Údarás
Náisiúnta Iompair
National **Transport** Authority

Rail Census 2013

Report prepared for the National Transport Authority by

EY

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Executive Summary

This report presents the findings from the Rail Census 2013. This is the second edition of the National Heavy Rail Census. Prior to 2012, the Census was undertaken for the Greater Dublin Area only.

The 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. Significant variation in rail usage from one day in a particular year to another day in the next year may be influenced by a range of factors. Some of these factors include operational changes such as amendments to timetables and frequency of services, while other factors are outside the control of the operator, such as the weather, improvements to other modes of travel or changes in the macroeconomic environment. Annual data on rail usage gives a balanced picture over the course of an entire year and therefore provides the best representation of systematic changes. The findings in this report should be interpreted in this context.

The main findings from the 2013 Rail Census are:

- The overall number of daily journeys on the rail network remained relatively static compared to 2012. The total number of journeys undertaken on Census day 2013 stood at nearly 123,500 compared with just over 124,000 journeys on Census day 2012.
- As in 2012, journeys undertaken in the Greater Dublin Area accounted for 83 percent of all journeys undertaken.
- In line with the nascent economic recovery, there was evidence across all lines of increased peak hour patronage compared to Census day 2012. On the DART line, there was also an indication of earlier travelling patterns which may be a further sign of improved economic conditions.

Looking at specific lines:

- Patronage on DART services remained relatively static when compared to Census day 2012. However the total number of daily journeys on the DART has fallen by 18 percent since 2003.
- The Heuston lines and Cork Regional lines exhibited the largest growth rates in the number of daily journeys from Census day 2012 to 2013. These lines experienced growth of 6 and 9 percent respectively.
- The largest percentage decline in patronage was evidenced on the regional lines (Limerick to Galway, Limerick to Limerick Junction, Limerick Junction to Waterford lines combined), which declined by – 24 percent, albeit from an already low base. Relative to other lines, these lines exhibited a low level of usage, with 1,900 daily journeys.
- While patronage on the Dundalk – Rosslare section of the network remained relatively static in comparison to Census 2012, declines occurred south of Dublin City and increases occurred north of Dublin City.
- Overall patronage on the Sligo- Longford – Bray section of the network decreased by approximately 5 percent compared to Census day 2012.

In summary, daily rail patronage has remained relatively static since Census day 2013, but behind the aggregate findings there are underlying variations.

1. Introduction and background to the Rail Census

1.1 Background to the Census

The National Transport Authority commission Iarnród Éireann to conduct an annual National Census of Rail patronage to record information on boardings and alightings of passengers at every train station in the country on one day of the year. This Census provides a detailed and reliable snap-shot of rail usage across the network.

The 2013 Census is the second national Census. Prior to 2012, the Census was carried out in the Greater Dublin Area (GDA) only.

This report provides an analysis of the 2013 National Rail Census and discusses the annual change in rail journeys spatially and by service type throughout the country. It also sets out the changes in rail usage in the GDA over the ten year period to 2013.

This report is structured as follows:

- The remainder of this chapter sets out the methodology of the Rail Census and provides an overview of the rail network in Ireland
- Chapter 2 analyses the trends in rail journeys in the GDA from 2003 to 2013 and also assesses how the findings of the Rail Census compare with other measurements of rail usage
- Chapter 3 discusses in detail the findings from the 2013 Rail Census
- Chapter 4 presents an analysis of journeys on individual lines, and
- Chapter 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 Census was undertaken on November 14th 2013 when enumerators counted the number of individuals boarding and alighting each service at every station on that day.[1]

The Rail Census measures rail usage on a single day of the year. The Census is undertaken mid-week in mid-November to provide a reasonable representation of daily travel patterns. The day is chosen to avoid Monday and Friday, which are typically more peaked. The month of November has been chosen as a month which is unaffected by holidays and when most places of work and education are in full session. On the day of the Census there were no reported service disruptions or changes to regular timetabled services. Due to these operating conditions, the Census can be said to have been undertaken on a representative day.

1.3 Overview of the rail network

The rail network in Ireland is comprised of approximately 2,400 kilometres of railway track and includes 147 open stations and 372 platforms.[2] Services operating on the national rail network can be broken down into three distinct categories - DART, Commuter and InterCity - which share lines at various locations along the network. For instance, the Dublin - Longford Commuter service shares the same line as the Dublin - Sligo InterCity service. As a consequence, there may be some issues in categorising patronage into these groupings. Where relevant this is detailed throughout the report. A description of the routes contained within the three categories, as defined by Iarnród Éireann, is provided in Table 1.

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1 The Rail Census does not uniquely report where individual passengers board or alight, so journeys cannot be attributed to a discrete route. Instead the Census quantifies the number of boardings and alightings across discrete sections of the network
2 "Infrastructure," Iarnród Éireann website http://www.irishrail.ie/index.jsp?p=115&n=126, accessed on 9 April 2012.

Table 1: Routes and services in the Iarnród Éireann Network

Route	Services on each route
InterCity	Dublin– Belfast/ Sligo/ Westport/ Ballina/Galway/ Limerick/ Ennis/Cork/ Tralee/ Waterford and Rosslare services
Commuter routes	Dublin Northern Commuter service *Extends from Dublin's Pearse Station via Dublin Connolly Station to Dundalk.*
	Dublin - Portlaoise Commuter service *Extends west from Dublin's Heuston Station to stations as far as Portlaoise.*
	Dublin - Longford Commuter service *Extends from Dublin's Pearse Station via Dublin's Connolly Station to Longford.*
	Dublin - Dunboyne / M3 Parkway services *Extends from Dublin's Dockland/ Connolly Station via Clonsilla to Dunboyne/ M3 Parkway.*
	Dublin Southern Commuter service *Operates from Dublin's Connolly Station to Gorey Station.*
	Mallow - Cork - Cobh - Midleton Commuter services *Extends from Mallow to Cork, Cork to Cobh or Midleton.*
DART	Services that run from Malahide or Howth in north County Dublin southwards as far as Greystones, Co Wicklow.

Figures 1 illustrates the InterCity network across Ireland.

Figure 1 Geographic distribution of InterCity Routes

Source: Iarnród Éireann

Figure 2 shows the DART network and lines stemming from Dublin stations.

Figure 2 Overview of DART and routes originating from Dublin
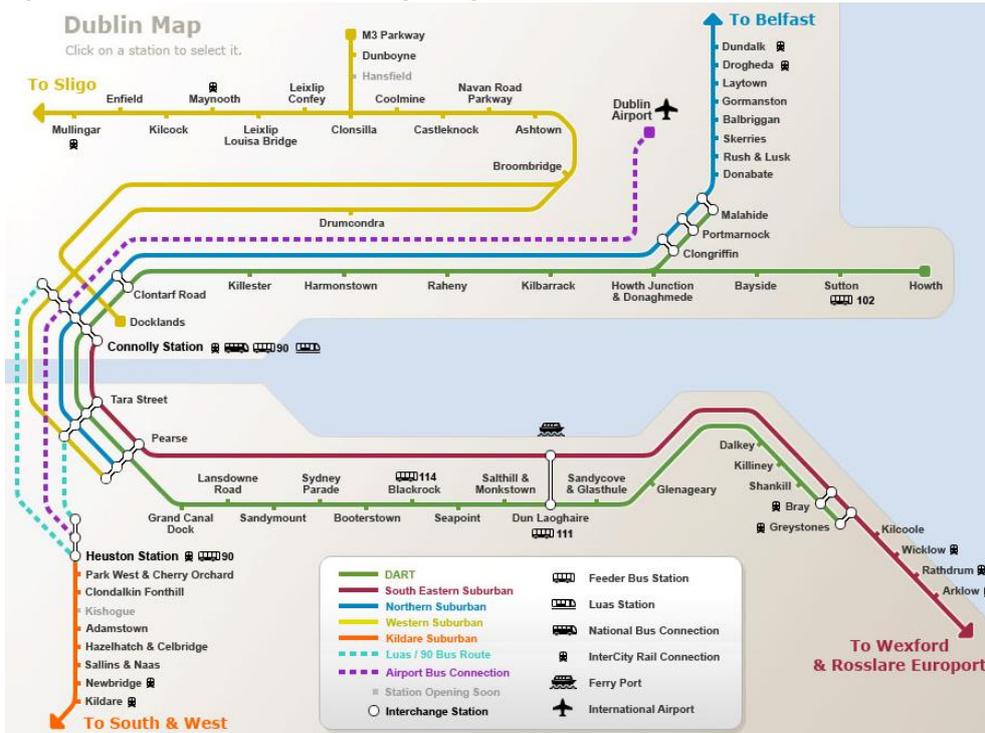
Source: Iarnród Éireann. Note: Geographical distribution is indicative only.

Figure 3 illustrates the commuter network operating in Cork and also the InterCity network stemming from Cork.

Figure 3 Overview of Cork Regional and InterCity routes

Source: Iarnród Éireann. Note: Geographical distribution is indicative only.

Tables 2 to 4 detail service provision on InterCity routes, and on a sample of key Commuter and DART services including the fastest journey time and the number of services available per weekday in 2013. For Commuter and DART services, where stated, all services originating and destined for intermediate locations on the route section are also included, not just services operating between the origin and destination specified in the route. For instance, the number of services from Cork to Mallow also includes trains operating from Tralee to Cork which serve Mallow. This reflects the shared nature of rail lines and provides a better indicator of the level of service provision between locations.

As can be seen from the tables, the most frequent services are Commuter and DART services, which tend to be shorter journeys. The most frequent InterCity service is between Dublin and Limerick, followed by Dublin and Cork.

Table 2 InterCity journey times and service frequency 2013[3]

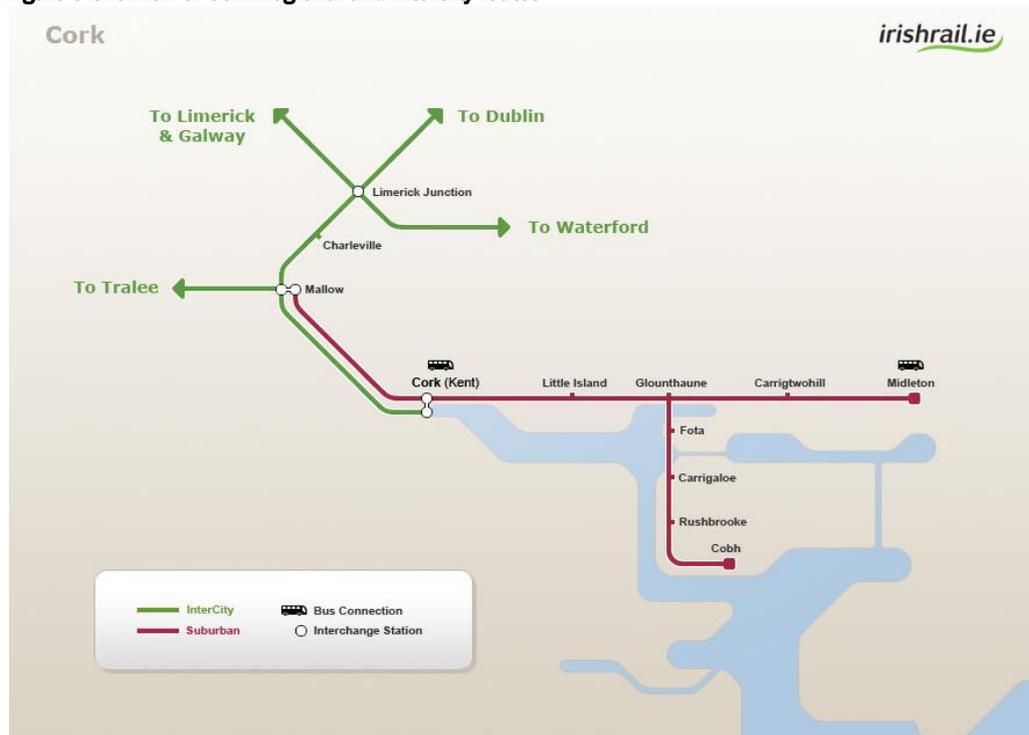| InterCity services			
Route	Fastest journey time 2013	Number of services per weekday between locations	Changes in timetable from 2012 to 2013
Dublin - Cork	2:30	30	Journey time improvements of 5 - 20 minutes
			05.05 Cork- Dublin ceased
			19.20 Cork - Dublin added
Dublin - Belfast	2:00	16	
Dublin - Galway	2:18	19	Journey time improvements of 5 - 25 minutes in January 2013 timetable
			Extra service in each direction every evening
			Some services now serving Oranmore station with journey time changes as a result
Dublin - Westport	3:02	9	Journey time improvements of 5 - 20 minutes
			09.45 Westport - Dublin added
Dublin - Sligo	3:00	14	One service less in each direction.
Dublin - Tralee	3: 35	16	Journey time improvements of 8 - 15 minutes
Dublin - Limerick	1:59	34	Journey time improvements of 17 minutes
			13.40 Dublin to Limerick ceased
Dublin - Waterford	1: 51	14	Journey time improvements of 5 - 18 minutes
Dublin - Rosslare	2:46	8	Journey time improvements of 5 - 20 minutes

Source: Iarnród Éireann, InterCity timetables in 2013. Does not include minor changes introduced to avoid congestion points on the network

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3 Reflects fastest journey time for weekday journeys

The journey times and frequency of key commuter services are documented in Table 3. There have been a number of revisions to the timetable since 2012, which are set out below.

Table 3 Sample of key Commuter journey times and service frequency 2013

Commuter services			
Route	Fastest journey time 2013	Number of services per weekday between locations	Changes in timetable from 2012 to 2013
Dublin - Portlaoise	0:42	62	One less service in each direction
Dublin - Maynooth[4]	0:28	82	
Dublin - Dundalk[5]	0:50	30	
Dublin - Drogheda[6]	0.45	64	
Cork - Mallow[7]	0 :20	44	Two additional Mallow services added
Cork- Midleton	0 :25	39	06.15 Midleton to Cork added
Cork - Cobh	0 :25	45	

Source: Iarnród Éireann, Commuter timetables. Does not include minor changes introduced to avoid congestion points on the network

Table 4 shows the fastest journey time on the DART lines in 2013. As noted in the table, the DART timetable remained unchanged from 2012 to 2013.

Table 4 DART journey times and service frequency 2013

DART services			
Route	Fastest journey time 2013	Number of services per weekday between locations	Changes in timetable from 2012 to 2013
Malahide- Greystones	01: 15	48	Unchanged, apart from minor departure and arrival time changes.
Bray - Howth[8]	01: 10	78	

Source: Iarnród Éireann, DART timetable

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4 Includes services between Longford and Dublin serving Maynooth
5 Includes services between Bray and Belfast serving Dundalk
6 Includes services between Bray and Belfast serving Drogheda
7 Includes services from Tralee and to and from Heuston serving Mallow
8 Includes services between Howth and Greystones serving Bray

2. Trends in daily rail patronage, 2003 -2013

2.1 Summary of key events affecting the railway over last decade

Rail usage is a derived demand, dependent on levels of economic activity and other determinants. Trends in rail patronage over the past decade have closely followed economic performance.

