Limerick Cordon Report 2024

Report on Inbound People Movements Across the Limerick City Cordon

List of Abbreviations and Definitions

JTC:

- Junction Turning Counts

LGV:

- Light Goods Vehicle. LGV includes the following vehicle types: Van, Pick-Up, Car Delivery Vans, Minibus, Commercial Vehicles < 3.5 tonnes (single rear tyres)

M/C:

- Motorcycle. M/C includes the following: Motorcycles, Motor Scooters, Mopeds, Three-wheel motorcycles

NTA:

- National Transport Authority

OGV1:

- Ordinary Goods Vehicle 1. OGV1 includes the following vehicle types: 2-Axles Rigid Truck, 3-Axles Rigid Truck and Commercial Vehicles > 3.5 Tonnes (single rear tyres)

OGV2:

- Ordinary Goods Vehicle 2. OGV2 includes the following vehicle types: 4 or more Axles Rigid Truck, 3 Axle or more Articulated Truck, Vehicles in Category OGV1 towing trailer

P/C:

- Pedal Cycle

PED:

- Pedestrian

PSV:

- Public Service Vehicle, excluding private / non-scheduled service vehicle

BUS:

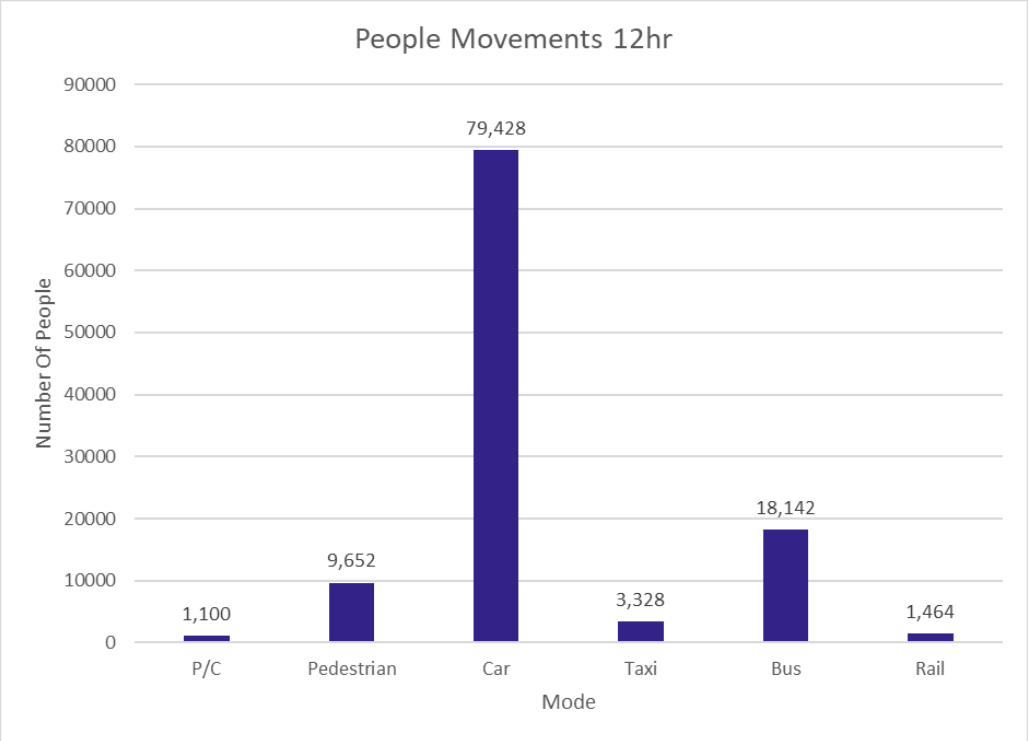
- Includes all public (PSV) / private, single / double deck, scheduled / non-scheduled service vehicles

Executive Summary

The Limerick City Cordon is a cordon of traffic survey locations that encloses Limerick City. Classified Junction Turning Counts and Pedestrian surveys were undertaken at 13 locations to determine the traffic flows crossing the Limerick City Cordon inbound during the key traffic periods for a typical weekday, i.e. AM (07:00 - 10:00), Lunch Time (10:00 - 13:00), School Run (13:00 - 16:00), PM (16:00 - 19:00), OP (19:00 - 07:00) and 24hr (00:00 - 24:00).

Vehicle occupancy surveys were undertaken at 12 sites and Pedestrian and Cycle only surveys were undertaken at 2 locations along the Cordon on key pedestrian and cycle only routes, i.e. parks and dedicated pedestrian and cycle corridors. In addition to this, Bus Occupancy surveys were undertaken at 10 bus stops to determine the number, occupancy and frequency of bus services crossing the Limerick City Cordon. Passenger numbers from the Annual Rail Census (Iarnród Éireann) were also used to determine the passengers travelling across the Limerick City Cordon inbound. Based on the analysis of the 2024 data, the key results are:

- In terms of overall people movements, 30,358 (27%) of a total of 113,114 people travelling inbound towards the City between 07:00 and 19:00 used sustainable modes of travel, i.e. pedal cycle, pedestrian, bus and rail.



- The total number of vehicles, pedestrians and cyclists that crossed the Limerick Cordon inbound was 101,037 over 24 hours on the day of the survey.
- The busiest time period for vehicles and cyclists was the AM peak with 20,101 crossing the Limerick City Cordon inbound towards the city. The busiest time period for Pedestrians was the SR peak with 2,605 crossing the Limerick City Cordon inbound.

- Between the hours of 07:00 and 19:00, cars were recorded to have the highest vehicular traffic split, with 72% of the total inbound flows. Light Goods Vehicles (LGVs) recorded 8%, Ordinary Goods Vehicles 1 (OGV1) recorded 2%, Ordinary Goods Vehicles 2 (OGV2) recorded 1% and taxis recorded 3%. The remaining vehicle classifications recorded 2% or less of the total flows.
- Between 07:00 and 19:00, 67% of buses were at 25-49% capacity. Approximately 8% of buses were at 0-24%. 19% were at 50-74% capacity, 5% were at 75-99% capacity and 1% were at 100% capacity.

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1 Introduction

The Limerick City Cordon is a closed cordon of traffic survey locations that encloses Limerick City. This report presents the findings of traffic surveys along the cordon, which were undertaken in November 2024 and captured the traffic movements crossing the Limerick City Cordon inbound towards the city.

The structure of this report is set out as follows:

- **Chapter 2** provides a definition of the Limerick City Cordon and sets out the methodology for the data collection;
- **Chapter 3** outlines
    - The traffic flows crossing the Limerick City Cordon inbound by vehicle classification;
    - The occupancy of the vehicles crossing the Limerick City Cordon in terms of the number of occupants per vehicle. Each vehicle type has been analysed per peak time periods and for the duration of the survey period.
- **Chapter 4** outlines the total number of people movements crossing the Limerick City Cordon inbound towards the city; and
- **Chapter 5** provides a summary of the results of the survey. .

2 Definition and Methodology

2.1 Data Sources

To establish the movement of people across the Limerick City Cordon, a bespoke data collection exercise was carried out, comprising of the following surveys:

Junction Turning Counts (JTC):

- The JTC surveys were recorded in 15-minute intervals over a 24-hour period at 13 sites on 12/11/2024. They were undertaken using telescopically mounted video cameras and were recorded for car, LGV, OGV1, OGV2, motorcycle, pedal cycle, taxi and bus as well as those where Pedestrian and Cycle Only surveys were conducted.

Pedestrian and Cycle Only Surveys:

- In addition to the pedestrian and cycle flow data obtained from the JTC surveys, the NTA also undertook additional pedestrian and cycle only surveys at links that are only accessible by pedestrians or cyclists. The surveys were recorded in 15-minute intervals over a 24-hour period at 2 additional sites on the day of the survey. The Pedestrian and Cycle Only surveys recorded the following classifications:
    - Adult Pedestrian;
    - Elderly Pedestrian;
    - Child Pedestrian < 5 years old;
    - Child Pedestrian < 16 years old; and
    - Mobility Impaired Pedestrian.

Taxi Occupancy Surveys

- Taxi Occupancy counts were also undertaken at survey points along the Limerick City Cordon. Taxi Occupancy counts were carried out by a manual enumerator between 07:00 and 19:00. All information was recorded in hourly intervals.

Bus Occupancy Surveys

- Bus Occupancy surveys were undertaken at 10 bus stops inside the Limerick City Cordon on the day of the survey in order to record the number of people travelling inbound into the city via bus. Manual enumerators recorded both occupancy of the bus at the bus stop, and the number of passengers boarding and alighting. These surveys also recorded the number of public and private buses passing the bus stop and the type of bus.

Heavy Rail Data:

- Since 2012, Iarnród Éireann has undertaken a census of passengers boarding and alighting on all services passing through all stations on the national rail network on 14th of November 2024. While this rail survey was not commissioned as part of the

multi-modal cordon surveys, results from the rail census were used to supplement the surveys.

Additional Two Weekly Vehicle Counts/Speed Surveys:

- Automatic Traffic Counts (ATCs) were carried out over a continuous two-week period (on 02/11/2024) in order to gather longer term data on daily movements at key points on the radial routes leading into the cordon.

2.2 Definition of the Limerick City Cordon

A map of the Limerick City Cordon is presented in Figure 2-1, and highlights the locations along the Cordon where JTC and Pedestrian data has been collected on the movement of people into the city. It also includes the location of Limerick Rail Station.

The Limerick City Cordon has been chosen to ensure, as far as possible, that any traffic flow (including cyclists and pedestrians) entering the city must pass through one of the locations where the surveys have been undertaken.

The data, as presented in this report, refers to movements in one direction only (i.e. inbound towards the city) across the various cordon points. Figure 2-2 shows the locations where ATC and the taxi occupancy surveys have been undertaken. Figure 2-3 shows the stops where the bus occupancy surveys have been undertaken.

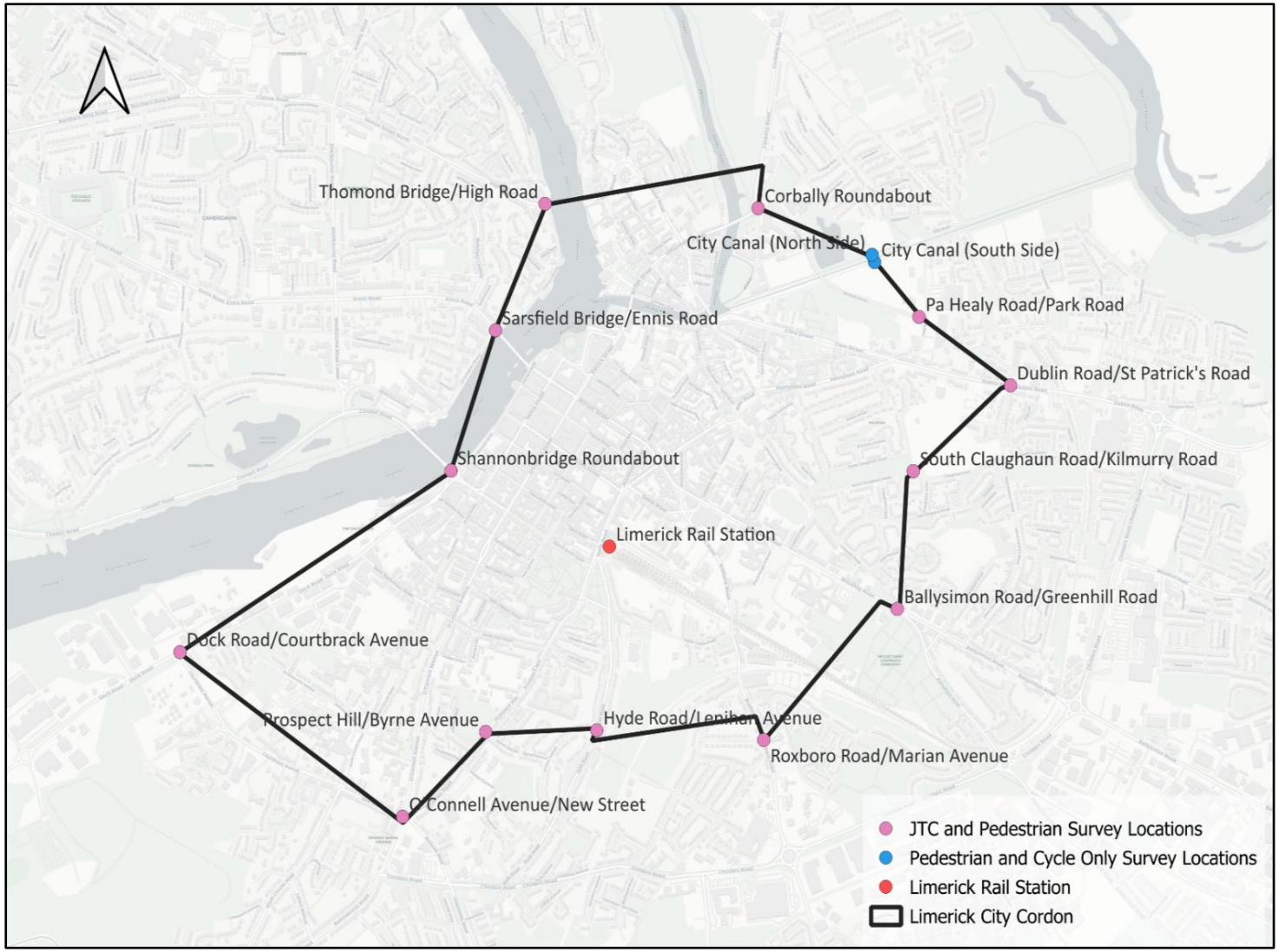


Figure 2-1:JTC and Pedestrian Sites on the Limerick Cordon and Limerick Colbert Rail Station

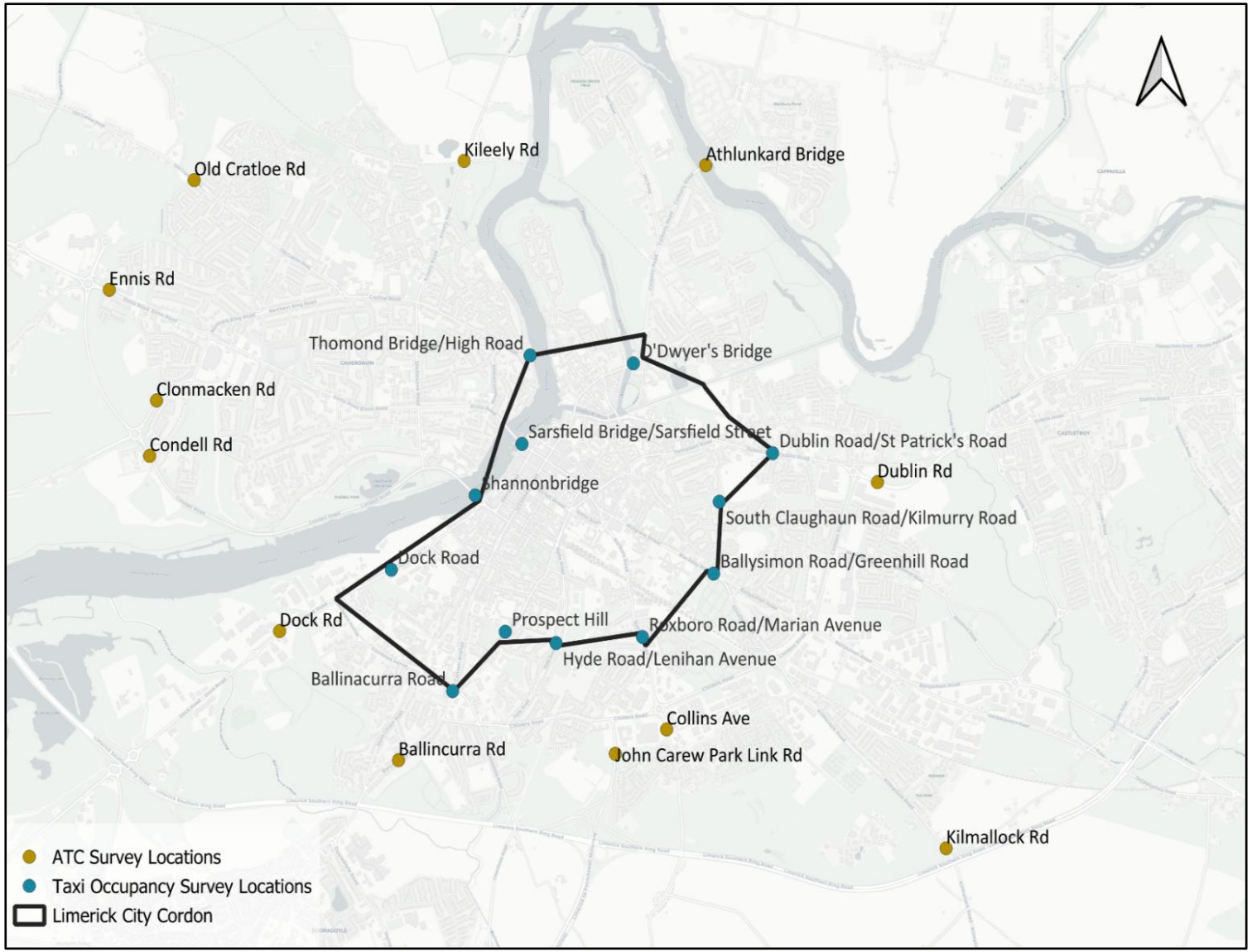


Figure 2-2:ATC and Taxi Occupancy Sites on the Limerick Cordon

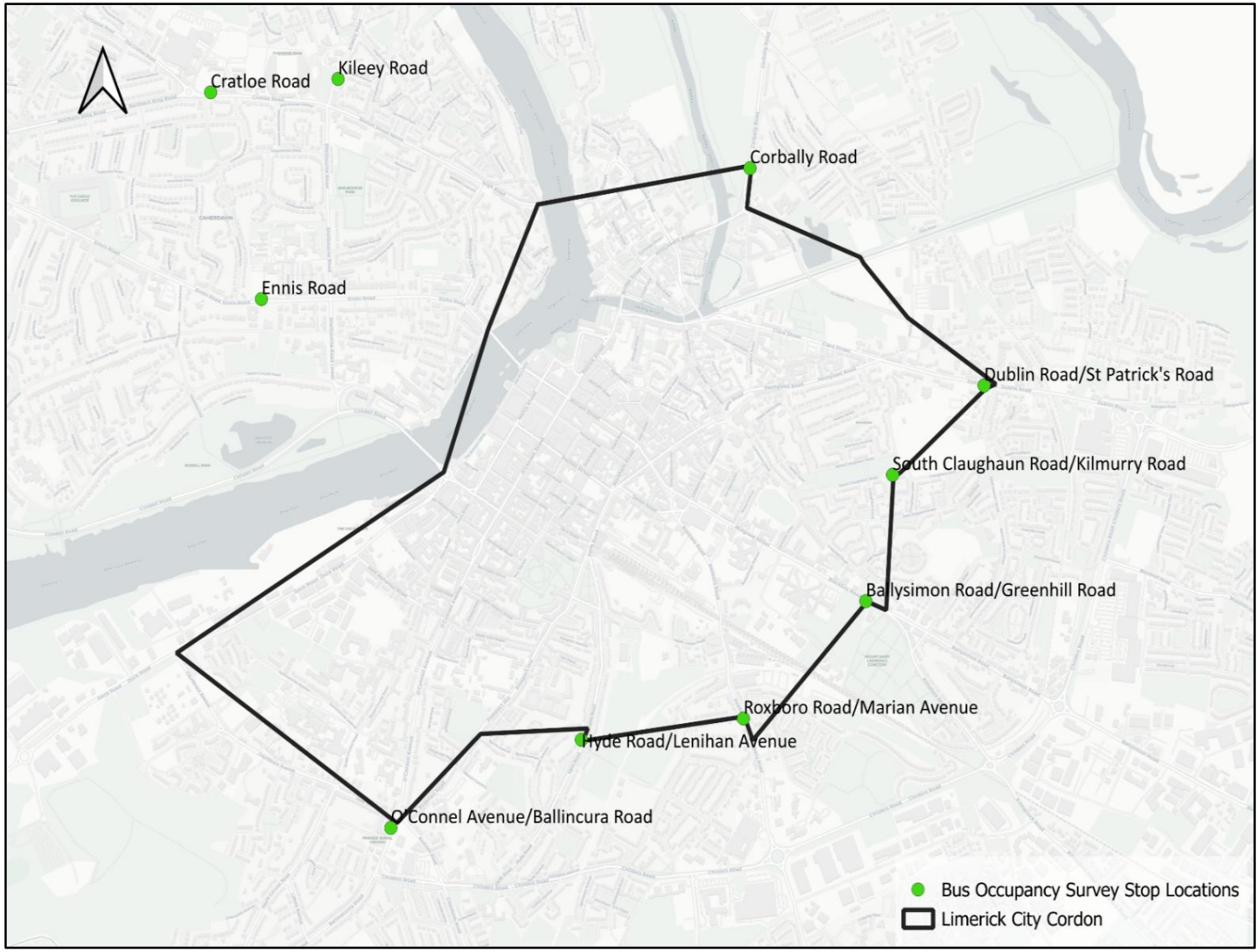


Figure 2-3:Bus Occupancy Stops on the Limerick Cordon

2.3 Time Periods Analysed

Surveys were recorded at either 15-minute or one-hour intervals, or, in the case of public transport services, when the bus or train was at a specific stop or station. Therefore, it is possible to understand trends throughout the day from the data. As such, the data was analysed for the following time periods:

- **AM:** 07:00 - 10:00
- **Lunch Time (LT):** 10:00 - 13:00
- **School Run (SR):** 13:00 - 16:00
- **PM:** 16:00 - 19:00
- **Off-Peak (OP):** 19:00 - 07:00
- **24hr:** 00:00 - 00:00

3 Limerick City Cordon

3.1 Traffic Flow Surveys

3.1.1 Overview

This section outlines the classified vehicle, pedestrian and cycle flows crossing the Limerick City Cordon inbound, towards the city centre. This information was collected from the JTC traffic survey sites for car, LGV, OGV1, OGV2, motorcycle, pedal cycle, taxi and bus, as well as pedestrian survey sites. It should be noted that these surveys count the number of vehicles, cyclists and pedestrians crossing the cordon. However, the figures presented below do not include the number of people in each vehicle (vehicle occupancy). Therefore, these figures are not representative of the mode share. Total passenger flows and mode share are discussed in sections 4.4 and 4.5 of this report.

Table 3-1 presents the observed flows by vehicle classification crossing the Limerick City Cordon inbound during the time periods recorded in the 2024 survey.

Table 3-1:Movements Across the Limerick City Cordon Inbound

	AM	LT	SR	PM	OP	24hr
Vehicle Classifications	**07:00-10:00**	**10:00-13:00**	**13:00-16:00**	**16:00-19:00**	**19:00-07:00**	**00:00-24:00**
Car	16,685	12,969	14,250	14,073	15,155	73,132
LGV	1,839	1,874	1,688	1,204	1,174	7,779
OGV1	322	432	329	140	193	1,416
OGV2	138	179	156	63	119	655
Motorcycle	28	24	35	35	32	154
Pedal Cycle	333	206	264	297	293	1,393
Taxi	557	708	664	504	1,628	4,061
Bus	199	194	183	181	260	1,017
Pedestrian	2,484	2,196	2,605	2,367	1,778	11,430
Total	22,585	18,782	20,174	18,864	20,632	101,037

Figure 3-1 illustrates the overall flows for all vehicle types across the Limerick City Cordon per key time period. It is evident that the AM time period has the highest volume of overall traffic movements, with a total of 22,585 travelling inbound.

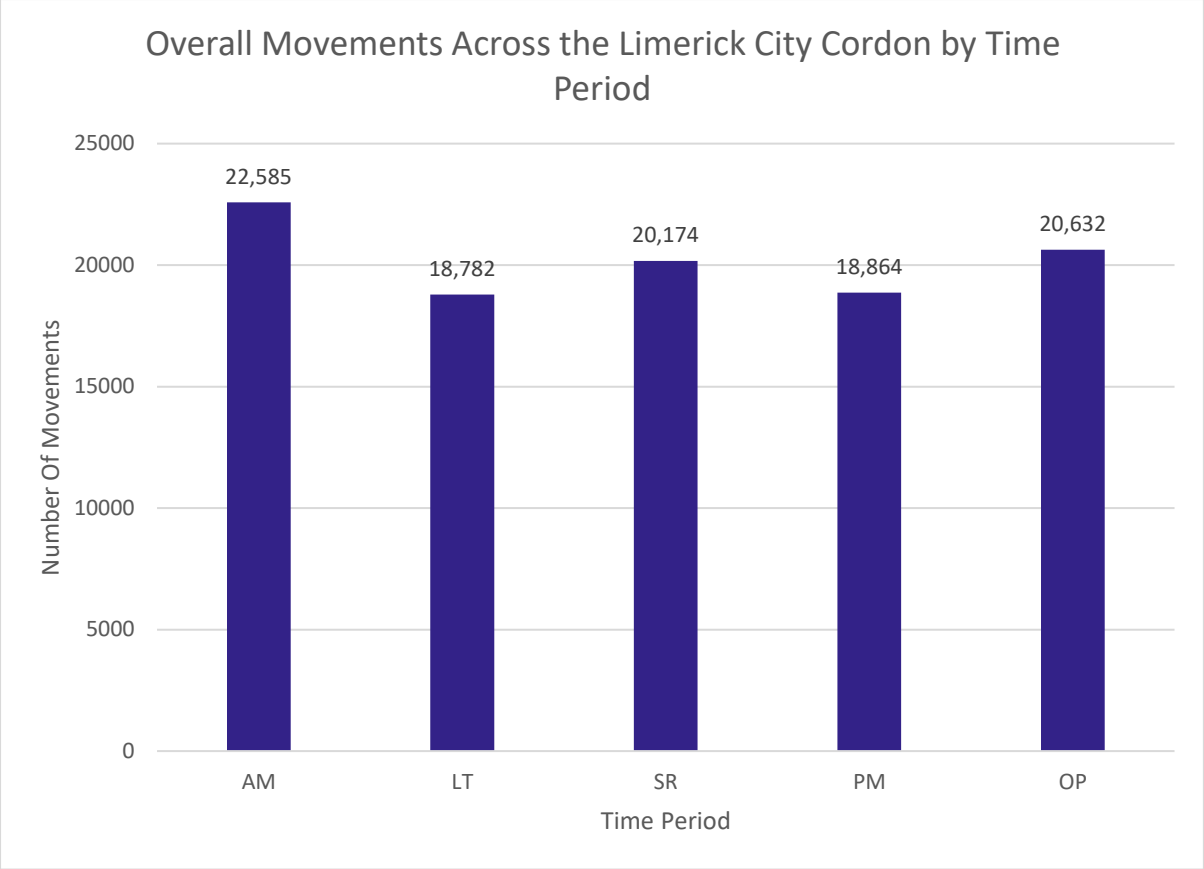


Figure 3-1:Total Movements across the Limerick City Cordon Inbound by Time Period

For further information, please refer to Appendix A, which presents additional graphs separated into the respective time periods surveys and survey site locations.

Figure 3-2 sets out the number of vehicles in each classification as recorded in the JTC surveys, as well as the number of pedestrians, over a 24-hour period. This figure shows that car is the most common vehicle type, with 73,132 inbound movements in the 24-hour period, accounting for 72% of all crossings.

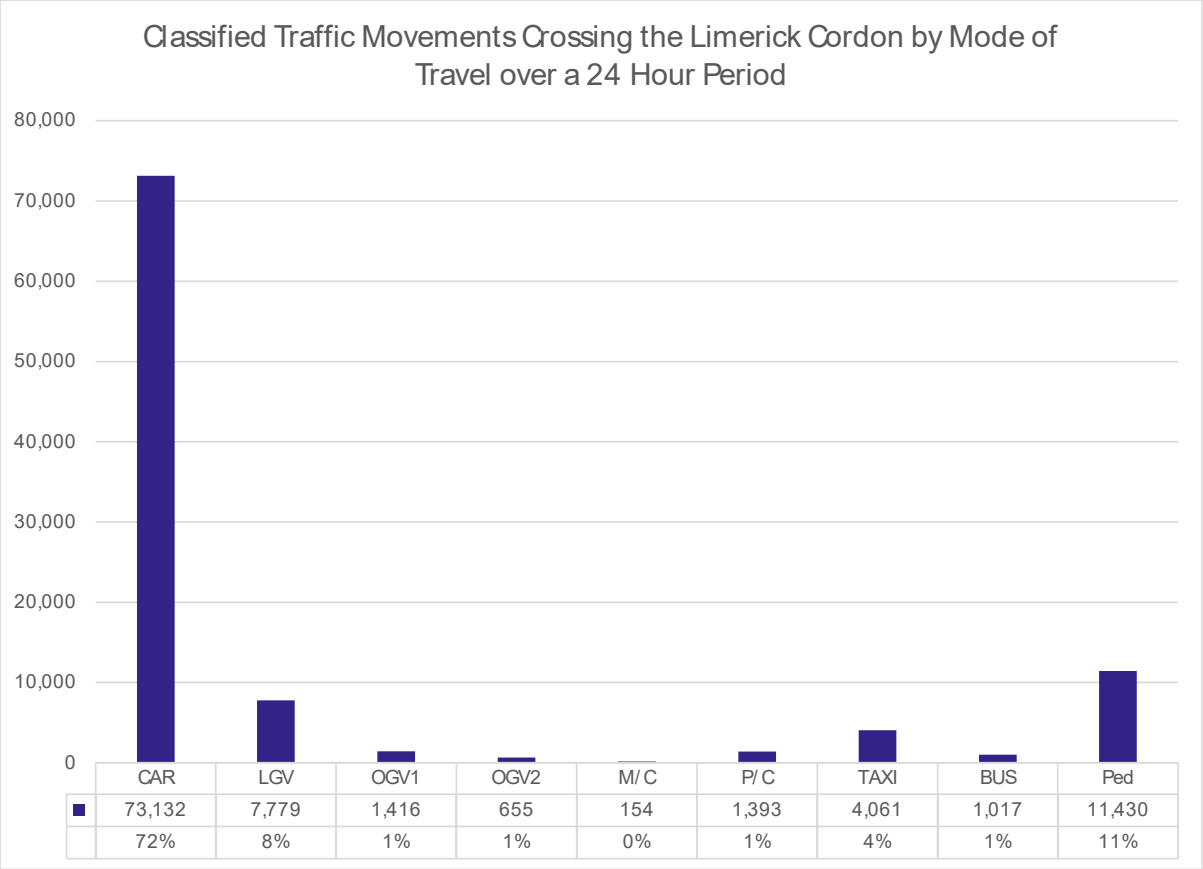


Figure 3-2:Total Number and Percentage of Vehicles crossing the Limerick City Cordon inbound by vehicle classification over a 24 hour period

Figure 3-3 sets out the number of vehicles in each classification as recorded in the JTC surveys, as well as the number of pedestrians, over a 12-hour period (i.e. 07:00 – 19:00). This figure shows that car is the most common vehicle type, with 57,977 inbound movements in the 12-hour period, accounting for 72% of all crossings.

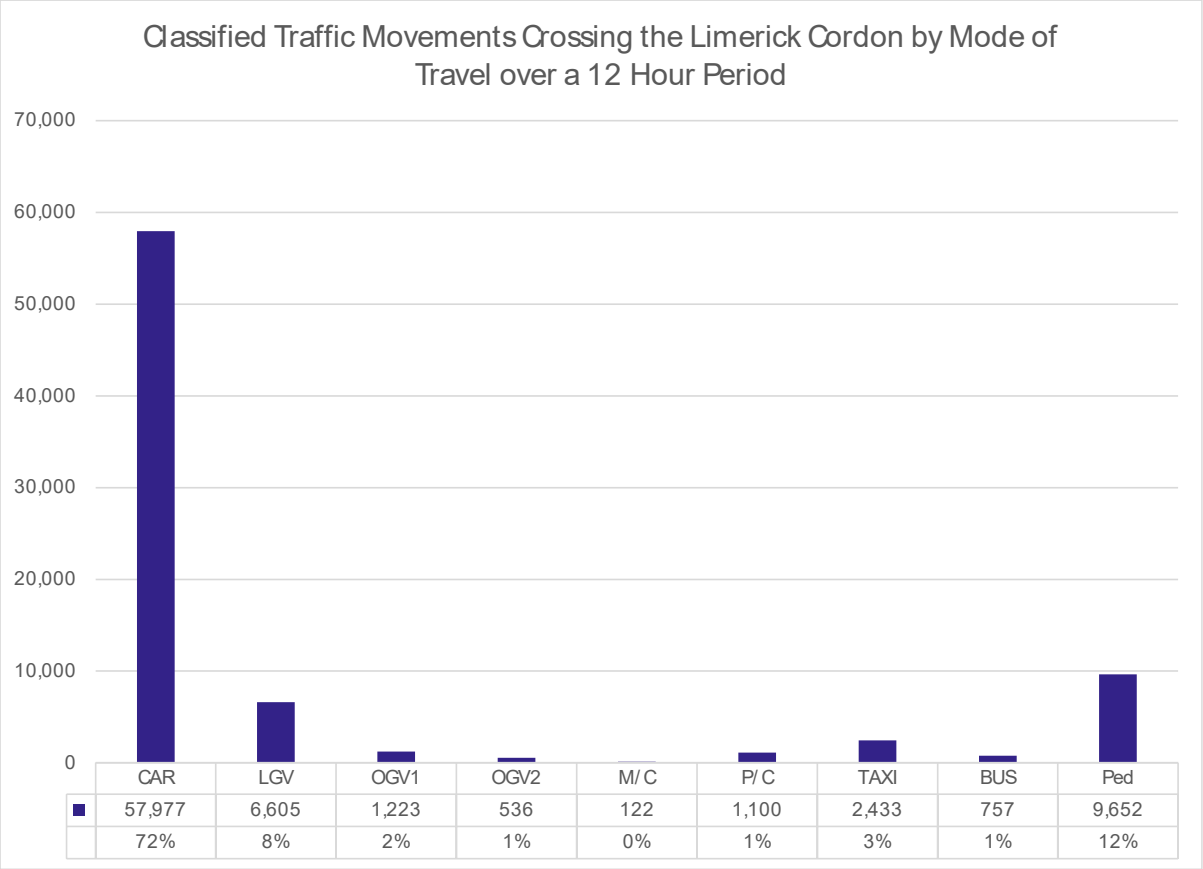


Figure 3-3:Total Number and Percentage of Vehicles crossing the Limerick City Cordon inbound by vehicle classification over a 12 hour period

3.1.2 Vehicle Classified Traffic Flows

The following sections provide a more detailed overview of the JTC survey results by vehicle classification and survey sites. Each vehicle class is analysed in turn providing information on the volume of vehicles per time period and per survey site.

Car

Figure 3-4 below presents the total number of cars crossing the Limerick City Cordon for each surveyed time period. Overall, it is evident that the AM time period has the highest volume of cars, with a total of 16,685 cars travelling inbound.

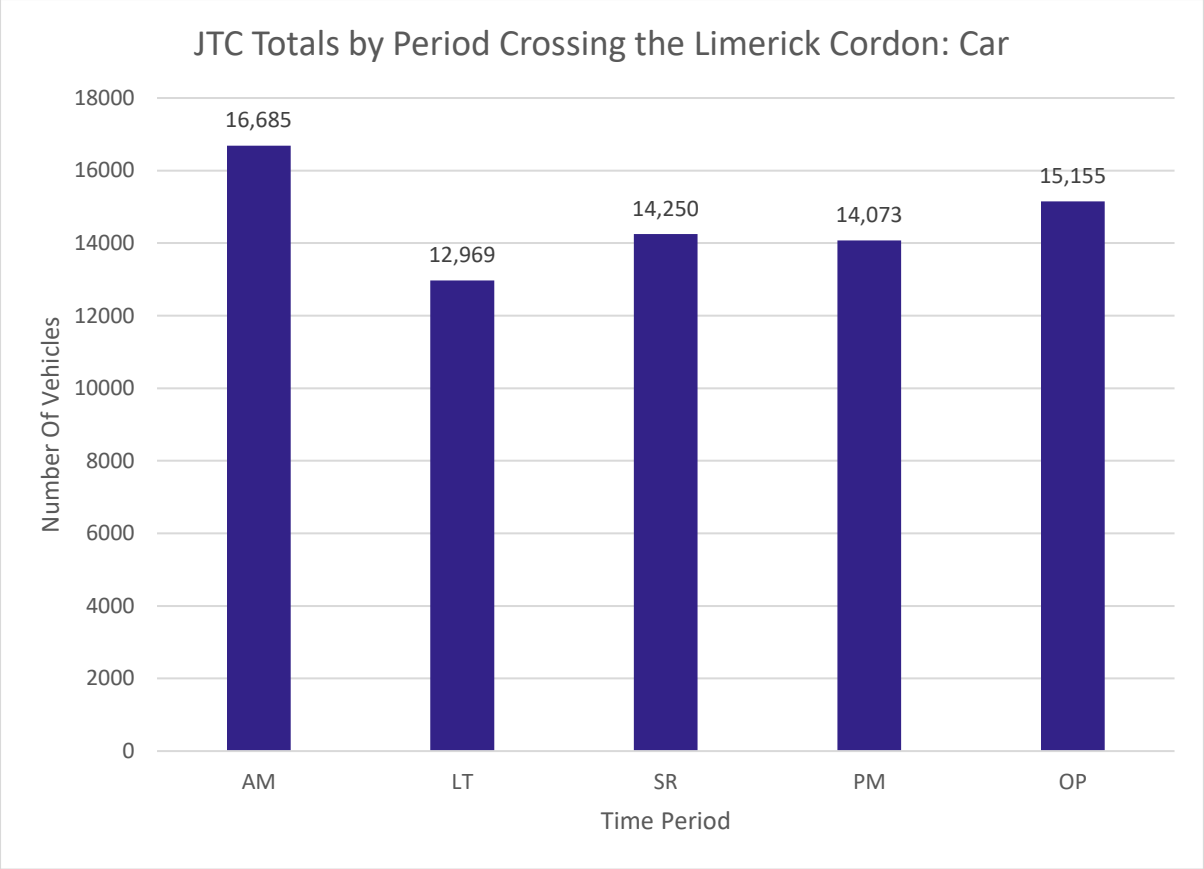


Figure 3-4:Total Number of Car journeys per Time Period

Figure 3-5 presents a further breakdown of the total number of cars, with reference to each site location. The busiest location for cars crossing the Limerick City Cordon was the Dublin Rd junction, with a total of 10,072 cars travelling inbound through this junction over a 24-hour period.

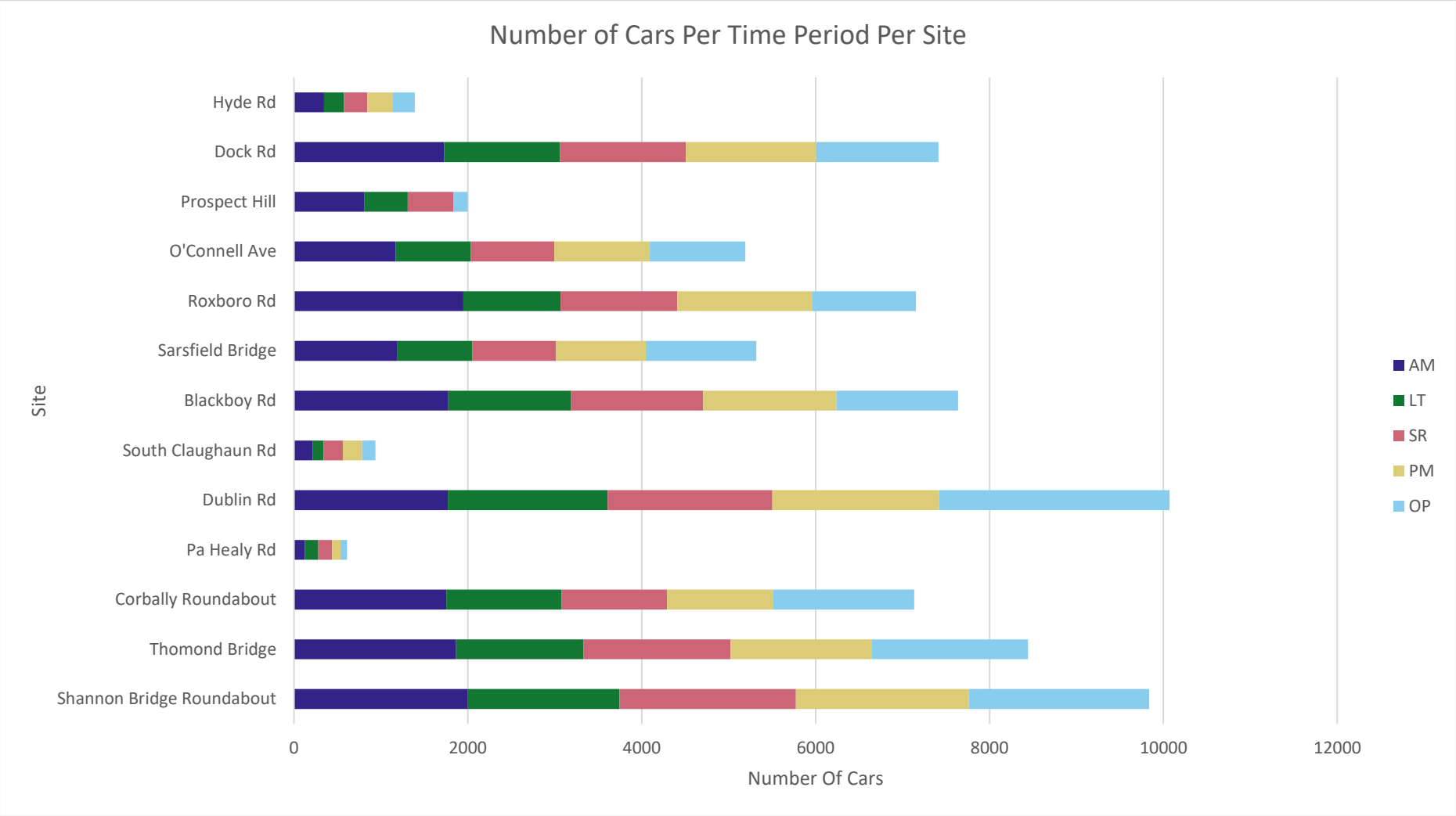


Figure 3-5:Number of Cars Crossing the Limerick City Cordon Inbound at all Sites Per Time Period

Please also refer to Appendix A for further information on the total number of each vehicle class, with reference to each individual time-period surveyed.

Light Goods Vehicle

Figure 3-6 below presents the total number of LGVs crossing the Limerick City Cordon for each surveyed time period. Overall, it is evident that the LT time period has the highest volume of LGVs, with a total of 1,874 LGVs travelling inbound.

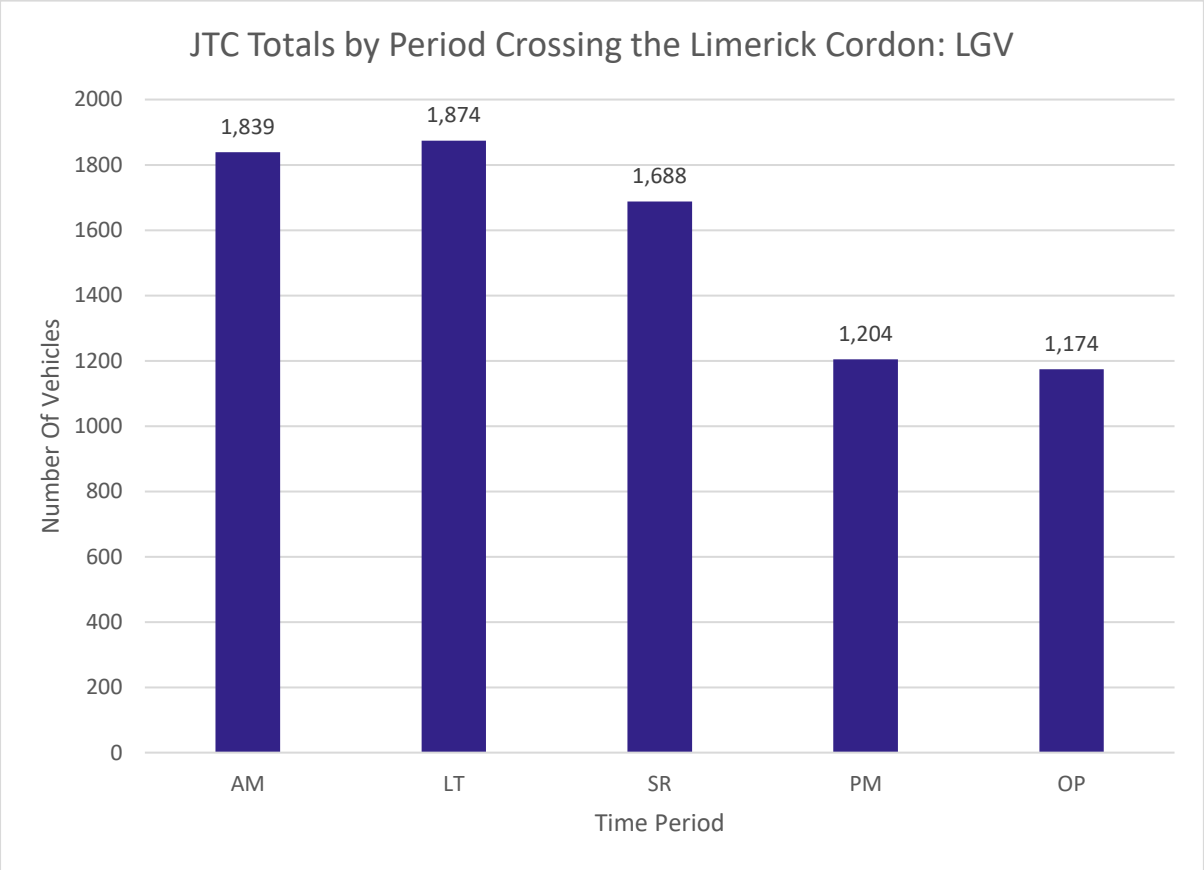


Figure 3-6:Total Number of LGV journeys per Time Period

Figure 3-7 presents a further breakdown of the total number of LGVs, with reference to each site location. The busiest location for LGVs crossing the Limerick City Cordon was the Dock Rd junction, with a total of 1,226 LGVs travelling inbound through this junction over a 24-hour period.

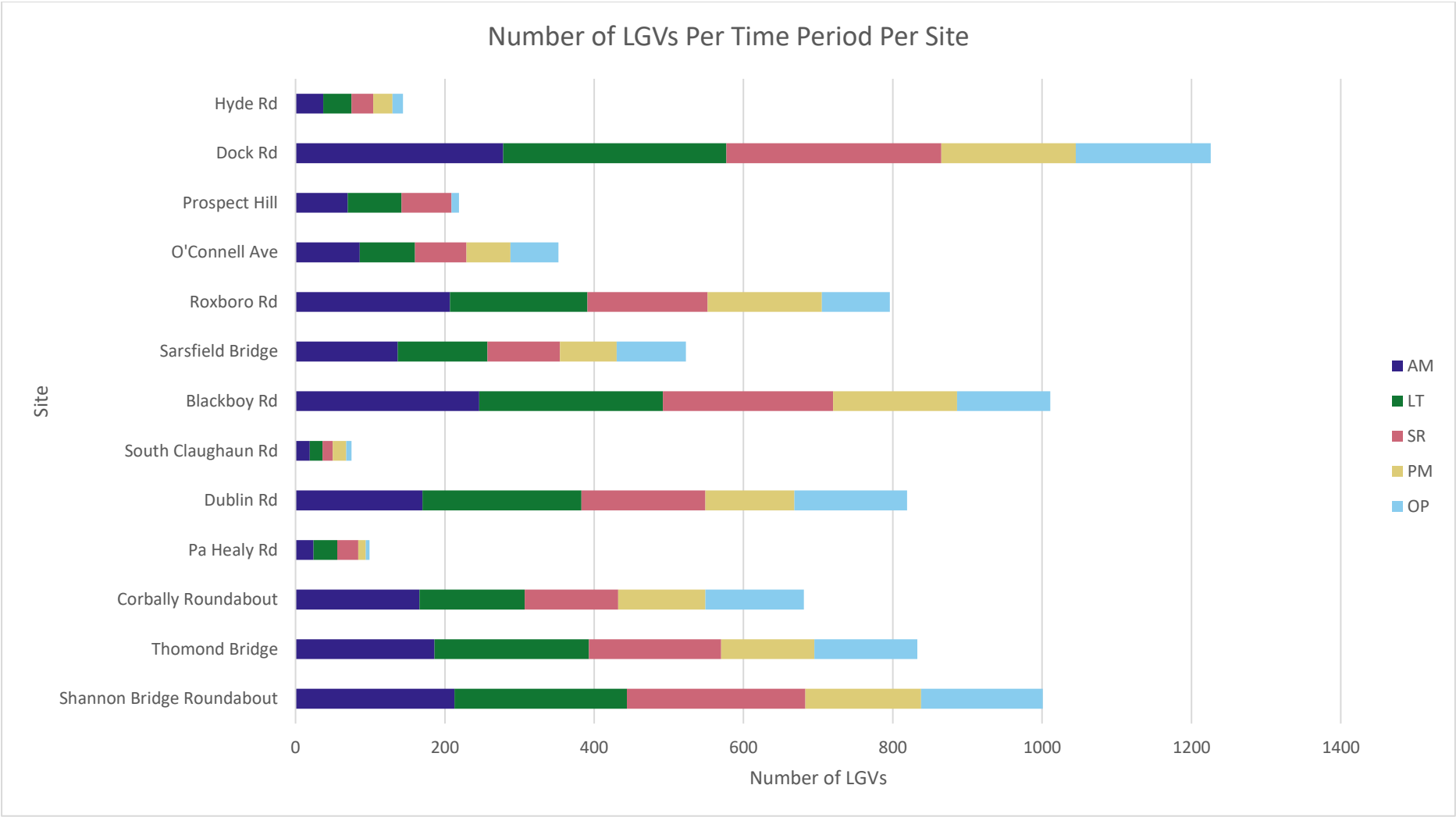


Figure 3-7:Number of LGVs Crossing the Limerick City Cordon Inbound at all Sites Per Time Period

Ordinary Goods Vehicle 1

Figure 3-8 below presents the total number of OGV1s crossing the Limerick City Cordon for each surveyed time period. Overall, it is evident that the LT time period has the highest volume of OGV1s, with a total of 432 OGV1s travelling inbound.

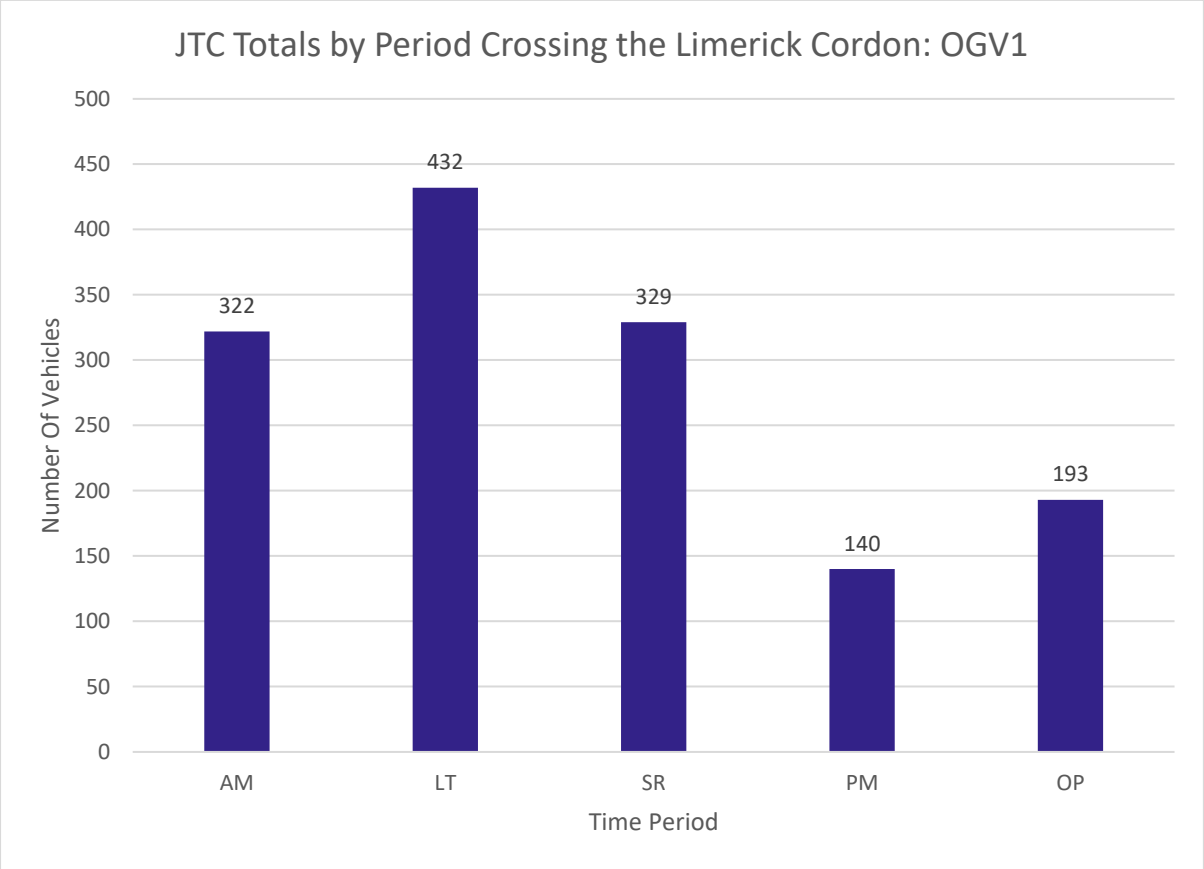


Figure 3-8:Total Number of OGV1 journeys per Time Period

Figure 3-9 presents a further breakdown of the total number of OGV1s, with reference to each site location. The busiest location for OGV1s crossing the Limerick City Cordon was the Dock Rd junction, with a total of 278 OGV1s travelling inbound through this junction over a 24-hour period.

