Tionscadal Éireann
Project Ireland
2040

NTA
Údarás Náisiúnta Iompair
National Transport Authority

Cork Cordon Report 2024

Report on Inbound People Movements Across the Cork 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:

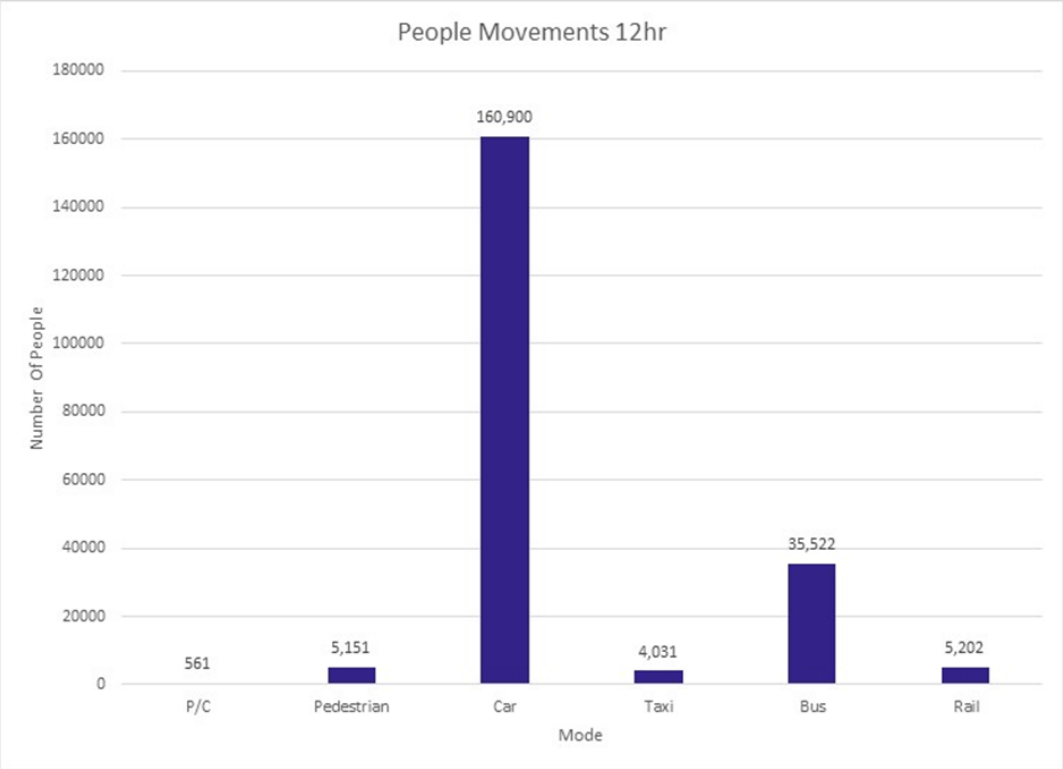
- Includes all public (PSV) / private, single / double deck, scheduled / non-scheduled service vehicles

Executive Summary

The Cork City Cordon is a cordon of traffic survey locations that encloses Cork City. Classified Junction Turning Counts and Pedestrian surveys were undertaken at 20 locations to determine the traffic flows crossing the Cork 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 13 sites. In addition to this, Bus Occupancy surveys were undertaken at 12 bus stops to determine the number, occupancy and frequency of bus services crossing the Cork City Cordon. Passenger numbers from the Annual Rail Census (Iarnród Éireann) were also used to determine the passengers travelling across the Cork City Cordon inbound. Based on the analysis of the 2024 survey data, the key results are:

- In terms of overall people movements, 46,436 (22%) of a total of 211,367 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 Cork Cordon inbound was 169,772 on the day of the survey.
- The busiest time period for vehicles and cyclists was the AM peak with 37,974 crossing the Cork City Cordon inbound towards the city. The busiest time period for Pedestrians was the PM peak with 1,448 crossing the Cork City Cordon inbound.
- Between the hours of 07:00 and 19:00, cars were recorded to have the highest vehicular traffic split, with 82% of the total inbound flows. Light Goods Vehicles (LGVs) recorded 9%, Ordinary Goods Vehicles 1 (OGV1) recorded 2%, Ordinary Goods

Vehicles 2 (OGV2) recorded 1% and taxis recorded 2%. The remaining vehicle classifications recorded 1% or less of the total flows.

- In terms of vehicle occupancy over the 12-hour survey period:
    - 88% of cars crossing the Cork City Cordon inbound towards the City had single occupancy during the AM period (07:00 – 10:00) and 90% during the PM period (16:00 – 19:00)
    - 52% of taxis recorded single occupancy (i.e. driver-only)
- Between 07:00 and 19:00, 51% of buses were at 25-49% capacity. Approximately 1% of buses were at 0-24%. 39% were at 50-74% capacity, 8% were at 75-99% capacity and 1% were at 100% capacity.

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1 Introduction

The Cork City Cordon is a closed cordon of traffic survey locations that encloses Cork 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 Cork City Cordon inbound towards the city.

The structure of this report is set out as follows:

- **Chapter 2** provides a definition of the Cork City Cordon and sets out the methodology for the data collection;
- **Chapter 3** outlines
    - The traffic flows crossing the Cork City Cordon inbound by vehicle classification;
    - The occupancy of the vehicles crossing the Cork 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 Cork City Cordon inbound towards the city; and
- **Chapter 5** provides a commentary of the overall trends observed.

2 Definition and Methodology

2.1 Data Sources

To establish the movement of people across the Cork 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 20 sites on the 19th of November. They were undertaken using telescopically mounted video cameras and were recorded for car, LGV, OGV1, OGV2, motorcycle, pedal cycle, taxi and bus.

Vehicle Occupancy Surveys

- Vehicle Occupancy counts were also undertaken at survey points along the Cork City Cordon. Vehicle 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 12 bus stops inside the Cork 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 a specific day each year in November. 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 between 06/11/2024 and 08/11/2024) 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 Cork City Cordon

A map of the Cork City Cordon is presented in Figure 2-1, and highlights the locations along the Cordon where JTC data has been collected on the movement of people into the city.

The Cork 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 is a map of the locations where ATC links and bus occupancy stops have been surveyed. Figure 2-3 is a map of the locations where taxi occupancy sites have been surveyed.

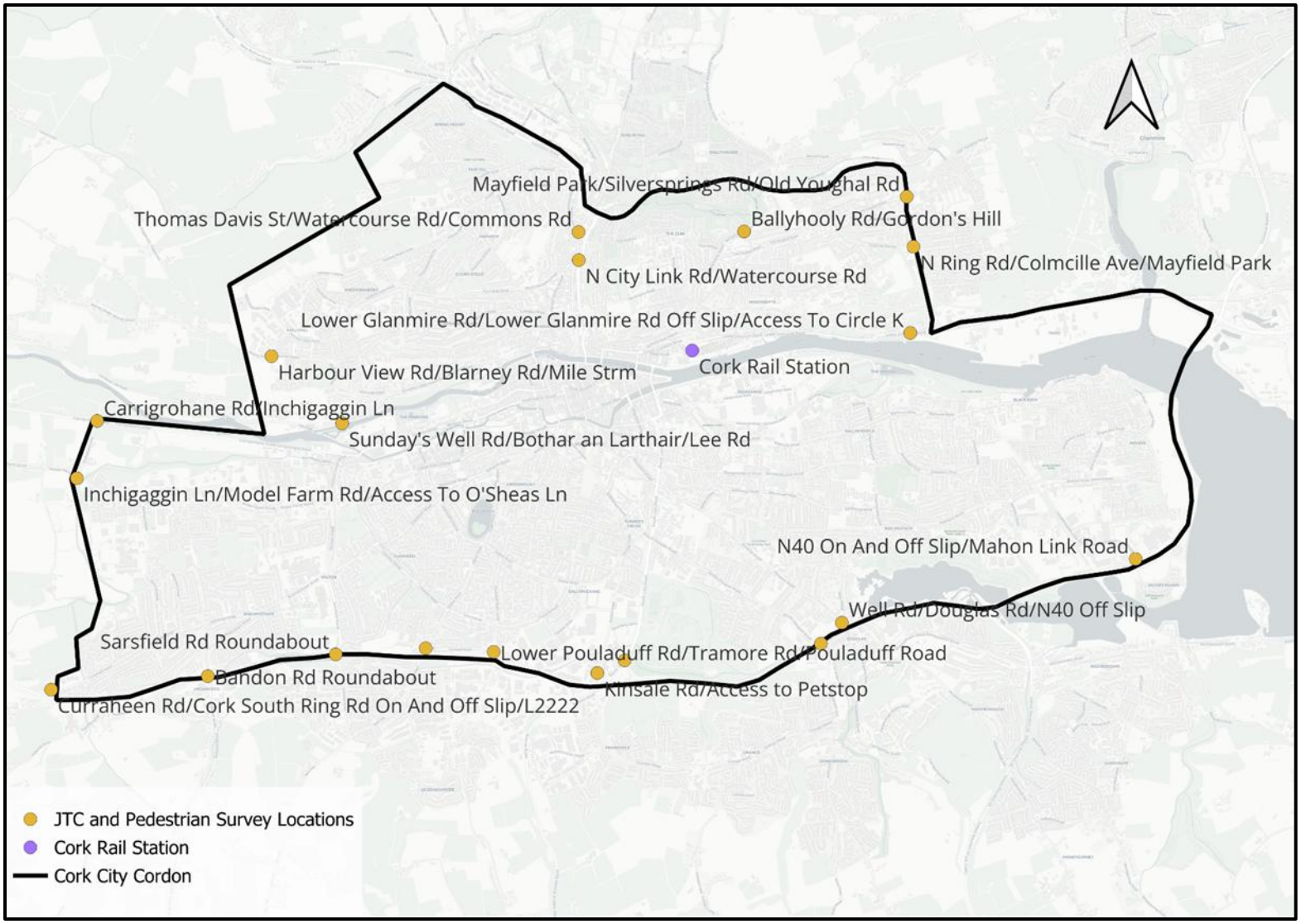


Figure 2-1:JTC and Pedestrian Site Locations and Rail Station Location

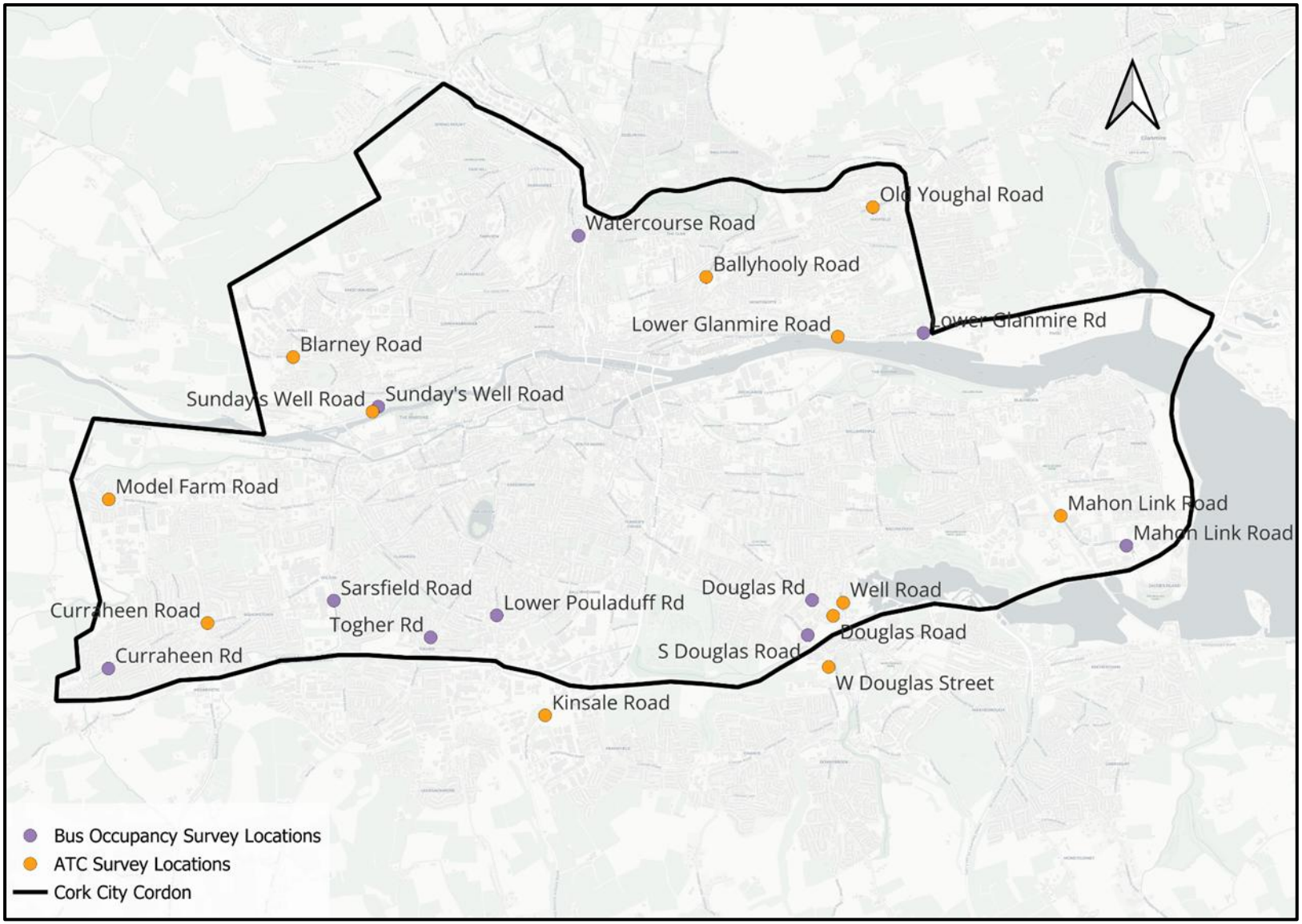


Figure 2-2:ATC Site Locations and Bus Occupancy Stop Locations

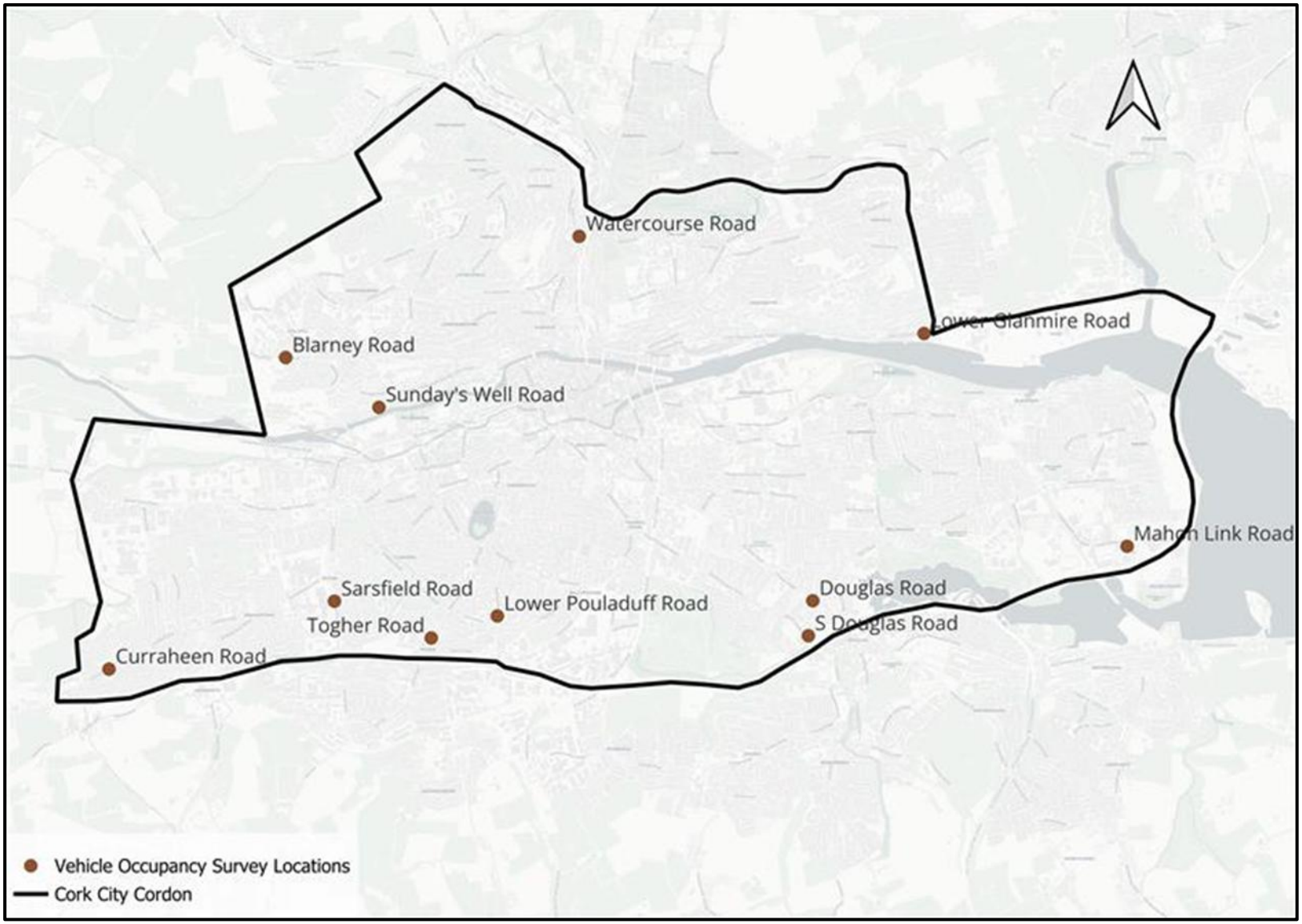


Figure 2-3:Cork Rail Station and Taxi Occupancy Site Locations

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 Cork City Cordon

3.1 Traffic Flow Surveys

3.1.1 Overview

This section outlines the classified vehicle, pedestrian and cycle flows crossing the Cork 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 Cork City Cordon inbound during the time periods recorded in the 2024 survey.