At the start of the period, as economic growth took hold and congestion levels grew, the demand for rail usage increased steadily. This increase also reflected investment and major rehabilitation works in the railway network and fleet, in addition to service improvements. Over the 2000 to 2010 period, for instance, service levels on the InterCity, Commuter and DART services were approximately doubled.

Capacity on the DART increased following an upgrade in 2006. This brought station improvements including longer platforms to accommodate longer, higher capacity trains.

The demand for rail services reached its highest point in 2007 owing to the peak in economic activity and consequential demand for services and expansion in the supply of rail services.

From 2008 to 2010 patronage declined in line with the downturn in the economy and increased competition from road transport as the interurban motorway network was completed. Since then rail usage has stabilised.

2.2 Historic trends in the Greater Dublin Area (GDA)

As previously mentioned, prior to 2012 the Rail Census was undertaken for the GDA only.

The Rail Census provides a snapshot of rail usage from 2003 to 2013 across the following sections of the network located in the GDA:

- DART line
- Longford - Dublin – Bray line
- Dundalk – Bray line
- Dublin - Carlow/Athlone/Portlaoise line

The Rail Census does not uniquely report where each individual passenger boards or alights, it provides an account of the boardings and alightings at each station. This allows us to determine patronage build up at each station and can help in understanding the importance of stations or sections of a route relative to the rest of the network. A consequence of this is that individual journeys are not attributed to a discrete route e.g. Longford to Dublin.

Instead it is necessary to look at specific sections of the network. This point is best illustrated through an example. The Longford - Dublin - Bray section of the network mostly facilitates trains and passengers travelling between Dublin and Longford. However the Bray - Maynooth service also runs along this part of the network. In order to quantify the number of complete journeys it is necessary to look entirely at the Longford - Dublin - Bray section rather than just Longford - Dublin. This approach is the basis for the rail line classification used in the Rail Census.

Table 5 shows daily rail journeys in the GDA since 2003. The number of rail journeys in the GDA increased until 2007 when the number of daily journeys peaked at approximately 143,800. This was followed by a period of decline in usage with the number of daily rail journeys falling from 2008 to 2010. Since 2010 the number of daily journeys in the GDA has remained relatively static at between 101,000 and 102,000 daily journeys.

Table 5 Daily passenger journeys by network section 2003 - 2013[9]

Year	DART	Dundalk - Gorey	Longford - Dublin - Bray	Dublin - Carlow/Athlone/Portlaoise	Total
2003	68,152	19,446	11,631	8,246	107,486
2004	64,435	20,419	13,601	9,219	107,687
2006	81,560	23,305	21,920	11,349	138,180
2007	83,618	24,624	23,800	11,722	143,800
2008	75,753	22,191	22,651	11,145	131,767
2009	63,559	18,037	19,977	9,760	111,348
2010	55,929	17,446	18,730	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

Source: Iarnród Éireann Census 2003 – 2013

Chart 1 shows the proportional contribution each section of the rail network within the GDA makes to daily rail patronage. There has been a shift in the contribution of each line since 2003. DART journeys have declined from 63 percent in 2003 to 56 percent in 2013 (representing a decline of approximately 12,000 daily journeys) while the proportional contribution from the Dundalk – Gorey and Dublin/Carlow/Athlone/Portlaoise sections of the network have remained relatively stable over the past decade. In absolute terms the number of journeys on these sections of the GDA network has declined by nearly 1,700 daily journeys and increased by 1,000 journeys respectively.

The Longford - Dublin - Bray section of the network increased its overall share of passengers in the GDA (by nearly 5,500 additional daily journeys) and currently accounts for 17% of total daily rail journeys in the region.

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9 In order to allow for comparisons with previous years, only journeys in the GDA have been included in the 2012 and 2013 figures.

Chart 1 Composition of daily rail patronage, 2003 - 2013[10]
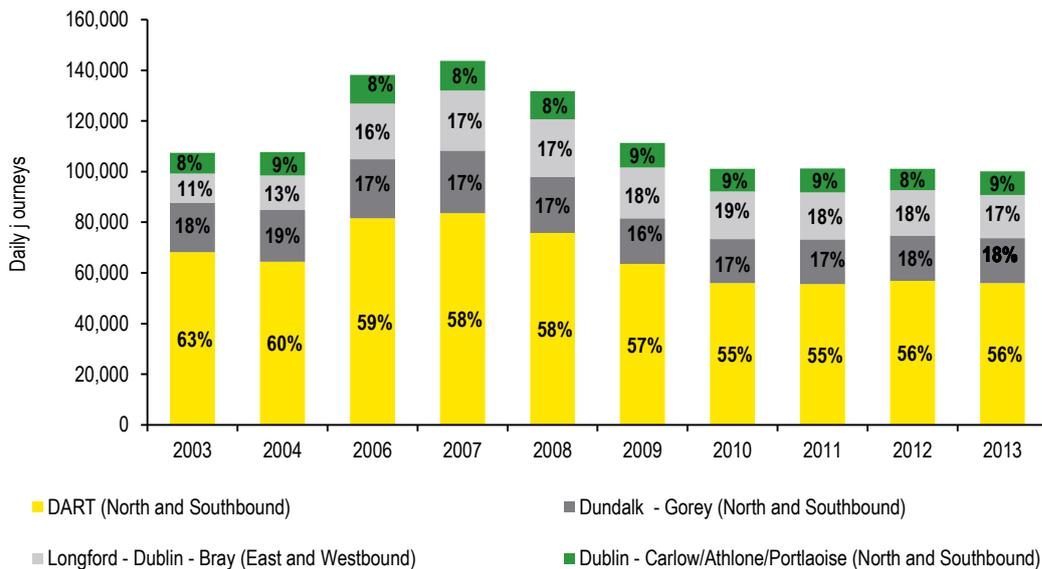
Source: *Iarnród Éireann Census 2003 - 2013*

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 on a specific day in November each year.[11] Figure 4 illustrates 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 2012 to 2013.

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10 *In order to allow for comparisons with previous years, only the Greater Dublin Area journeys have been included in the 2012 and 2013 figures. Note revision to Dublin - Carlow/Athlone/Portlaoise 2012 results.*
11 *The counts refer to movements of people in one direction only (i.e. inbound into the city centre) across the various cordon points.*

Figure 4 Canal Cordon and 33 count locations
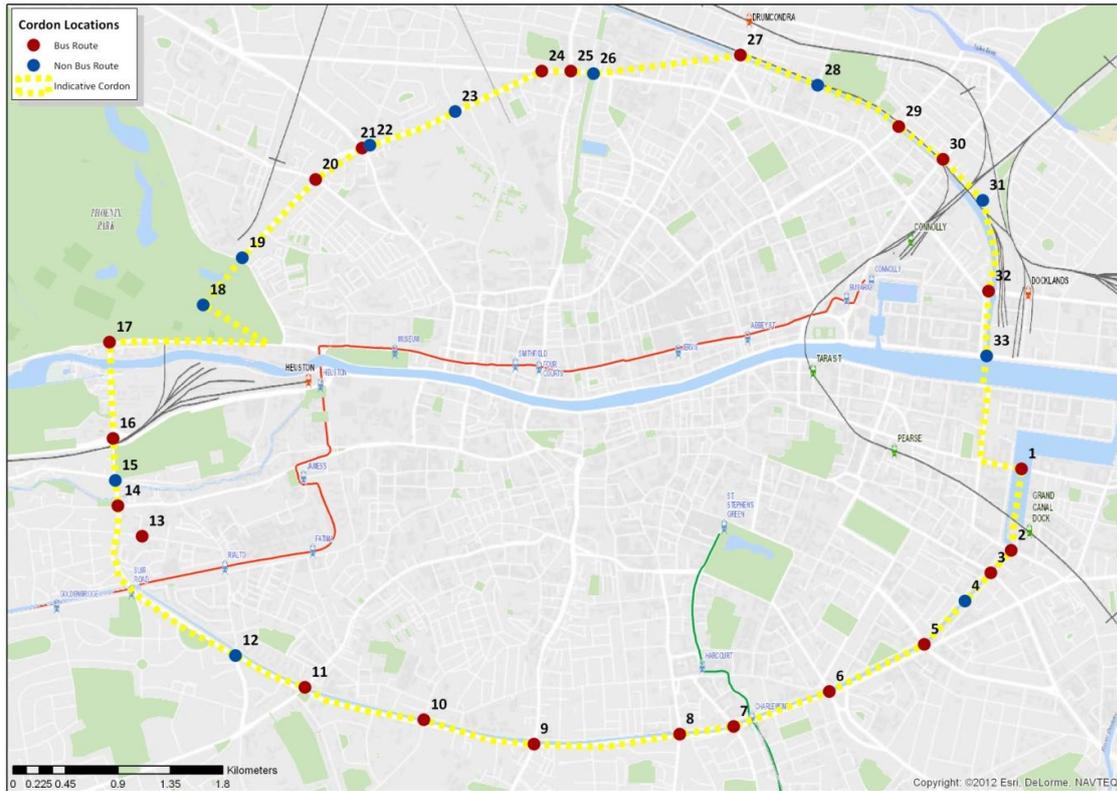
Source: National Transport Authority

Table 6 details the number of people entering the canal cordon by mode in 2012 and 2013.

Table 6 - Number of people entering the canal cordon by mode in 2012 and 2013

	2012	2013	Annual percentage change
Bus	52,007	56,177	8%
Rail	23,999	24,969	4%
LUAS	10,041	10,835	8%
Car	68,626	68,072	-1%
Taxi	3,271	3,111	-5%
Walk	17,070	17,495	2%
Cycle	7,943	9,061	14%
Commercial Vehicle	1,099	1,045	-5%
Motor cycles	1,425	1,423	0%
Total	185,481	192,188	4%

Source: National Transport Authority, Canal Cordon Counts

Chart 2 illustrates the mode share of journeys in to the city centre.

Chart 2 – Modal share of journeys into the city centre, 2006 – 2012[12]
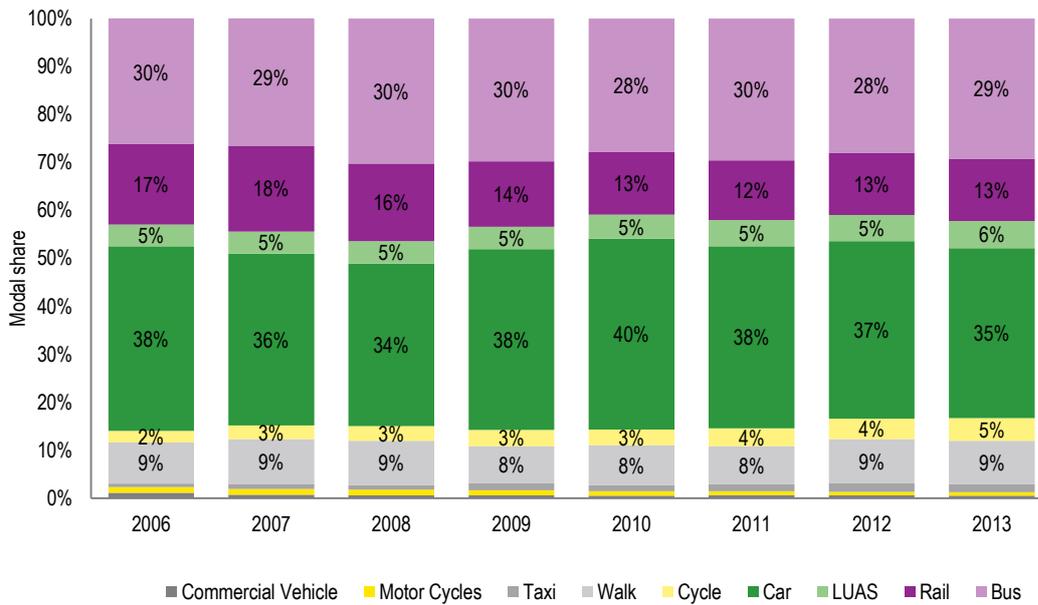
Source: National Transport Authority

This analysis highlights a number of changes in mode share since 2006:

- The share of journeys into the city centre by Rail has fallen from 17 percent in 2006 to 13 percent in 2013.
- There has been an increase in the proportion of journeys into the city centre by bicycle from 2 percent to 5 percent.[13] From 2012 to 2013 alone, the number choosing to cycle into the city centre during morning peak increased by 14 percent.
- The share of journeys accounted for by private vehicles and bus have also fallen by 3 and 1 percentage points respectively, although these still represent the dominant modes of transport into the cordon.
- The remaining modes – walking, commercial vehicle, and motor cycles have largely maintained their mode shares since 2006.

This indicates that there has been a degree of modal shift from rail and private car to other modes over the last number of years.

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12 *This breakdown was not available prior to 2006.*
13 *This does not fully take into account the impact of the Dublin Bike scheme, given that many of the bicycle terminals are within the canal cordon parameters.*

2.4   Comparison of census data and annual statistics

Iarnród Éireann also produces statistics on the number of journeys taken nationally on the rail network on an annual basis.

Chart 3 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 3 Daily rail journeys relative to annual rail journeys 2003 - 2012 (2003 = 100)[14]
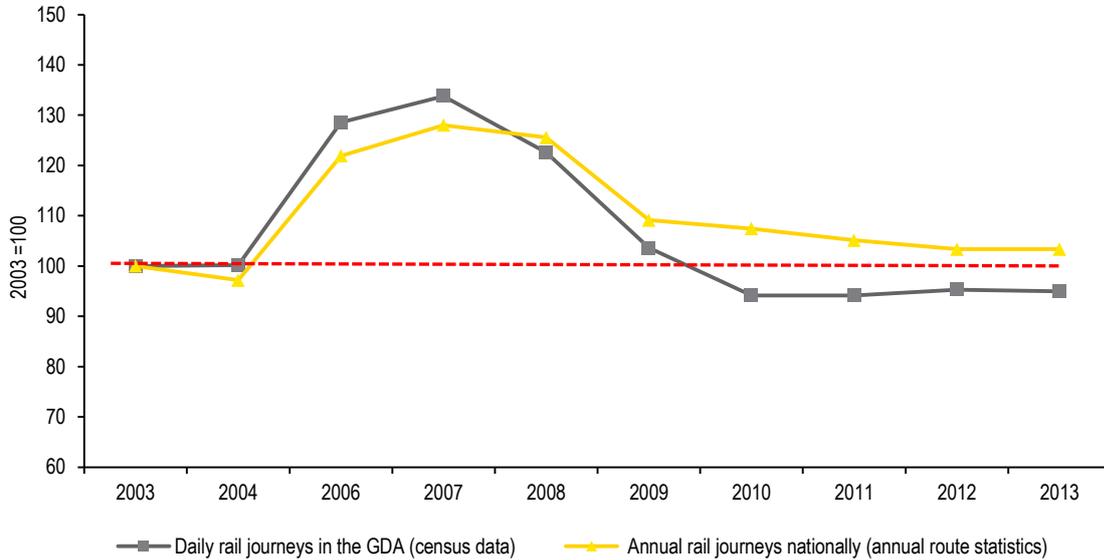
Source: *Iarnród Éireann Census 2003 – 2013, Iarnród Éireann, Annual Route statistics 2003 – 2013*

As illustrated in this chart, annual and daily rail journeys have exhibited similar trajectories over the past decade. This offers evidence that the Rail Census is representative of annual rail patronage and as such offers a good proxy for annual trends.

