



Report on trends in mode share of vehicles and people crossing the Canal Cordon

2006 to 2014

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March 2014

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1 Introduction

1.1 Background to data collection

Since 1980, Dublin City Council (DCC) has been conducting traffic counts at 33 locations around the cordon formed by the Royal and Grand Canals. The counts are conducted during the month of November each year. Since 1997 the counts have been conducted over the period between 07:00 and 10:00.

Between 1997 and 2009, the Dublin Transportation Office (DTO) collected data from a number of sources on people crossing the Canal Cordon into Dublin's City Centre in the morning peak between 07:00 and 10:00. The National Transport Authority (NTA) subsumed the DTO in 2009, and has continued to collate this data on an annual basis.

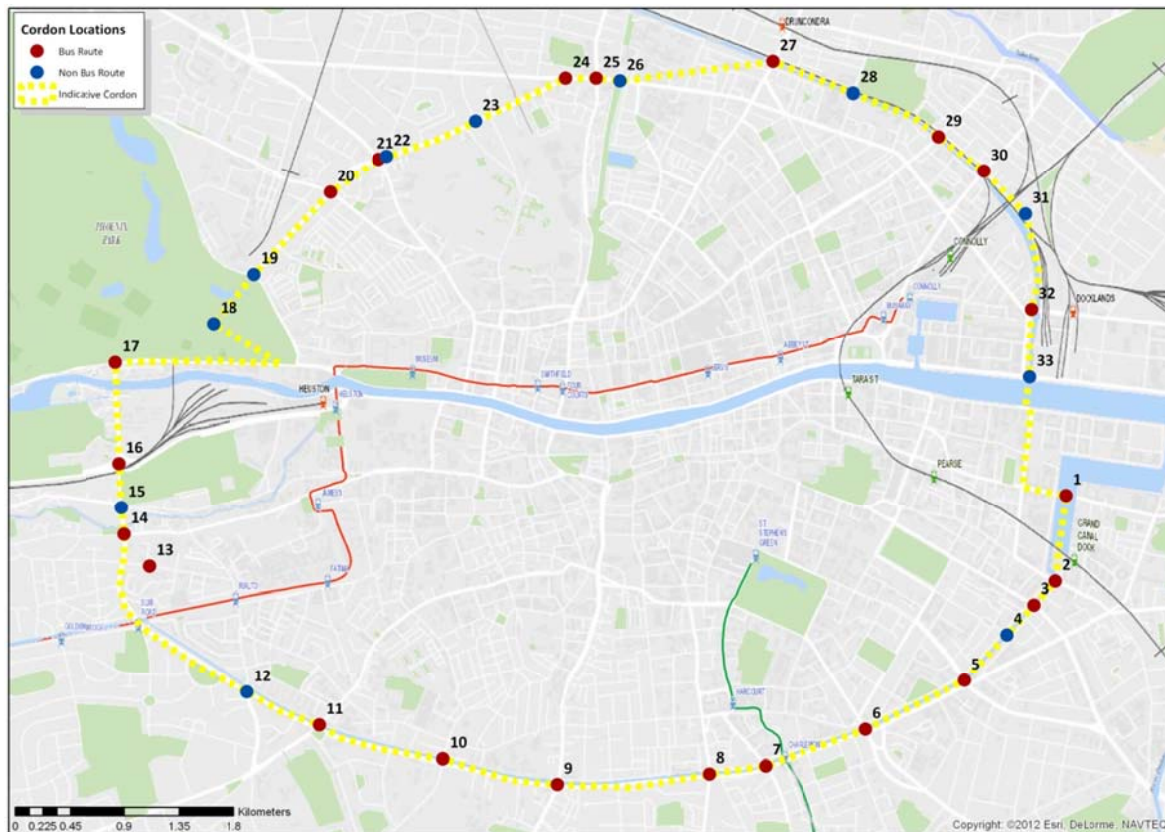
Combining the two sets of data enables the tracking of trends in the modes of travel that people are using to travel into the city centre. This in turn gives an indication of the effectiveness or otherwise of various transport measures and policies that have been introduced since 1997 in changing people's travel behaviour.

1.2 Definition of the Canal Cordon

Figure 1.1 below is a map of the Canal Cordon and the 33 locations on the Cordon where data is annually collected on the movement of people in the morning peak period between 7:00 and 10:00. As the name suggests, the cordon has been chosen to ensure (as far as possible) that any person entering the City Centre from outside must pass through one of the 33 locations where the surveys were undertaken. It should be noted that the data as presented in this report refers to movements of people in one direction only (i.e. inbound into the city centre) across the various cordon points.

All 33 cordon points are on routes for general traffic into the City Centre, while 22 of the cordon points (shown in red in Figure 1.1) are on bus routes into the City. People using DART and suburban rail services to enter the City Centre cross the cordon close to cordon points 2, 16 and 31 in Figure 1.1, while those travelling on the two LUAS lines cross the cordon at points 7 and 13.

Figure 1.1 Canal Cordon – including all 33 count locations



1.3 Data sources

Data as collected on the movement of people across the Canal Cordon has been assembled from a number of sources as follows:

- Dublin City Council has been undertaking surveys at the Canal Cordon in November annually since 1980. Surveys are undertaken over two days and an average over the two days is reported. This survey counts pedestrians, cyclists, cars, taxis, buses, goods vehicles and motorcycles crossing the cordon points in the inbound direction in the three hour period 07:00 to 10:00.
- To complement the Dublin City Council Canal Cordon annual surveys, Dublin Bus have undertaken their own surveys annually on a single day in November (not necessarily on the same day as the Dublin City Council cordon counts). Since 1997; this survey has counted the number of

passengers on all buses (including privately operated bus services) crossing inbound over the canal cordon points. However in 2014 passenger numbers on Dublin Bus services only were surveyed¹. This survey is undertaken at the 22 cordon points that are on bus routes into the city (shown in red in Figure 1.1).