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

	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	32,237	24,862	27,564	28,252	26,117	139,032
LGV	3,623	3,343	3,066	2,308	1,838	14,178
OGV1	643	750	615	237	495	2,740
OGV2	306	382	309	100	319	1,416
Motorcycle	68	68	110	134	162	542
Pedal Cycle	179	100	112	170	156	717
Taxi	641	725	800	534	884	3,584
Bus	277	273	272	261	342	1,425
Pedestrian	1,219	1,117	1,367	1,448	987	6,138
Total	**39,193**	**31,620**	**34,215**	**33,444**	**31,300**	**169,772**

Figure 3-1 illustrates the overall flows for all vehicle types across the Cork 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 39,193 travelling inbound.

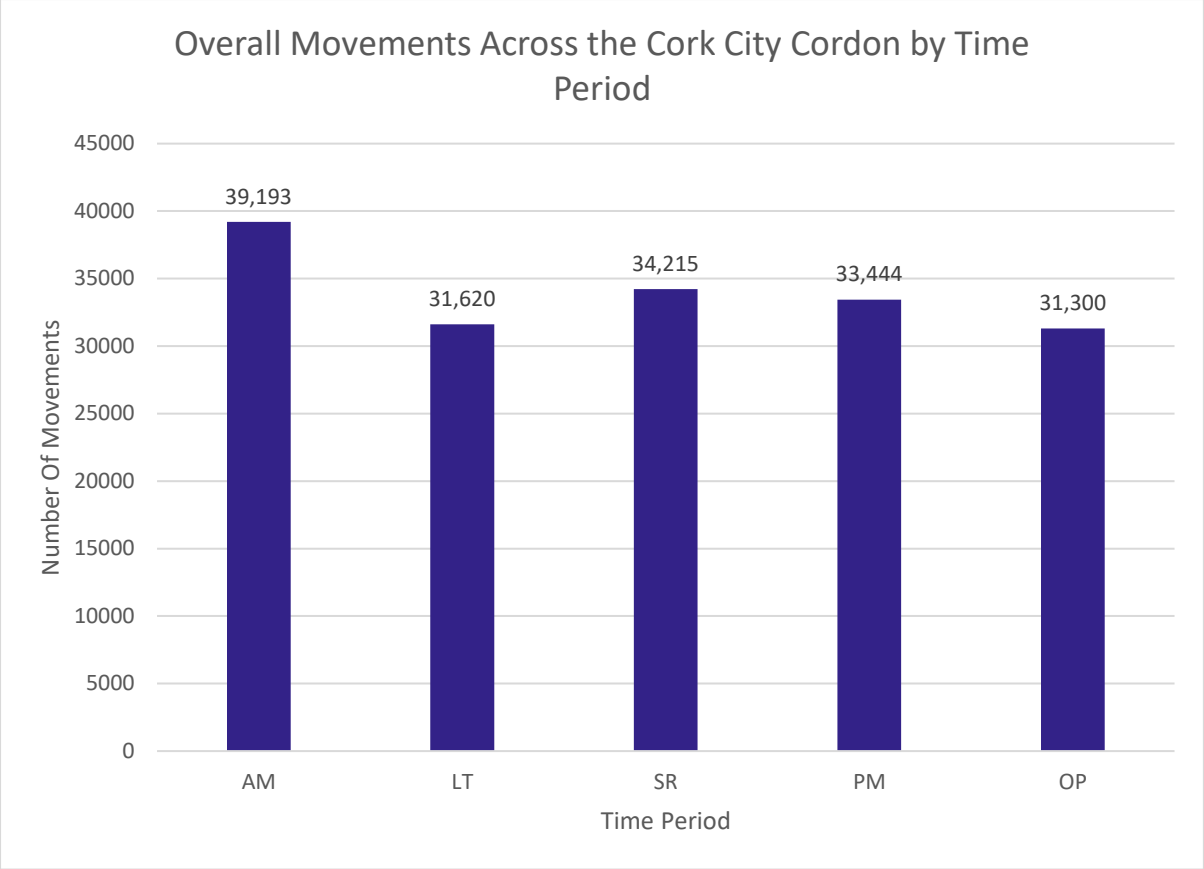


Figure 3-1:Total Movements across the Cork City Cordon Inbound by Time Period

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 139,032 inbound movements in the 24-hour period, accounting for 82% of all crossings.

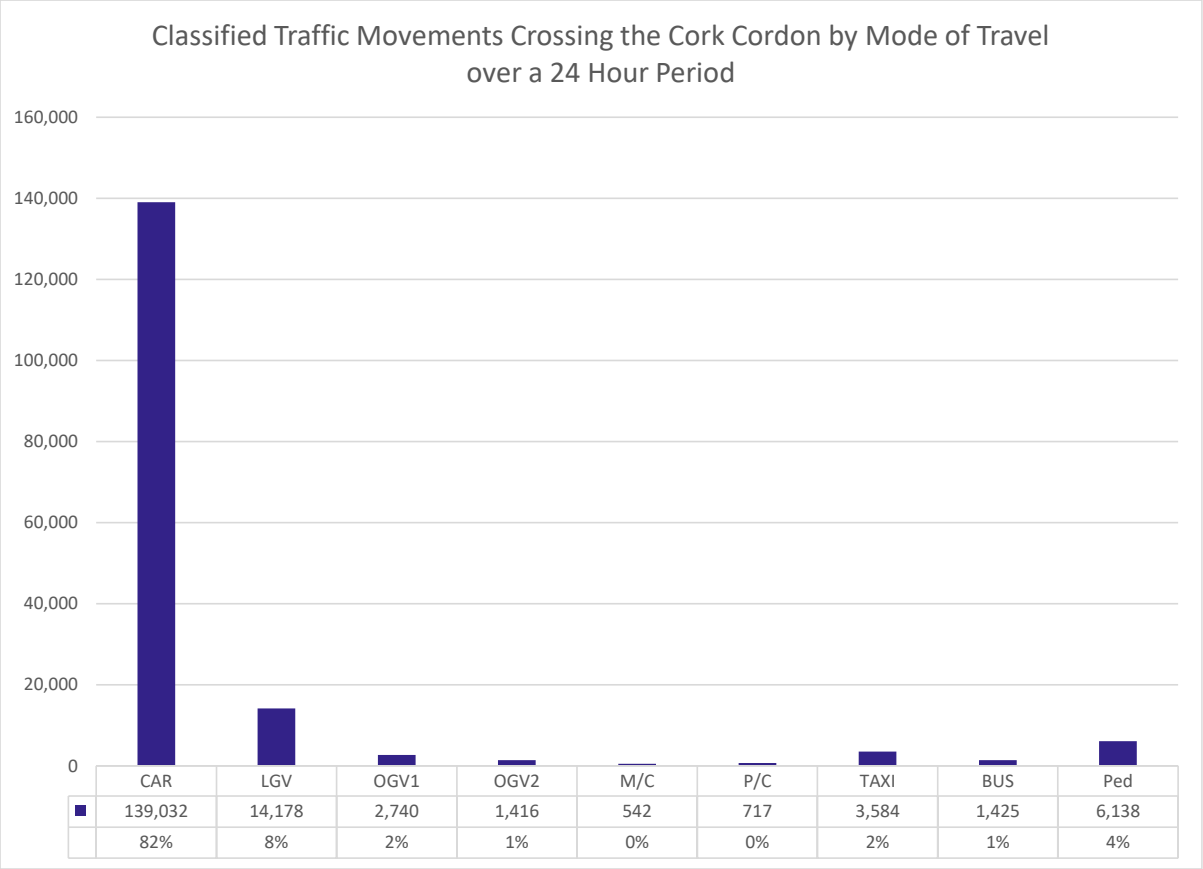


Figure 3-2:Total Number and Percentage of Vehicles crossing the Cork City Cordon inbound by vehicle classification over a 24 hour period

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 112,915 inbound movements in the 12-hour period, accounting for 82% of all crossings.

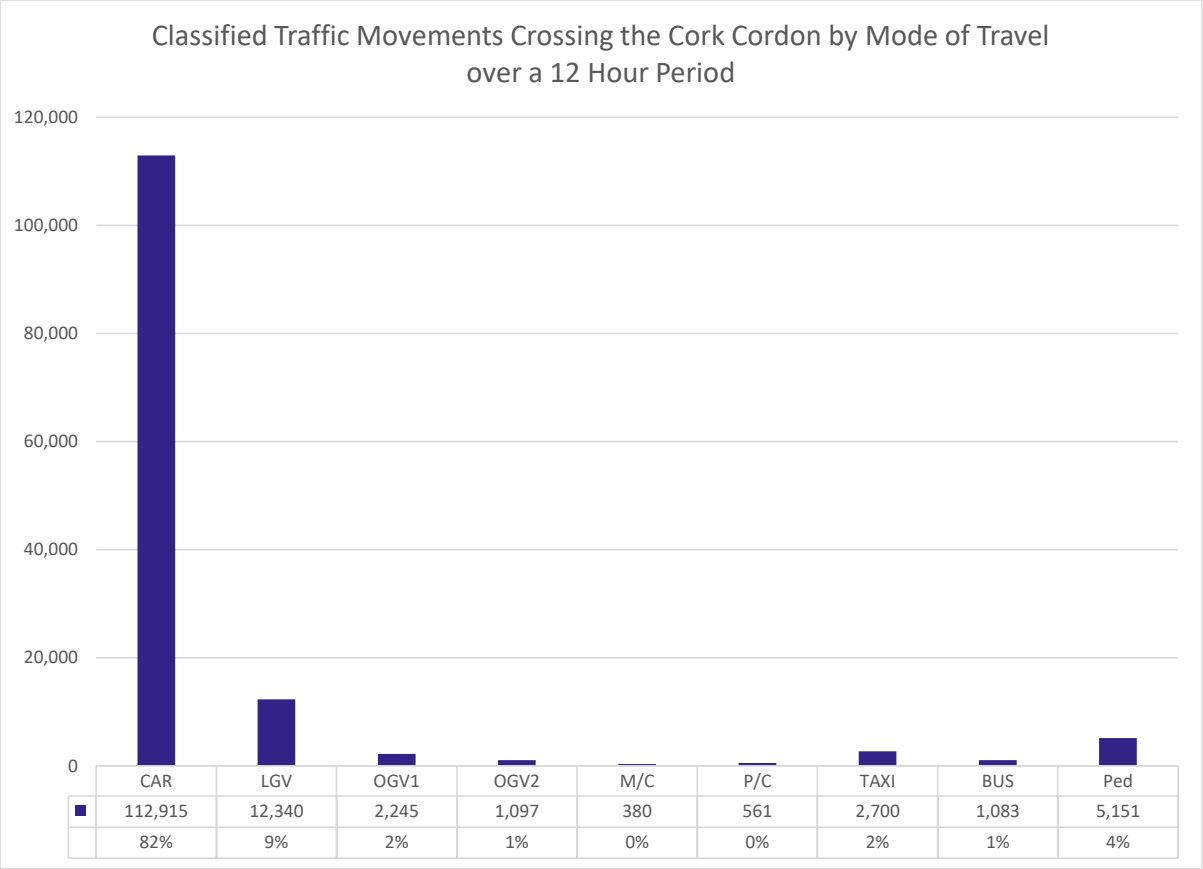


Figure 3-3:Total Number and Percentage of Vehicles crossing the Cork City Cordon inbound by vehicle classification over a 12-hour period

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 site. 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 Cork 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 32,237 cars travelling inbound.

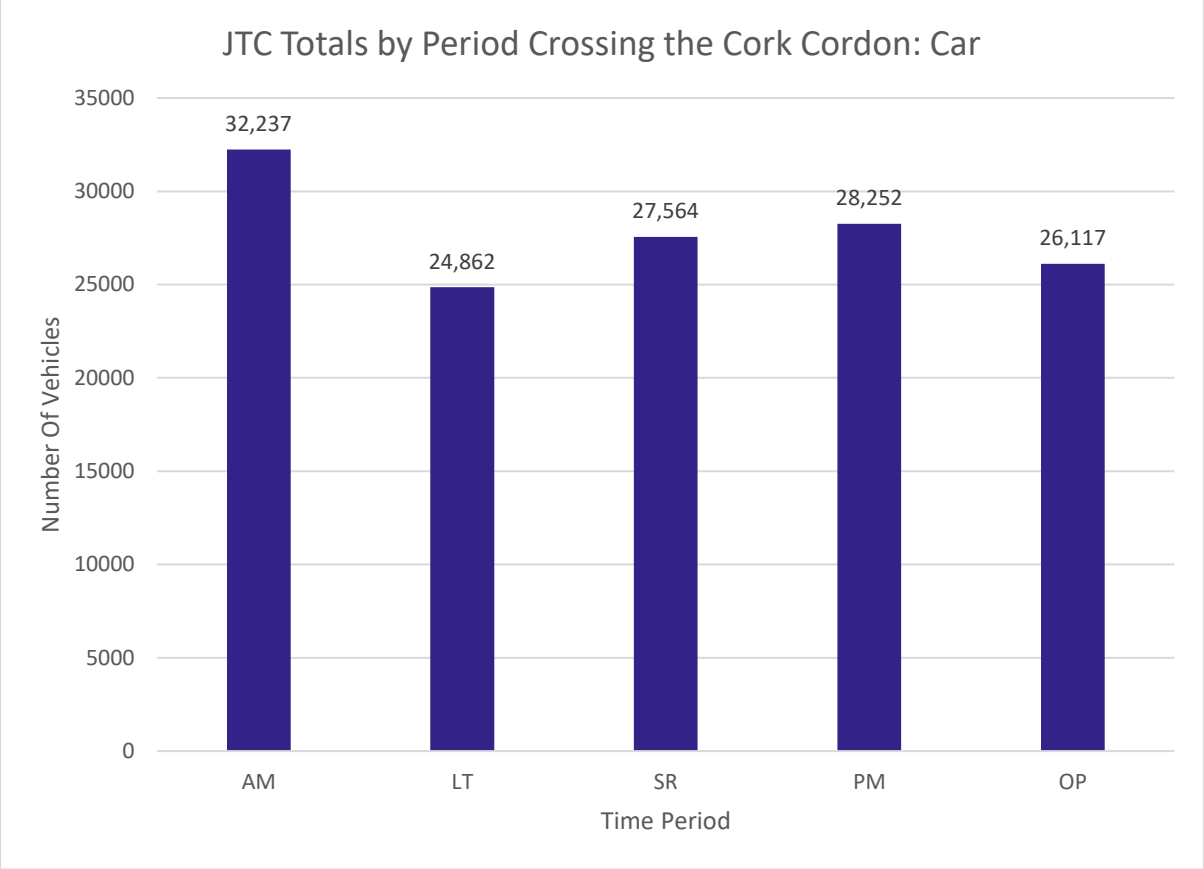


Figure 3-4:Total Number of Car journeys per Time Period

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 Cork City Cordon was the South Link Rd/Blackash junction, with a total of 14,518 cars travelling inbound through this junction over a 24-hour period.

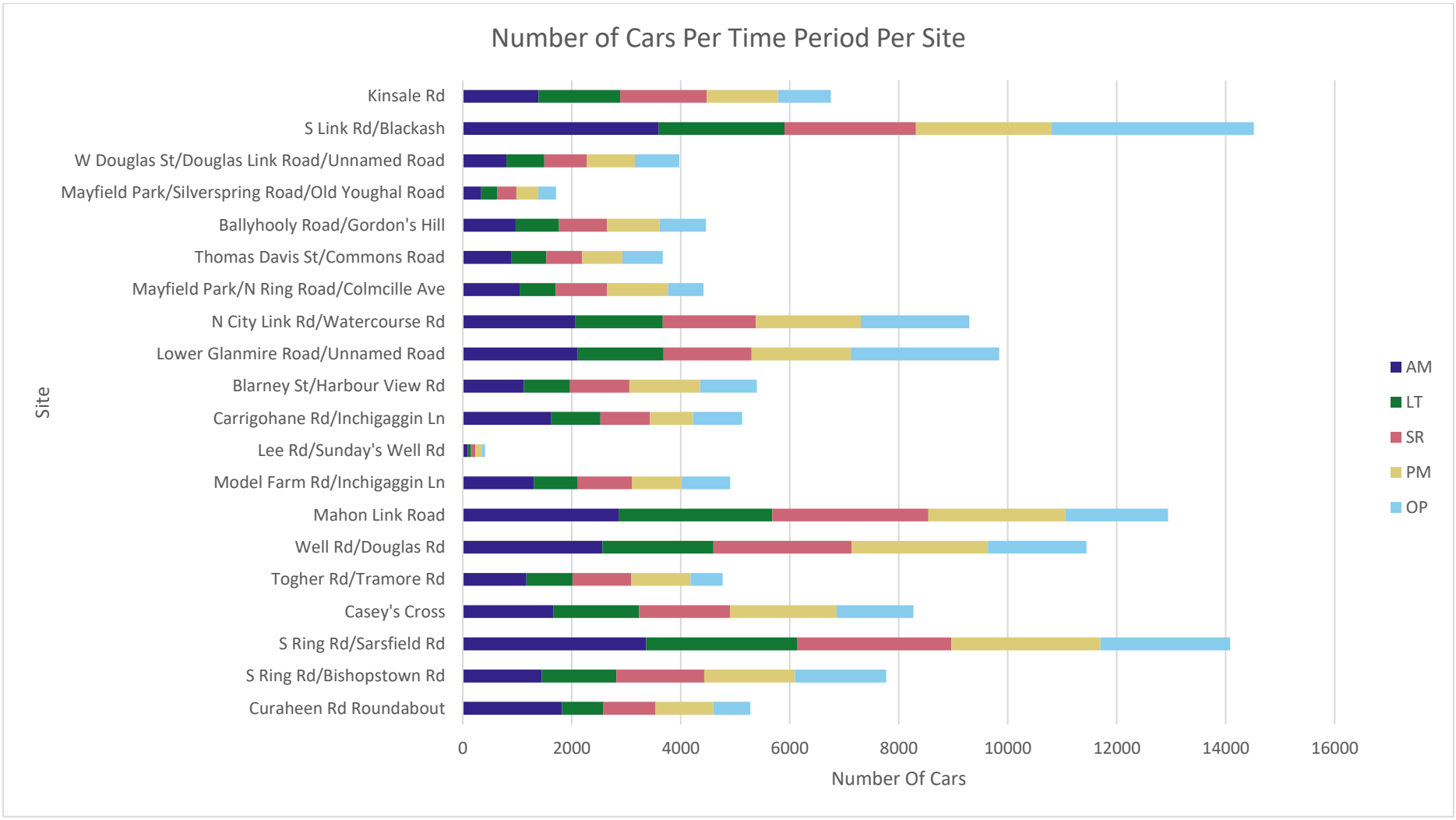


Figure 3-5:Number of Cars Crossing the Cork City Cordon Inbound at all Sites Per Time Period

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

Light Goods Vehicle

Figure 3-6 below presents the total number of LGVs crossing the Cork City Cordon for each surveyed time period. Overall, it is evident that the AM time period has the highest volume of LGVs, with a total of 3,623 LGVs travelling inbound.