The difference in the scale of change demonstrated by each measure can be explained by coverage differences. Daily rail journeys in the GDA will be heavily influenced by the decline in DART patronage, thereby exhibiting a sharper decline since 2008.

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14 *No rail passenger data available for 2005. In order to allow for comparisons with previous years, only the GDA region has been included in the 2013 Rail Census figures.*

2.5 Rail usage in the GDA relative to overarching 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 4 compares the evolution of rail patronage in the GDA with key economic trends.

Chart 4 Rail journeys in GDA relative to key economic trends, (2003 =100)[15]
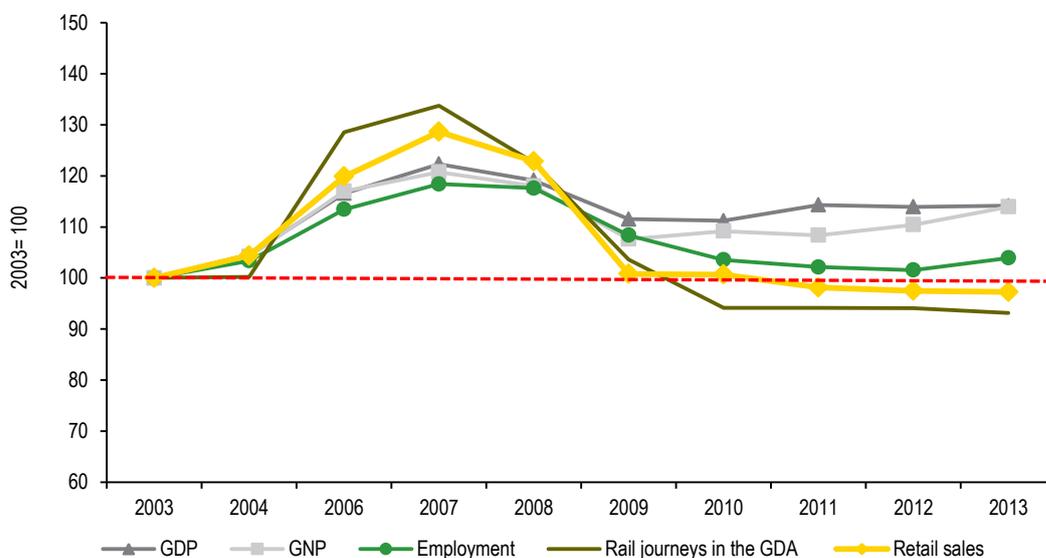
A number of interesting findings emerge from this comparison:

- Rail patronage appears more sensitive to economic changes than other activity measures such as employment and retail sales – experiencing larger swings on the upside *and* downside of the economic cycle. A number of explanations can be advanced for this:
  - It may be due to displacement effects with rail passengers shifting from rail to road transport as congestion eases. This displacement effect then diminishes as economic activity takes hold and passengers return to rail transport
  - The customer profile of rail (and public transport more generally) is such that they are more reliant on rail transport as a mode of transport
  - Rail patronage - similar to employment and retail sales - tends to lag economic growth
  - Retail sales appear to be most closely correlated with rail usage. This is unsurprising as both are based on derived demand, and are proxies for consumer demand

At individual rail line level, some lines are less correlated with economic indicators than others. Chart 5 illustrates the rail journeys on individual lines relative to employment, again indexing these metrics to their 2003 levels.

Since 2008, patronage on the DART and Dundalk - Gorey section of the network fell at a rate greater than that of employment, whereas patronage on the Longford - Dublin - Bray section and Dublin - Carlow/Athlone/Portlaoise sections have remained well above 2003 levels, compared to employment numbers which are now just above their 2003 levels. This is likely to be reflective of the impact of displacement effects with passengers shifting to car, bus and Luas on the completion of the M50 and the extension of the Luas Green line to Cherrywood in 2010.

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15 GNP and GDP at constant prices, annual employment is quarterly average for the year in question. In order to allow for comparisons with previous years, only GDA journeys have been included in the 2012 and 2013 figures.

Chart 5 Rail journeys on various sections of the network relative to employment, (2003 =100)
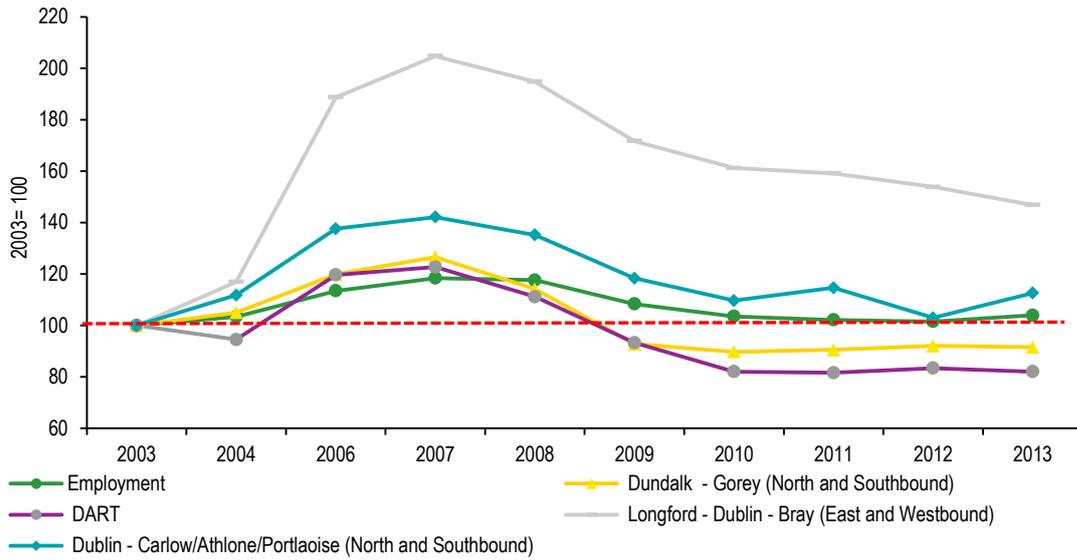
Source: Iarnród Éireann Census, 2003 - 2013, CSO Quarterly National Household Survey

3.   Key characteristics in rail patronage, Rail Census 2013

3.1   National and Greater Dublin Area

The total patronage on the rail network on Census day was just under 123,500, involving approximately 660 rail services. The number of journeys is similar to 2012 levels, when total patronage stood at just over 124,000.

In net terms the number of services operating on Census day across the network was down marginally by 7 services (1 percent of total). This was largely driven by a reduction in short journey regional services e.g. Limerick to Limerick Junction services.

The main changes in services operated on Rail Census day 2013 compared to 2012 are as follows:

- An increase of 6 services on Heuston Northbound
- A decrease of 1 service on Heuston Southbound
- A decrease of 1 service on the Dundalk – Rosslare section of the network
- A decrease of 1 service in each direction on the Sligo - Longford – Bray section of the network
- An increase of 4 services on the Cork Regional lines
- A decrease of 13 services across regional services (e.g. Limerick – Limerick Junction, Waterford –Limerick Junction)

Table 7 illustrates the total number of boardings and alightings within and outside the GDA, along with the change relative to the 2012 Census. The GDA encompasses the counties of Dublin, Kildare, Meath and Wicklow.

Of the total rail journeys undertaken on Census day 2013, 83 percent were within the GDA. This remains unchanged from 2012.

The number of boardings and alightings outside of the GDA has grown from 2012 to 2013. The growth in usage outside the GDA is driven by an increase in passenger movements on the Cork Regional lines and on Heuston services which may be partly influenced by changes in service provision.

Table 7 Boardings and alightings within and outside the Greater Dublin Area, 2013

	Greater Dublin Area	Percentage change on previous year	Outside Greater Dublin Area	Percentage change on previous year
Boardings	102,456	-1%	21,088	3%
Alightings	102,474	-1%	21,895	5%

Source: Iarnród Éireann Census 2013

3.2 Rail usage according to service categories

Table 8 shows the total number of services and journeys taken on the day of the Census, according to service category. The share of journeys taken across these categories has remained largely unchanged compared to 2012.

Table 8 Number of services and journeys taken

	Number of services	Annual percentage change	Passenger journeys taken	Annual percentage change
DART	157	-	55,921	-1.6%
Commuter[16]	363	-1.4%	41,237	-0.4%
InterCity[17]	142	-1.4%	26,258	0.8%

Source: Iarnród Éireann Census 2013

3.3 Rail usage on individual lines

Table 9 shows the number of journeys on each of the lines on Census day 2013.

Table 9 Journeys by direction and by line, 2013

Line	Description of route	Journeys	Annual % change
DART Northbound	Greystones/Bray - Howth / Malahide	28,152	-1%
DART Southbound	Malahide/Howth - Greystones/Bray	27,769	-2%
Connolly - Northbound	Rosslare – Dundalk	9,600	-6%
Connolly - Southbound	Dundalk – Rosslare	10,392	6%
Connolly - Eastbound	Sligo - Longford – Bray	9,305	-4%
Connolly - Westbound	Bray - Longford – Sligo	9,160	-6%
Heuston - Northbound	Kildare/Newbridge/Athlone/Carlow/Portlaoise/ Cork/Limerick/Galway/Wesport/Waterford/Tralee to Heuston	11,167	13%
Heuston - Southbound	Heuston to Kildare/Newbridge/Athlone/Carlow/ Portlaoise/Cork/Limerick/Galway/Wesport/ Waterford/Tralee	10,902	2%
Cork Regional Northbound	Cobh - Cork - Mallow, or Cork - Mallow - Tralee	2,620	19%
Cork Regional Southbound	Cork to Cobh and from Tralee - Mallow - Cork	2,447	1%
Regional Northbound	Limerick to Galway/Ballybrophy/Limerick junction, Waterford to Limerick junction	803	-31%
Regional Southbound	Galway/Ballybrophy/Limerick junction to Limerick, Limerick junction to Waterford	1,095	-17%

Source: Iarnród Éireann Census 2013

There was a notable increase in journeys on Heuston Northbound services. This was also the case for the Cork Regional Northbound services.

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16 *Tralee/Mallow and Cork, Limerick/Limerick Junction, and Limerick/Ballybrophy services are also included in this category.*
17 *Galway/Limerick, and Waterford /Limerick Junction services are included in this category also.*

The number of Regional northbound and southbound journeys experienced large percentage decreases from 2012 to 2013. In absolute terms the decline in the number of journeys on these lines is much lower than other lines given lowers levels of usage overall.

3.4 Busiest stations

Mirroring overall trends in rail usage, the busiest stations for boardings and alightings in the country were dominated by Dublin City stations (Table 10). Outside of Dublin City - Kent station, in Cork city, Maynooth in Kildare and Bray in Wicklow also featured in the top ten busiest stations in terms of passenger movements.

Table 10 Top ten stations by the number of boardings and alightings, 2013 and rank in 2012

Boardings			Alightings		
Connolly	1.	12,512 (1)	Connolly	1.	13,311 (1)
Pearse	2.	12,168 (2)	Pearse	2.	11,238 (2)
Heuston	3.	8,662 (3)	Heuston	3.	8,919 (3)
Tara Street	4.	6,344 (4)	Tara Street	4.	7,473 (4)
Dún Laoghaire	5.	3,168 (5)	Lansdowne Road	5.	3,328 (7)
Cork (Kent)	6.	3,101 (6)	Cork (Kent)	6.	3,322 (6)
Bray	7.	2,909 (7)	Dún Laoghaire	7.	3,178 (5)
Grand Canal Dock	8.	2,579 (8)	Grand Canal Dock	8.	3,051 (9)
Lansdowne Road	9.	2,529 (9)	Bray	9.	2,818 (8)
Maynooth	10.	2,232 (12)	Blackrock	10.	2,265 (10)

Source: Iarnród Éireann Census 2013

The top ten stations represent a significant proportion of overall daily patronage on the rail network. The top ten busiest boarding stations accounted for 46 percent of total boardings in the country on Census day. Interestingly, the share accounted for by the top ten alighting stations has fallen from 53 percent in 2012 to 48 percent in 2013. This is further evidence of the increase in alightings outside the GDA mentioned in Section 3.1.

While the busiest stations remained largely unchanged from 2012 the following points are noteworthy:

- Despite retaining the title of busiest station in the country, the number of boardings and alightings at Connolly station declined by 7 and 6 percent respectively from 2012 to 2013.
- Maynooth station ranked the tenth highest station in the country for passenger boardings – a slot previously held by Blackrock station.

The four busiest stations remain unchanged from 2012. These stations cater for different types of services, for instance Connolly caters for all types of rail services - DART, Commuter and InterCity services; Pearse and Tara accommodate DART and Commuter services and Heuston facilitates both InterCity and Commuter services. In addition, stations located in significant areas of employment e.g. Grand Canal Dock and Lansdowne Road feature in the top ten, as do Bray and Dún Laoghaire which are both locations with significant populations, a mix of economic activity and rail stations that are accessible not only by walking and cycling but also by bus.

Similar to 2012, there is some variance in the numbers boarding and alighting at individual stations. This may indicate a proportion of one-way trips, for example, when passengers did not make a return journey on the same day or made their return trip by a different mode of travel or a different station.

3.5   Variation in station usage across the network

Chart 6 shows the number of daily journeys to and from each station in 2012 and 2013. The number of daily journeys has been derived by adding the number of boardings and alightings at each station.

As can be seen from Chart 6, 28 stations in the country experienced less than 100 journeys on Census day, and a further 20 generated between 100 and 200 journeys.