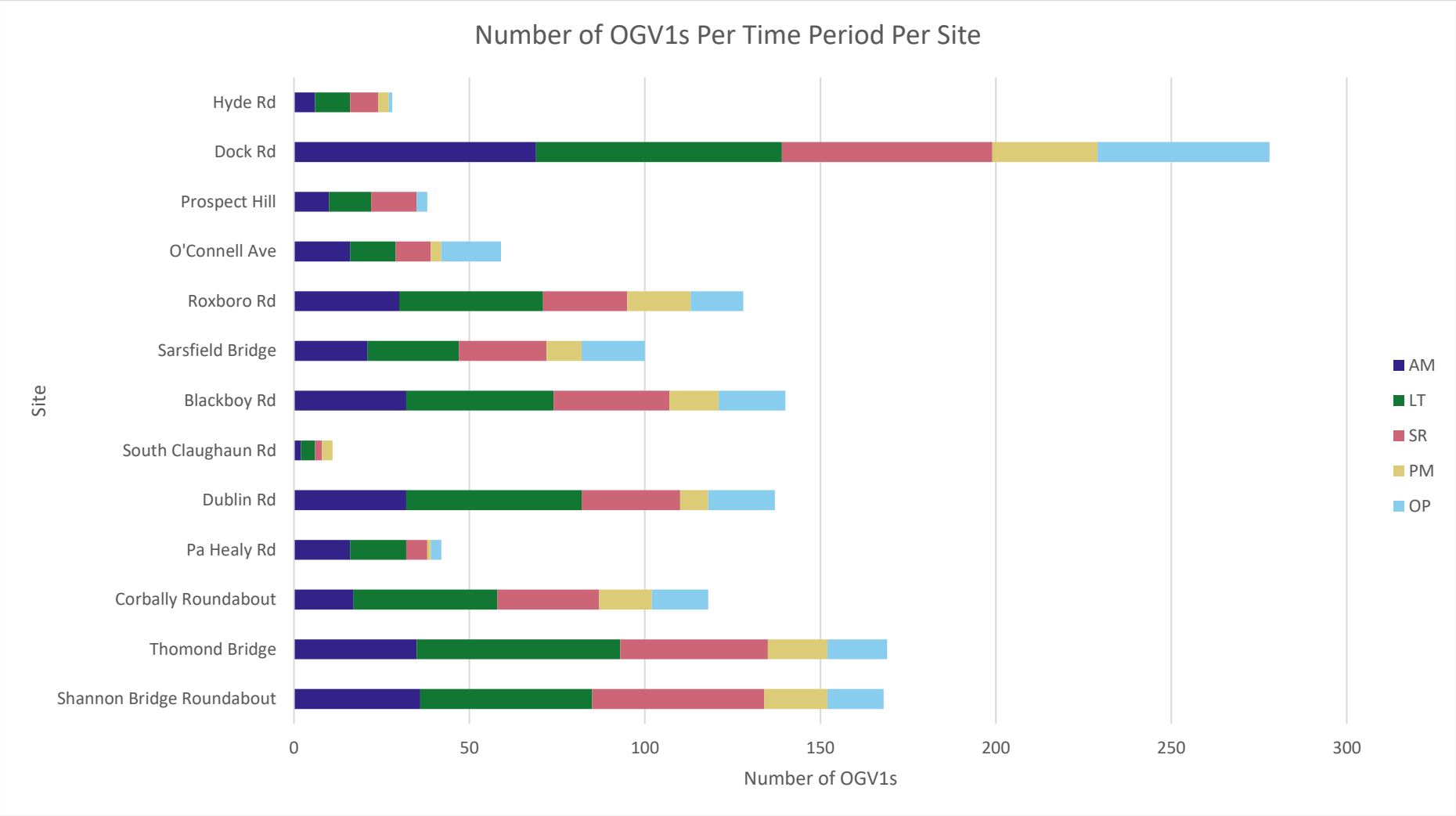


Figure 3-9:Number of OGV1s Crossing the Limerick City Cordon Inbound at all Sites Per Time Period

Ordinary Goods Vehicle 2

Figure 3-10 below presents the total number of OGV2s crossing the Limerick City Cordon for each surveyed time period. Overall, it is evident that the LT time period has the highest volume of OGV2s, with a total of 179 OGV2s travelling inbound.

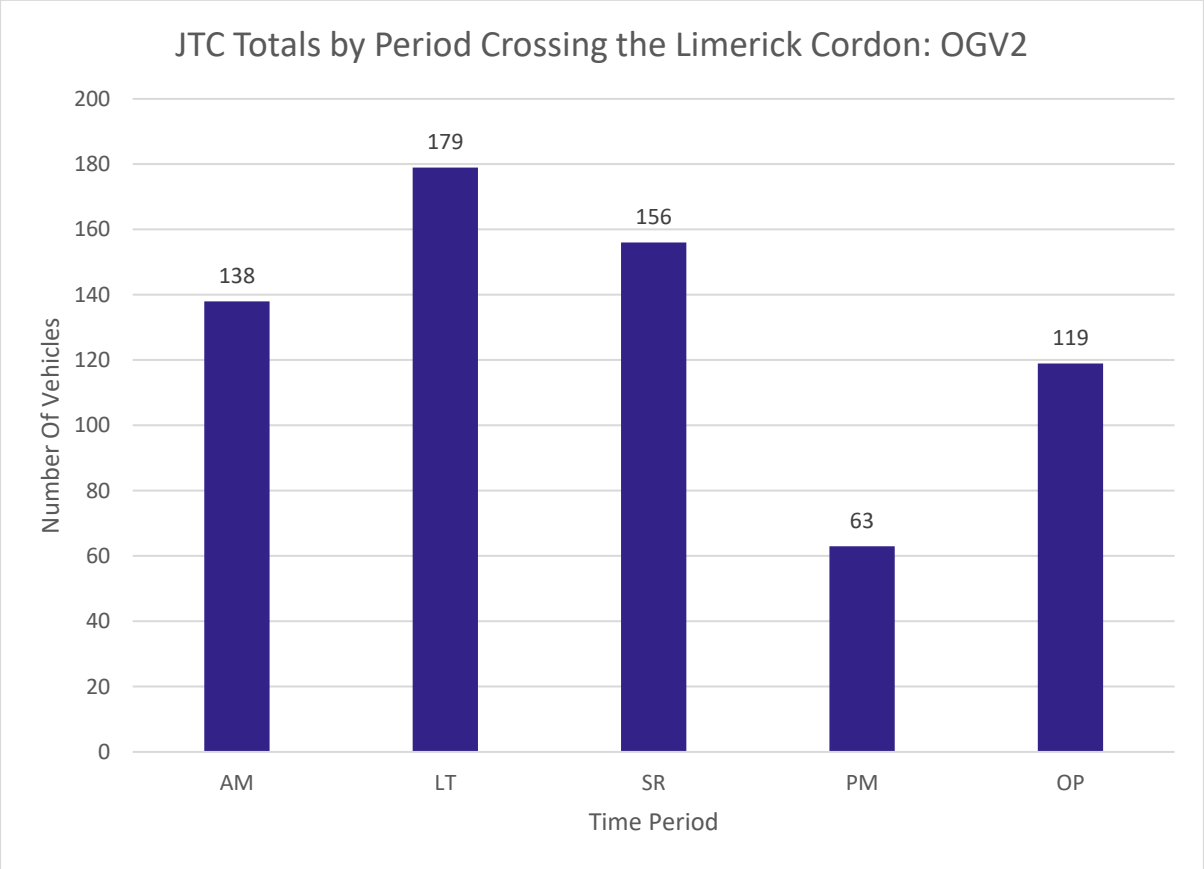


Figure 3-10:Total Number of OGV2 journeys per Time Period

Figure 3-11 presents a further breakdown of the total number of OGV2s, with reference to each site location. The busiest location for OGV2s crossing the Limerick City Cordon was the Dock Rd junction, with a total of 270 OGV2s travelling inbound through this junction over a 24-hour period.

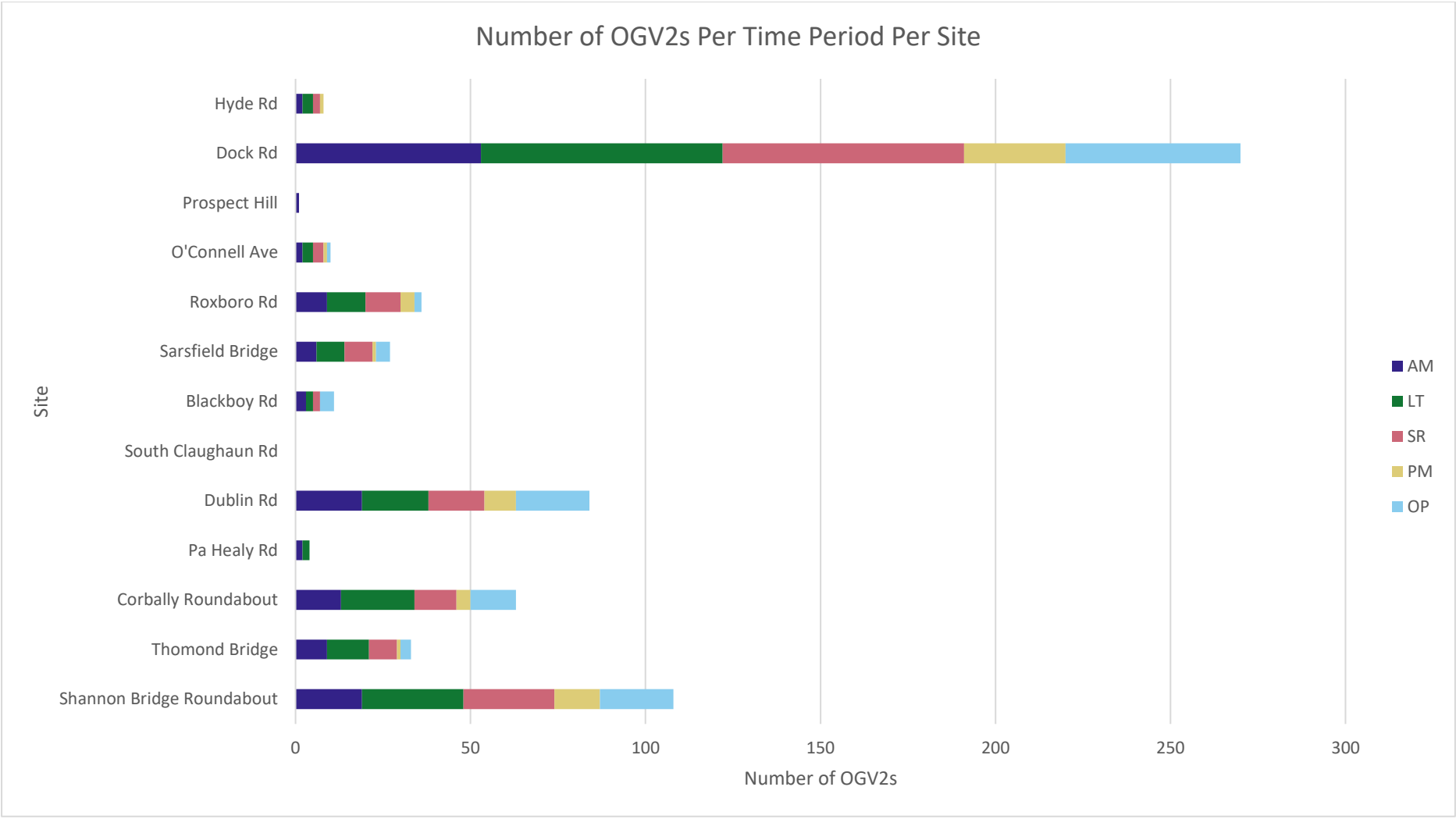


Figure 3-11:Number of OGV2s Crossing the Limerick City Cordon Inbound at all Sites Per Time Period

Motorcycle

Figure 3-12 below presents the total number of motorcycles crossing the Limerick City Cordon for each surveyed time period. Overall, it is evident that the SR time period has the highest volume of motorcycles, with a total of 35 motorcycles travelling inbound.

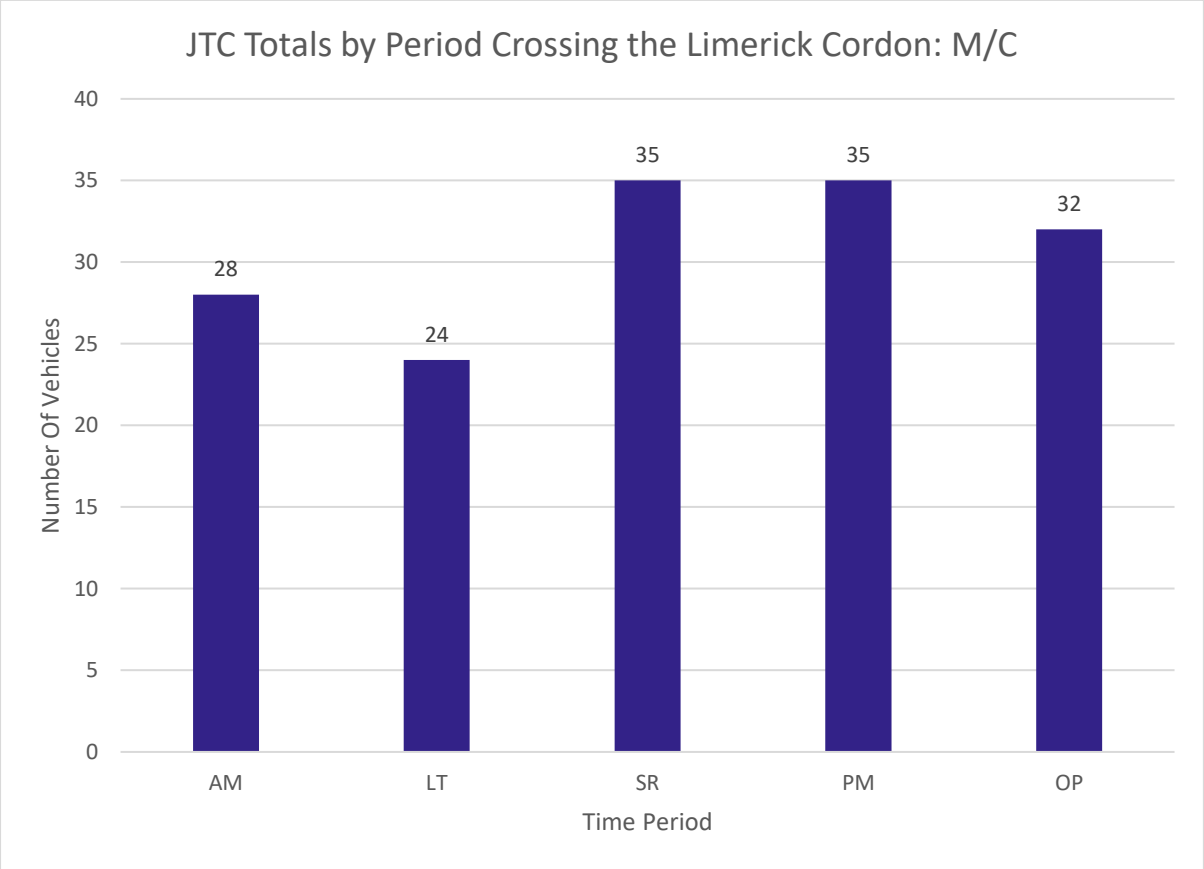


Figure 3-12:Total Number of Motorcycle journeys per Time Period

Figure 3-13 presents a further breakdown of the total number of motorcycles, with reference to each site location. The busiest location for motorcycles crossing the Limerick City Cordon was the Dublin Rd junction, with a total of 24 motorcycles travelling inbound through this junction over a 24-hour period.

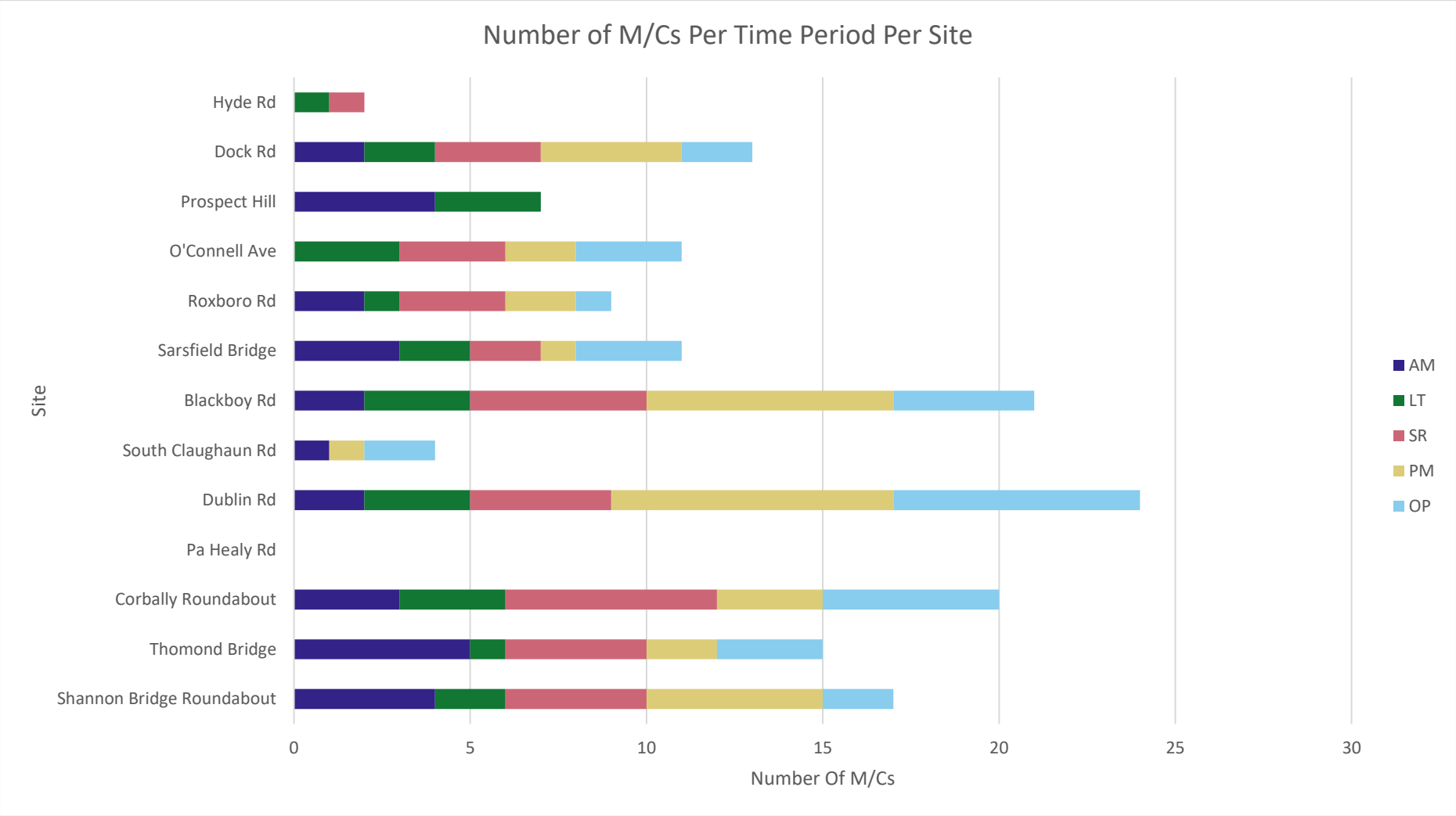


Figure 3-13:Number of Motorcycles Crossing the Limerick City Cordon Inbound at all Sites Per Time Period

Pedal Cycle

Figure 3-14 below presents the total number of pedal cycles crossing the Limerick City Cordon for each surveyed time period. Overall, it is evident that the AM time period has the highest volume of pedal cycles, with a total of 333 pedal cycles travelling inbound.

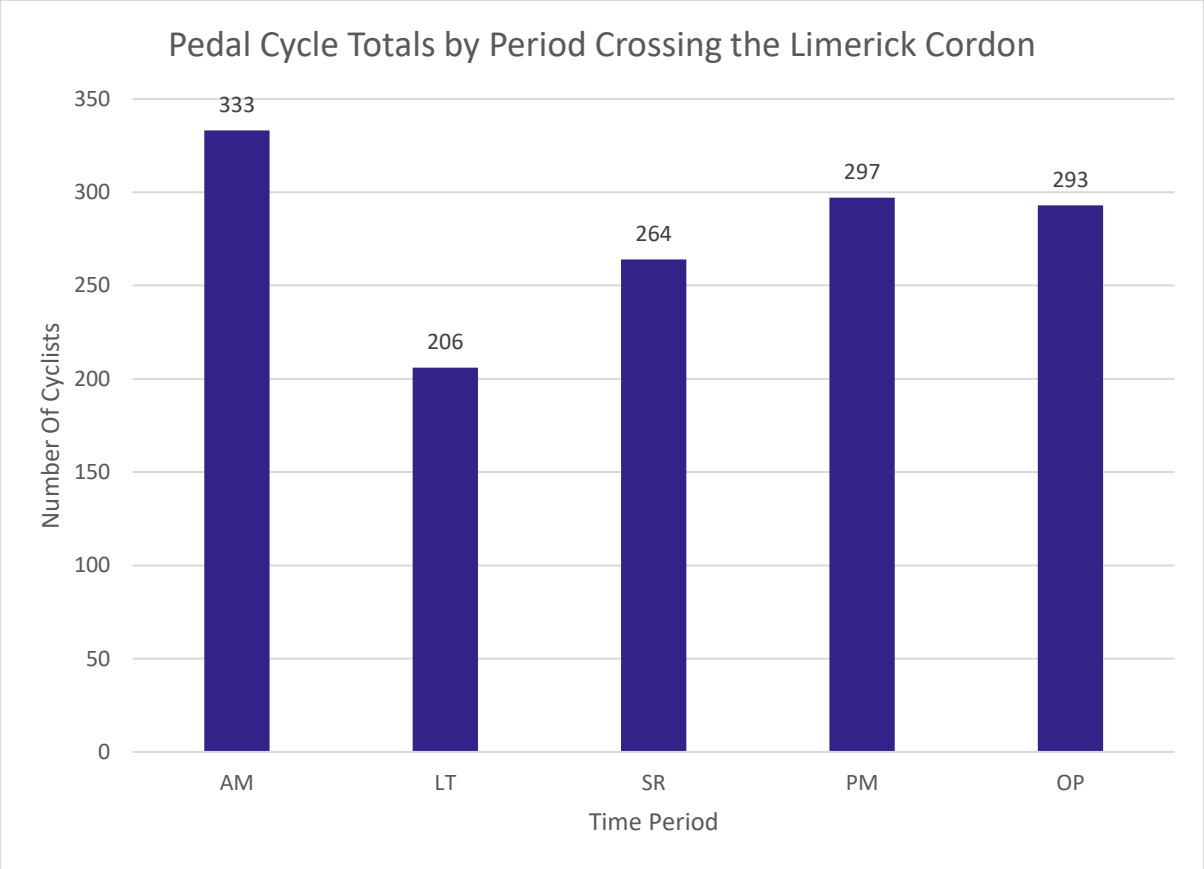


Figure 3-14:Total Number of Pedal Cycle journeys per Time Period

Figure 3-15 presents a further breakdown of the total number of pedal cycles, with reference to each site location. The busiest location for pedal cycles crossing the Limerick City Cordon was the Thomond Bridge junction, with a total of 218 pedal cycles travelling inbound through this junction over a 24-hour period.

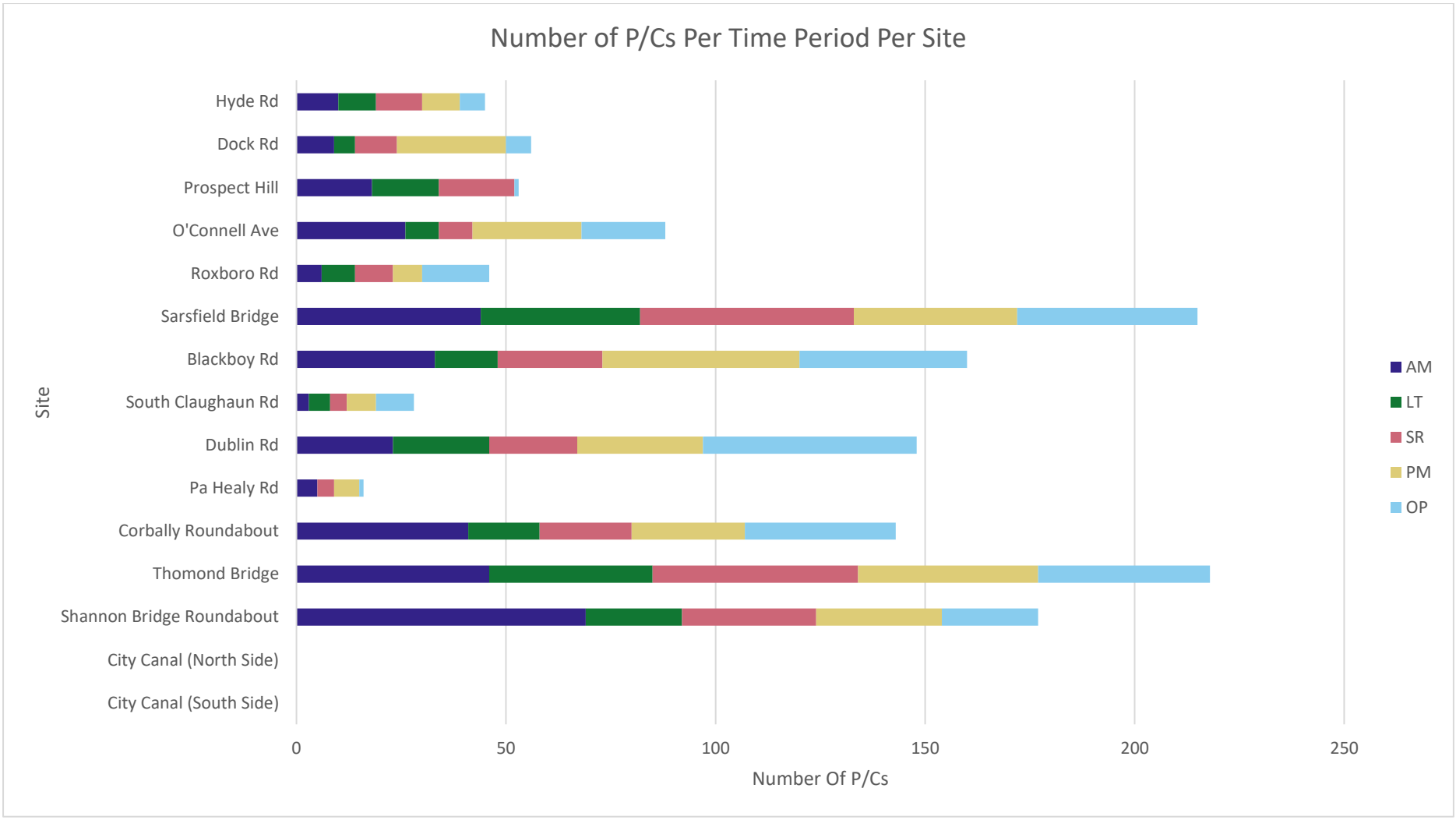


Figure 3-15:Number of Pedal Cycles Crossing the Limerick City Cordon Inbound at all Sites Per Time Period

Taxi

Figure 3-16 below presents the total number of taxis crossing the Limerick City Cordon for each surveyed time period. Overall, it is evident that the OP time period has the highest volume of taxis, with a total of 1,628 taxis travelling inbound.

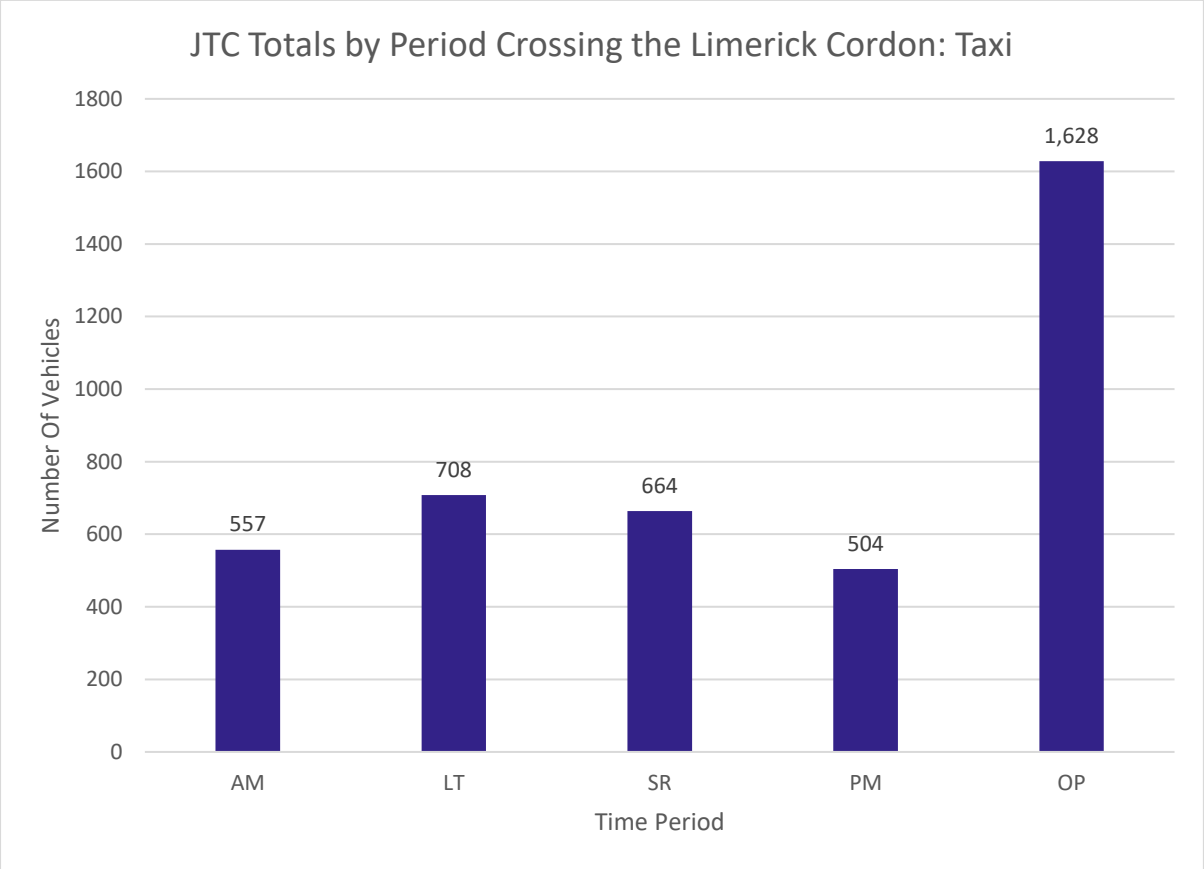


Figure 3-16:Total Number of Taxi journeys per Time Period

Figure 3-17 presents a further breakdown of the total number of taxis, with reference to each site location. The busiest location for taxis crossing the Limerick City Cordon was the Dublin Rd junction, with a total of 1,504 taxis travelling inbound through this junction over a 24-hour period.

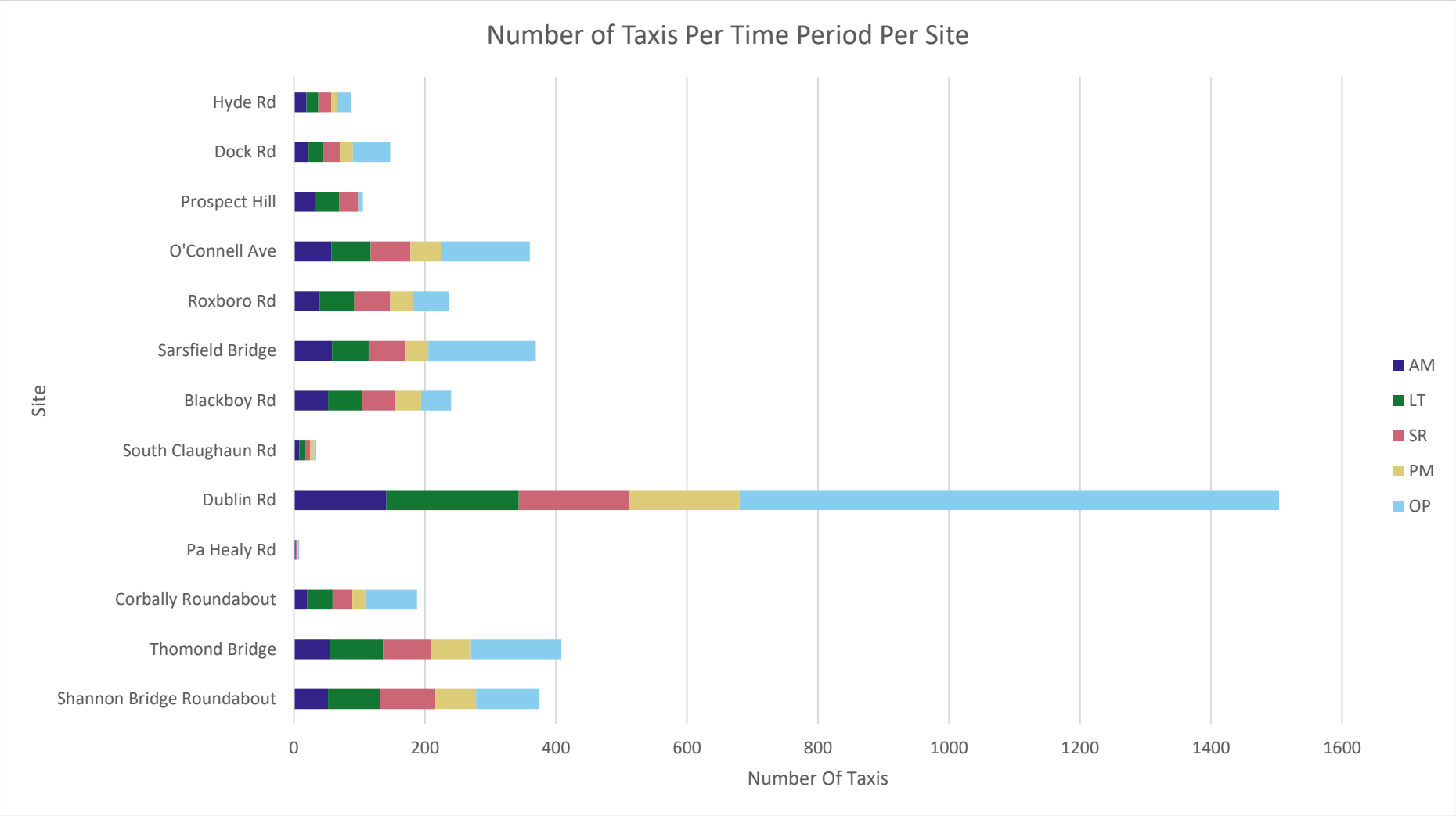


Figure 3-17:Number of Taxis Crossing the Limerick City Cordon Inbound at all Sites Per Time Period

Bus

Figure 3-18 below presents the total number of buses crossing the Limerick City Cordon for each surveyed time period. Overall, it is evident that the OP time period has the highest volume of buses, with a total of 260 buses travelling inbound.

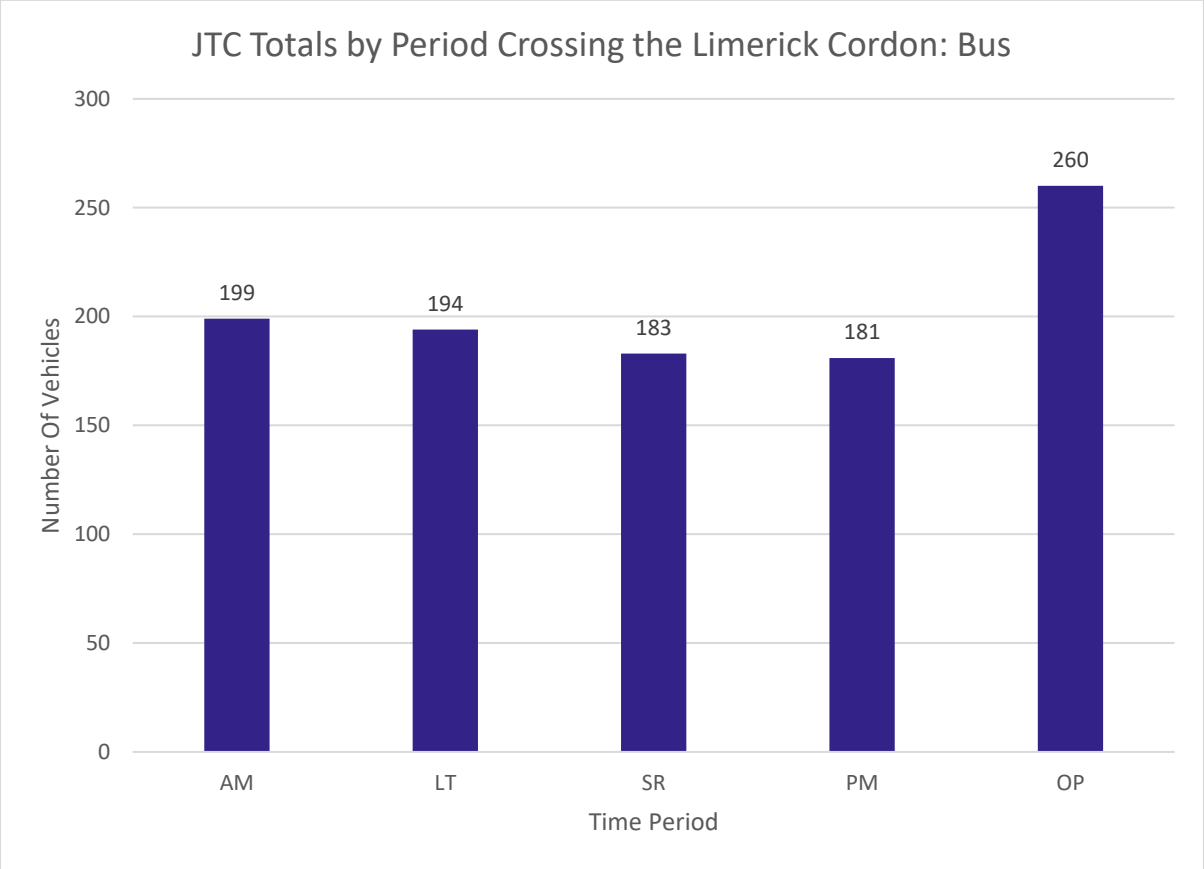


Figure 3-18:Total Number of Bus journeys per Time Period

Figure 3-19 presents a further breakdown of the total number of buses, with reference to each site location. The busiest location for buses crossing the Limerick City Cordon was the Roxboro Rd junction, with a total of 173 buses travelling inbound through this junction over a 24-hour period.

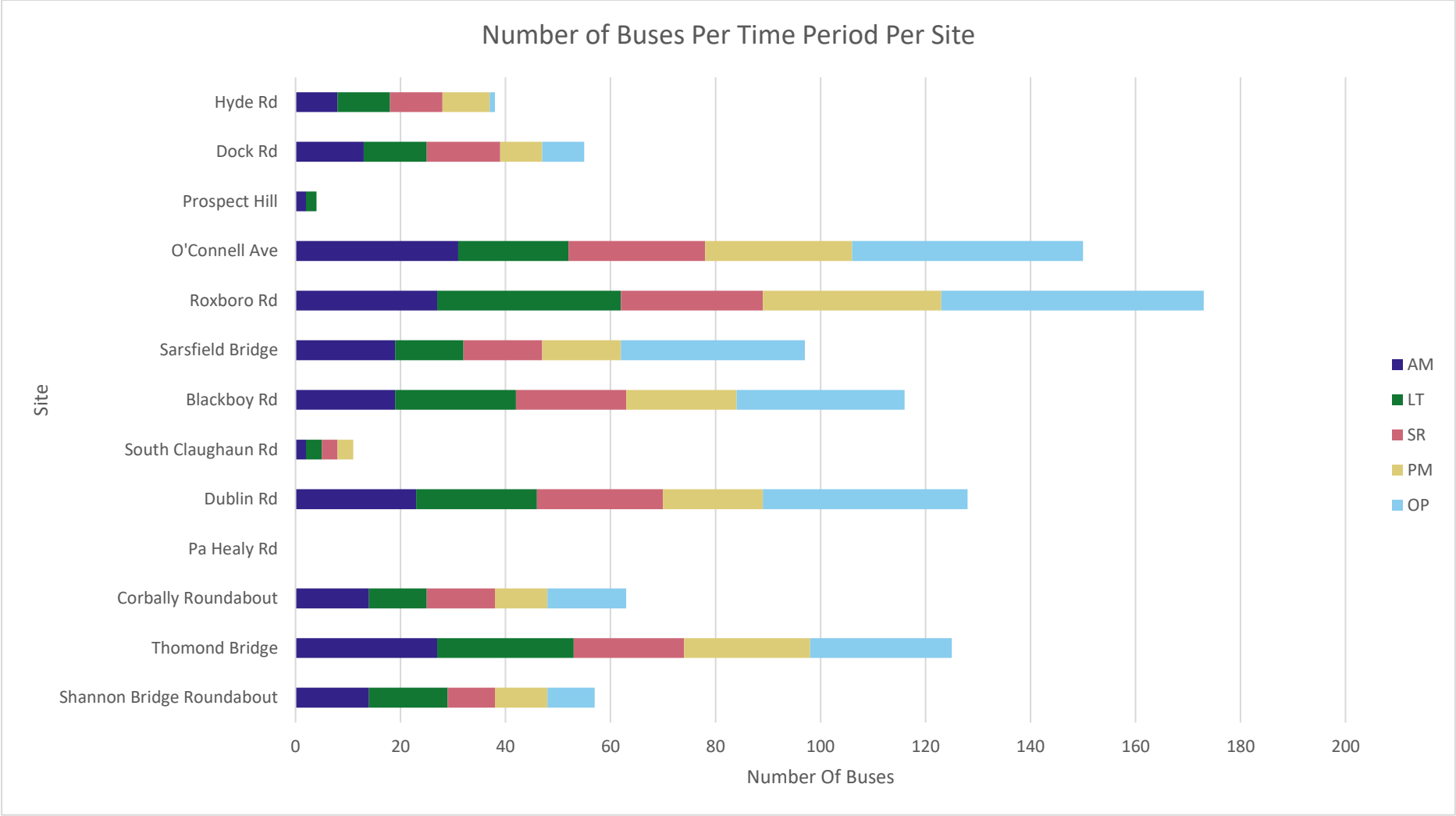


Figure 3-19:Number of Buses Crossing the Limerick City Cordon Inbound at all Sites Per Time Period

Pedestrians

Figure 3-20 presents the total number of pedestrian movements crossing the Limerick City Cordon per surveyed time period. Overall, it is evident that the SR period has the highest volume of pedestrians, with a total of 2,605 pedestrians travelling inbound.

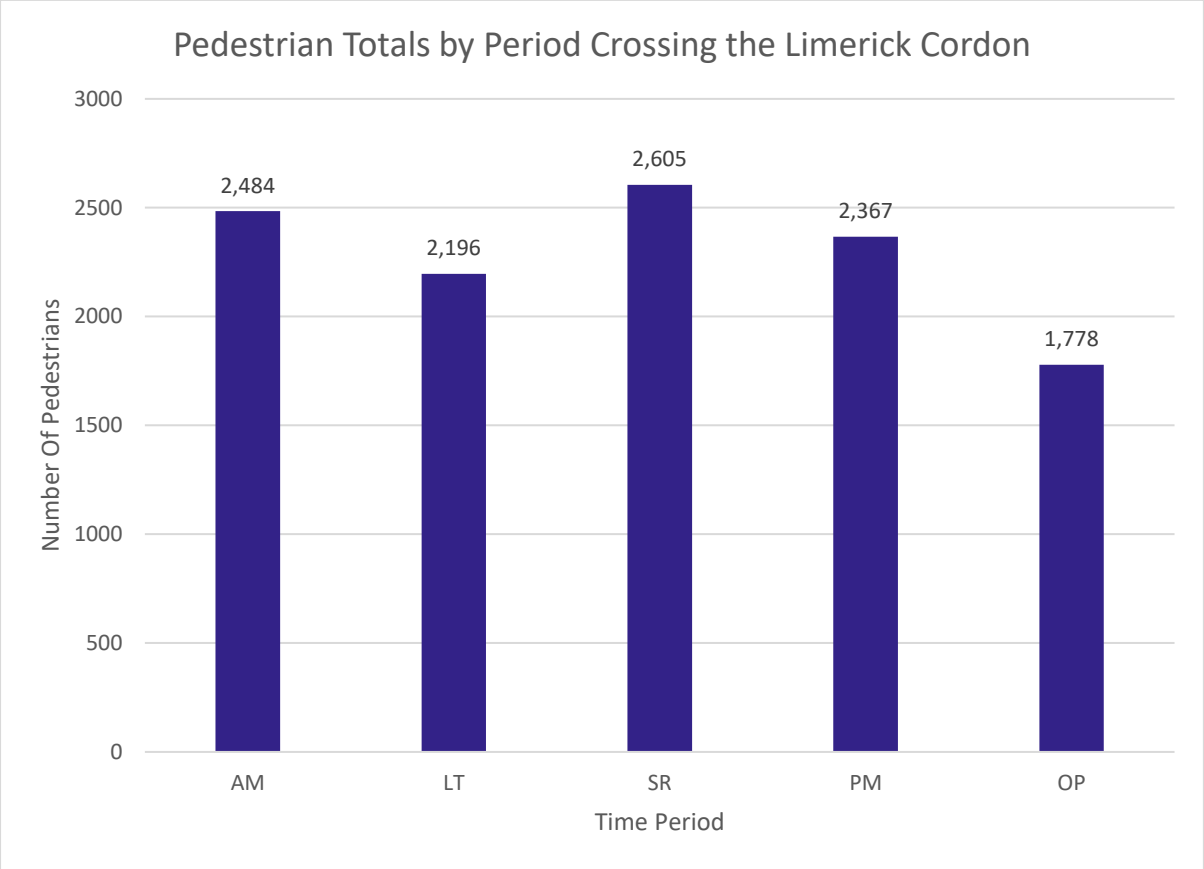


Figure 3-20:Total Pedestrians per Time Period

Figure 3-21 presents a further breakdown of the total number of pedestrian movements, with reference to each site location. The busiest location for pedestrians crossing the Limerick City Cordon was the Sarsfield Bridge, with a total of 3,199 pedestrians travelling inbound through this junction over a 24-hour period.

Please also refer to Appendix A for further information on the total number of pedestrian movements, with reference to each individual time period and the classified pedestrian types (i.e. adult, OAP, child < 5, child < 16 and mobility impaired).

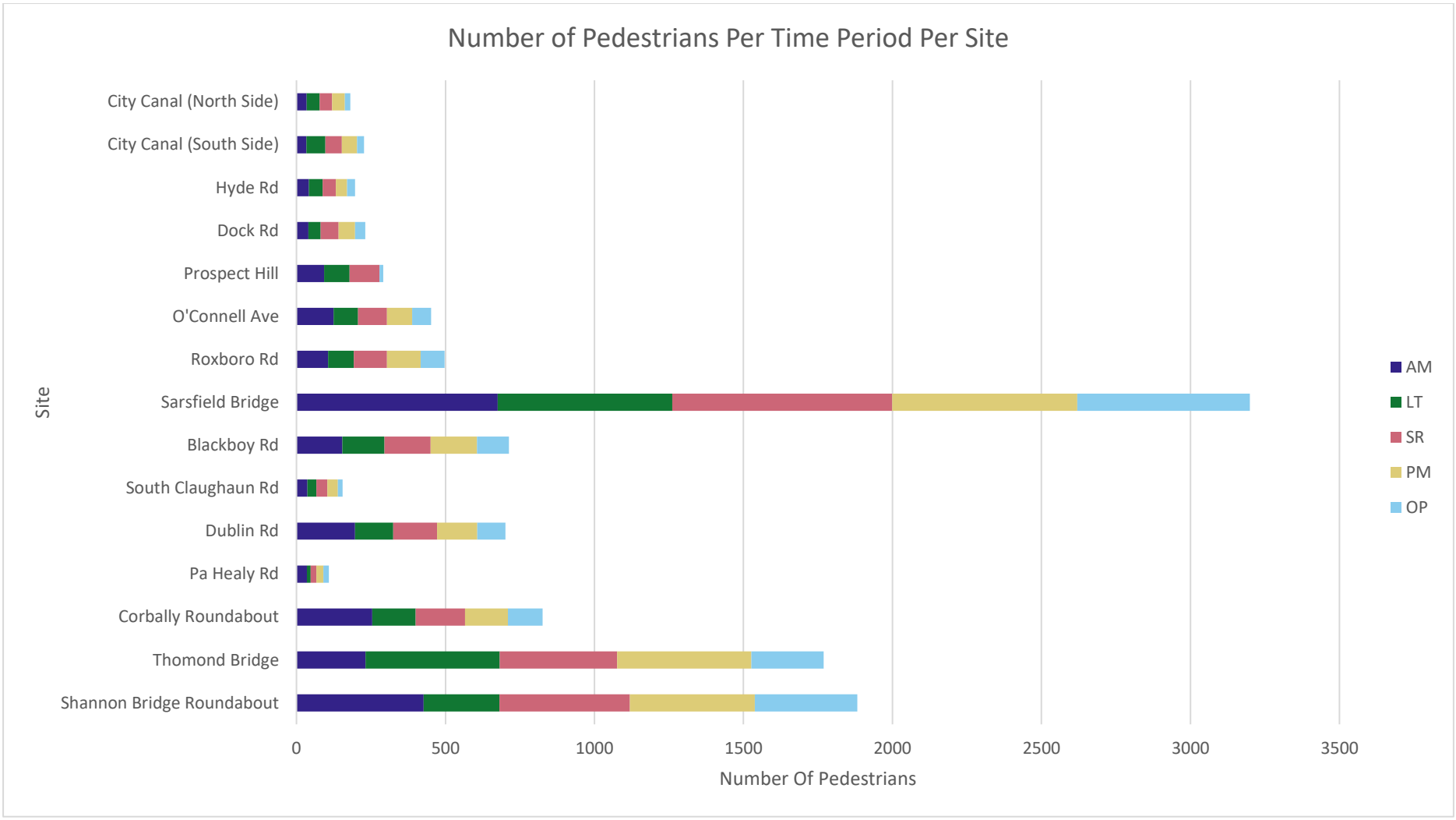


Figure 3-21:Total Pedestrians at all Sites per Time Period

3.1.3 Daily Movements Across the Limerick City Cordon

ATCs recorded traffic flows at 15-minute intervals at 12 sites on the main radial routes into and around the city for a period of two weeks to understand daily two-way traffic movements. These surveys were primarily used to provide insight into the variation in demand across the week. The results from these surveys show that the day with the highest number of vehicles is Thursday, as can be seen in Figure 3-22.

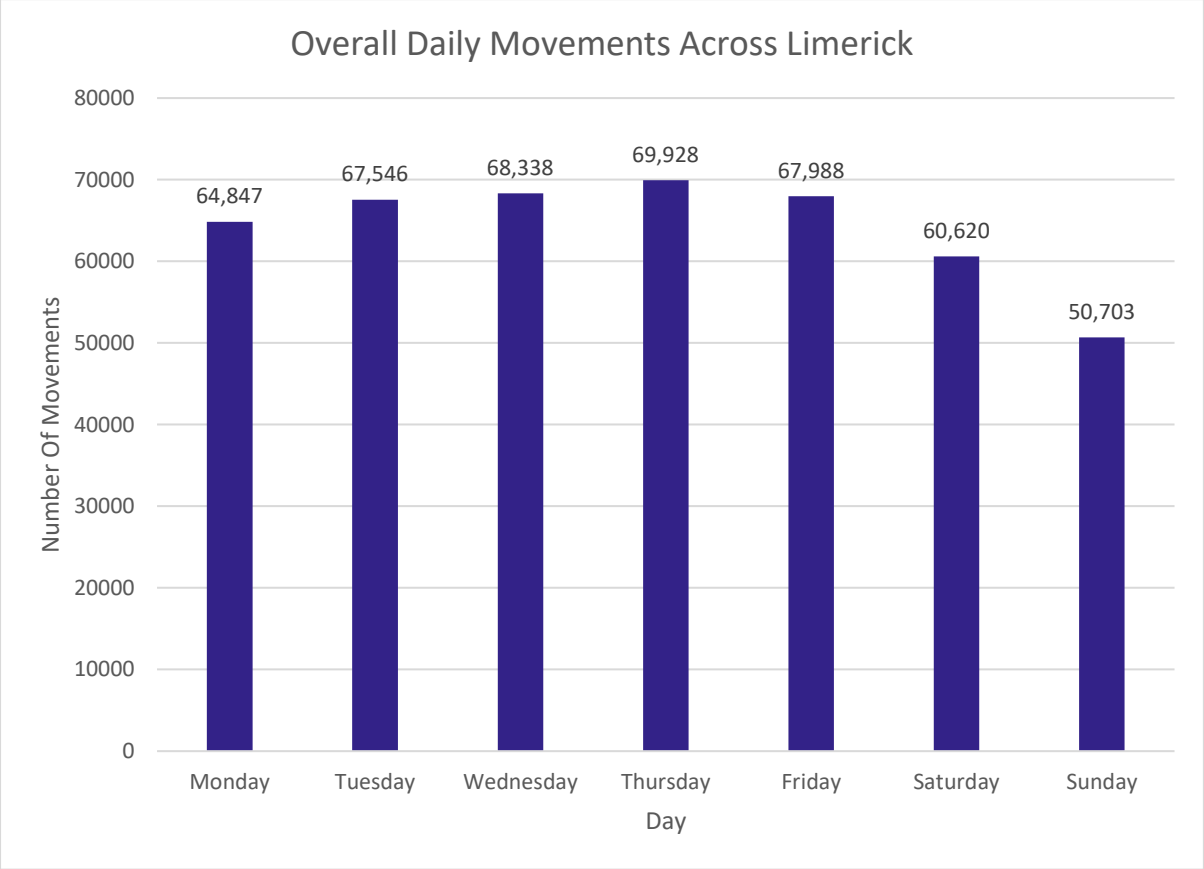


Figure 3-22:Average Daily Traffic at ATC Sites

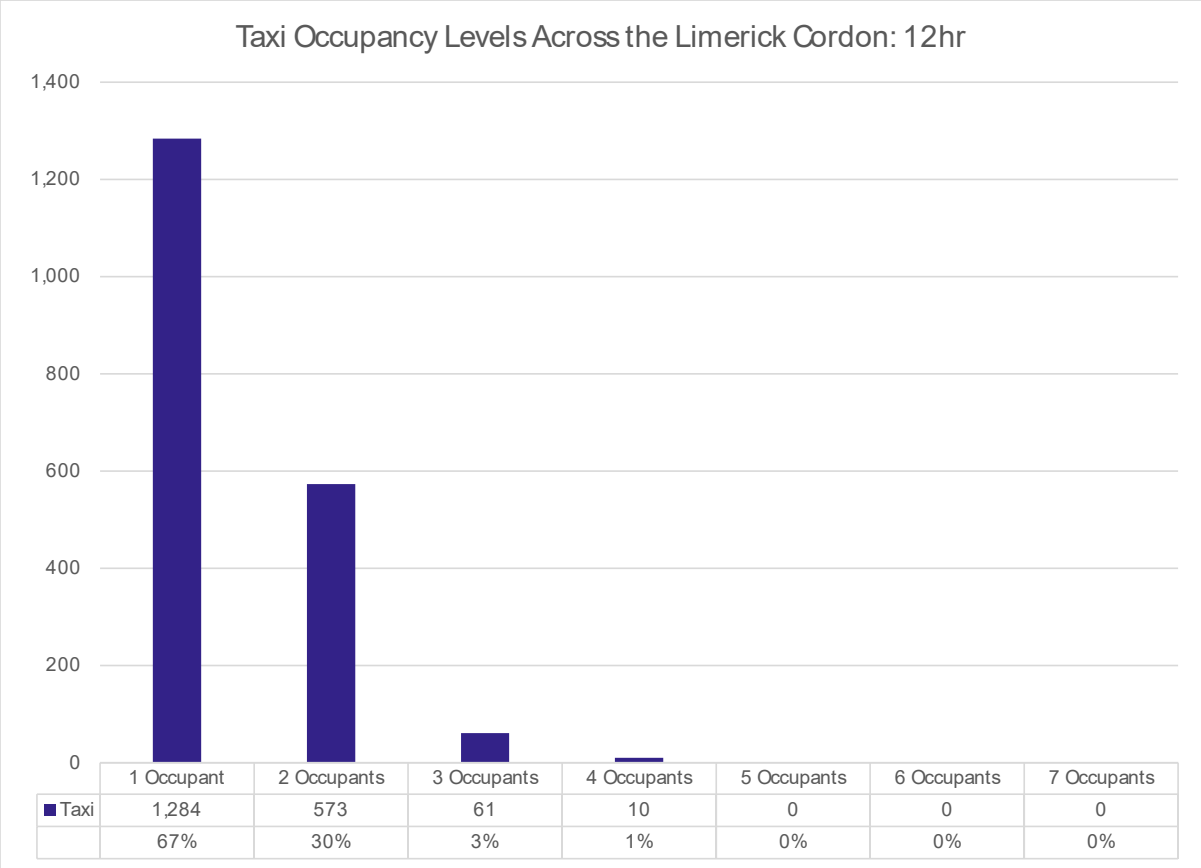
3.2 Vehicle Occupancy Data

3.2.1 Taxi Occupancy

In order to obtain accurate data reflective of a neutral weekday, taxi occupancy surveys were recorded in hourly intervals, over a 12-hour period (i.e. 07:00-19:00) on the day of the survey.