- Since 2012, Iarnród Éireann have undertaken a census of passenger boardings and alightings on all services passing through all stations in the national rail network in a single day. The most up to date information available is for the census carried out on November 13th 2014. Since 1997, Iarnród Éireann have undertaken a similar passenger census for services operating in the Greater Dublin Area (GDA). Analysis of the census data for services operating within the GDA enables a calculation of the numbers of rail passengers crossing the three Canal Cordon points (in the inbound direction) between 07:00 and 10:00 on the census day.
- The Railway Procurement Agency undertake an annual census of boardings and alightings at all LUAS tram stops (Red and Green lines and extensions). This census is undertaken in a single day in November, and has been undertaken every year since both LUAS lines became operational in 2004. This data enables calculation of the numbers of LUAS passengers crossing the two Canal Cordon points inbound between 07am and 10am on the census day.

By combining these four data sources, the NTA and DCC have been able to compile a comprehensive picture of the modes of travel used by people travelling across the Canal Cordon into the city in a typical morning peak period. There may be gaps in the data compiled in certain years, and some changes in the survey methodology for the Dublin City Council cordon counts have been introduced in recent years.

The introduction of LUAS also had a significant impact on the data trends. For these reasons, the analysis of trends in Chapter 2 of this report is restricted to the years 2006 to 2014. For these nine years, there is access to a consistent and continuous set of data that enables a direct comparison of mode share trends.

¹ Non Dublin Bus passenger numbers can be estimated by applying the 2013 average occupancy of non-Dublin Bus services to the 2014 non Dublin Bus vehicle count which is captured in the DCC canal cordon count.

2 Data Analysis

2.1 Overview

Table 2.1 below presents the total numbers of vehicles, pedestrians and cyclists crossing the Canal Cordon inbound between 07:00 and 10:00, as surveyed in 2014 (in bold italics), and for each year between 2006 and 2014, by mode of travel.

Table 2.1 – Vehicle, cyclists and pedestrians crossing the Canal Cordon by mode of travel

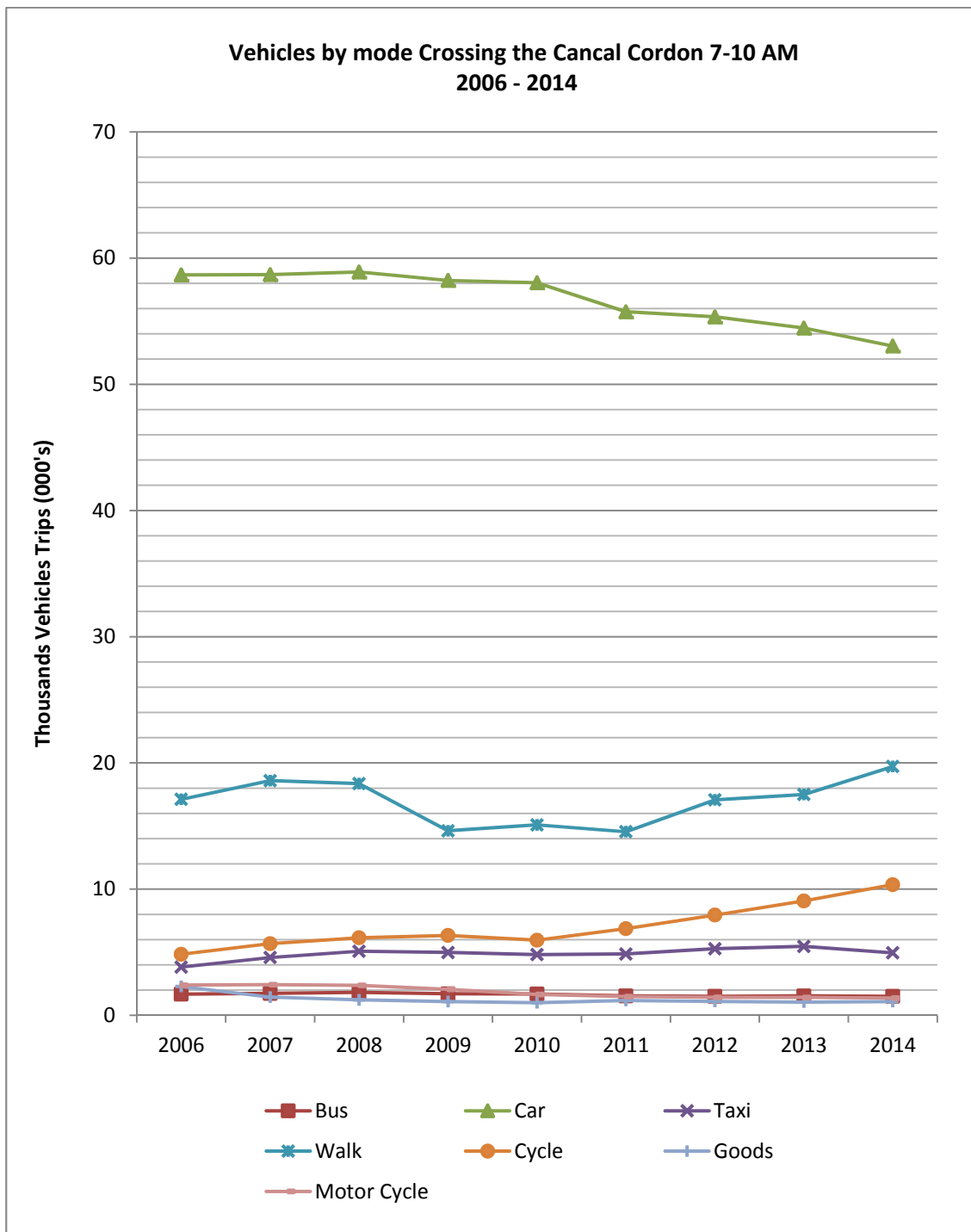
| Mode | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------|
| Bus | 1,680 | 1,740 | 1,814 | 1,704 | 1,688 | 1,539 | 1,503 | 1,539 | <i>1,504</i> |
| Car | 58,664 | 58,686 | 58,897 | 58,232 | 58,047 | 55,745 | 55,343 | 54,458 | <i>53,033</i> |
| Taxi | 3,825 | 4,583 | 5,079 | 4,980 | 4,809 | 4,862 | 5,277 | 5,458 | <i>4,955</i> |
| Walk | 17,114 | 18,594 | 18,360 | 14,618 | 15,092 | 14,551 | 17,070 | 17,495 | <i>19,711</i> |
| Cycle | 4,839 | 5,676 | 6,143 | 6,326 | 5,952 | 6,870 | 7,943 | 9,061 | <i>10,349</i> |
| Goods | 2,291 | 1,445 | 1,223 | 1,087 | 993 | 1,176 | 1,099 | 1,045 | <i>1,087</i> |
| Motor Cycle | 2,395 | 2,429 | 2,375 | 2,060 | 1,656 | 1,485 | 1,425 | 1,423 | <i>1,372</i> |

