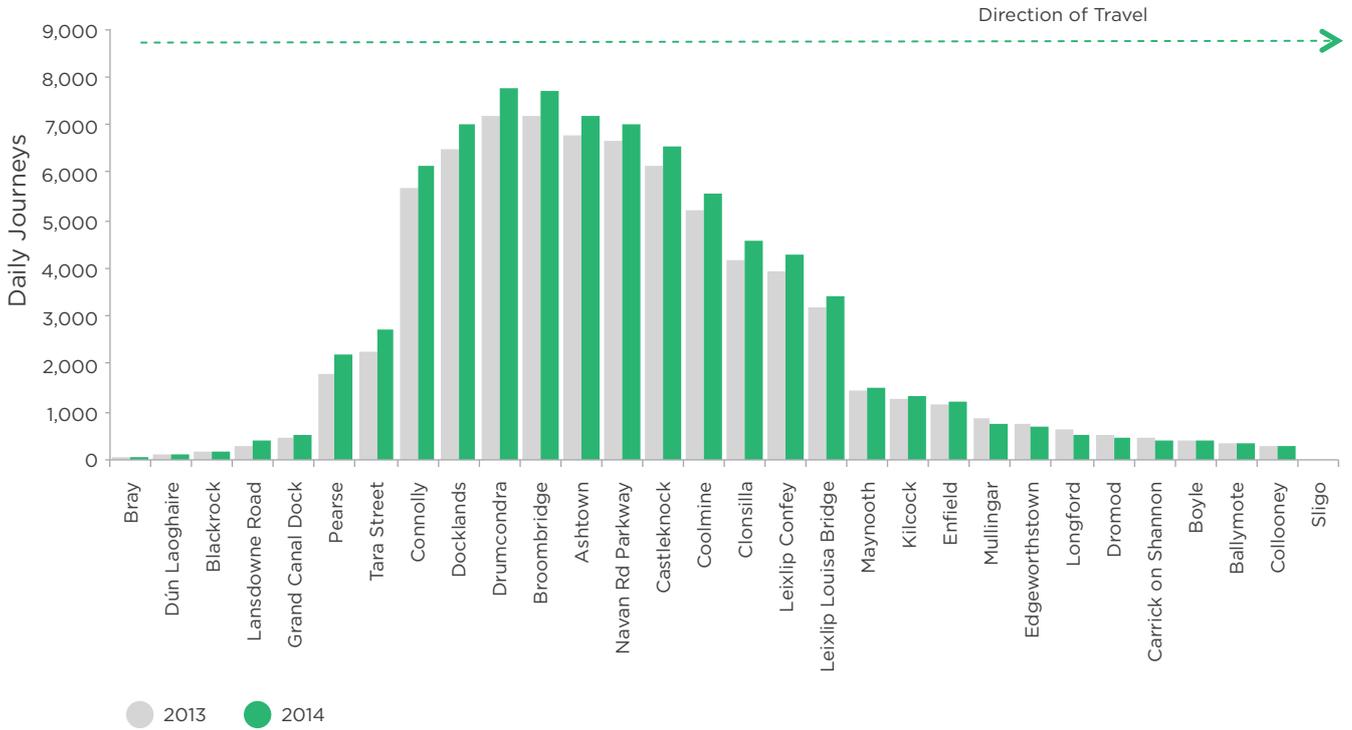
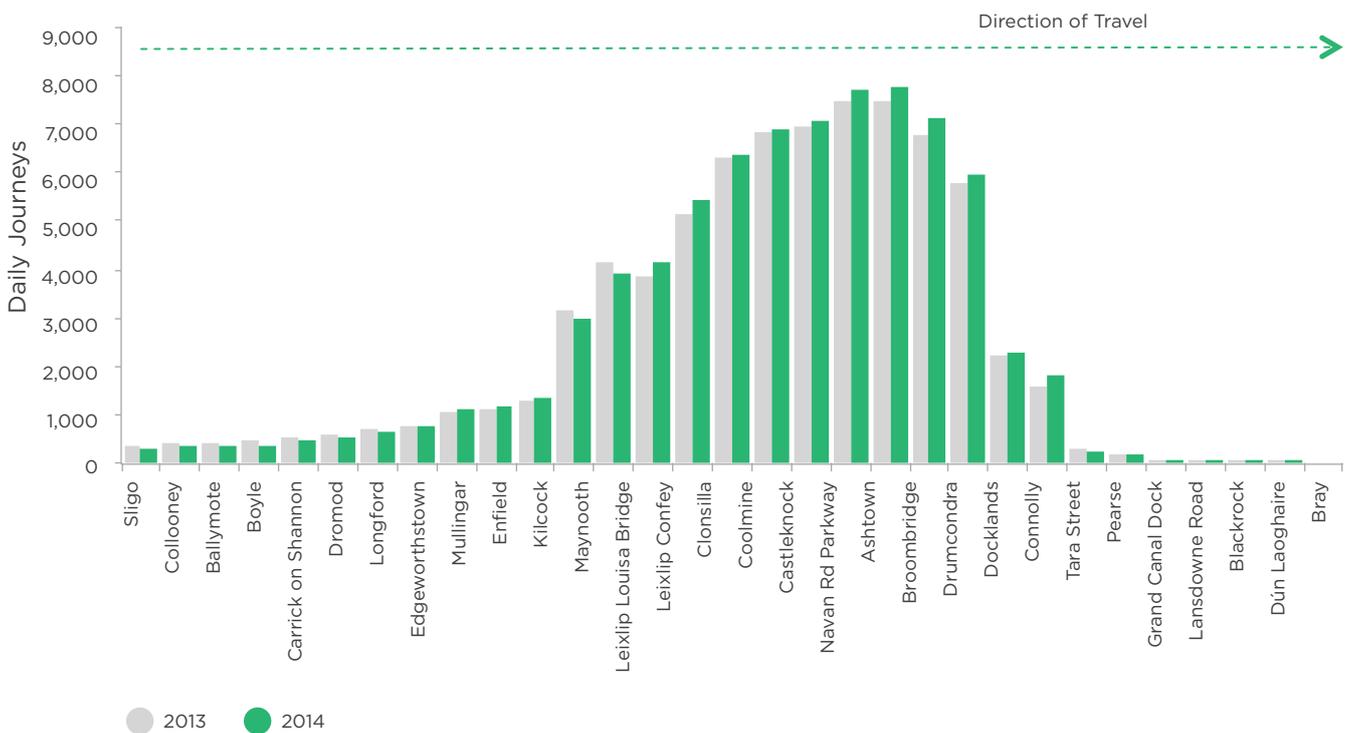


