



Comhairle Cathrach Bhaile Átha Cliath Dublin City Council

# **Canal Cordon Report 2021**

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

2006 to 2021

# 

August 2022

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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 AM peak 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 AM peak period 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 for the period 2006-2021.

# 1.2 Definition of the Canal Cordon

Map 1 illustrates the Canal Cordon and the 33 locations on the Cordon where data is annually collected on the movement of people in the AM 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 Map 1) are on bus routes into the City the remaining 11 are non-bus routes (shown in blue in Map 1). People using DART and suburban rail services to enter the City Centre cross the cordon close to cordon points 2, 16 and 31 on Map 1, while those travelling on the two LUAS lines cross the cordon at points 7 and 13.



Map 1 Canal Cordon Showing all 33 count locations

## 1.3 Data Sources

# Data on the movement of people across the Canal Cordon has been assembled from a number of sources as outlined below:

- Dublin City Council has undertaken surveys at the Canal Cordon in November annually since 1980. Surveys
  are undertaken over two days at each location and an average across the two days is reported. The survey
  counts pedestrians, cyclists, cars, taxis, buses, goods vehicles and motorbikes crossing the cordon points in
  the inbound direction in the three hour, AM peak period 07:00-10:00.
- To complement the Dublin City Council Canal Cordon annual surveys, Dublin Bus have undertaken their own surveys annually on a single day at each location in November. This is not necessarily the same day as the DCC cordon counts. Since 1997 this survey has counted the number of passengers on all buses (including privately operated bus services)<sup>1</sup> crossing inbound over the canal cordon points. This survey is undertaken at the 22 cordon points that are on bus routes into the City (shown in red in Map 1).
- Since 2012, larnród Éireann has undertaken a census of passengers boarding and alighting on all services passing through all stations in the national rail network on a single day. In 2019 the national rail census was carried out on 21st November. Prior to 2012 and since 1997, larnród Éireann had undertaken a similar passenger census for services operating within the Greater Dublin Area (GDA)<sup>2</sup>. Analysis of this data enables a calculation of the numbers of rail passengers crossing the three Canal Cordon points (inbound) between 07:00 and 10:00 on the census day.
- Transport Infrastructure Ireland (TII)<sup>3</sup> undertakes an annual census of passengers boarding and alighting at all LUAS tram stops. This census is undertaken on a single day in November. It has been undertaken every year since both LUAS lines became operational in 2004. This data enables calculation of the number of LUAS passengers crossing the two Canal Cordon points (inbound) between 07:00 and 10:00 on 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 AM peak period. There may be gaps in the data compiled in certain years, and some changes in the survey methodology for the DCC 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 after 2006.

Traffic flows during 2020 and 2021 have been impacted by the COVID-19 pandemic which resulted in large scale reductions in traffic due to movement restrictions which resulted in a high number of people working from home.

Due to this reason comparisons will be made between 2019 (normal conditions) and 2021 (C-19 recovery) in the following sections of this report, in addition the 2020 figures (where available) will be presented to provide a full set of trend data.

3 Previously Railway Procurement Agency (RPA)

<sup>1</sup> Surveyors board all Dublin Bus services at the cordon point and conduct a count of passengers. For non-Dublin Bus services (such as Bus Éireann and privately operated services) experienced surveyors estimate the volume of passengers on board as the bus crosses the cordon point.

<sup>2</sup> When the Census was GDA only, passengers who began their trip outside of the GDA would still be counted once they completed their trip within the GDA. For example a passenger travelling from Cork to Dublin would be counted crossing the Cordon at point 16 i.e. departing Parkwest and Cherry Orchard station.

# 2. Traffic Surveys – Vehicles, Cyclist, Pedestrians

## 2.1 Overview

This Chapter of the report records the data collected from the traffic counts only, which records the numbers of vehicles of different types and the numbers of cyclists and pedestrians. It does not include the public transport surveys which supplements the traffic counts with the additional passenger numbers on the various modes of public transport. That information is included in Chapter 3 of this report.

Table 1 below presents the total numbers of vehicles, pedestrians and cyclists crossing the Canal Cordon inbound between 07:00am and 10:00am from 2006 to 2021. Figure 1 illustrates this data in graphical format.