Chart 6 Number of stations experiencing different levels of daily journeys
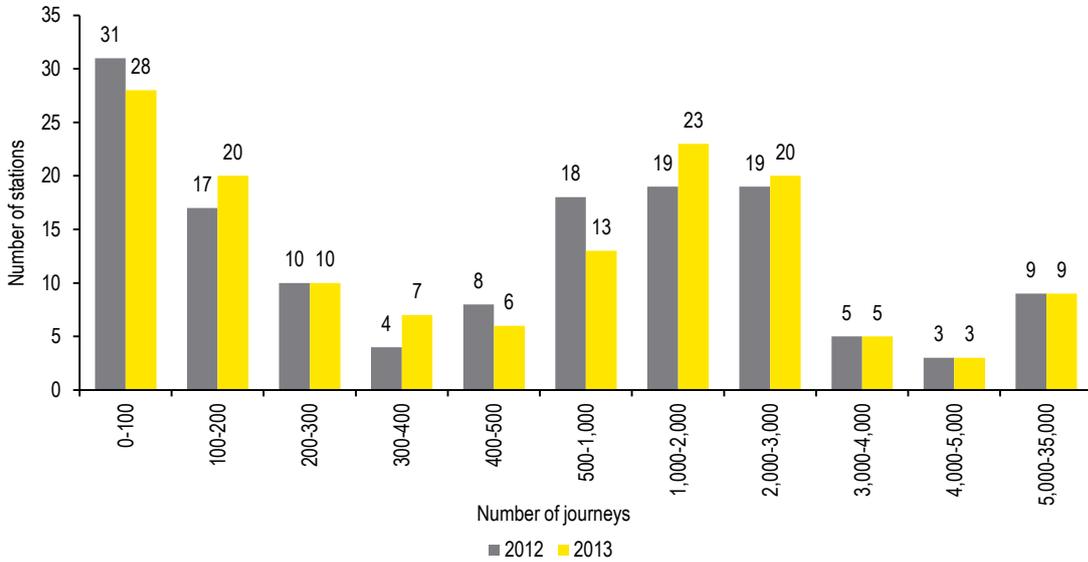
Source: Iarnród Éireann Census 2013

At the opposite end of the scale 9 stations generated in excess of 5,000 journeys (the busiest stations referred to in Section 3.4 with the exception of Blackrock and Maynooth). Connolly station received the highest number of journeys at almost 26,000. This indicates that there is significant variation in station usage and the volume of journeys generated to/from individual stations across the rail network.

There has been a shift in the number of stations experiencing mid-range journeys. As can be seen in the chart above there has been a decrease in the number of stations exhibiting between 500 – 1,000 daily journeys, while there has been an increase in the two next journey bands. This could be an indication that the gap between the least used stations and other more frequently used stations is getting wider.

3.6   Patronage relative to population

Figure 5 illustrates the level of daily journeys in 2013 for each station in the country relative to population density.

Figure 5 - Level of daily journeys to stations relative to population density
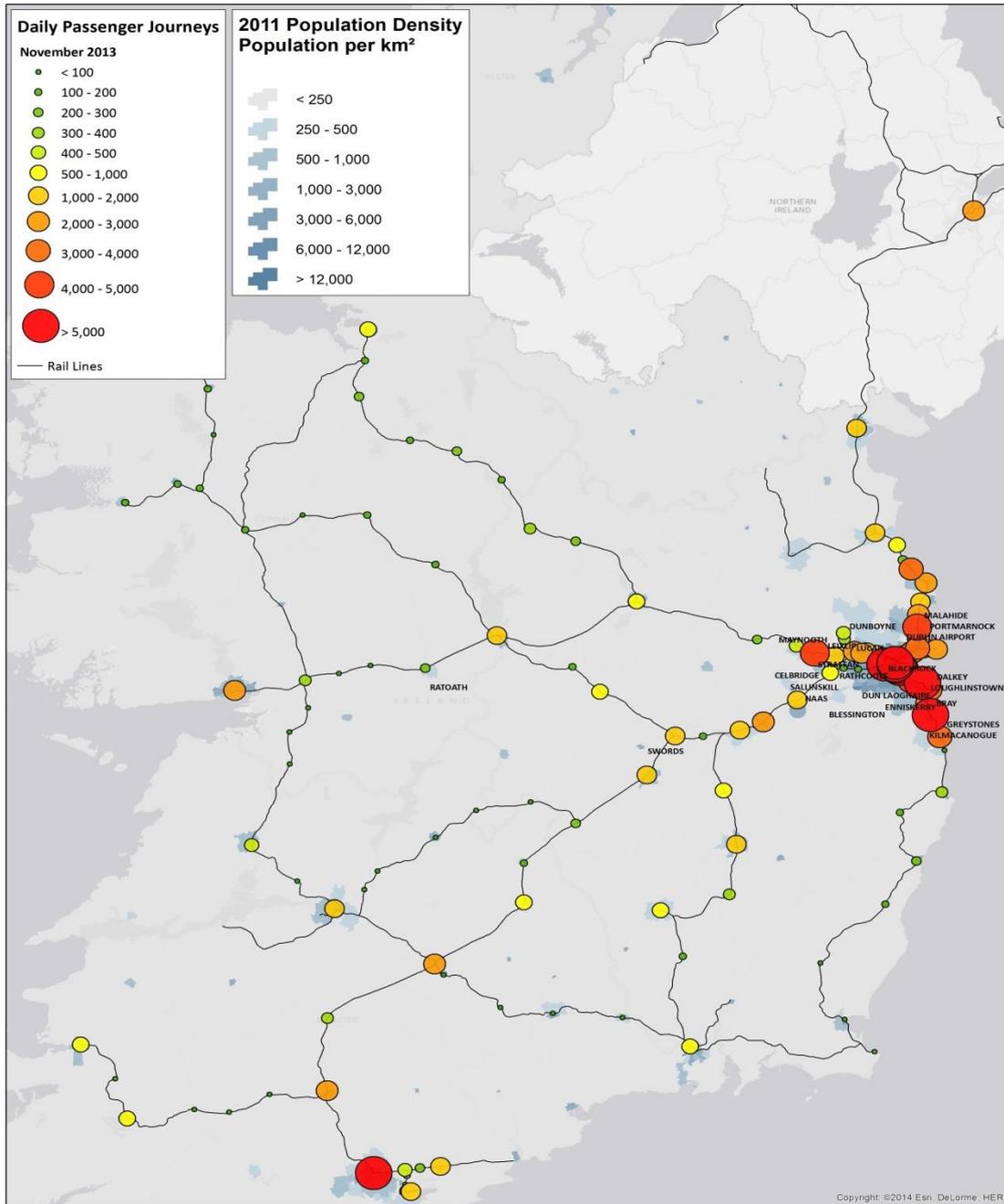
Source: National Transport Authority based on data from the Iarnród Éireann Census 2013

As seen in Figure 5, in general, there is a strong relationship between the number of daily journeys at stations and population density. Densely populated urban areas exhibit higher levels of daily journeys; while rural locations have much lower levels of journeys.

However there are a number of outliers in this regard, which were also evident in the 2012 Census. Sligo, which has a relatively low population density, experienced nearly 700 daily journeys suggesting that the catchment area for the Sligo station is much wider than the town itself.

There are also pockets of densely populated areas which do not experience a higher degree of daily rail journeys. Wexford town has low number of daily journeys relative to locations of similar population density. This indicates that the population in Wexford is more inclined to choose alternative modes of transport to rail. This may, at least in part, be due to shorter journey times by road and the availability of alternatives.

Figure 6 illustrates the level of daily journeys in the GDA with corresponding population density. The GDA has the highest population density in the country and unsurprisingly stations within this area exhibited some of the highest levels of daily journeys.

Figure 6 - Level of daily journeys to stations in the GDA relative to population density
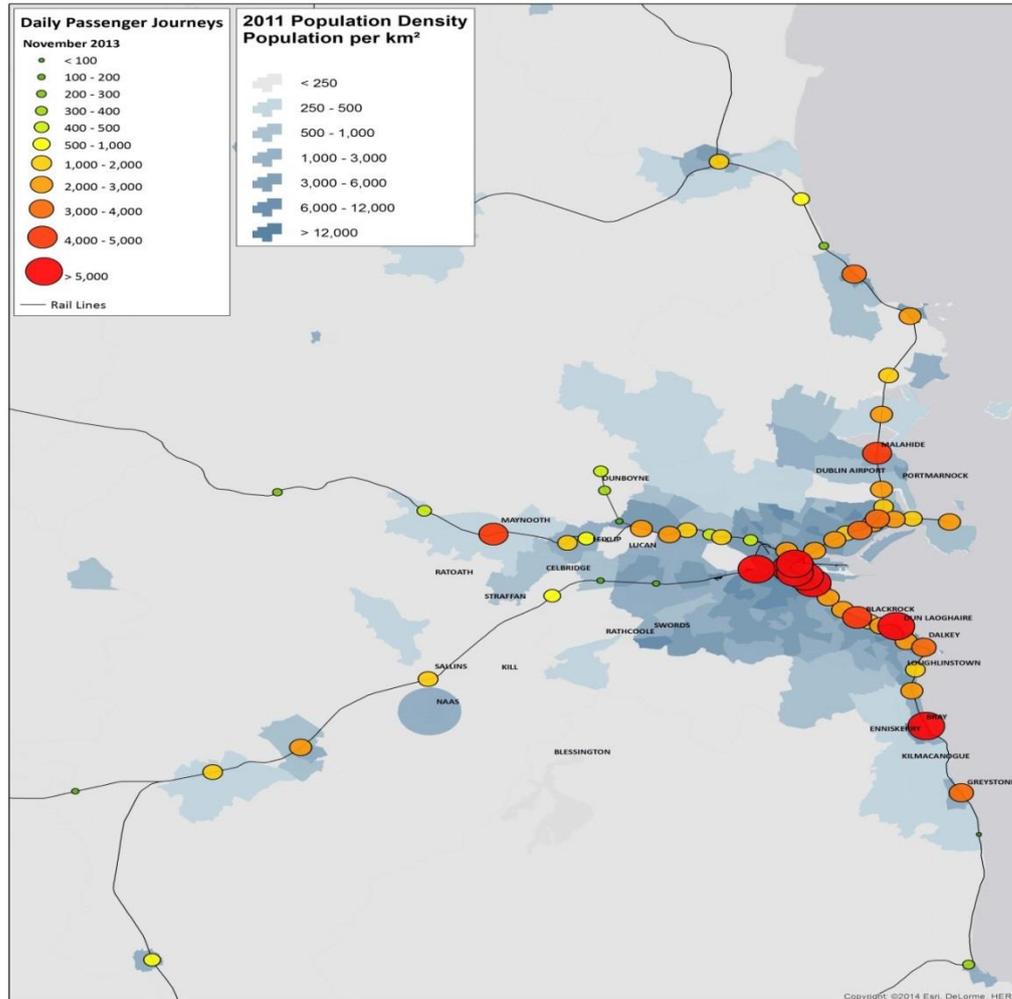
Source: National Transport Authority based on data from the Iarnród Éireann Census 2013

The busiest stations (as shown by the large red circles) were located in areas with high population density (shown by the concentration of dark grey areas). Bray, by exception exhibited a high level of daily journeys relative to its population density. This is evidence that the catchment area for Bray station is much wider than the parameters of Bray town. Maynooth also experienced a high incidence of daily journeys in the Rail Census relative to its population density. The town is host to a university, which can in part explain the high incidence of trip demand relative to population density. These patterns are consistent with those in the 2012 Census.

4.   Daily rail patronage by line

4.1   DART

According to the Rail Census the total number of daily journeys on the DART was almost 56,000, down by approximately 900 journeys or 1.6 percent on 2012 levels.

Table 11 Total daily patronage on DART lines, 2013

Line	2012	2013
DART Northbound	28,425	28,152
DART Southbound	28,410	27,769
Total	56,835	55,921

Source: Iarnród Éireann Census 2013

4.1.1   Hourly profile of demand

Chart 7 shows variations in demand throughout the day on the DART line in 2012 and 2013. This is based on numbers of passengers boarding services. The busiest hour was between 08:00 and 09:00 when a total of approximately 10,400 passengers boarded services over the length of the line. The evening peak hour which occurred between 17:00 and 18:00 was less busy than the morning peak with around 7,600 boardings.

 The greatest increase in demand was in the 07:00-08:00 period.

During the inter peak period, there was a general trend of reduced demand compared with 2012, potentially indicating that fewer people travelled by train for leisure or social purposes.

Chart 7 Hourly profile of demand on DART line, 2012 and 2013
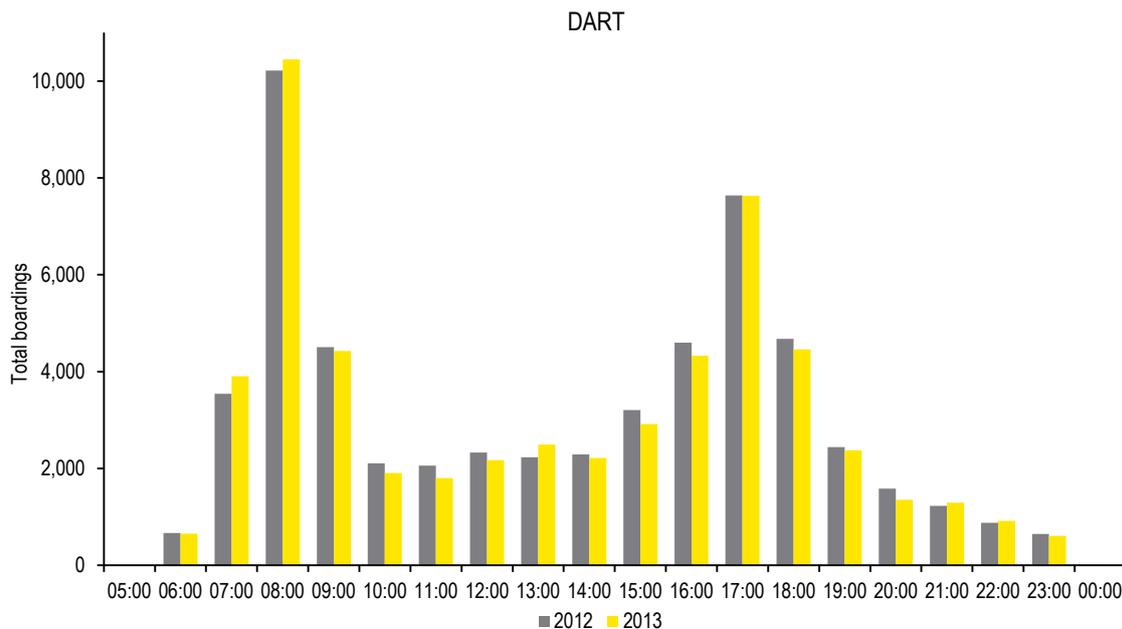
Source: Iarnród Éireann Census 2013