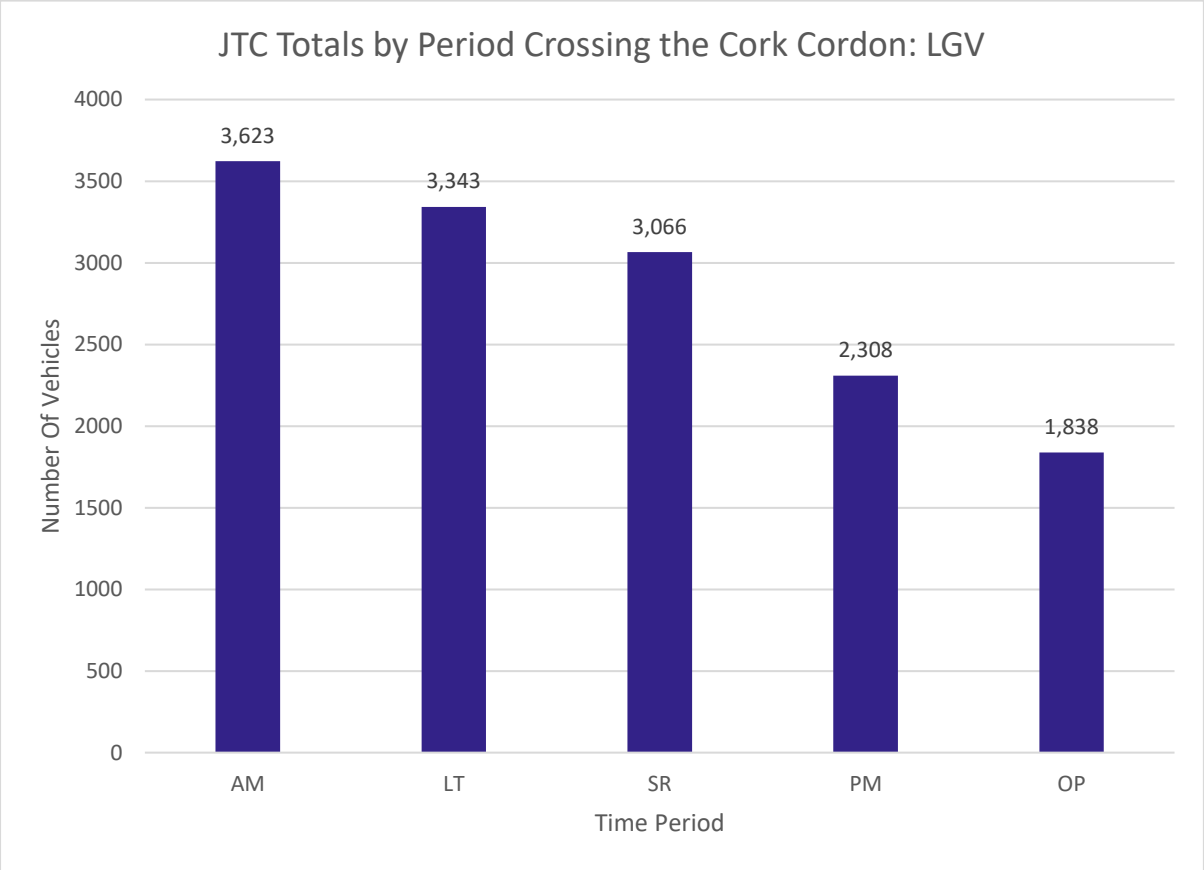


Figure 3-6:Total Number of LGV journeys per Time Period

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 Cork City Cordon was the Casey's Cross junction, with a total of 1,431 LGVs travelling inbound through this junction over a 24-hour period.

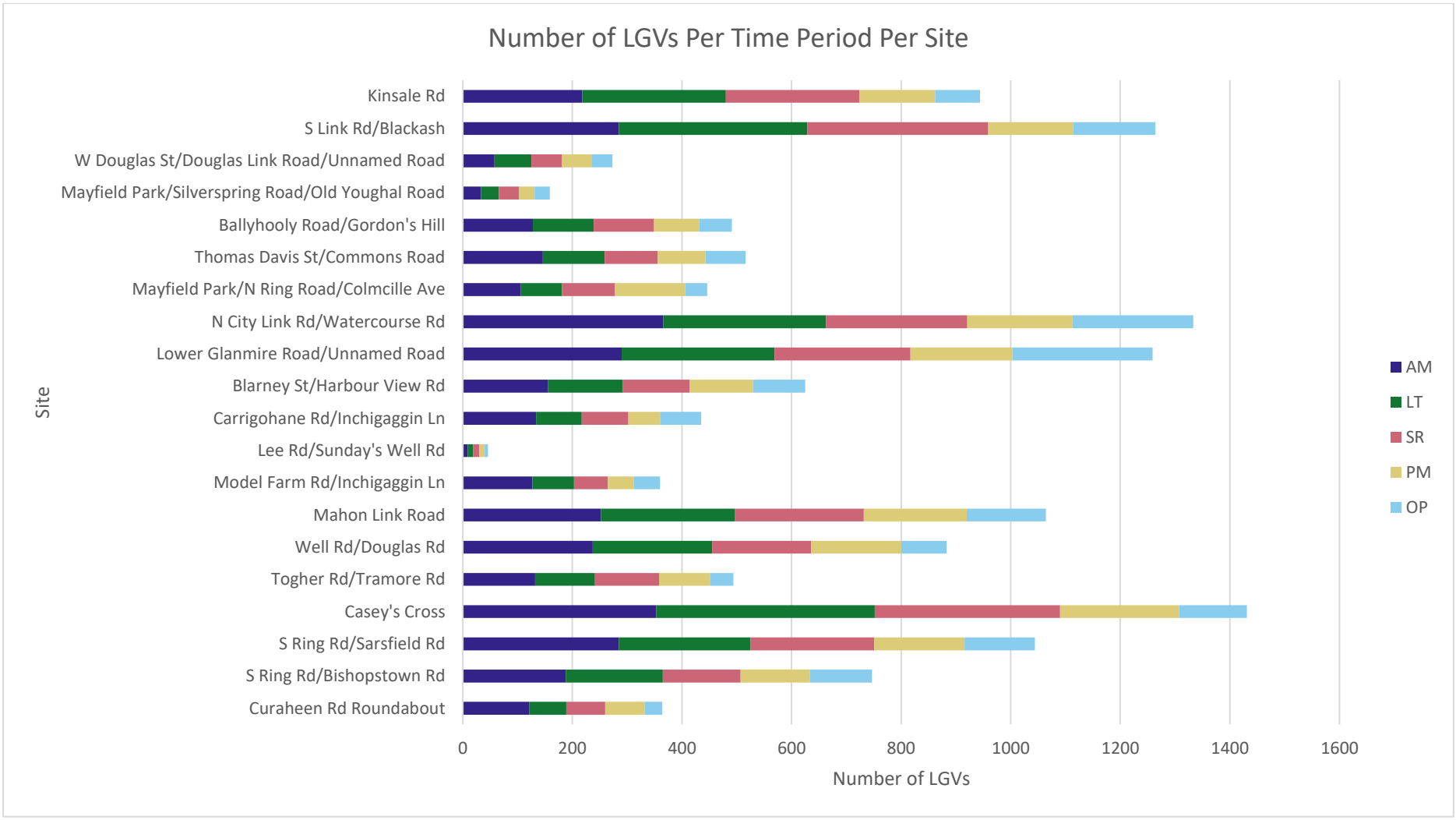


Figure 3-7:Number of LGVs Crossing the Cork City Cordon Inbound at all Sites Per Time Period

Ordinary Goods Vehicle 1

Figure 3-8 below presents the total number of OGV1s crossing the Cork 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 750 OGV1s travelling inbound.

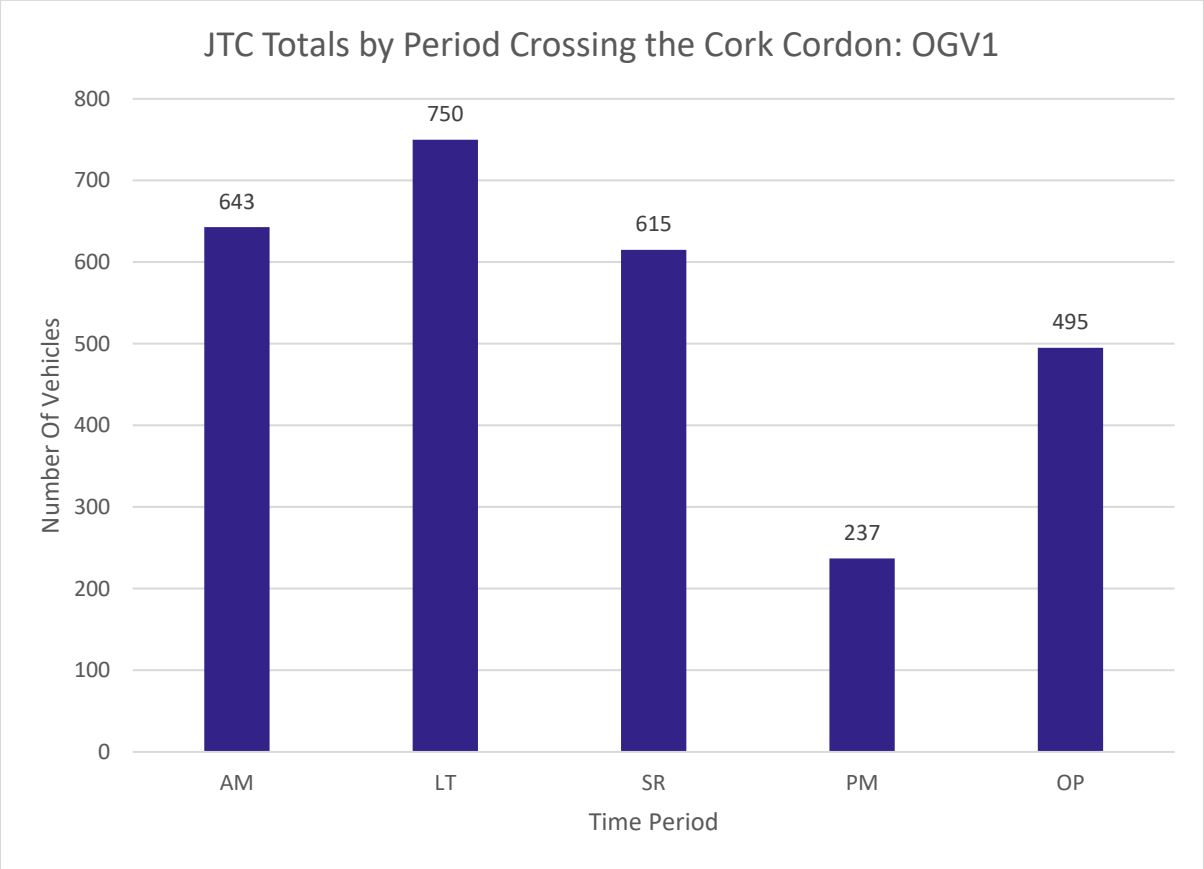


Figure 3-8:Total Number of OGV1 journeys per Time Period

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 Cork City Cordon was the N City Link Rd/Watercourse Rd junction, with a total of 303 OGV1s travelling inbound through this junction over a 24-hour period.

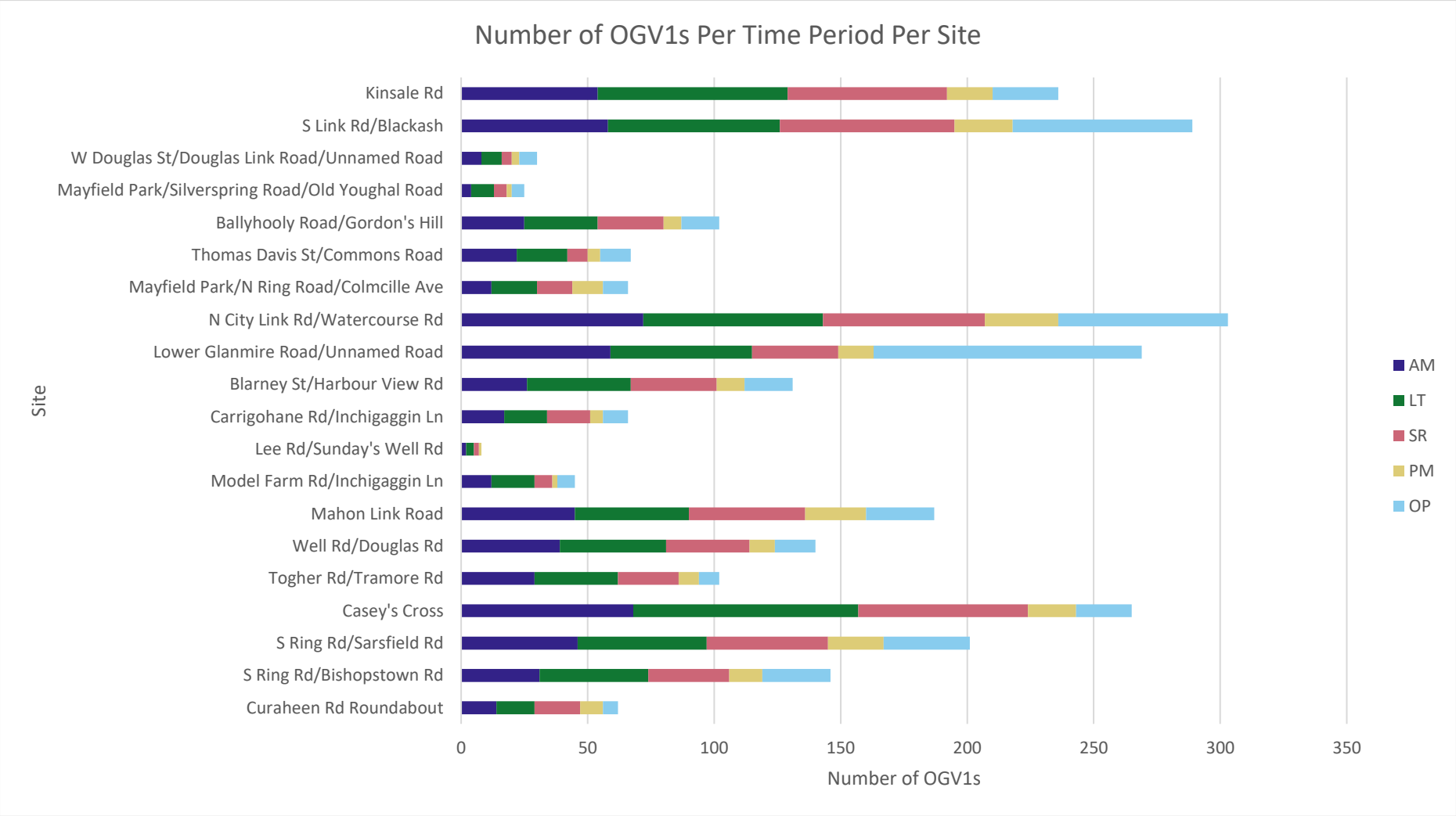


Figure 3-9:Number of OGV1s Crossing the Cork City Cordon Inbound at all Sites Per Time Period

Ordinary Goods Vehicle 2

Figure 3-10 below presents the total number of OGV2s crossing the Cork 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 382 OGV2s travelling inbound.

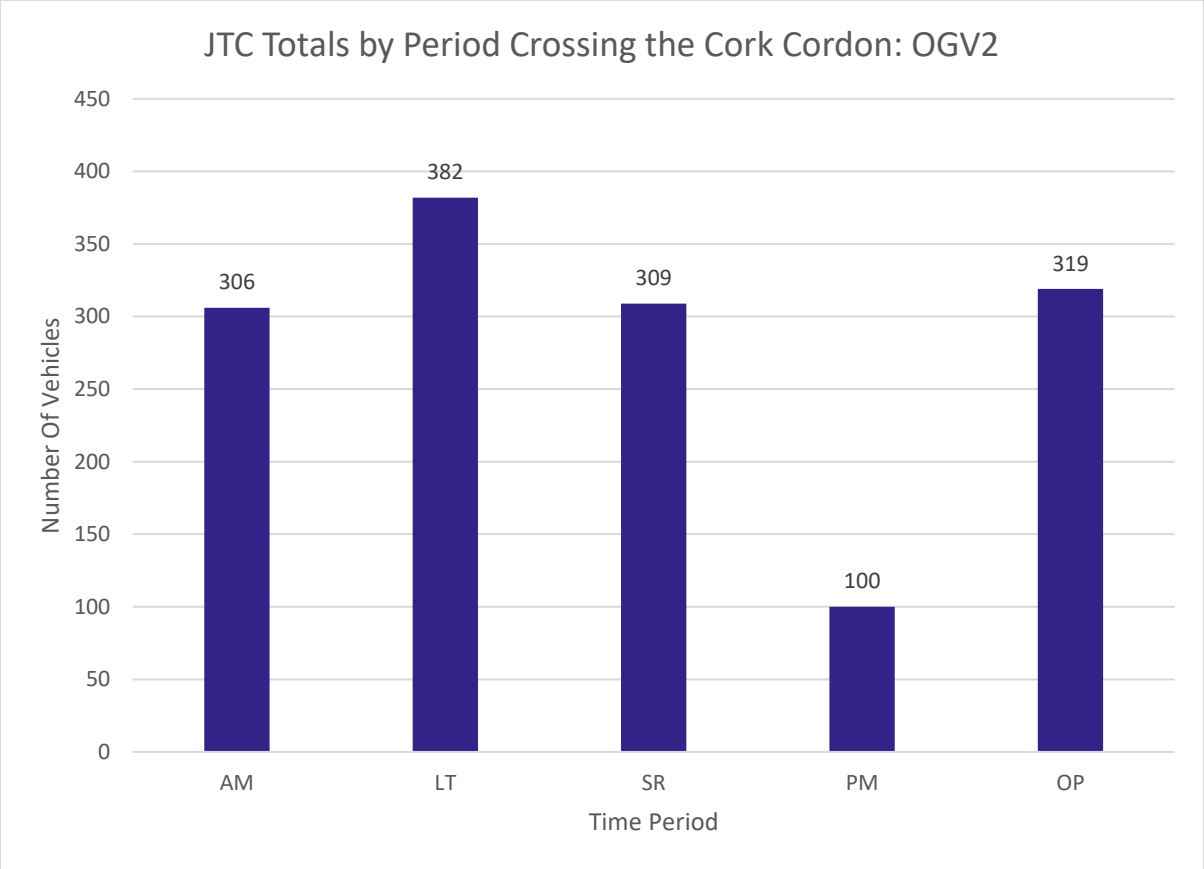


Figure 3-10:Total Number of OGV2 journeys per Time Period

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 Cork City Cordon was the Kinsale Rd junction, with a total of 305 OGV2s travelling inbound through this junction over a 24-hour period.