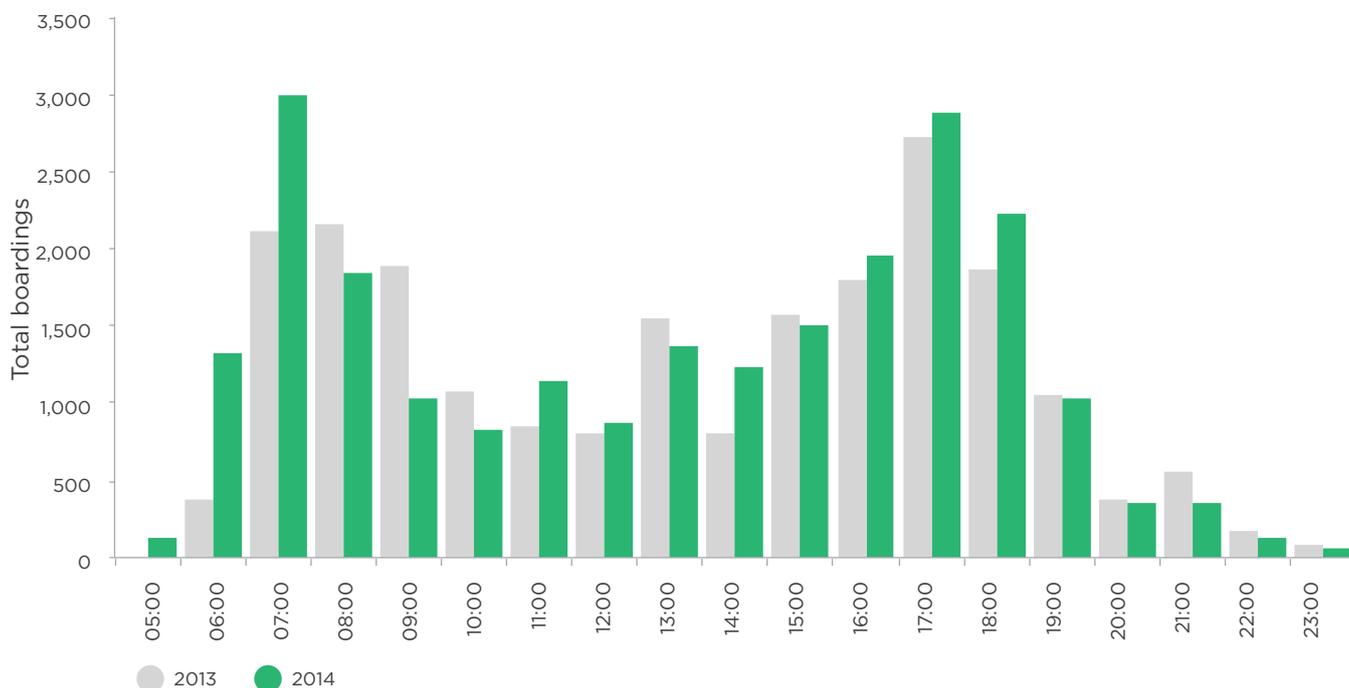
Chart 15 Profile of Demand by Station, Sligo - Dublin - Bray (Eastbound), 2013 and 2014



4.5 Heuston lines

A number of rail lines branch out of Heuston. This network of lines serves the majority of the country, with services to and from Kildare, Waterford, Newbridge, Athlone, Carlow, Portlaoise, Cork, Tralee, Limerick, Galway, and Westport. Chart 16 shows the build-up of demand on all Heuston services over the course of the Census day. The build-up captures the total boardings per hour based on time of arrival or departure from Heuston station.

Chart 16 Hourly Profile of Demand, Heuston Lines, 2013 and 2014



4.6 Cork Regional

Services included:

Commuter - Cobh - Cork - Mallow - Tralee

4.6.1 Hourly Profile of Demand

Chart 17 Hourly Profile of Demand, Cork Lines, 2013 and 2014

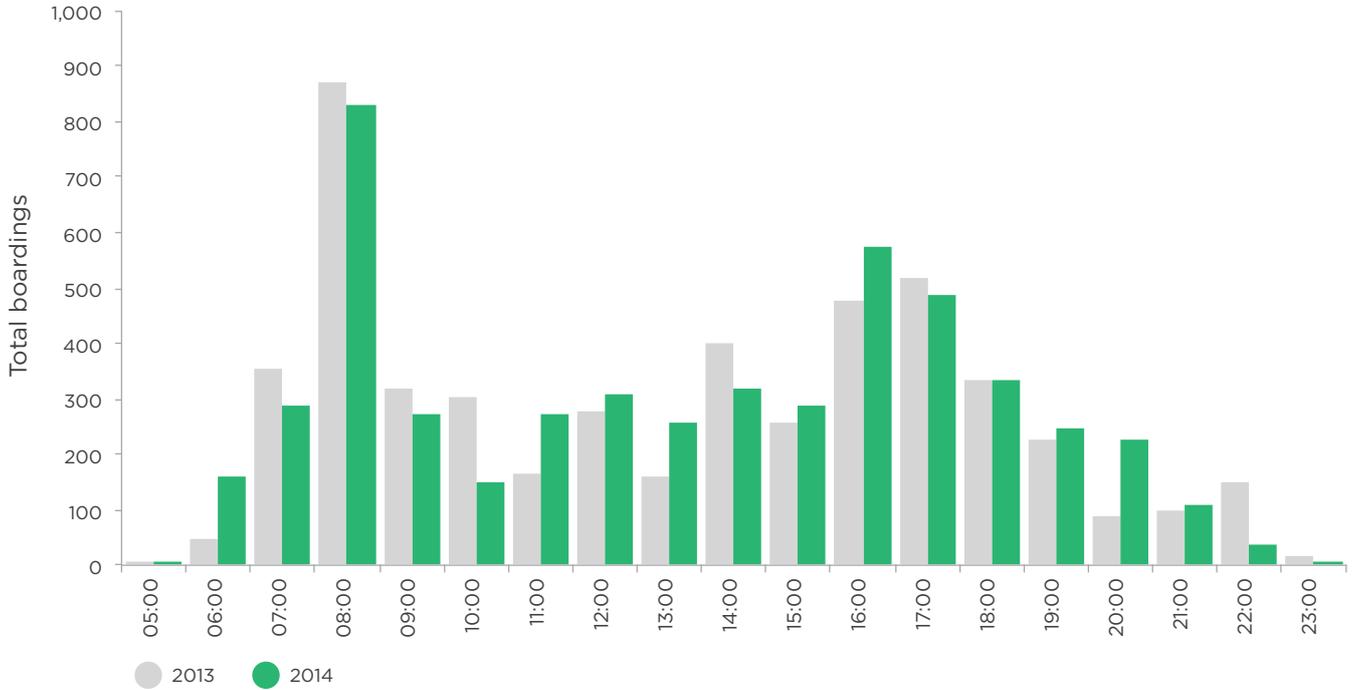
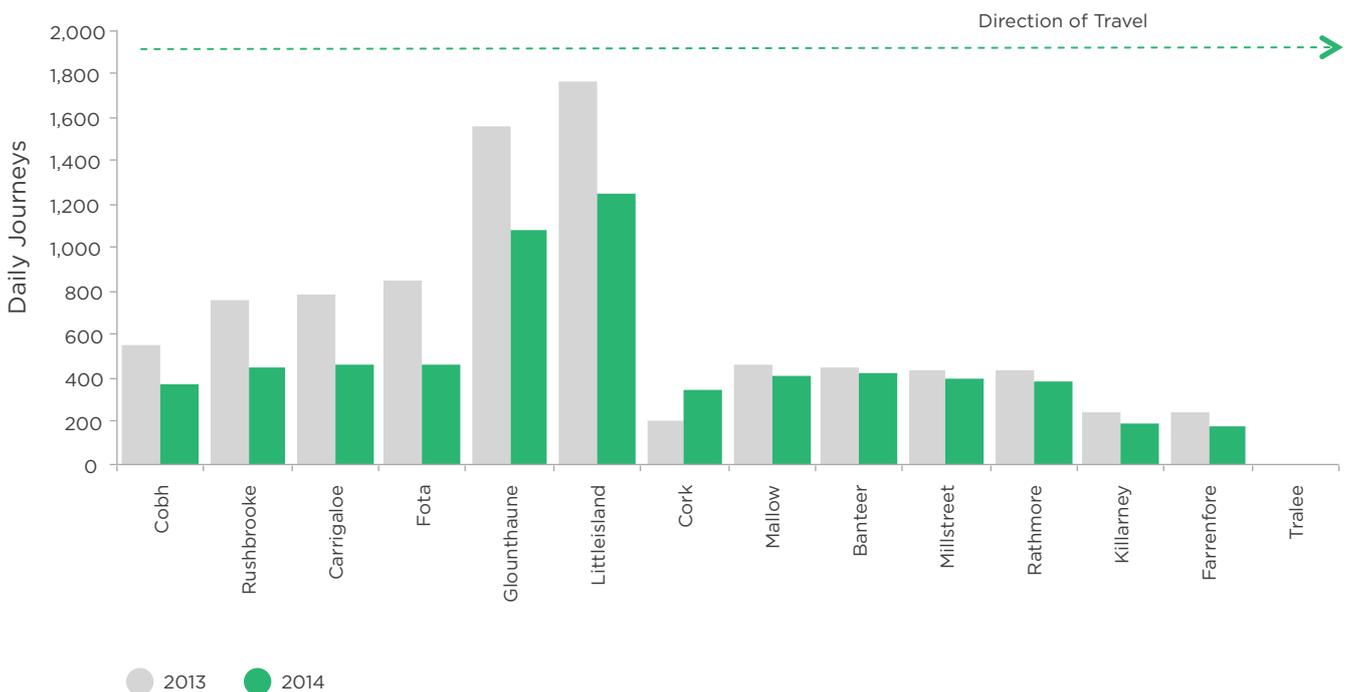
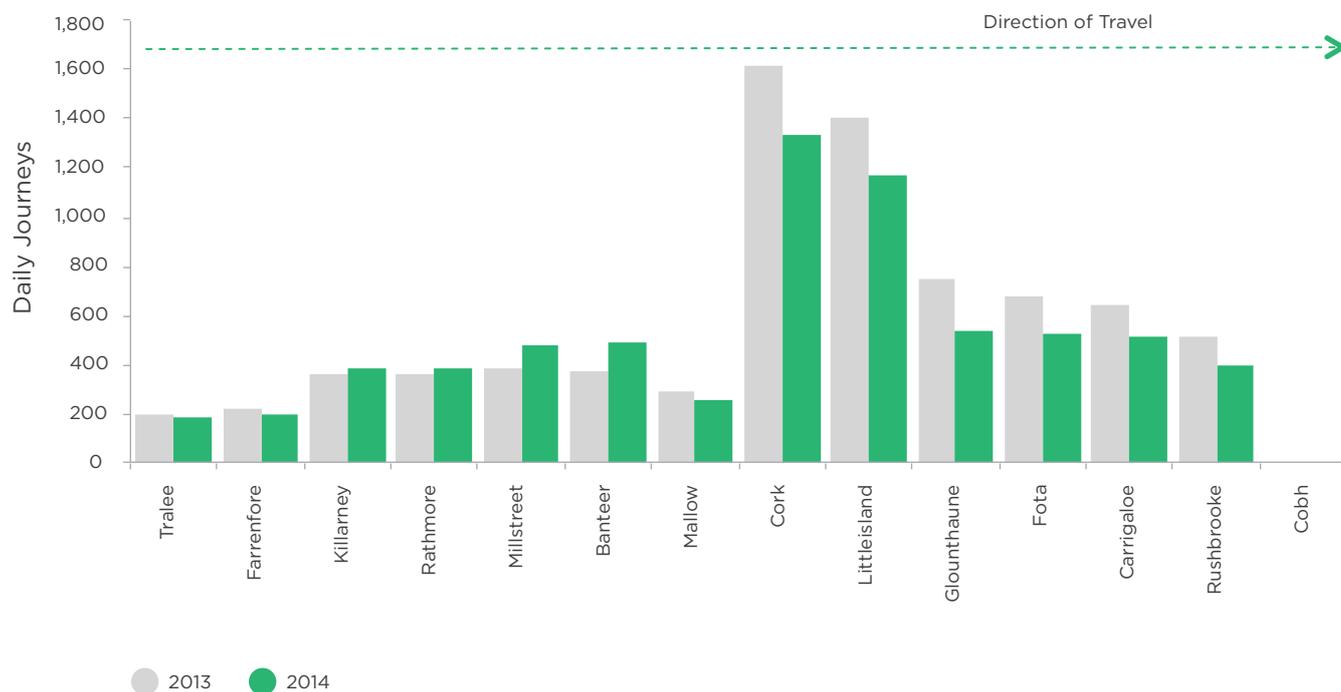