4.1.2   Profile of demand by station

Chart 8 illustrates the daily build-up of passengers along the route of the DART Northbound from Greystones to Howth Junction, where the line 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 8 Profile of demand by station, DART Northbound, 2012 and 2013[18]
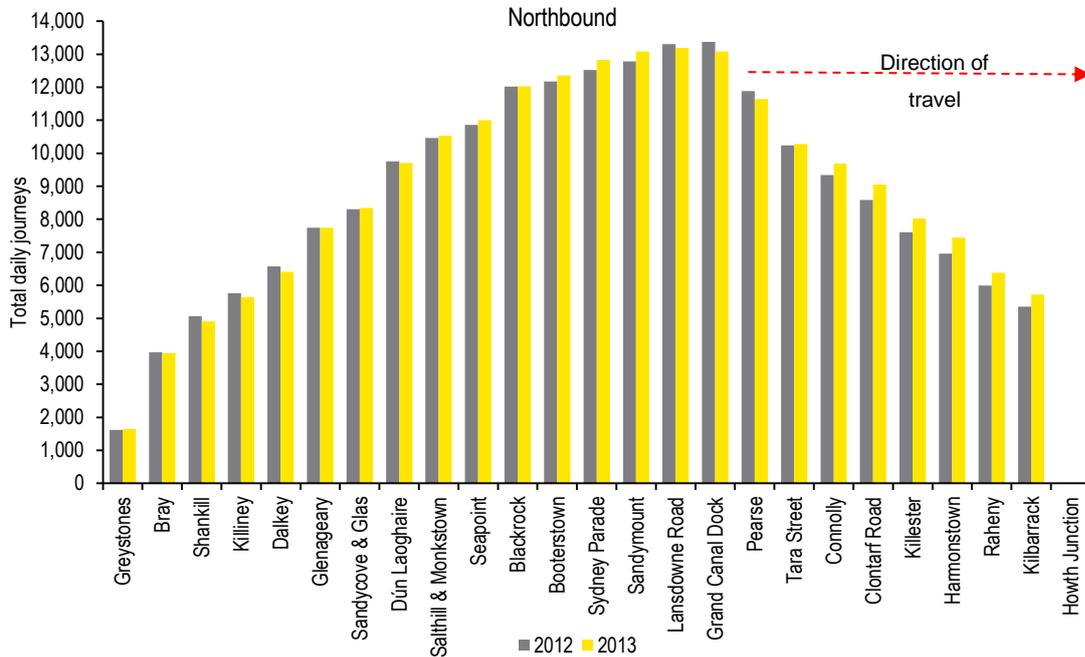
Source: Iarnród Éireann Census 2013

Overall the pattern of demand along the route was similar to 2012; there was a steady build-up of passengers from Greystones to Booterstown, with notable increases in the numbers of passengers on board at Dún Laoghaire and Blackrock stations.

The pace of increase eased between Blackrock and Sandymount and plateaued between Lansdowne Road and Grand Canal Dock indicating a balanced flow of both passengers alighting and boarding at these stations.

At the northern end of the line, there was a fall-off in the number of people on board. This is likely to be reflective of the large residential catchments at these locations. There are also fewer employment or education centres located along this section of the route relative to the southern portion of the line.

Chart 9 shows the profile of demand in the southbound direction which, as would be expected, mirrored the northbound profile.

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[18] Note passenger movements for Malahide, Portmarnock, Clongriffin, Howth, Sutton, and Bayside has been attributed to Howth Junction.

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Chart 9 Profile of demand by station, DART Southbound, 2012 and 2013[19]
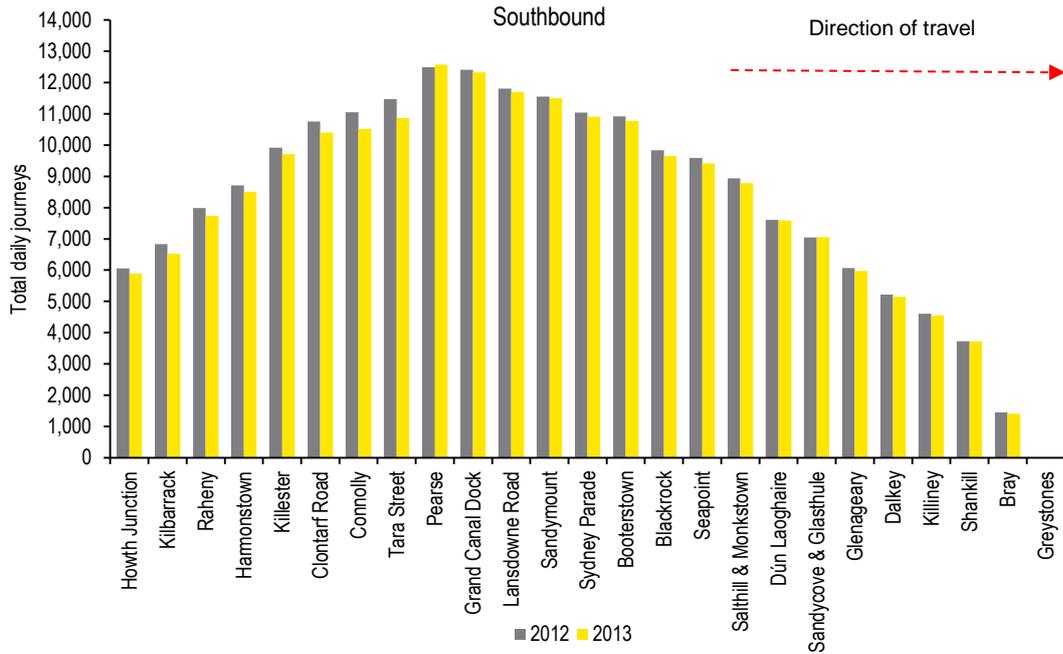
Source: Iarnród Éireann Census 2013

4.2   Dundalk - Rosslare

4.2.1   Hourly profile of demand

As shown in Chart 10, similar to the DART, the peak hours on this part of the network also occurred at 08:00 - 09:00 and 17:00 - 18:00.

Chart 10 Hourly profile of demand, Dundalk - Rosslare , 2012 and 2013
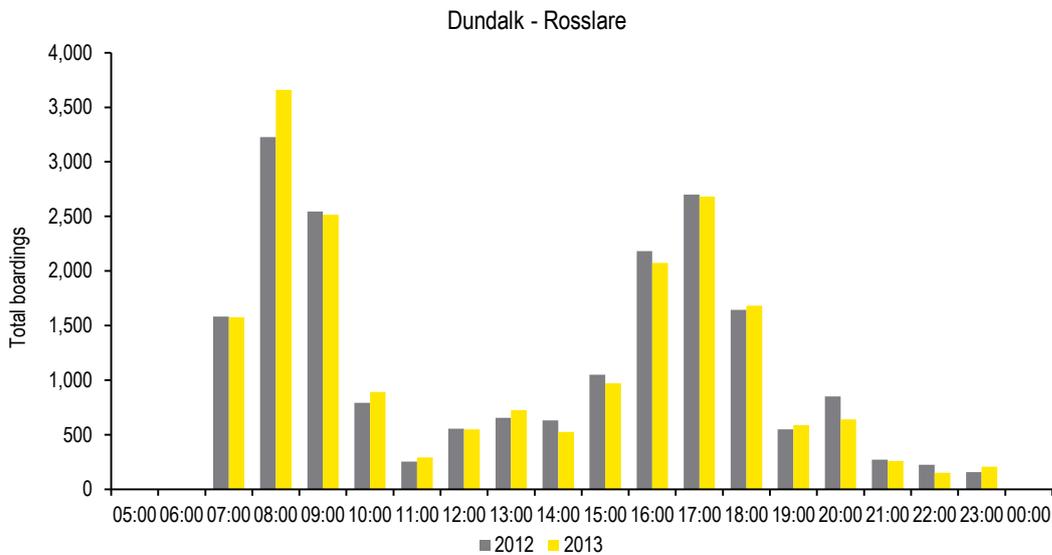
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[19] Note passenger movements for Malahide, Portmarnock, Clongriffin, Howth, Sutton, and Bayside has been attributed to Howth Junction.

There was a notable increase from 2012 to 2013 in the number of individuals boarding services during the morning peak (13 percent).

Patronage on this line is highly peaked compared with the DART. Outside of the peak periods hourly boardings on the line are relatively small.

4.2.2 Profile of demand by station

Charts 11 and 12 illustrate the demand profile of patronage on the Dundalk – Rosslare section of the network. Northbound, this section stretches from Rosslare Europort to Dundalk. Demand on the southern portion of the route from Rosslare to Dublin is down on 2012 figures.

Chart 11 Profile of demand by station, Dundalk - Rosslare (Northbound), 2012 and 2013
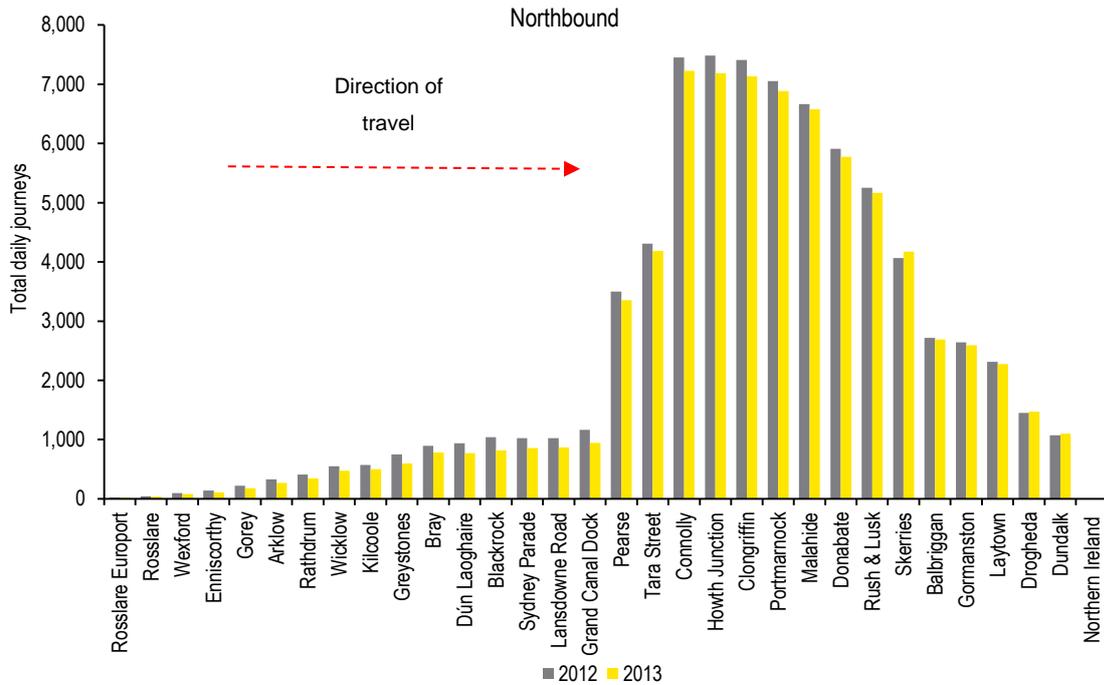
Source: Iarnród Éireann Census 2013

Chart 12 Profile of demand by station, Dundalk - Rosslare line (Southbound)
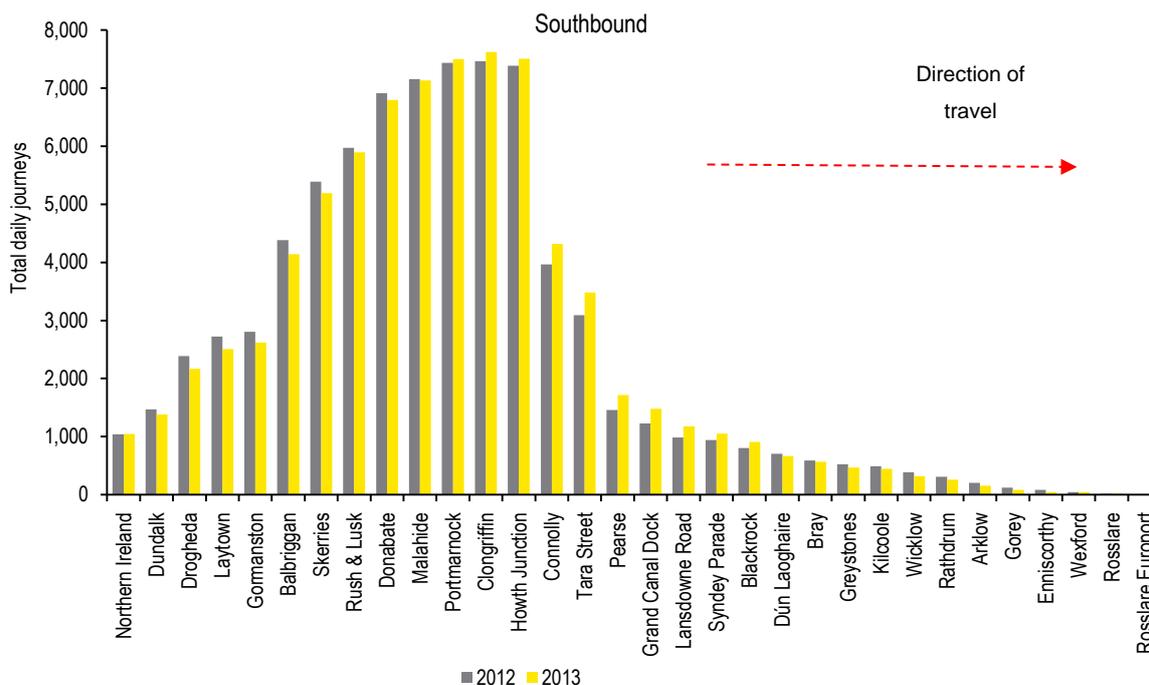
Many of the services in each direction on this line originate/terminate at Connolly, others at Pearse and others further south, which explains why boarding numbers change significantly from Connolly northwards. The profile is reflective of the capacity of different services. The InterCity service between Connolly and Belfast for instance is more frequent than the service between Dublin and Wexford/Rosslare.

There is a relative plateau of individuals on board at Howth Junction, Clongriffin and Portmarnock, for both the Northbound and Southbound services, which is due to the fact that not all services stop at these stations.

4.3   Dublin - Belfast

The Rail Census also captures the total number of passengers on services operating between Northern Ireland and the Republic of Ireland. Boarding and alighting numbers on these services are similar, indicating that the vast majority of passengers travelling on this route used the train for round trips - possibly mostly day trips. There were approximately one thousand cross border daily journeys taken and this remains largely unchanged from 2012 to 2013.

Table 12 Number of boardings and alightings on the Northern Ireland service originating/destined for the Republic of Ireland

Northern Ireland	2012	2023
Boardings	1,040	1,047
Alightings	1,074	1,100

4.4   Sligo - Longford - Bray

4.4.1   Hourly profile of demand

This section of the network stretches from Bray to Dublin City Centre and on to Longford and Sligo. It caters for both Commuter and InterCity services and the majority of services operate to and from the city centre with few through services.