The data is displayed in graphical format in Figure 2.1.

Section 2.2 provides an analysis of this data by mode of travel, identifying the trends in the number of vehicles, pedestrians and cyclists crossing the canal cordon during the peak morning period from 07:00 to 10:00.

In the later section 2.3, this analysis is supplemented with additional public transport data to provide a full picture of the travel trends in person terms across the canal cordon.

Figure 2.1 – Vehicles, cyclists and pedestrians crossing the canal cordon by mode of travel 2006 to 2014

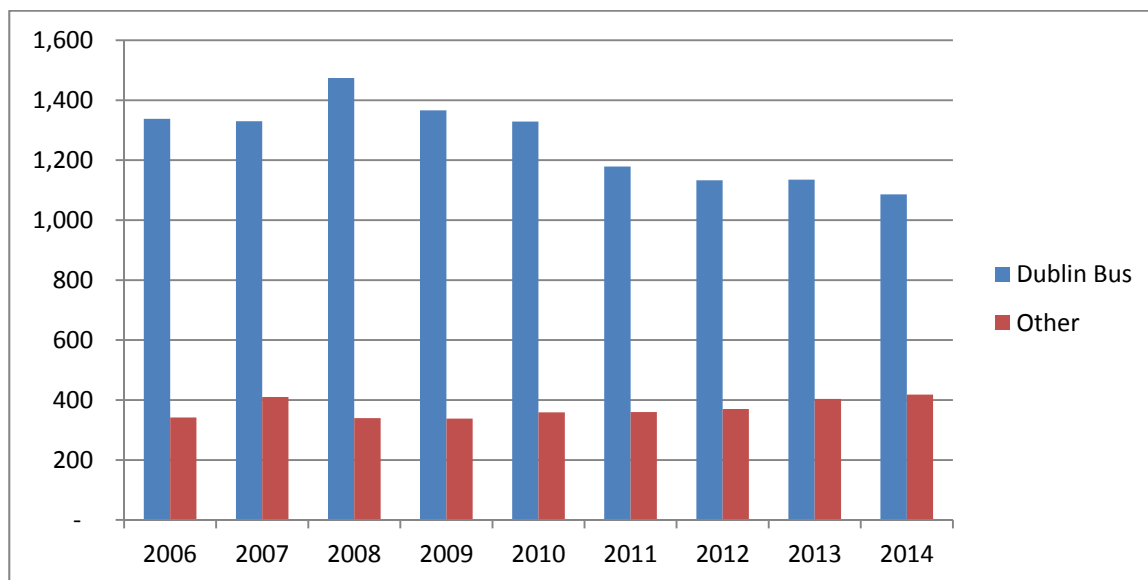


2.2 Numbers of vehicles, cyclists and pedestrians crossing the canal cordon by mode

Buses

Between 2013 and 2014, there has been a decrease in the number of buses crossing the cordon from 1,539 buses in 2013 to 1,504 in 2014, a decrease of 2.3%. Within this change, the number of Dublin Buses crossing the canal decreased by 4.3%, while the number of private buses increased by 3.5%.

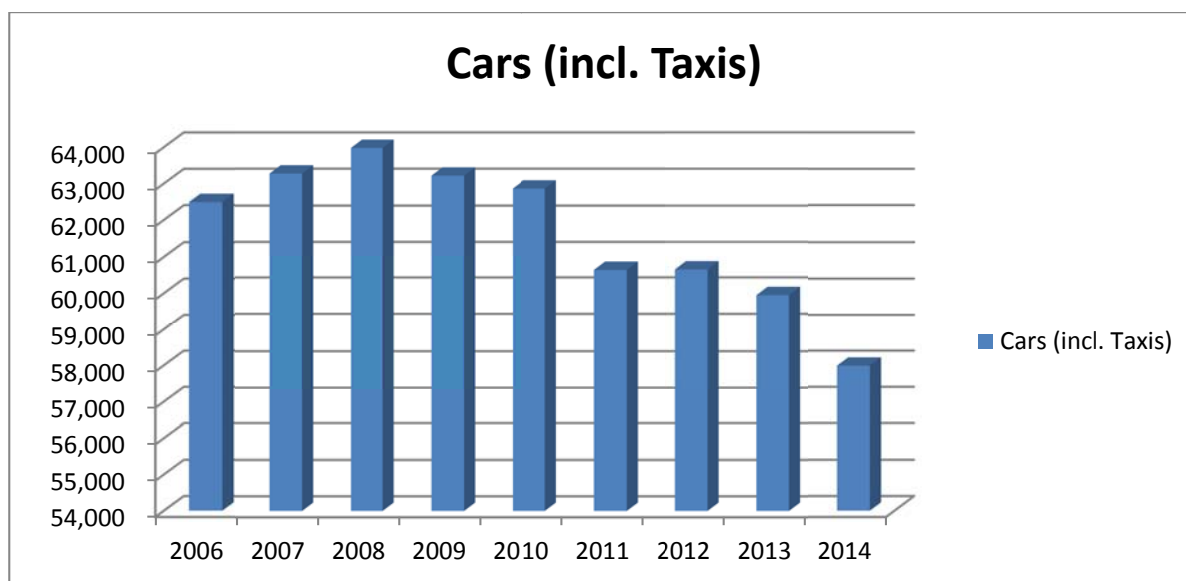
In the nine year period, 2006 to 2014, the total number of all buses crossing the cordon has decreased by 10%. Over this same interval, the number of Dublin Bus vehicles has decreased by 19% while the number of private buses has increased by 22%.