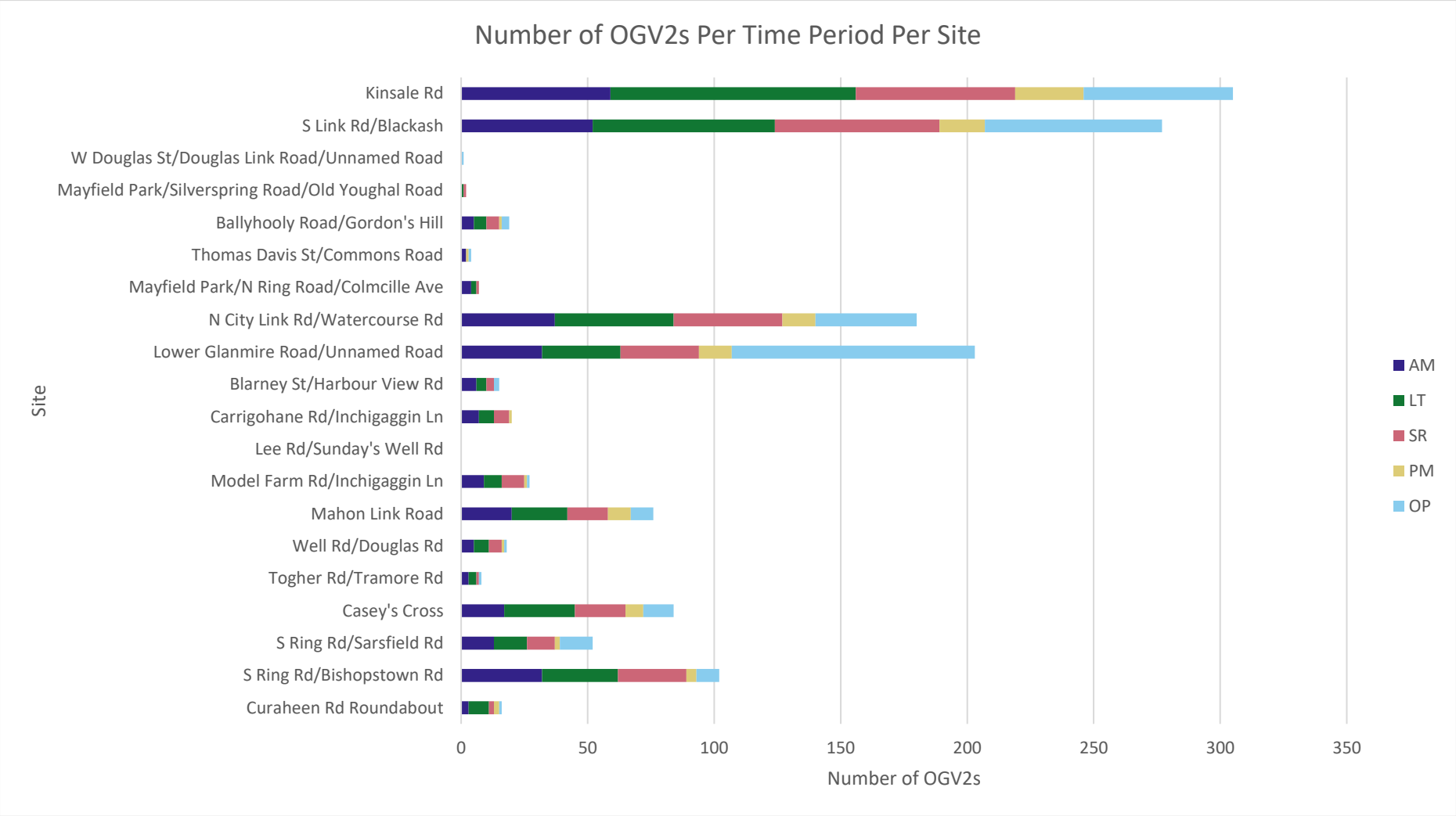


Figure 3-11:Number of OGV2s Crossing the Cork City Cordon Inbound at all Sites Per Time Period

Motorcycle

Figure 3-12 below presents the total number of motorcycles crossing the Cork City Cordon for each surveyed time period. Overall, it is evident that the OP time period has the highest volume of motorcycles, with a total of 162 motorcycles travelling inbound.

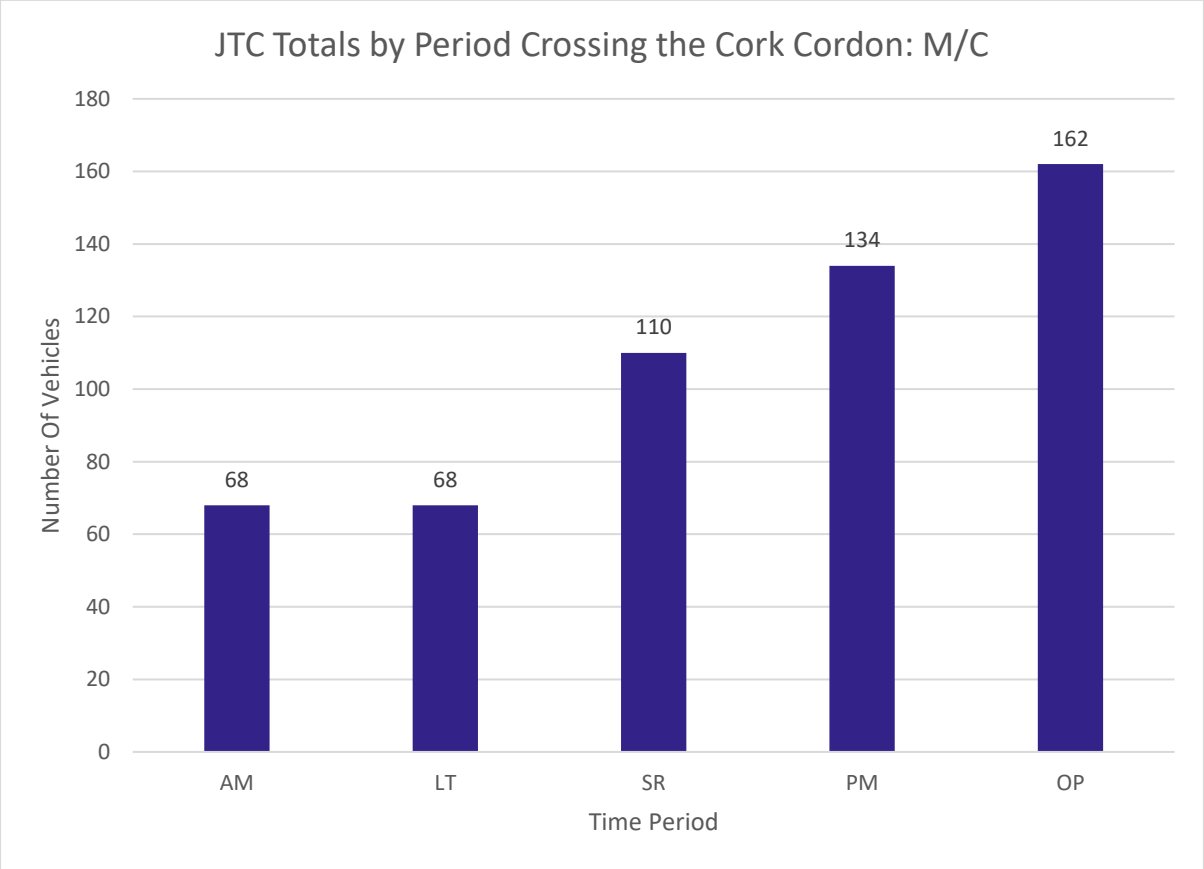


Figure 3-12:Total Number of Motorcycle journeys per Time Period

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 Cork City Cordon was the Well Rd/Douglas Rd junction, with a total of 60 motorcycles travelling inbound through this junction over a 24-hour period.

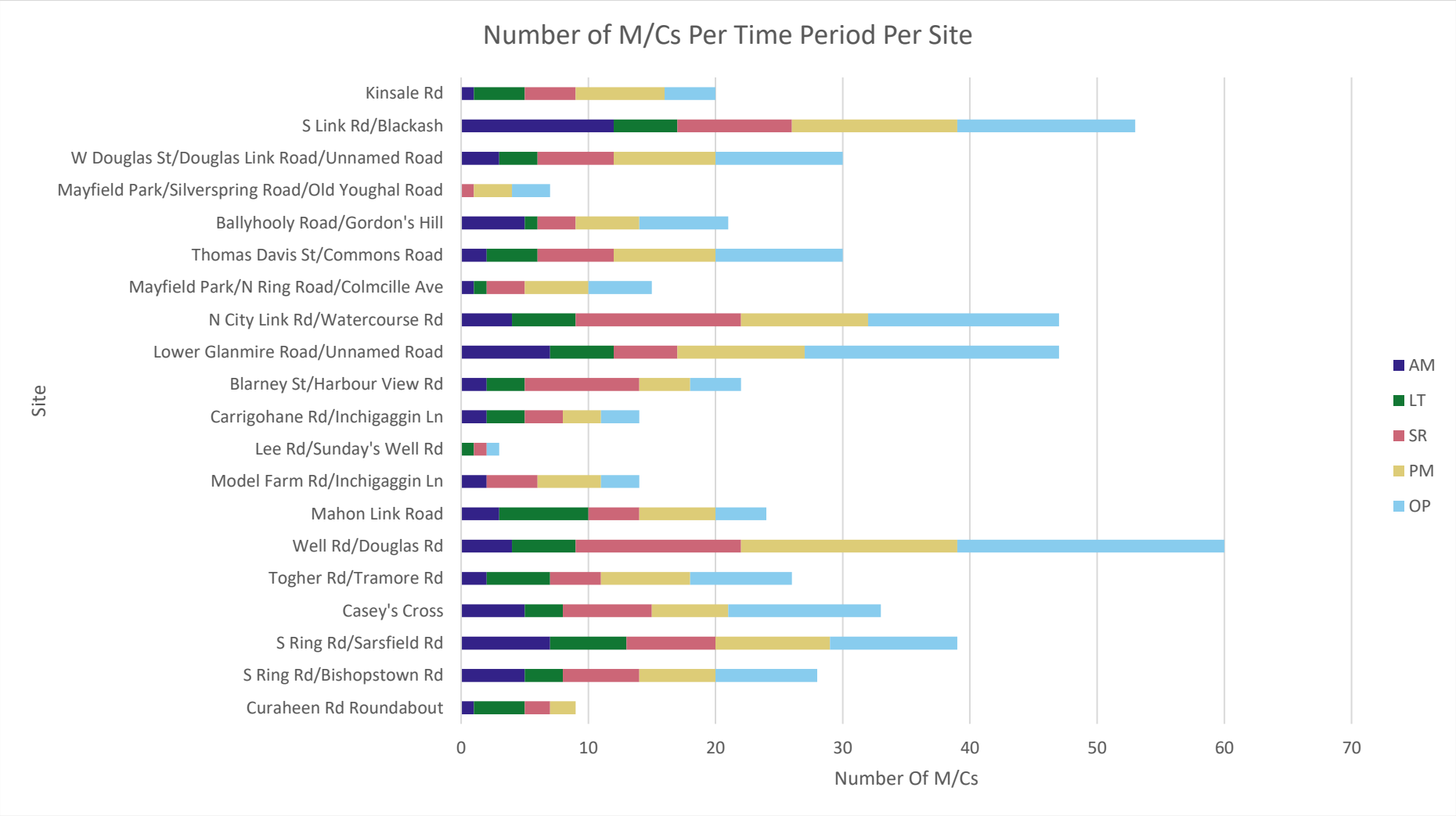


Figure 3-13:Number of Motorcycles Crossing the Cork City Cordon Inbound at all Sites Per Time Period

Pedal Cycle

Figure 3-14 below presents the total number of pedal cycles crossing the Cork 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 179 pedal cycles travelling inbound.

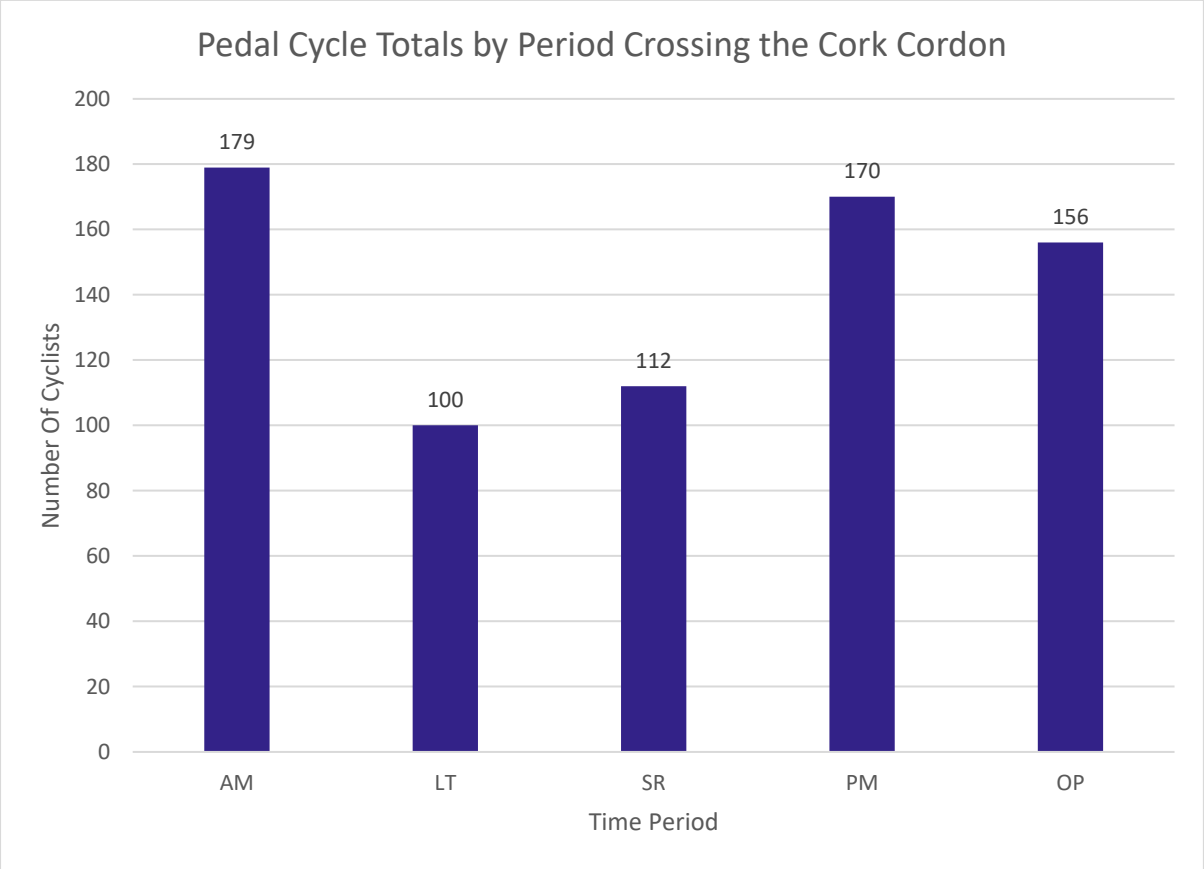


Figure 3-14:Total Number of Pedal Cycle journeys per Time Period

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 Cork City Cordon was the Thomas Davis St/Commons Road junction, with a total of 125 pedal cycles travelling inbound through this junction over a 24-hour period.