Overall, approximately 900 less journeys were made on this section of the network on Census day in 2013 relative to 2012. This line experiences large peak hour activity with the morning peak hour (08:00 to 09:00) accounting for the largest number of hourly boardings. The number of boardings decreases substantially between 10:00 and 14:00 but picks up again from 15:00.

There were a number of timing and service changes to the schedule on this line between 2012 and 2013. These changes may have contributed in part to the variation in hourly demand profile compared with 2012.

Chart 13 Hourly profile of demand, Sligo - Longford - Bray, 2012 and 2013
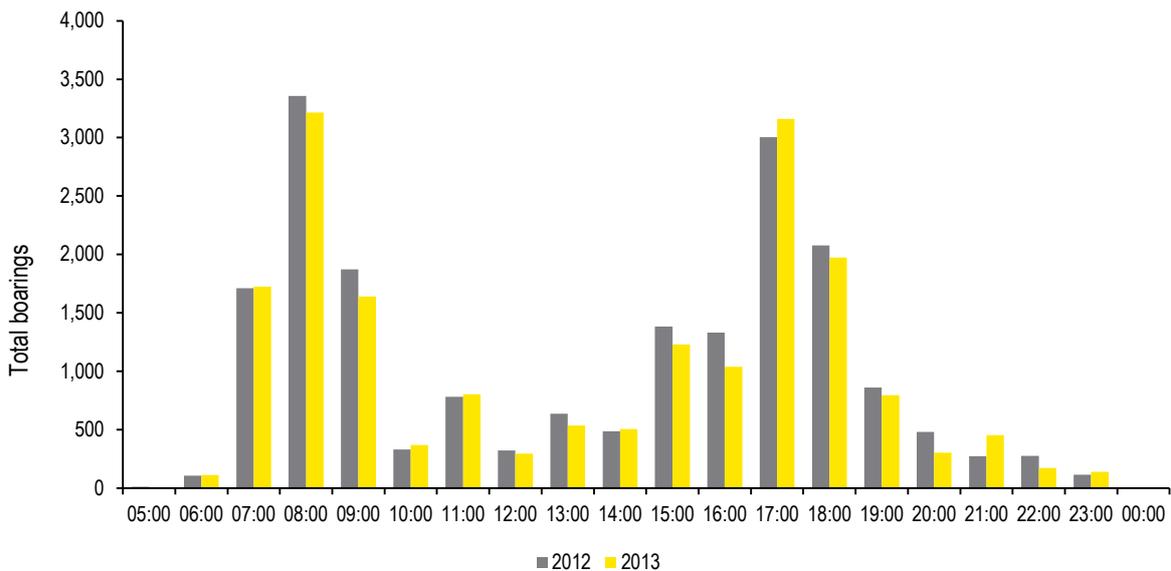
Source: Iarnród Éireann Census 2013

4.4.2   Profile of demand by station

Chart 14 illustrates the daily patronage build-up in the westbound direction from Bray to Sligo in 2012 and 2013. From Bray there was a slow build up in patronage until Pearse station where significant numbers of passengers boarded. This is where a number of Commuter services originate, for example Pearse – Maynooth services. A jump in patronage was also witnessed at Connolly station where InterCity services to Sligo and a number of Commuter services originate. As trains approached stations at the end of the Maynooth Commuter service there was a decline in patronage. This is evidenced by a notable fall off at Maynooth.

Pearse and Tara Street stations were the only stations at which the build-up in demand increased from 2012 to 2013.

Chart 14 Profile of demand by station, Sligo - Longford - Bray (Westbound), 2012 and 2013

Westbound

Direction of travel

■ 2012 ■ 2013
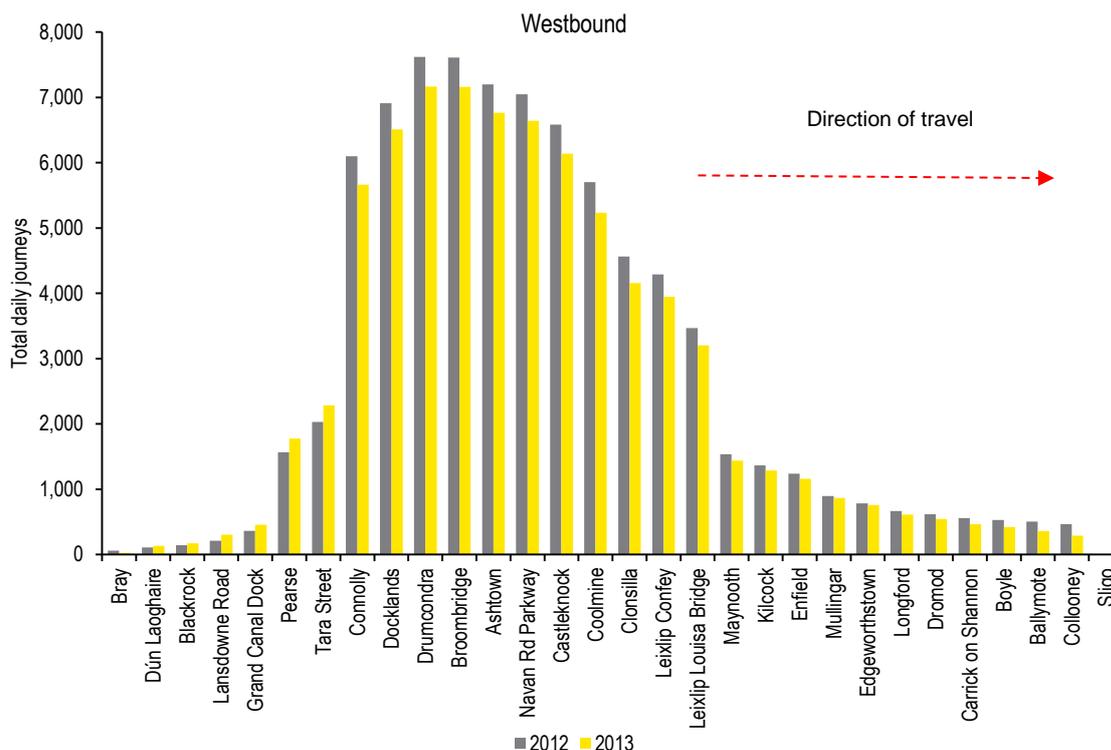
Source: Iarnród Éireann Census 2012

In the eastbound direction, as shown in Chart 15, there was a steady build-up in patronage from Sligo to Kilcock. The pace of patronage increase along this section is similar to 2012. The number of people on board services increased substantially at Maynooth owing to the fact that this is the station of origin for many Dublin Commuter services. As services moved closer to Dublin City the build-up in patronage along the line gathered pace, reflecting Commuter service usage on the line. There was a significant drop off in patronage at Connolly, given that this is the final destination for InterCity and many Commuter services.

The profile shows that the reduction in patronage from Census day 2012 to Census day 2013 is evenly spread across stations between Maynooth and Connolly.

Chart 15 Profile of demand by station, Sligo - Longford - Bray (Eastbound), 2012 and 2013
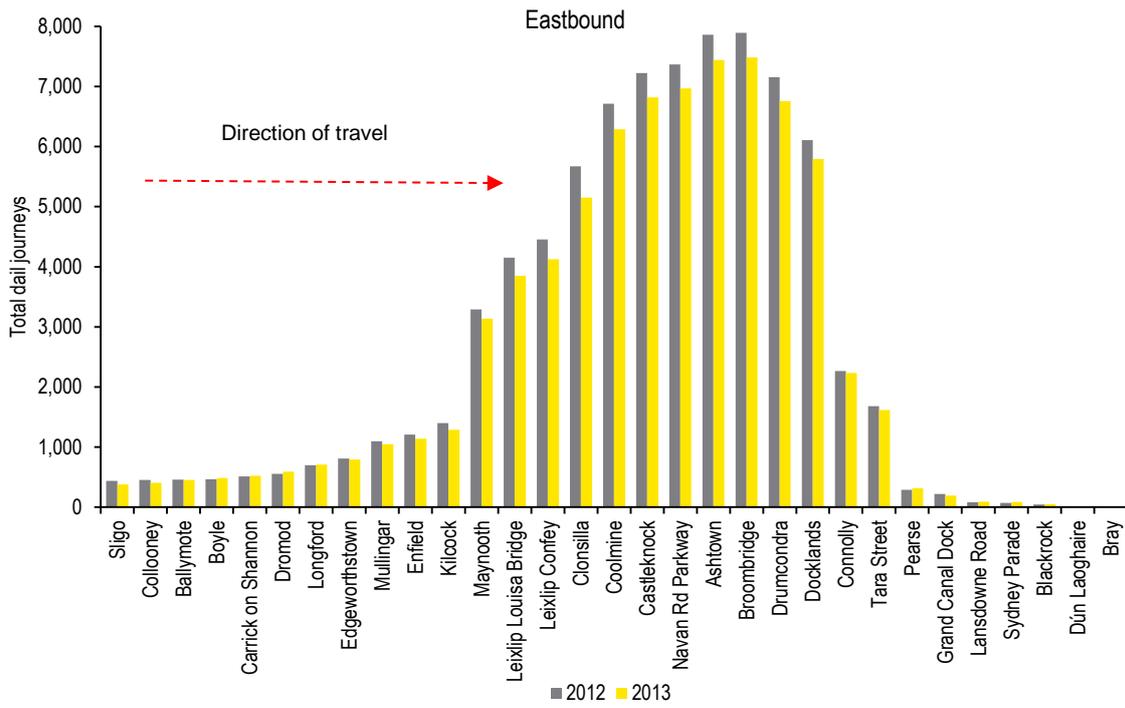
Source: Iamród Éireann Census 2013

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 at, and departure from, Heuston station.

In 2012, the Heuston services exhibited an earlier morning peak compared to other parts of the network - the highest number of boardings on the Heuston services occurred between 07:00 and 08:00, rather than between 08:00 and 09:00. In 2013, the number of boardings on Heuston services between 08.00 and 09.00 increased relative to 2012 with the result that peak demand in the morning was prolonged from 07.00 to 09.00. There was also an increase in demand from 17.00 to 18.00 which may be partly due to additional services during this period.

Chart 16 Hourly profile of demand, Heuston lines, 2012 and 2013

Source: Iarnród Éireann Census 2013

4.6   Cork Regional

Chart 17 shows the hourly profile of demand across this network which includes services operating between Kent Station and Midleton, Cobh and Mallow as well as those operating between Mallow and Tralee (see Figure 3). There was a notably low level of demand in comparison with services in the Greater Dublin Area, which is likely to be reflective of the lower levels of population and economic activity. Demand during the morning peak increased from 2012 to 2013 while the evening peak was less pronounced. There was also more evidence of peak spreading in the evening.

Chart 17 Hourly profile of demand, Cork regional lines, 2012 and 2013
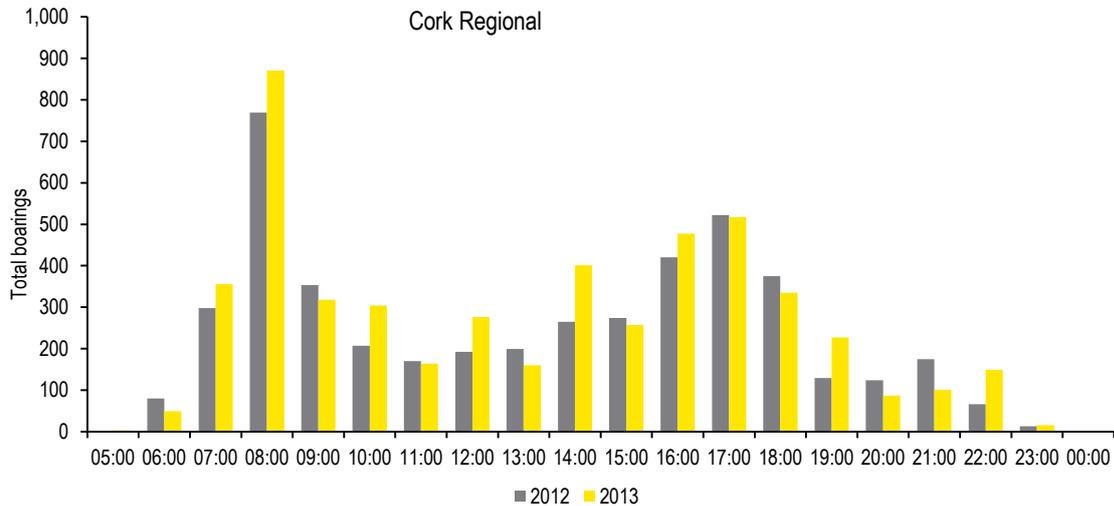
Source: Iarnród Éireann Census 2013

4.6.1   Profile of demand by station

Charts 18 and 19 show the profile of demand by station on the Cork Regional network. Although there are no through services between the Cobh/Midleton line and the Mallow line, it is interesting to plot the profile of demand across stations on these lines.

The busiest section of the Cork regional network was between Littleisland and Cork Kent Station. For the Tralee line, there was very little change in the patronage from Mallow to Rathmore and approximately half of the remaining passengers alighted at Killarney and half at Tralee. This is unchanged from 2012. Northbound services experienced an increased build-up of demand across every station on the route.

Chart 18 Profile of demand by station, Cork Regional lines[20] (Northbound)
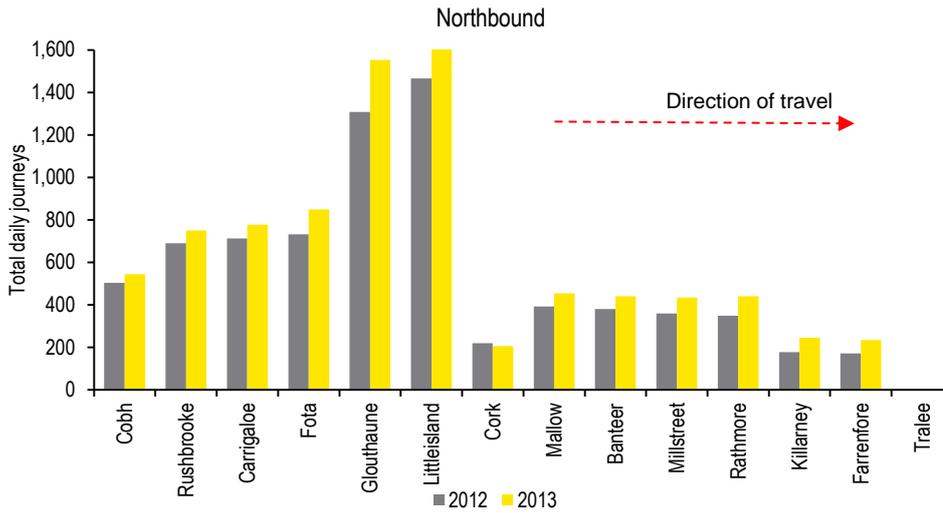
Source: Iarnród Éireann Census 2013

The profile in the southbound direction mirrored that of the northbound direction. However relative to 2012, the pace of build-up on the line declined.