Cars and Taxis

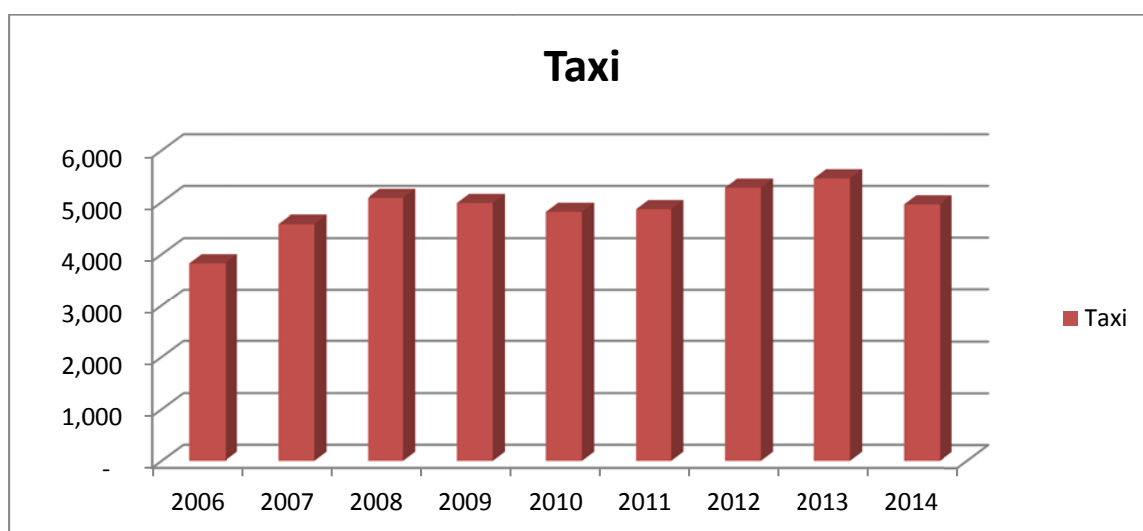
Between 2013 and 2014, there was a decrease in the number of cars and taxis crossing the cordon from 59,916 vehicles in 2013 to 57,988 in 2014, a decrease of 3.2%.

Over the nine year period between 2006 and 2014, the peak year for cars and taxis crossing the canal cordon was in 2008 registering 63,976 vehicles. The 2014 figure represents a decrease of 9.4% from this peak.



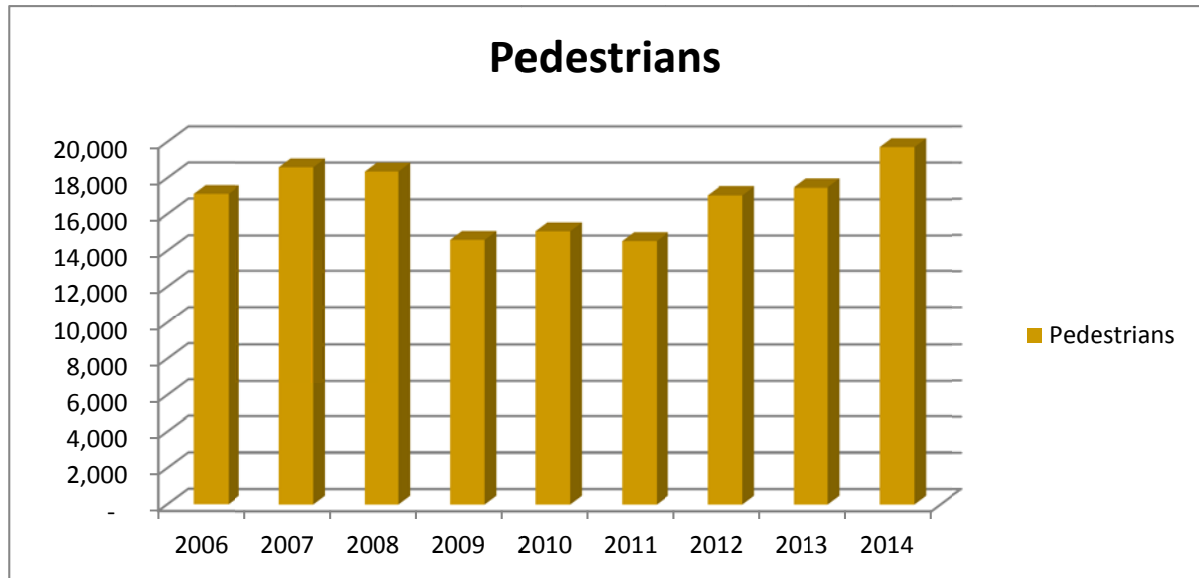
Taxis

Taxis made up 6.1% of all cars crossing the canal cordon in 2006. This increased to 8.5% in 2014. Between 2006 and 2014 the total number of taxis crossing the cordon increased by 30%. From 2013 to 2014 there was a decrease of 9.2%.