Chart 18 Profile of Demand by Station, Cobh - Cork - Mallow - Tralee⁶



⁶ Note that passengers to/from Midleton and Carrigtwohill are captured at Glounthaune

Chart 19 Profile of Demand by Station, Tralee – Mallow – Cork – Cobh⁷



4.7 Other Lines

Table 13 Daily Patronage on remaining Lines outside Cork and the GDA

Line	2012	2013	2014
Galway - Athenry - Ennis - Limerick	1,011	886	783
Limerick - Limerick Junction/Nenagh - Ballybrophy	1,331	916	1,388
Waterford to Limerick Junction line	156	96	130

⁷ Note that passengers to/from Midleton and Carrigtwohill are captured at Glounthaune



5:Radial Rail Usage in Dublin

5.1 Daily boardings by radial corridor

Table 14 Daily Boardings from Stations Inbound to the City Centre

Radial corridor	Section	Service	Boardings 2012	Boardings 2013	Boardings 2014
Northern lines	Malahide/Howth - Clontarf Road	DART	12,403	11,949	12,160
	Dundalk - Howth Junction	Commuter	7,064	7,380	7,329
	Northern Ireland-Donabate	InterCity	1,536	1,410	1,167
Total			21,003	20,739	20,656
South Eastern lines	Greystones - Grand Canal Dock	DART	19,667	19,468	18,630
	Bray - Grand Canal Dock	Commuter	817	495	558
	Rosslare - Grand Canal Dock	InterCity	1,180	876	1,521
Total			21,664	20,839	20,709
Heuston Lines	Portlaoise - Heuston	Commuter	1,737	2,275	2,741
	National - Heuston	InterCity	8,251	8,927	8,576
Total			9,988	11,202	11,317
Sligo lines	Longford - Drumcondra	Commuter	7,594	7,500	8,151
	Sligo - Drumcondra	InterCity	1,871	1,611	1,635
Total			9,465	9,111	9,786

5.2 Peak hour flows by radial corridor

Table 15 Maximum Flows per Line in the Morning Peak Hour (8:00 - 9:00)

Radial corridor	Service	Maximum hourly passenger flow	Location of Maximum Flow
Northern lines	DART	4,463	Clontarf Road - Connolly
	Commuter	2,396	Clongriffin - Howth Junction
	InterCity	319	Drogheda - Connolly
Total		7,299	
South-eastern lines	DART	2786	Sandymount - Sydney Parade
	Commuter	-	No Commuter services 08:00 - 09:00
	InterCity	366	Bray - Dún Laoghaire
Total		3,152	
Heuston Lines	Commuter	668	Sallins and Naas - Hazelhatch and Celbridge
	InterCity	1,082	Newbridge - Sallins & Naas
Total		1,750	
Sligo lines	Commuter	3,050	Ashtown - Broombridge
	InterCity	456	Maynooth - Drumcondra
Total		3,506	