Mode	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bus	1,680	1,740	1,814	1,704	1,688	1,539	1,503	1,539	1,504	1,528	1,652	1,637	1,837	1,852	1,683	1,663
Car	58,664	58,686	58,897	58,232	58,047	55,745	55,343	54,458	53,033	53,064	51,908	50,158	48,820	46,388	35,041	39,088
Taxi	3,825	4,583	5,079	4,980	4,809	4,862	5,277	5,458	4,955	4,699	4,779	4,098	4,399	4,292	2,264	3,055
Walk	17,114	18,594	18,360	14,618	15,092	14,551	17,070	17,495	19,711	18,727	21,473	24,936	23,858	24,691	9,235	13,103
Cycle	4,839	5,676	6,143	6,326	5,952	6,870	7,943	9,061	10,349	10,893	12,089	12,447	12,227	13,131	4,756	7,597
Goods	2,291	1,445	1,223	1,087	993	1,176	1,099	1,045	1,087	1,096	1,093	1,024	1,153	983	1,054	980
M.Bike	2,395	2,429	2,375	2,060	1,656	1,485	1,425	1,423	1,372	1,390	1,464	1,532	1,477	1,485	581	782

Table 1 – Vehicles, cyclists and pedestrians crossing the Canal Cordon by mode of travel 2006-2021



Vehicles by mode crossing the Canal Cordon 0700 - 1000 2006 - 2021

The next sections provide 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 AM peak period from 07:00-10:00. In Chapter 3, this analysis is supplemented with additional public transport patronage data to provide a full picture of the travel trends in person terms across the canal cordon.

Figure 1 - Vehicles, cyclists and pedestrians crossing the Canal Cordon by mode of travel 2006-2021

# 2.2 Numbers of Vehicles, Cyclists and Pedestrians Crossing the Canal Cordon by Mode

#### 2.2.1 Buses

Between 2019 and 2021, there has been an overall decrease in the number of buses crossing the cordon from 1,852 to 1,663. However within this total, Dublin Bus vehicle numbers increased by 12% whereas buses operated by Bus Éireann and private operators have displayed a significant decreasing trend of 52%.

In the period 2006-2021 the total number of buses crossing the cordon has decreased by 1%.



Number of Buses Crossing Cordon in AM Peak Period, 2006-2021

#### 2.2.2 Cars

Continuing the trend of recent years, there was a decrease in the number of cars crossing the cordon from 46,388 to 39,088 between 2019 and 2021. This represents a decrease of 16%.

In the period 2006-2021 the peak year for cars crossing the canal cordon was in 2008 with almost 59,000 vehicles. The 2021 figure represents a decrease of 34%, or 19,809 cars, since this peak.



#### Number of Cars Crossing Cordon in AM Peak Period, 2006-2021

#### 2.2.3 Taxis

Taxis made up 6.12% of all cars crossing the canal cordon in 2006. This proportion increased to 8.47% in 2019. Although the proportional percentage increased between 2006 and 2019, 2021 saw a substantial drop in the number of taxis crossing the cordon in the AM peak period from 2019, down by 29% or 1,237 vehicles.



#### Number of Taxis Crossing Cordon in AM Peak Period, 2006-2021

#### 2.2.4 Pedestrians

The number of pedestrians crossing the canal cordon has decreased from 24,691 in 2019 to 13,103 in 2021, a decrease of over 47% or 11,588 people. In the period 2006 to 2021, there has been a 23% decrease in the number of pedestrians crossing the cordon during the AM peak period.



#### Number of Pedestrians Crossing Cordon in AM Peak Period, 2006-2021

#### 2.2.5 Cyclists

There has been a decrease in cyclists crossing the canal between 2019 and 2021 with numbers decreasing by 42%. There had been a steady year on year growth in the number of cyclists crossing the cordon since 2010 with the exception of a slight dip in 2018 until 2019. In 2021, a downward shift was observed with 7,597 cyclists crossing the cordon in the AM peak period. Even with these lower numbers in 2021, this still represents a significant growth of 57% when compared with 2006.