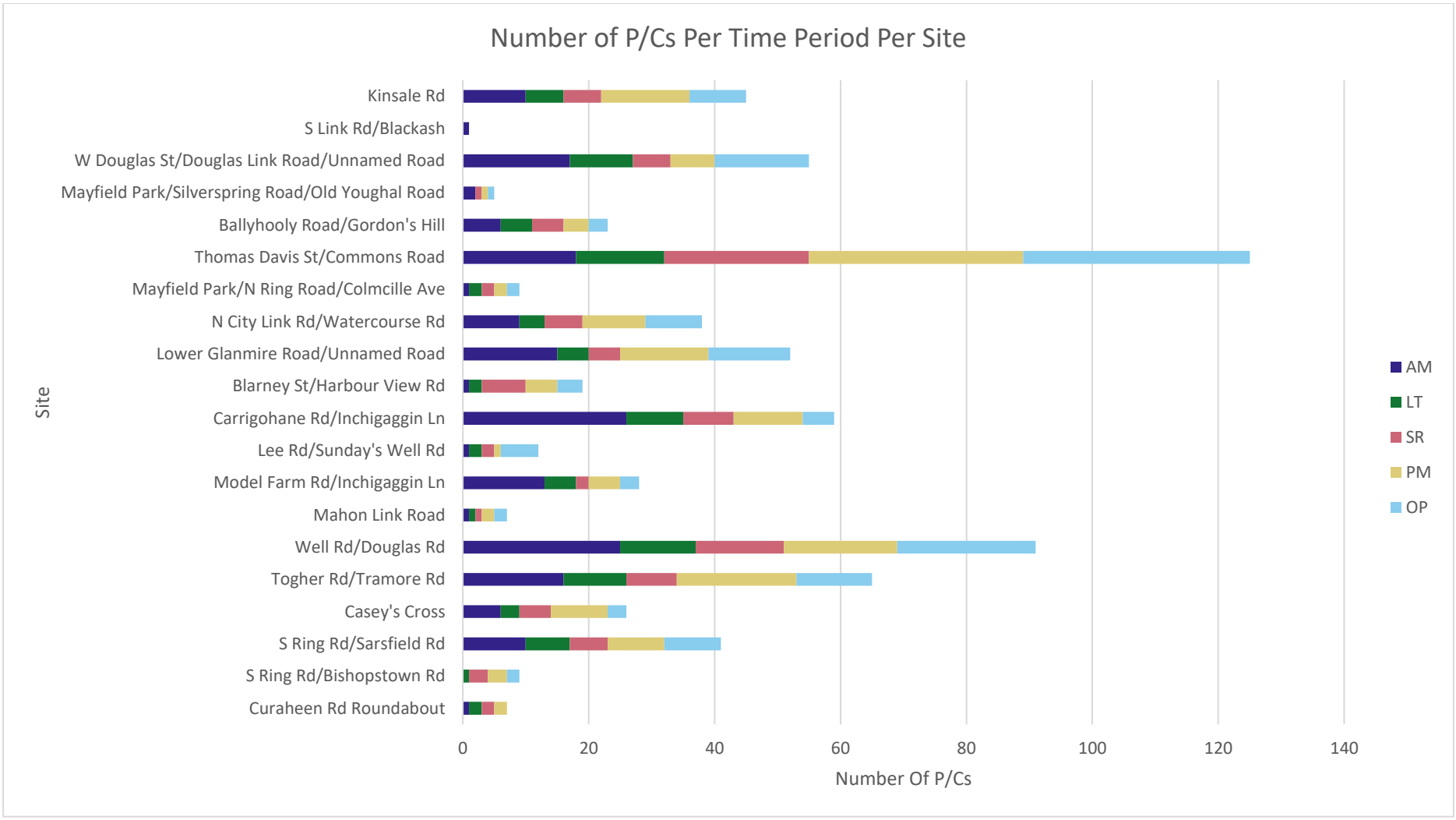


Figure 3-15:Number of Pedal Cycles Crossing the Cork City Cordon Inbound at all Sites Per Time Period

Taxi

Figure 3-16 below presents the total number of taxis crossing the Cork 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 884 taxis travelling inbound.

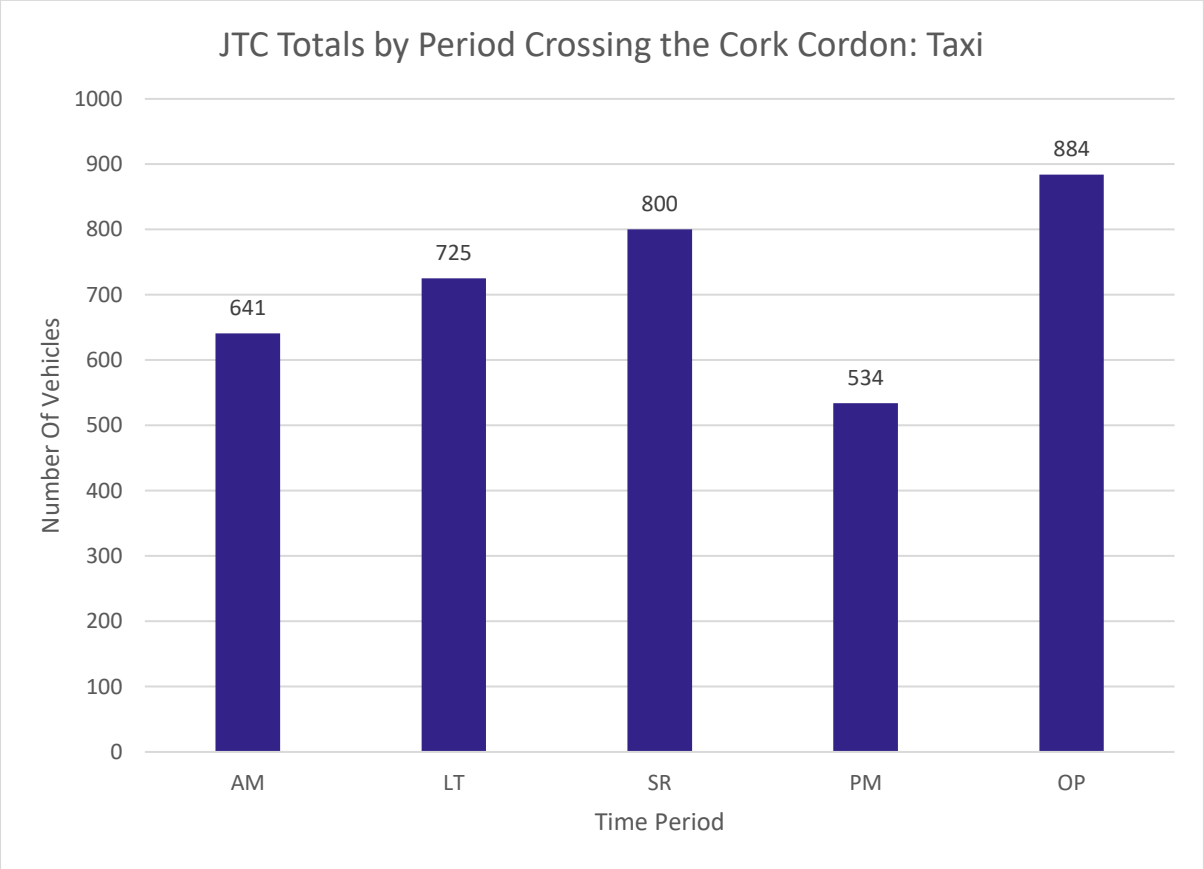


Figure 3-16:Total Number of Taxi journeys per Time Period

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 Cork City Cordon was the S Ring Rd/Sarsfield Rd junction, with a total of 366 taxis travelling inbound through this junction over a 24-hour period.

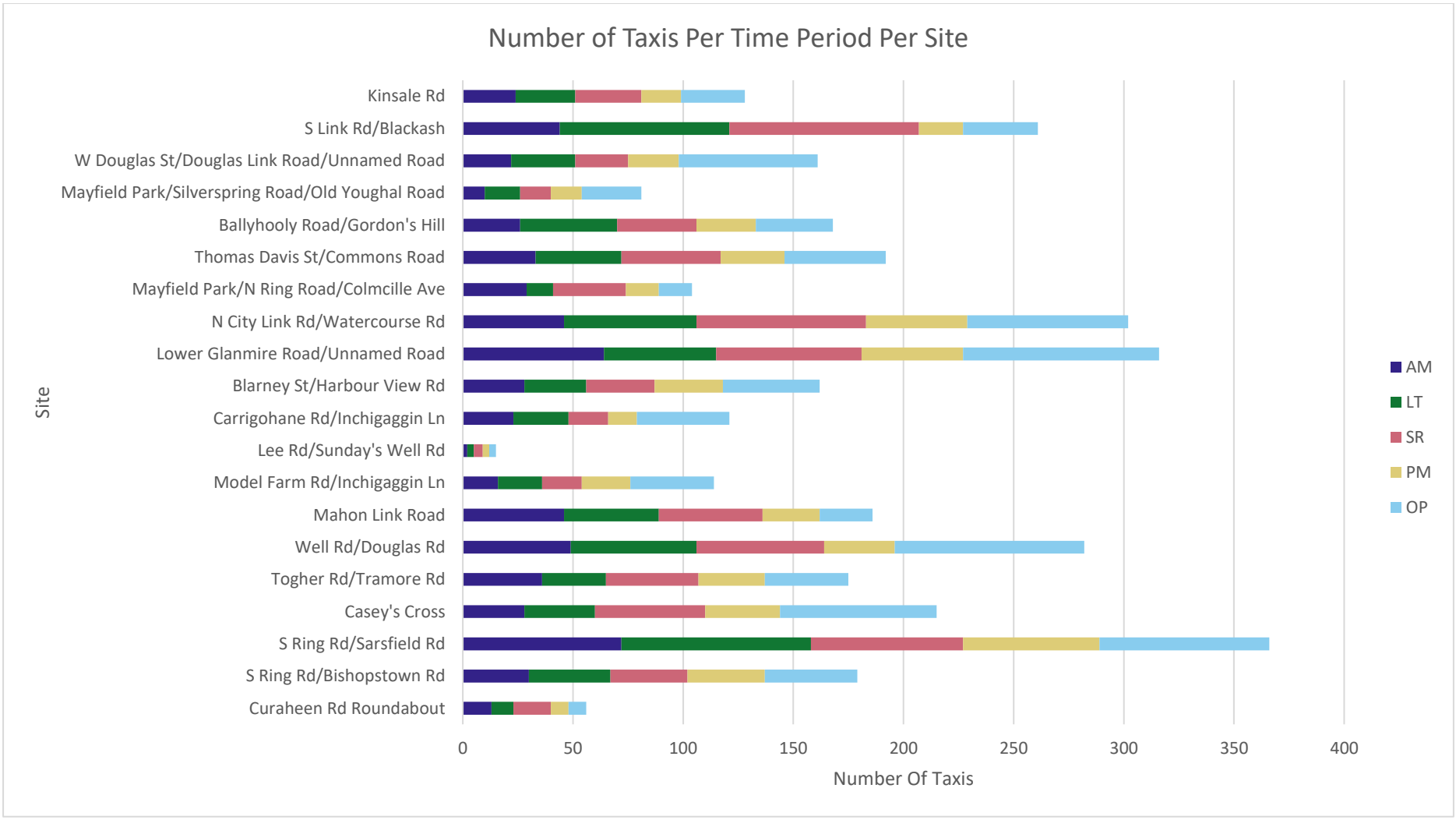


Figure 3-17:Number of Taxis Crossing the Cork City Cordon Inbound at all Sites Per Time Period

Bus

Figure 3-18 below presents the total number of buses crossing the Cork 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 342 buses travelling inbound.

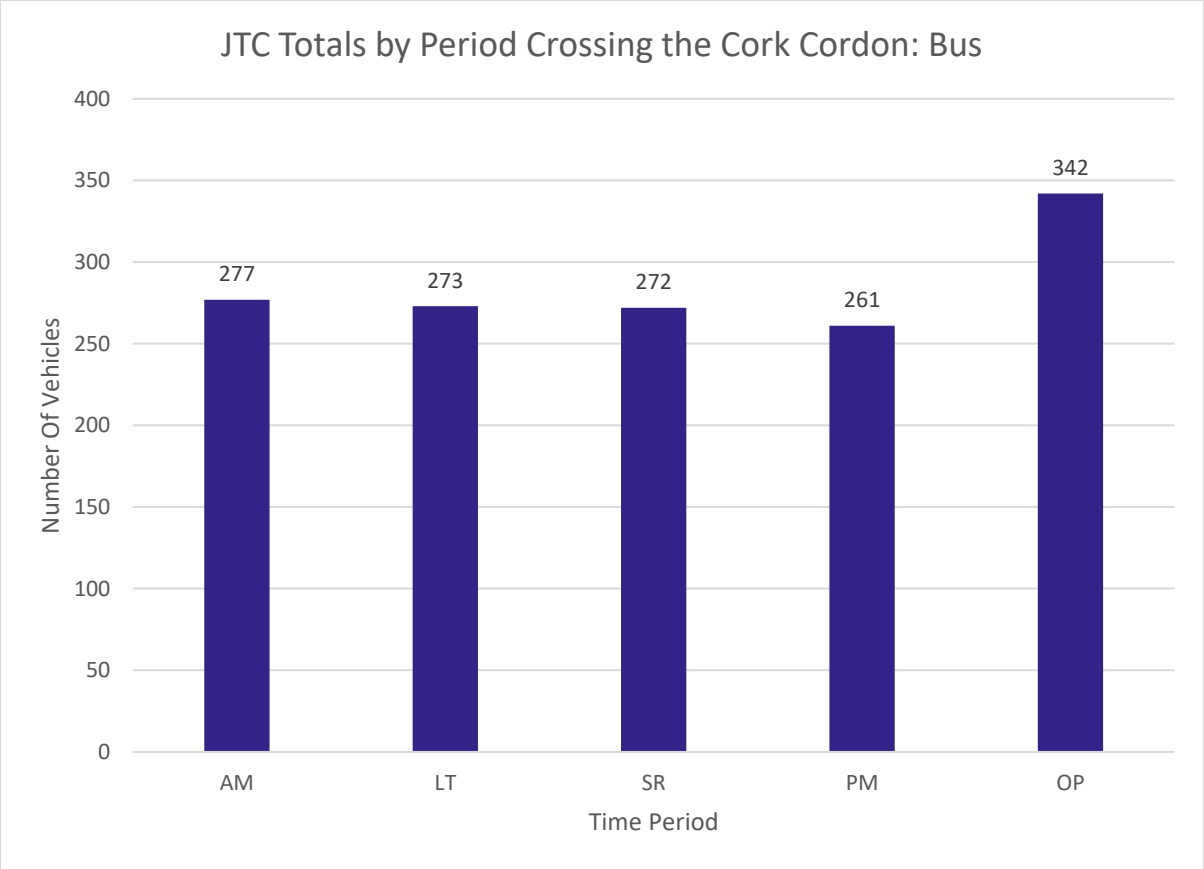


Figure 3-18:Total Number of Bus journeys per Time Period

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 Cork City Cordon was the Lower Glanmire Road/Unnamed Road junction, with a total of 242 buses travelling inbound through this junction over a 24-hour period.

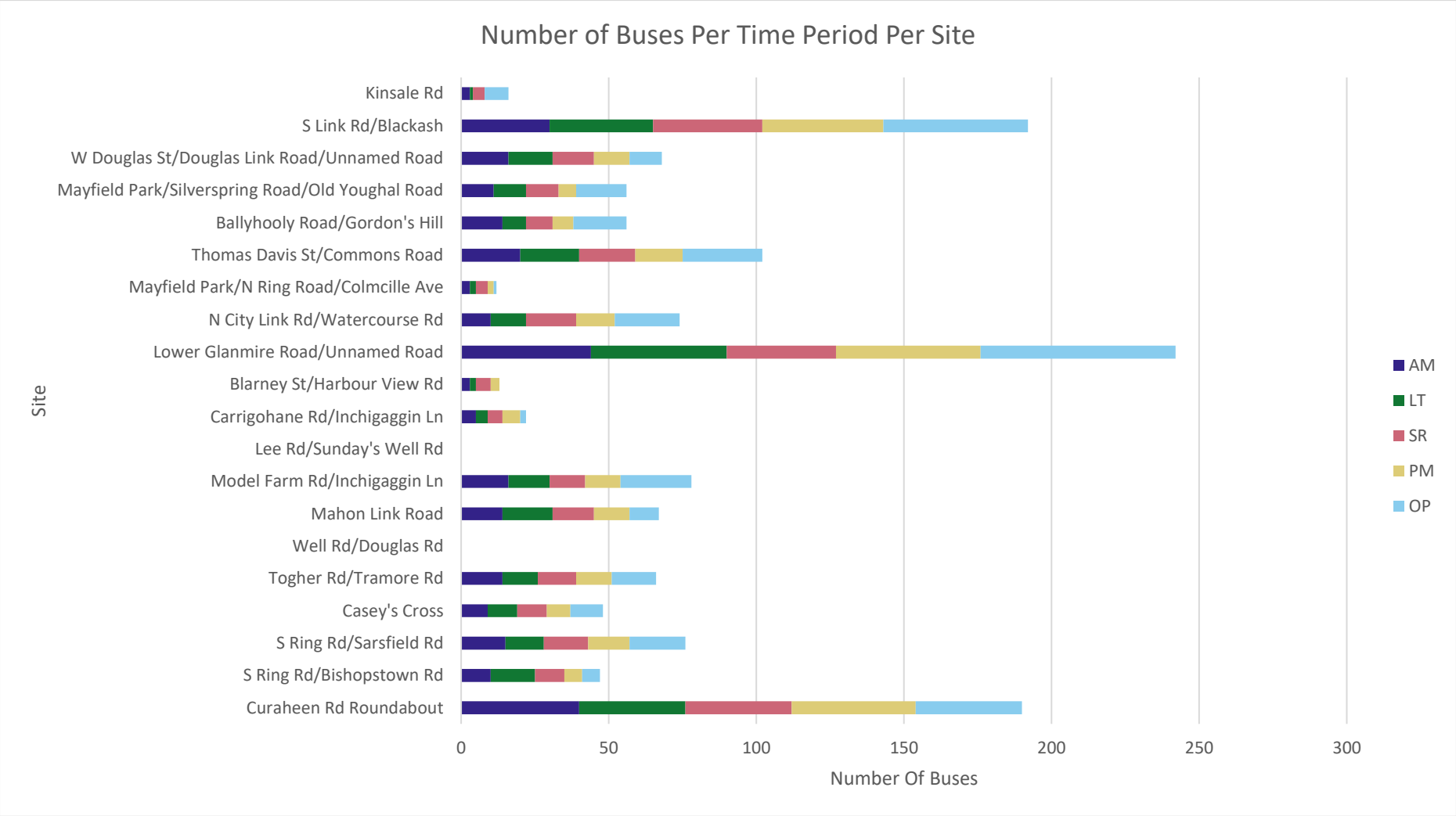


Figure 3-19:Number of Buses Crossing the Cork City Cordon Inbound at all Sites Per Time Period

Pedestrians

Figure 3-20 presents the total number of pedestrian movements crossing the Cork City Cordon per surveyed time period. Overall, it is evident that the PM period has the highest volume of pedestrians, with a total of 1,448 pedestrians travelling inbound.