Table 16 Maximum Flows per Line in the Evening Peak Hour (17:00 - 18:00)

Line	Service	Maximum Passenger Flow	Location of Maximum Flow
Northern lines	DART	2,640	Tara Street - Connolly
	Commuter	2,049	Clongriffin - Portmarnock
	InterCity	-	No Dublin - Belfast service 17:00 - 18:00
Total		4,789	
South-eastern lines	DART	2,183	Pearse - Grand Canal Dock
	Commuter	-	No Commuter service
	InterCity	160	Grand Canal Dock - Dún Laoghaire
Total		2,343	
Heuston Lines	Commuter	833	Sallins and Naas - Newbridge
	InterCity	1,516	Heuston - Hazelhatch
Total		2,349	
Sligo lines	Commuter	1,789	Navan Road Parkway - Castleknock
	InterCity	438	Connolly - Leixlip Louisa Bridge
Total		2,227	

5.3 Train loadings by radial corridor

Table 17 Most Heavily Loaded Trains in the Morning Peak Hour

Line	Service	Maximum load per train	Service	Location
Northern lines	DART	905	08:07 Malahide - Dun Laoghaire	Connolly - Tara
	Commuter	865	07:12 Drogheda - Bray	Howth Junction - Connolly
	InterCity	327	06:50 Belfast - Connolly	Drogheda - Connolly
South Eastern lines	DART	923	08:00 Greystones - Malahide	Boooterstown - Sydney Parade
	Commuter	n/a	No Commuter services between 08:00 - 09:00	
	InterCity	499	05:35 Rosslare - Dundalk	Blackrock - Lansdowne Road
Heuston Lines	Commuter	285	06:25 Portlaoise - Heuston	Hazelhatch & Celbridge - Clondalkin/Fonhill
	InterCity	451	05:30 Galway - Heuston	Sallins & Naas - Heuston
Sligo lines	Commuter	801	07:55 Maynooth - Bray	Drumcondra - Connolly
	InterCity	333	05:45 Sligo - Connolly	Maynooth - Broombridge

Table 18 Most Heavily Loaded Trains in the Evening Peak Hour

Line	Service	Maximum load per train	Train	Location of busiest service
Northern lines	DART	731	16:30 Greystones - Malahide	Connolly - Clontarf Road
	Commuter	712	16:50 Bray - Drogheda	Connolly - Portmarnock
	InterCity	n/a	No Dublin - Belfast train 17:00 - 18:00	
South Eastern lines	DART	684	17:00 Malahide - Greystones	Lansdowne Road - Sandymount
	Commuter	n/a	No Commuter service between 17:00 - 18:00	
	InterCity	403	17:36 Connolly - Wexford	Pearse - Dun Laoghaire
Heuston Lines	Commuter	266	17:10 Heuston - Athlone	Heuston - Newbridge
	InterCity	419	17:30 Heuston - Galway	Heuston - Sallins & Naas
Sligo lines	Commuter	692	17:05 Bray - Maynooth	Drumcondra - Broombridge
	InterCity	469	17:05 Connolly - Sligo	Connolly - Lexlip Louisa Bridge



Appendices

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Appendix A: Daily Boardings at each Station, by Service Type

	DART North Bound	DART South Bound	Rosslare - City Centre - Dundalk	Dundalk - City Centre - Rosslare	Bray - City Centre - Maynooth	Sligo - Maynooth - City Centre - Bray	Total 2014	Total 2013	Total 2012
Rosslare Europort			13	-			13	20	20
Rosslare Strand			12	2			14	21	25
Wexford			67	11			78	68	81
Enniscorthy			26	12			38	43	61
Gorey			73	5			78	86	105
Arklow			80	11			91	109	119
Rathdrum			69	6			75	98	94
Wicklow			146	6			152	166	180
Kilcoole			29	4			33	31	23
Greystones	1,402	-	125	34			1,561	1,783	1,858
Bray	2,099	172	192	78	32	-	2,573	2,909	3,029
Shankill	1,010	75					1,085	1,149	1,301
Killiney	638	93					731	882	859
Dalkey	919	382					1,301	1,531	1,544
Glenageary	1,288	100					1,388	1,568	1,494
Sandycove & Glasthule	836	168					1,004	1,022	995
Dun Laoghaire	1,627	597	200	110	76	-	2,610	3,168	3,359
Salthill & Monkstown	897	168					1,065	1,168	1,041
Seapoint	525	157					682	785	699
Blackrock	1,878	508	222	16	71	4	2,699	2,091	2,399
Boosterstown	866	408					1,274	1,334	1,164
Sydney Parade	1,001	417	34	32	63	5	1,552	1,327	1,308
Sandymount	536	292					828	889	975
Lansdowne	1,821	714	127	18	183	5	2,868	2,529	2,490
Grand Canal Dock	1,287	1,151	106	24	133	11	2,712	2,579	2,825
Pearse	3,341	5,031	2,824	516	1,840	8	13,560	12,168	11,312
Tara Street	1,977	2,510	1,060	434	563	202	6,746	6,344	6,556
Connolly	1,940	2,553	3,163	705	3,578	90	12,029	12,512	13,477
Clontarf Road	303	969					1,272	1,377	1,431
Killester	150	1,445					1,595	1,575	1,592
Harmonstown	90	908					998	1,011	994
Raheny	165	1,593					1,758	1,641	1,672
Kilbarrack	204	902					1,106	1,043	1,138
Howth Junction & Donaghmede	265	1,012	167	169			1,613	1,667	1,730
Bayside	69	1,153					1,222	1,156	1,024
Sutton	43	626					669	689	657
Howth	-	875					875	1,073	1,285
Clongriffin	132	585	6	107			830	767	674
Portmarnock	21	775	35	351			1,182	1,186	1,236