Figure 3-23, Figure 3-24, Figure 3-25, Figure 3-26 and Figure 3-27 display the observed vehicle occupancy for taxis crossing the Limerick City Cordon inbound towards the city during the respective time periods. Please note these graphs display both the absolute values and the percentage occupancy for each time period.

During the 12-hour period (07:00 and 19:00) 67% of Taxis crossing the Limerick City Cordon had one occupant, 30% had two occupants and 3% had three occupants.



	1 Occupant	2 Occupants	3 Occupants	4 Occupants	5 Occupants	6 Occupants	7 Occupants
Taxi	1,284	573	61	10	0	0	0
	67%	30%	3%	1%	0%	0%	0%

Figure 3-23:Taxi Occupancy: 12 Hour

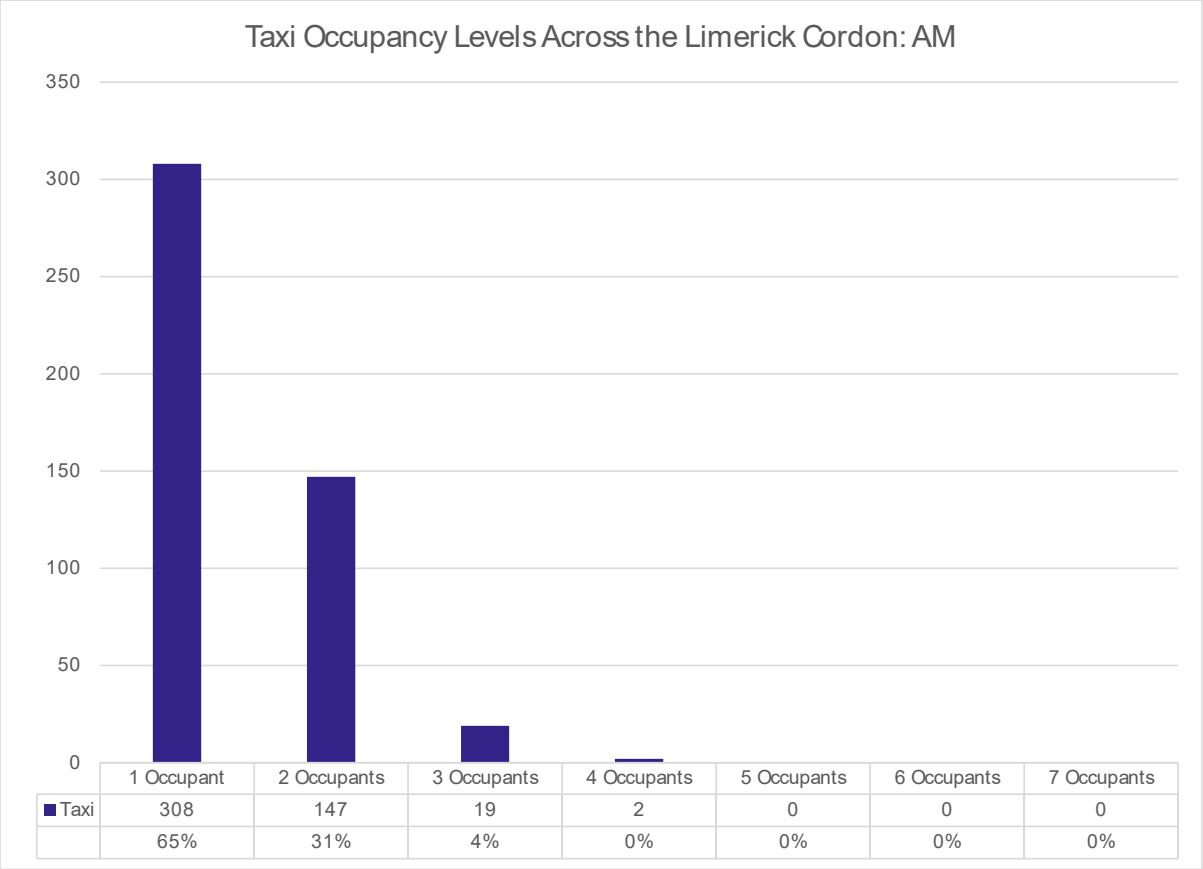


Figure 3-24:Taxi Occupancy: AM

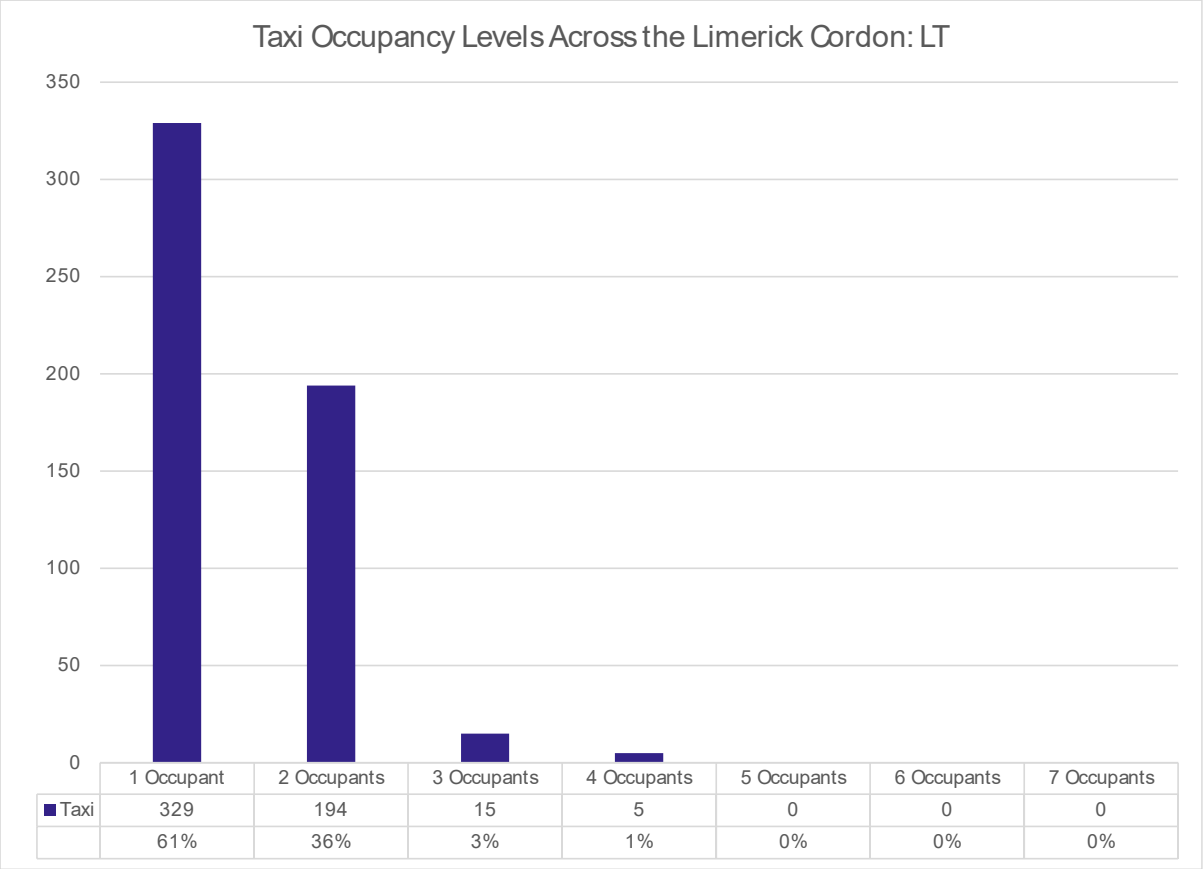


Figure 3-25:Taxi Occupancy: LT

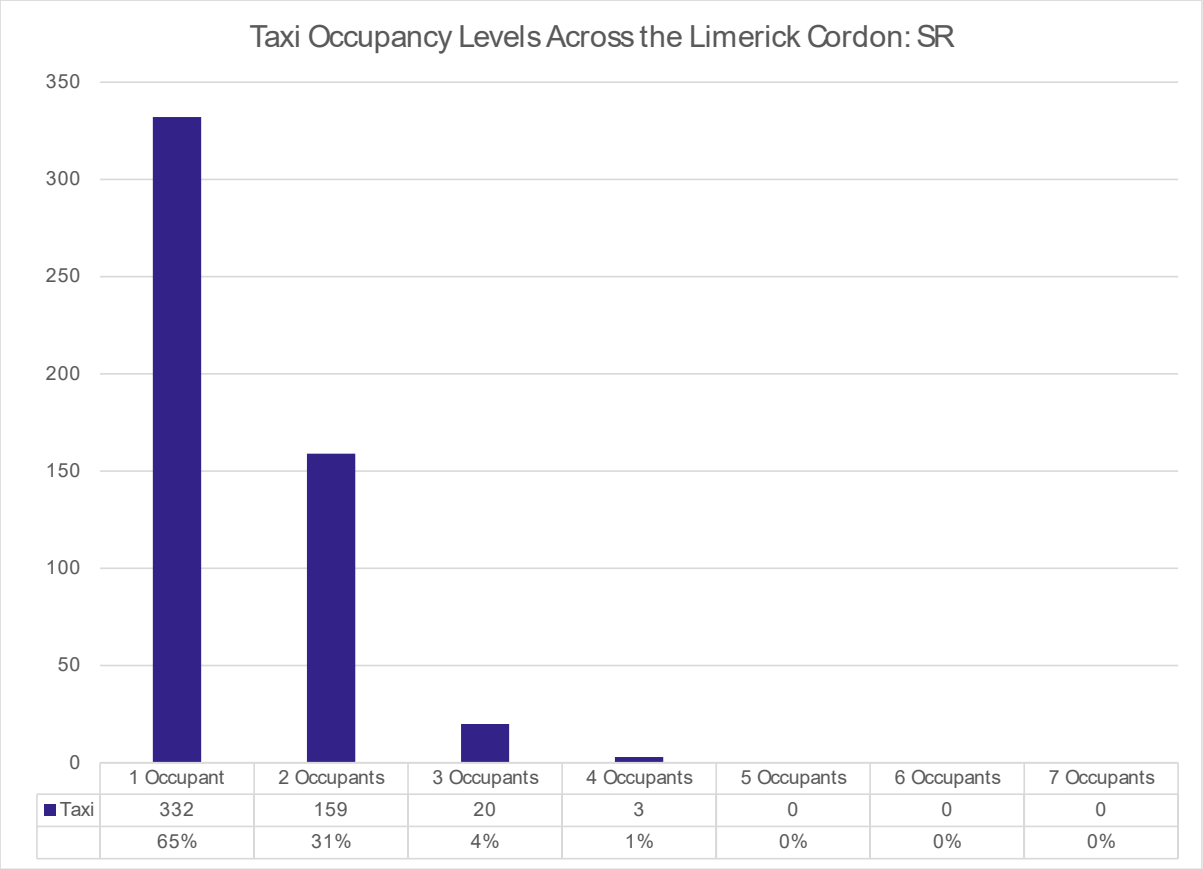


Figure 3-26:Taxi Occupancy: SR

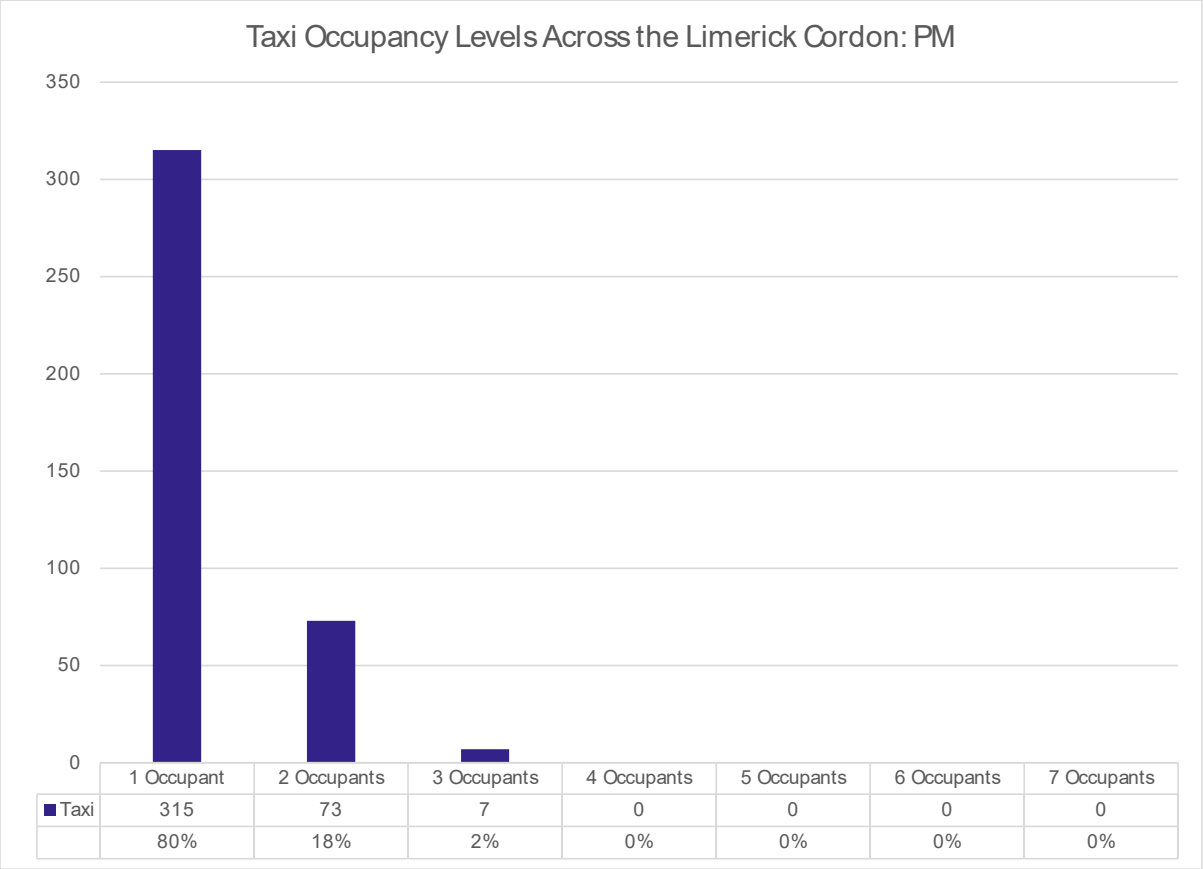


Figure 3-27:Taxi Occupancy: PM

Taxi Occupancy per site

Figure 3-28, Figure 3-29, Figure 3-30, Figure 3-31 and Figure 3-32 display the vehicle occupancy for taxis crossing the Limerick City Cordon during the respective time periods, with further reference to each individual site location.

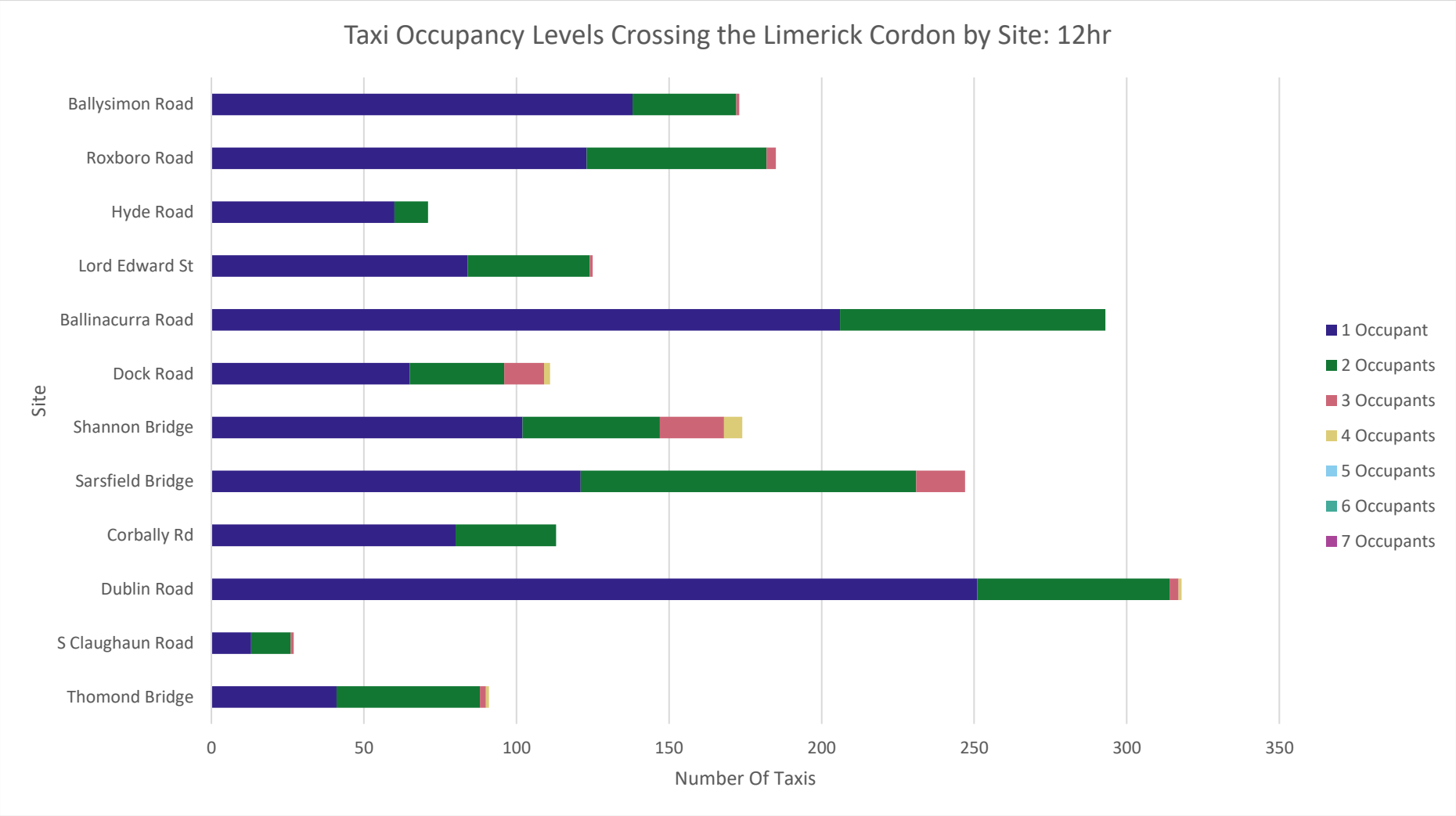


Figure 3-28:Taxi Occupancy per Site: 12 Hour

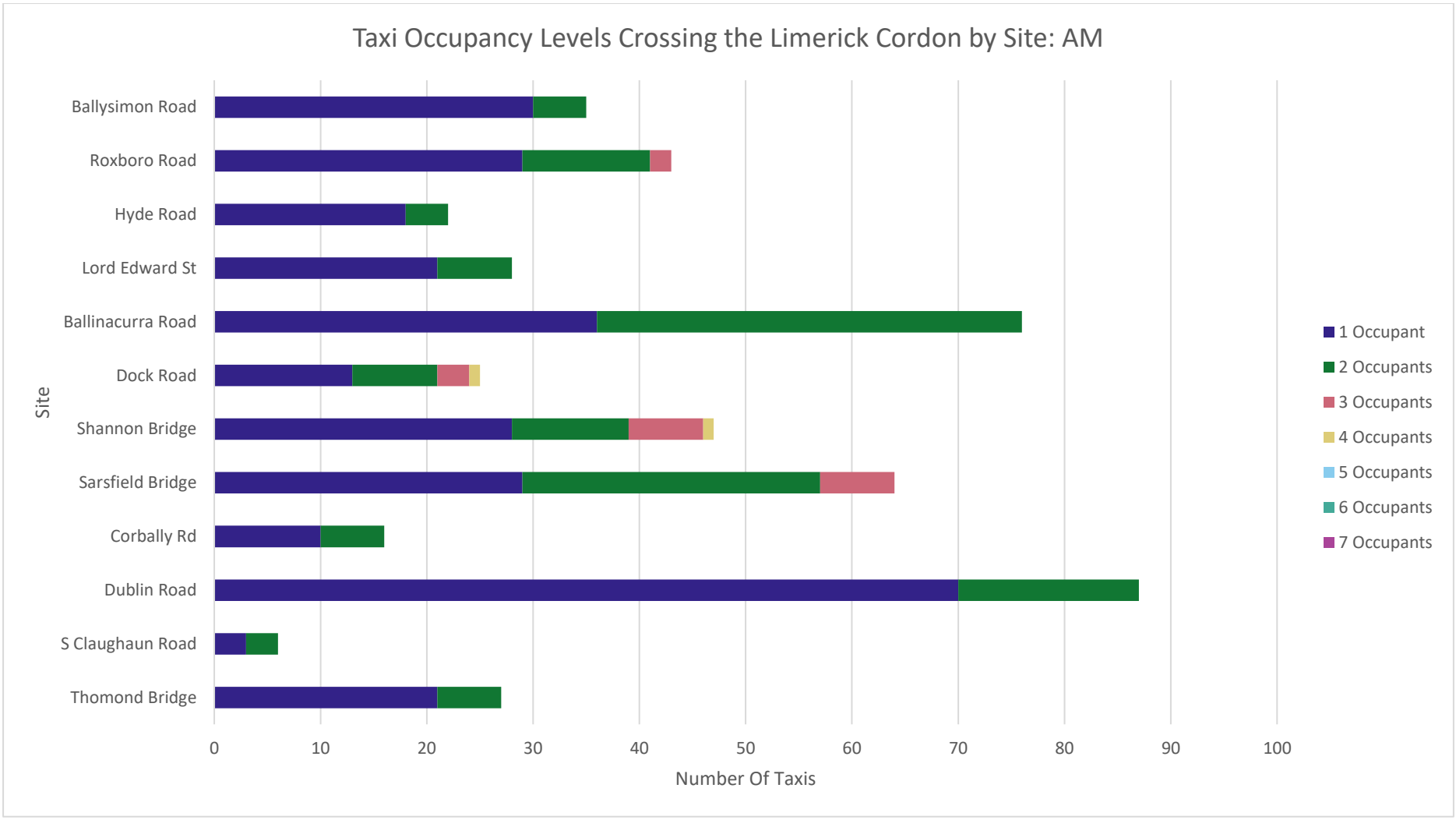


Figure 3-29:Taxi Occupancy per Site: AM

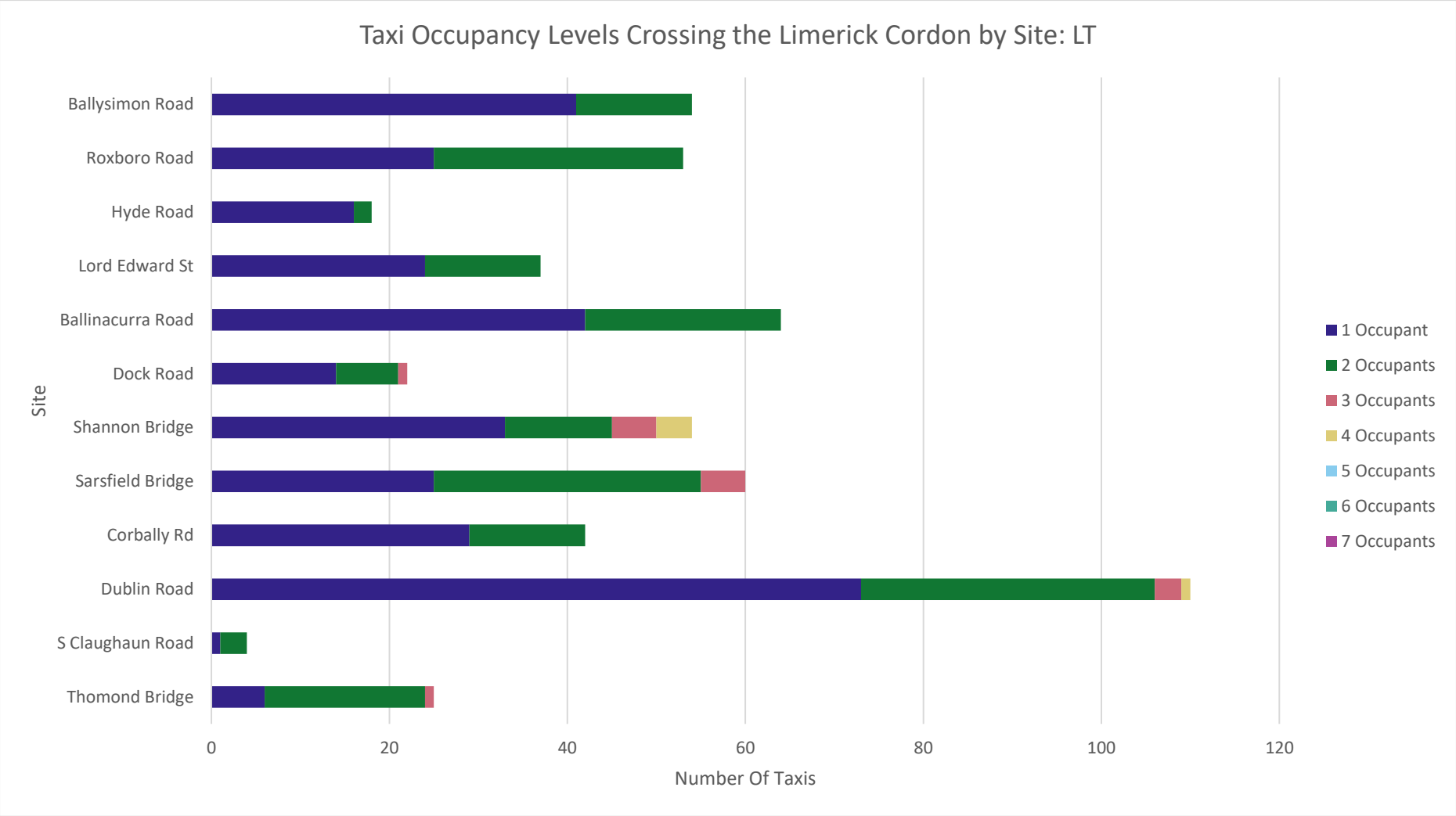


Figure 3-30:Taxi Occupancy per Site: LT

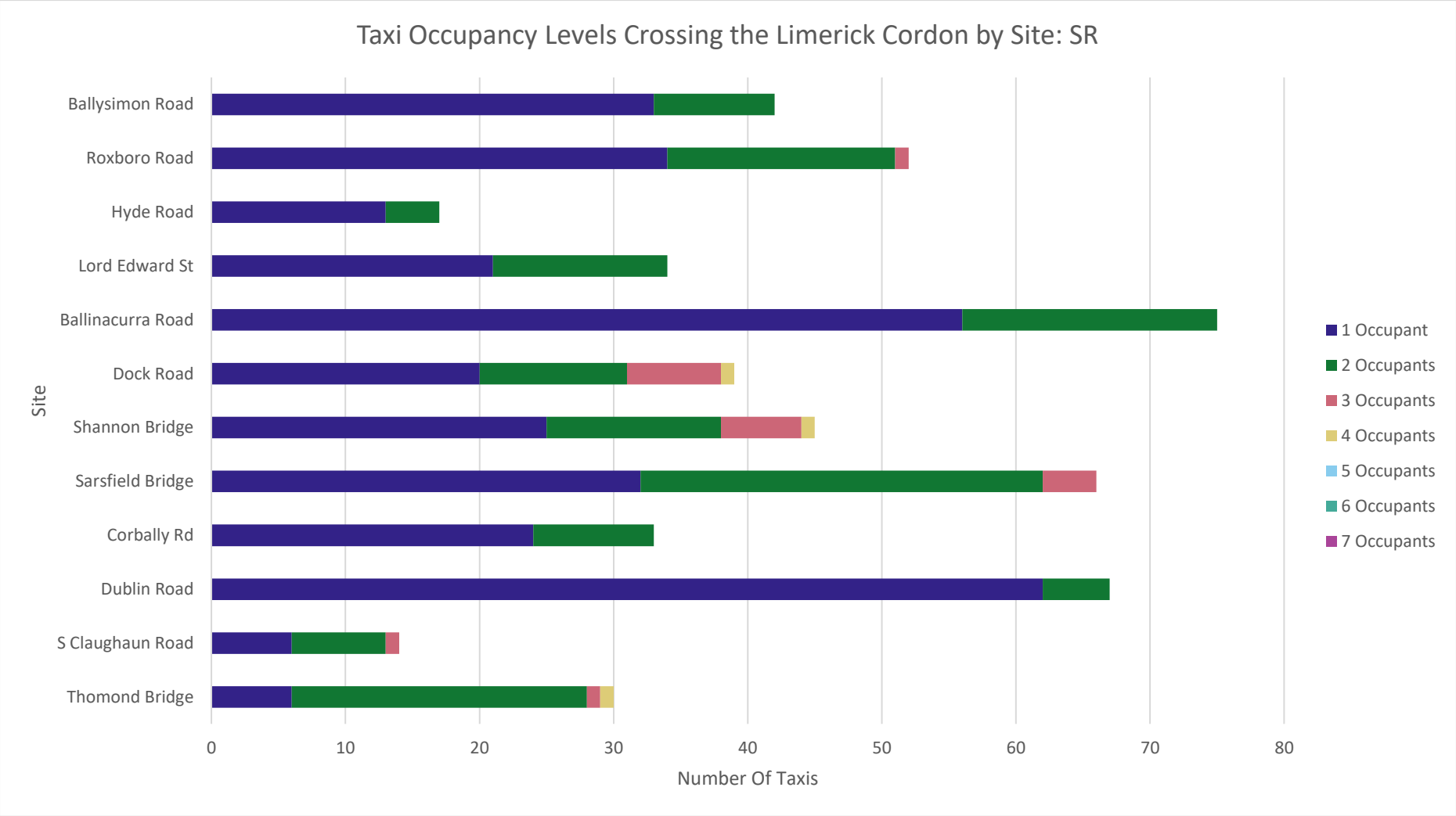


Figure 3-31:Taxi Occupancy per Site: SR

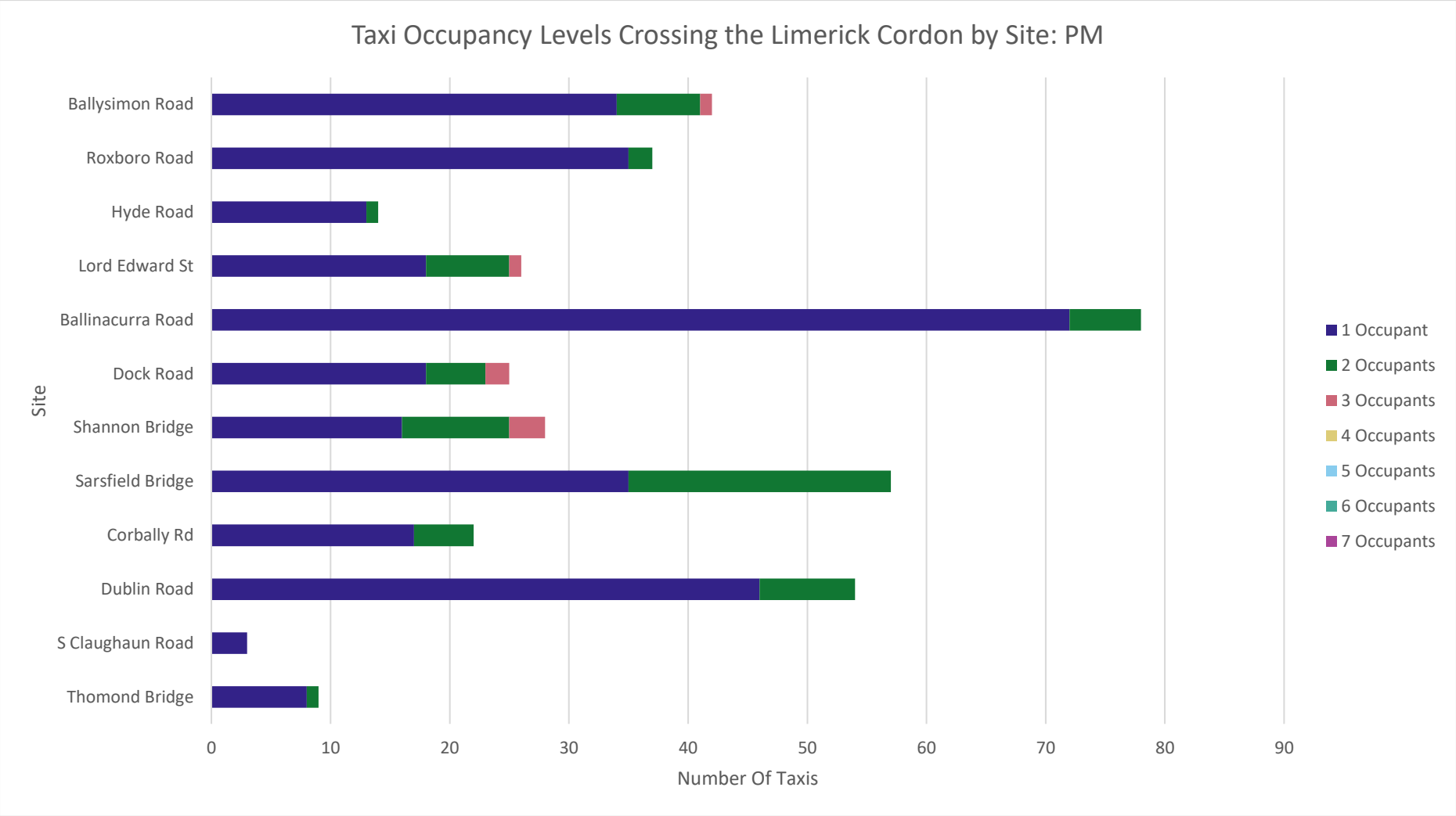


Figure 3-32:Taxi Occupancy per Site: PM

3.2.2 Bus Occupancy

Bus occupancy information was obtained from 10 bus stop survey locations, recorded at hourly intervals over a 12-hour period (i.e. 07:00 - 19:00) on the day of the survey.

Figure 3-33, Figure 3-34, Figure 3-35, Figure 3-36 and Figure 3-37 display the recorded bus occupancies crossing the Limerick City Cordon inbound towards the city during the respective time periods. The bus occupancies are displayed in terms of 5 different capacity bands (0-24%, 25-49%, 50-74%, 75-99% and 100%). Please note that these graphs display both the absolute values and the percentage occupancy for each time period. The figure below shows that, over the full 12-hour survey period, approximately 8% of buses were at less than 25% capacity, 67% were at between 25% and 49% capacity, 19% were at between 50% and 74% capacity, 5% were at between 75% and 99% capacity and approximately 1% were full.

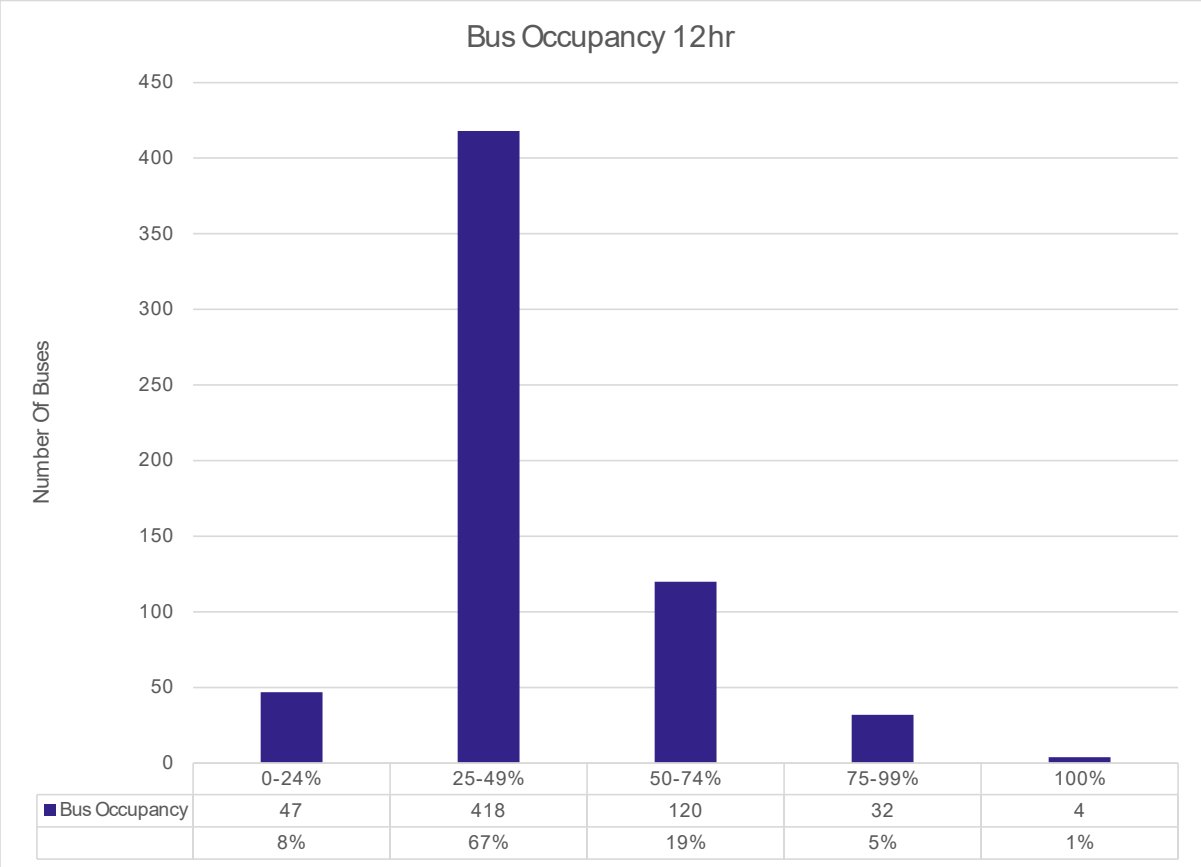


Figure 3-33:Bus Occupancy: 12 Hour

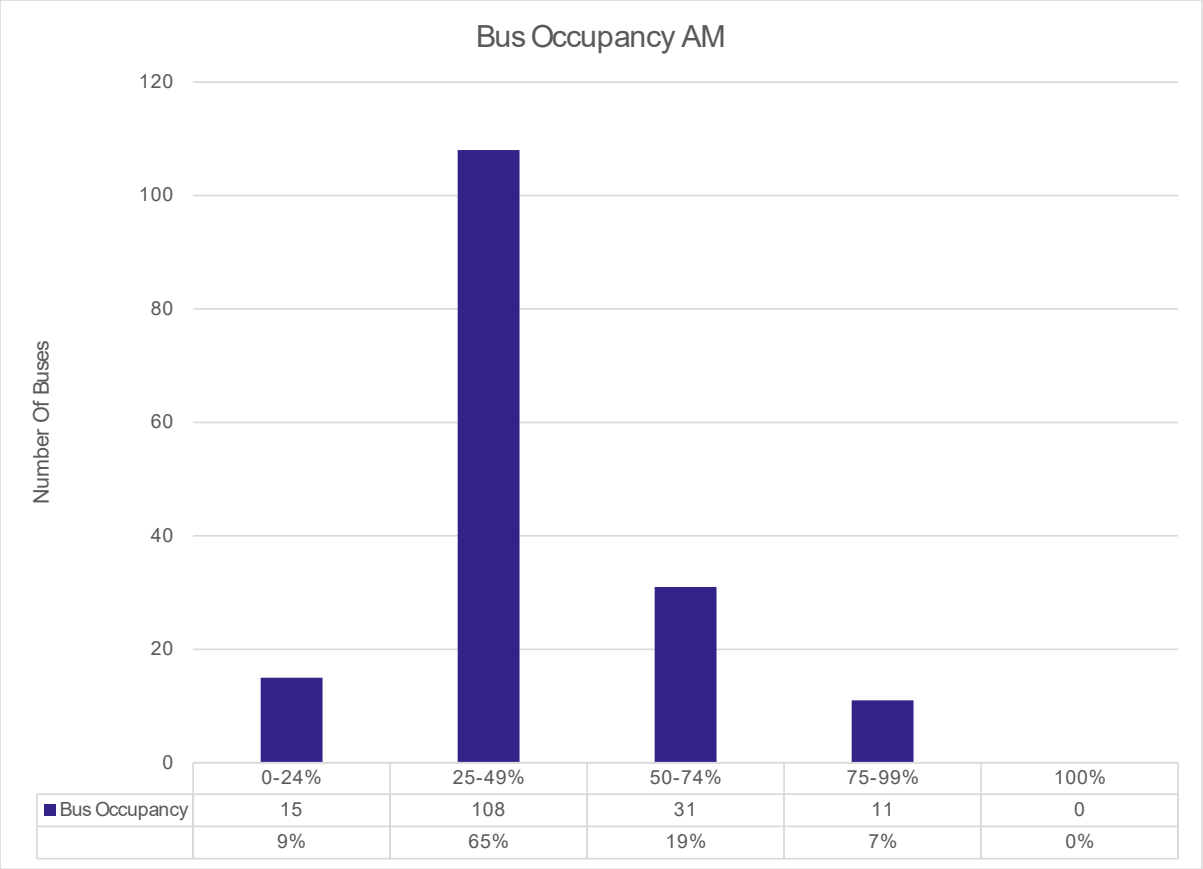


Figure 3-34:Bus Occupancy: AM

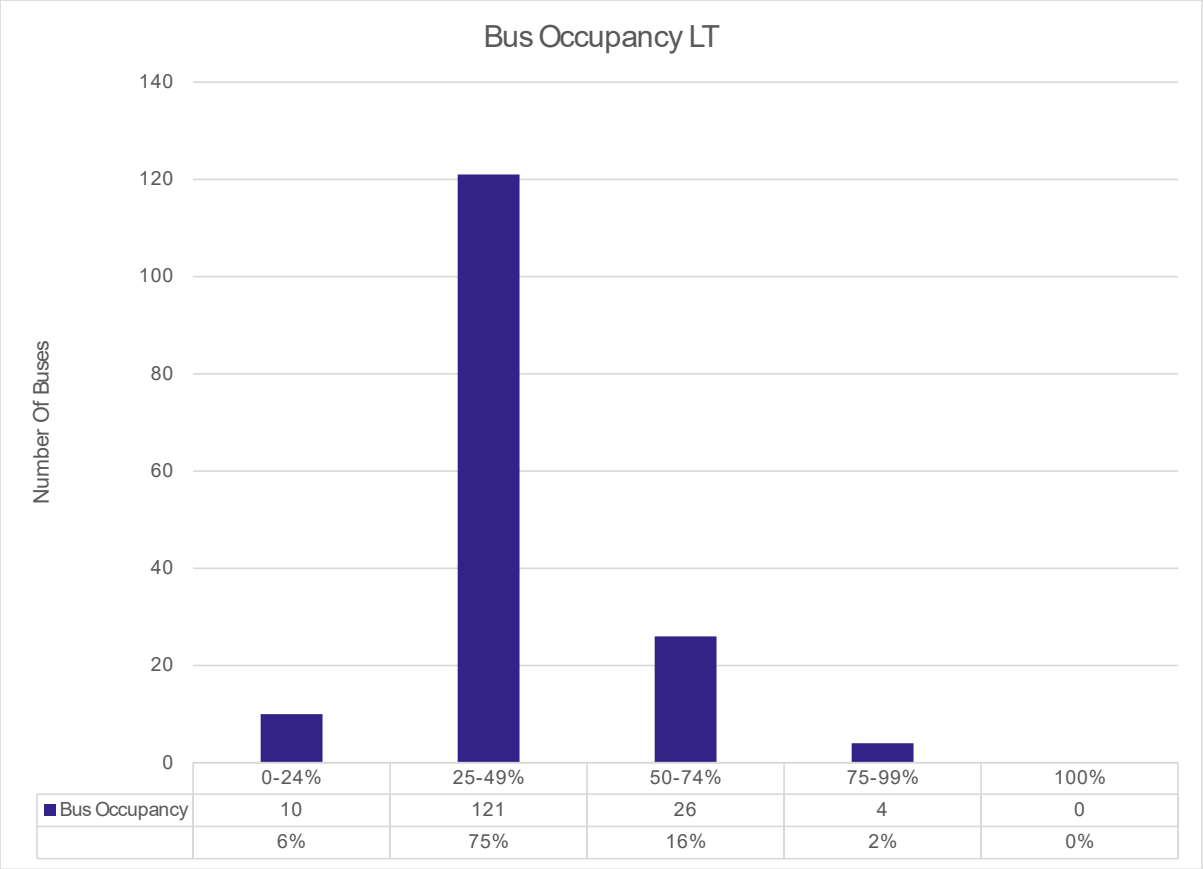


Figure 3-35:Bus Occupancy: LT

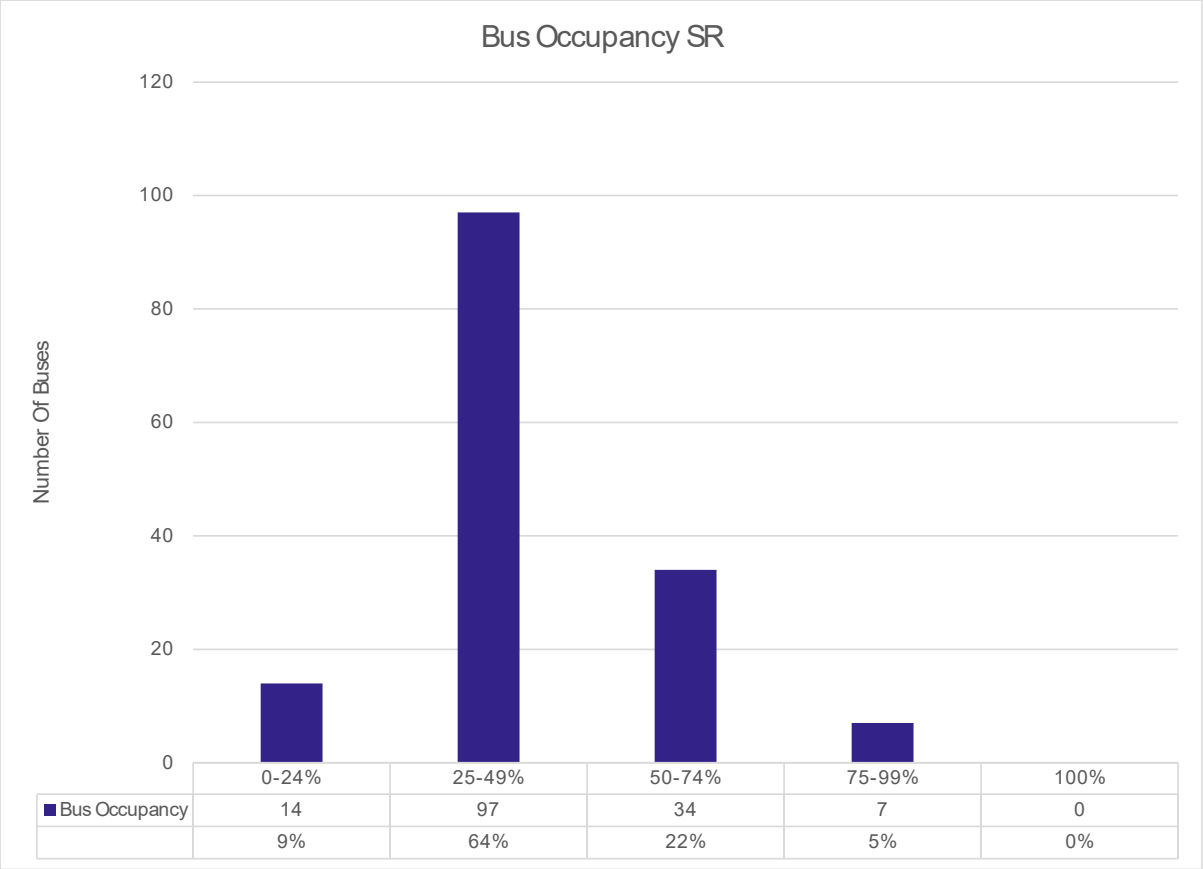


Figure 3-36:Bus Occupancy: SR

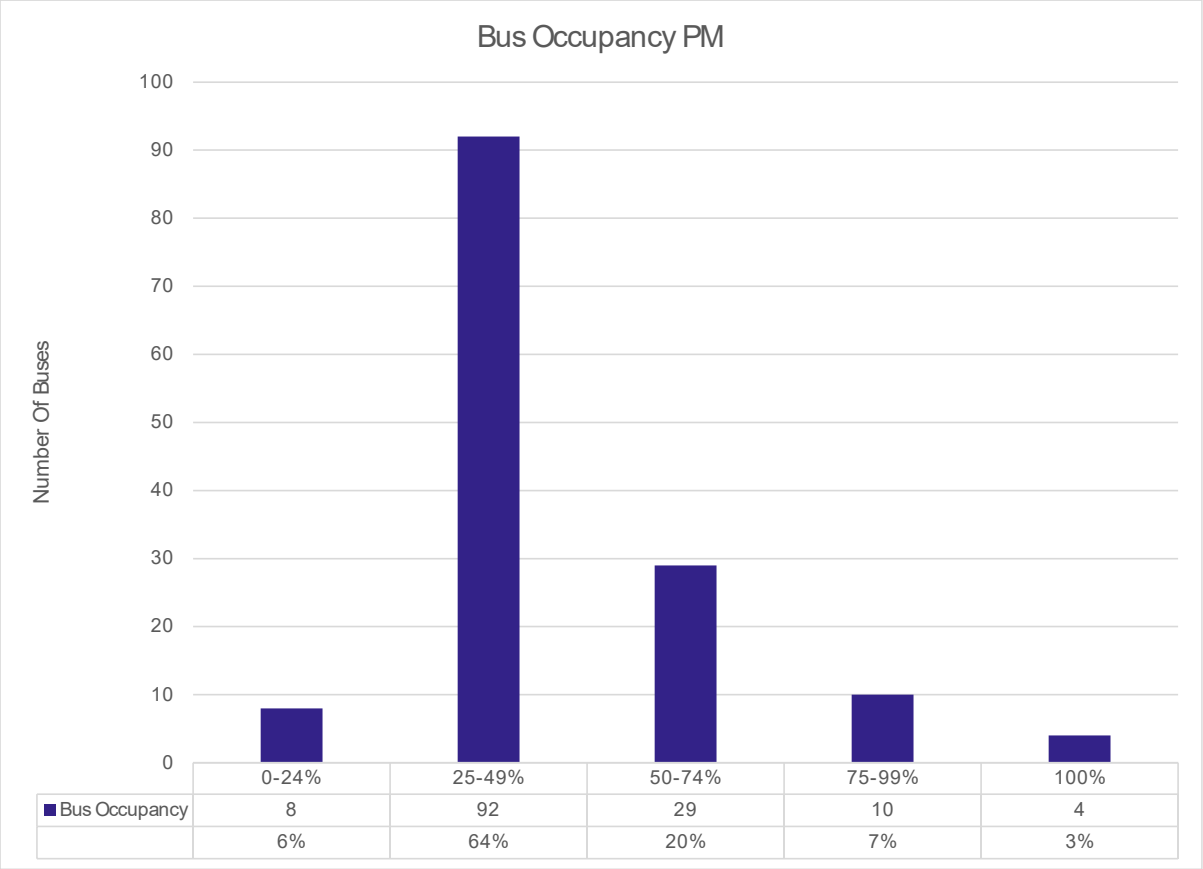


Figure 3-37:Bus Occupancy: PM

Bus Occupancy per Site

Figure 3-38, Figure 3-39, Figure 3-40, Figure 3-41 and Figure 3-42 display the vehicle occupancy for buses crossing the Limerick City Cordon during the respective time periods, with further reference to each individual bus stop location.