Pedestrians

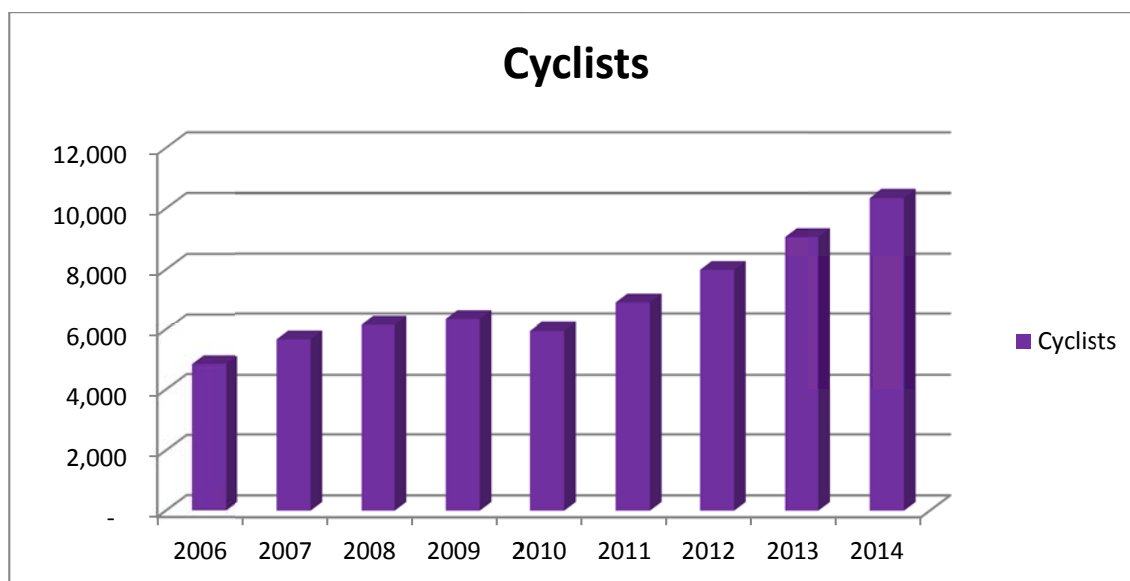
The number of pedestrians crossing the canal cordon increased from 17,495 people in 2013 to 19,711 people in 2014, an increase of 12.7%.



Cyclists

There was an increase of 14.2% in the number of cyclists crossing the canal cordon between 2013 and 2014, with 10,349 cyclists counted in 2014 compared to 9,061 cyclists in 2013.

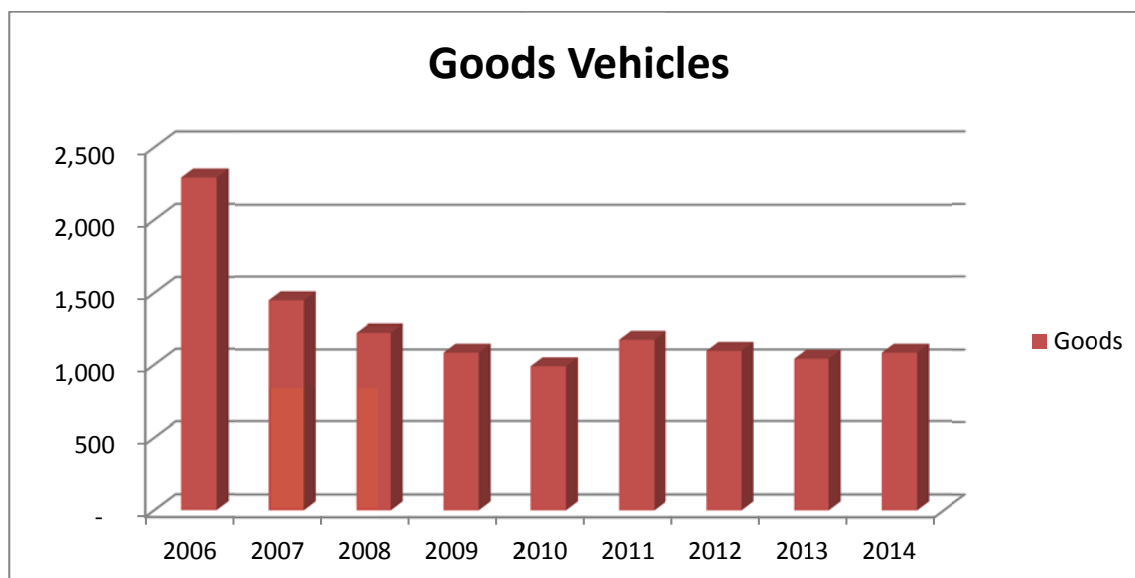
Between 2006 and 2014 the volume of cyclists crossing the canal cordon during the morning peak period has increased by 114%.



Goods Vehicles

The number of goods vehicles crossing the cordon in the peak morning period increased by 4% between 2013 and 2014, up from 1,045 vehicles in 2013 to 1,087 vehicles in 2014.