	DART North Bound	DART South Bound	Rosslare - City Centre - Dundalk	Dundalk - City Centre - Rosslare	Bray - City Centre - Maynooth	Sligo - Maynooth - City Centre - Bray	Total 2014	Total 2013	Total 2012
Malahide	-	1,317	268	501			2,086	2,177	2,318
Donabate			108	997			1,105	1,149	1,213
Rush & Lusk			66	742			808	920	800
Skerries			125	1,189			1,314	1,365	1,279
Balbriggan			102	1,655			1,757	1,753	1,778
Gormanston			1	86			87	113	92
Laytown			2	303			305	371	375
Drogheda			102	855			957	962	1,094
Dundalk			113	281			394	492	567
Belfast			-	1,094			1,094	1,047	1,040
Docklands					874	-	874	850	811
Drumcondra					1,015	276	1,291	1,065	1,150
Broombridge					84	137	221	249	229
Ashtown					132	798	930	743	743
Navan Road Parkway					38	207	245	232	197
Castleknock					120	596	716	841	840
Coolmine					221	1,111	1,332	1,554	1,550
Clonsilla					388	1,092	1,480	1,161	1,262
Hansfield					3	84	87	58	-
Dunboyne					4	216	220	171	177
M3 Parkway					-	174	174	206	226
Leixlip Confey					85	331	416	497	511
Leixlip Louisa Bridge					76	978	1,054	834	969
Maynooth					189	1,817	2,006	2,232	2,202
Kilcock					30	195	225	233	247
Enfield					8	92	100	110	131
Mullingar					60	432	492	370	451
Edgeworthstown					10	94	104	122	167
Longford					55	211	266	181	221
Dromod					29	95	124	88	81
Carrick-on-Shannon					13	90	103	95	114
Boyle					23	35	58	54	76
Ballymote					27	47	74	93	69
Collooney					4	46	50	46	41
Sligo					-	307	307	379	436
Total	27,330	27,656	9,663	10,354	10,027	9,786	94,816	94,378	96,283

	Heuston North Bound	Heuston South Bound	Kerry and Cork Regional South	Cork and Kerry Regional North	Limerick - Galway	Limerick Jct - Bally brophy	Limerick Jct - Waterford	Total 2014	Total 2013	Total 2012
Heuston	-	9,394						9,394	8,497	8,650
Parkwest & Cherry Orchard	86	98						184	155	126
Clondalkin / Fonthill	31	23						54	56	37
Adamstown	78	9						87	71	85
Hazelhatch & Celbridge	224	46						270	260	323
Sallins & Naas	1,054	69						1,123	814	916
Newbridge	973	108						1,081	1,058	989
Kildare	461	151						612	806	754
Athy	251	63						314	360	446
Carlow	480	95						575	657	565
Monasterevin	81	10						91	72	37
Portarlinton	616	190						806	677	504
Portlaoise	610	117						727	721	488
Ballybrophy	82	1				16		99	146	84
Templemore	57	13						70	62	67
Thurles	372	171				16		559	483	504
Limerick Junction	645	134				599	31	1,409	1,109	1,334
Limerick	227	-			156	690		1,073	963	1,221
Charleville	61	4						65	119	78
Mallow	425	236	301	406				1,368	1,569	1,246
Cork	1,560	-	1,336	-				2,896	3,188	3,112
Muine Bheag	126	20						146	129	108
Kilkenny	274	76						350	362	328
Thomastown	36	3						39	53	36
Waterford	471	-					47	518	68	500
Tullamore	370	105						475	452	371
Clara	68	15						83	61	55
Athlone	353	207						560	560	468
Ballinasloe	41	27						68	121	109
Woodlawn	4	18						22	24	10
Attymon	-	3						3	1	1
Athenry	116	45			76	29		266	141	363
Galway	891	-			191	136		1,218	1,053	1,011
Roscommon	52	20						72	80	63
Castlerea	50	10						60	49	53
Ballyhaunis	61	3						64	45	45
Claremorris	83	4						87	66	54
Castlebar	114	-						114	82	93
Westport	104	-						104	85	90
Manulla Junction	75	3						78	101	138

	Heuston North Bound	Heuston South Bound	Kerry and Cork Regional South	Cork and Kerry Regional North	Limerick - Galway	Limerick Jct - Ballybrophy	Limerick Jct - Waterford	Total 2014	Total 2013	Total 2012
Foxford								-	15	12
Ballina								-	51	65
Banteer	3	1	7	8				19	38	37
Millstreet	10	-	96	5				111	380	43
Rathmore	3	-	8	7				18	42	41
Killarney	42	-	166	20				228	357	240
Farranfore	6	-	5	3				14	32	29
Tralee	39	-	169	-				208	411	281
Littleisland			29	189				218	316	250
Glounthaune			33	106				139	203	162
Carrigtwohill			9	89				98	91	83
Midleton			-	458				458	495	422
Fota			3	6				9	82	23
Carrigaloe			2	17				19	31	36
Rushbrooke			8	79				87	156	201
Cobh			-	369				369	517	504
Sixmilebridge					27	28		55	46	60
Ennis					111	62		173	236	276
Gort					13	7		20	13	18
Ardrahan					4	3		7	8	14
Craughwell					10	3		13	10	27
Oranmore	7	-			11	1		19	23	
Roscrea						4		4	19	15
Cloughjordan						8		8	15	5
Nenagh						9		9	14	18
Birdhill						6		6	10	8
Castleconnell						10		10	15	9
Carrick-on-Suir								-	6	15
Clonmel							20	20	29	29
Cahir							5	5	11	9
Tipperary							7	7	9	31
								-		
								-		
								-		
-	11,773	11,492	2,172	1,762	599	1,627	110	29,535	29,057	28,425