#### Number of Cyclists Crossing Cordon in AM Peak Period, 2006-2021

#### 2.2.6 Goods Vehicles

With the exception of 2018, the number of goods vehicles crossing the Canal Cordon in the AM Peak had remained relatively static over recent years. In 2021 there was a very slight decrease of <1% between 2019 and 2021. The goods vehicle count in 2019 are similar to figures of just below 1,000 last seen in 2010. Overall, the volume of goods vehicles crossing the cordon has remained broadly unchanged since 2009. Over the longer period from 2006 to 2021 however, the number of goods vehicles crossing the cordon has decreased by almost half at 57%. The majority of that decrease occurred in the period 2006-2007, and coincided with the opening of the Dublin Port Tunnel in 2006 and the implementation of the HGV Management Strategy in 2007.



#### Number of Good Vehicles Crossing Cordon in AM Peak Period, 2006-2021

#### 2.2.7 Motor Bikes

There has been a significant decrease of 47% in the number of motor bikes crossing the canal cordon between 2019 and 2021. In the period 2006-2021 the volume of motor cyclists crossing the cordon in the AM peak has fallen by roughly 67% which equates to 1,613 vehicles. The declining trend seemed to have stabilised since 2011 until the occurrence of COVID-19.



#### Number of Motor Bikes Crossing Cordon in AM Peak Period, 2006-2021

# 3. Traffic and Transport Surveys - Overall Movements

### **3.1 Overview**

While Chapter 2 reports the number of vehicles, cyclists and pedestrians crossing the canal cordon, this chapter supplements that information with the data obtained from the public transport surveys, to give the overall number of people travelling across the cordon.

Using that supplementary data, Table 2 gives the total numbers of people crossing the canal cordon inbound in the AM peak period between 07:00-10:00 for 2021 and for each year since 2006, broken down by mode of travel. The data is displayed in graphical format in Figure 2.

Means of Travel	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bus	59,874	57,201	60,438	56,168	50,420	54,251	52,007	56,177	56,671	57,584	56,572	60,798	64,206	65,048	No Data	38,885
Rail	33,534	35,692	32,324	25,723	23,580	22,932	23,999	24,866	24,866	29,521	31,309	34,409	34,471	37,407	No Data	13,330
LUAS	9,029	9,171	9,242	8,776	9,111	9,949	10,014	10,835	11,670	12,503	12,254	11,953	13,835	13,832	No Data	5,740
All Public Transport	102,437	102,064	102,004	90,667	83,111	87,132	86,047	91,981	93,207	99,608	100,135	107,160	112,512	116,287	No Data	57,995
Car	76,850	71,597	67,732	71,043	71,978	69,681	68,626	68,072	64,169	65,269	64,885	61,694	60,537	57,985	43,100	47,687
Taxi	1,453	2,154	1,930	2,739	2,260	2,674	3,271	3,111	2,775	2,960	2,724	2,623	2,156	2,661	3,192	4,796
Walk	17,114	18,594	18,360	14,618	15,092	14,551	17,070	17,495	19,711	18,727	21,473	24,936	23,858	24,691	9,235	13,103
Cycle	4,839	5,676	6,143	6,326	5,952	6,870	7,943	9,061	10,349	10,893	12,089	12,447	12,227	13,131	4,756	7,597
Goods	2,291	1,445	1,223	1,087	993	1,176	1,099	1,045	1,087	1,096	1,093	1,024	1,153	983	1,045	980
MCycles	2,395	2,429	2,375	2,060	1,656	1,485	1,425	1,423	1,372	1,390	1,464	1,532	1,477	1,485	581	782
Total Person Trips	207,379	203,959	199,767	188,540	181,042	183,569	185,481	192,188	192,670	199,943	203,863	211,416	213,920	217,223	61,910	132,900

\*Rail & LUAS data not available for 2020

Table 2 - Numbers of people crossing the Canal Cordon by mode of travel 2006-2021



Figure 2 - Numbers of people crossing the Canal Cordon by mode of travel 2006-2021

### 3.2 Percentage Mode Share of People Crossing the Canal Cordon

Table 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 2021. The trend is graphed in Figure 3.