Chart 19 Station by station profile of demand, Cork Regional lines[21] (Southbound)
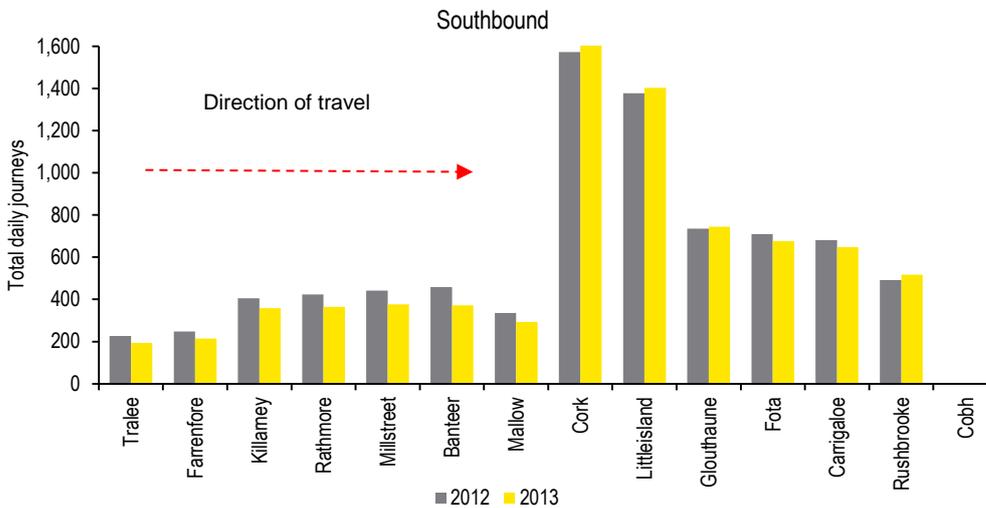
Source: Iarnród Éireann Census 2013

20 Note that passengers to and from Midleton and Carrigtwohill are captured at Glouthaune station.
21 Note that passengers to and from Midleton and Carrigtwohill are captured at Glouthaune station.

4.7   Other lines on the network

The remaining parts of the network not previously discussed are:

- Galway - Athenry - Ennis - Limerick
- Limerick - Limerick Junction/Nenagh - Ballybrophy
- Waterford - Limerick Junction.

As can be seen from Table 13 the daily patronage on these sections of the network was small relative to other parts of the rail network. Relative to the rest of the network these sections also have lower population catchments, characterised by small-medium sized settlements surrounded by dispersed rural populations. They also exhibit rail journey times that struggle to compete with journey times by road and have the lowest levels of services on the network. The total number of boardings on each of these lines declined relative to 2012.

Table 13 Total boardings on regional lines outside the Greater Dublin and Cork areas

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

Source: Iarnród Éireann Census 2013

5.   Characteristics in radial rail usage, Dublin 2013

5.1   Daily boardings by radial corridor

As noted in Section 3.1, rail usage is highly concentrated in the Dublin area. It is therefore useful to understand how demand compares across the radial corridors in and out of Dublin. Table 14 identifies boardings from the 2012 and 2013 Census on inbound services according to the type of service and section of the line.

Daily boardings on the Northern lines, comprising DART, Commuter and InterCity Services, north of the city totalled almost 21,000, which is on par with 2012 figures. Boardings on the Southeastern group of lines also totaled almost 21,000 although the DART accounted for a far higher proportion of the Southeastern patronage.

InterCity passengers accounted for the majority of patronage on the Heuston lines whereas Commuter service boardings represented the majority on the Sligo lines. These lines accounted for a smaller number of boardings, which is to be expected given that they are not served by DART services. Boardings on the Heuston rail corridor increased by 12 percent from 2012 to 2013. All other radial corridors experienced slight declines of between 1 and 4 percent.

Table 14 Daily boardings from stations inbound to the city centre (excludes city centre boardings)

Radial corridor	Section	Service	Daily boardings 2012	Daily boardings 2013
Northern lines	Malahide/Howth - Clontarf Road	DART	12,403	11,949
	Dundalk - Howth Junction	Commuter	7,064	7,380
	Northern Ireland- Donabate	InterCity	1,536	1,410
Total			21,003	20,739
Southeastern lines	Greystones - Grand Canal Dock	DART	19,667	19,468
	Bray - Grand Canal Dock	Commuter	817	495
	Rosslare - Grand Canal Dock	InterCity	1,180	876
Total			21,664	20,839
Heuston Lines	Portlaoise – Heuston	Commuter	1,737	2,275
	National – Heuston	InterCity	8,251	8,927
Total			9,988	11,202
Sligo lines	Longford - Drumcondra	Commuter	7,594	7,500
	Sligo - Drumcondra	InterCity	1,871	1,611
Total			9,465	9,111

Source: Iarnród Éireann Census 2013

5.2   Peak hour flows by radial corridor

Table 15 shows the morning peak hour (08:00 - 09:00) flow inbound on a radial corridor basis, with the breakdown for DART, Commuter and InterCity across various lines and services. Table 16 shows the evening peak hour (17:00 - 18:00) flows in an outbound direction from the city centre.

Mirroring trends witnessed in 2012, the Northern lines carried more than twice as many passengers as the Southeastern lines in the morning peak hour.

The highest hourly flow on Commuter services occurred on the Sligo line between Broombridge and Drumcondra, closely followed by the Northern line between Clongriffin and Howth Junction.

In the evening peak hour flows were less than in the morning peak hour but followed the same general patterns. The patterns of peak hour flows are largely in line with 2012 results, although the location of the maximum flow for some services occurs at different locations.

Table 15 Maximum flows per line in the morning peak hour (08:00 - 09:00) - inbound

Radial corridor	Service	Maximum hourly passenger flow	Location of maximum flow
Northern lines	DART	3,716	Clontarf Road - Connolly
	Commuter	2,076	Clongriffin - Howth Junction
	InterCity	364	Drogheda - Connolly
Total*		6,156	
Southeastern lines	DART	3,324	Blackrock - Booterstown
	Commuter	-	No Commuter services 08:00-09:00
	InterCity	384	Bray - Dún Laoghaire
Total*		3,708	
Heuston Lines	Commuter	525	Clondalkin Fonthill - Parkwest & Cherry
	InterCity	1,112	Newbridge - Sallins & Naas
Total*		1,637	
Sligo lines	Commuter	2,450	Broombridge – Drumcondra
	InterCity	332	Maynooth – Drumcondra
Total*		2,782	

Source: Iarnród Éireann Census 2013

* Although the routes do not all peak at precisely the same location, this total is not significantly greater than that at the busiest link, and is a useful indicator for planning purposes

Table 16 Maximum flows per line in the evening peak hour (17:00 - 18:00) - outbound

Line	Service	Maximum passenger flow	Location of maximum flow
Northern lines	DART	2,953	Tara Street - Connolly
	Commuter	1,836	Clongriffin - Portmarnock
	InterCity	-	No Dublin - Belfast service 17.00 - 18.00
Total		4,789	
Southeastern lines	DART	2,081	Booterstown - Blackrock
	Commuter	-	No Commuter service
	InterCity	222	Grand Canal Dock - Dún Laoghaire
Total		2,303	
Heuston Lines	Commuter	622	Parkwest & Cherry - Clondalkin Fonthill
	InterCity	1,672	Heuston - Hazelhatch
Total		2,294	
Sligo lines	Commuter	1,789	Navan Road Parkway - Castleknock
	InterCity	438	Connolly - Leixlip Louisa Bridge
Total		2,227	

Source: Iarnród Éireann Census 2013

5.3   Train loadings by radial corridor

Tables 17 and 18 show the busiest train (the train carrying the most passengers or passenger load) in the morning and evening peak hours by line.

The most heavily loaded train on the network was the 08:00 DART service from Greystones to Malahide, on the section of line between Sandymount and Sydney Parade. It carried 981 passengers at that point. This service was operated using an 8-car DART, which has a capacity of 1,400 passengers (seats and standing) - this represents a 70 percent load factor. This was also the most heavily loaded train in the 2012 Census, when it reached a capacity of 65 percent.

The most heavily loaded Commuter service was the 07.10 from (Newry) Dundalk to Bray, which carried 822 passengers between Donabate and Connolly. Assuming an 8-car trainset with a capacity of 1,280 (seats and standing), this represents a 64 percent load factor. In 2012 the most heavily loaded Commuter train was the 07.55 Maynooth – Bray service which reached a capacity of 66 percent.

On InterCity services the most heavily loaded train was the 17.05 Connolly to Sligo service, which carried 438 passengers between Connolly and Lexlip Louisa Bridge. If served using a 6-car high capacity InterCity railcar with seating capacity of 406, it means not all passengers were able to get a seat from Connolly and Lexlip Louisa Bridge. Again, this was a change from the 2012 Census when the busiest InterCity service was the 05:45 Sligo - Connolly service.

Table 17 - Most heavily loaded trains in the morning peak hour

Line	Service	Maximum load per train	Service	Location
Northern lines	DART	865	08.02 Howth - Greystones	Clontarf road - Connolly
	Commuter	822	07.10 (Newry) Dundalk - Bray	Donabate - Connolly
	InterCity	364	(Belfast) Dundalk - Connolly	Drogeda - Connolly
Southeastern lines	DART	981	08.00 Greystones- Malahide	Lansdowne Road
	Commuter	n/a	No Commuter services between 08.00 - 09.00	
	InterCity	384	05.35 Rosslare - Dundalk	Bray - Dún Laoghaire
Heuston Lines	Commuter	225	07.20 Portlaoise - Heuston	Clondalkin Fonthill - Parkwest & Cherry
	InterCity	327	06.40 Limerick - Heuston	Kildare - Heuston
Sligo lines	Commuter	820	07.55 Maynooth - Bray	Broombridge - Connolly
	InterCity	332	05.45 Sligo - Connolly	Maynooth - Broombridge

Source: Iarnród Éireann Census 2013

Table 18 - Busiest service in the evening peak hour (outbound)

Line	Service	Highest load per train	Train	Location of busiest service
Northern lines	DART	727	16.30 Greystones - Malahide	Clontarf Road - Killester
	Commuter	593	16.50 Bray - Drogheda	Connolly - Clongriffin
	InterCity	n/a	No Dublin - Belfast train 17.00 - 18.00	
Southeastern lines	DART	694	17.00 Malahide - Greystones	Lansdowne Road - Sandymount
	Commuter	n/a	No Commuter service between 17.00 -18.00	
	InterCity	222	17.36 Connolly - Wexford	Pearse - Blackrock
Heuston Lines	Commuter	290	17.10 Heuston - Athlone	Heuston - Sallins & Naas
	InterCity	330	17.30 Heuston - Galway	Heuston - Hazelhatch & Cellbridge
Sligo lines	Commuter	708	17.05 Bray - Maynooth	Connolly - Docklands
	InterCity	438	17.05 Connolly - Sligo	Connolly - Lexlip Louisa Bridge

Source: Iarnród Éireann Census 2013

Appendix A - Daily boardings at each station, by service type, from the Rail Census 2013

Iarnród Éireann National Census 2013

BOARDINGS

BOARDINGS Service Type & Station	DART NORTH BOUND	DART SOUTH BOUND	Rosslare - City Centre - Dundalk	Dundalk / Drogheda - City Centre - Rosslare	Bray - City Centre - Maynooth - Sligo	Sligo - Maynooth - City Centre - Bray	Total 2013	Total 2012	Total 2011
Rosslare Europort			20	-			20	20	-
Rosslare			19	2			21	25	-
Wexford			51	17			68	81	-
Enniscorthy			39	4			43	61	64
Gorey			76	10			86	105	89
Arklow			104	5			109	119	98
Rathdrum			86	12			98	94	4
Wicklow			142	24			166	180	142
Kilcoole			27	4			31	23	18
Greystones	1,644	-	119	20			1,783	1,858	1,705
Bray	2,407	153	243	81	25	-	2,909	3,029	3,001
Shankill	1,068	81					1,149	1,301	1,193
Killiney	806	76					882	859	797
Dalkey	1,159	372					1,531	1,544	1,566
Glenageary	1,445	123					1,568	1,494	1,366
Sandycove & Glas	827	195					1,022	995	954
Dún Laoghaire	2,046	774	143	87	116	2	3,168	3,359	3,102
Salthill & Monkstown	997	171					1,168	1,041	1,086
Seapoint	627	158					785	699	678
Blackrock	1,483	465	85	12	44	2	2,091	2,399	2,391
Booterstown	840	494					1,334	1,164	1,172
Sydney Parade	928	350	35	11		3	1,327	1,308	1,465
Sandymount	551	338					889	975	870
Lansdowne Road	1,437	841	100	22	129	-	2,529	2,490	2,653
Grand Canal Dock	1,203	1,109	82	19	160	6	2,579	2,825	2,463
Pearse	2,864	4,939	2,689	333	1,336	7	12,168	11,312	11,271
Tara Street	2,038	2,397	1,028	278	542	61	6,344	6,556	6,749
Connolly	2,149	2,784	3,350	661	3,455	113	12,512	13,477	12,189
Clontarf Road	320	1,057					1,377	1,431	1,401
Killester	200	1,375					1,575	1,592	1,470
Harmonstown	124	887					1,011	994	955
Raheny	204	1,437					1,641	1,672	1,626
Kilbarrack	208	835					1,043	1,138	1,077
Howth Junction	353	1,038	137	139			1,667	1,730	1,761
Bayside	93	1,063					1,156	1,024	1,229
Sutton	67	622					689	657	821
Howth	-	1,073					1,073	1,285	1,092
Clongriffin	43	588	3	133			767	674	656
Portmarnock	21	745	21	399			1,186	1,236	1,224
Malahide	-	1,229	336	612			2,177	2,318	2,317
Donabate			125	1,024			1,149	1,213	1,107
Rush & Lusk			94	826			920	800	857
Skerries			140	1,225			1,365	1,279	1,188
Balbriggan			116	1,637			1,753	1,778	1,705
Gormanston			3	110	-	-	113	92	100
Laytown			12	359	-	-	371	375	385
Drogheda			84	878	-	-	962	1,094	1,094
Dundalk			91	401	-	-	492	567	418
Northern Irish Railways			-	1,047	-	-	1,047	1,040	-