Appendix B: Daily Alightings at each station, by Service Type

	DART North Bound	DART South Bound	Rosslare - City Centre - Dundalk	Dundalk - City Centre - Rosslare	Bray - City Centre - Maynooth	Sligo - Maynooth - City Centre - Bray	Total 2014	Total 2013	Total 2012
Rosslare Europort			-	16			16	21	18
Rosslare Strand			-	24			24	25	30
Wexford			6	76			82	31	64
Enniscorthy			7	58			65	49	55
Gorey			6	71			77	89	107
Arklow			4	91			95	122	117
Rathdrum			3	90			93	88	92
Wicklow			10	152			162	160	145
Kilcoole			-	25			25	26	34
Greystones	-	1,253	13	194			1,460	1,551	1,571
Bray	75	2,556	41	323	-	2	2,997	2,818	2,867
Shankhill	90	959					1,049	1,012	1,088
Killiney	98	636					734	750	774
Dalkey	310	948					1,258	1,594	1,586
Glenageary	120	1,204					1,324	1,311	1,299
Sandycove & Glasthule	182	786					968	957	999
Dun Laoghaire	497	1,670	90	352	7	17	2,633	3,178	3,278
Salthill & Monkstown	106	843					949	981	990
Seapoint	112	402					514	551	550
Blackrock	655	1,834	52	178	3	42	2,764	2,265	2,353
Boosterstown	431	667					1,098	1,144	1,131
Sydney Parade	514	1,038	4	137	5	18	1,716	1,542	1,525
Sandymount	300	546					846	836	972
Lansdowne	746	1,484	44	333	4	111	2,722	3,328	2,906
Grand Canal Dock	1,478	1,453	2	297	7	118	3,355	3,051	2,833
Pearse	4,204	3,593	277	2,262	145	1,540	12,021	11,238	11,271
Tara Street	3,461	2,120	202	1,010	64	656	7,513	7,473	7,971
Connolly	2,470	2,281	603	3,600	192	3,785	12,931	13,311	14,128
Clontarf Road	1,034	371					1,405	1,337	1,346
Killester	1,342	169					1,511	1,386	1,363
Harmonstown	808	89					897	823	916
Raheny	1,486	212					1,698	1,493	1,489
Kilbarrack	902	210					1,112	1,072	994
Howth Junction & Donaghmede	1,107	197	204	200			1,708	1,836	1,764
Bayside	1,032	59					1,091	1,048	958
Sutton	611	29					640	616	646
Howth	898	-					898	1,255	1,178
Clongriffin	569	30	117	10			726	567	640

	DART North Bound	DART South Bound	Rosslare - City Centre - Dundalk	Dundalk - City Centre - Rosslare	Bray - City Centre - Maynooth	Sligo - Maynooth - City Centre - Bray	Total 2014	Total 2013	Total 2012
Portmarnock	530	17	375	18			940	978	1,057
Malahide	1,162	-	591	239			1,992	2,178	2,302
Donabate			960	97			1,057	1,051	1,029
Rush & Lusk			688	107			795	828	876
Skerries			1,101	126			1,227	1,308	1,460
Balbriggan			1,477	87			1,564	1,711	1,543
Gormanston			70	1			71	99	85
Laytown			339	10			349	345	367
Drogheda			872	169			1,041	979	1,040
Dundalk			379	74			453	532	515
Belfast			1,126	-			1,126	1,100	1,074
Docklands					-	1,141	1,141	966	1,048
Drumcondra					249	905	1,154	1,135	1,176
Broombridge					132	125	257	215	207
Ashtown					655	118	773	665	660
Navan Road Parkway					187	35	222	202	204
Castleknock					582	112	694	817	793
Coolmine					1,235	171	1,406	1,317	1,392
Clonsilla					852	274	1,126	1,202	1,173
Hansfield					99	2	101	82	
Dunboyne					208	3	211	138	185
M3 Parkway					215	-	215	231	231
Leixlip Confey					362	74	436	428	480
Leixlip Louisa Bridge					975	64	1,039	870	932
Maynooth					2,084	192	2,276	2,148	2,242
Kilcock					214	22	236	232	225
Enfield					131	11	142	148	145
Mullingar					483	81	564	407	507
Edgeworthstown					110	12	122	145	169
Longford					197	72	269	212	194
Dromod					89	31	120	86	94
Carrick-on-Shannon					81	13	94	135	122
Boyle					38	19	57	69	100
Ballymote					46	18	64	108	90
Collooney					72	2	74	84	58
Sligo					304	-	304	292	467
Total	27,330	27,656	9,663	10,427	10,027	9,786	94,889	94,378	96,290