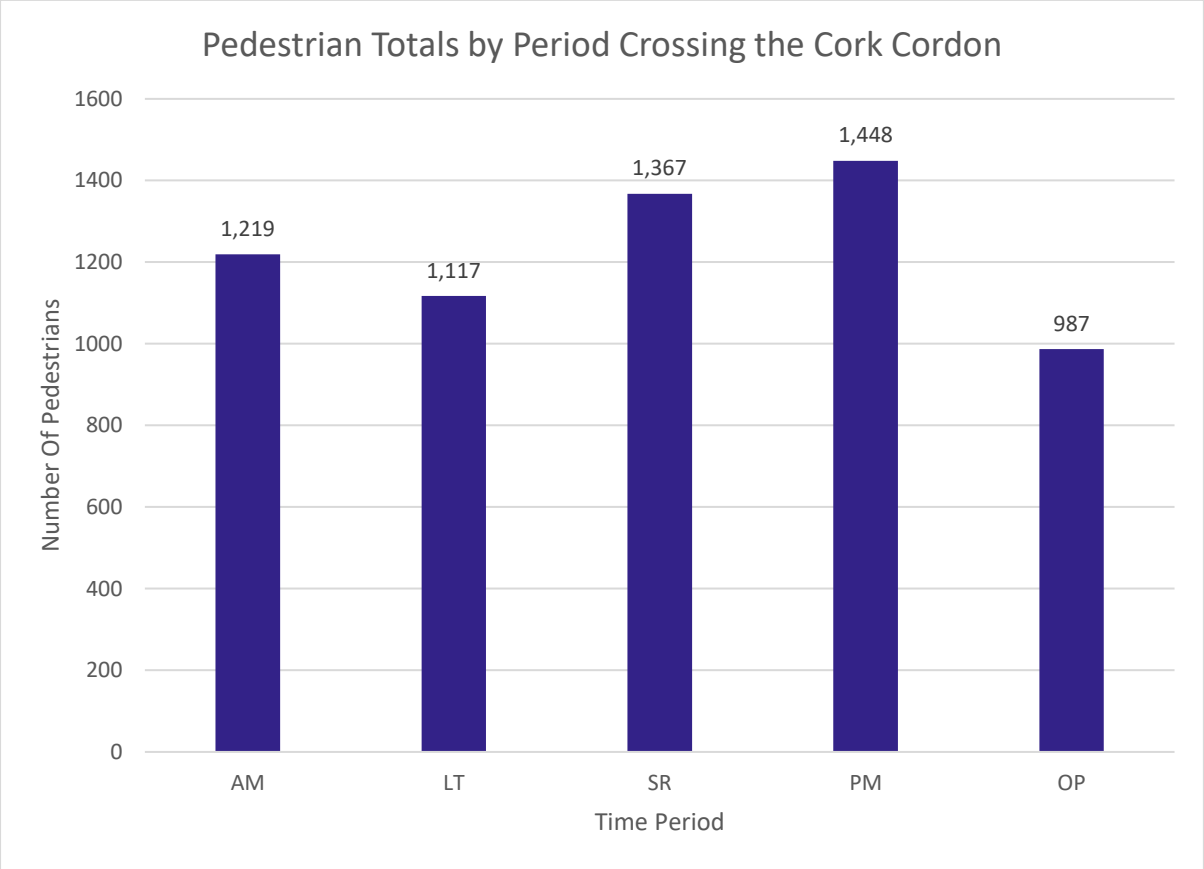


Figure 3-20:Total Pedestrians per Time Period

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 Cork City Cordon was the Thomas Davis St/Commons Road, with a total of 1,528 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).

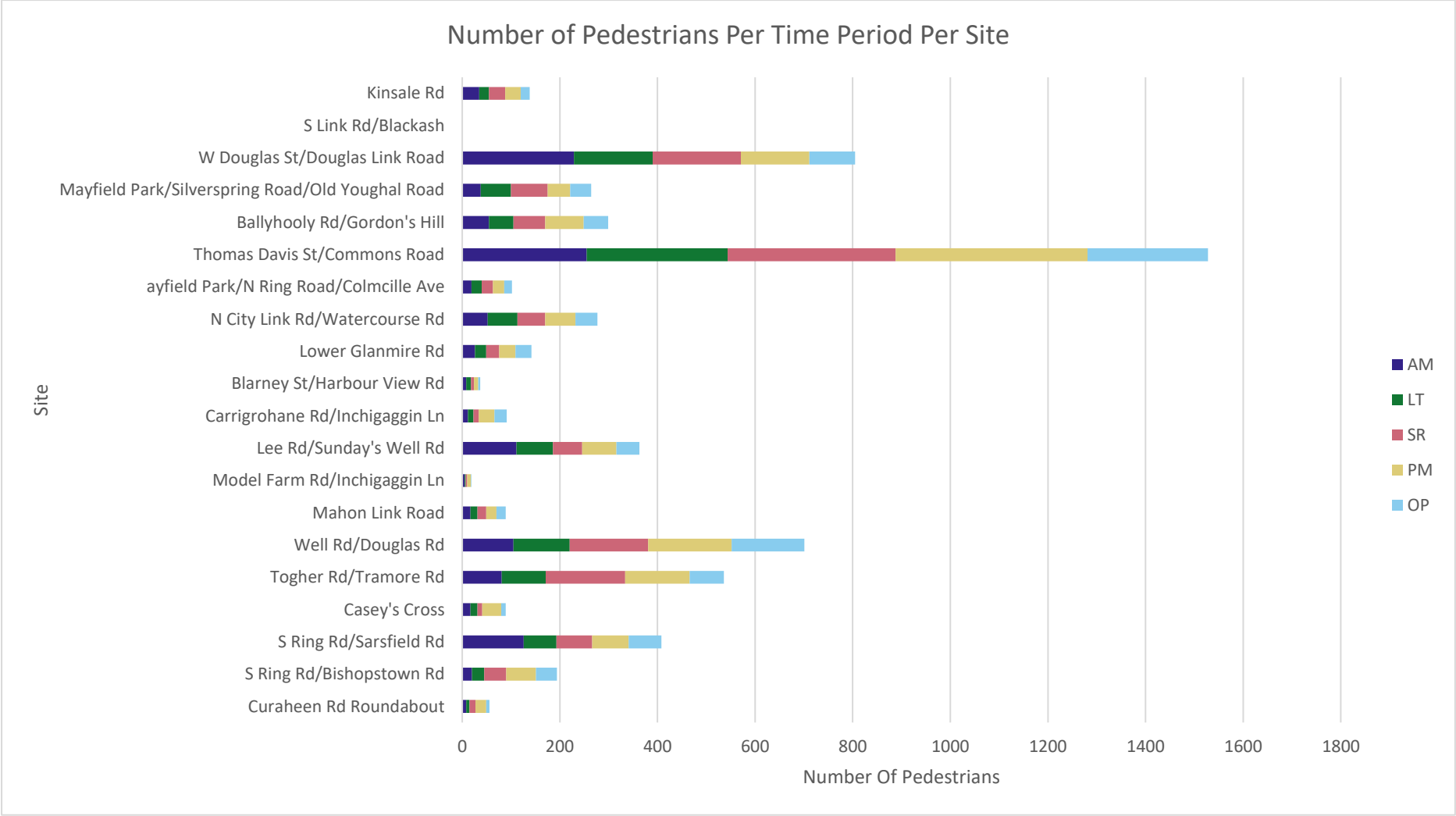


Figure 3-21:Total Pedestrians at all Sites per Time Period

3.1.3 Daily Movements Across the Cork City Cordon

ATCs recorded traffic flows at 15-minute intervals at 12 sites on the main radial routes into 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 Wednesday, as can be seen in Figure 3-22.

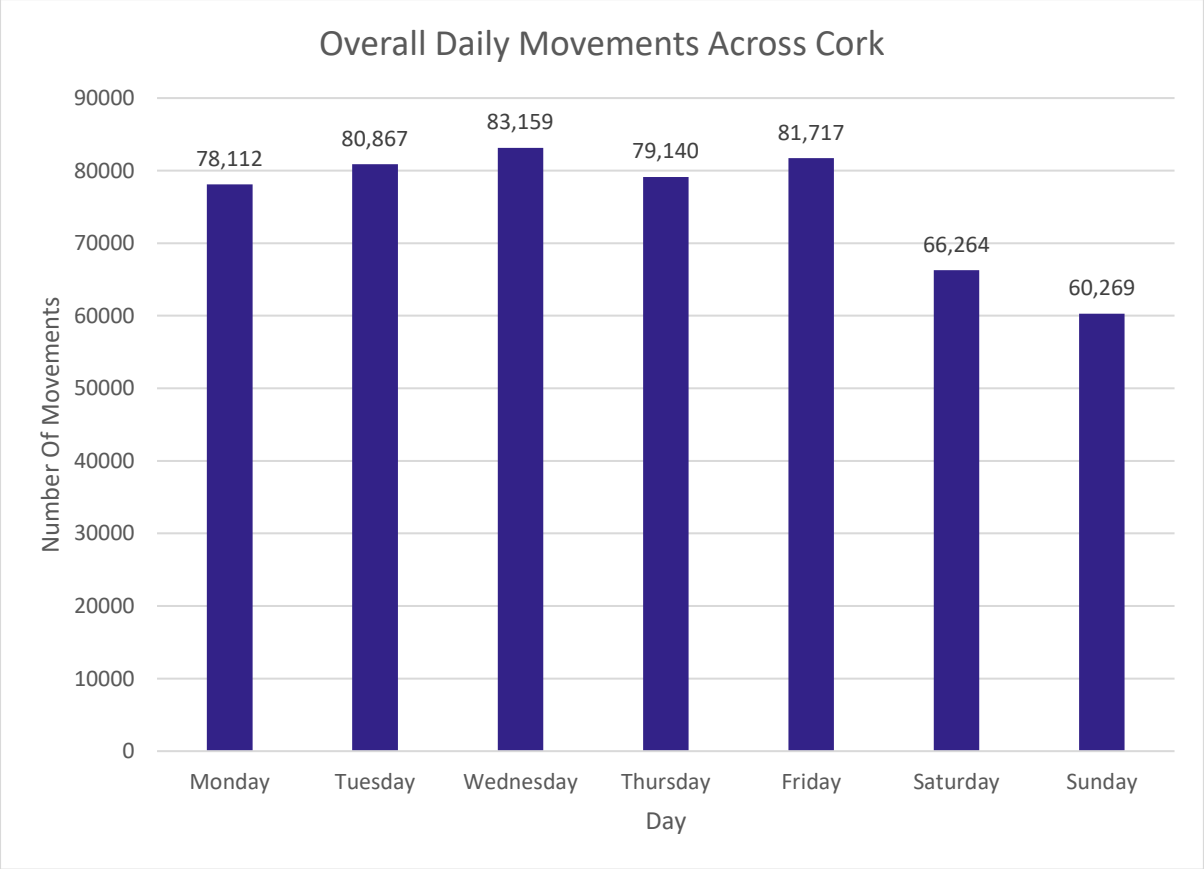


Figure 3-22:Average Daily Traffic at ATC Sites

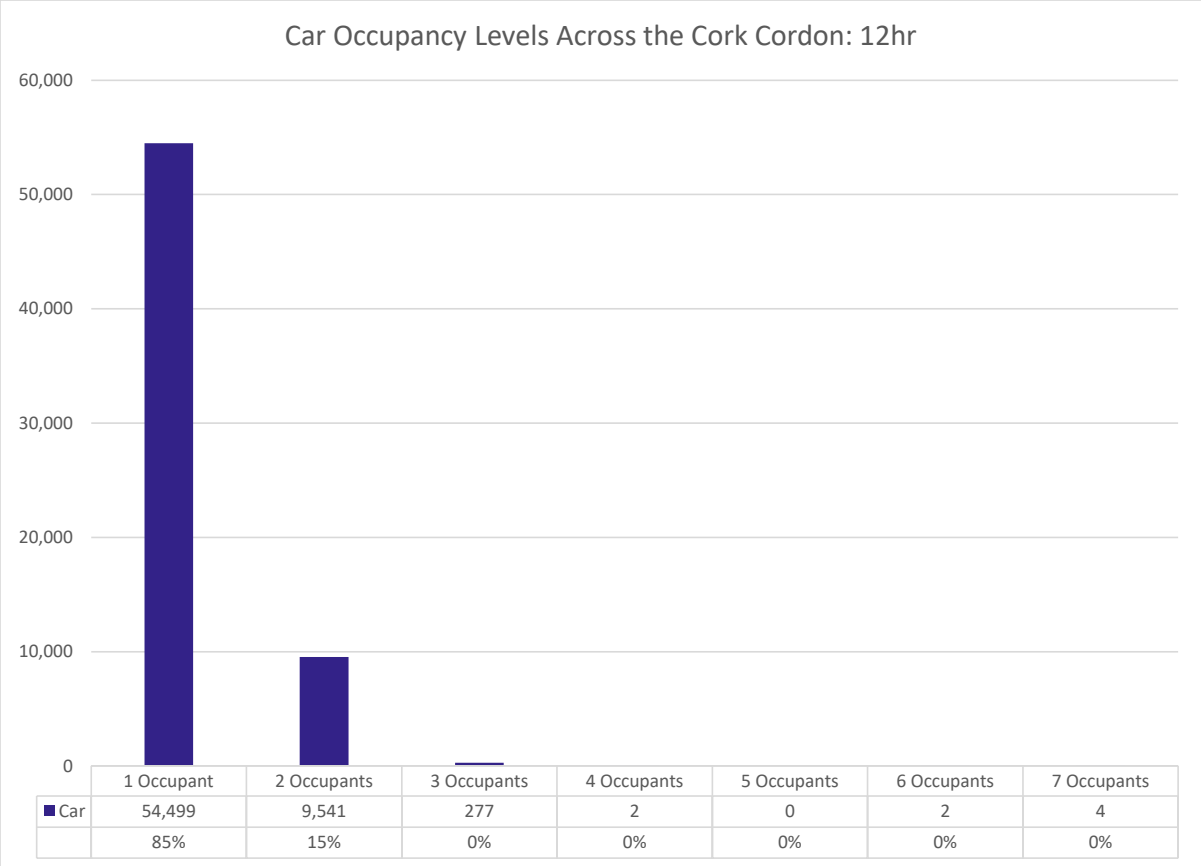
3.2 Vehicle Occupancy Data

3.2.1 Car Occupancy

In order to obtain accurate data reflective of a neutral weekday, car 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 cars crossing the Cork 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) 85% of Cars crossing the Cork City Cordon had one occupant, 15% had two occupants and 0% had three occupants.



	1 Occupant	2 Occupants	3 Occupants	4 Occupants	5 Occupants	6 Occupants	7 Occupants
Car	54,499	9,541	277	2	0	2	4
	85%	15%	0%	0%	0%	0%	0%

Figure 3-23:Car Occupancy: 12 Hour

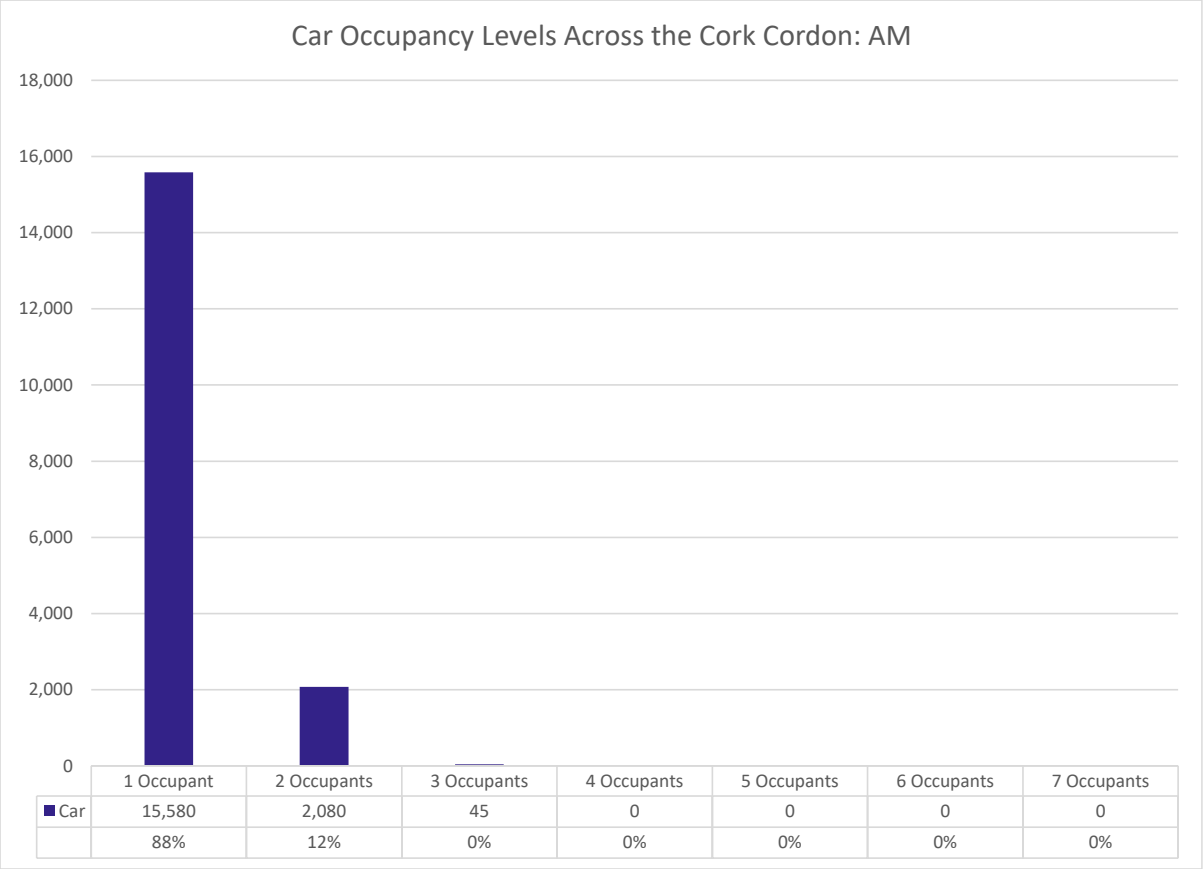
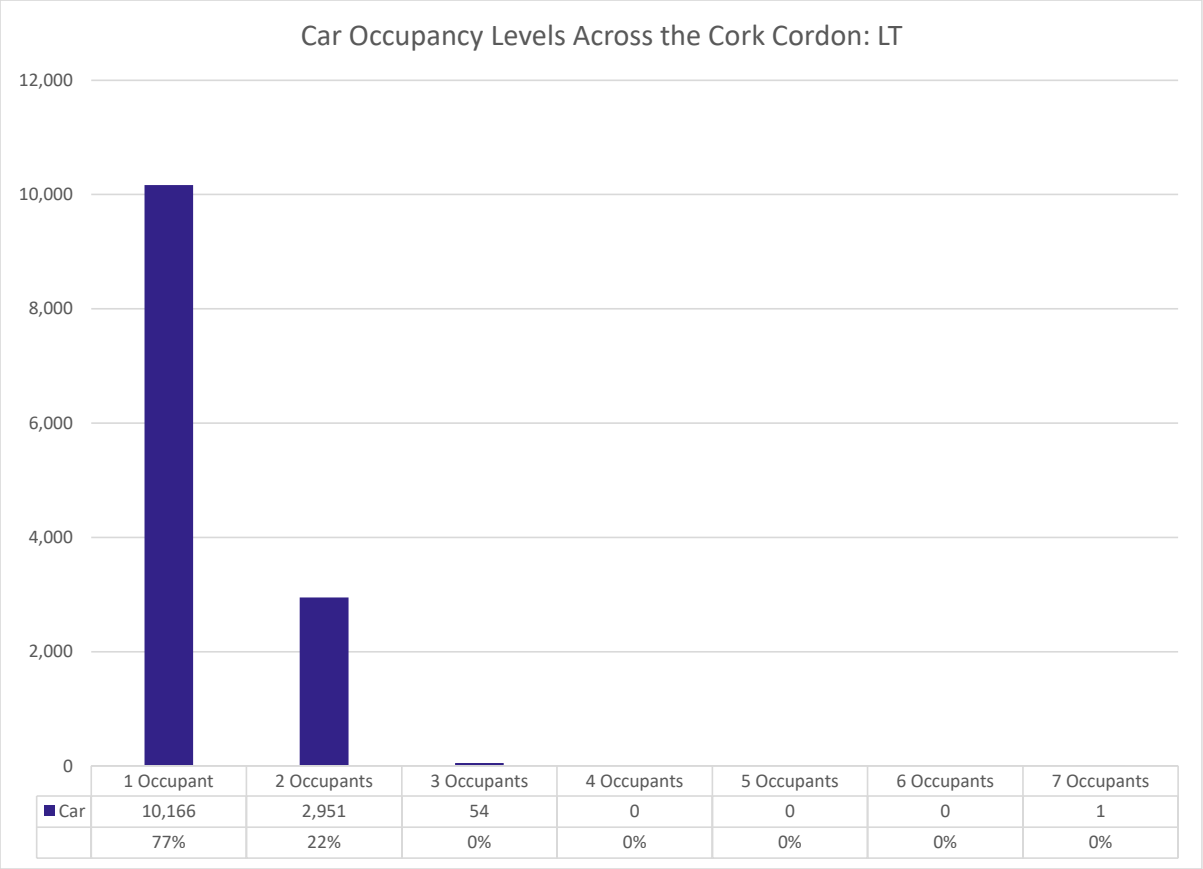