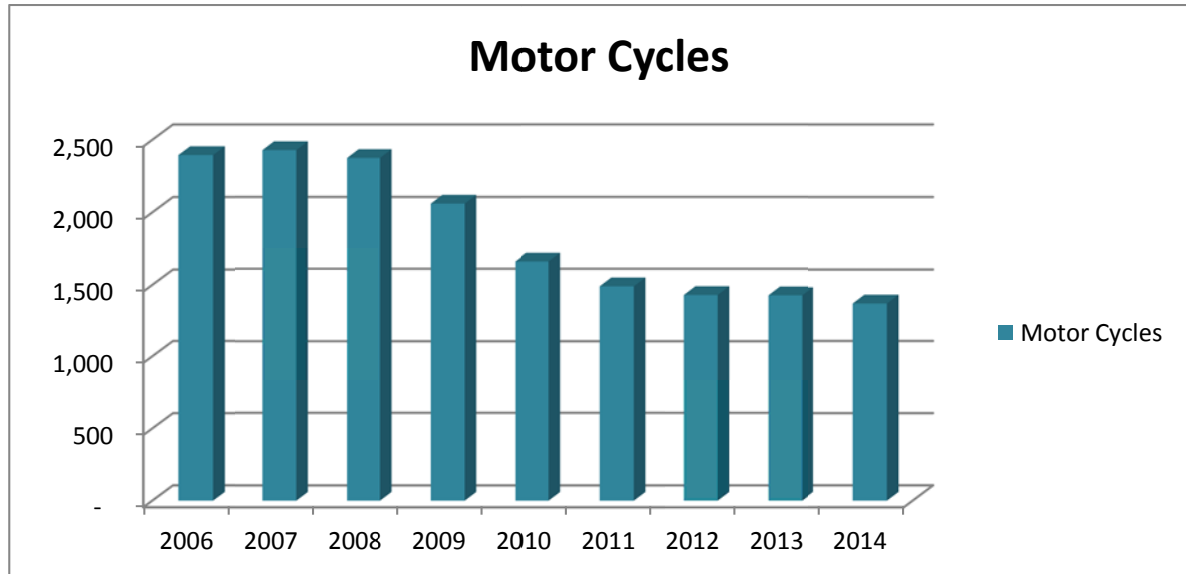
Over the longer period between 2006 and 2014, the number of goods vehicles crossing the canal cordon during the morning peak decreased by 52.5%.



Motor Cyclists

There was a decrease of 3.6% in the number of motor cyclists crossing the canal cordon between 2013 and 2014, with 1,423 motor cyclists recorded in 2013 and 1,372 counted in 2014.

From 2006 to 2014 the volume of motor cyclists crossing the canal cordon during the morning peak period decreased by 42.7%.



2.3 Numbers of people crossing the canal cordon by mode

Using the data obtained from the public transport surveys, Table 2.2 gives the total numbers of people crossing the Canal Cordon inbound between 07:00 and 10:00 for 2014 (in bold italics), and for each year between 2006 and 2014 broken down by mode of travel.

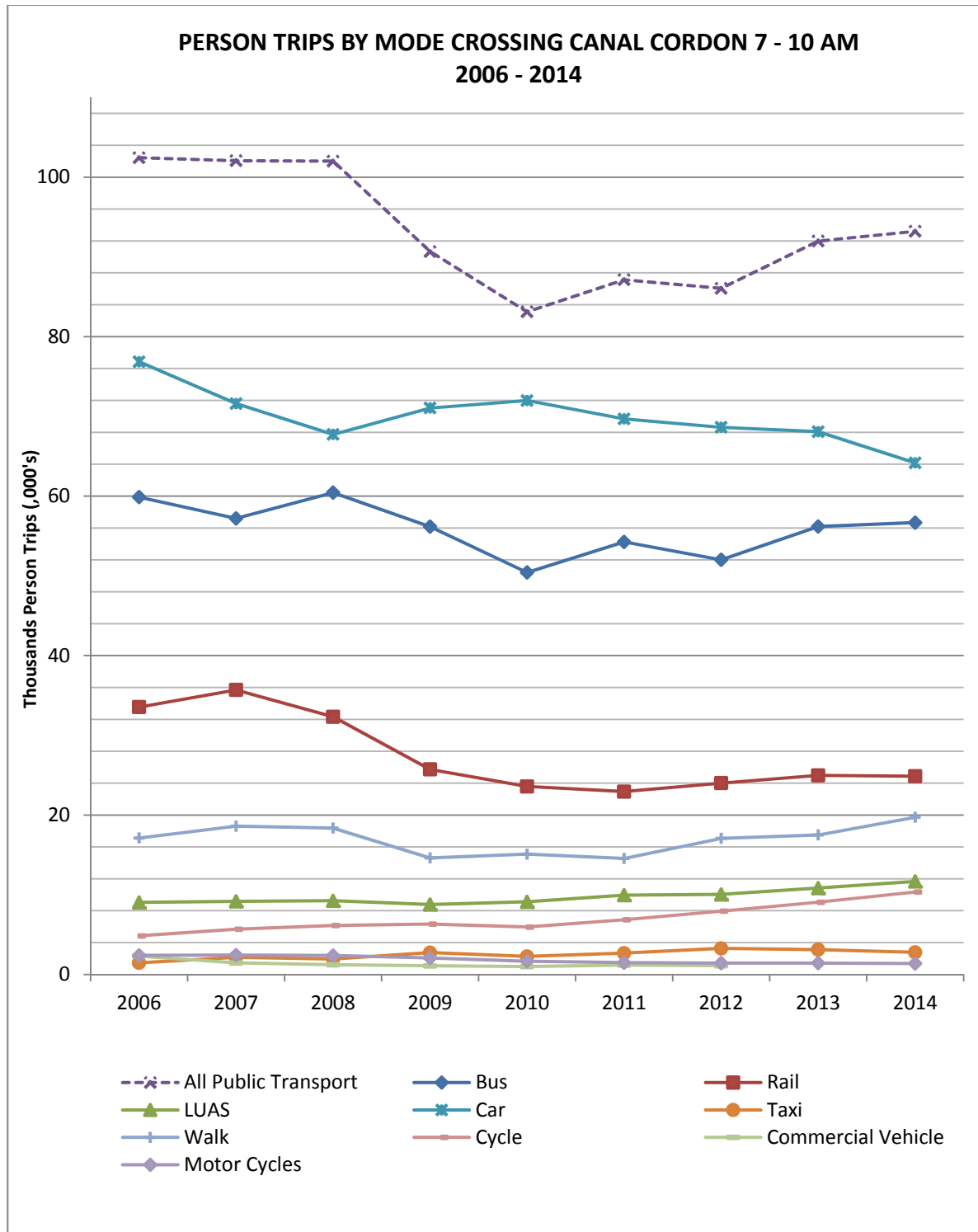
Table 2.2 *Numbers of People crossing the Canal Cordon by mode of travel*