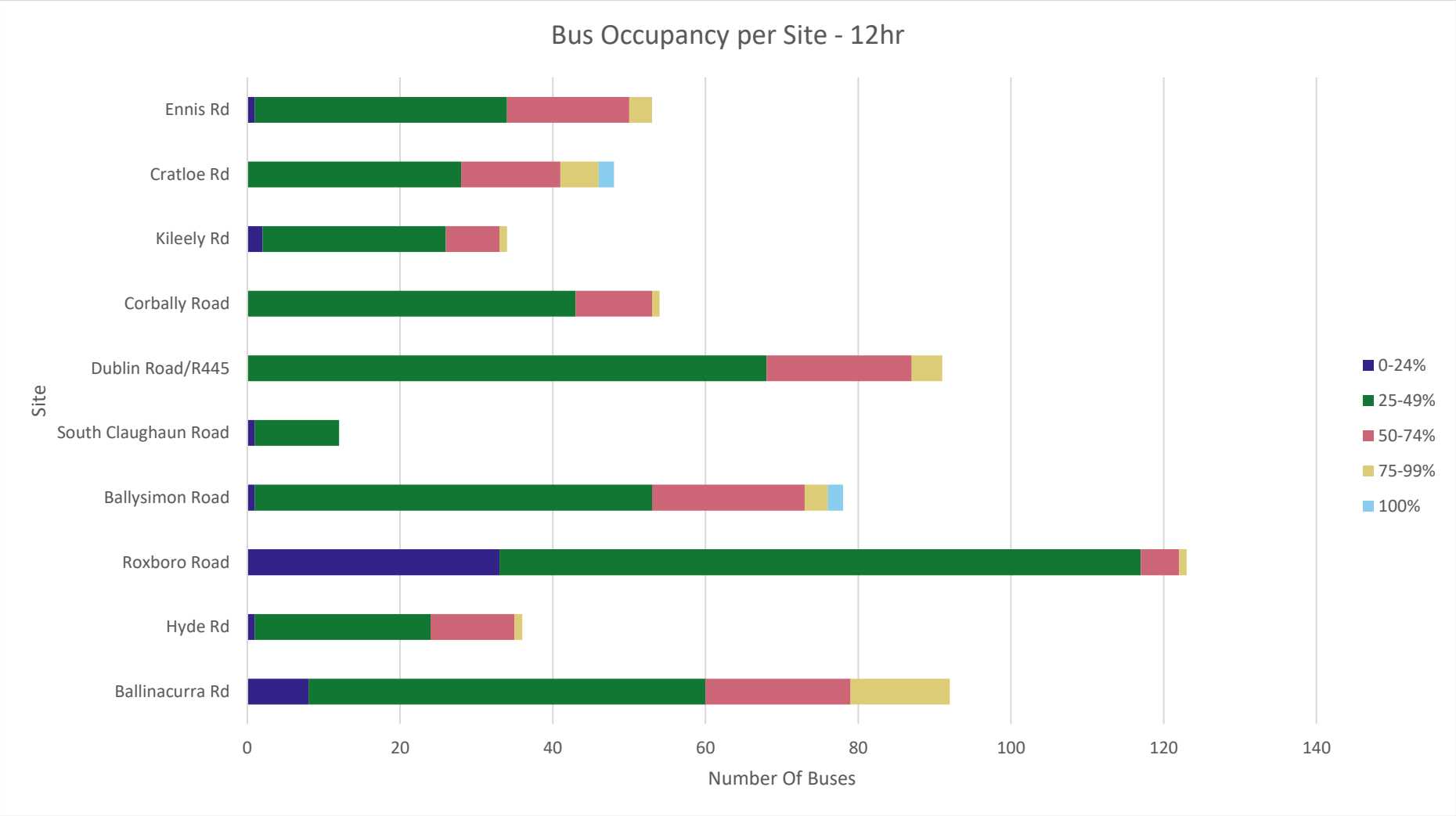


Figure 3-38:Bus Occupancy per Site: 12 Hour

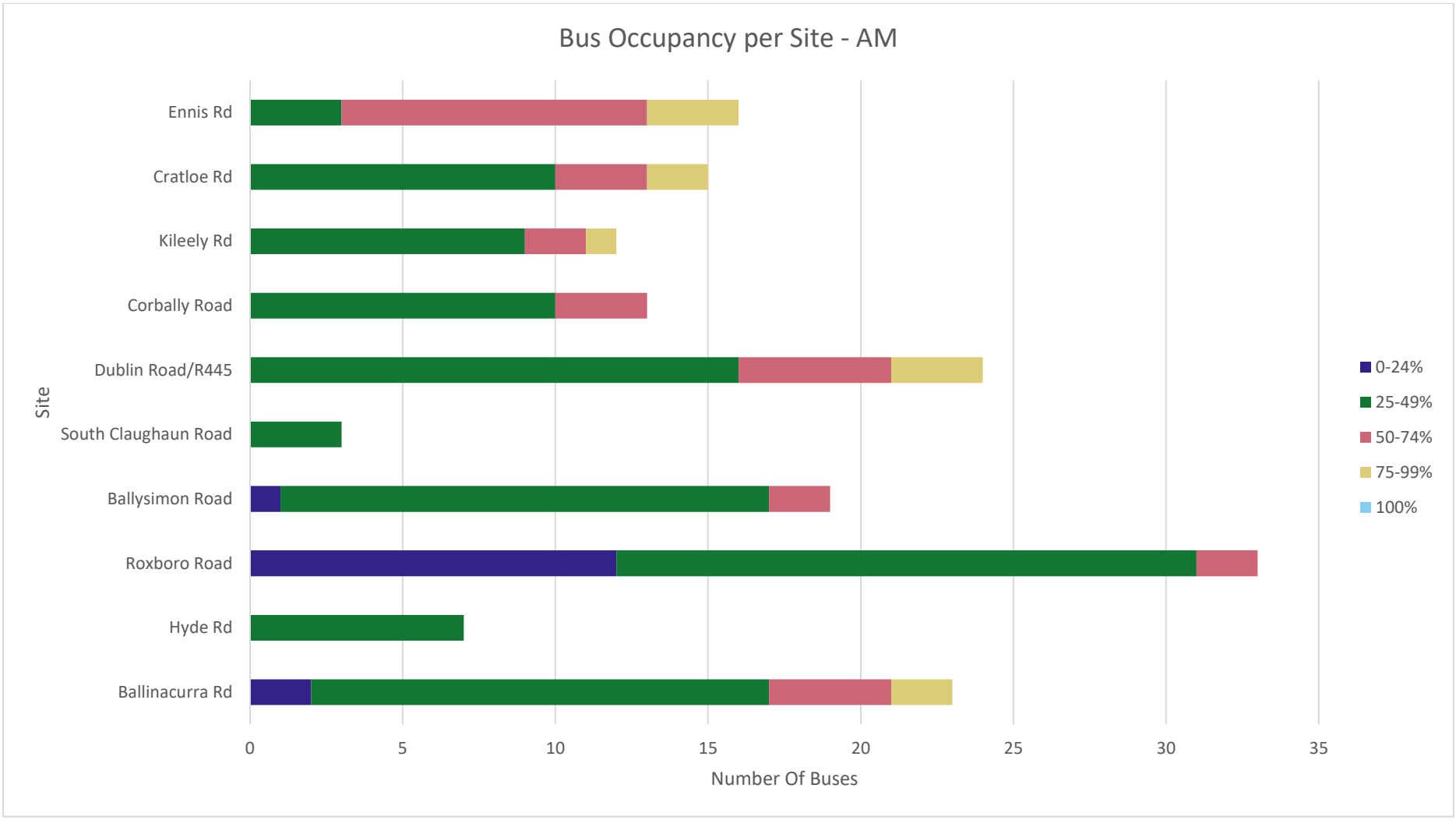


Figure 3-39:Bus Occupancy per Site: AM

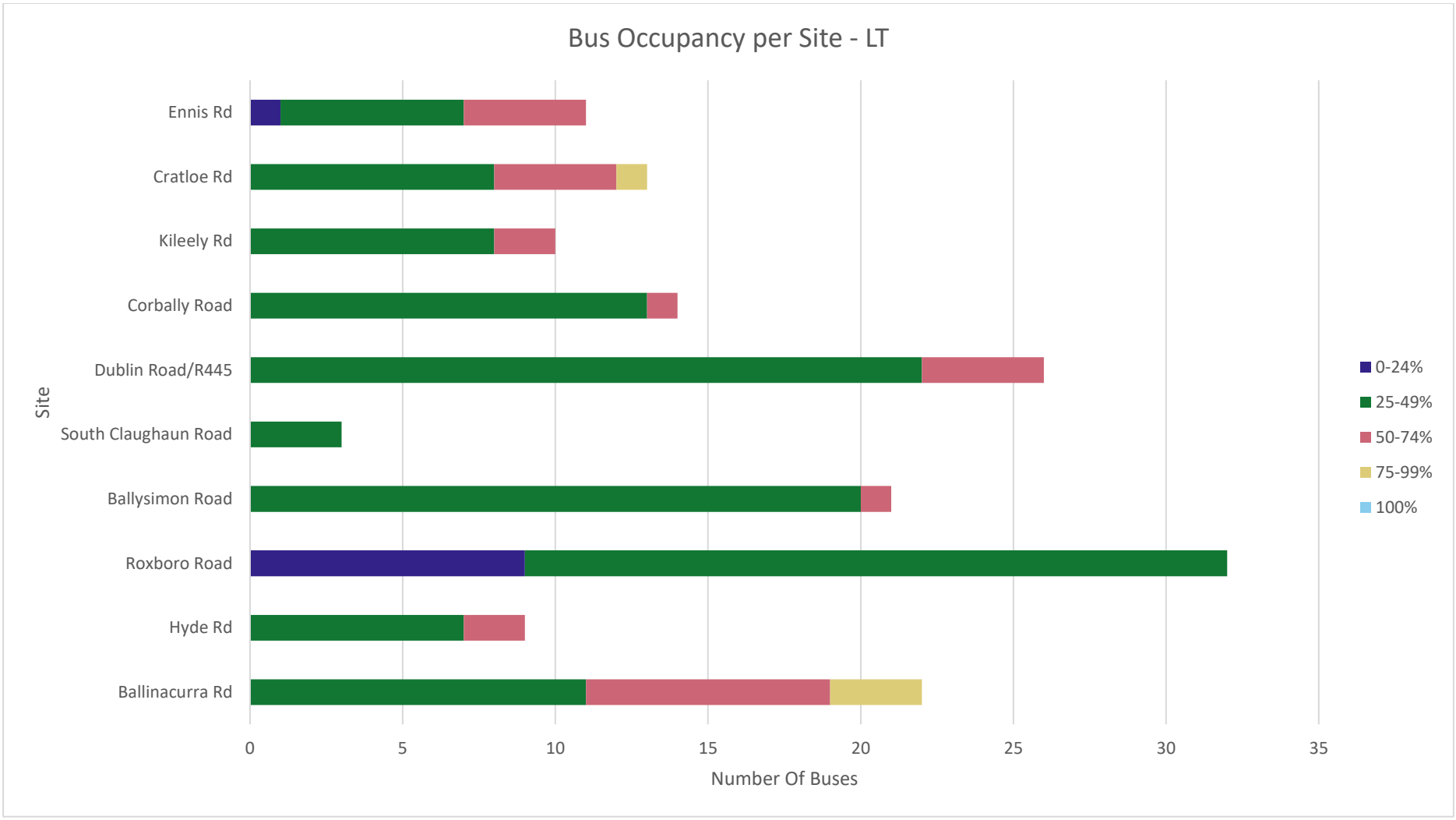


Figure 3-40:Bus Occupancy per Site: LT

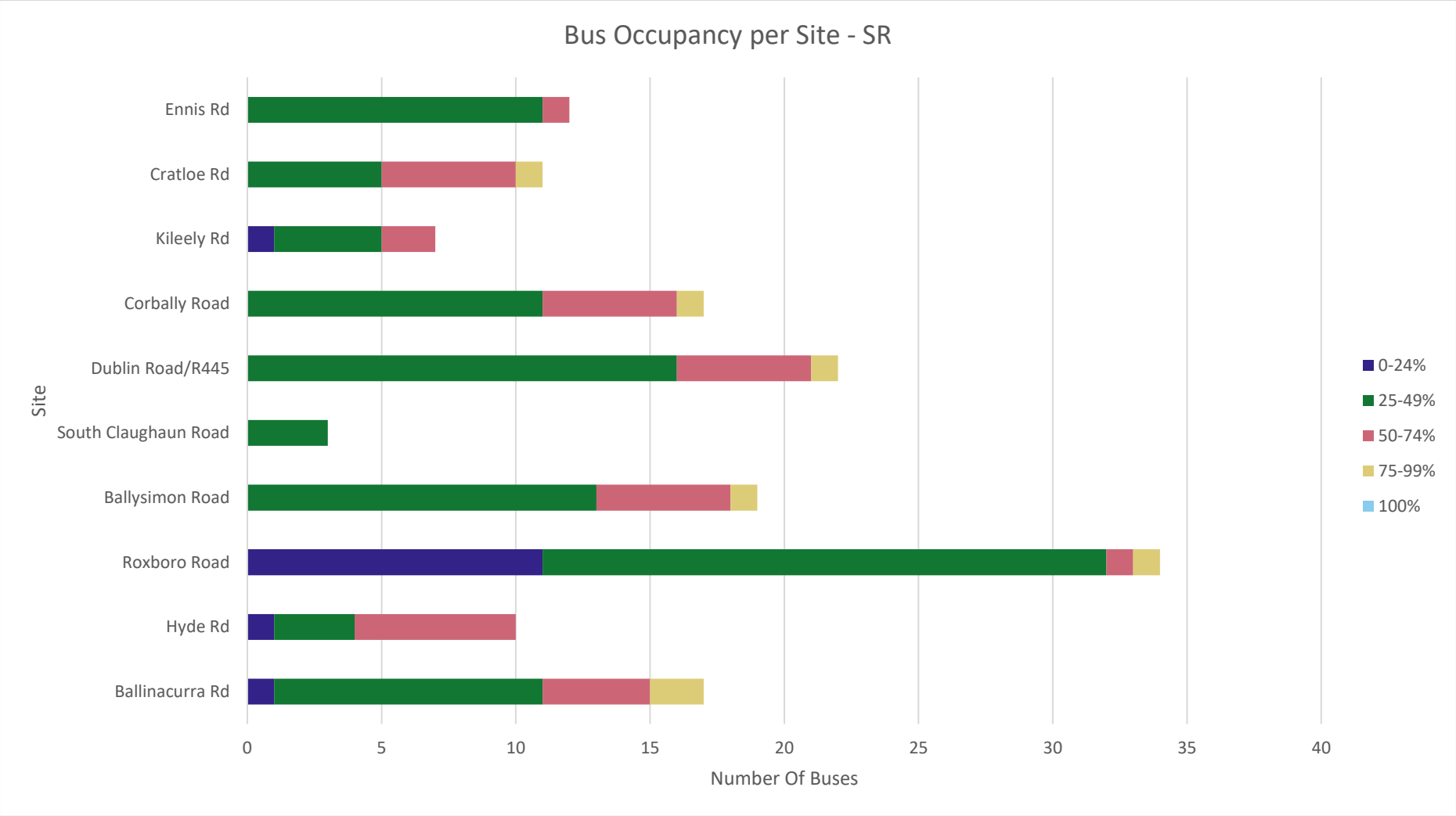


Figure 3-41:Bus Occupancy per Site: SR

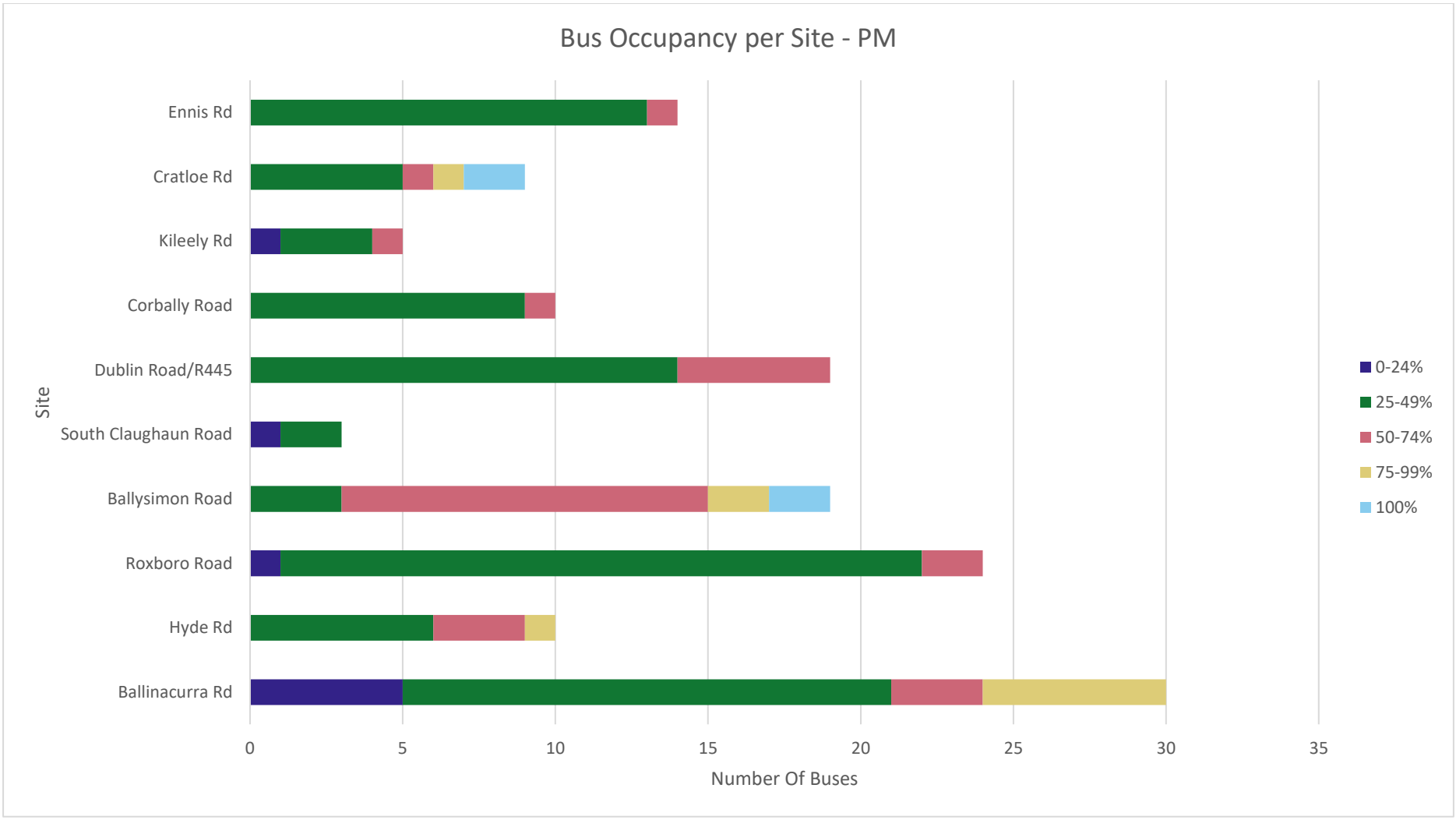


Figure 3-42:Bus Occupancy per Site: PM

4 People Movements

4.1 Methodology

Chapter 3 provided details on the number of vehicles, pedestrians and cyclists crossing the Limerick City Cordon. In order to convert these to total person trips crossing the cordon, it is necessary to estimate the occupancy of each vehicle type. Further details on how this was done is outlined below.

- Road Passenger Movements were calculated in the following ways:
    - As there are no car vehicle occupancy surveys available, movements were calculated by applying an occupancy factor of 1.37, derived from the National Household Travel Survey, to the number of vehicles at each equivalent site from the JTC surveys. This value is comparable to the value of 1.38 from table 6.11.24 of the TII Project Appraisal Guidelines.
    - Taxi people movements were calculated by taking the number of taxis in the JTC surveys and multiplying these by a site-specific occupancy factor that was calculated by dividing the number of passengers by the number of vehicles. Where no equivalent site was available, an average factor from all sites was used.
    - Total bus passenger movements were calculated by applying average bus occupancy factors (as outlined in Appendix B) to the number of buses observed in the bus occupancy surveys.
    - Cyclist and pedestrian people movements were taken directly from the JTC and pedestrian surveys.
- Rail Passenger Movements were calculated in the following way:
    - Rail movements include passengers crossing the cordon inbound from the National Rail Census, which is a boarding and alighting survey conducted by Iarnród Éireann on a single day each year at every rail station throughout the country. The most recent survey was performed during November 2024. This Rail Census is considered representative of typical rail movements.

The resulting people movements, by mode, are discussed in the following sections of this Chapter.

4.2 Road Passenger Movements

Figure 4-1, Figure 4-2, Figure 4-3, Figure 4-4 and Figure 4-5 show the number of passenger trips for pedal cycle, pedestrian, car, taxi and bus crossing the Limerick City Cordon over the 12-hour survey period.

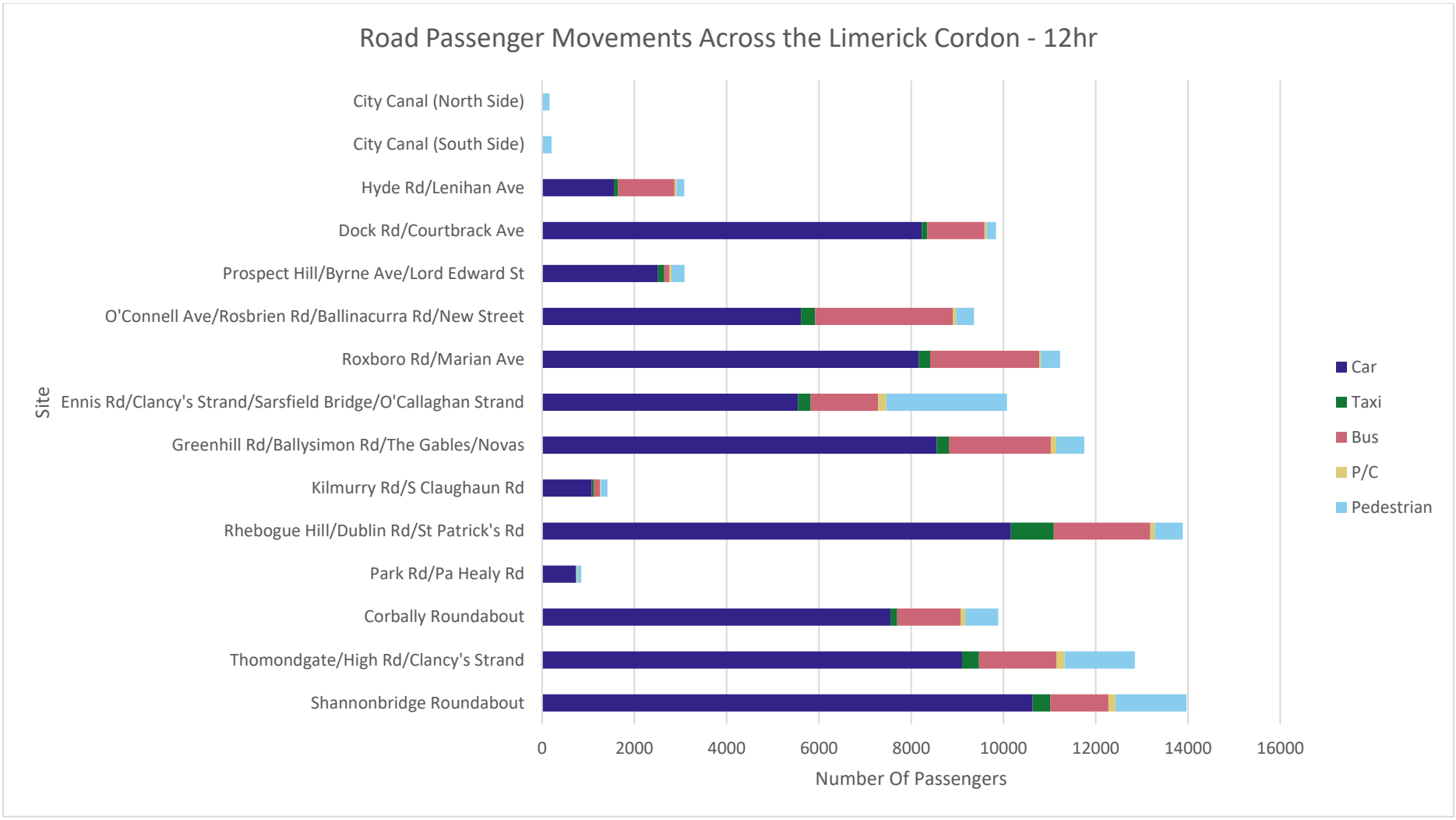


Figure 4-1:Road Passenger Movements per Mode per Site: 12 Hour

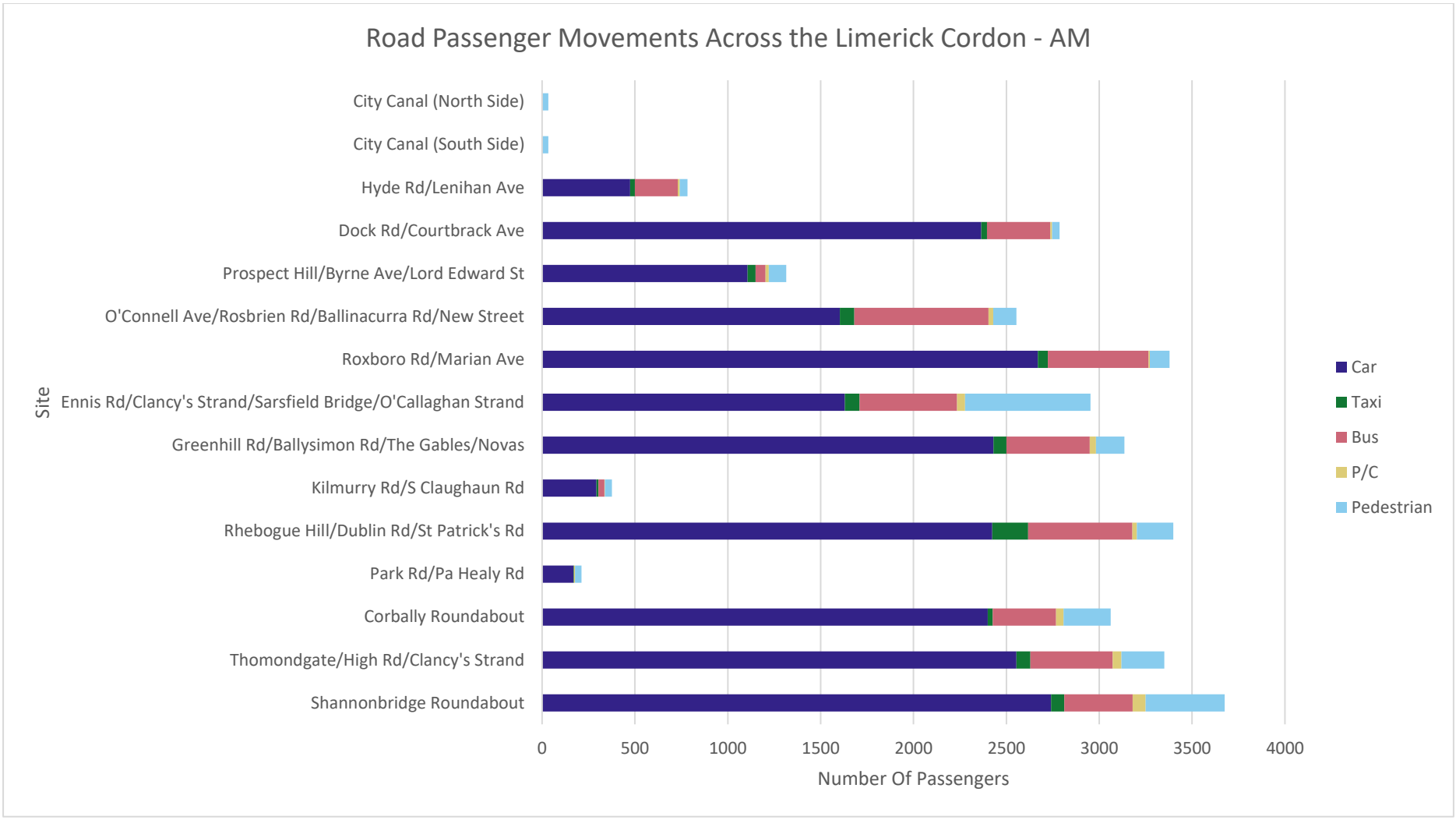


Figure 4-2:Road Passenger Movements per Mode per Site: AM

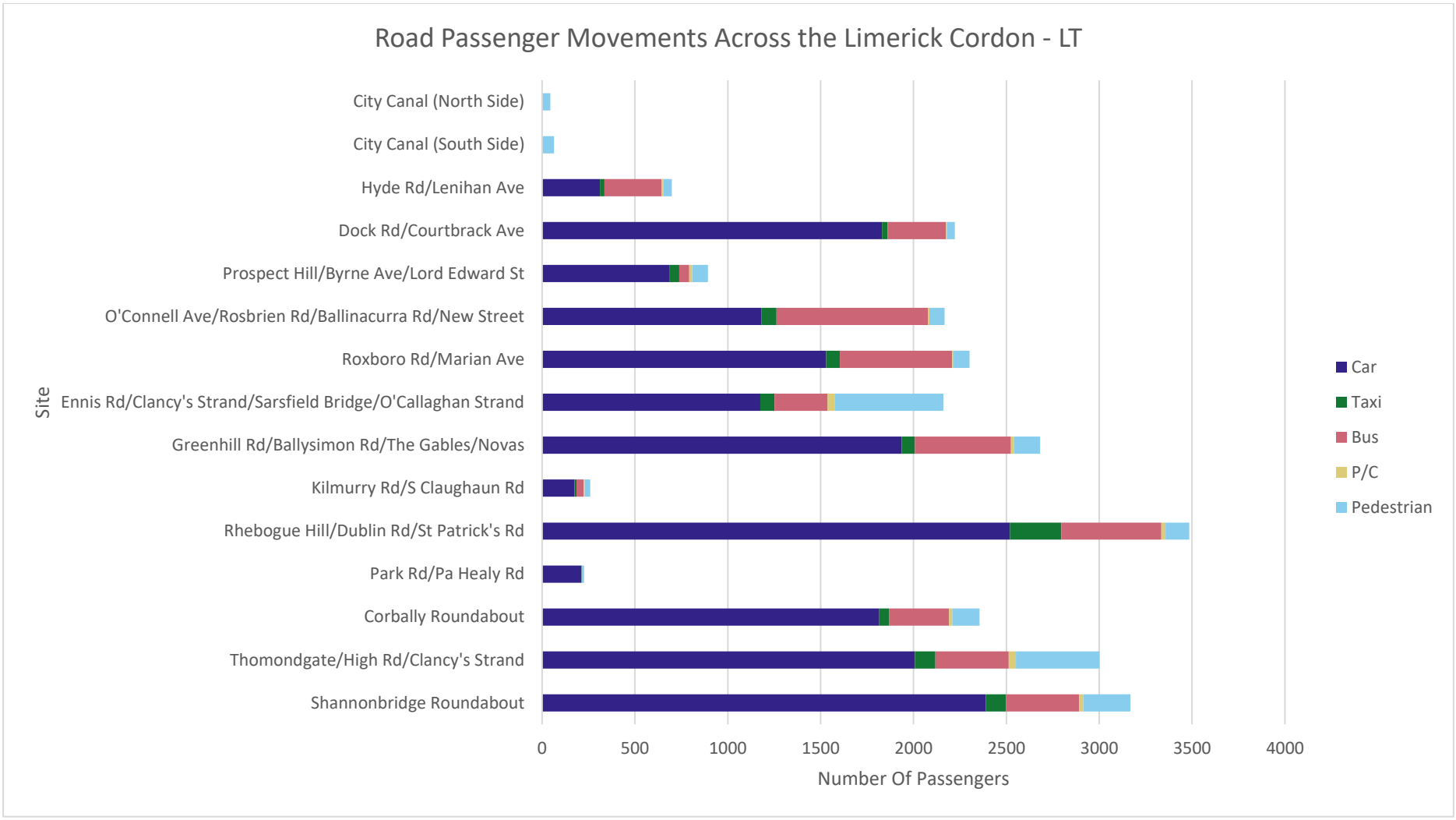


Figure 4-3:Road Passenger Movements per Mode per Site: LT

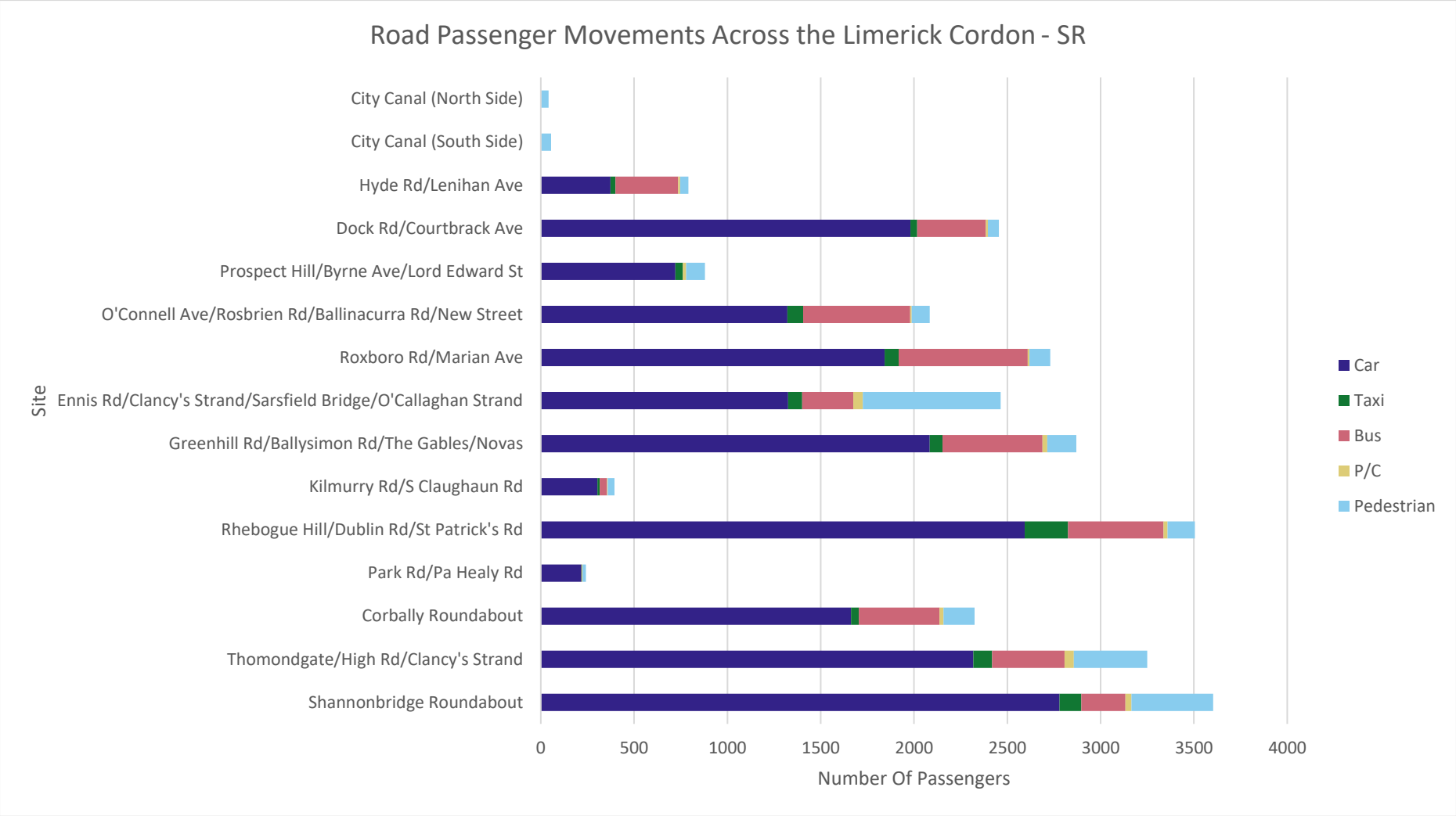


Figure 4-4:Road Passenger Movements per Mode per Site: SR

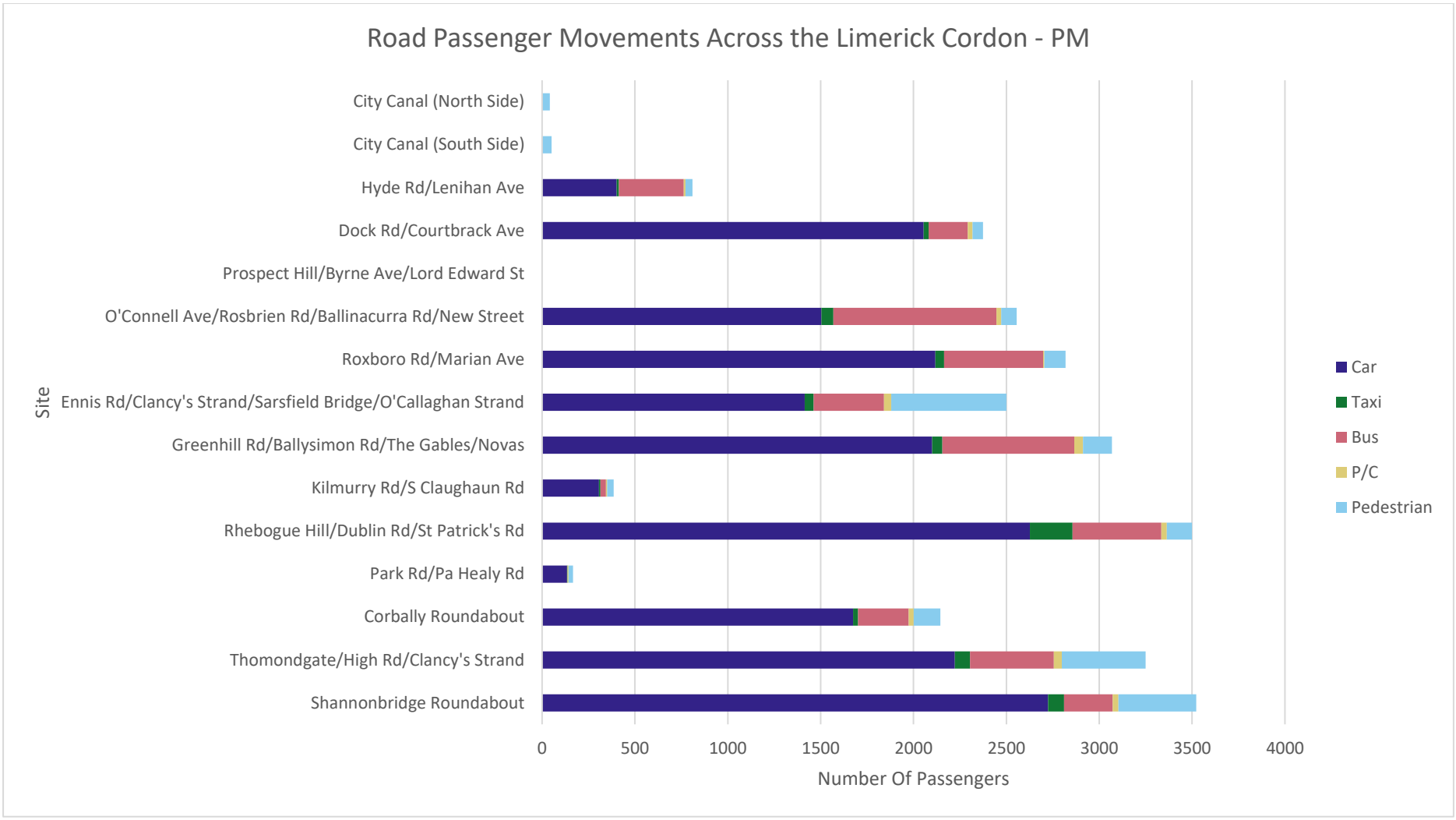


Figure 4-5:Road Passenger Movements per Mode per Site: PM

4.3 Rail Passenger Movements

4.3.1 Heavy Rail Passenger Movements

The National Rail Census is a survey carried out by Iarnród Éireann every year which records the boardings and alightings at every rail station in the country during t November 2024. This report extracts the number alighting passengers at Limerick Colbert Station from that survey.

Limerick Colbert Station is served by trains on the Dublin Heuston - Limerick and Ennis line, trains on the Galway - Limerick line, as well as those originating from Waterford and transferring at Limerick Junction. It is served by 3 direct trains a day from Heuston, 6 trains a day from Ennis, 20 trains a day from Limerick Junction, 5 trains a day from Galway and 5 trains a day from other stations.

Figure 4-6 shows the total number of people alighting at Limerick station grouped by the origin of the service. In total, 1,464 people alighted at Limerick Train Station over the 12-hour survey period.

Note that Limerick Junction is a key interchange station for trains serving Limerick, and thus trips from this station likely have their ultimate origin at another station.

Appendix D presents the breakdown of heavy rail passenger movements in further detail.

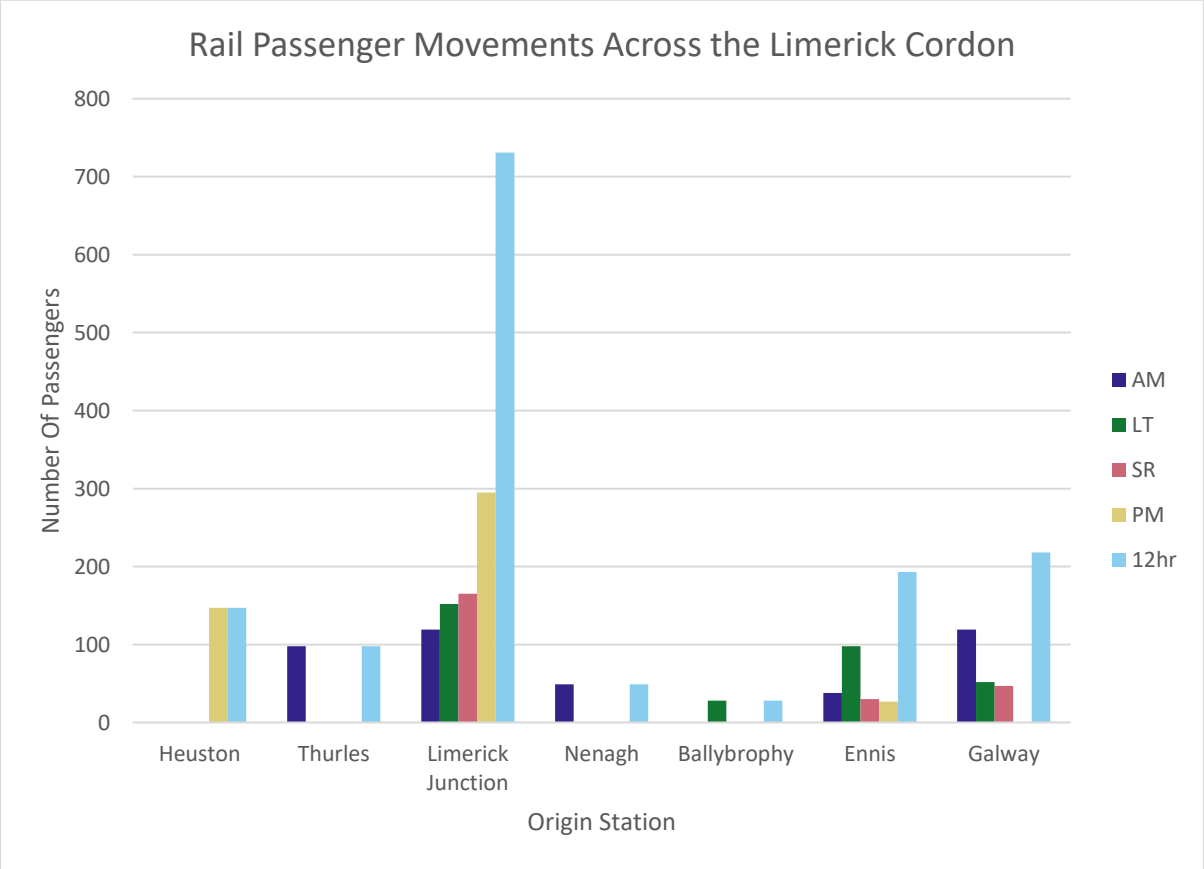


Figure 4-6:Heavy Rail Services - Passengers Inbound

4.4 Total Passenger Movements

Figure 4-7 and Figure 4-8 display the total number of passengers crossing the Limerick City Cordon by pedal cycle, pedestrian, car, taxi, bus and rail for each time period.

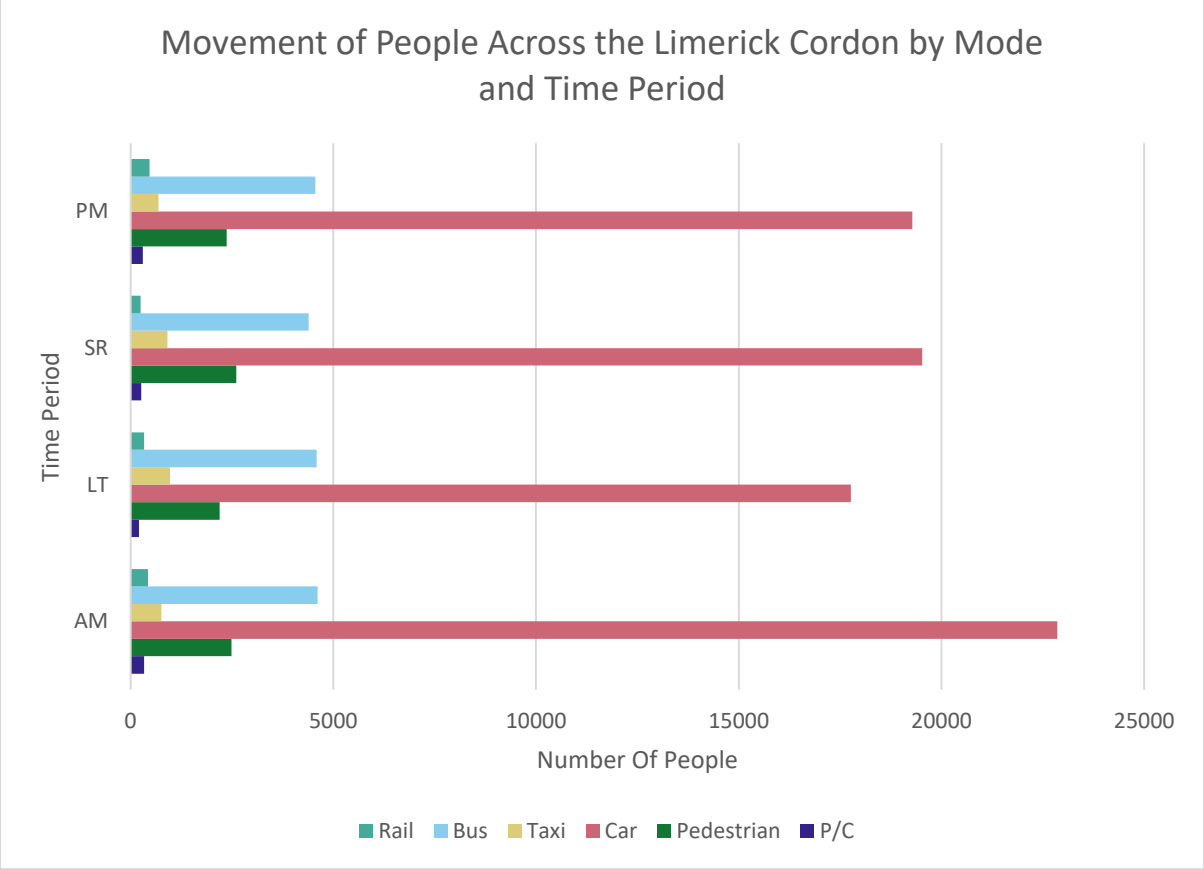


Figure 4-7:Car, Cycle, Taxi, Pedestrian and Rail Trips Inbound Across the Limerick City Cordon During Each Time Period

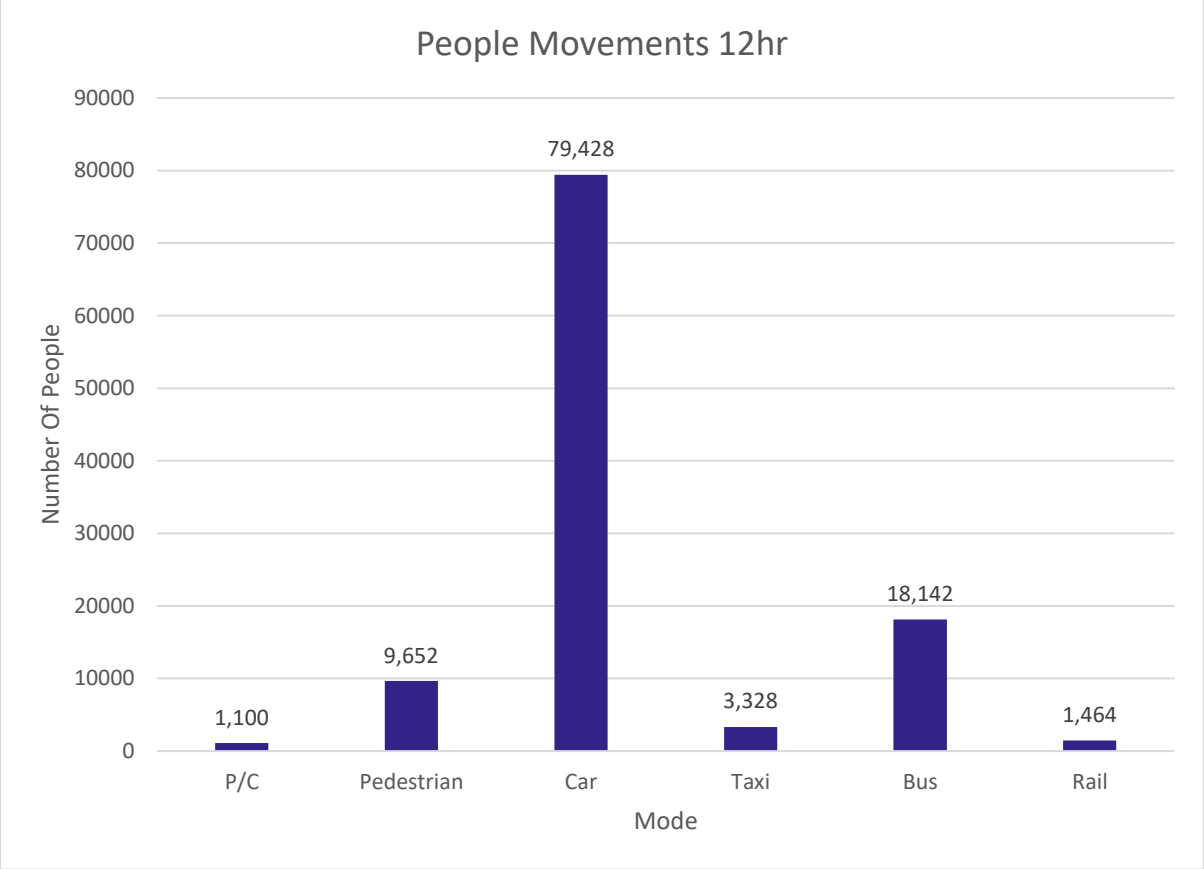


Figure 4-8:Trips Inbound across the Limerick City Cordon: 12 Hour

4.5 Modal Split

Table 4-1 shows the number and percentage of people, by mode, crossing the Limerick City Cordon during the 12hr survey period.

Table 4-1:Number of Journeys Across the Limerick City Cordon by Mode

Mode	Trips	% Trips
P/C	1,100	1%
Pedestrian	9,652	9%
Car	79,428	70%
Taxi	3,328	3%
Bus	18,142	16%
Rail	1,464	1%

As can be seen from Figure 4-9, the mode with the highest share over a 12-hr period is Car with 70%.

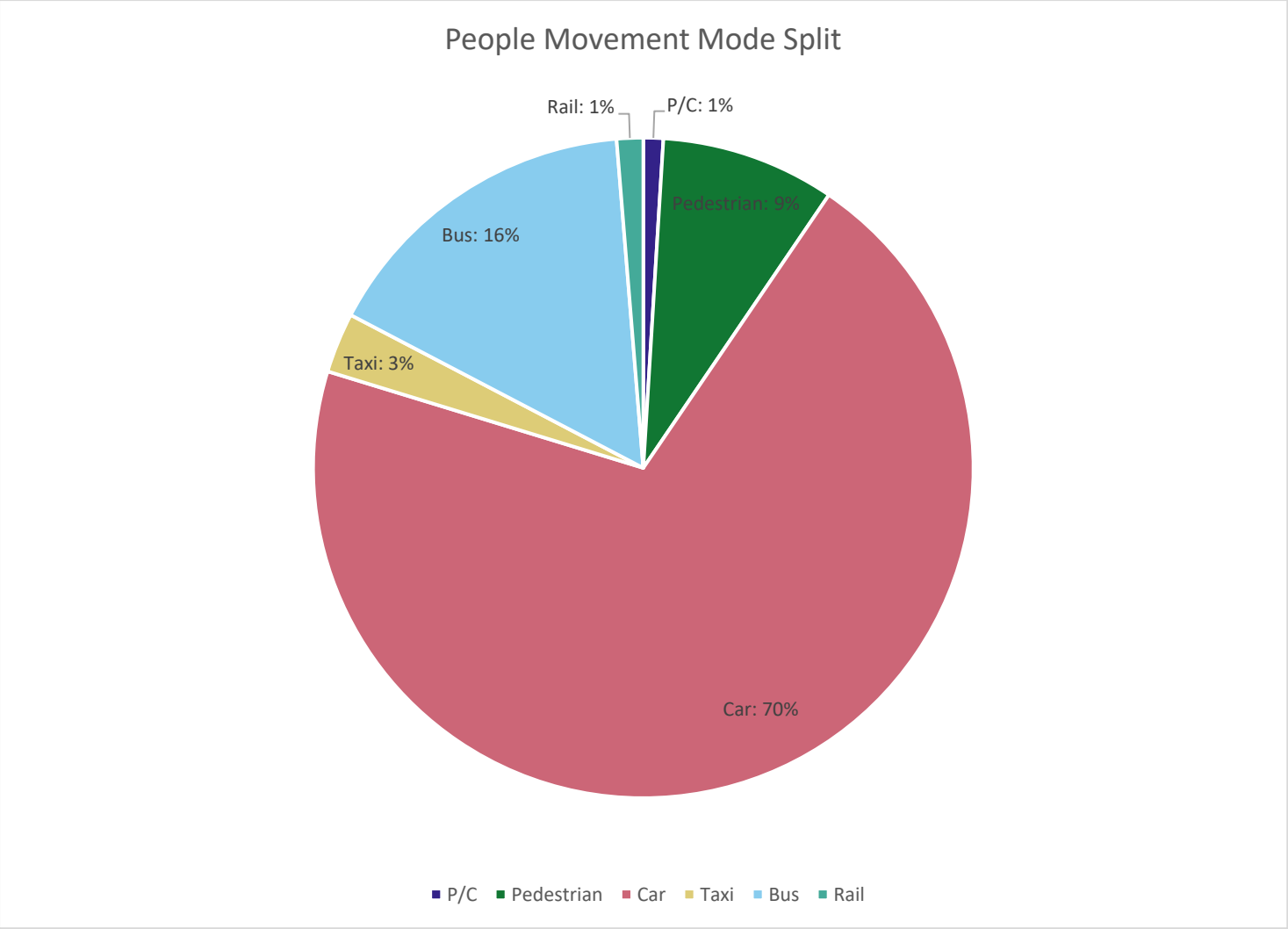


Figure 4-9:Mode share of people crossing the Limerick City Cordon by Sustainable and Vehicular Modes

4.6 Trend Analysis

As the surveys used for this report have been repeated every year since 2022, a historical trend analysis of people movements for 2022, 2023 and 2024 can be performed. Table 4-2 and Figure 4-10 show the number of people crossing the Limerick Cordon inbound by mode and year over the 12-hour time period.