Means of Travel	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Bus	28.9%	28.1%	30.3%	29.8%	27.9%	29.6%	28.0%	29.2%	29.4%	28.8%	27.8%	28.8%	30.0%	29.9%	No Data	29.3%
Rail	16.2%	17.5%	16.2%	13.6%	13.0%	12.5%	12.9%	13.0%	12.9%	14.8%	15.4%	16.3%	16.1%	17.2%	No Data	10.0%
LUAS	4.4%	4.5%	4.6%	4.7%	5.0%	5.4%	5.4%	5.6%	6.1%	6.3%	6.0%	5.7%	6.5%	6.4%	No Data	4.3%
All Public Transport	49.4%	50.0%	51.1%	48.1%	45.9%	47.5%	46.4%	47.9%	48.4%	49.8%	49.1%	50.7%	52.6%	53.5%	No Data	43.6%
Car	37.1%	35.1%	33.9%	37.7%	39.8%	38.0%	37.0%	35.4%	33.3%	32.6%	31.8%	29.2%	28.3%	26.7%	69.6%	35.9%
Taxi	0.7%	1.1%	1.0%	1.5%	1.3%	1.5%	1.8%	1.6%	1.4%	1.5%	1.3%	1.2%	1.0%	1.2%	5.2%	3.6%
Walk	8.3%	9.1%	9.2%	7.8%	8.3%	7.9%	9.2%	9.1%	10.2%	9.4%	10.5%	11.8%	11.2%	11.4%	14.9%	9.9%
Cycle	2.3%	2.8%	3.1%	3.4%	3.3%	3.7%	4.3%	4.7%	5.4%	5.4%	5.9%	5.9%	5.7%	6.0%	7.7%	5.7%
Goods	1.1%	0.7%	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%	0.6%	0.5%	0.5%	0.5%	0.5%	0.5%	1.7%	0.7%
MCycles	1.2%	1.2%	1.2%	1.1%	0.9%	0.8%	0.8%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.9%	0.6%
Total Person Trips	207,379	203,959	9199,767	188,540	181,042	183,569	185,481	192,188	192,670	199,943	203,863	3 211,416	213,920	217,223	61,910	132,900

\*Rail & LUAS data not available for 2020

Table 3 - Mode share of people crossing the Canal Cordon by mode of travel 2006-2021



Figure 3 - Mode share of people crossing the Canal Cordon by mode of travel 2006-2021

## 3.3 Trips Crossing the Canal Cordon by Sustainable Modes

The tables below show the number and mode share of trips crossing the canal cordon in the AM peak period by sustainable modes during the period 2006 to 2021. Sustainable modes consist of public transport, active modes (walking & cycling) and taxi.

Means of Travel	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	ľ
Sustainable Modes	125,843	128,488	128,437	114,350	106,415	111,227	114,304	121,648	126,042	132,188	136,421	147,166	150,753	156,770	No Data	83,451	
Car, Goods and Other Modes	81,536	75,471	71,330	74,190	74,627	72,342	71,150	70,540	66,628	67,755	67,422	64,250	63,167	60,453	44,726	49,449	
	207,379	203,959	199,767	188,540	181,042	183,569	185,454	192,188	192,670	199,943	203,863	211,416	213,920	217,223	44,726	132,900	

Table 4 - Numbers of people crossing the Canal Cordon by sustainable modes of travel 2006-2021

Means of Travel	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Sustainable Modes	61%	63%	64%	61%	59%	61%	62%	63%	65%	66%	67%	70%	70%	72%	No Data	63%	
Car, Goods and Other Modes	39%	37%	36%	39%	41%	39%	38%	37%	35%	34%	33%	30%	30%	28%	No Data	37%	

Table 5 - Mode share of people crossing the Canal Cordon by sustainable modes 2006-2021

During the 2021 AM peak period (7am to 10am), 63% of all inbound trips crossing the canal cordon were made by a sustainable mode (walking, cycling, public transport or taxi). The sustainable mode share had grown year on year since 2010 up to 2019. In the last 2 years the share for sustainable modes has declined by 9 percentage points.

In 2021 83,451 trips crossed the cordon by sustainable modes in the three hour AM peak period. This is the lowest level of mode share and person trips by sustainable modes since the cordon count began. This represents 42,392 less person trips by sustainable mode than were made in 2006.



The graphs below show the trend in trips by sustainable modes for the 15 year period 2006 - 2021.



Figure 5 - Numbers of people crossing the Canal Cordon by sustainable modes of travel 2006-2021



Figure 6 - Mode share of people crossing the Canal Cordon by sustainable modes 2006-2021





## 4.1 Overall Trends

As shown in Table 3 and Figure 3, the total number of people crossing the canal cordon in the AM peak period (07:00-10:00) decreased substantially by 39.4% between 2019 and 2021. This is a decrease of 84,323 person trips, bringing the total number of people crossing the canal (inbound) in the AM peak period to 132,900. Although there had been a continual annual increase in the number of people crossing the canal in the AM peak from 2010 to 2019, this figure is 35.9% lower in 2021 than it was in 2006 and this is likely due to COVID 19 restrictions during November when these surveys were conducted.