| Mode | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------------|
| Bus | 59,874 | 57,201 | 60,438 | 56,168 | 50,420 | 54,251 | 52,007 | 56,177 | 56,671 ² |
| Rail | 33,534 | 35,692 | 32,324 | 25,723 | 23,580 | 22,932 | 23,999 | 24,969 | 24,866 |
| LUAS | 9,029 | 9,171 | 9,242 | 8,776 | 9,111 | 9,949 | 10,014 | 10,835 | 11,670 |
| All Public Transport | 102,437 | 102,064 | 102,004 | 90,667 | 83,111 | 87,132 | 86,047 | 91,981 | 93,207 |
| Car | 76,850 | 71,597 | 67,732 | 71,043 | 71,978 | 69,681 | 68,626 | 68,072 | 64,169 |
| Taxi | 1,453 | 2,154 | 1,930 | 2,739 | 2,260 | 2,674 | 3,271 | 3,111 | 2,775 |
| Walk | 17,114 | 18,594 | 18,360 | 14,618 | 15,092 | 14,551 | 17,070 | 17,495 | 19,711 |
| Cycle | 4,839 | 5,676 | 6,143 | 6,326 | 5,952 | 6,870 | 7,943 | 9,061 | 10,349 |
| Goods | 2,291 | 1,445 | 1,223 | 1,087 | 993 | 1,176 | 1,099 | 1,045 | 1,087 |
| Motorcycles | 2,395 | 2,429 | 2,375 | 2,060 | 1,656 | 1,485 | 1,425 | 1,423 | 1,372 |
| Total Person Trips | 207,379 | 203,959 | 199,767 | 188,540 | 181,042 | 183,569 | 185,481 | 192,188 | 192,670 |

The data is displayed in graphical format in Figure 2.2.

² The passenger numbers for non-Dublin Bus services crossing the cordon were not counted in 2014. Accordingly, Non Dublin Bus passenger numbers have been estimated by applying the 2013 average occupancy of non-Dublin Bus services to the 2014 vehicle count.

Figure 2.2 – Mode share of people crossing the canal cordon 2006 to 2014



2.4 Percentage mode share of people crossing the Canal Cordon

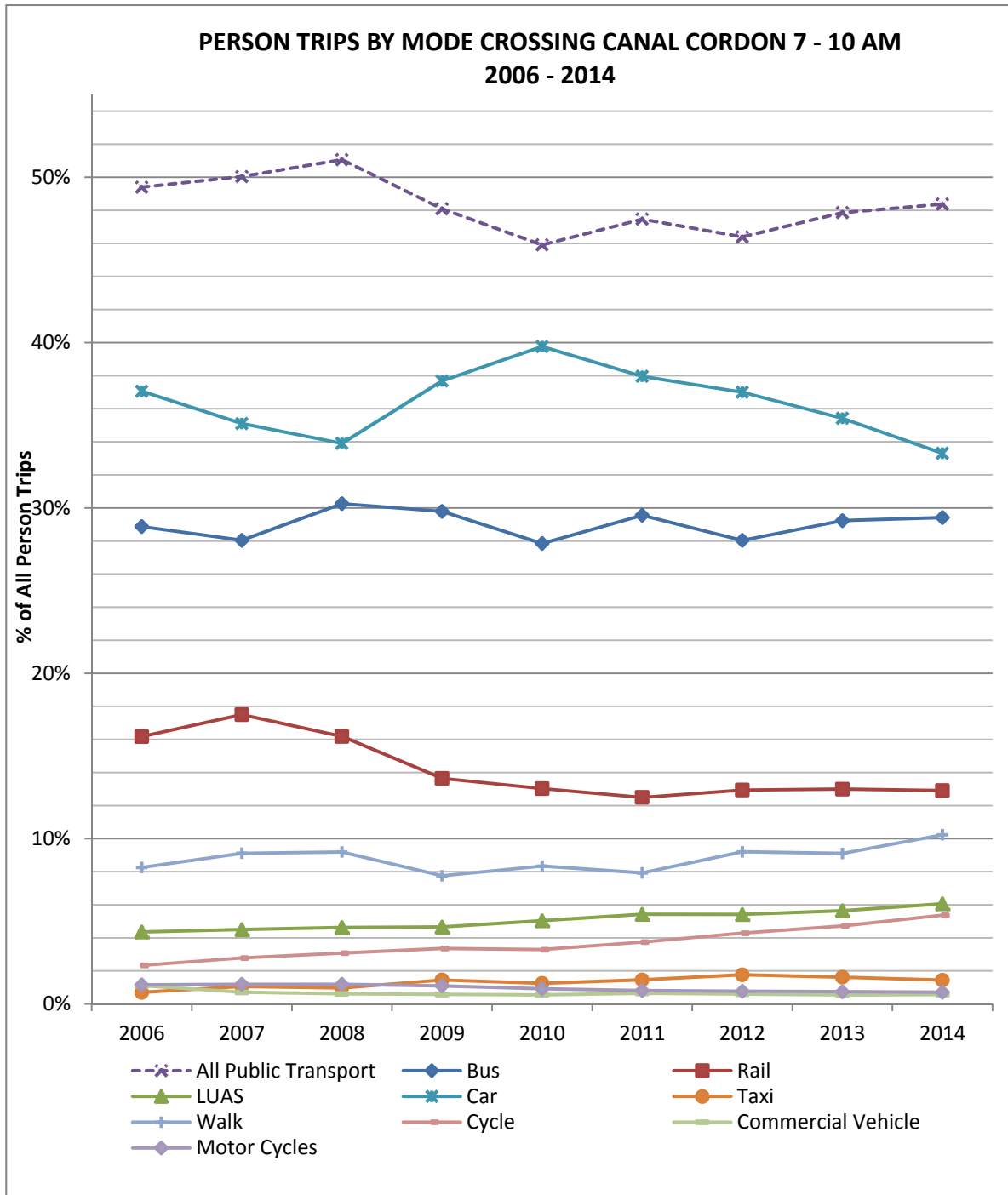
Table 2.3 gives the percentage mode share for all modes of travel used by people crossing the Canal Cordon inbound between 07:00 and 10:00 for the years 2006 to 2014.