	Heuston North Bound	Heuston South Bound	Kerry and Cork Regional South	Cork and Kerry Regional North	Limerick - Galway	Limerick Jct - Ballybrophy	Limerick Jct - Waterford	Total 2014	Total 2013	Total 2012
Heuston	9,273	-						9,273	8686	8515
Parkwest & Cherry	97	74						171	114	140
Clondalkin/ Fonthill	17	34						51	48	46
Adamstown	24	73						97	98	107
Hazelhatch & Celbridge	31	229						260	258	325
Sallins & Naas	53	953						1,006	908	943
Newbridge	132	902						1,034	999	973
Kildare	177	554						731	733	616
Athy	79	329						408	371	461
Carlow	106	476						582	617	524
Monasterevin	9	73						82	64	56
Portarlinton	212	542						754	587	528
Portlaoise	115	622						737	583	418
Ballybrophy	1	95				12		108	129	129
Templemore	20	70						90	89	81
Thurles	182	396				-		578	463	458
Limerick Junction	185	615				598	37	1,435	1263	1571
Limerick	-	221			108	671		1,000	849	1192
Charleville	11	80						91	185	79
Mallow	316	400	334	226				1,276	1460	1404
Cork	-	1,518	-	1,246				2,764	3322	3239
Muine Bheag	31	122						153	174	121
Kilkenny	79	325						404	346	263
Thomastown	3	38						41	55	36
Waterford	-	449					23	472	414	437
Tullamore	157	290						447	327	412
Clara	18	64						82	75	41
Athlone	238	366						604	575	427
Ballinasloe	48	100						148	69	119
Woodlawn	19	6						25	18	26
Attymon	8	-						8	45	11
Athenry	82	125			61	29		297	133	241
Galway	-	704			-	74		778	1125	884
Roscommon	13	70						83	84	69
Castlerea	11	55						66	57	61
Ballyhaunis	6	42						48	45	52
Claremorris	2	61						63	128	82
Castlebar	-	103						103	110	128
Westport	-	123						123	124	118
Manulla Junction	2	67						69	15	90

	Heuston North Bound	Heuston South Bound	Kerry and Cork Regional South	Cork and Kerry Regional North	Limerick - Galway	Limerick Jct - Ballybrophy	Limerick Jct - Waterford	Total 2014	Total 2013	Total 2012
Foxford								-	21	18
Ballina								-	72	80
Banteer	-	6	7	4				17	34	26
Millstreet	-	13	10	29				52	34	48
Rathmore	-	7	9	17				33	53	34
Killarney	-	35	8	211				254	328	266
Farranfore	1	7	1	15				24	33	25
Tralee	-	47	60	181				288	405	216
Littleisland			190	25				215	315	288
Glounthaune			110	26				136	207	196
Carrigtwohill			83	10				93	100	81
Midleton			488	-				488	495	456
Fota			10	1				11	81	30
Carrigaloe			22	2				24	32	41
Rushbrooke			121	3				124	146	204
Cobh			396	-				396	517	492
Sixmilebridge					20	34		54	28	41
Ennis					130	143		273	199	229
Gort					11	6		17	9	11
Ardrahan					7	5		12	6	3
Craughwell					16	12		28	10	15
Oranmore	15	11			17	11		54	22	0
Roscrea						5		5	7	1
Cloughjordan						5		5	5	4
Nenagh						11		11	5	2
Birdhill						8		8	2	2
Castleconnell						3		3	2	6
Carrick-on-Suir							13	13	4	7
Clonmel							29	29	25	46
Cahir							11	11	11	10
Tipperary							17	17	7	13
								-		
								-		
								-		
-	11,773	11,492	1,849	1,996		1,627	130	29,237	28,960	28,314

Appendix C: Changes in Journeys by Service from 2013 to 2014

Variations		2014 (13 Nov)	Variance (%) 2014 Vs 2013
		GDA	
DART (Greystones - City Centre - Howth / Malahide & v.v.)	Northbound	27,330	-2.9%
	Southbound	27,673	-0.3%
	Total	55,003	-1.6%
Connolly Commuter Services (Gorey - City Centre - Drogheda - Dundalk & v.v.)	Northbound	9,663	0.7%
	Southbound	10,427	0.3%
	Total	20,090	0.5%
Connolly Commuter Services (Gorey - City Centre - Maynooth - Longford & v.v.)	Westbound	9,786	6.8%
	Eastbound	10,027	7.8%
	Total	19,813	7.3%
Heuston Commuter Services (Heuston - Kildare - Carlow/Portlaoise/Athlone & v.v.)	Southbound	11,492	8.3%
	Northbound	11,773	9.2%
	Total	23,265	8.7%
Regional Services (Limerick - Galway, Cork- Cobh - Midleton, Limerick - Ballybrophy, Limerick Junction - Waterford, Limerick - Limerick Junction)		6,502	-6.2%
	Total	6,502	-6.2%
TOTAL ALL SERVICES		124,673	1.04%

Appendix D: Train Capacity by Type

Train Type		Capacity	
4-DART	(4 car DART set)	700	- Seats + Standing Accommodation
6-DART	(6 car DART set)	1050	- Seats + Standing Accommodation
8-DART	(8 car dart set)	1400	- Seats + Standing Accommodation
2 x 2600	(2 car commuter rail car)	206	- Seats + Standing Accommodation
2 x 2800	(2 car commuter rail car)	221	- Seats + Standing Accommodation
4 x 29000	(4 car Commuter railcar)	640	- Seats + Standing Accommodation
8 x 29000	(8 car Commuter railcar)	1280	- Seats + Standing Accommodation
1 x 3ICR	(3-car InterCity railcar)	190	- Seats
1 x 6ICR	(6-car Premier Class InterCity railcar)	376	- Seats
1 x 6HCR	(6-car High Capacity InterCity Railcar)	406	- Seats
7 x MkIV	(7 car Mk IV set)	348	- Seats
7 x DD	(7 car De Dietrich set)	358	- Seats



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