People movements across all modes increased by 999, or 1%, between 2023 and 2024. The number of people using cars fell by 1,203 (1%) and the number of people using taxis increased by 433 (15%).

Walking and cycling saw an increase in the number of users. Walking increased by 1,469 people, or 18%, and cycling increased by 43, or 4%. Similarly, public transport patronage also increased with bus passengers rising by 245 and rail passengers rising by 12, both an increase of 1%.

Sustainable (i.e. walking, cycling, bus and rail) mode share increased from 25% in 2023 to 27% in 2024. This is also up from 23% in 2022. In total, 30,358 people out of a total of 113,114 used sustainable modes in the 2024 surveys, an increase of 1,769 over 2023.

Table 4-2 People Movements Inbound Across the the Limerick Cordon by Year - 12-Hours

Mode	2022 Trips	2023 Trips	2024 Trips	% Difference between 2023 and 2024
P/C	838	1,057	1,100	4%
Pedestrian	7,046	8,183	9,652	18%
Car	80,800	80,631	79,428	-1%
Taxi	2,570	2,895	3,328	15%
Bus	15,436	17,897	18,142	1%
Rail	1,130	1,452	1,464	1%
Total	**107,820**	**112,115**	**113,114**	**1%**

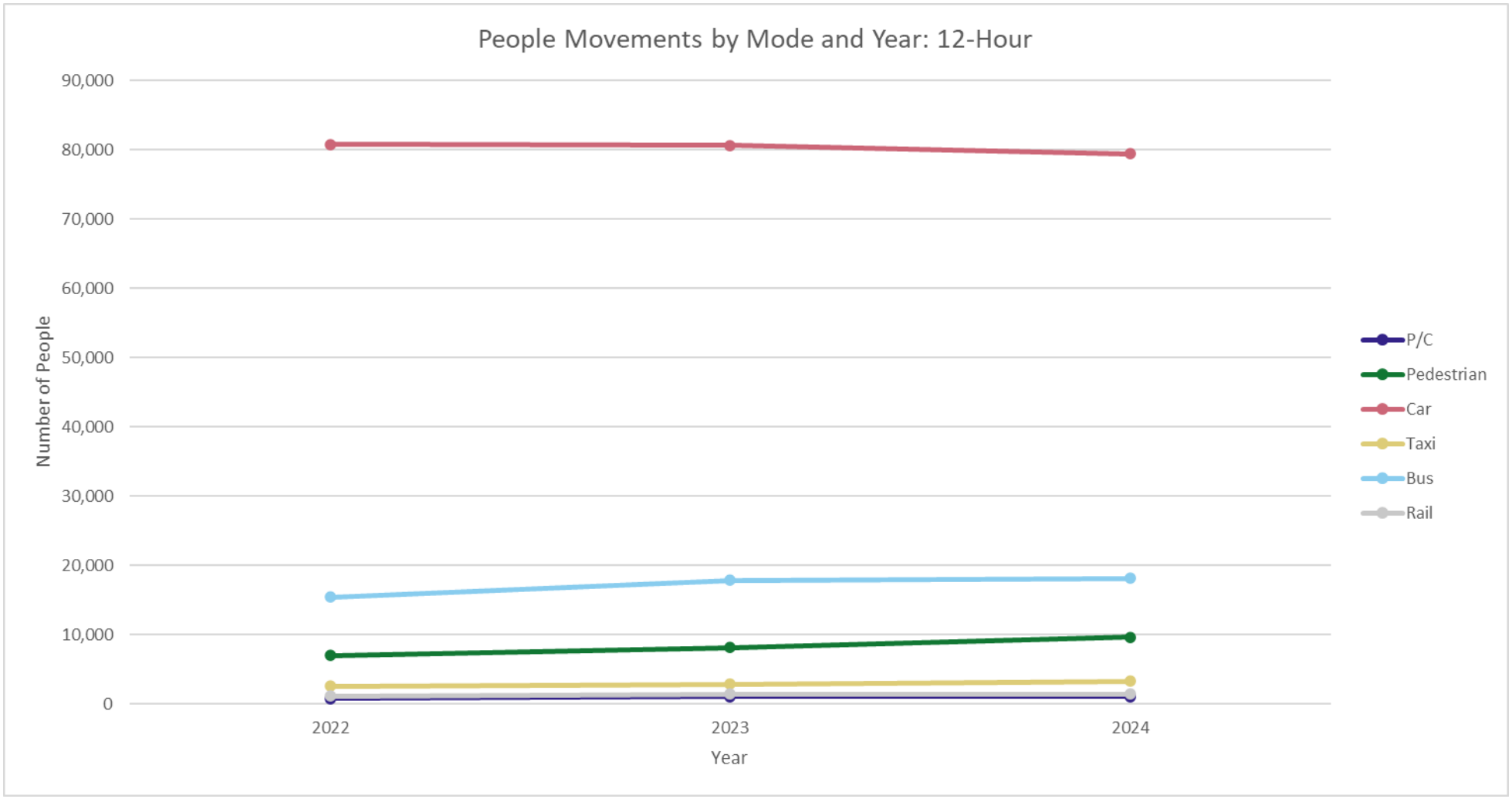


Figure 4-10 Number of People Crossing the Limerick Cordon Inbound by Year and Mode

5 Summary Results

Based on the analysis of the 2024 survey data, the key results are:

- In terms of overall people movements, 30,358 (27%) of a total of 113,114 people travelling inbound towards the City between 07:00 and 19:00 used sustainable modes of travel, i.e. pedal cycle, pedestrian, bus and rail.
- The total number of vehicles, pedestrians and cyclists that crossed the Limerick Cordon inbound was 101,037 over 24 hours on the day of the survey.
- The busiest time period for vehicles and cyclists was the AM peak with 20,101 crossing the Limerick City Cordon inbound towards the city. The busiest time period for Pedestrians was the SR peak with 2,605 crossing the Limerick City Cordon inbound.
- Between the hours of 07:00 and 19:00, cars were recorded to have the highest vehicular traffic split, with 72% of the total inbound flows. Light Goods Vehicles (LGVs) recorded 8%, Ordinary Goods Vehicles 1 (OGV1) recorded 2%, Ordinary Goods Vehicles 2 (OGV2) recorded 1% and taxis recorded 3%. The remaining vehicle classifications recorded 2% or less of the total flows.
- Between 07:00 and 19:00, 67% of buses were at 25-49% capacity. Approximately 8% of buses were at 0-24%. 19% were at 50-74% capacity, 5% were at 75-99% capacity and 1% were at 100% capacity.

Appendix A - Additional Graphs

Car Movements by Site and Period

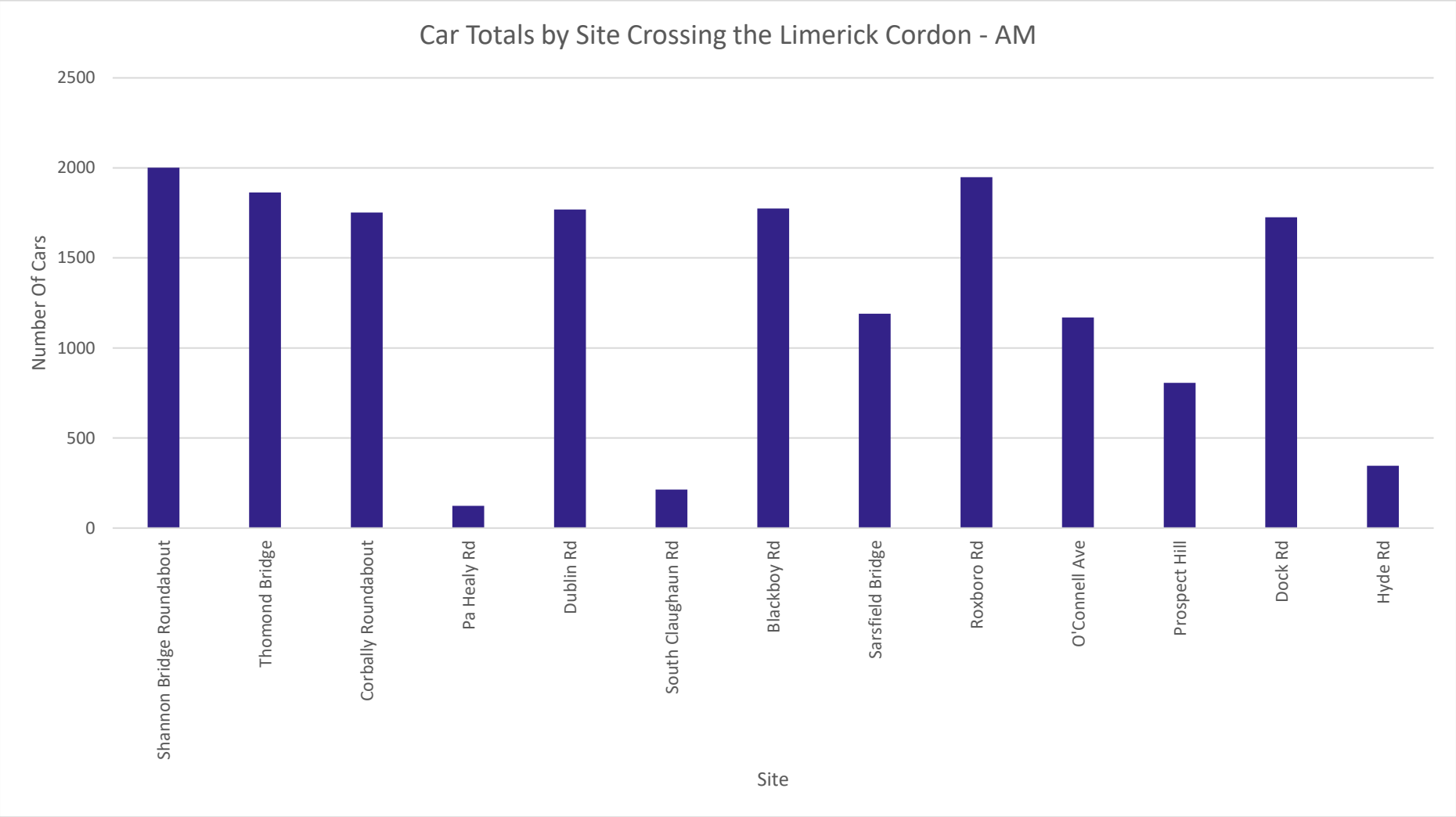


Figure 0-1:Number of Car Journeys for JTC Surveys for AM per Site

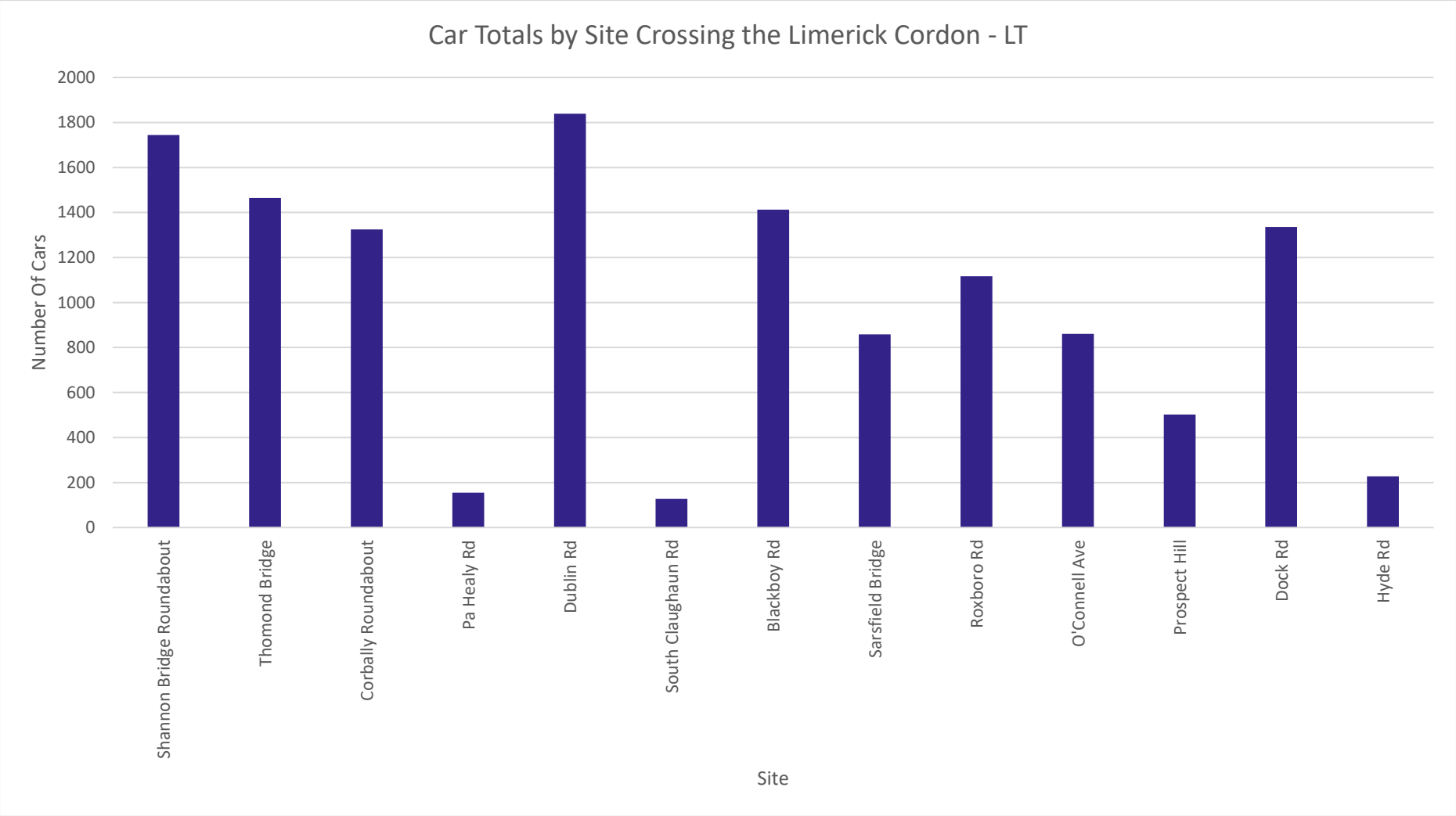


Figure 0-2:Number of Car Journeys for JTC Surveys for LT per Site

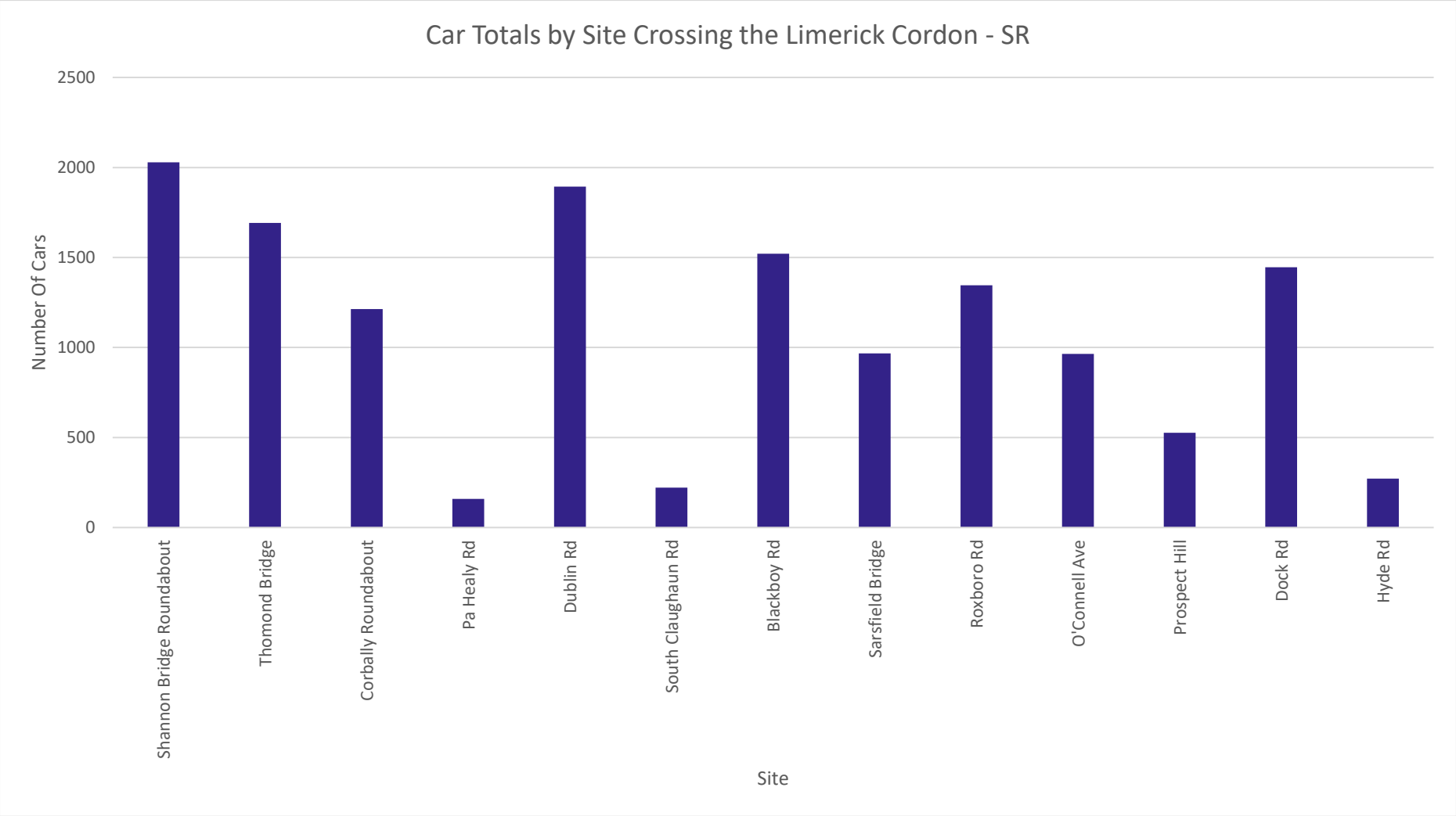


Figure 0-3:Number of Car Journeys for JTC Surveys for SR per Site

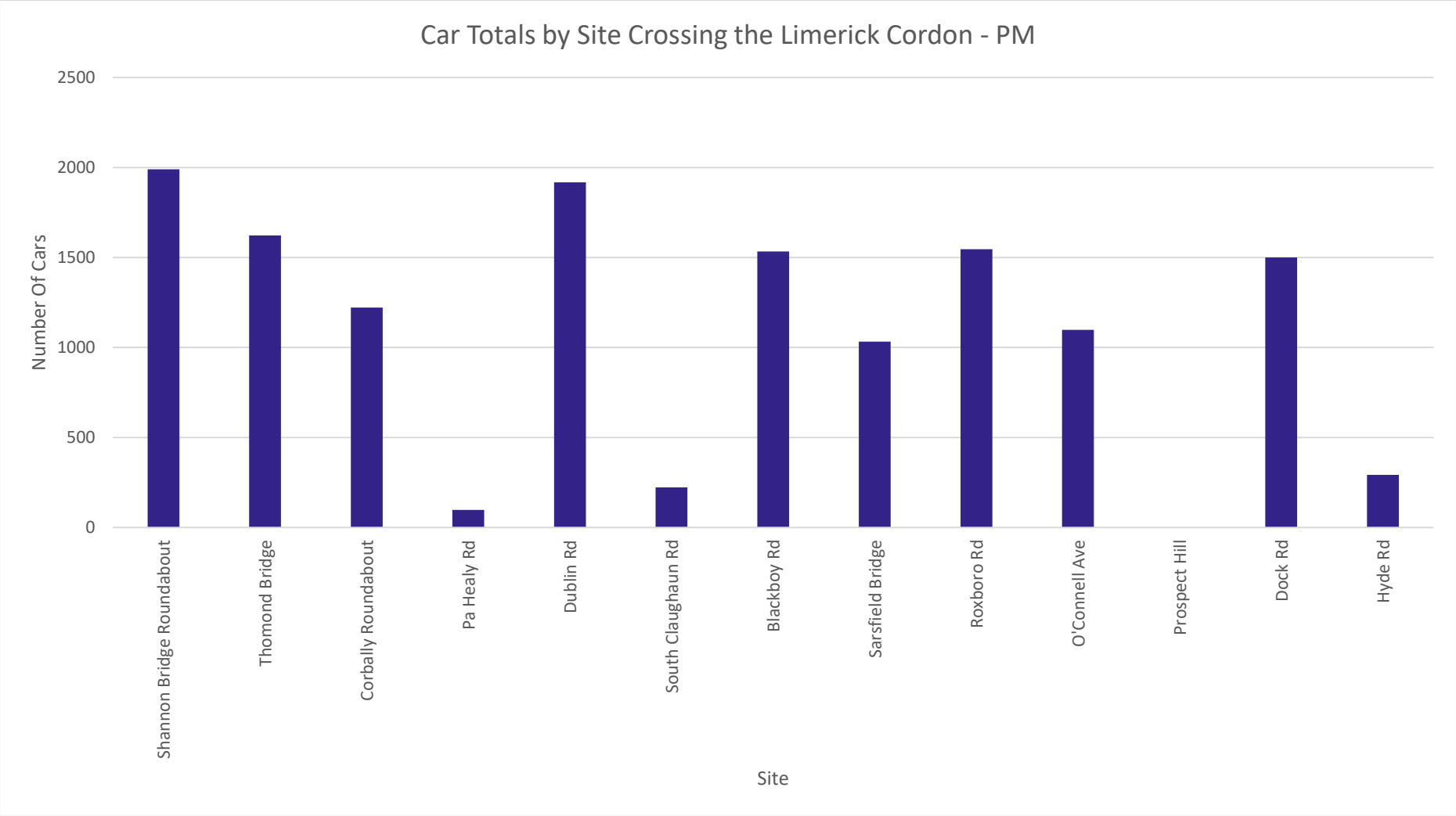


Figure 0-4:Number of Car Journeys for JTC Surveys for PM per Site

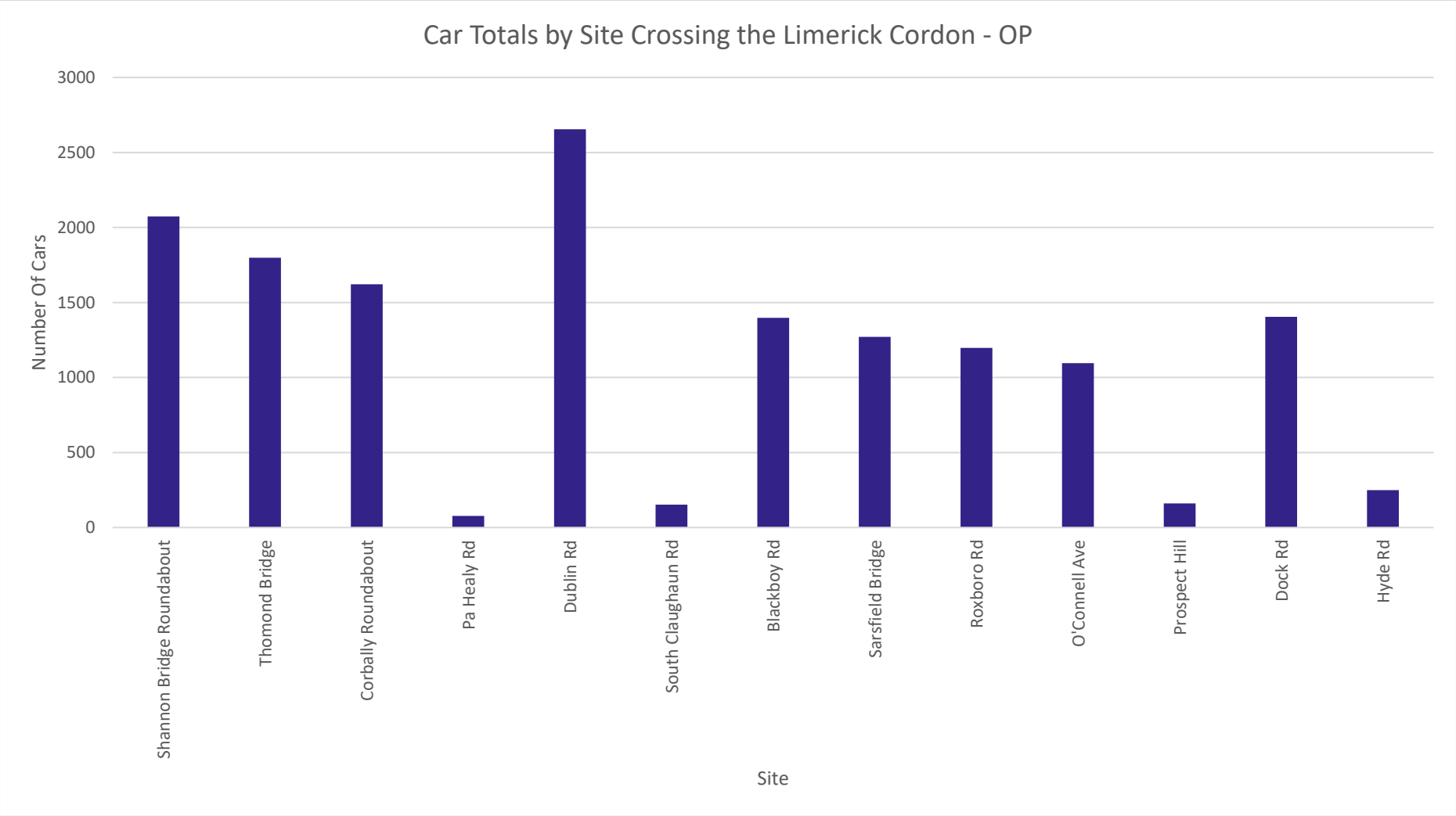


Figure 0-5:Number of Car Journeys for JTC Surveys for OP per Site

Light Goods Vehicle Movements by Site and Period

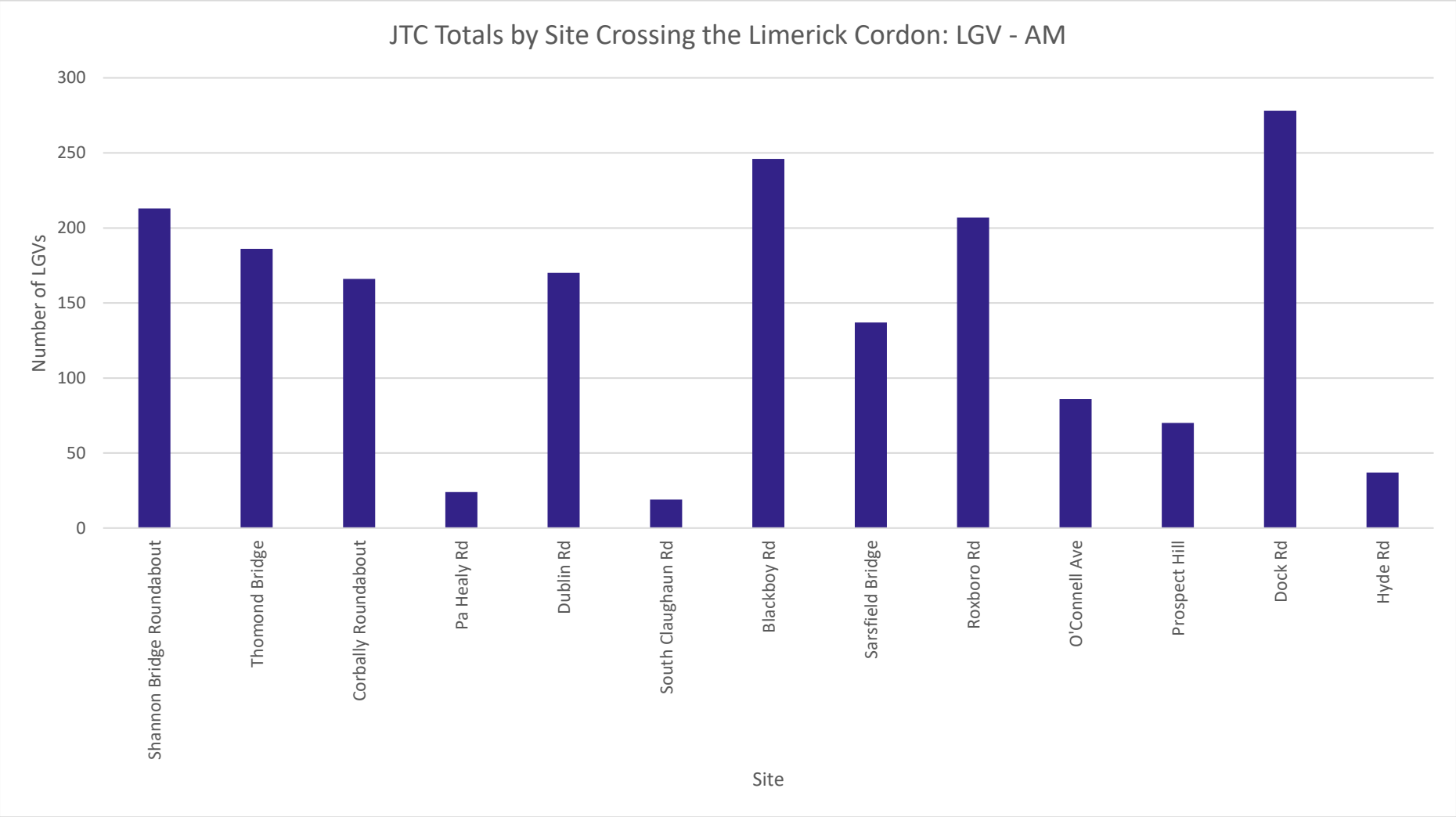


Figure 0-6:Number of Light Goods Vehicle Journeys for JTC Surveys for AM per Site

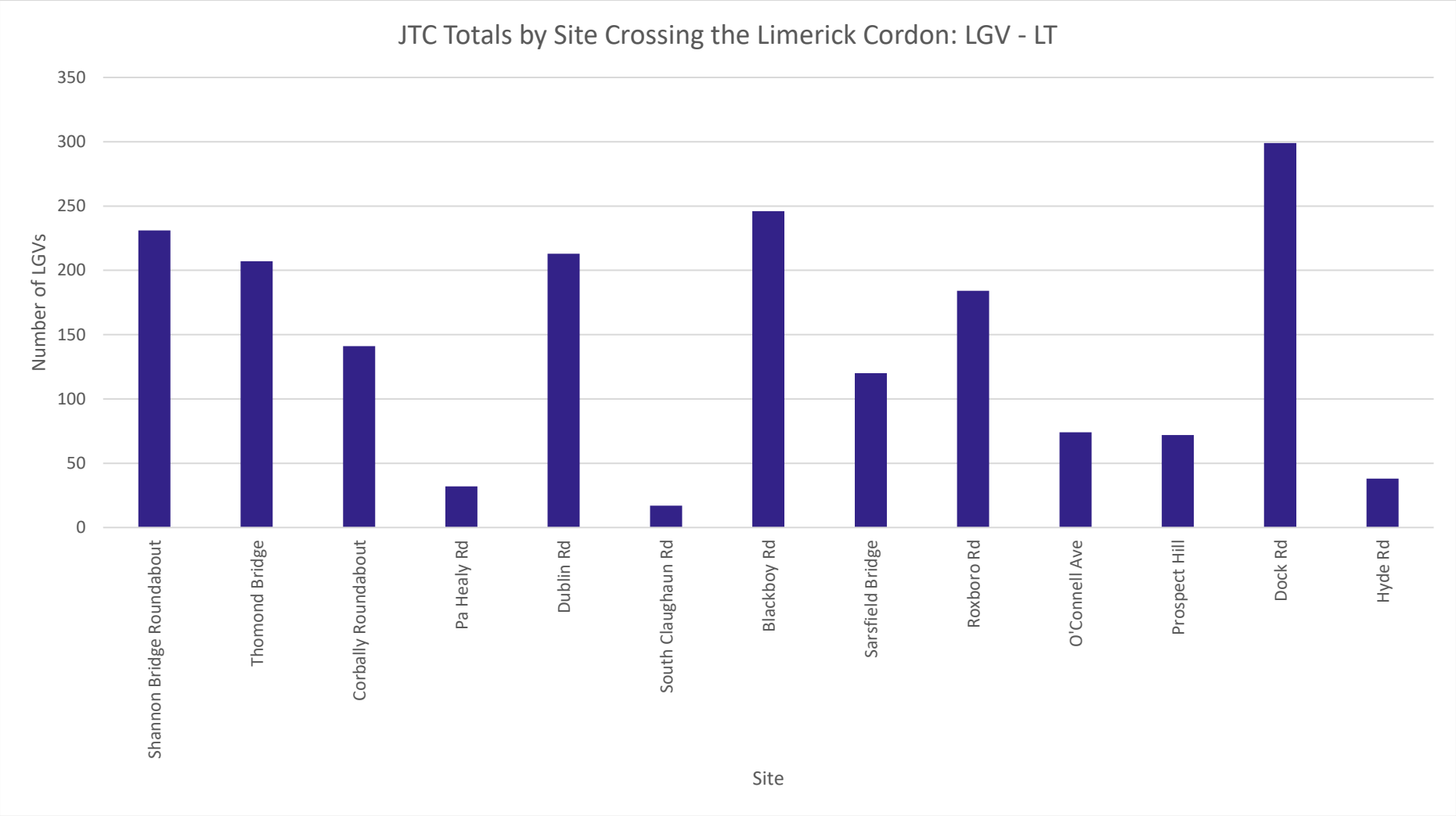


Figure 0-7:Number of Light Goods Vehicle Journeys for JTC Surveys for LT per Site

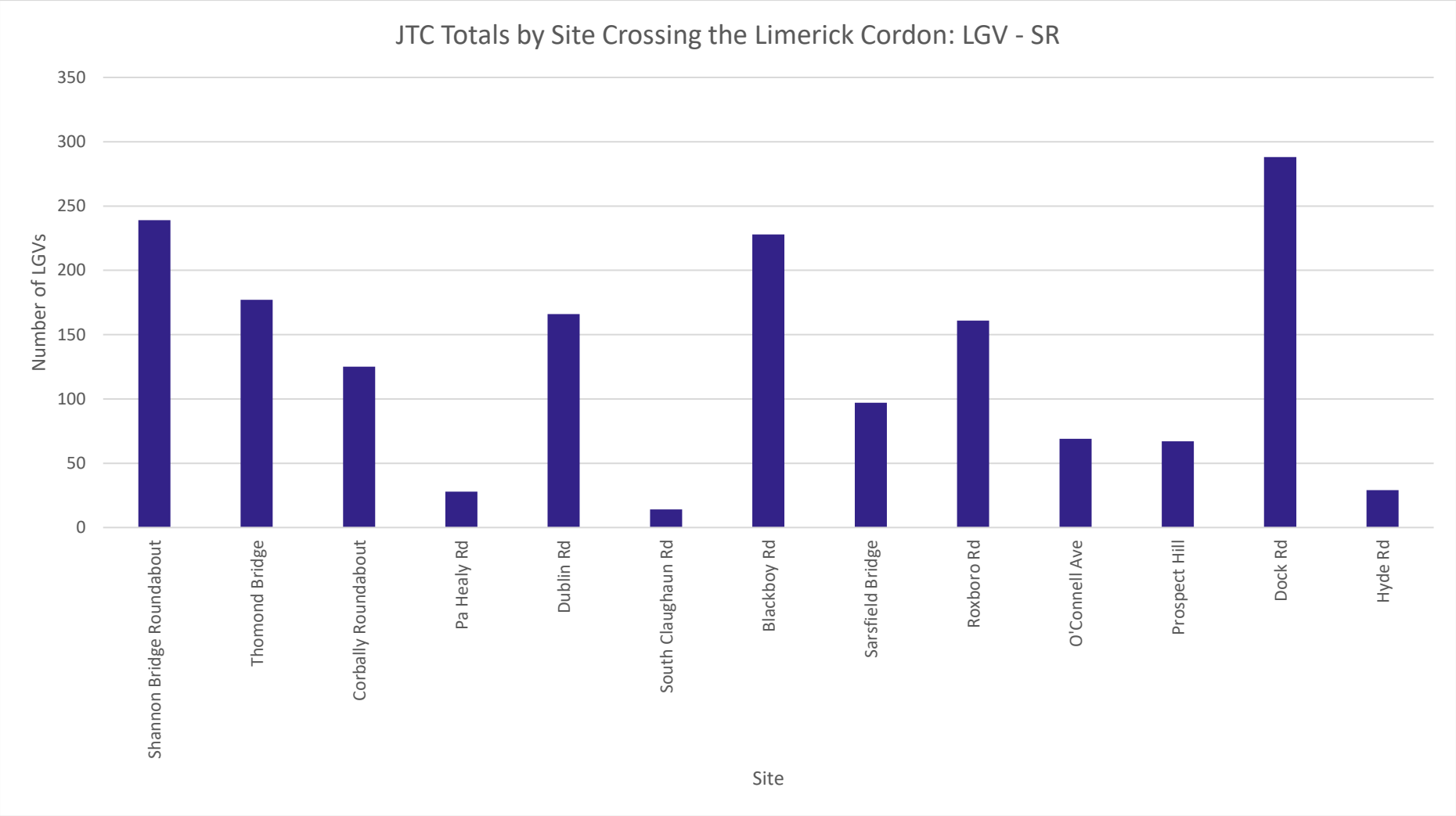


Figure 0-8:Number of Light Goods Vehicle Journeys for JTC Surveys for SR per Site

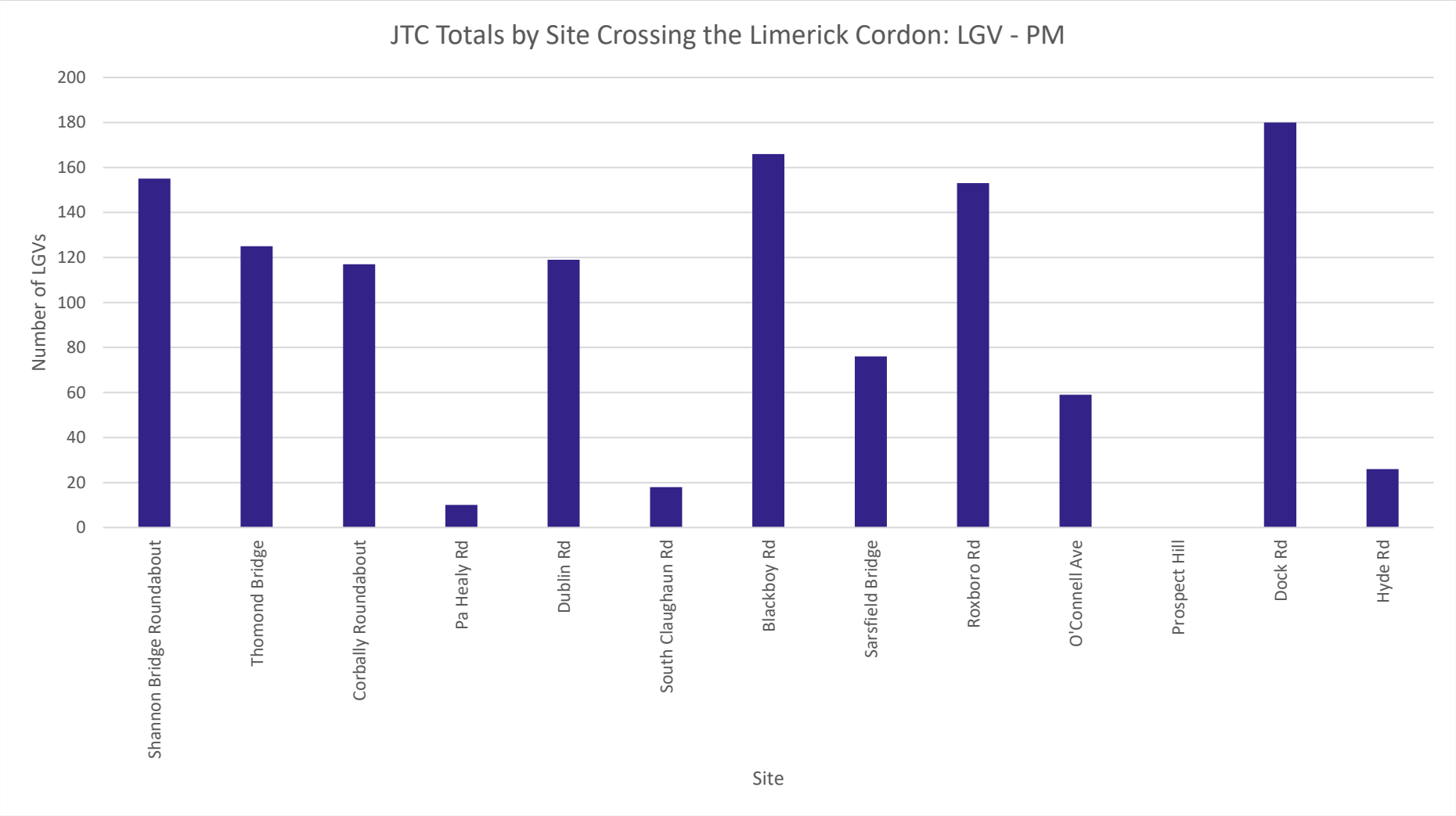


Figure 0-9:Number of Light Goods Vehicle Journeys for JTC Surveys for PM per Site

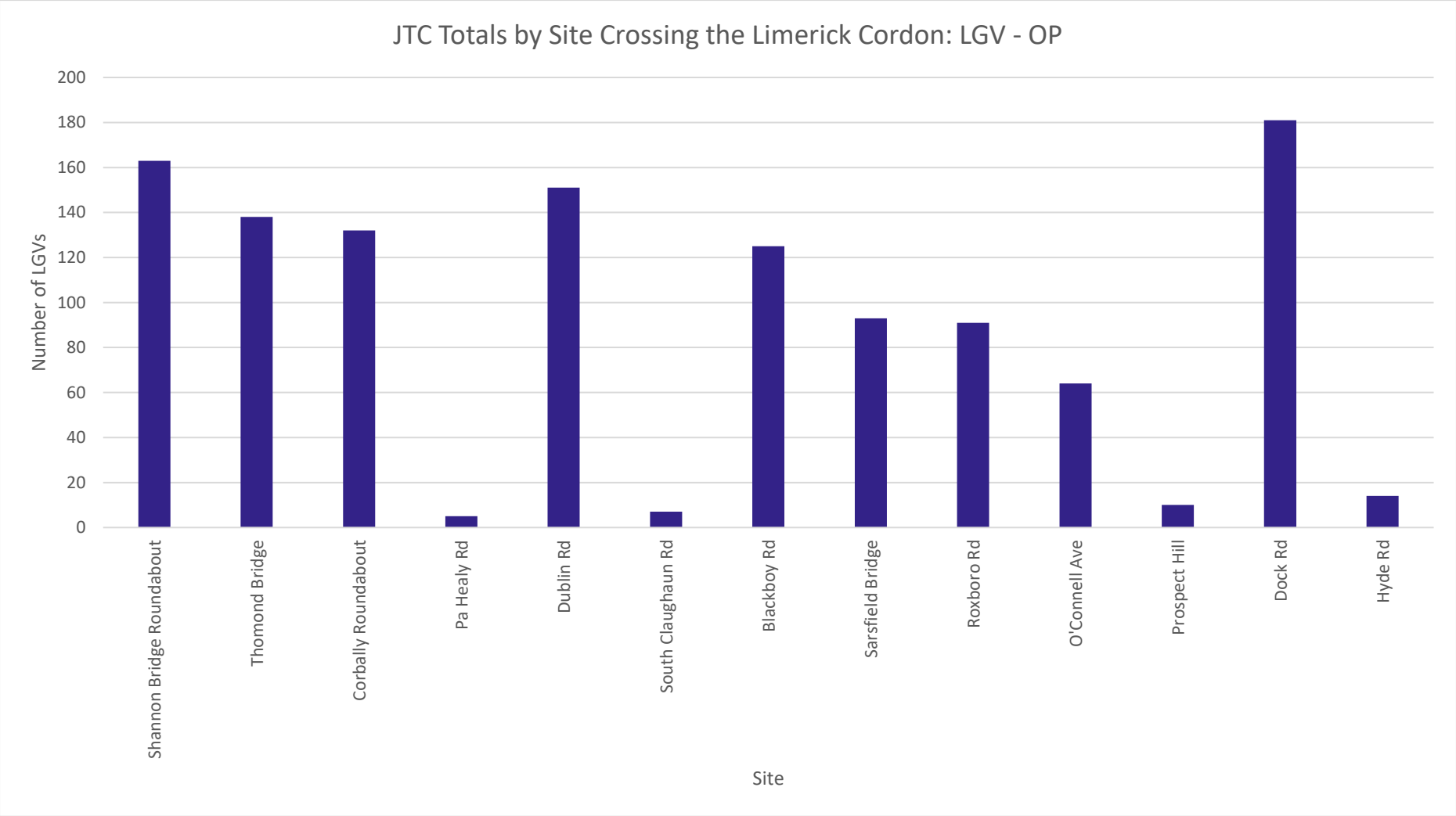


Figure 0-10:Number of Light Goods Vehicle Journeys for JTC Surveys for OP per Site