BOARDINGS Service Type & Station	DART NORTH BOUND	DART SOUTH BOUND	Rosslare - City Centre - Dundalk	Dundalk / Drogheda - City Centre - Rosslare	Bray - City Centre - Maynooth - Sligo	Sligo - Maynooth - City Centre - Bray	Total 2013	Total 2012	Total 2011
Docklands					850	-	850	811	
Drumcondra					890	175	1,065	1,150	
Broombridge					121	128	249	229	
Ashtown					151	592	743	743	
Phoenix Park					51	181	232	197	
Castleknock					165	676	841	840	
Coolmine					214	1,340	1,554	1,550	
Clonsilla					267	894	1,161	1,262	
Hansfield					-	58	58	-	
Dunboyne					1	170	171	177	
M3 Parkway					-	206	206	226	
Leixlip Confey					133	364	497	511	
Leixlip Louisa Bridge					71	763	834	969	
Maynooth					214	2,018	2,232	2,202	
Kilcock					43	190	233	247	
Enfield					9	101	110	131	
Mullingar					56	314	370	451	
Edgeworthstown					15	107	122	167	
Longford					32	149	181	221	
Dromod					8	80	88	81	
Carrick on Shannon					25	70	95	114	
Boyle					11	43	54	76	
Ballymote					20	73	93	69	
Collooney					6	40	46	41	
Sligo					-	379	379	436	
	28,152	27,769	9,600	10,392	9,160	9,305	94,378	96,283	79,569

BOARDINGS Service Type & Station	Heuston North Bound	Heuston South Bound	Kerry & Cork Regional South bound	Cork & Kerry Regional North Bound	Limerick - Galway, Galway Athenry	Limerick - Junction Limerick - Ballybrophy	Limerick Jct - Wateford	Total 2013	Total 2012	Total 2011
Heuston	-	8,662	---	---	---	---	---	8,662	8,650	3,891
Parkwest & Cherry Orch	111	44	---	---	---	---	---	155	126	106
Clondalkin Fonthill	23	33	---	---	---	---	---	56	37	45
Adamstown	64	7	---	---	---	---	---	71	85	67
Hazelhatch & Cel	223	37	---	---	---	---	---	260	323	274
Sallins & Naas	753	61	---	---	---	---	---	814	916	833
Newbridge	948	110	---	---	---	---	---	1,058	989	1,004
Kildare	631	175	---	---	---	---	---	806	754	875
Athy	290	73	---	---	---	---	---	363	446	499
Carlow	483	174	---	---	---	---	---	657	565	396
Monasterevin	64	8	---	---	---	---	---	72	37	62
Portarlington	536	141	---	---	---	---	---	677	504	457
Portlaoise	612	109	---	---	---	---	---	721	488	408
Ballybrophy	102	26				18		146	84	
Templemore	50	12						62	67	
Thurles	315	168						483	504	
Limerick Junction	648	118				316	27	1,109	1,334	
Limerick	215	-			239	509		963	1,221	
Charleville	78	41						119	78	
Mallow	552	162	261	455				1,430	1,246	
Cork (Kent)	1,272	-	1,623	206				3,101	3,112	
Muine Bheag	106	23						129	108	
Kilkenny	287	75						362	328	
Thomastown	50	3						53	36	
Waterford	458	12					14	484	500	
Tullamore	387	65						452	371	
Clara	49	12						61	55	
Athlone	348	212						560	468	
Ballinasloe	49	103						152	109	
Woodlawn	-	34						34	10	
Attymon	-	10						10	1	
Athenry	-	66			93			159	363	
Galway	889	28			184			1,101	1,011	
Roscommon	57	23						80	63	
Castlerea	42	7						49	53	
Ballyhaunis	45	-						45	45	
Claremorris	63	3						66	54	
Castlebar	82	-						82	93	
Westport	85	-						85	90	
Manulla Junction	72	29						101	138	
Foxford	2	13						15	12	
Ballina	51	-						51	65	
Banteer	7	-	7	3				17	37	
Millstreet	6	-	20	14				40	43	
Rathmore	9	-	16	21				46	41	

BOARDINGS Service Type & Station	Heuston North Bound	Heuston South Bound	South bound Regional Kerry & Cork	Northbound Cork & Kerry Regional	Limerick - Galway, Galway Athenry	Limerick - Junction Limerick - Ballybrophy	Limerick Jct - Wateford	Total 2013	Total 2012
Killarney	48	2	170	16				236	240
Farrenfore	3	-	23	6				32	29
Tralee	37	-	193	-				230	281
Littleisland			48	257				305	250
Glouthaune			54	149				203	162
Carrigtwohill			11	90				101	83
Midleton			-	542				542	422
Fota			7	79				86	23
Carrigaloe			1	29				30	36
Rushbrooke			13	209				222	201
Cobh			-	544				544	504
Sixmilebridge					46			46	60
Ennis					236			236	276
Gort					13			13	18
Ardrahan					8			8	14
Craughwell					10			10	27
Oranmore		21			25			46	
Roscrea						19		19	15
Cloughjordan						15		15	5
Nenagh						14		14	18
Birdhill						10		10	8
Castleconnell						15		15	9
Carrick on Suir							6	6	15
Clonmel							29	29	29
Cahir							11	11	9
Tipperary							9	9	31
	11,202	10,902	2,447	2,620	854	916	96	29,037	30,437

Appendix B - Daily alightings at each station, by service type, from the Rail Census 2013

ALIGHTINGS

ALIGHTINGS Service Type & Station	DART NORTH BOUND	DART SOUTH BOUND	ROSSLARE - CITY CENTER - DUNDALK	Dundalk - CITY CENTER - ROSSLARE	BRAY - CITY CENTER - MAYNOOTH - SLIGO	SLIGO - MAYNOOTH - CITY CENTER - BRAY	Total 2013	Total 2012	Total 2011
Rosslare Europort			-	21			21	18	
Rosslare			-	25			25	30	
Wexford			11	20			31	64	
Enniscorthy			10	39			49	55	
Gorey			6	83			89	107	
Arklow			13	109			122	117	
Rathdrum			13	75			88	92	
Wicklow			11	149			160	145	
Kilcoole			1	25			26	34	
Greystones	-	1,409	21	121			1,551	1,571	
Bray	108	2,464	61	178	-	7	2,818	2,867	
Shankill	100	912					1,012	1,088	
Killiney	76	674					750	774	
Dalkey	396	1,198					1,594	1,586	
Glenageary	104	1,207					1,311	1,299	
Sandycove & Glas	231	726					957	999	
Dún Laoghaire	676	1,971	149	328	9	45	3,178	3,278	
Salthill & Monkstown	180	801					981	990	
Seapoint	155	396					551	550	
Blackrock	449	1,584	37	154	2	39	2,265	2,353	
Booterstown	514	630					1,144	1,131	
Sydney Parade	451	944		138		9	1,542	1,525	
Sandymount	308	528					836	972	
Lansdowne Road	1,329	1,480	91	327	-	101	3,328	2,906	
Grand Canal Dock	1,310	1,347	4	254	7	129	3,051	2,833	
Pearse	4,303	3,233	279	2,100	18	1,305	11,238	11,271	
Tara Street	3,399	2,056	194	1,114	31	679	7,473	7,971	
Connolly	2,743	2,657	313	3,848	79	3,671	13,311	14,128	
Clontarf Road	959	378					1,337	1,346	
Killester	1,220	166					1,386	1,363	
Harmonstown	708	115					823	916	
Raheny	1,270	223					1,493	1,489	
Kilbarrack	864	208					1,072	994	
Howth Junction	1,127	281	172	256			1,836	1,764	
Bayside	970	78					1,048	958	
Sutton	581	35					616	646	
Howth	1,255	-					1,255	1,178	
Clongriffin	462	36	55	14			567	640	-
Portmarnock	645	32	272	29			978	1,057	
Malahide	1,259	-	644	275			2,178	2,302	
Donabate			929	122			1,051	1,029	
Rush & Lusk			704	124			828	876	
Skerries			1,133	175			1,308	1,460	
Balbriggan			1,599	112			1,711	1,543	
Gormanston			98	1	-	-	99	85	
Laytown			330	15	-	-	345	367	
Drogheda			886	93	-	-	979	1,040	
Dundalk			464	68	-	-	532	515	
Northern Irish Railway			1,100	-	-	-	1,100	1,074	

ALIGHTINGS Service Type & Station	DART NORTH BOUND	DART SOUTH BOUND	ROSSLARE - CITY CENTER - DUNDALK	Dundalk - CITY CENTER - ROSSLARE	BRAY - CITY CENTER - MAYNOOTH - SLIGO	SLIGO - MAYNOOTH - CITY CENTER - BRAY	Total 2013	Total 2012	Total 2011
Docklands					-	966	966	1,048	
Drumcondra					237	898	1,135	1,176	
Broombridge					126	89	215	207	
Ashtown					545	120	665	660	
Phoenix Park					174	28	202	204	
Castleknock					669	148	817	793	
Coolmine					1,117	200	1,317	1,392	
Clonsilla					900	302	1,202	1,173	
Hansfield					80	2	82		
Dunboyne					137	1	138	185	
M3 Parkway					230	1	231	231	
Leixlip Confey					340	88	428	480	
Leixlip Louisa Bridge					818	52	870	932	
Maynooth					1,979	169	2,148	2,242	
Kilcock					192	40	232	225	
Enfield					136	12	148	145	
Mullingar					348	59	407	507	
Edgeworthstown					123	22	145	169	
Longford					183	29	212	194	
Dromod					74	12	86	94	
Carrick on Shannon					103	32	135	122	
Boyle					55	14	69	100	
Ballymote					83	25	108	90	
Collooney					73	11	84	58	
Sligo					292	-	292	467	
	28,152	27,769	9,600	10,392	9,160	9,305	94,378	96,290	-

Service Type & Station	Heuston North Bound	Heuston South Bound	Kerry/Cork Regional South Bound	Cork/Kerry Regional North Bound	Limerick - Galway, Galway Athenry	Limerick - Limerick Jct - Ballybrophy	Limerick Jct - Wateford	Total 2013	Total 2012	Total 2011
Heuston	8,919	-						8,919	8,515	
Parkwest & Cherry	58	56						114	140	
Clondalkin Fonthill	22	26						48	46	
Adamstown	15	83						98	107	
Hazelhatch & Cel	38	220						258	325	
Sallins & Naas	57	851						908	943	
Newbridge	105	894						999	973	
Kildare	185	548						733	616	
Athy	80	303						383	461	
Carlow	144	473						617	524	
Monasterevin	9	55						64	56	
Portarlington	150	437						587	528	
Portlaoise	109	474						583	418	
Ballybrophy	5	96				28		129	129	
Templemore	19	70						89	81	
Thurles	129	334						463	458	
Limerick Junction	150	578				506	29	1,263	1,571	
Limerick	-	202			286	361		849	1,192	
Charleville	24	161						185	79	
Mallow	302	502	340	207				1,351	1,404	
Cork (Kent)	-	1,266	293	1,763				3,322	3,239	
Muine Bheag	52	122						174	121	
Kilkenny	95	294						389	263	
Thomastown	4	51						55	36	
Waterford	-	394					20	414	437	
Tullamore	81	246						327	412	
Clara	19	56						75	41	
Athlone	257	318						575	427	
Ballinasloe	35	41						76	119	
Woodlawn	8	10						18	26	
Attymon	3	5						8	11	
Athenry	40	4			133			177	241	
Galway	-	940			153			1,093	884	
Roscommon	22	62						84	69	
Castlerea	6	51						57	61	
Ballyhaunis	4	41						45	52	
Claremorris	6	122						128	82	
Castlebar	1	115						116	128	
Westport	-	102						102	118	
Manulla Junction	1	45						46	90	
Foxford	8	13						21	18	
Ballina	-	72						72	80	
Banteer	-	1	12	16				29	26	
Millstreet	-	2	7	20				29	48	
Rathmore	-	9	11	16				36	34	

ALIGHTINGS Service Type &	Heuston North Bound	Heuston South Bound	Kerry/Cork Regional South Bound	Cork/Kerry Regional North Bound	Limerick - Galway, Galway Athenry	Limerick - Limerick Jct - Ballybrophy	Limerick Jct - Wateford	Total 2013	Total 2012	Total 2011
Killarney	-	40	25	211				276	266	
Farrenfore	-	6	2	17				25	25	
Tralee	-	58	-	234				292	216	
Littleisland			268	47				315	288	
Glouthaune			149	58				207	196	
Carrigtwohill			80	20				100	81	
Midleton			495	-				495	456	
Fota			75	6				81	30	
Carrigaloe			30	2				32	41	
Rushbrooke			143	3				146	204	
Cobh			517	-				517	492	
Sixmilebridge					28			28	41	
Ennis					199			199	229	
Gort					9			9	11	
Ardrahan					6			6	3	
Craughwell					10			10	15	
Oranmore	5				30			35	-	
Roscrea						7		7	1	
Cloughjordan						5		5	4	
Nenagh						5		5	2	
Birdhill						2		2	2	
Castleconnell						2		2	6	
Carrick on Suir							4	4	7	
Clonmel							25	25	46	
Cahir							11	11	10	
Tipperary							7	7	13	
	11,167	10,849	2,447	2,620	854	916	96	28,949	28,314	

Appendix C - Changes in journeys taken across each service from 2012 to 2013

Variances: 2013 v 2012		2013 (14 Nov)	2012 (15 Nov)	Variance (%) 2013 Vs 2012
DART	Northbound	28,152	28,425	-1.0%
(Greystones - City Centre - Howth / Malahide & v.v.)	Southbound	27,769	28,410	-2.3%
		----------	----------	
	Total	55,921	56,835	-1.6%
Connolly Commuter Services	Northbound	9,600	10,219	-6.1%
(Gorey - City Centre - Drogheda - Dundalk & v.v.)	Southbound	10,392	9,836	5.7%
		----------	----------	
	Total	19,992	20,055	-0.3%
Connolly Commuter Services	Westbound	9,160	9,697	-5.5%
(Gorey - City Centre - Maynooth - Longford & v.v.)	Eastbound	9,305	9,703	-4.1%
	Total	18,465	19,397	-4.8%
Heuston Commuter Services	Southbound	10,902	10,659	2.3%
(Heuston - Kildare - Carlow/Portlaoise/Athlone & v.v.)	Northbound	11,202	10,143	10.4%
		----------	----------	
	Total	22,104	20,802	6.3%
Regional Services				
(Limerick - Galway, Cork- Cobh - Midleton, Limerick - Ballybrophy, Limerick Junction - Waterford, Limerick -	**Total**	6,933	7,131	-2.8%
TOTAL ALL SERVICES		123,415	124,220	-0.6%

Appendix D - Train capacity by type

Train Capacity

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
4 x 2800	(4 car Commuter railcar)	640	- Seats + Standing Accommodation
4 x 29000	(4 car Commuter railcar)	640	- Seats + Standing Accommodation
6 x 2800	(6 car Commuter railcar)	960	- 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