Figure 3-24:Car Occupancy: AM



	1 Occupant	2 Occupants	3 Occupants	4 Occupants	5 Occupants	6 Occupants	7 Occupants
Car	10,166	2,951	54	0	0	0	1
	77%	22%	0%	0%	0%	0%	0%

Figure 3-25:Car Occupancy: LT

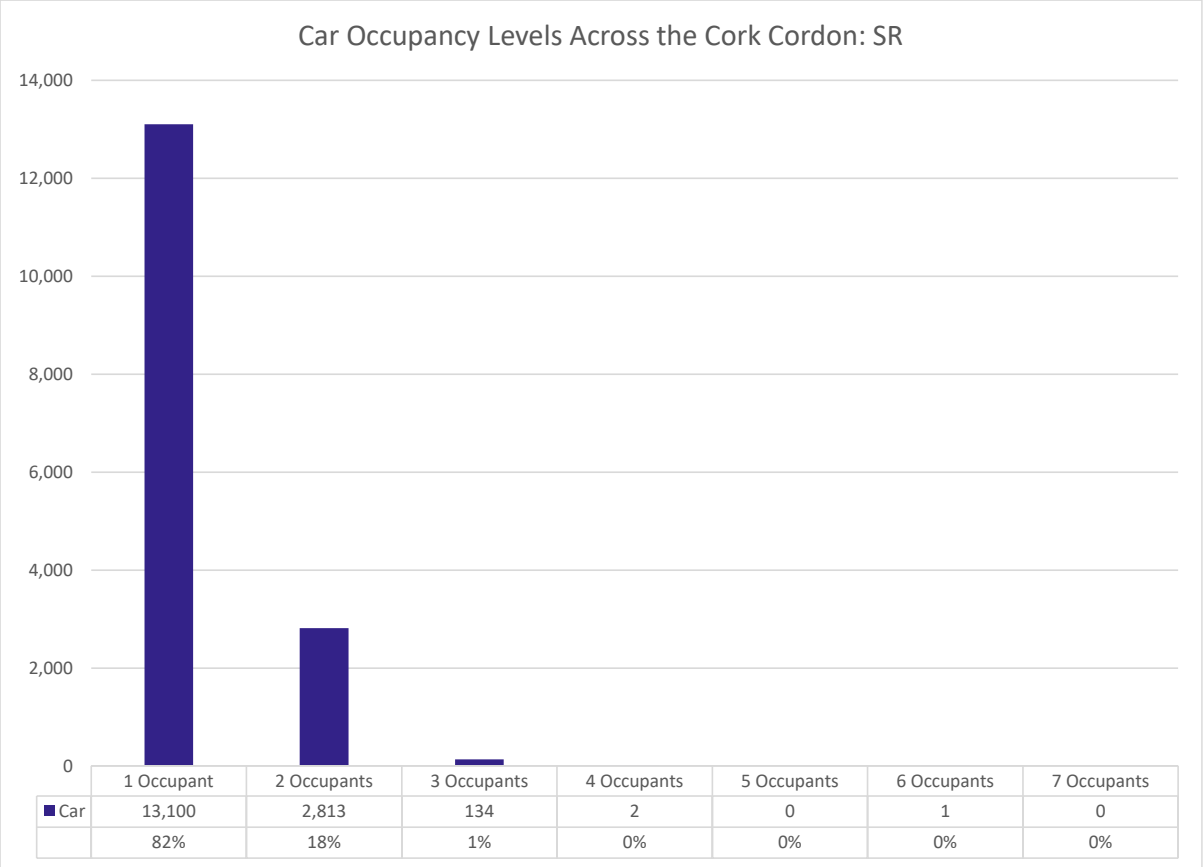


Figure 3-26:Car Occupancy: SR

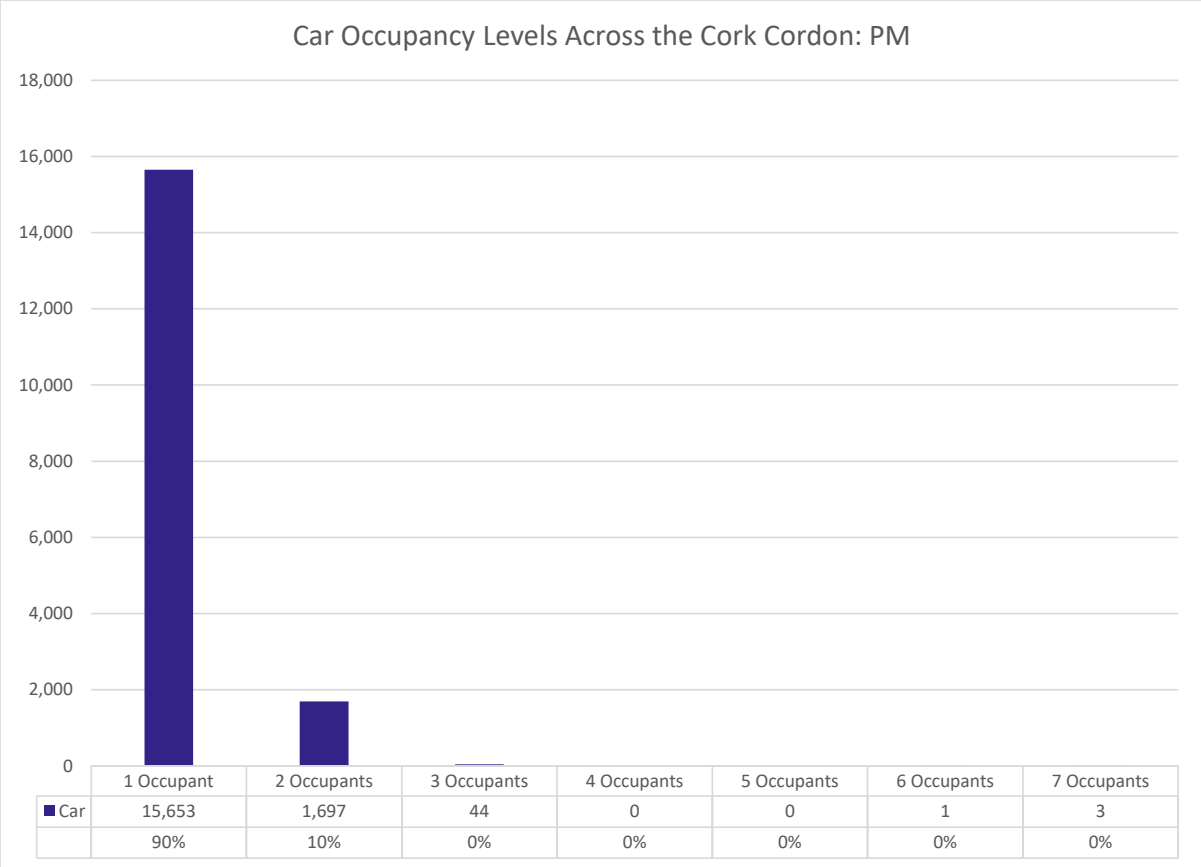


Figure 3-27:Car Occupancy: PM

Car Occupancy per site

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

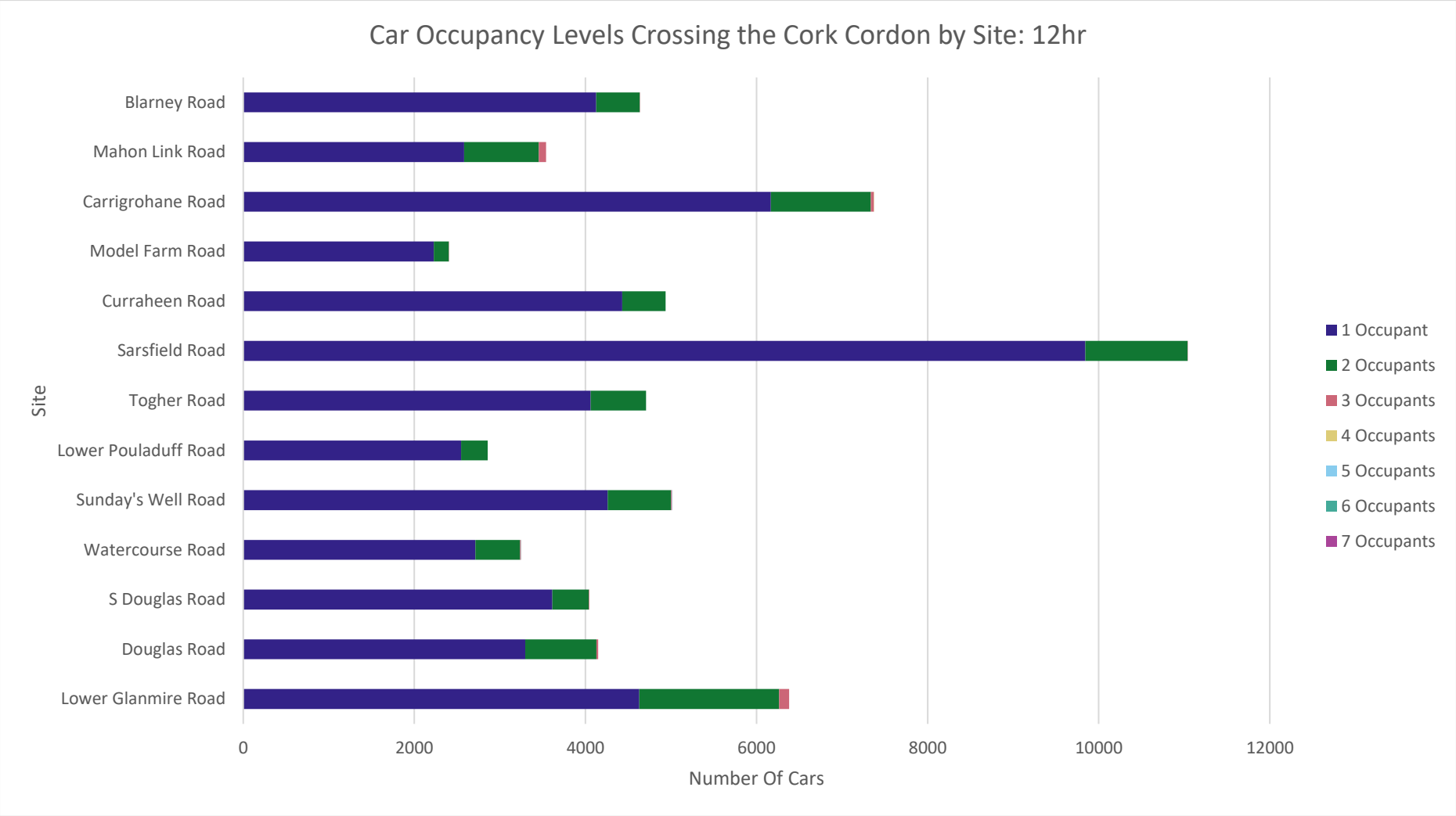


Figure 3-28:Car Occupancy per Site: 12 Hour

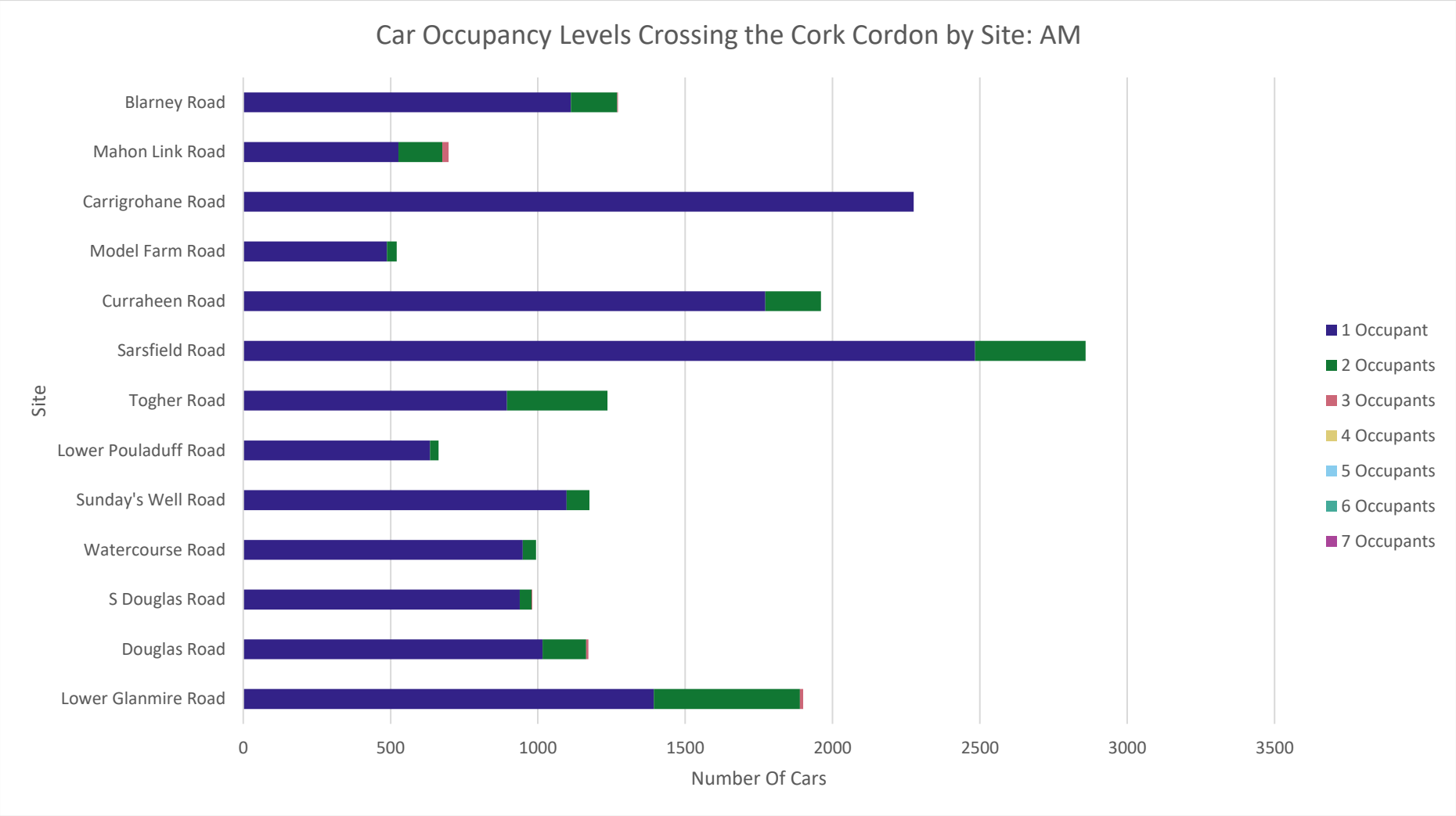


Figure 3-29:Car Occupancy per Site: AM

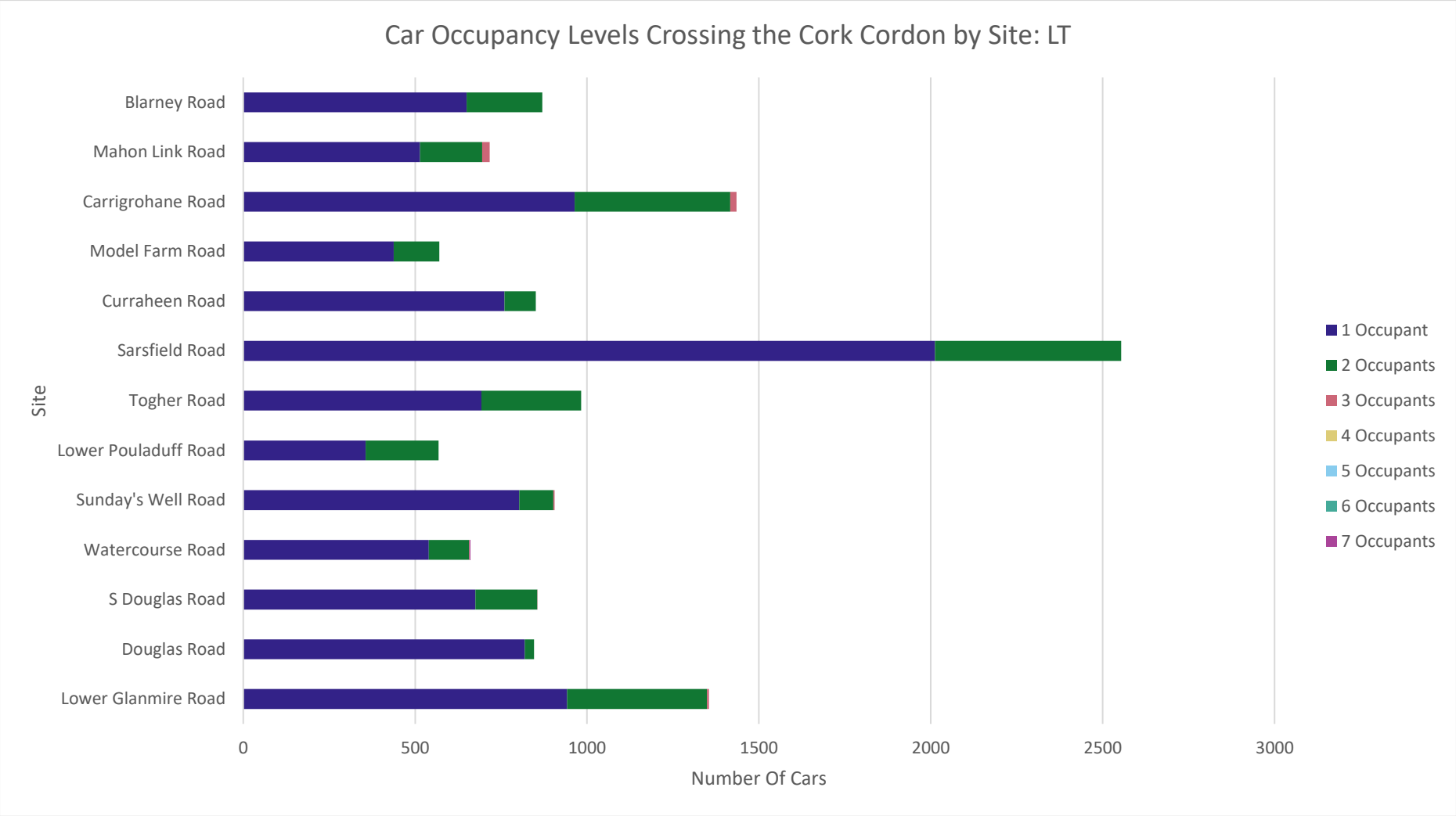


Figure 3-30:Car Occupancy per Site: LT

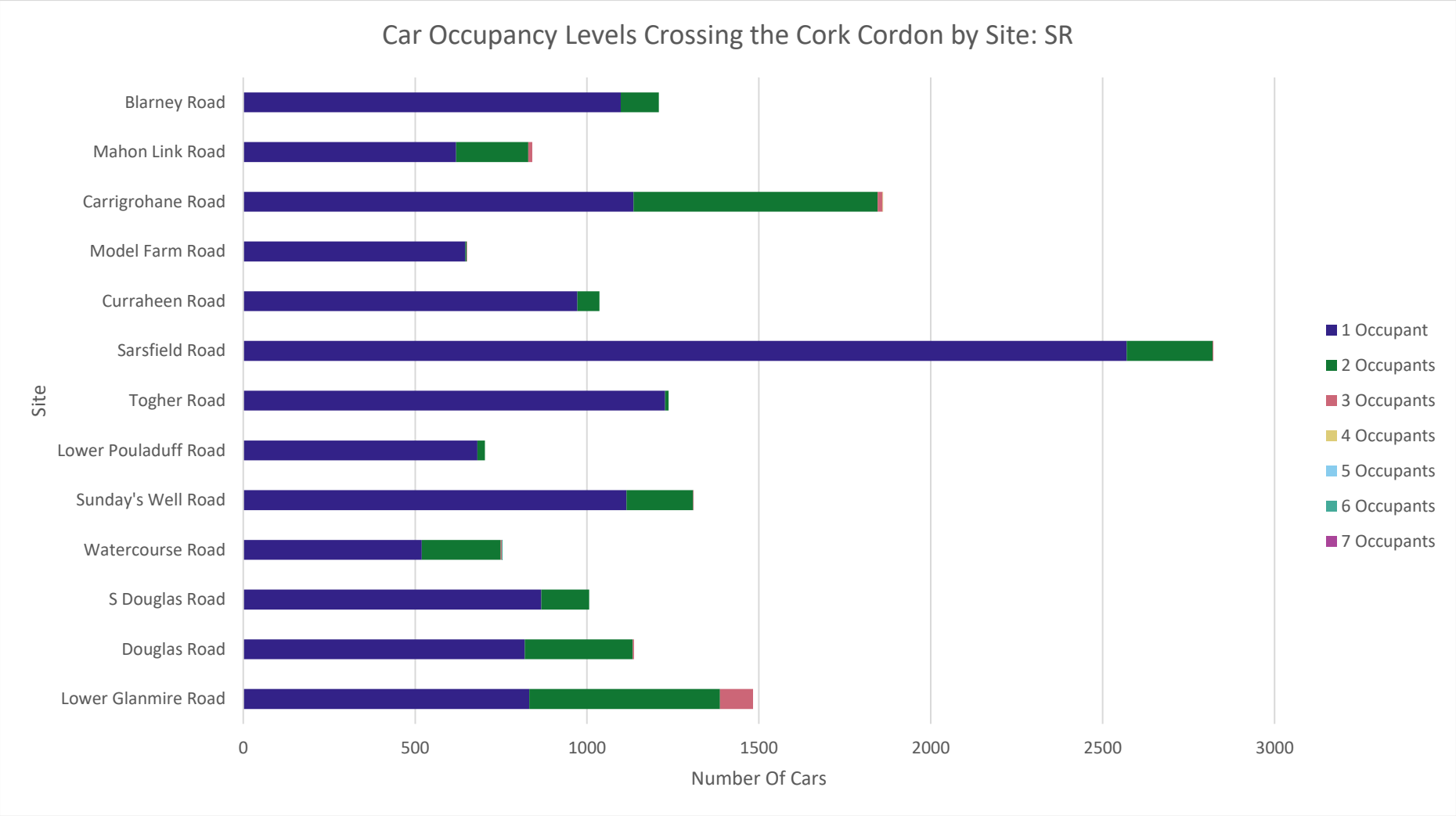