Ordinary Goods Vehicle 1 Movements by Site and Period

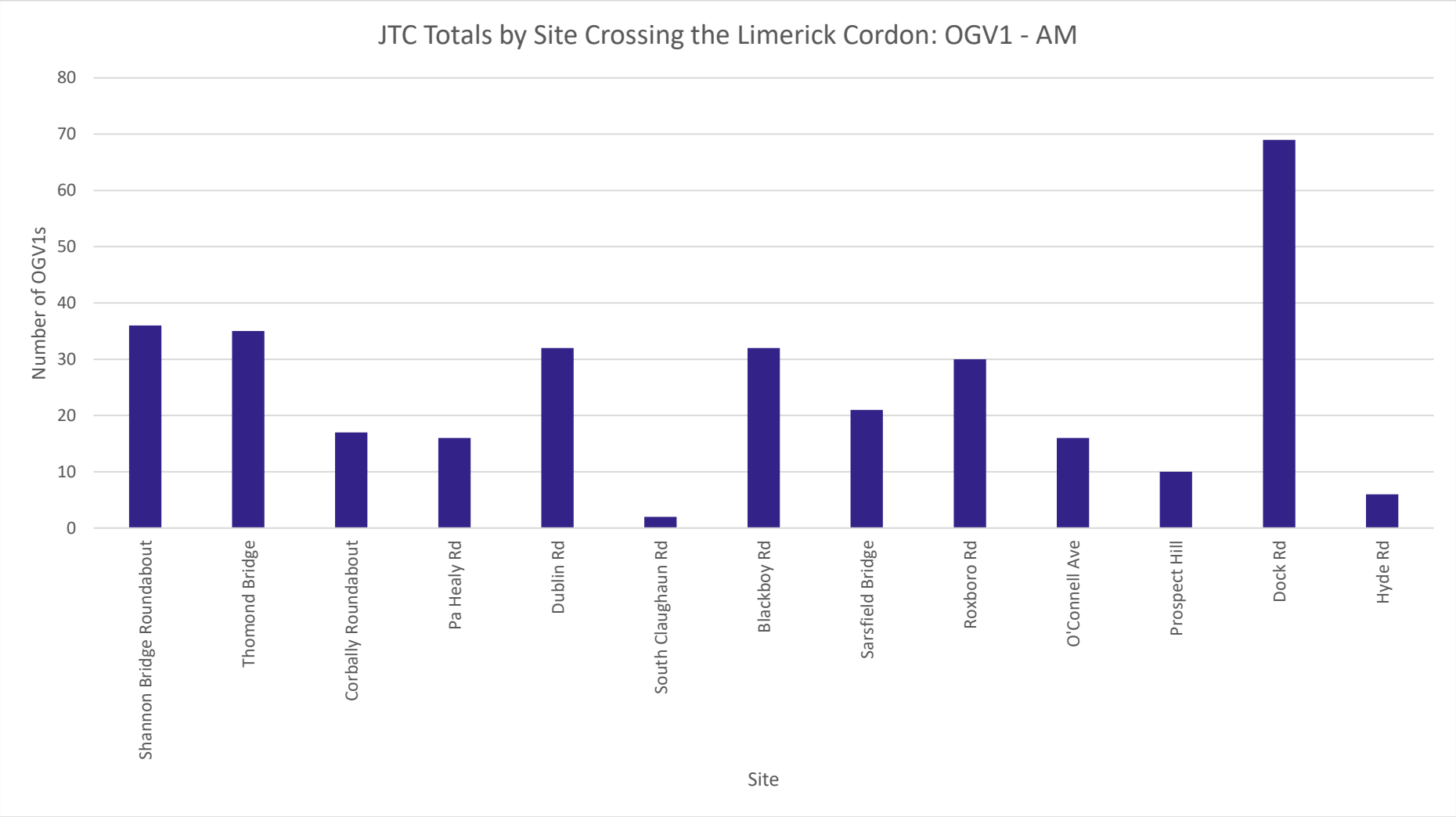


Figure 0-11:Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for AM per Site

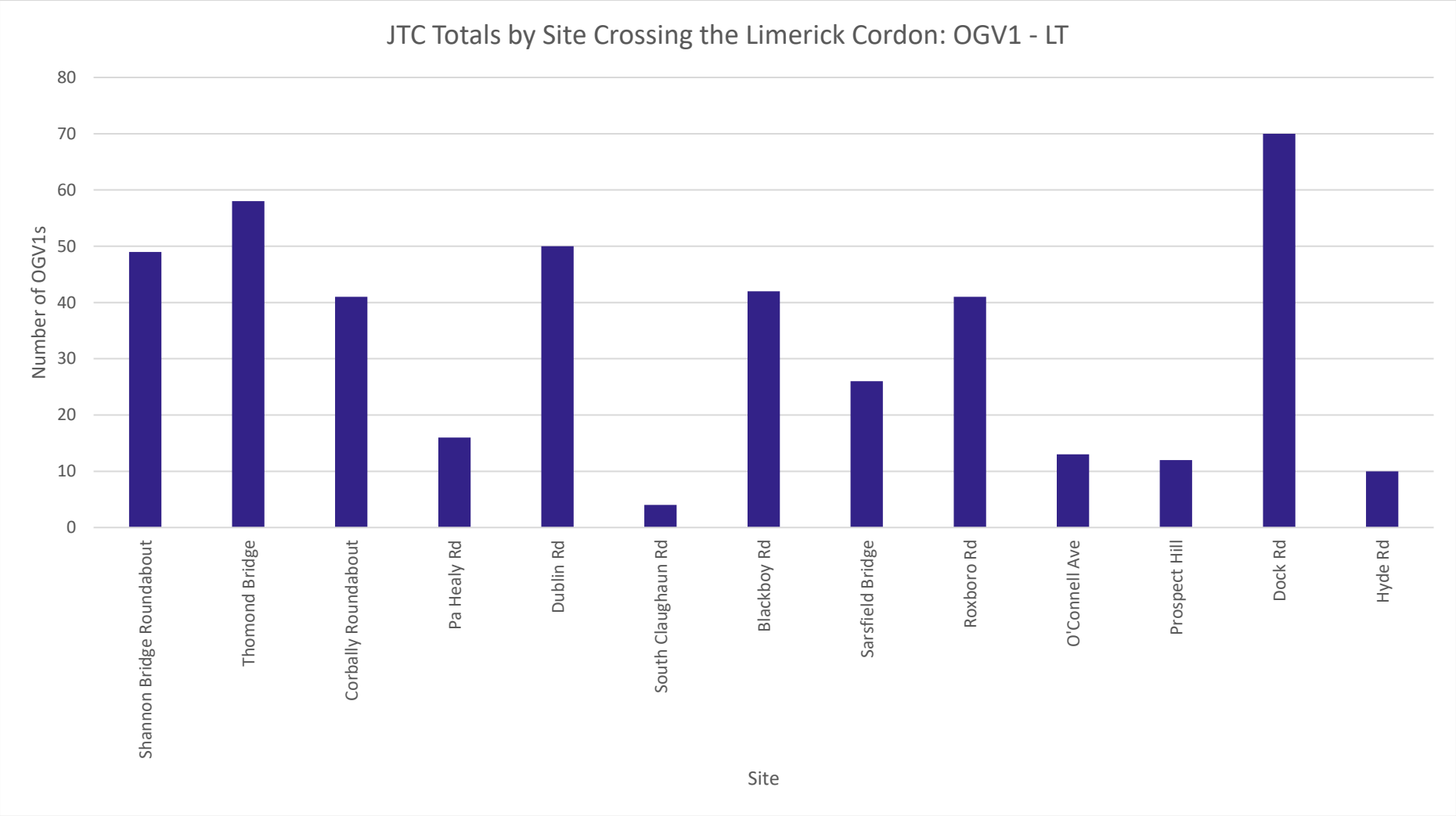


Figure 0-12:Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for LT per Site

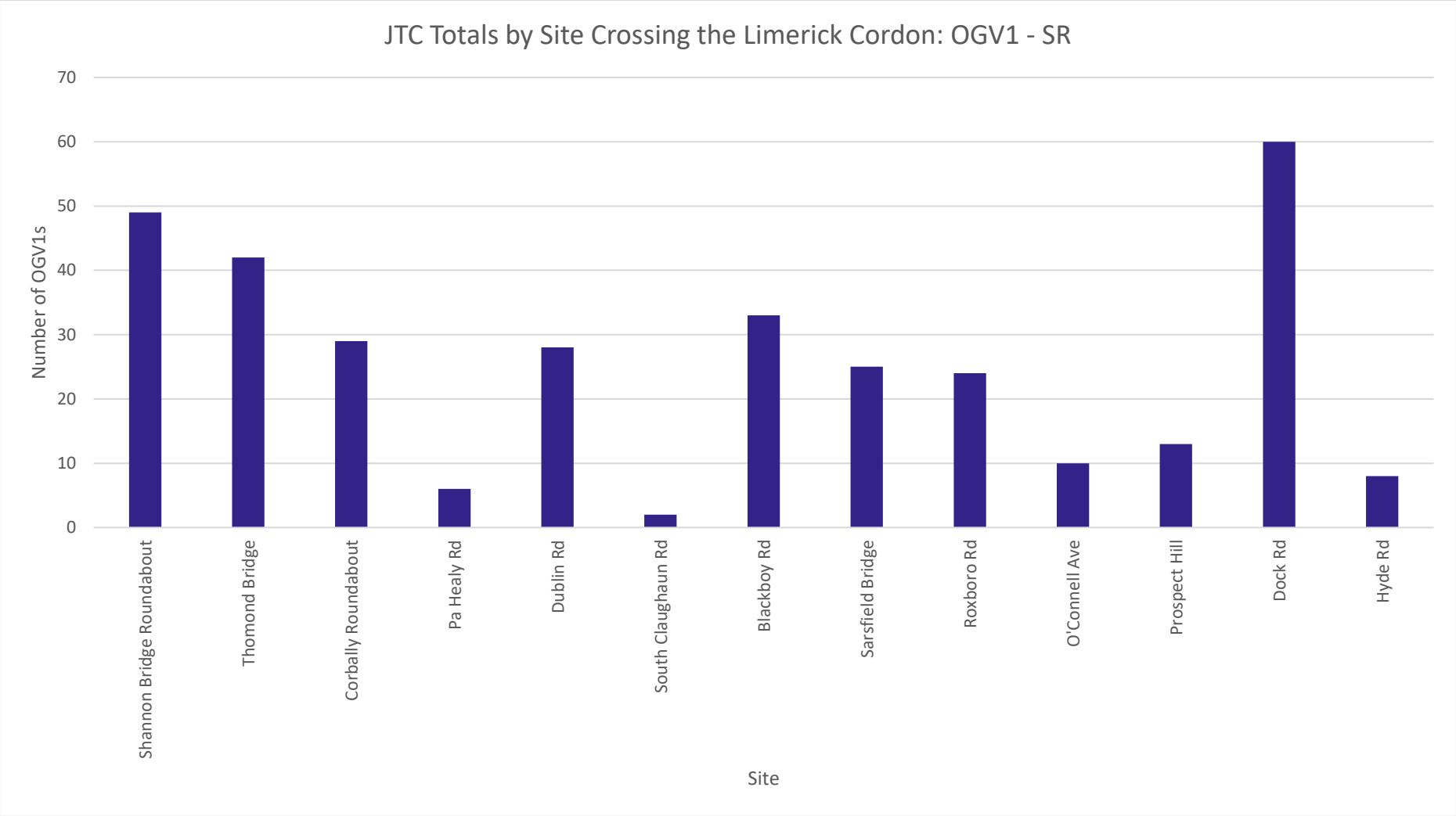


Figure 0-13:Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for SR per Site

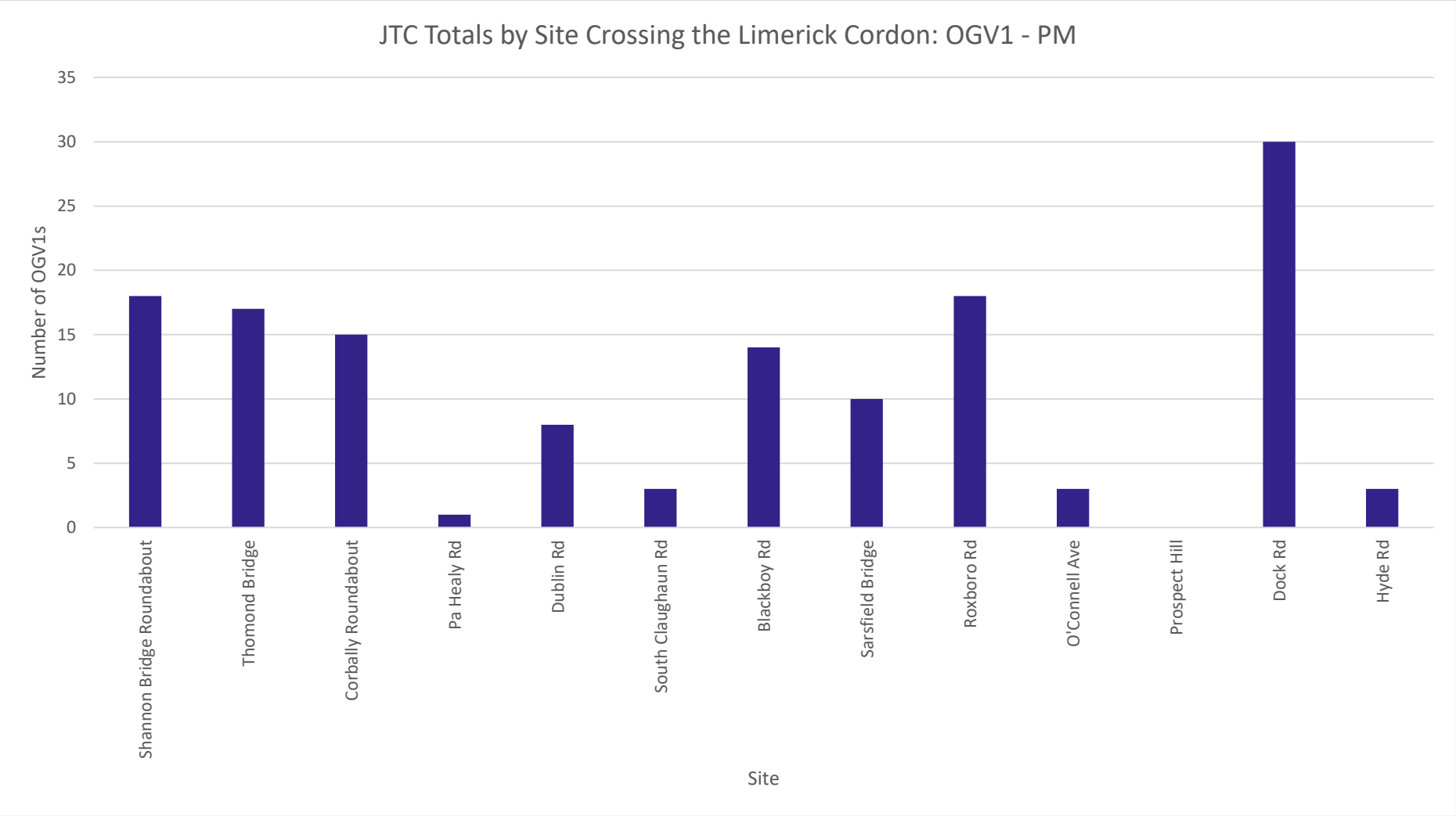


Figure 0-14:Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for PM per Site

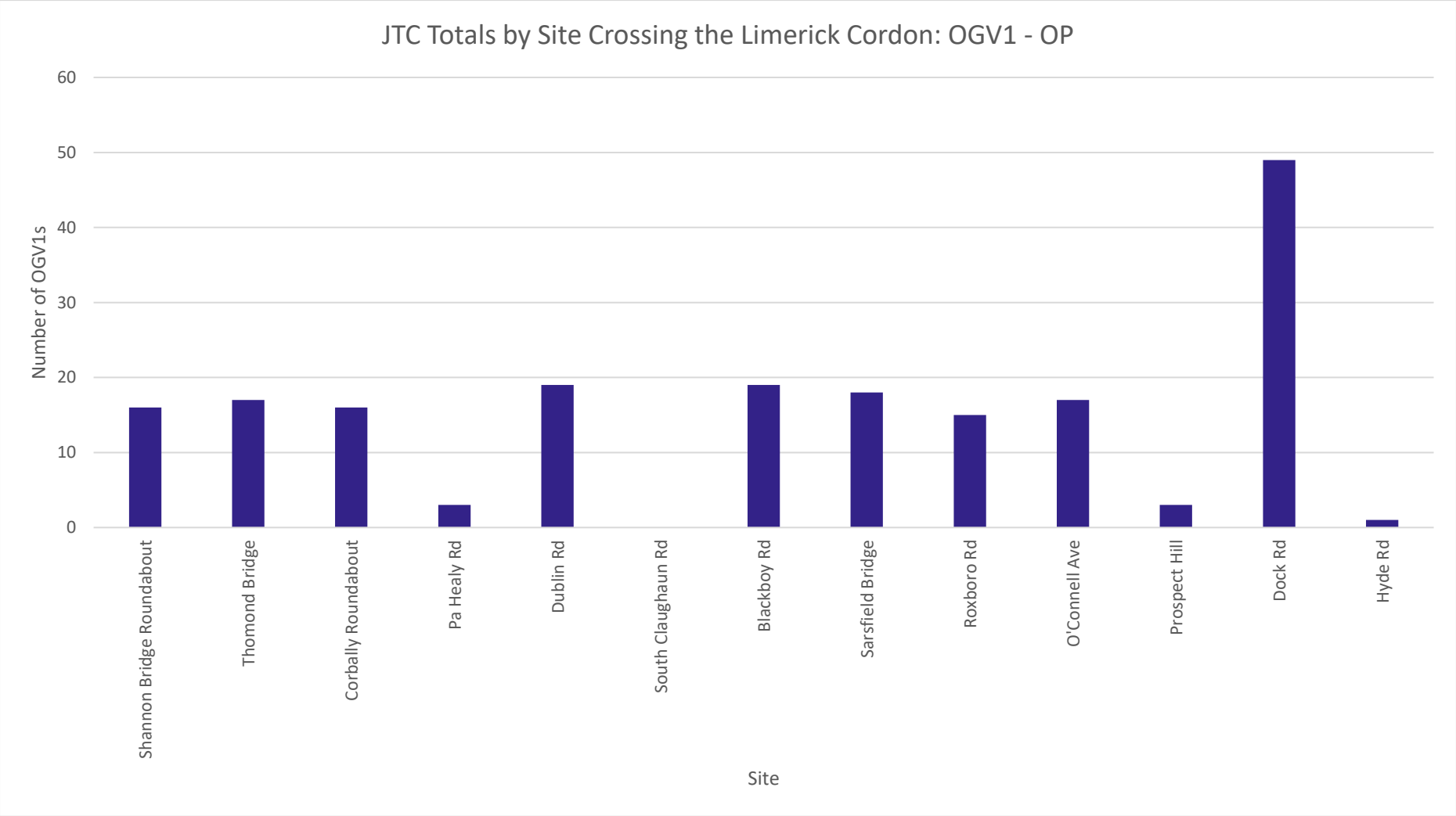


Figure 0-15:Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for OP per Site

Ordinary Goods Vehicle 2 Movements by Site and Period

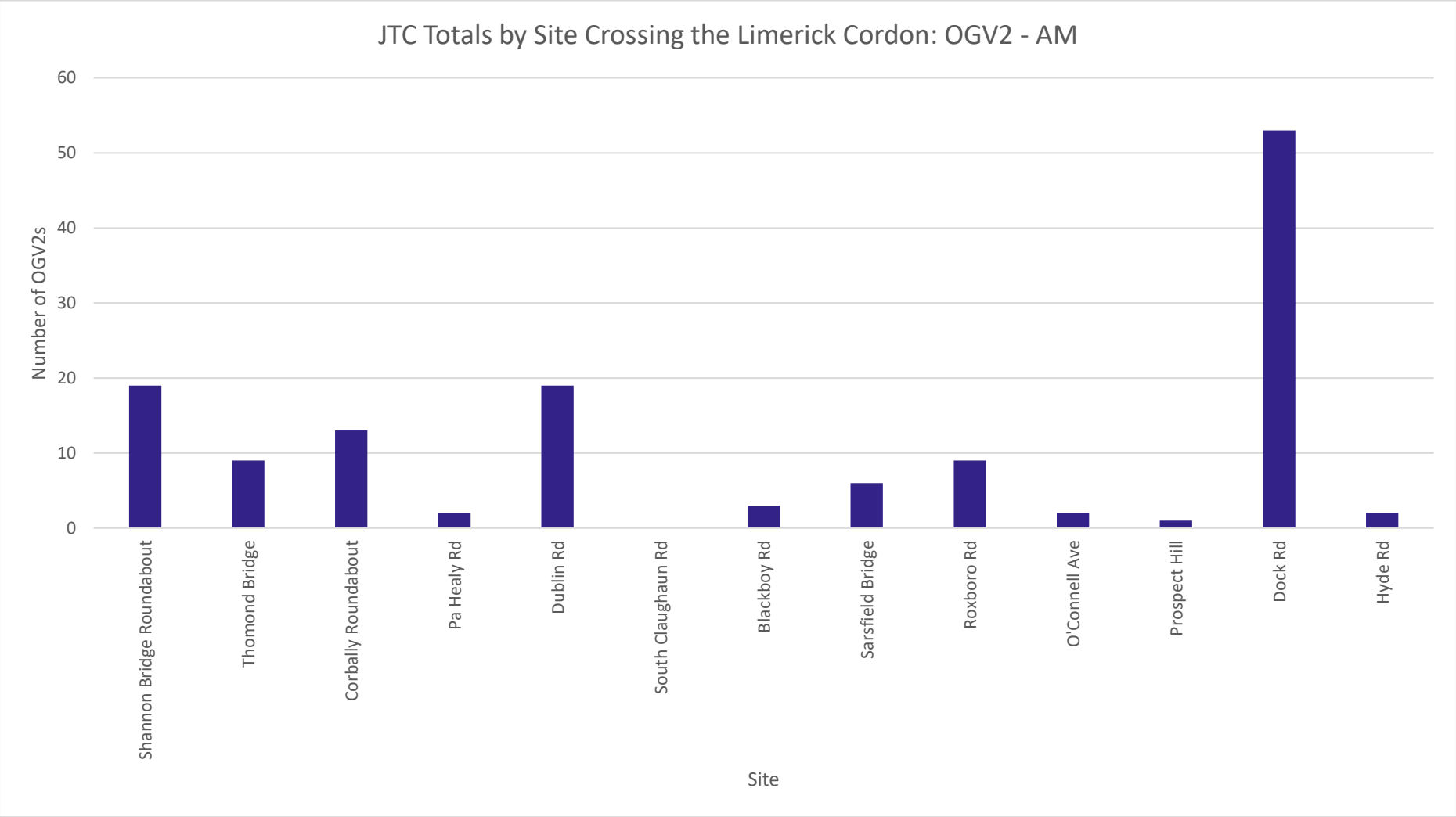


Figure 0-16:Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for AM per Site

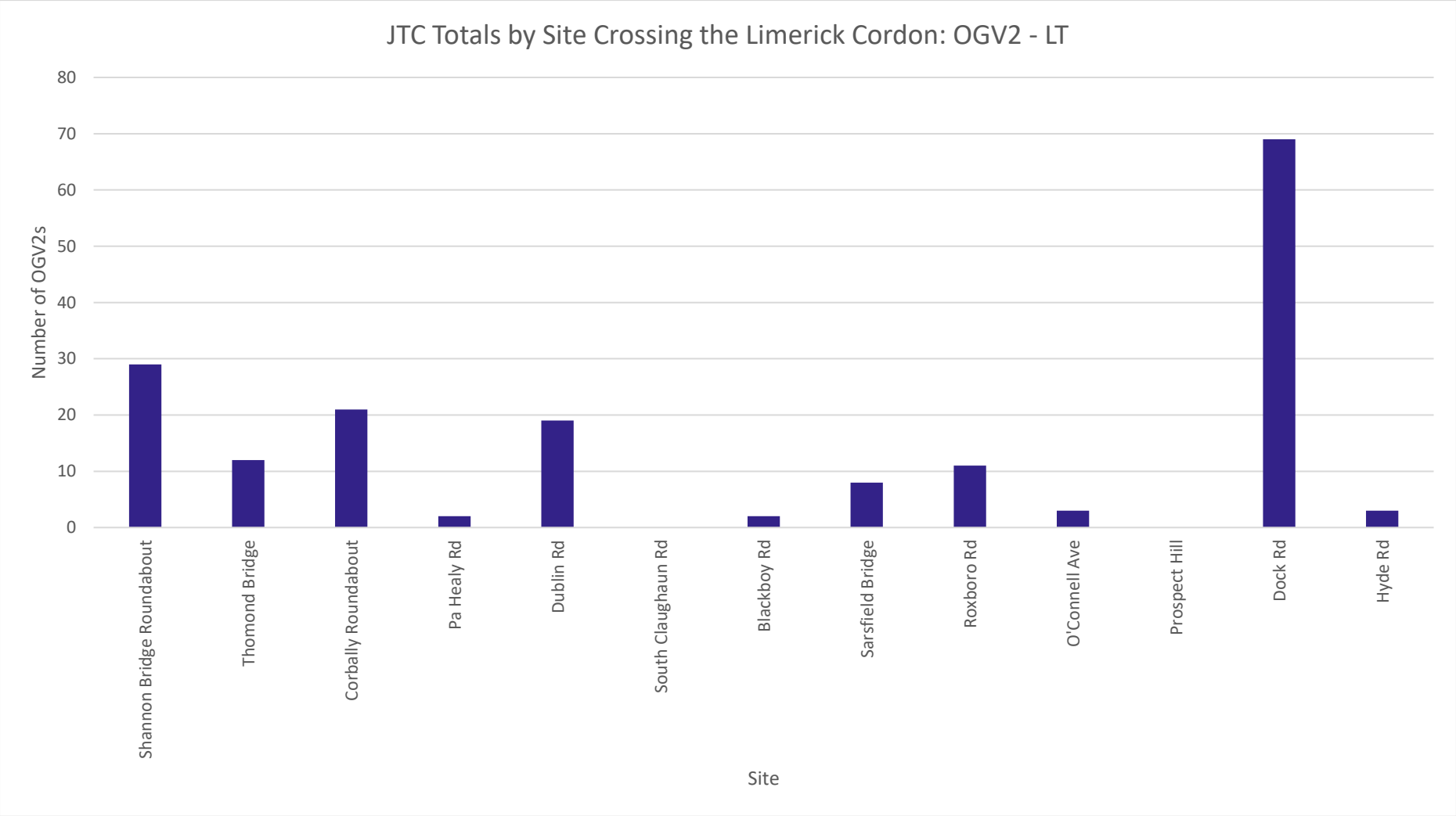


Figure 0-17:Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for LT per Site

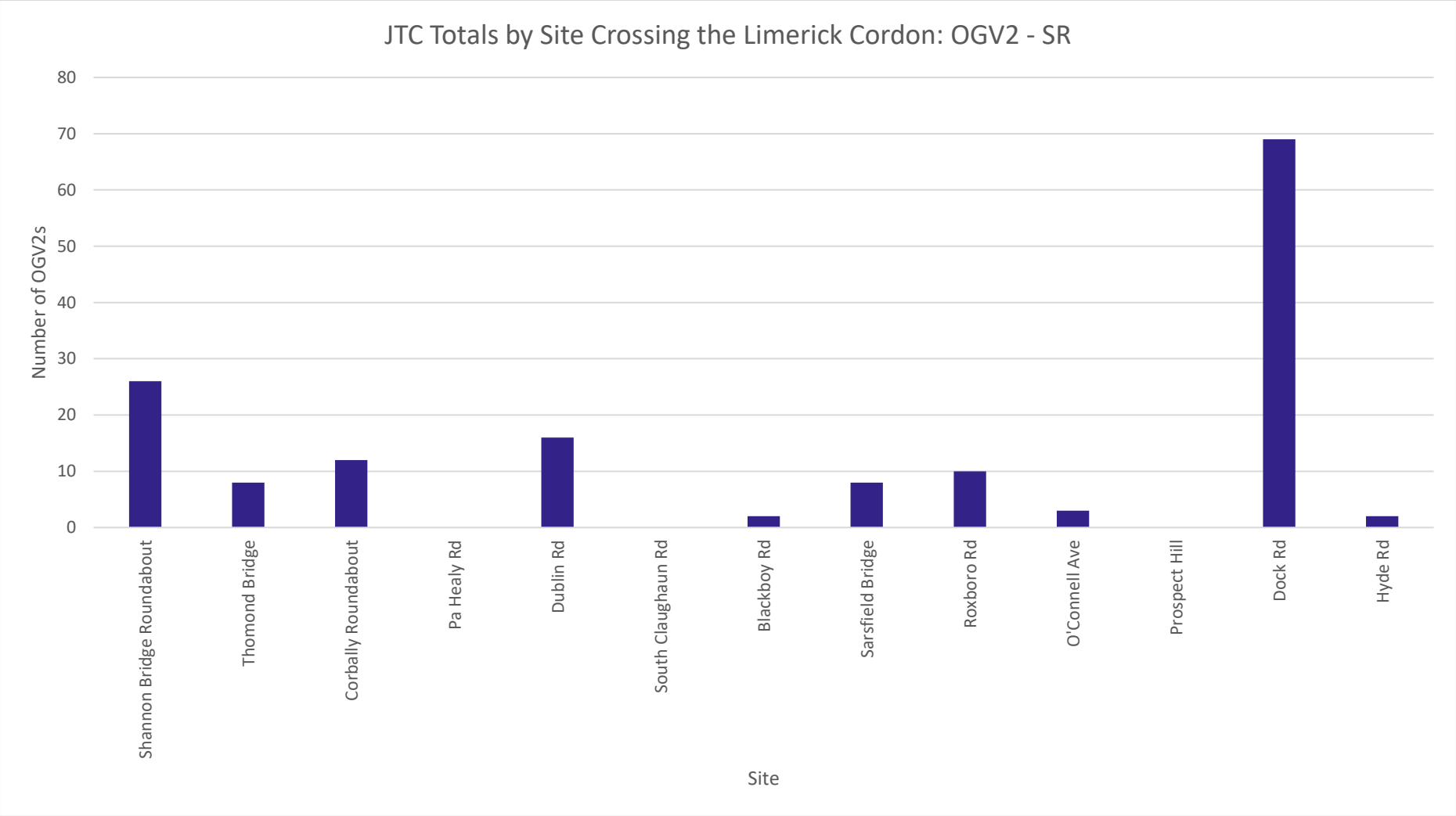


Figure 0-18:Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for SR per Site

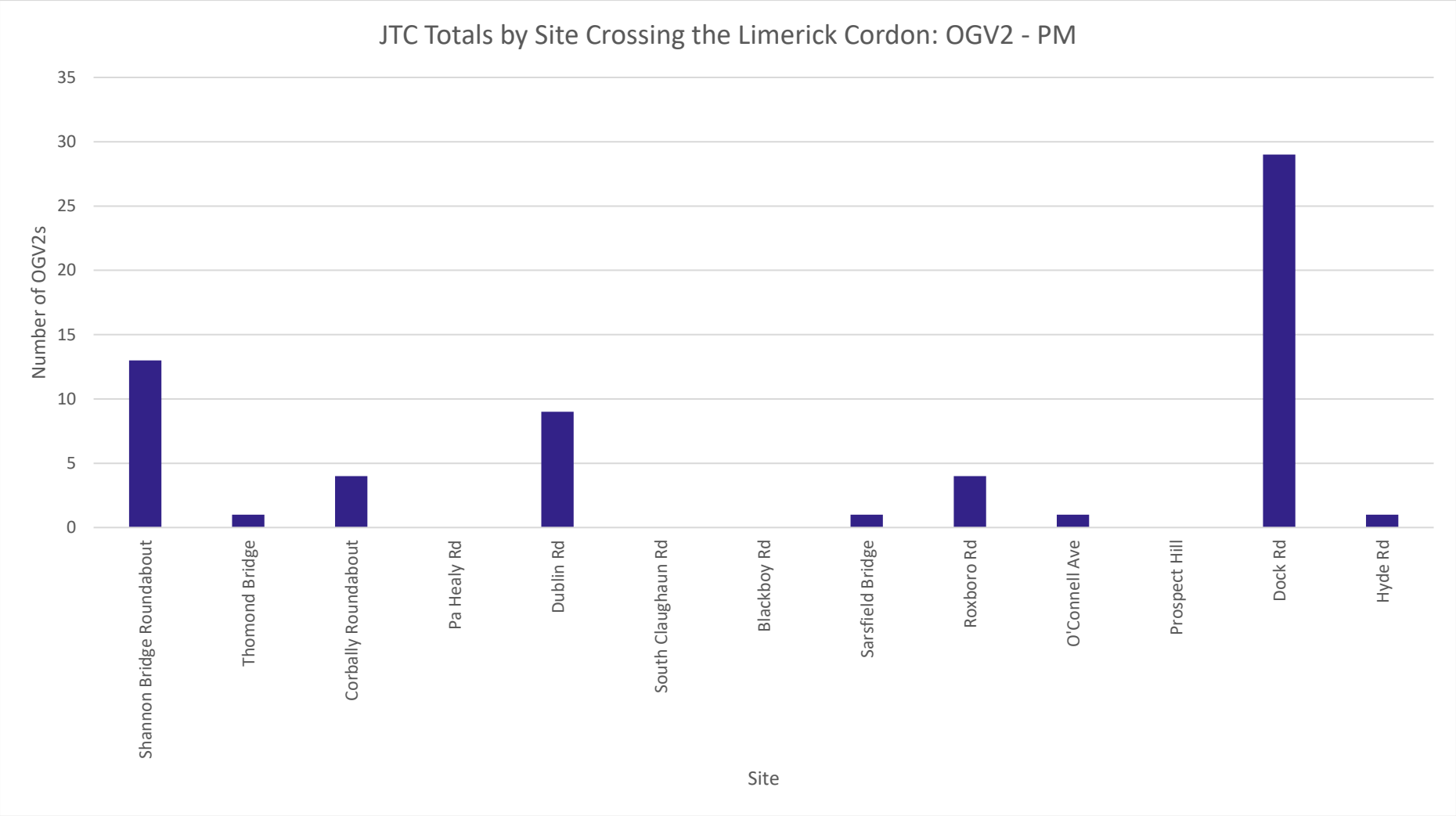


Figure 0-19:Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for PM per Site

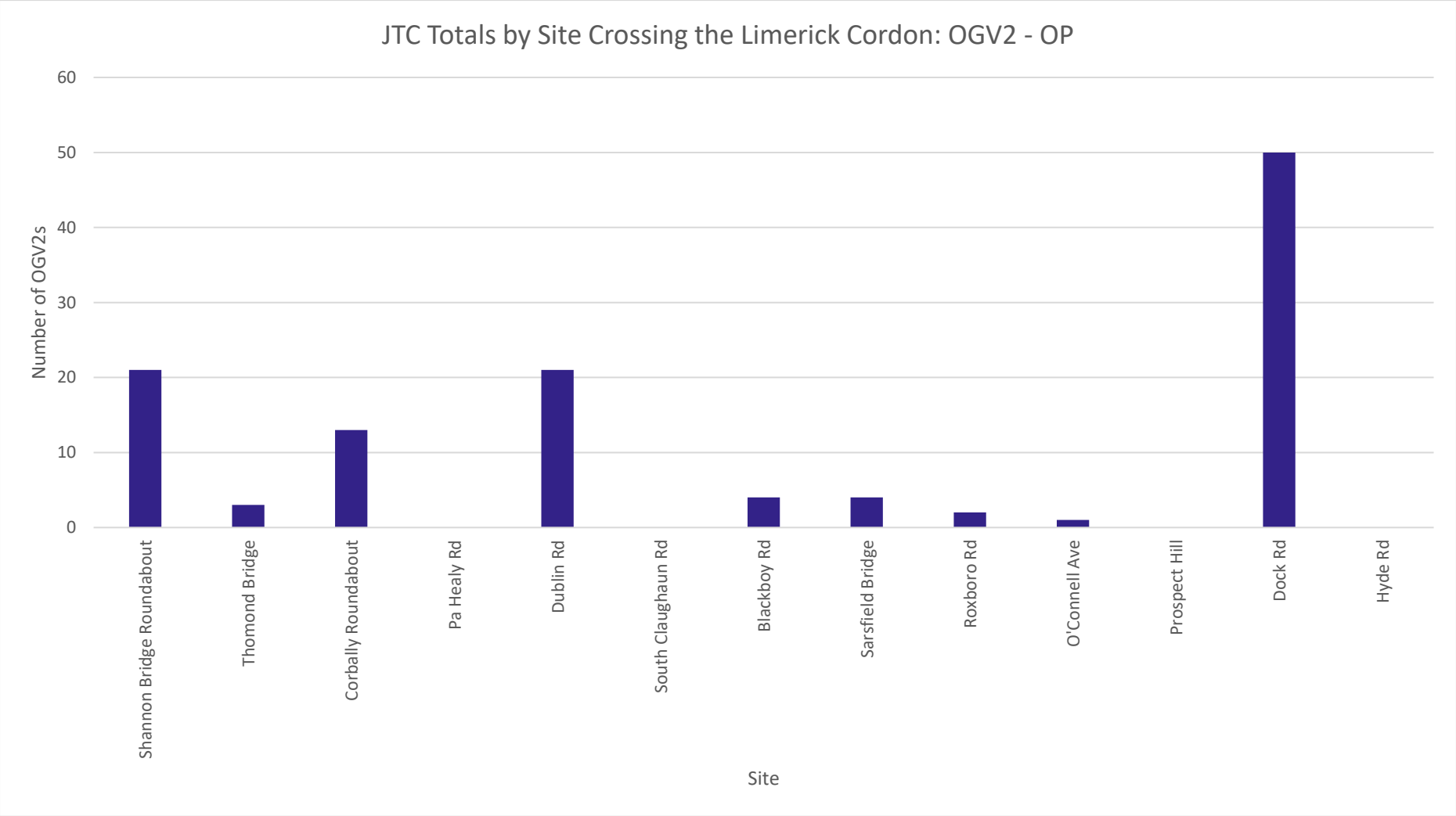


Figure 0-20:Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for OP per Site

Motorcycle Movements by Site and Period

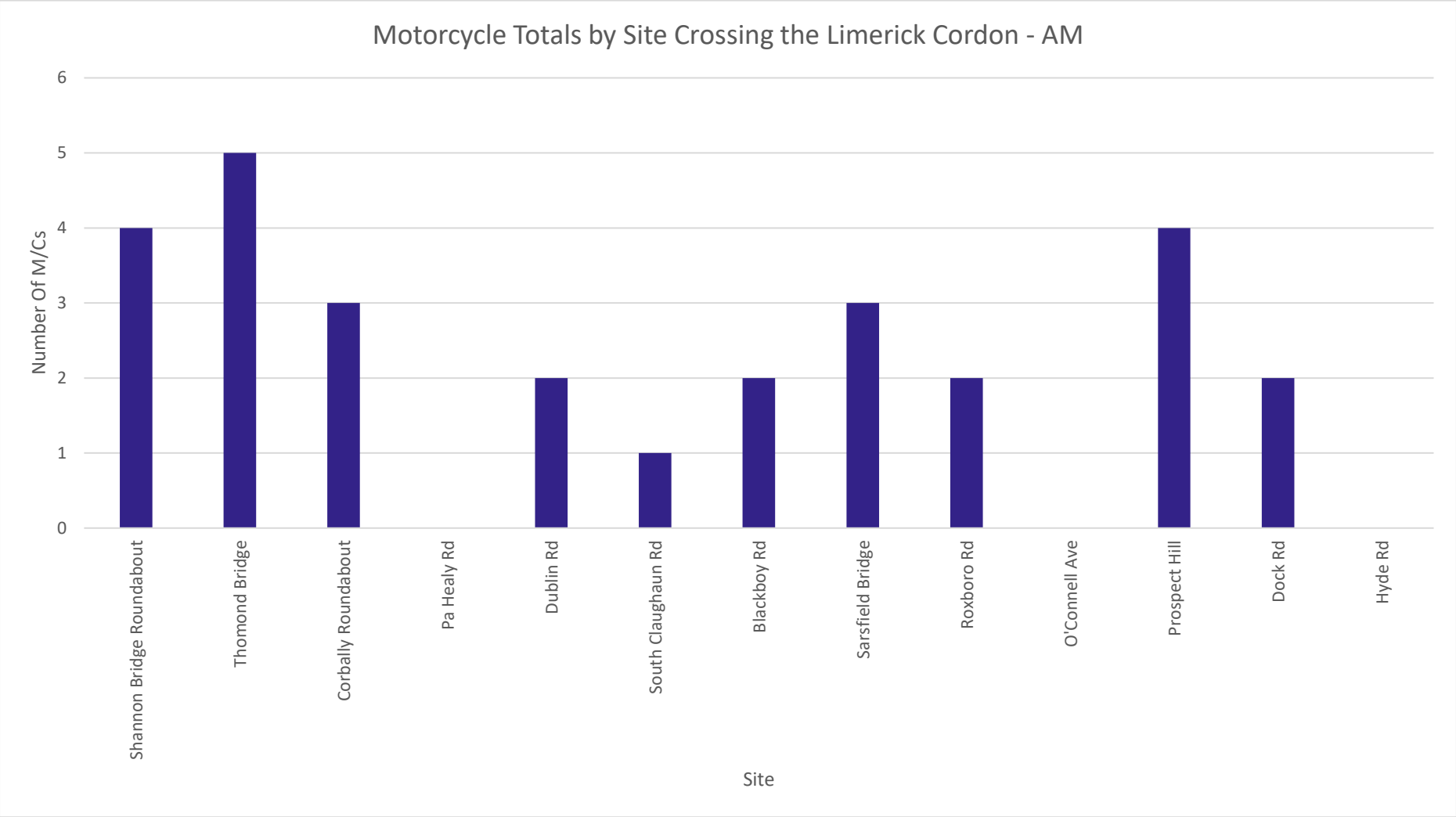


Figure 0-21:Number of Motorcycle Journeys for JTC Surveys for AM per Site

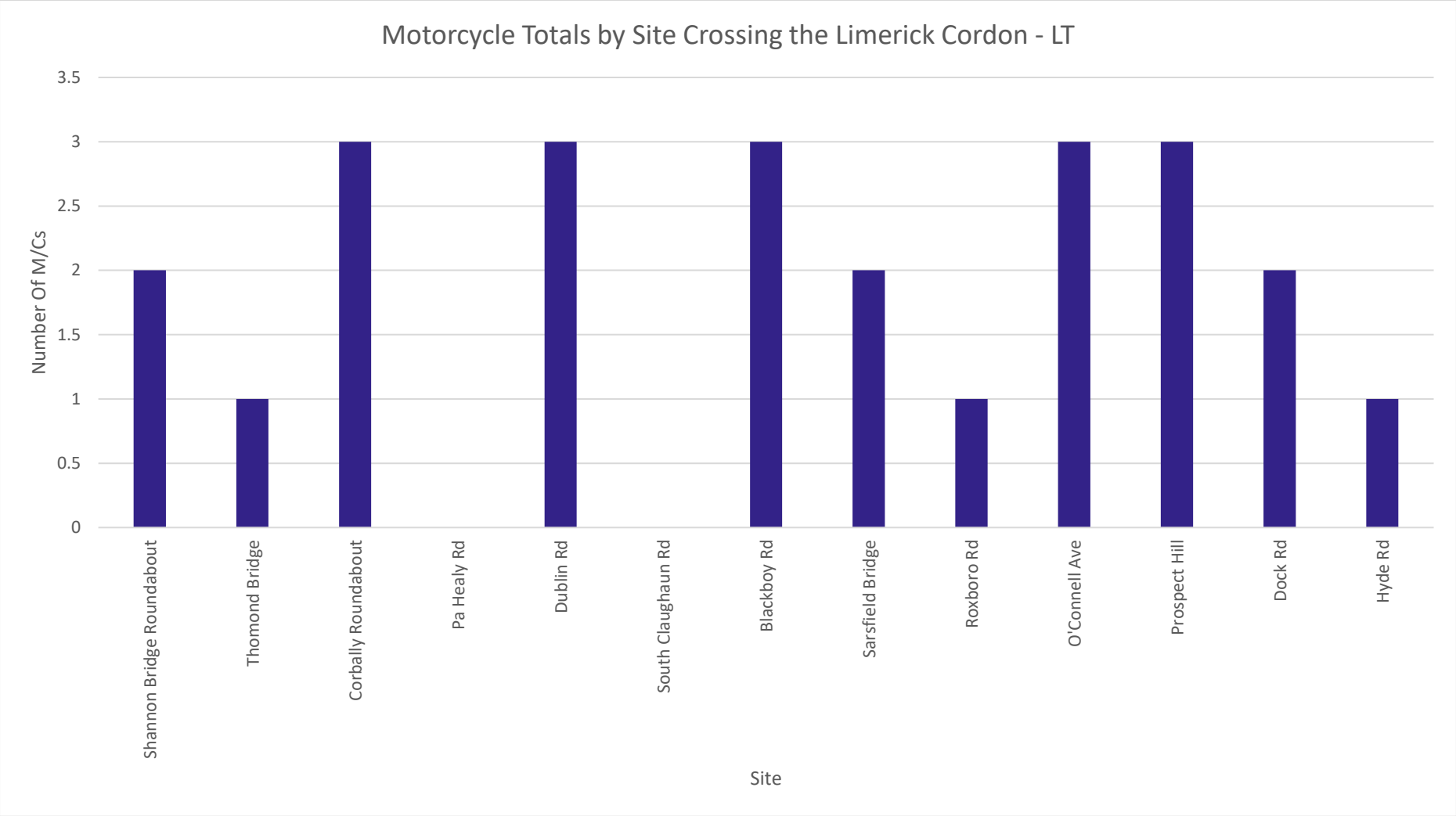


Figure 0-22:Number of Motorcycle Journeys for JTC Surveys for LT per Site

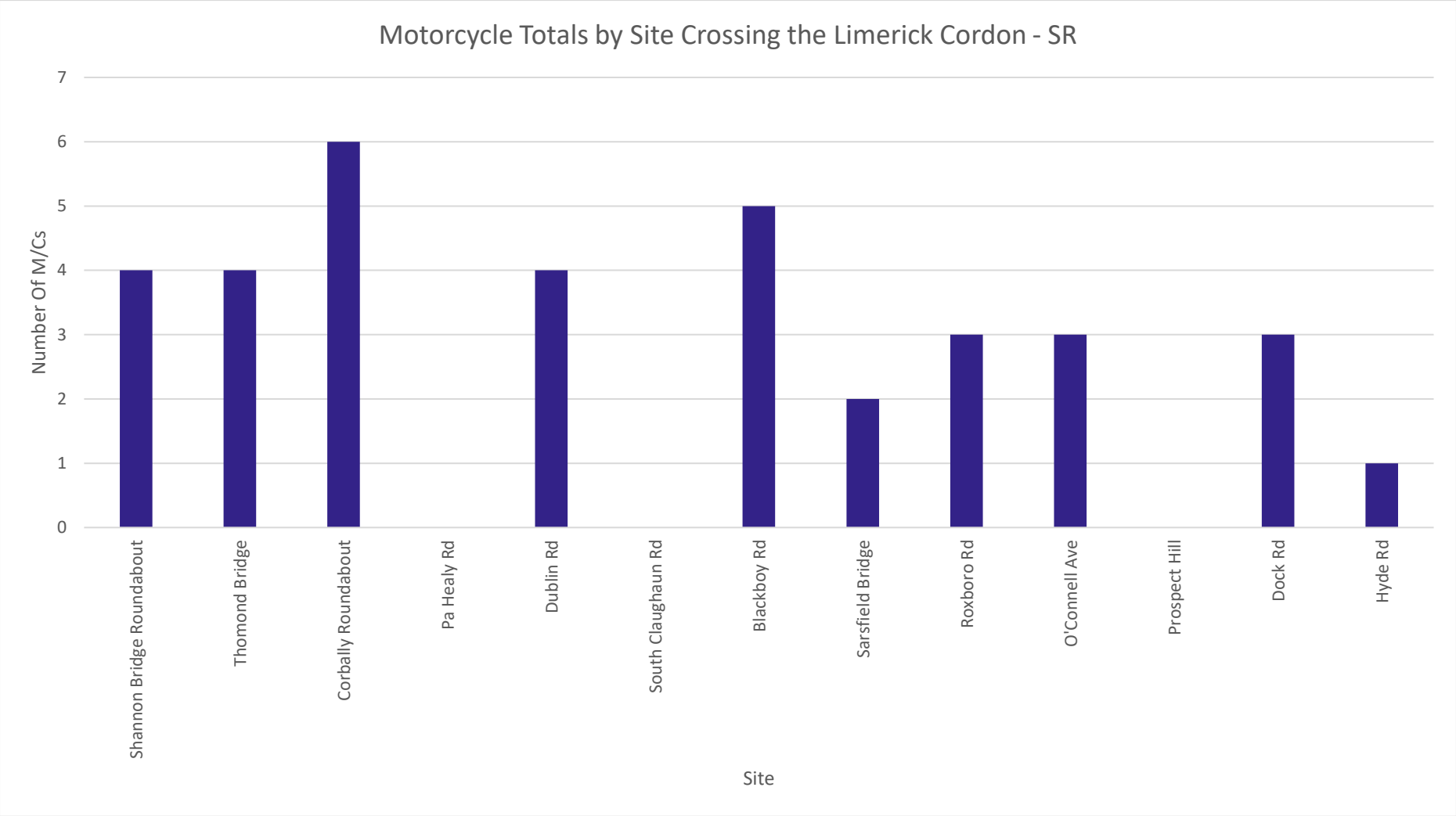


Figure 0-23:Number of Motorcycle Journeys for JTC Surveys for SR per Site

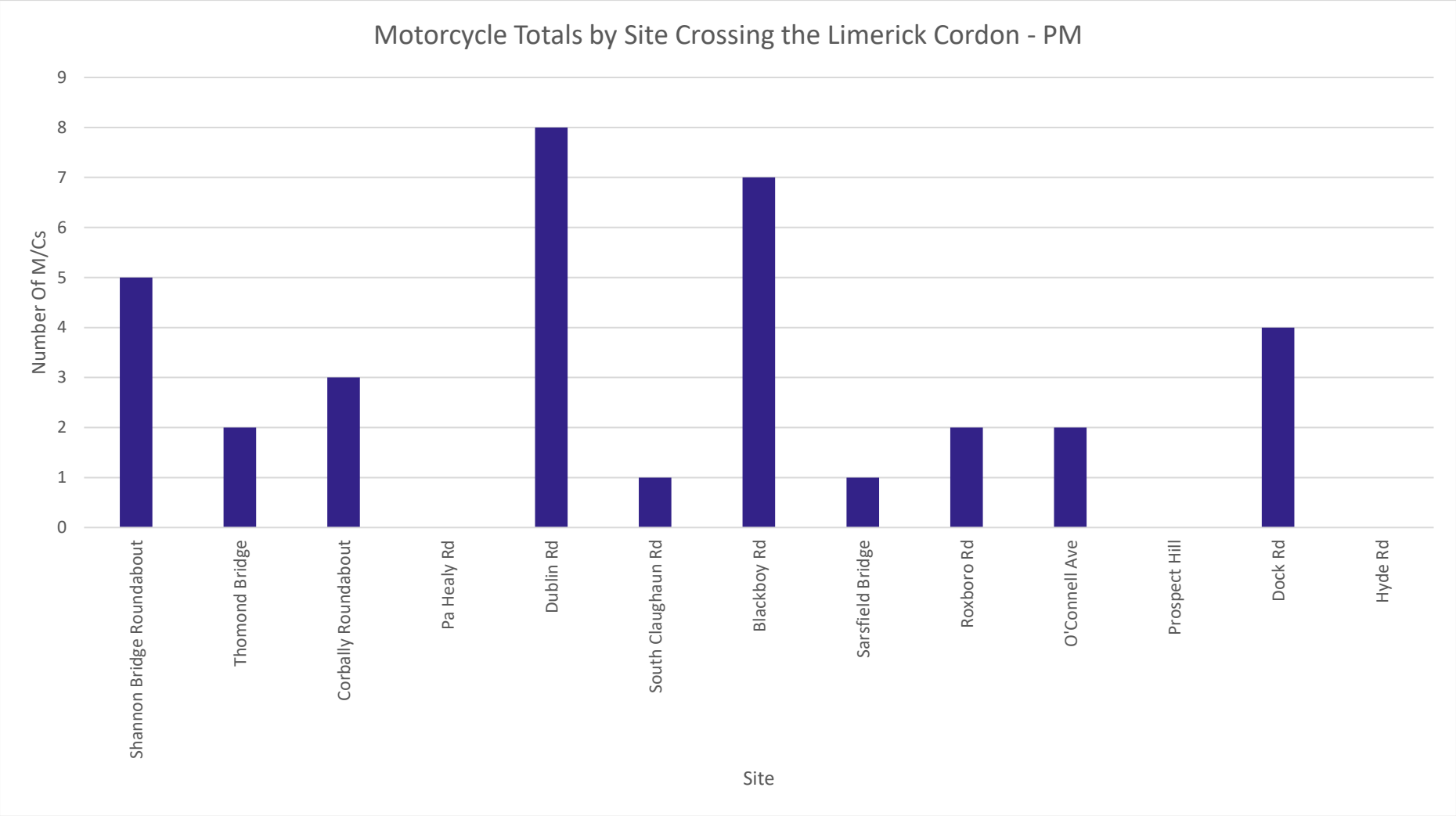


Figure 0-24:Number of Motorcycle Journeys for JTC Surveys for PM per Site

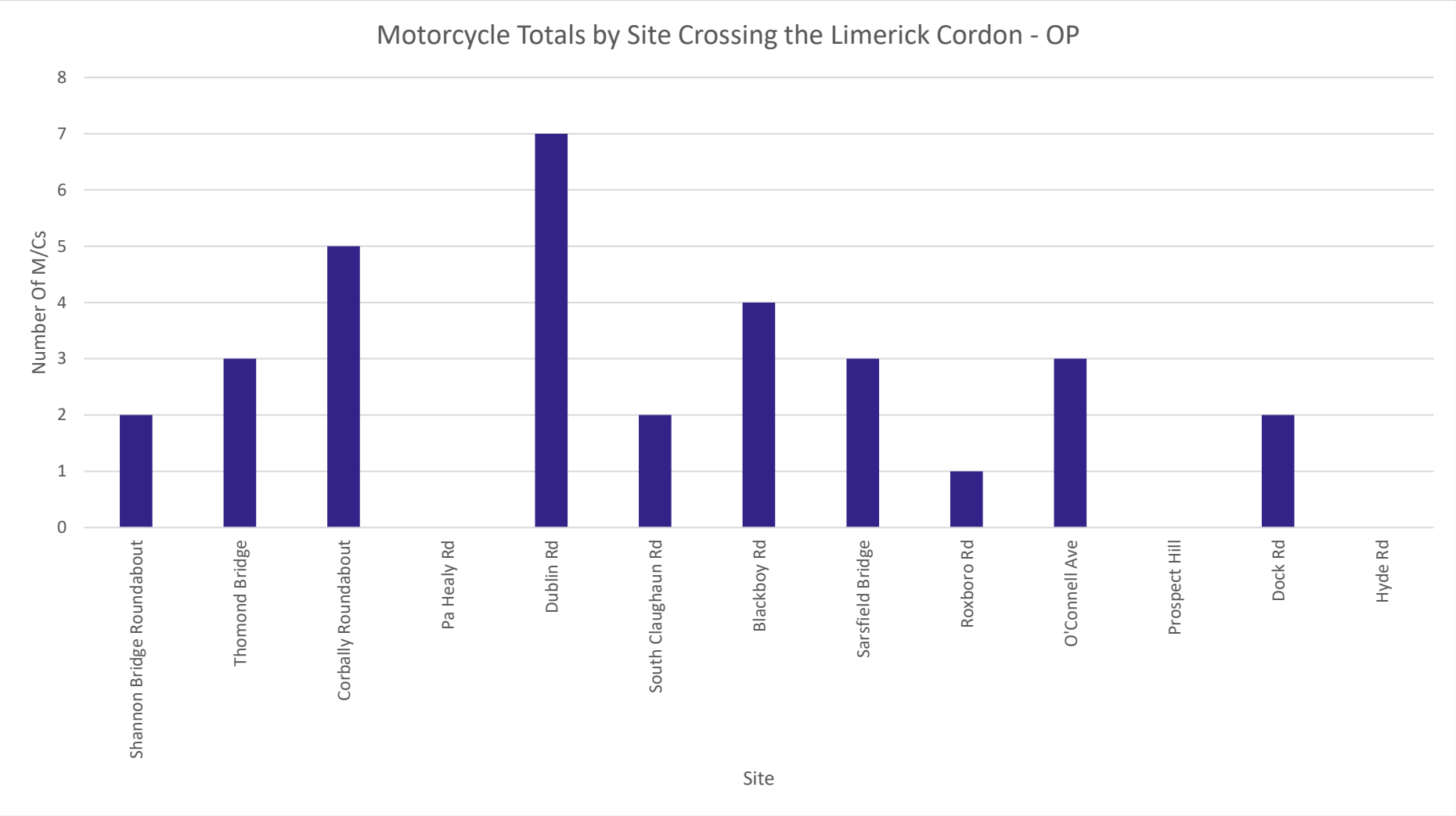


Figure 0-25:Number of Motorcycle Journeys for JTC Surveys for OP per Site

Pedal Cycle Movements by Site and Period

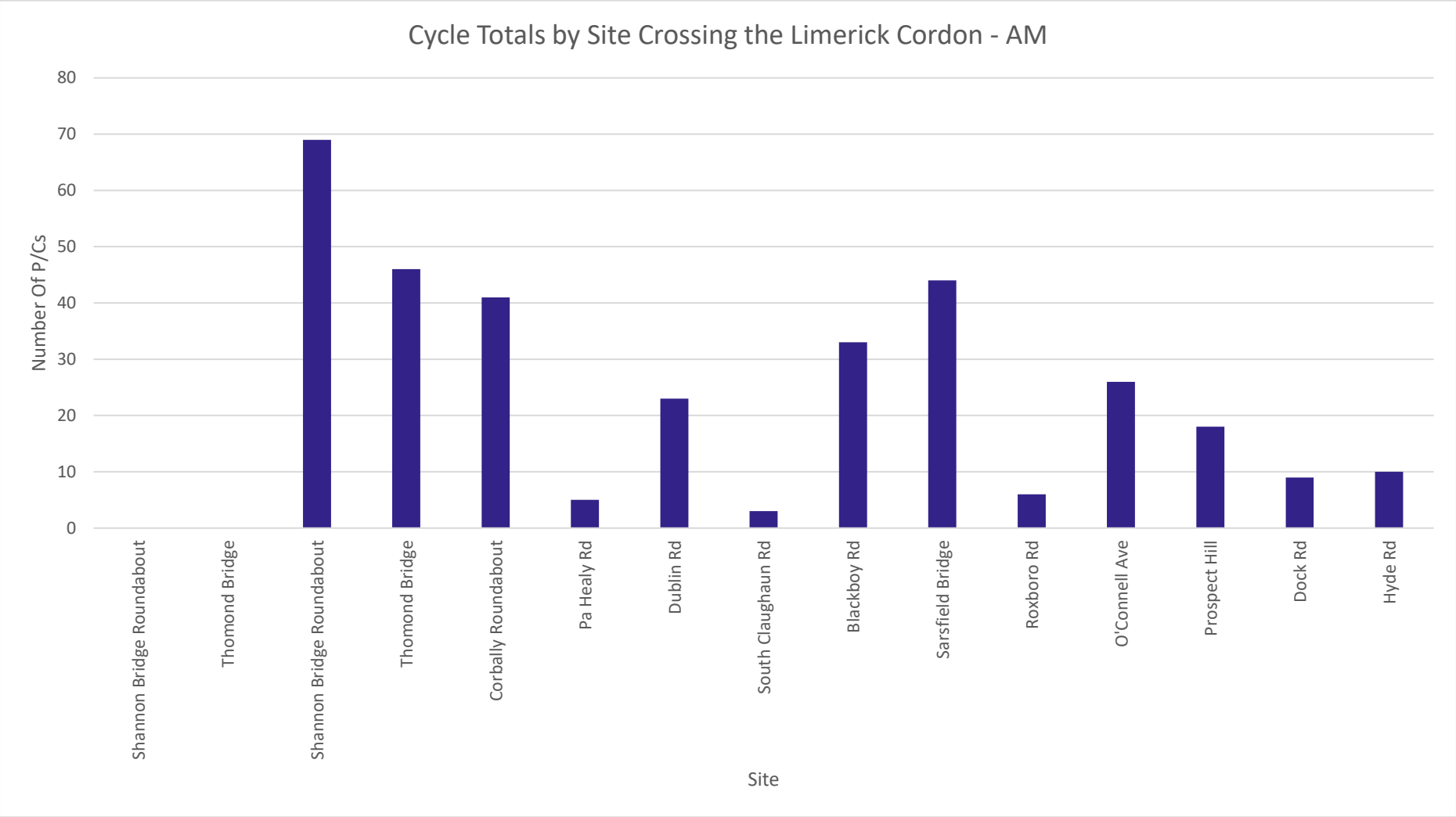


Figure 0-26:Number of Pedal Cycle Journeys for JTC Surveys for AM per Site

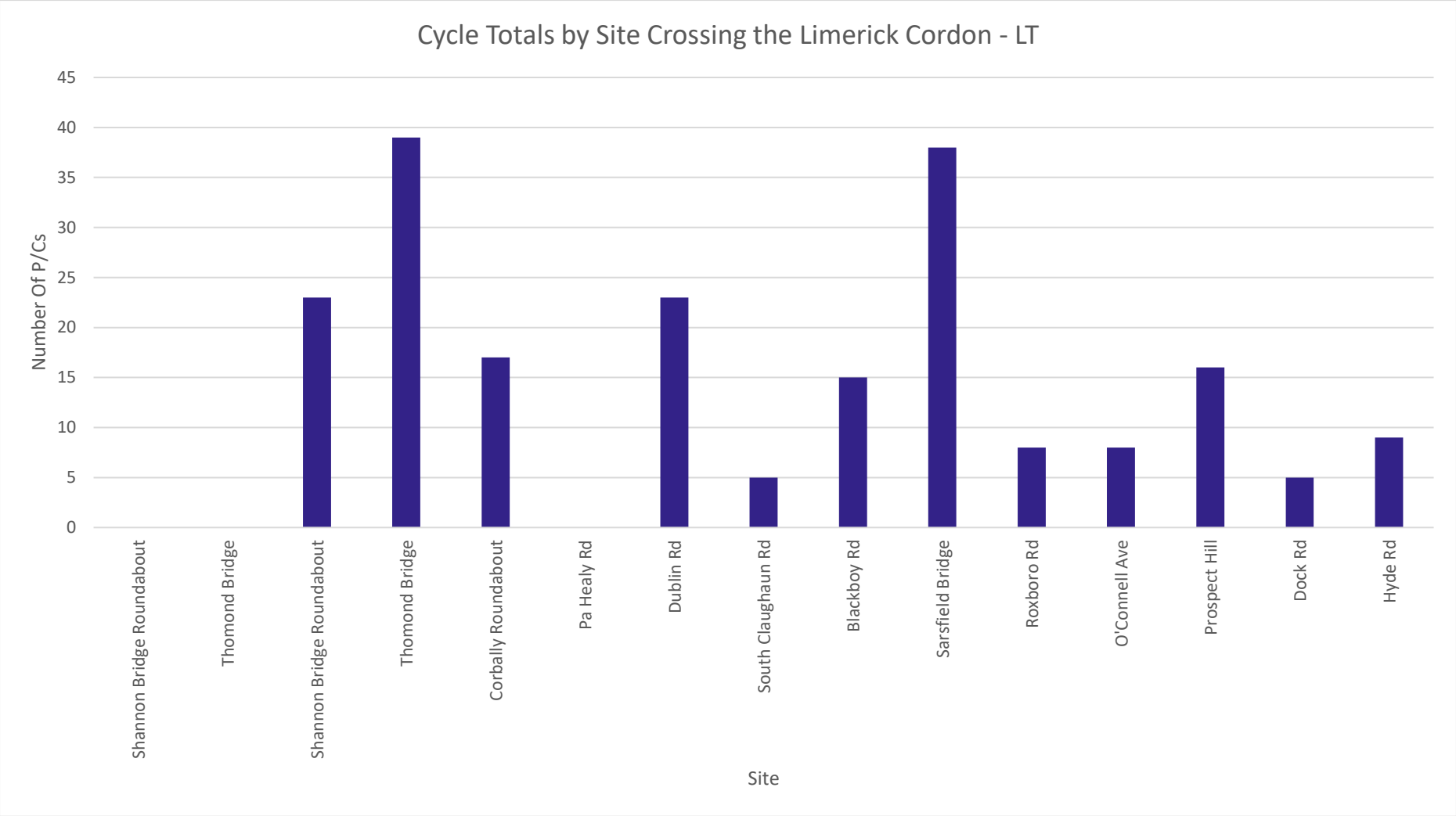


Figure 0-27:Number of Pedal Cycle Journeys for JTC Surveys for LT per Site

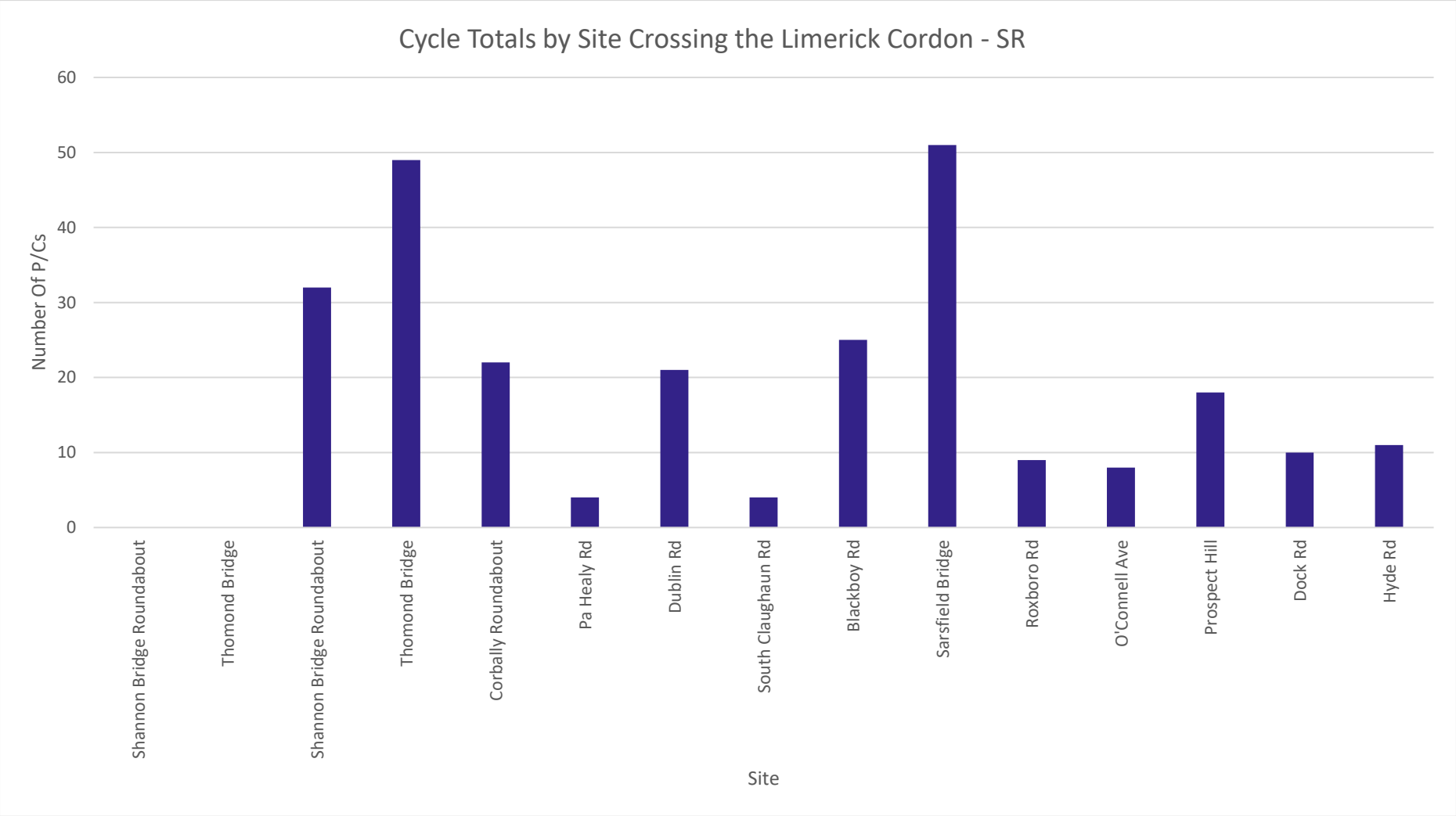


Figure 0-28:Number of Pedal Cycle Journeys for JTC Surveys for SR per Site

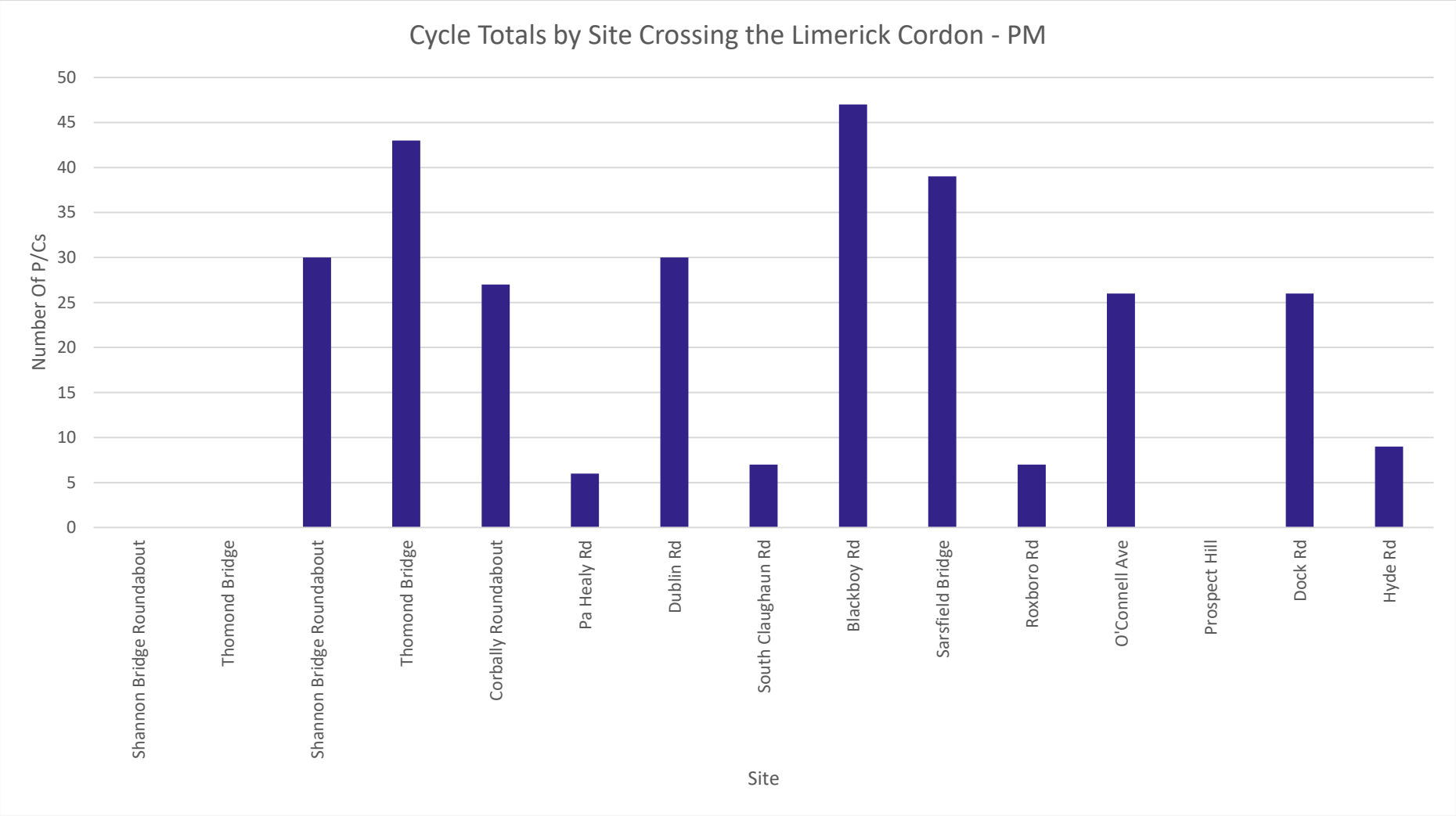


Figure 0-29:Number of Pedal Cycle Journeys for JTC Surveys for PM per Site

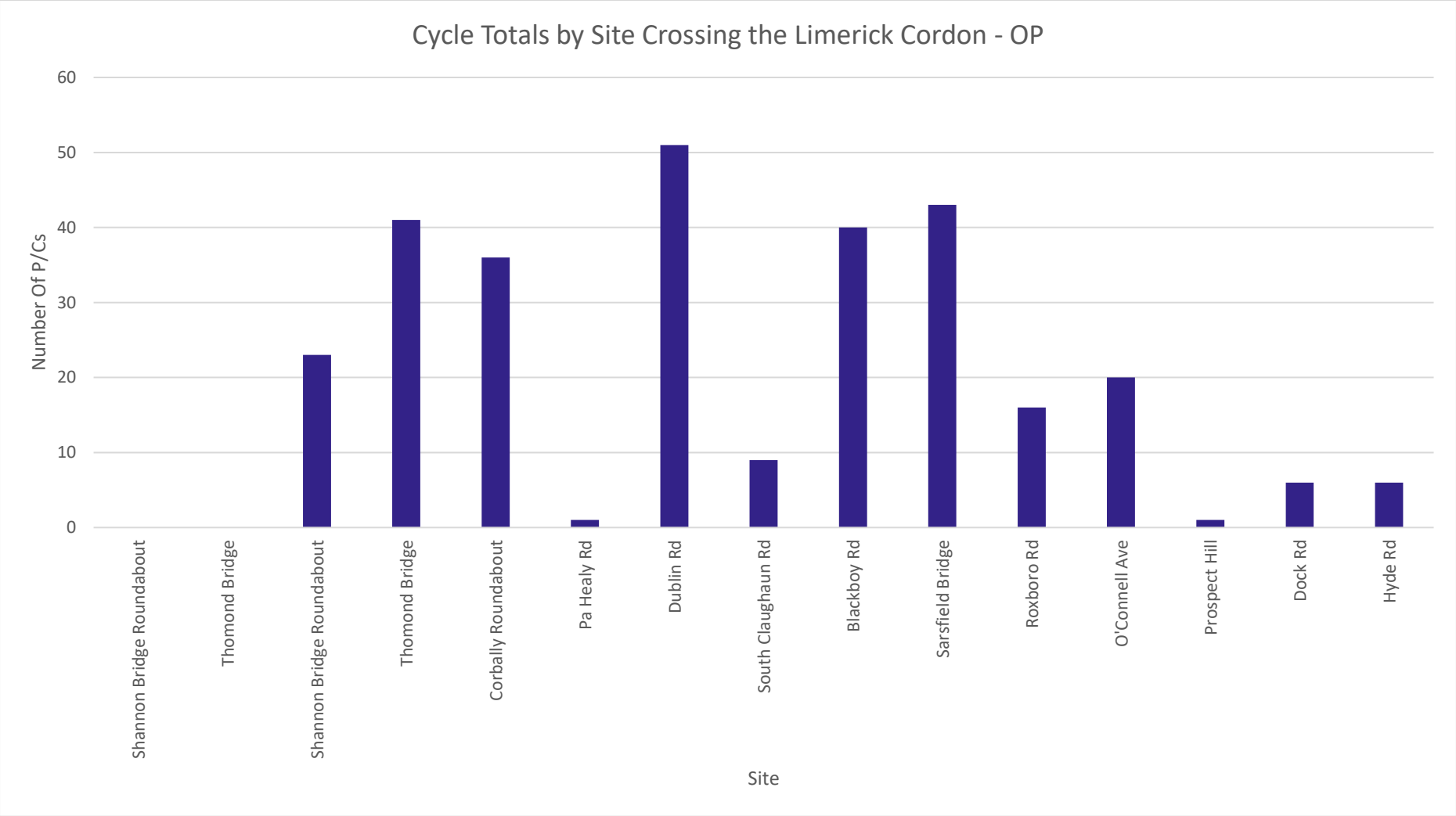


Figure 0-30:Number of Pedal Cycle Journeys for JTC Surveys for OP per Site

Taxi Movements by Site and Period

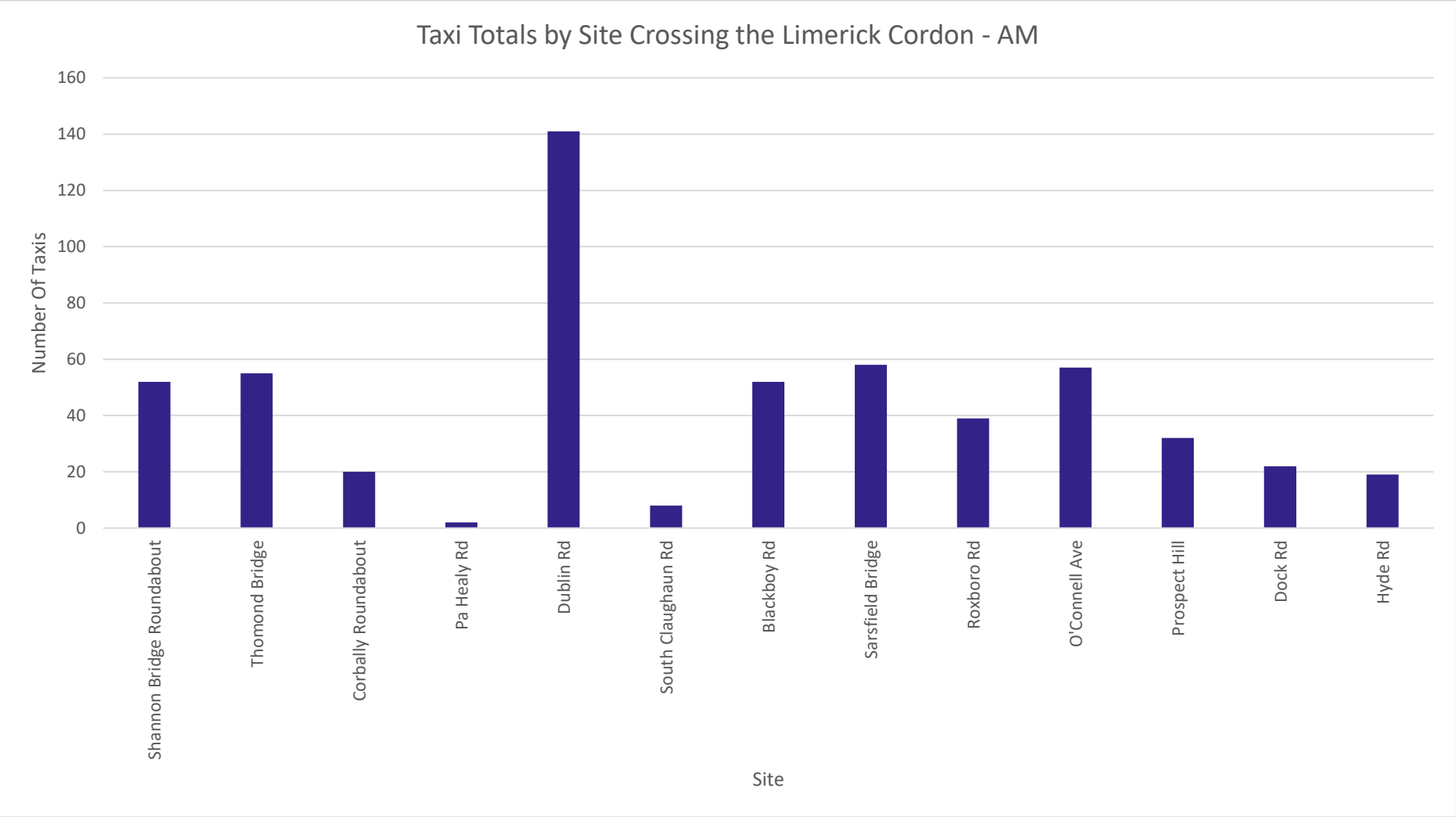


Figure 0-31:Number of Taxi Journeys for JTC Surveys for AM per Site

Figure 0-32:Number of Taxi Journeys for JTC Surveys for LT per Site

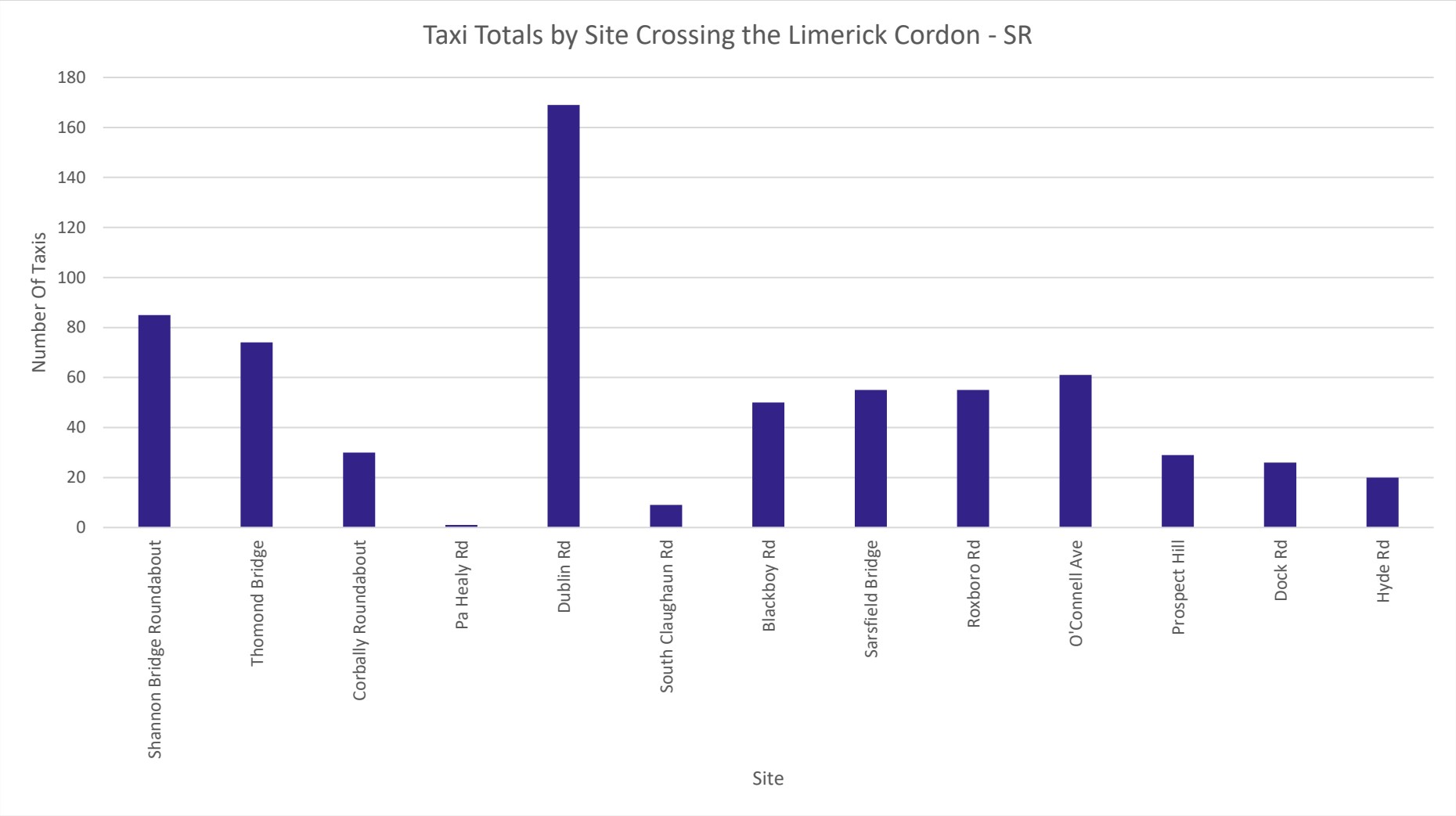


Figure 0-33:Number of Taxi Journeys for JTC Surveys for SR per Site

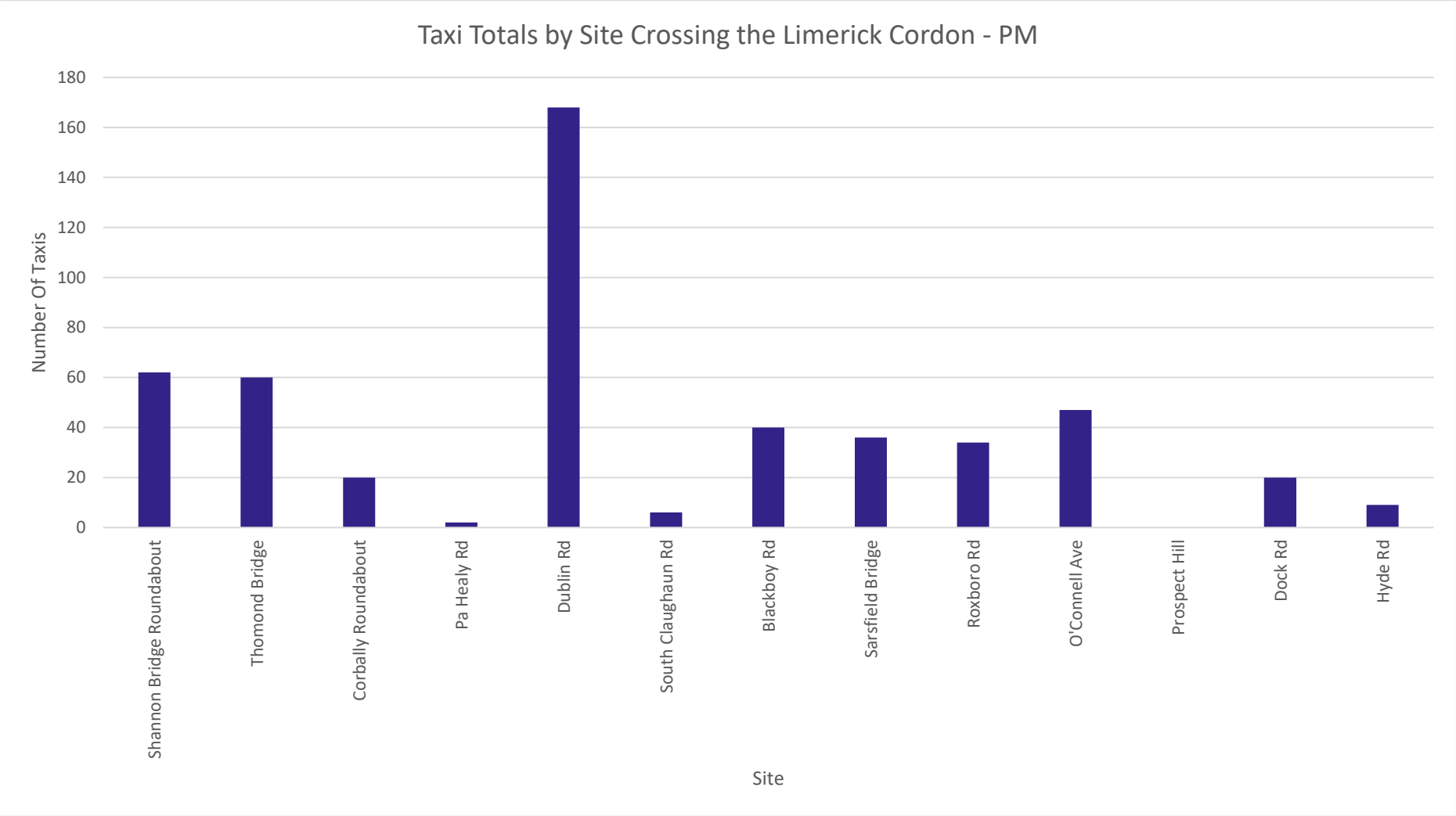


Figure 0-34:Number of Taxi Journeys for JTC Surveys for PM per Site

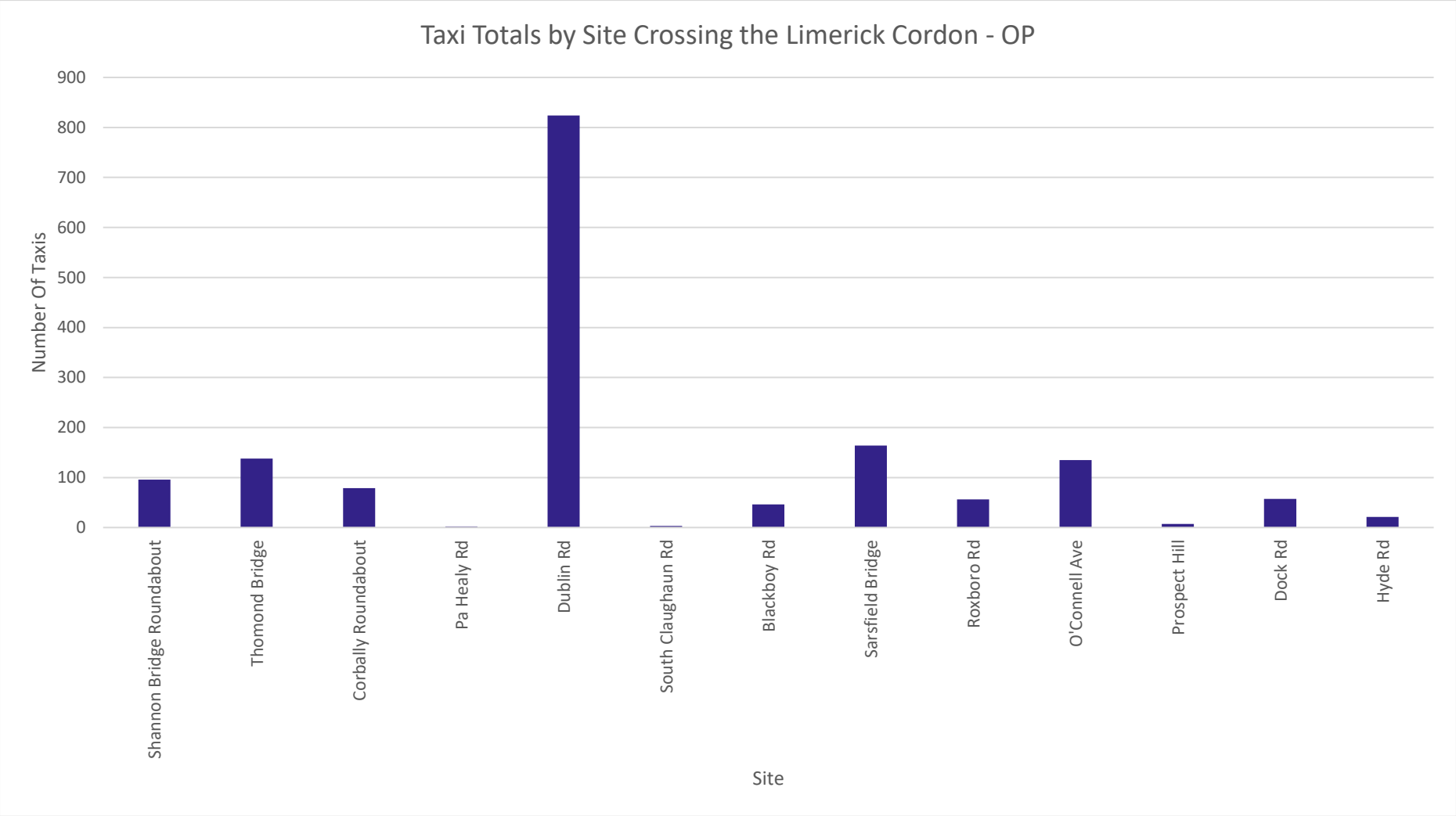


Figure 0-35:Number of Taxi Journeys for JTC Surveys for OP per Site

Bus Movements by Site and Period

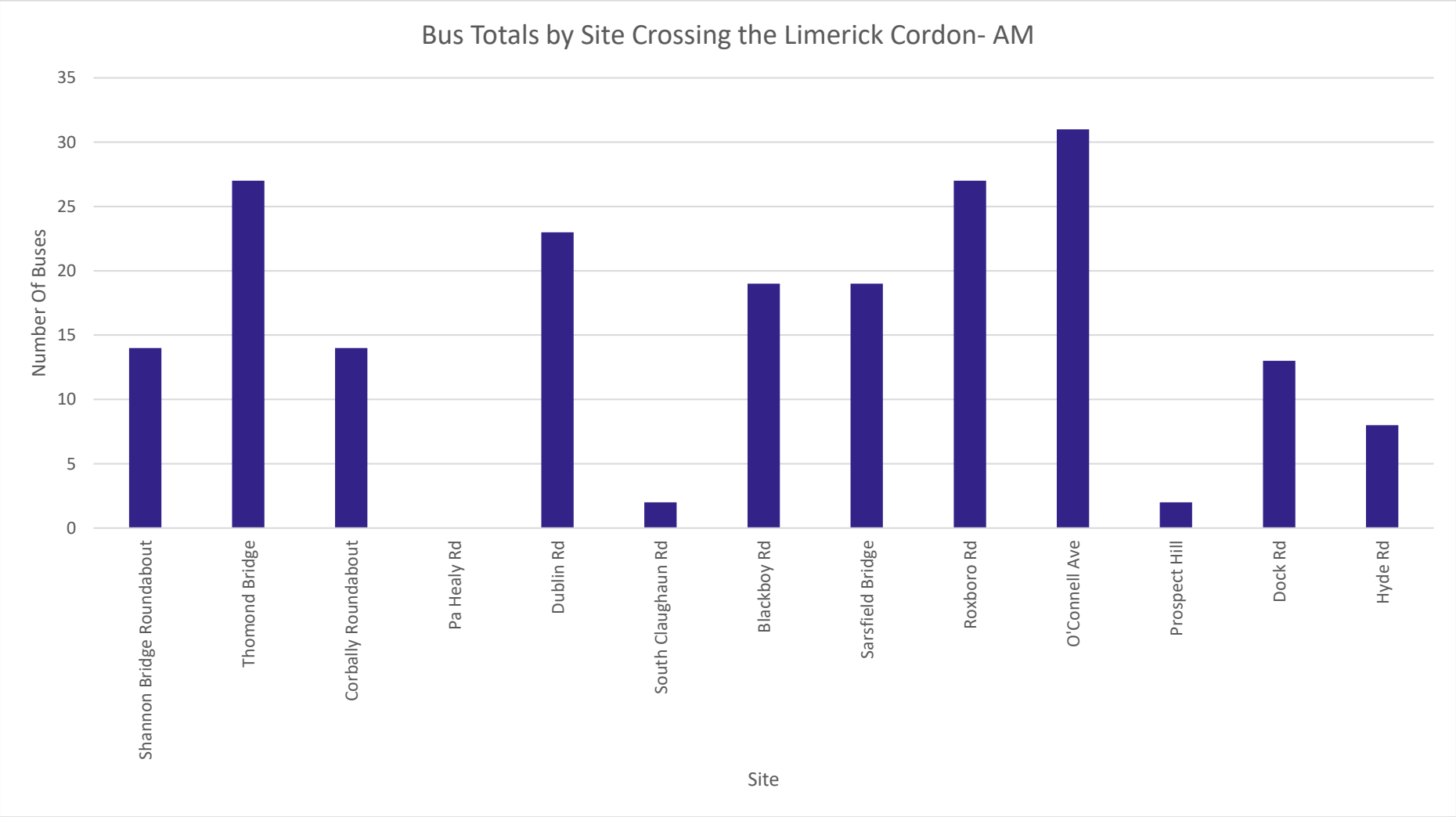


Figure 0-36:Number of Bus Journeys for JTC Surveys for AM per Site

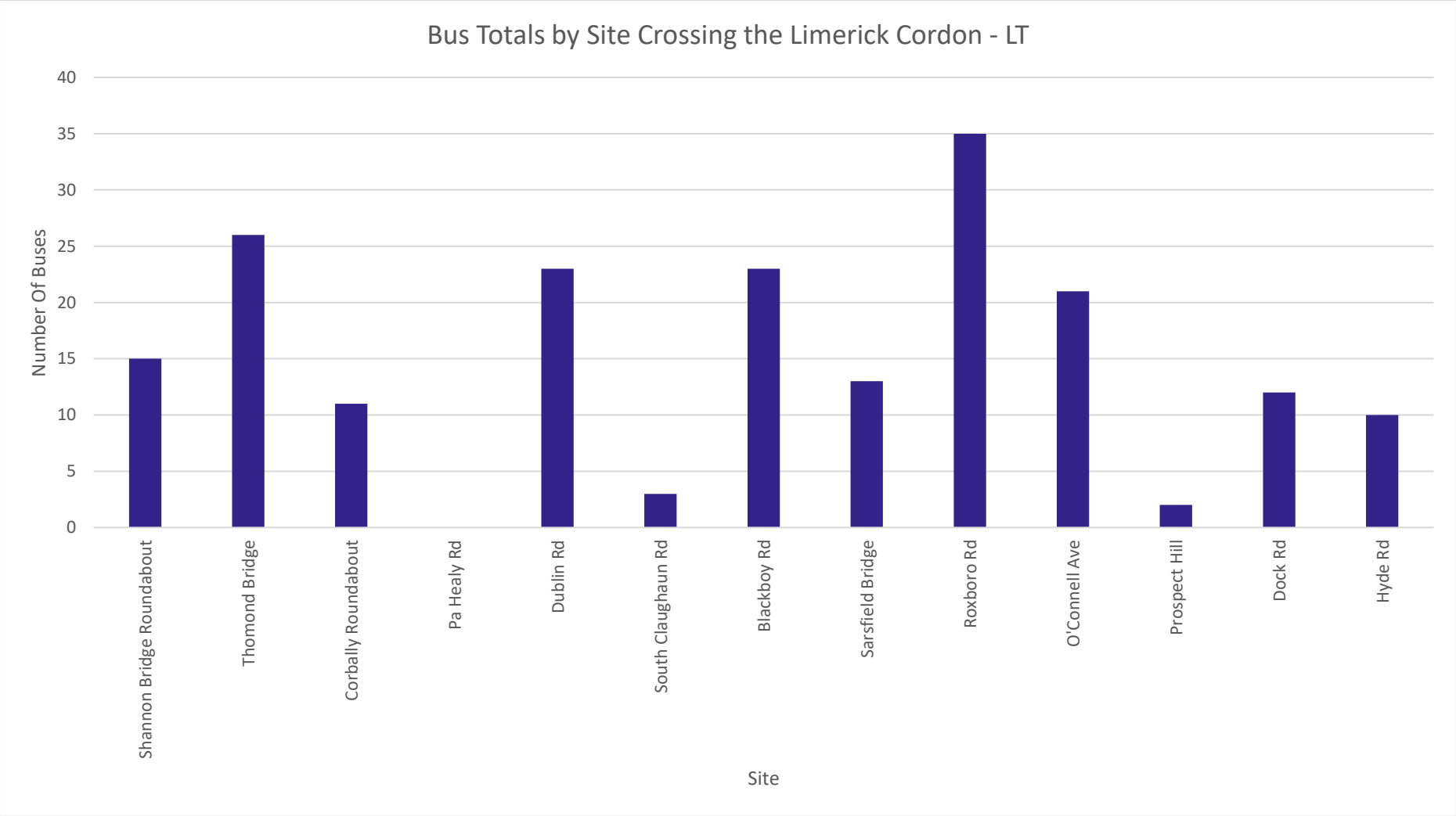


Figure 0-37:Number of Bus Journeys for JTC Surveys for LT per Site