Table 2.3 – Mode share of people crossing the canal cordon 2006 to 2014 –

| Mode | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Bus | 28.9% | 28.0% | 30.3% | 29.8% | 27.8% | 29.6% | 28.0% | 29.23% | 29.41% |
| Rail | 16.2% | 17.5% | 16.2% | 13.6% | 13.0% | 12.5% | 12.9% | 12.99% | 12.91% |
| LUAS | 4.4% | 4.5% | 4.6% | 4.7% | 5.0% | 5.4% | 5.4% | 5.6% | 6.1% |
| All PT | 49.40% | 50.04% | 51.06% | 48.09% | 45.91% | 47.47% | 46.39% | 47.86% | 48.38% |
| Car | 37.1% | 35.1% | 33.9% | 37.7% | 39.8% | 38.0% | 37.0% | 35.4% | 33.3% |
| Taxi | 0.7% | 1.1% | 1.0% | 1.5% | 1.2% | 1.5% | 1.8% | 1.6% | 1.4% |
| Walk | 8.3% | 9.1% | 9.2% | 7.8% | 8.3% | 7.9% | 9.2% | 9.1% | 10.2% |
| Cycle | 2.3% | 2.8% | 3.1% | 3.4% | 3.3% | 3.7% | 4.3% | 4.7% | 5.4% |
| Goods | 1.1% | 0.7% | 0.6% | 0.6% | 0.5% | 0.6% | 0.6% | 0.5% | 0.6% |
| Motorcycles | 1.2% | 1.2% | 1.2% | 1.1% | 0.9% | 0.8% | 0.8% | 0.7% | 0.7% |

The trend is graphed in Figure 2.3 below.

Figure 2.3 – Mode share of people crossing the canal cordon 2006 to 2014



3 Commentary on Canal Cordon Trends

From an analysis of the data presented in chapter 2 above, the following trends are apparent:

3.1 Overall Trends

As shown in Table 2.3 and Figure 2.3, the total number of people crossing the Canal Cordon in the morning peak period (7:00 to 10:00) increased by 0.25% between 2013 and 2014, from 192,188 person trips in 2013 to 192,670 person trips in 2014.

Over the longer period from 2006 to 2014, total person trips have decreased by 7.1% (15,000 persons) overall, down from a peak of 207,379 in 2006.

3.2 Public Transport Usage

Between 2013 and 2014, there was an increase of 1.3% in the number of public transport users crossing the cordon between 7:00 and 10:00, up from 91,981 users in 2013 to 93,207 users in 2014.

Both bus and Luas showed increases from 2013 numbers, with Luas showing an increase of almost 8%. Rail showed a slight decrease of 0.4%.

While continuing the trend of the last three years of increasing public transport passenger numbers, the number of passengers is still 9% below the equivalent 2006 numbers although overall public transport mode share is down 1% in the same period.

3.3 Mode Trends

A summary of the key changes in travel across the Canal Cordon set out in section 2 is described below:

- In percentage terms, the mode share for bus travel across the canal cordon in 2014 is 29.41%; slightly up from 2013 (29.23%) but down 0.84% from the peak 30.25% mode share for bus in 2008.
- Comparatively, the mode share for rail across the canal cordon in 2014 is down over 4.6% (to 12.91%) from a peak of 17.5% mode share in 2007.
- Cycling has continued its steady trend of increasing usage, and now represents a mode share of 5.4%. The number of cycle trips crossing the Cordon in the morning peak exceeded 10,000 for the first time and is more than double that of 2006.

- Car usage (excluding taxis) declined by 0.81% in 2014 and continues its annual decline since 2010. Car usage is down over 16% since 2006.
- Inter-City Rail, Suburban rail and DART has lost a significant share of travel into Dublin city centre, with a drop of 3.3% in mode share between 2006 and 2014. Although, the recent trend had changed, with a 0.5% increase in Rail mode share between 2011 and 2013. The 2014 rail mode share has fallen to 12.91% and is now some 30% lower than 2007 levels of rail usage.
- Bus patronage remained relatively flat from 2013 to 2014, giving a mode share of 29.41% in 2014. Bus continues to carry over 56,000 passengers into the city in 2014, representing 61% of all public transport trips in the morning peak.
- The number of cyclists entering Dublin City has more than doubled over the period 2006 to 2014. In the last year this increased again with cycle mode share at 5.4% up from 4.7% last year.
- Walking has continued its upward trend in 2014 with the walk mode share passing 10% with just under 20,000 walk trips crossing the Cordon in 2014 (the highest level of walking since the post 1997 Cordon Count commenced). There are now over 30,000 walking and cycling (active) trips crossing the Cordon in the morning peak.
- The number of motorcyclists entering the City across the Canal Cordon has reduced significantly (by over 40%) in the last eight years.
- The number of people accessing the City by car has decreased by almost 17% between 2006 and 2014. The decreasing trend in car mode share crossing the Canal Cordon since 2010; continued in 2014 and is now at 33%, down from almost 40% in 2010. This can in part be explained by a significant drop in average car occupancy between 2013 and 2014 from 1.25 to 1.21.
- The number of people travelling in taxis across the Canal Cordon had more than doubled between 2006 and 2013. The number declined by some 336 persons in 2014 but the taxi mode share (though small in overall terms) has more than doubled in the last 8 years.