### 4.2 Public Transport Usage

Between 2019 and 2021, there was a noticeable decrease of 50.2% in the number of public transport users crossing the cordon between 07:00 and 10:00. In 2021 57,955 people used public transport to get into the City Centre on census day.

There was significant change between 2019 & 2021 in the use of LUAS with figures of 13,832 & 5,740 respectively. In 2021 rail trips decreased by 24,077 and so too did bus patronage, showing a substantial decrease of 26,163 trips. Again, likely due to the pandemic travel restrictions, rail showed a decrease of 64.4% relative to 2019 and similarly bus saw a decrease of 40.2% in the same period. Comparing 2021 to 2006, the number of public transport passengers has decreased by 43%.

### 4.3 Mode Trends

A summary of the key changes in travel across the canal cordon set out above is described below:

In percentage terms mode share for bus travel across the canal cordon in 2021 is now 29.3%. This is a slight decrease of 0.6% on 2019 figures. In absolute terms bus patronage decreased in 2021 by person trips, and it carried 38,885 people into the City Centre in the AM peak period. This represents 67% of all public transport trips into the City Centre in the peak period.

The mode share for rail across the canal cordon in 2021 was 10%. This figure is over 7% lower than in 2019 which is the lowest peak rail mode share since the cordon counts began in 2006. Intercity, Suburban Rail and DART had lost a significant share of travel into the City Centre between 2007 and 2014. However this trend reversed in 2015 and had continued to steadily increase year on year until 2019 pre-pandemic.

Car mode share (excluding taxis) increased in 2021, reversing the trend of year on year decline seen from 2010 until 2019. When compared to 2006, car usage has declined by approximately 1.2%. Car use increased by just over 9 % between 2019 and 2021. It is worth noting that even with changes in pandemic related mode choices, on census day 2021 over 29,163 less cars entered the City during the AM peak period than on census day 2006.

Walking has decreased by over 47% between 2019 and 2021. Walking levels were at their highest since the cordon count began in 2017 (11.8%) and while there was a small decline in 2018 (11.2%) it showed an upward trend again up to 2019 (11.4%) until in 2021 the walk mode share drop slightly to 9.9%. There were some 13,100 "active trips" (walking and cycling) crossing the canal cordon during the AM peak period, almost equivalent to that carried by the entire heavy rail network for the same period.

With the exception of a slight drop in 2018, cycling had presented a steadily increasing trend between 2006 and 2019. It is currently represented by a mode share of 5.7%, showing a slight decrease (0.3%) from its 2019 figure. Whilst overall cycle numbers are up 57% on 2006 levels, the cycle mode share has more than doubled in the same period.

Over 4,700 people entered the City by taxi in 2021 - this represents an 80% increase on 2019 levels. This is a marked increase when compared to the observed decline of taxi use between 2012 and 2018. Until 2021, the peak taxi use occurred in 2012 when over 3,270 passengers crossed the canal in the AM peak period.

The number of motor bikes entering the City has decreased since 2019 (by 47%). There had been a slow and steady downward trend of motorcycle use between 2006 and 2013 with a relative flattening from 2013 to 2019. Motor cycle mode share had remained relatively static at 0.7% from 2013 to 2019 with just a slight drop to 0.6% in 2021.

There has been a very minor decrease of 0.3% or 3 vehicles in the number of goods vehicles entering the City during the AM peak period between 2019 and 2021. Goods vehicle volumes in 2021 have marginally decreased continuing a downward trend, with just over 980 vehicles crossing the canal cordon in the AM peak period, a decrease of 57% since 2006.

Since 2010, there had been a trend of increasing mode share for sustainable transport modes, with a consistent level of increase each year up to 2019. In 2021 the overall mode share for sustainable transport modes – walking, cycling and public transport was 63% maintaining a high proportion even giving the unusual circumstances brought about by COVID-19. Goods vehicles and journeys by car and motorbike accounted for 37% of the trips crossing the canal cordon.

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