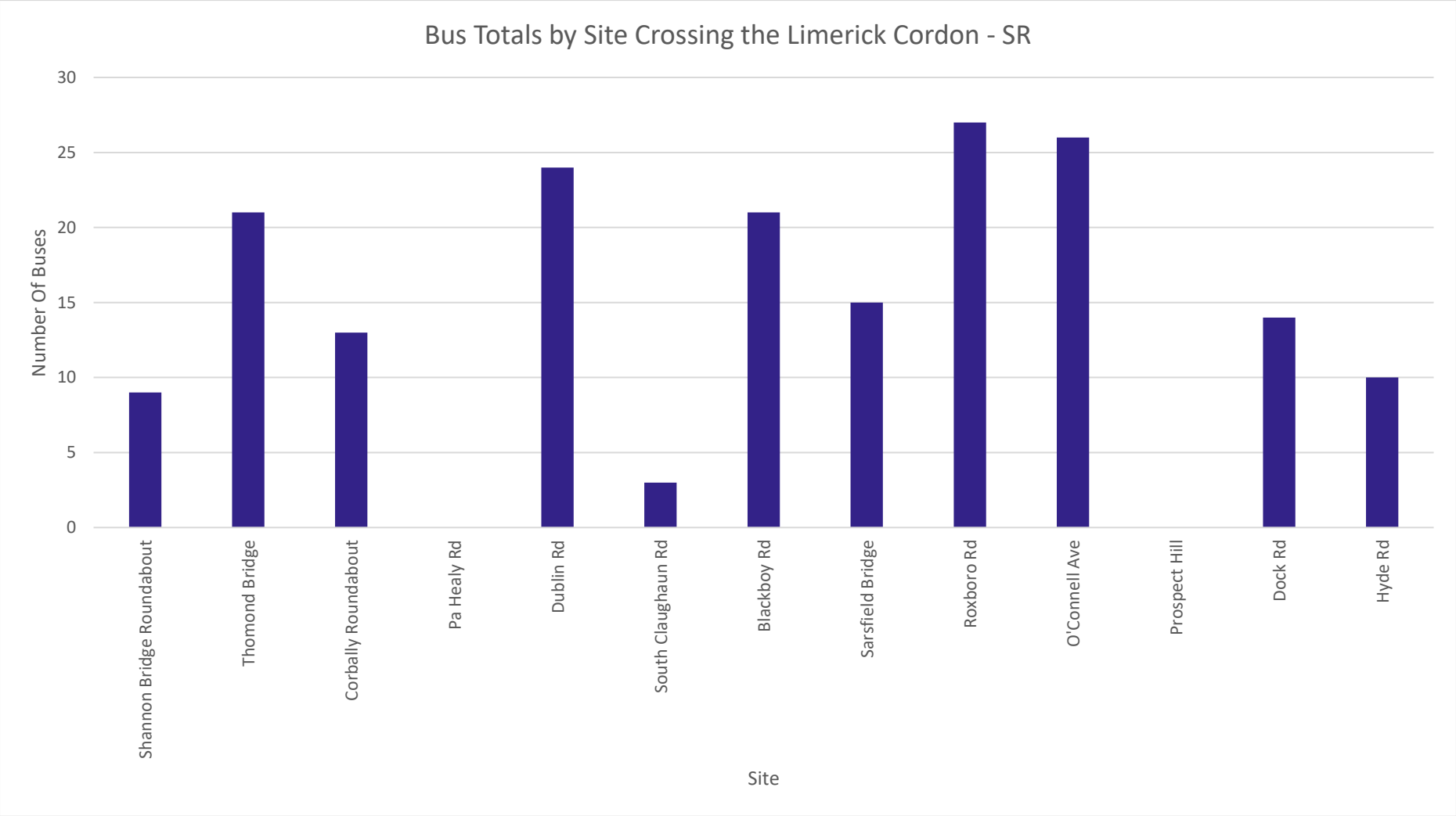


Figure 0-38:Number of Bus Journeys for JTC Surveys for SR per Site

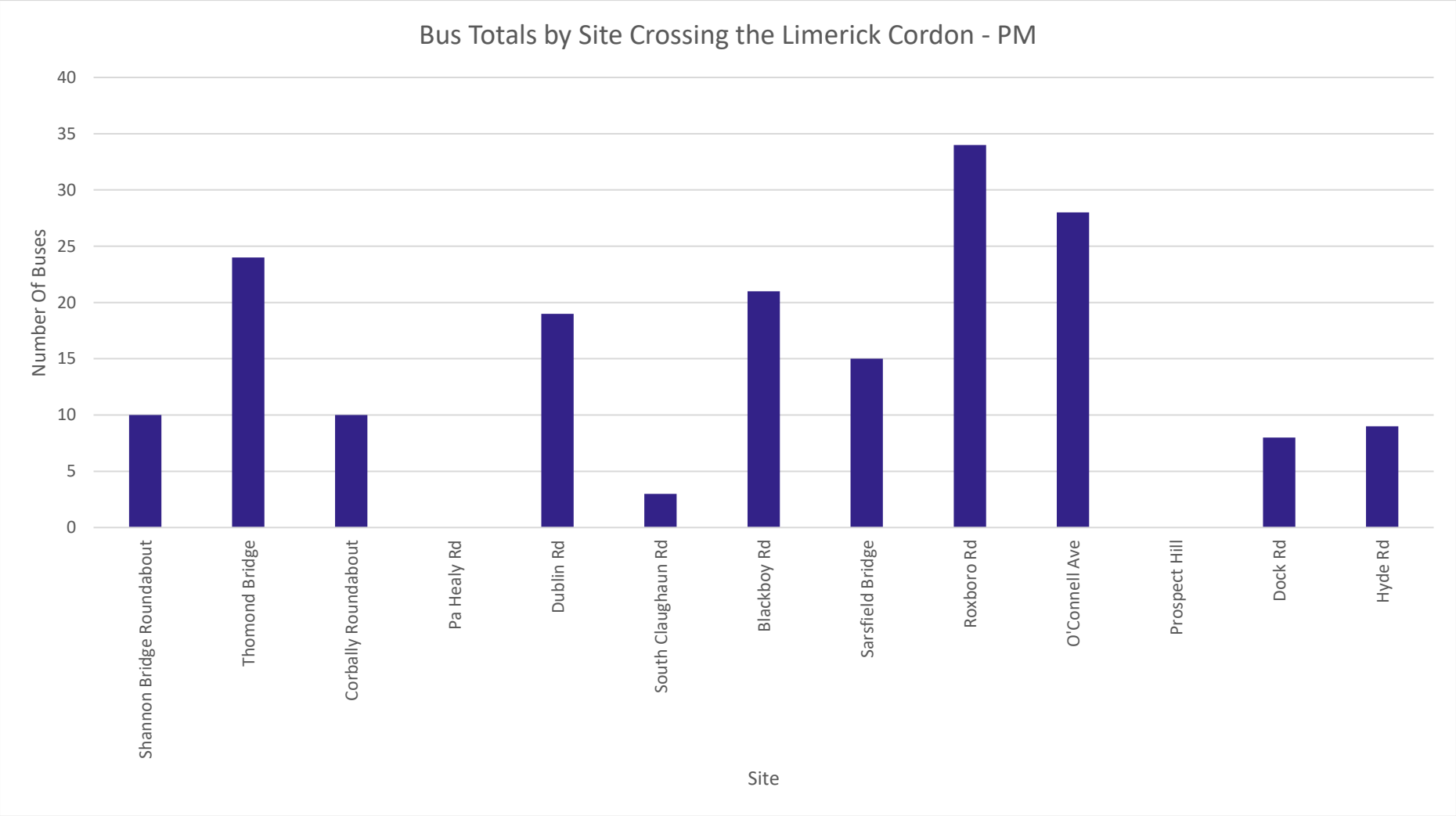


Figure 0-39:Number of Bus Journeys for JTC Surveys for PM per Site

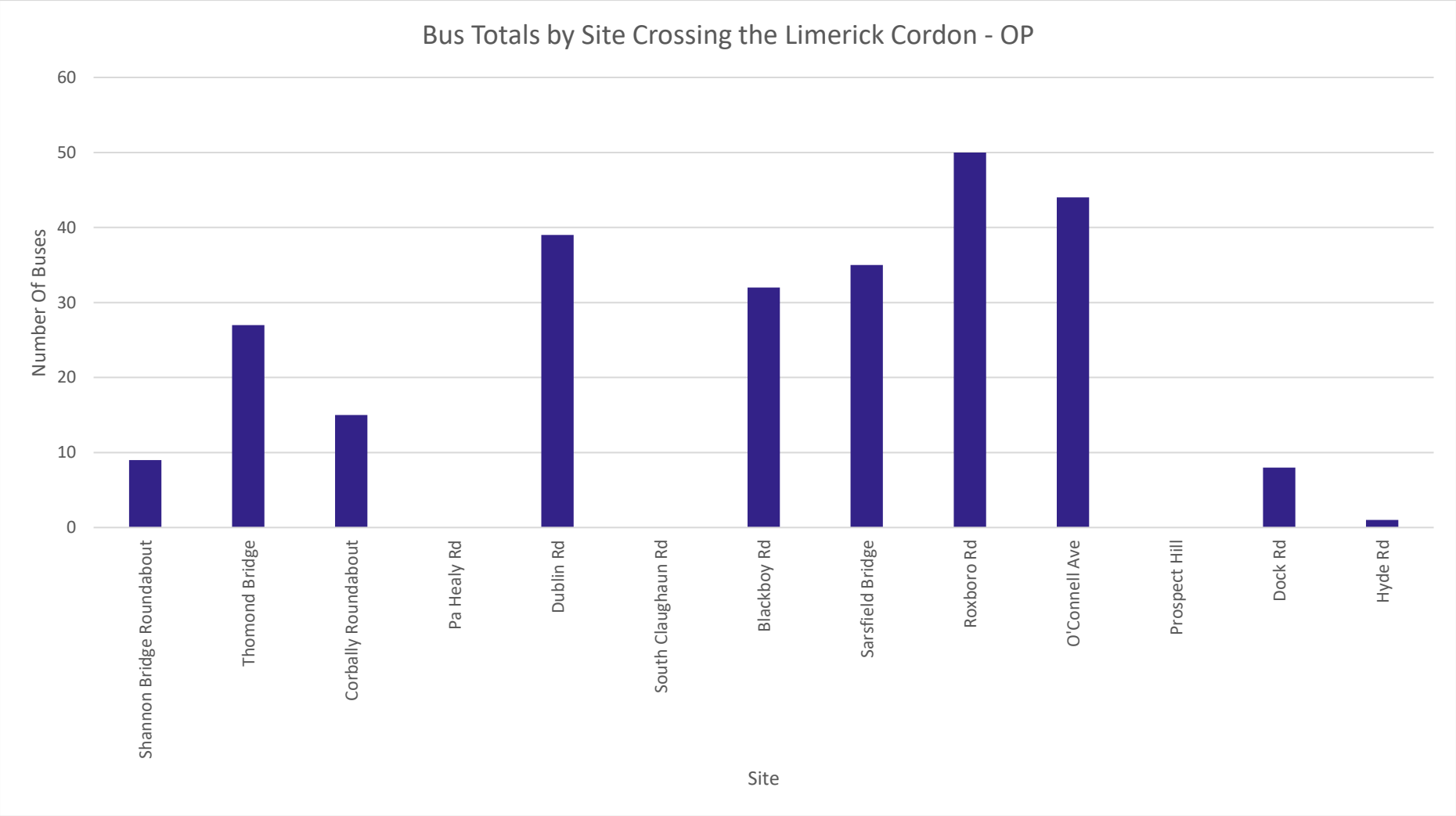


Figure 0-40:Number of Bus Journeys for JTC Surveys for OP per Site

Pedestrian Movements by Site and Period

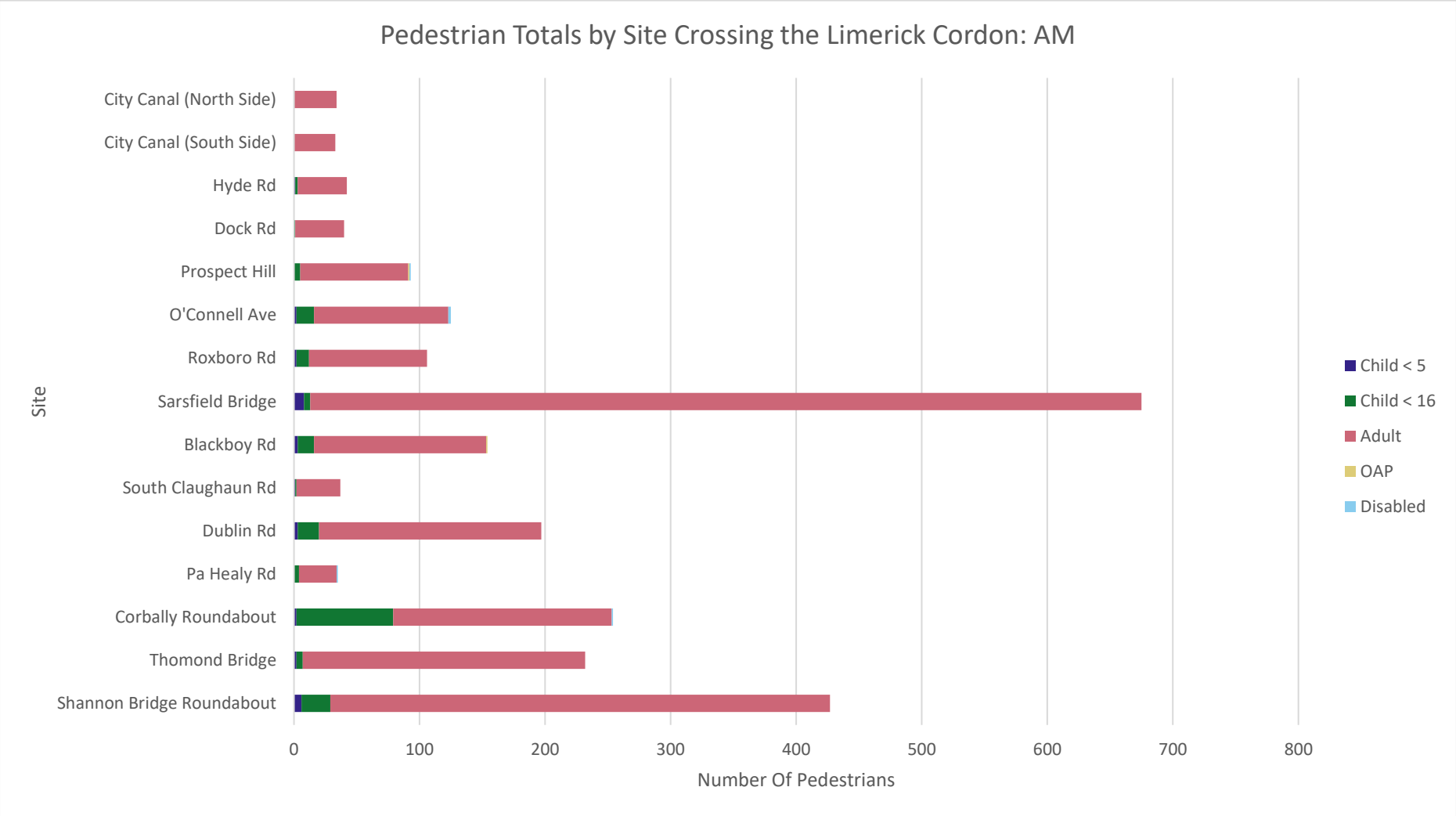


Figure 0-41:Number of Pedestrian Journeys for Ped Surveys for AM per Site

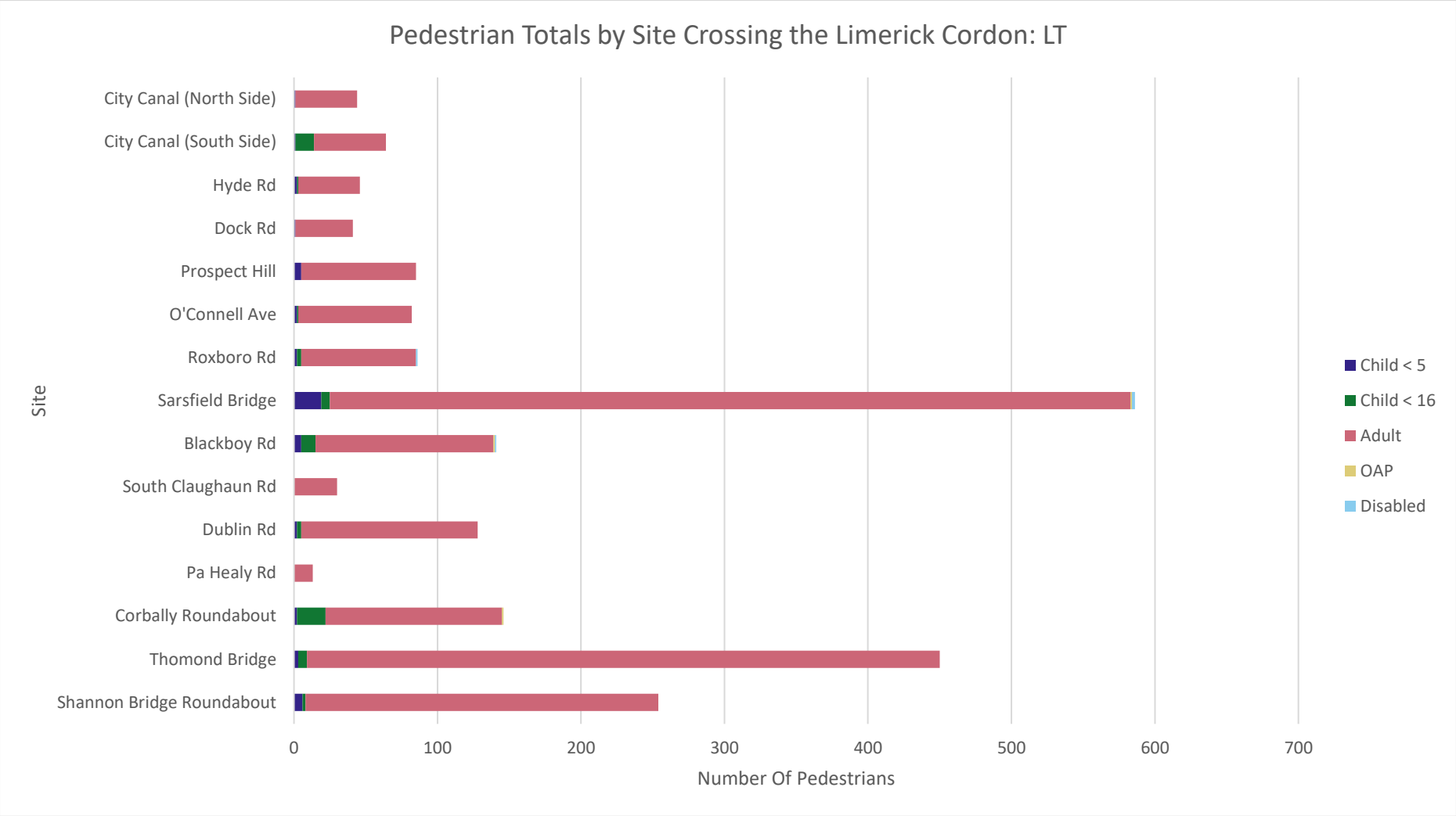


Figure 0-42:Number of Pedestrian Journeys for Ped Surveys for LT per Site

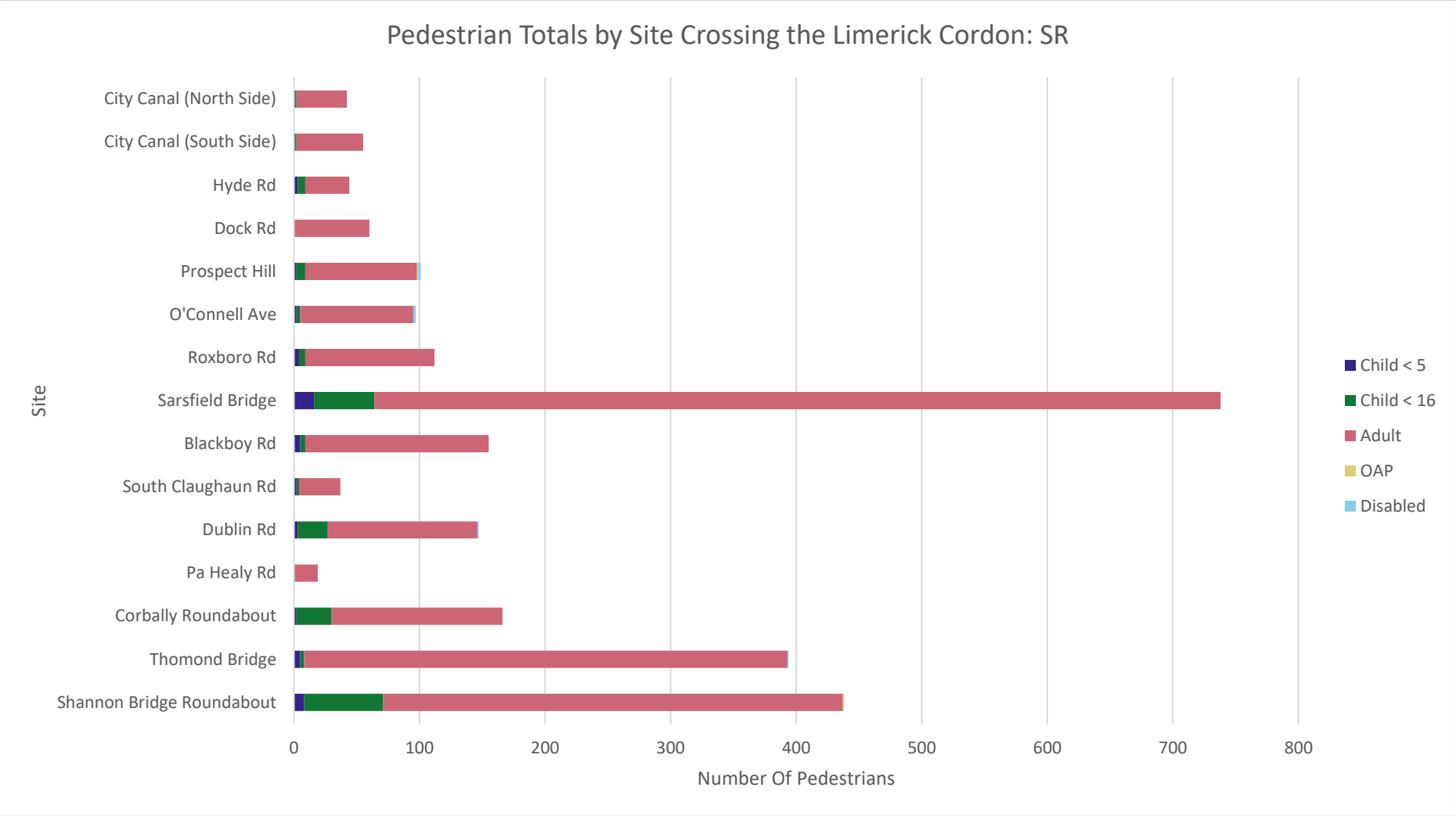


Figure 0-43:Number of Pedestrian Journeys for Ped Surveys for SR per Site

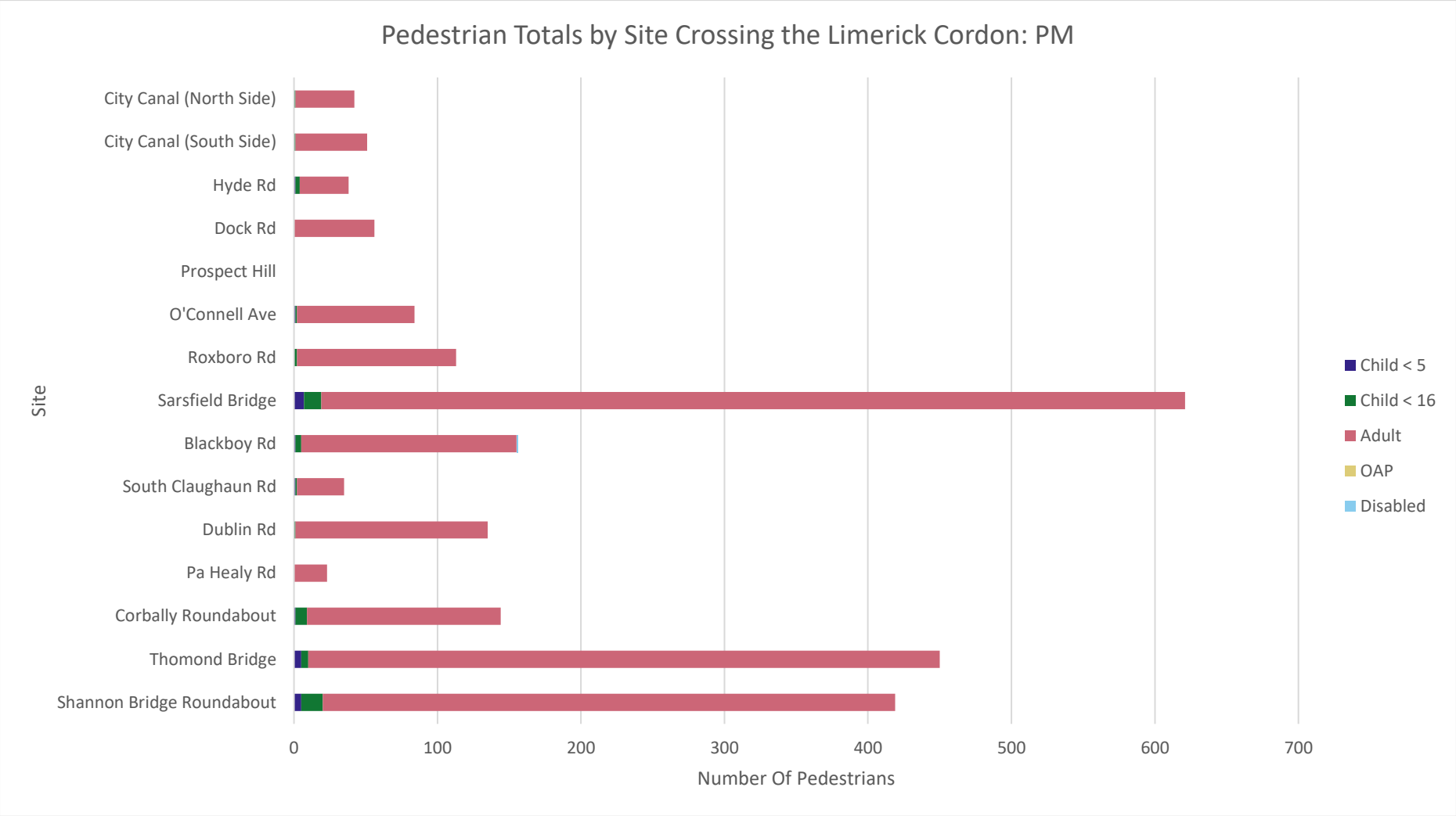


Figure 0-44:Number of Pedestrian Journeys for Ped Surveys for PM per Site

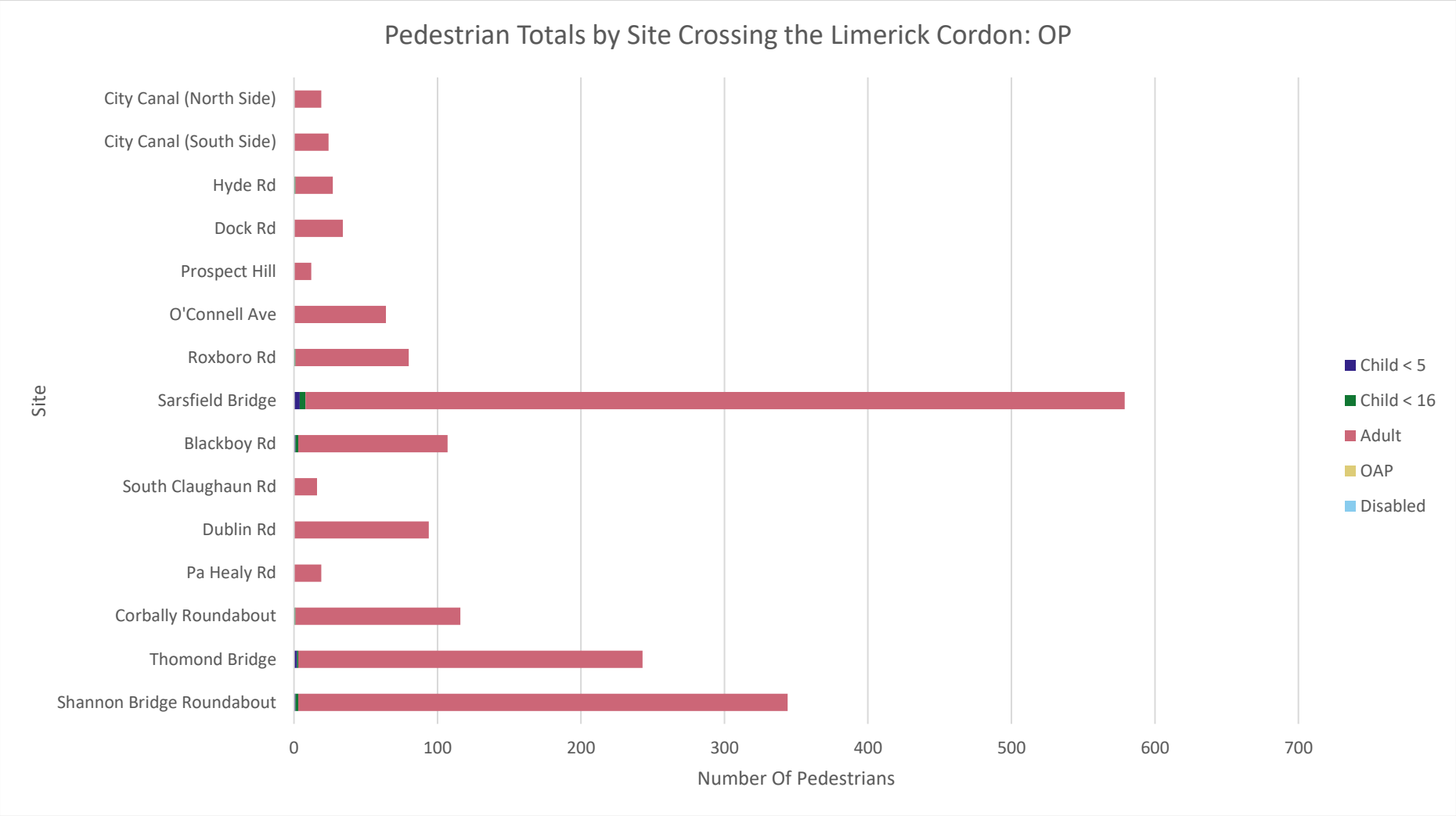


Figure 0-45:Number of Pedestrian Journeys for Ped Surveys for OP per Site

Total People Movements by Time Period

Table A-1:AM Period Total Movements - Limerick Cordon

Mode	Trips	% Trips
P/C	333	1%
Pedestrian	2,484	8%
Car	22,859	73%
Taxi	761	2%
Bus	4,610	15%
Rail	423	1%

Table A-2:LT Period Total Movements - Limerick Cordon

Mode	Trips	% Trips
P/C	206	1%
Pedestrian	2,196	8%
Car	17,766	73%
Taxi	970	2%
Bus	4,589	15%
Rail	330	1%

Table A-3:SR Period Total Movements - Limerick Cordon

Mode	Trips	% Trips
P/C	264	1%
Pedestrian	2,605	8%
Car	19,524	73%
Taxi	908	2%
Bus	4,388	15%
Rail	242	1%

Table A-4:PM Period Total Movements - Limerick Cordon

Mode	Trips	% Trips
P/C	297	1%
Pedestrian	2,367	8%
Car	19,279	73%
Taxi	689	2%
Bus	4,555	15%
Rail	469	1%

Appendix B - Additional Bus Stop Survey Data

Bus Stop Count Data

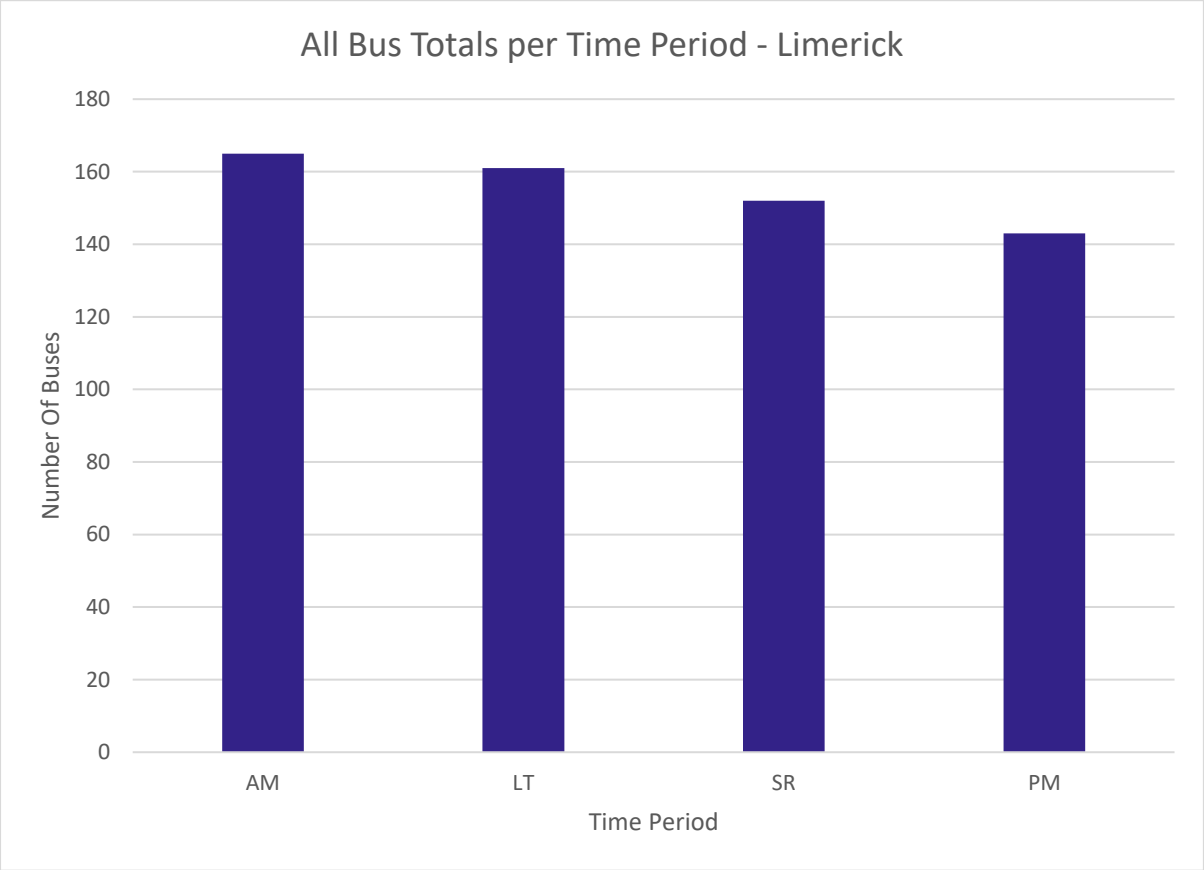


Figure B-1:Total Buses per Time Period - Limerick

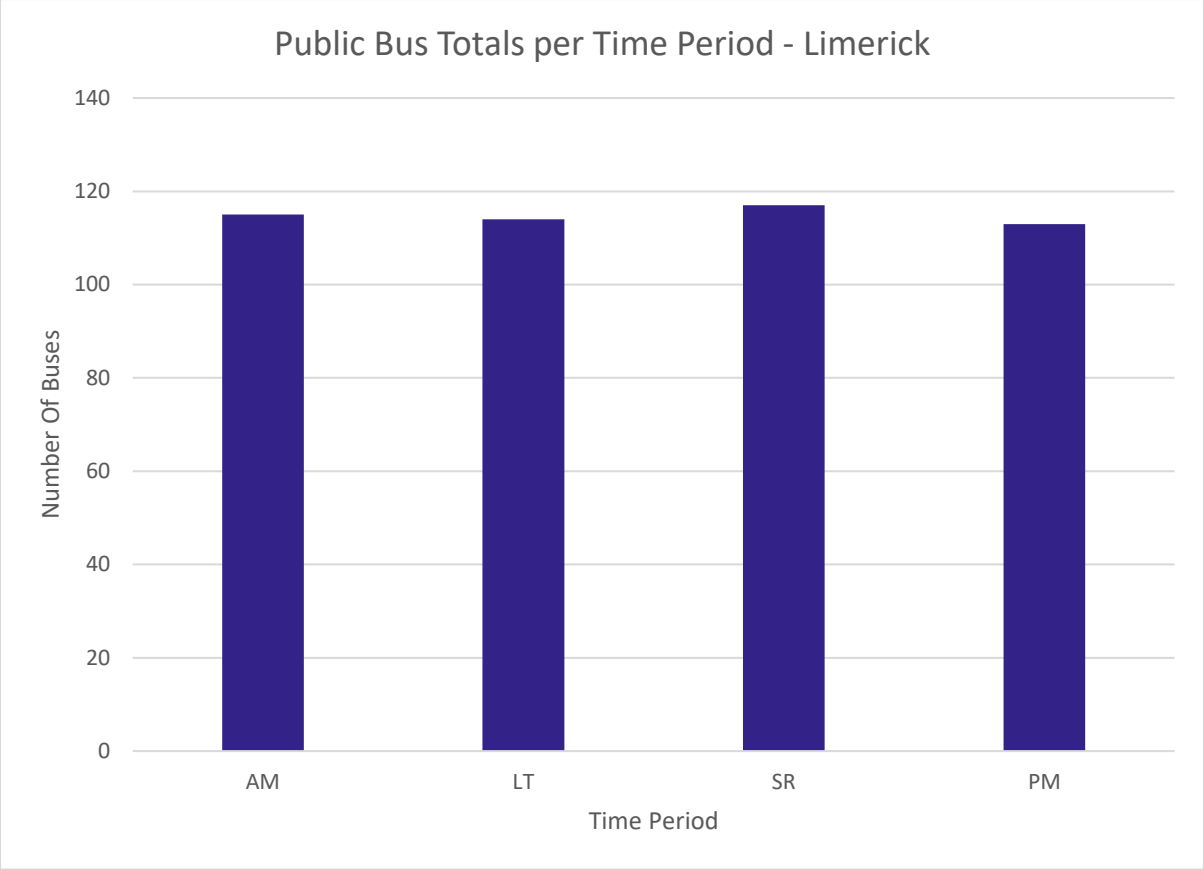


Figure B-2:Public Buses Total per Time Period - Limerick

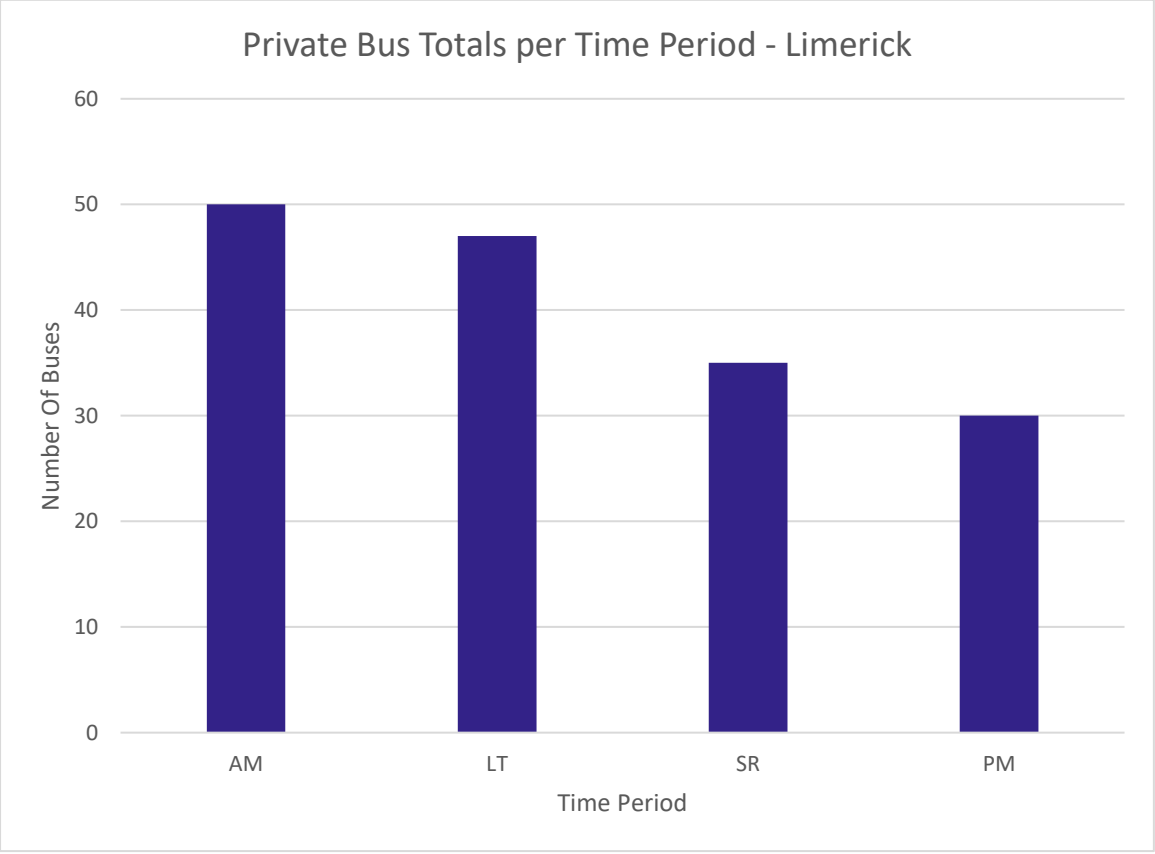


Figure B-3:Private Buses Total per Time Period - Limerick

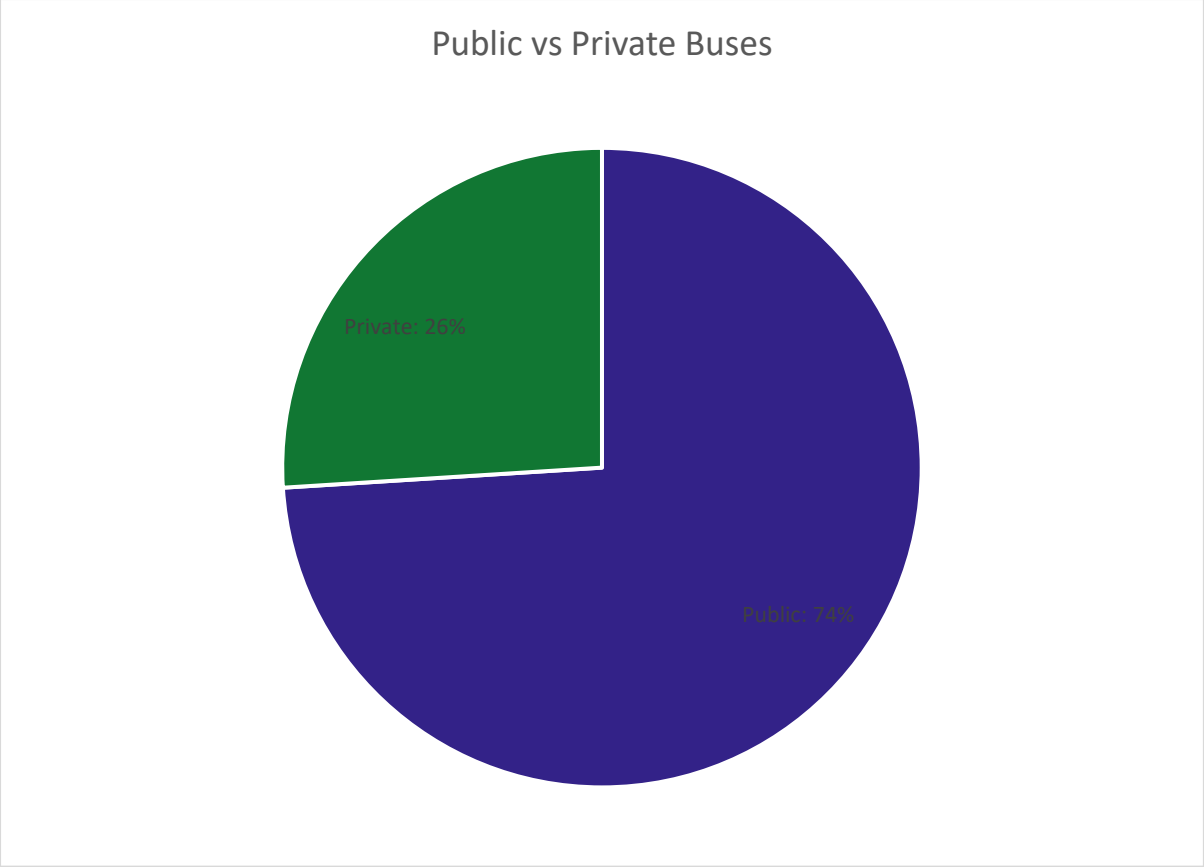


Figure B-4:Private Buses vs Public Buses - Limerick

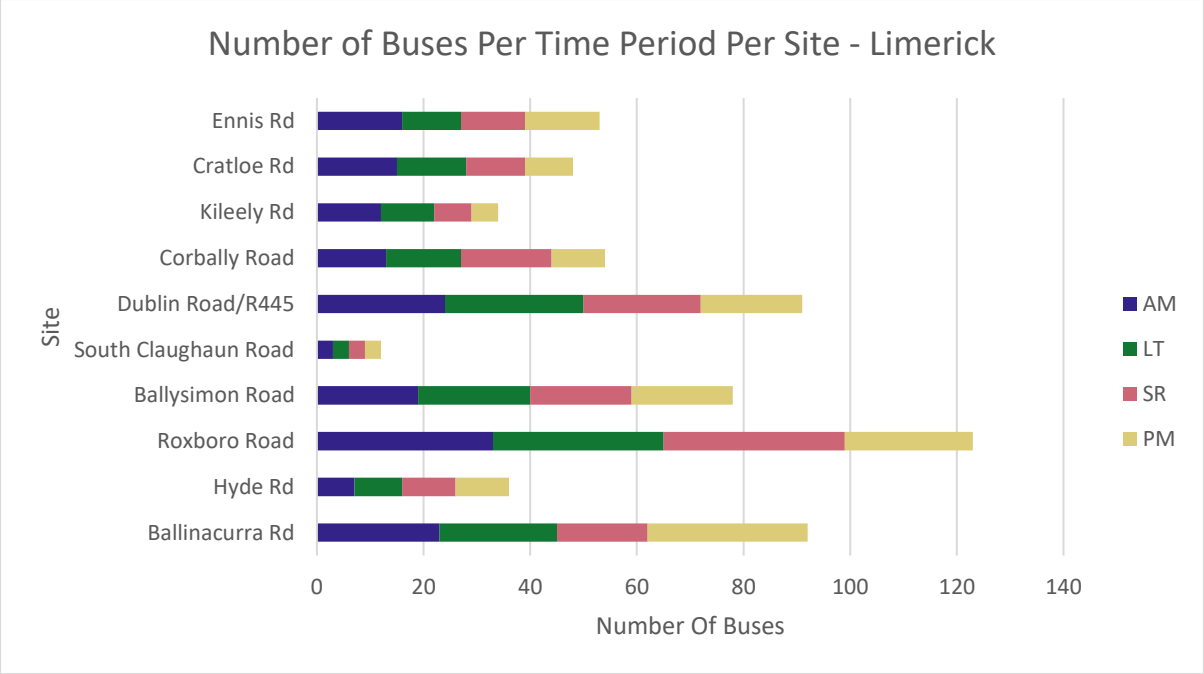


Figure B-5:Number of Buses per Time Period Per Site - Limerick

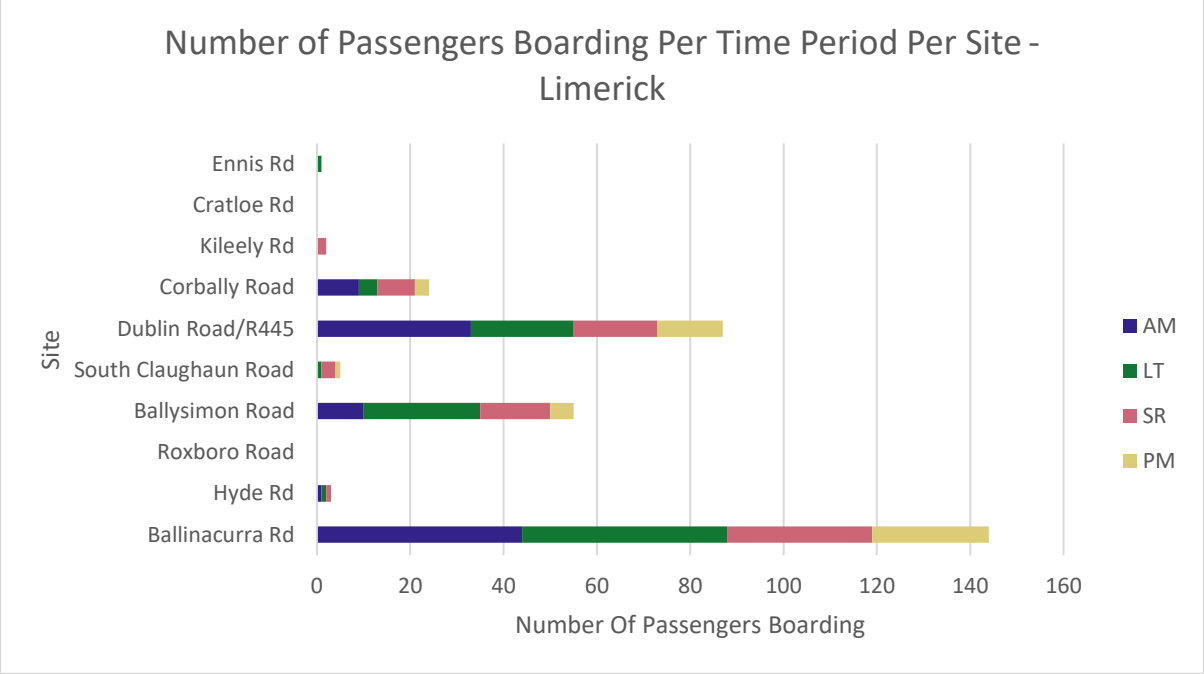


Figure B-6:Number of Passengers Boarding per Time Period Per Site - Limerick

Bus Occupancy Methodology

The bus passenger trip numbers used throughout this report were calculated from the bus occupancy surveys using the methodology outlined below.

First, the average capacity for each bus type was calculated. These are standard industry bus capacity values and are shown in the table below.

Table B-1:Average number of passengers per bus type

Average Capacity of a Bus per Bus Type				
Double Decker	**Single Decker**	**Single Coach**	**Double Coach**	**Mini Bus**
94	37	55	79	16

Then, working back from the average capacity per bus type, a value was calculated which corresponds with each occupancy percentage that was recorded in the bus occupancy surveys. This was calculated by taking the maximum passenger numbers per bus type, dividing the value by 100 and multiplying by the occupancy value.

Table B-2:Occupancy Per Bus Type

Occupancy %	Double Decker Passenger Number	Single Decker Passenger Number	Single Coach Passenger Number	Double Coach Passenger Number	Mini Bus Passenger Number
0	0	0	0	0	0
5	5	2	3	4	1
10	9	4	6	8	2
15	14	6	8	12	2
20	19	7	11	16	3
25	24	9	14	20	4
30	28	11	17	24	5
35	33	13	19	28	6
40	38	15	22	32	6
45	42	17	25	36	7
50	47	19	28	40	8
55	52	20	30	43	9
60	56	22	33	47	10

65	61	24	36	51	10
70	66	26	39	55	11
75	71	28	41	59	12
80	75	30	44	63	13
85	80	31	47	67	14
90	85	33	50	71	14
95	89	35	52	75	15
100	94	37	55	79	16

Then, using the above table, the average number of passengers per bus type and occupancy range was calculated. The below table defines the ranges and the average passenger number for each range. The passenger numbers from the above table for each range are added together and the average calculated.

Table B-3:Average passengers per range

Average number of passengers per range					
Range	**Double Decker**	**Single Decker**	**Single Coach**	**Double Coach**	**Mini Bus**
0-24%	9	4	6	8	2
25-50%	33	13	19	28	6
51-74%	38	15	22	32	6
75-99%	61	24	36	51	10
100%	94	37	55	79	16

The same process was then carried out to calculate the lower and upper passenger bounds of each bus type. These upper and lower bounds, along with the average passenger numbers can be seen in the below tables.

Table B-4:Lower bound of passengers by range

Lower Bound of passengers per range					
Lower	**Double Decker**	**Single Decker**	**Single Coach**	**Double Coach**	**Mini Bus**
0-24%	0	0	0	0	0
25-50%	5	2	3	4	1
51-74%	28	11	17	24	5
75-99%	52	20	30	43	9
100%	75	30	44	63	13

Table B-5:Upper bound of passengers by range

Upper Bound of passengers per range					
Upper	**Double Decker**	**Single Decker**	**Single Coach**	**Double Coach**	**Mini Bus**
0-24%	19	7	11	16	3
25-49%	42	17	25	36	7
50-74%	66	26	39	55	11
75-99%	89	35	52	75	15
100%	94	37	55	79	16

Bus Passenger Trips

The following graphs indicate how many passengers crossed the Limerick cordon on a bus during each time period at each site. The data in this section was taken from the Bus Occupancy surveys, where average bus occupancy values have been used to calculate the average number of passengers on board each bus.

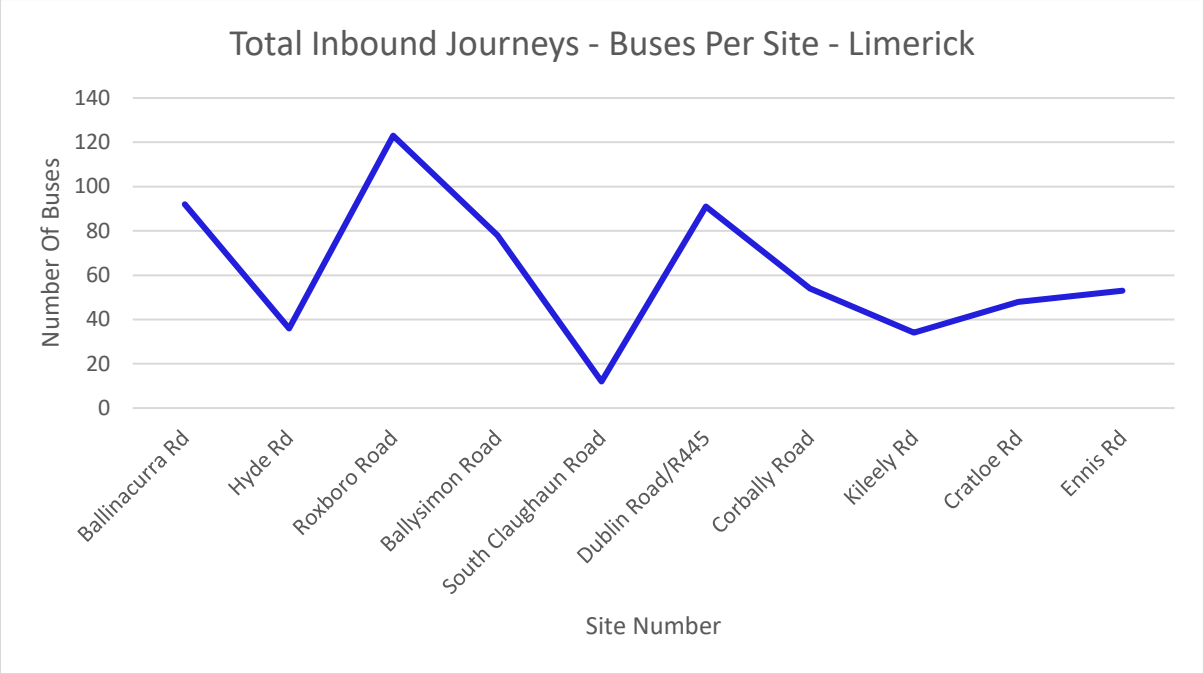


Figure B-7:Total Inbound Journeys – Buses Per Site - Limerick

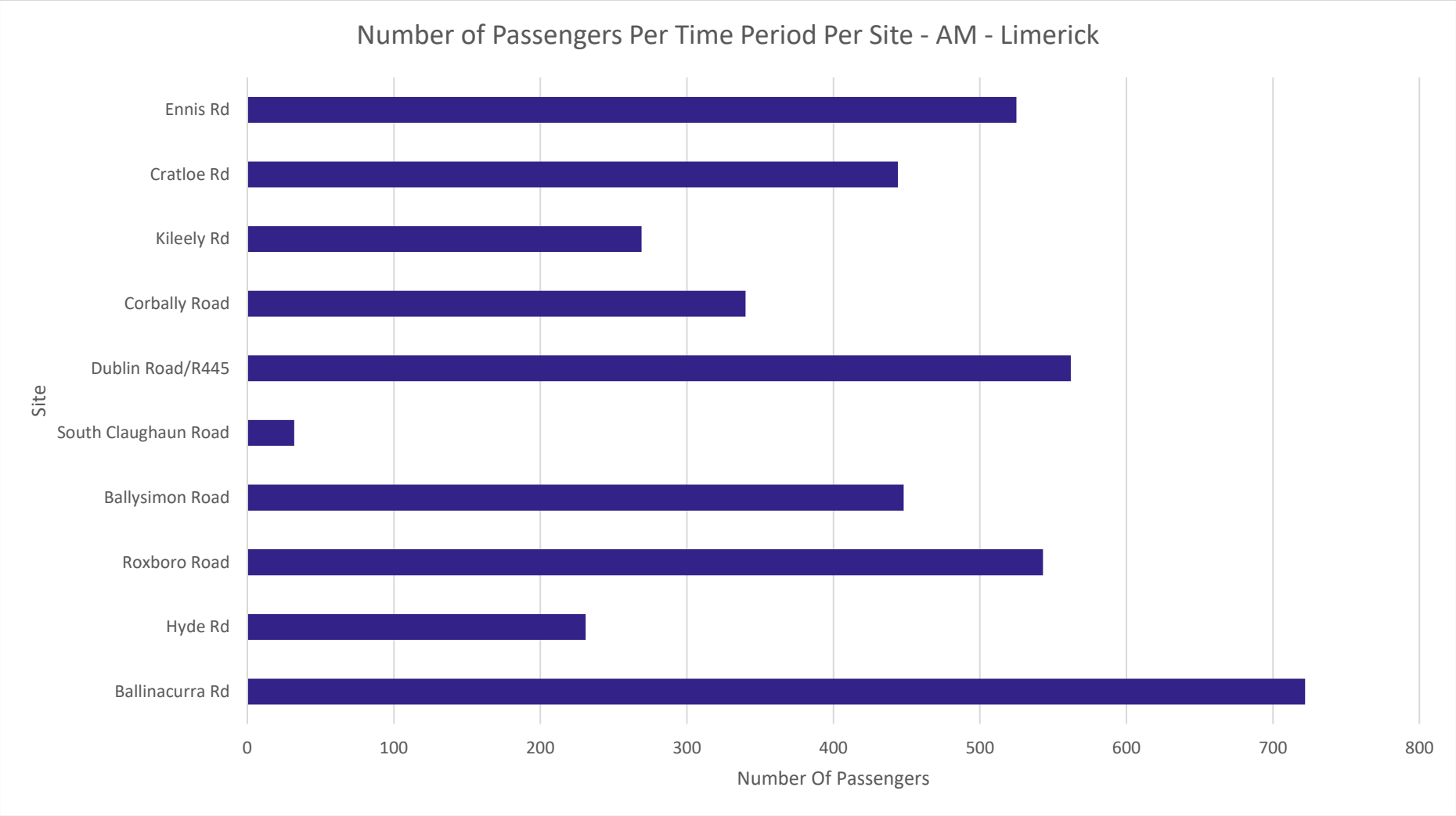


Figure B-8:Bus Passengers - AM - Limerick

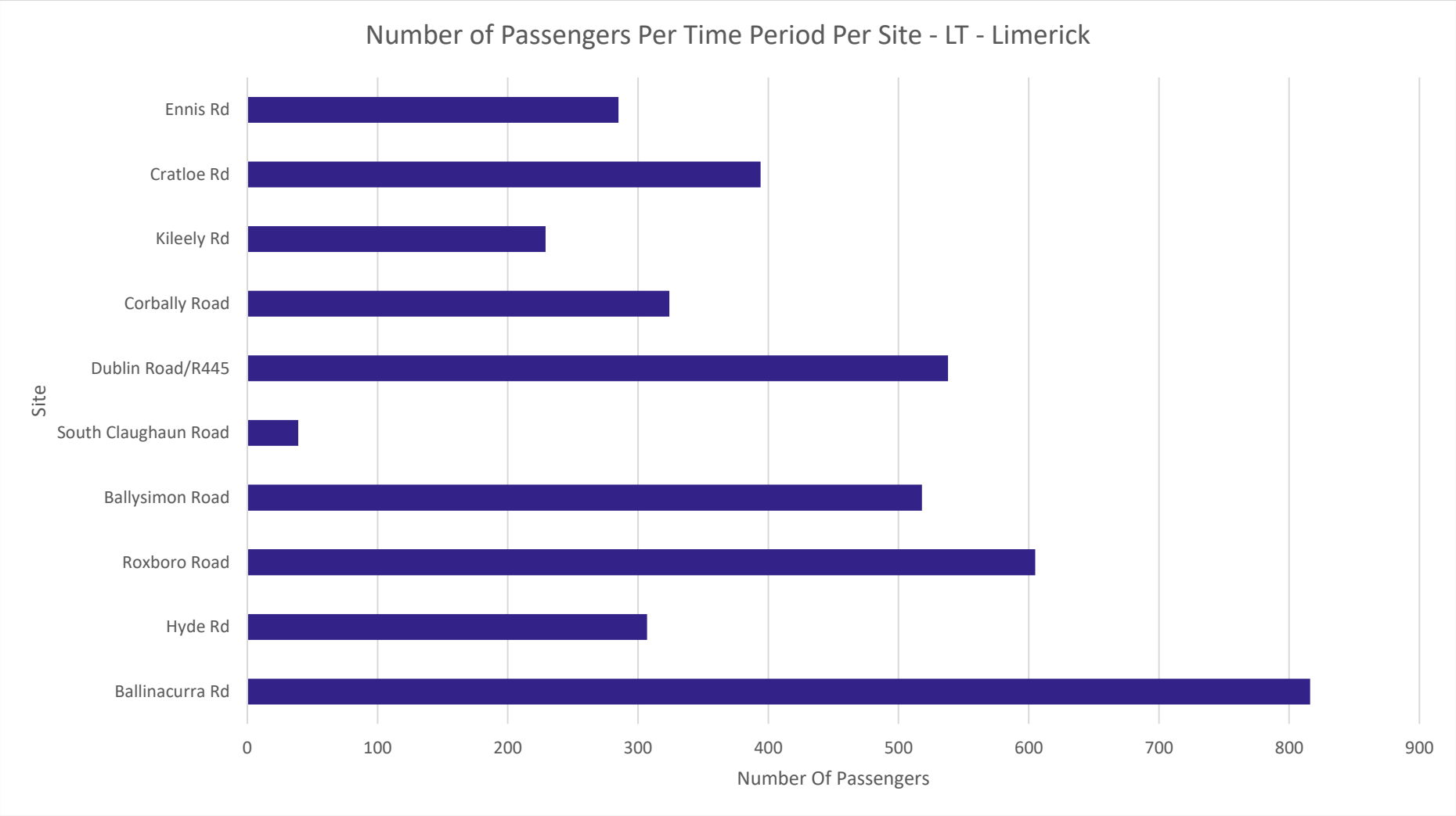


Figure B-9:Bus Passengers - LT - Limerick

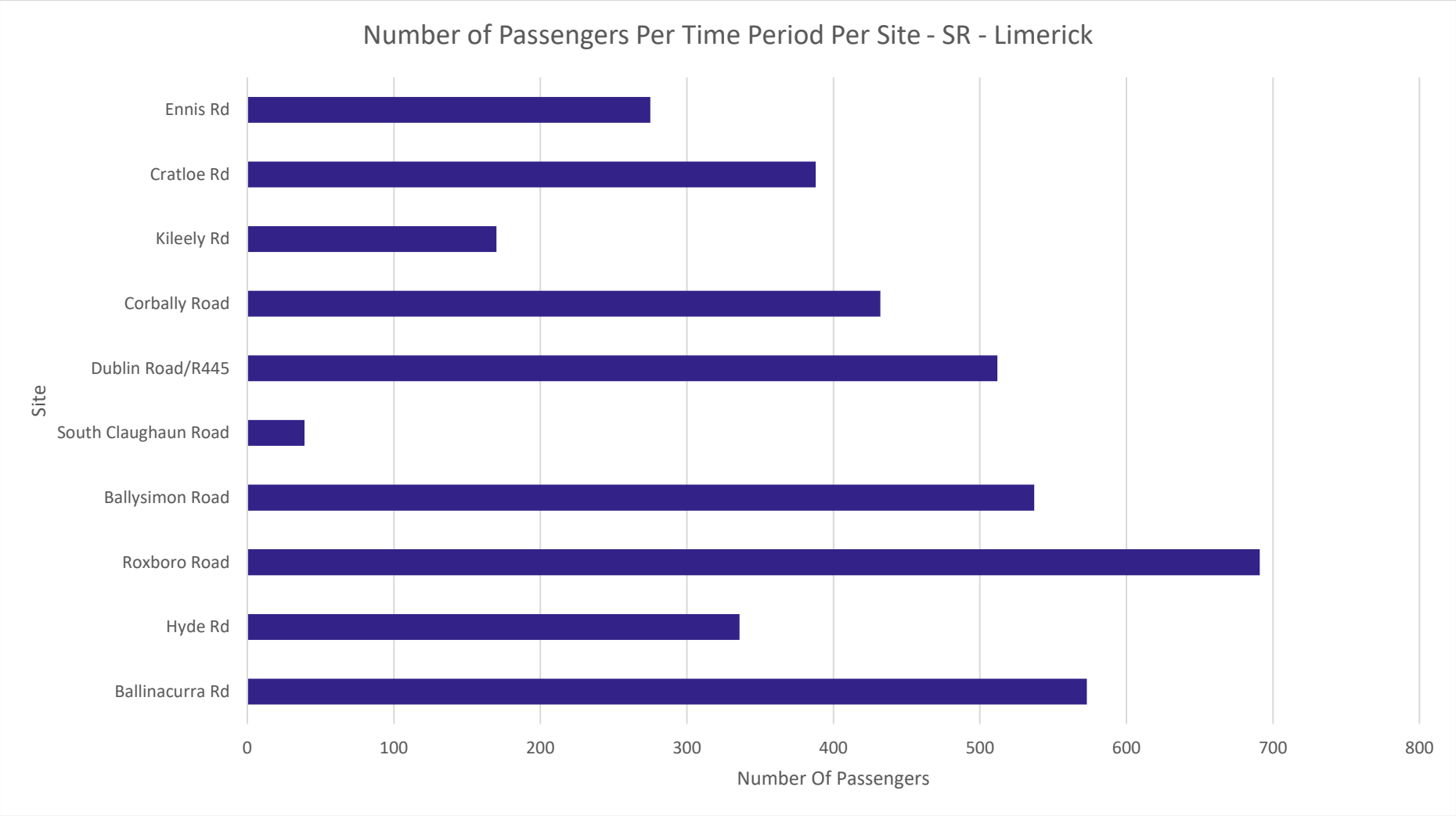


Figure B-10:Bus Passengers - SR - Limerick

Figure B-11:Bus Passengers - PM - Limerick

Figure B-12:Bus Passengers - 12hr - Limerick

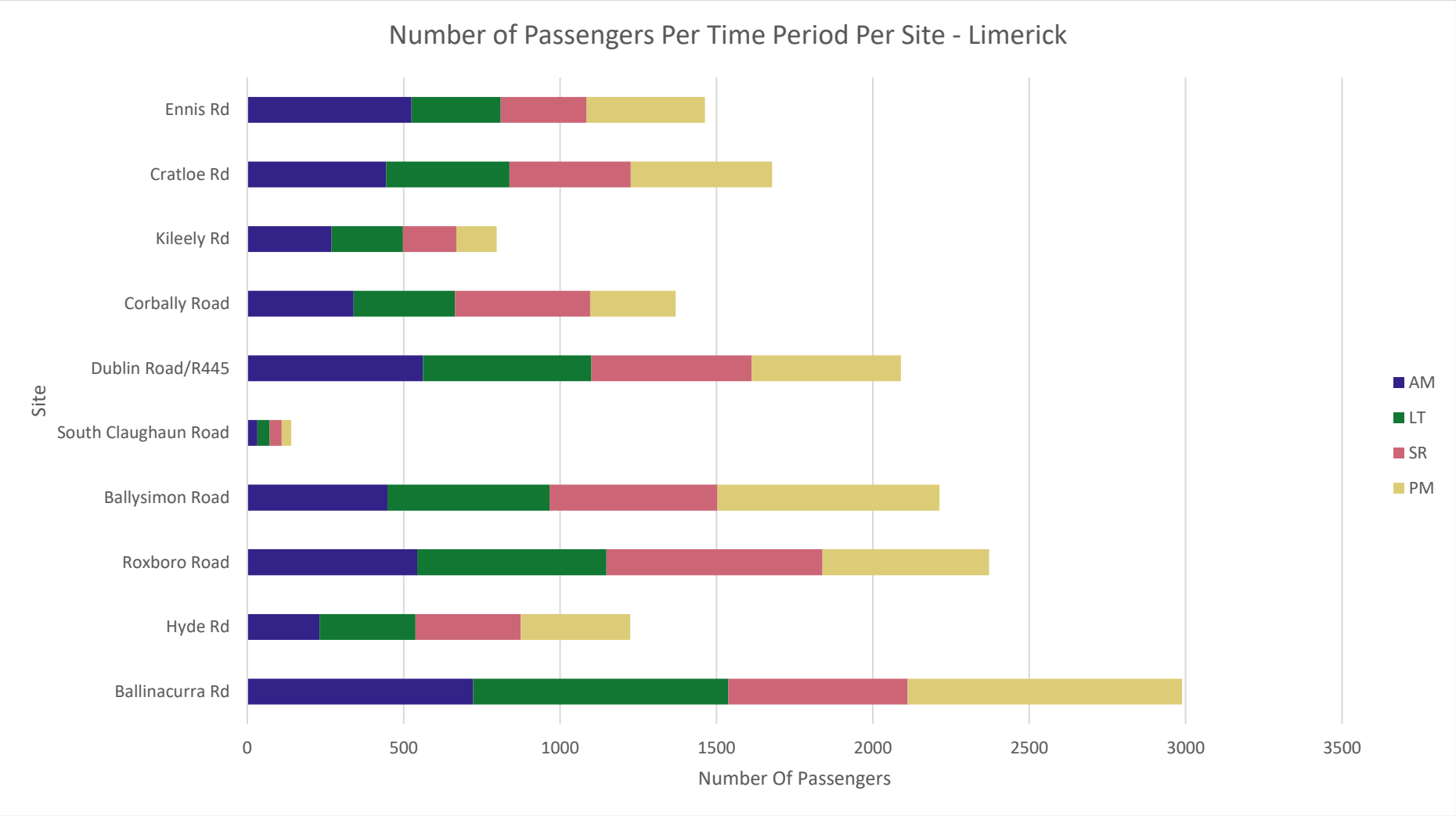


Figure B-13:Total Passenger Trips Per Site Per Time Period - Limerick

Appendix C - Heavy Rail Data

The heavy rail passenger numbers are taken from the Annual Rail Census, carried out by Iarnród Éireann. The Passenger numbers from these services were taken where the train crossed the Limerick City Cordon, or the first station that the train stopped at, after crossing the Cordon. In this case the station used was Limerick Colbert Train Station.

The total number of people alighting at Limerick Colber Station, grouped by time period and origin station, are summarised below.

Table C-1:Rail Passengers per Time Period

All Rail Trips Inbound Across Cordon	Trips
AM	423
LT	330
SR	242
PM	469
12hr	1,464

Table C-2:Rail Passengers by Origin

Origin	AM	LT	SR	PM	12hr
Heuston	0	0	0	147	147
Thurles	98	0	0	0	98
Limerick Junction	119	108	165	201	593
Nenagh	49	0	0	0	49
Ballybrophy	0	28	0	0	28
Ennis	38	0	30	27	95
Galway	119	52	47	0	218
Ennis	0	98	0	0	98
Limerick Junction	0	44	0	94	138