Figure 3-31:Car Occupancy per Site: SR

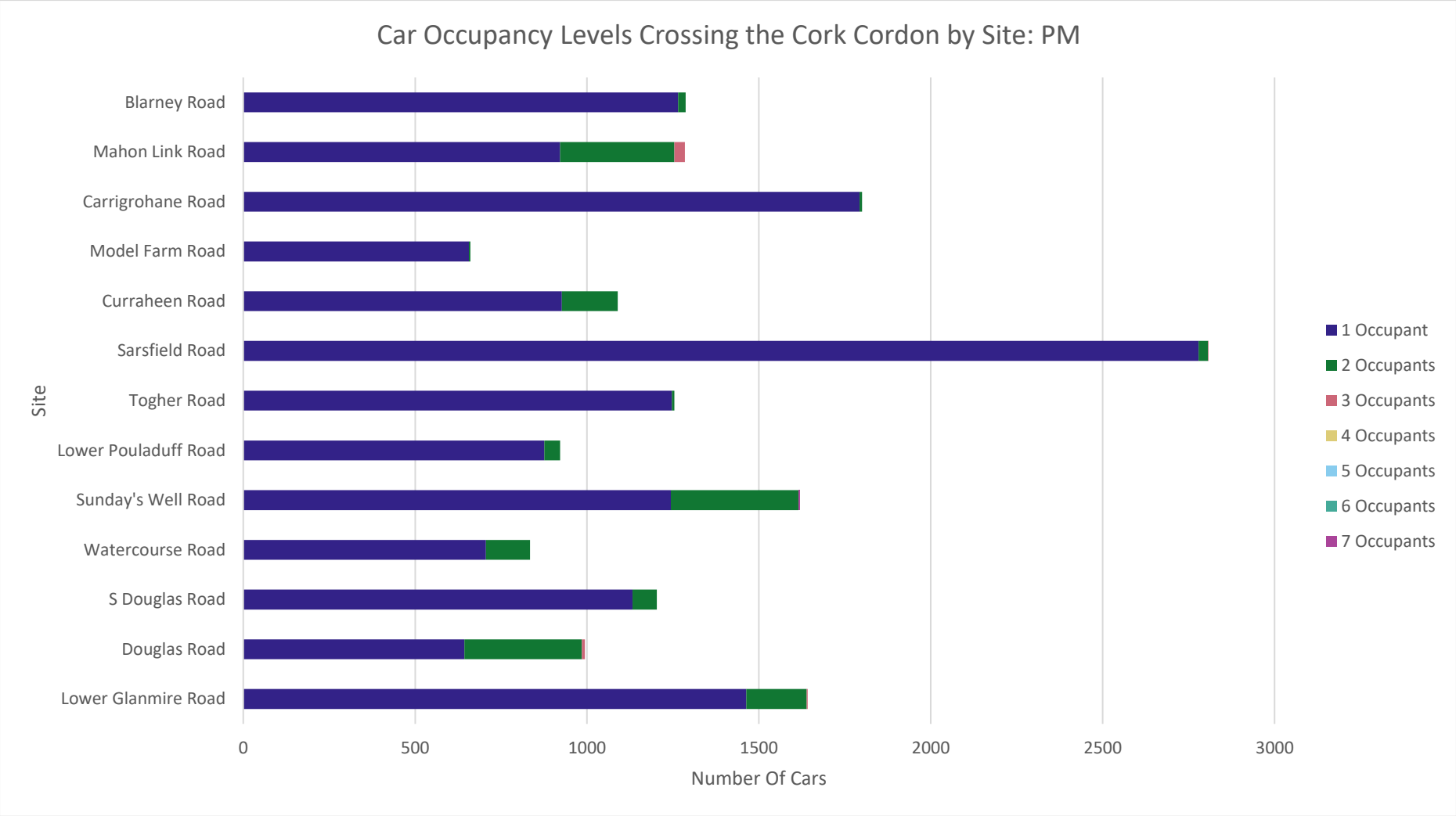


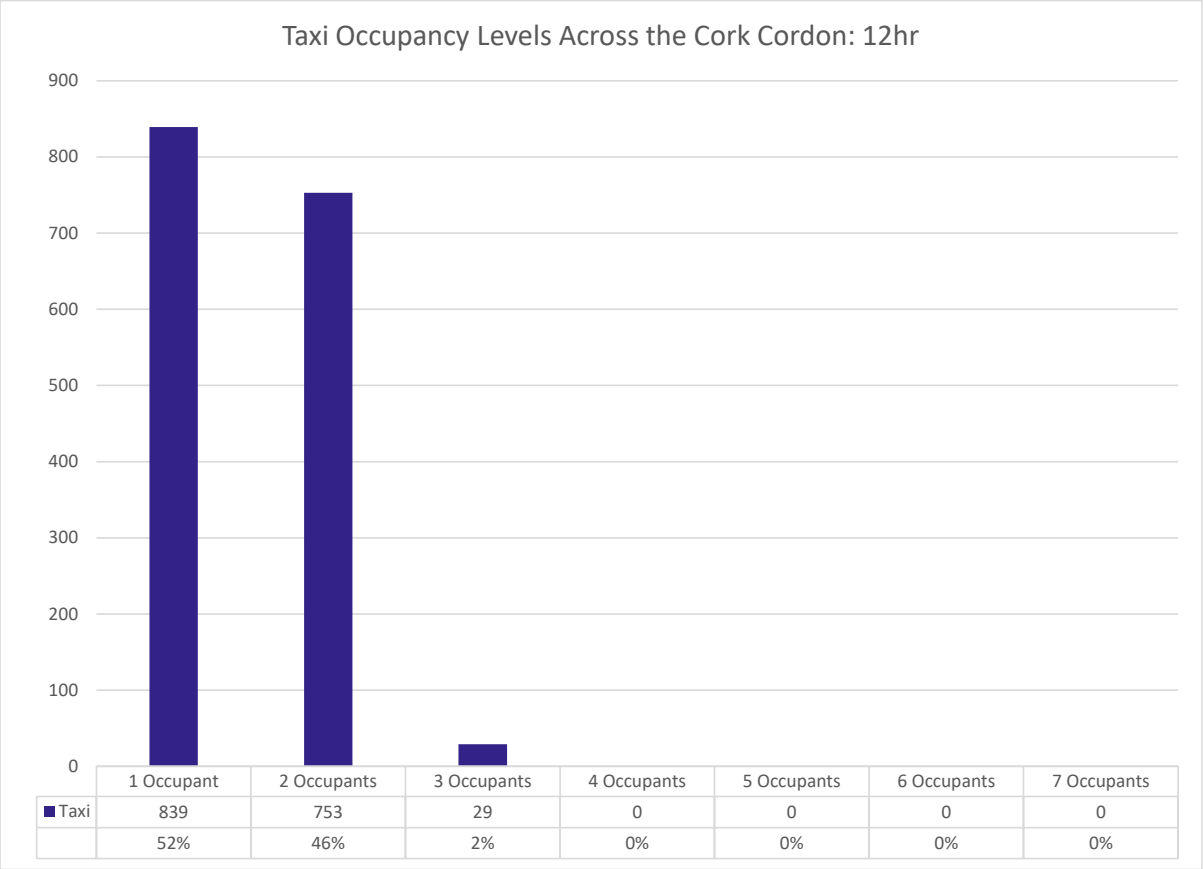
Figure 3-32:Car Occupancy per Site: PM

3.2.2 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 3-33, Figure 3-34, Figure 3-35, Figure 3-36 and Figure 3-37 display the observed vehicle occupancy for taxis crossing the Cork 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) 52% of Taxis crossing the Cork City Cordon had one occupant, 46% had two occupants and 2% had three occupants.



	1 Occupant	2 Occupants	3 Occupants	4 Occupants	5 Occupants	6 Occupants	7 Occupants
Taxi	839	753	29	0	0	0	0
	52%	46%	2%	0%	0%	0%	0%

Figure 3-33:Taxi Occupancy: 12 Hour

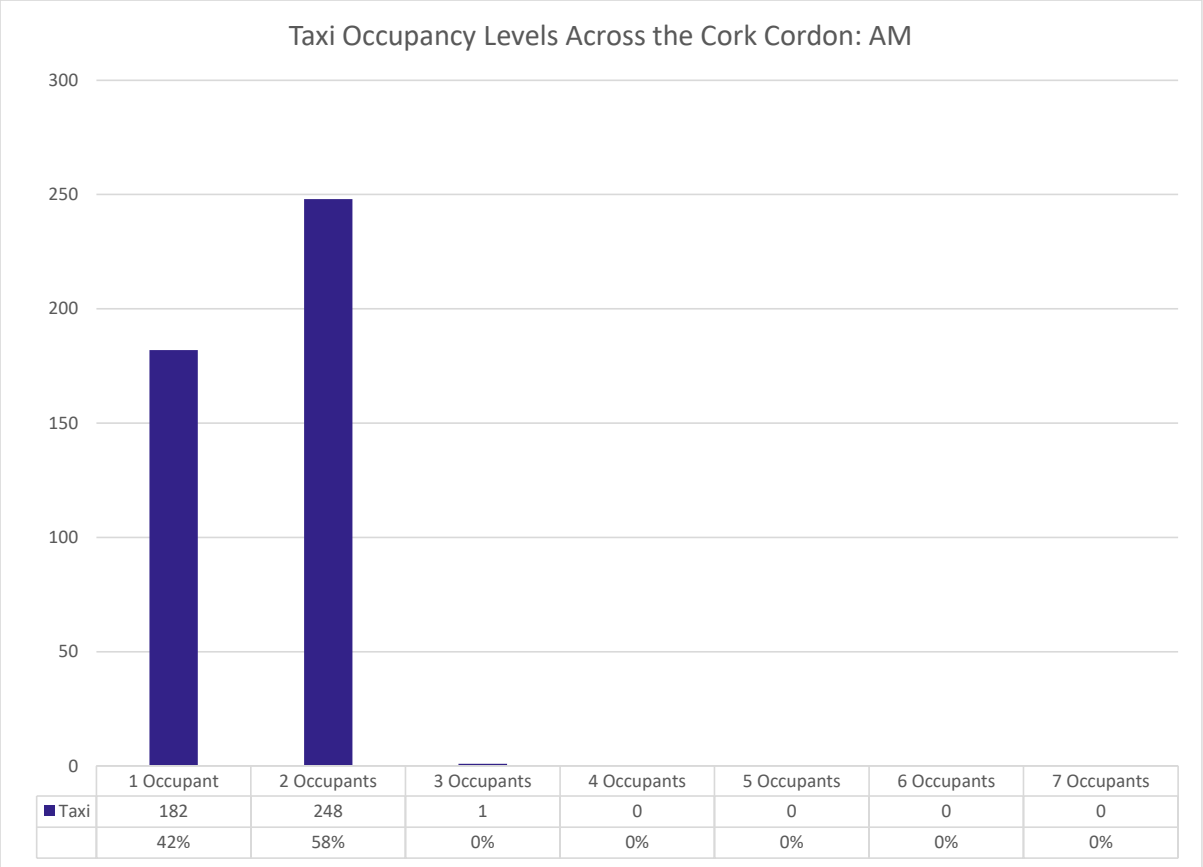


Figure 3-34:Taxi Occupancy: AM

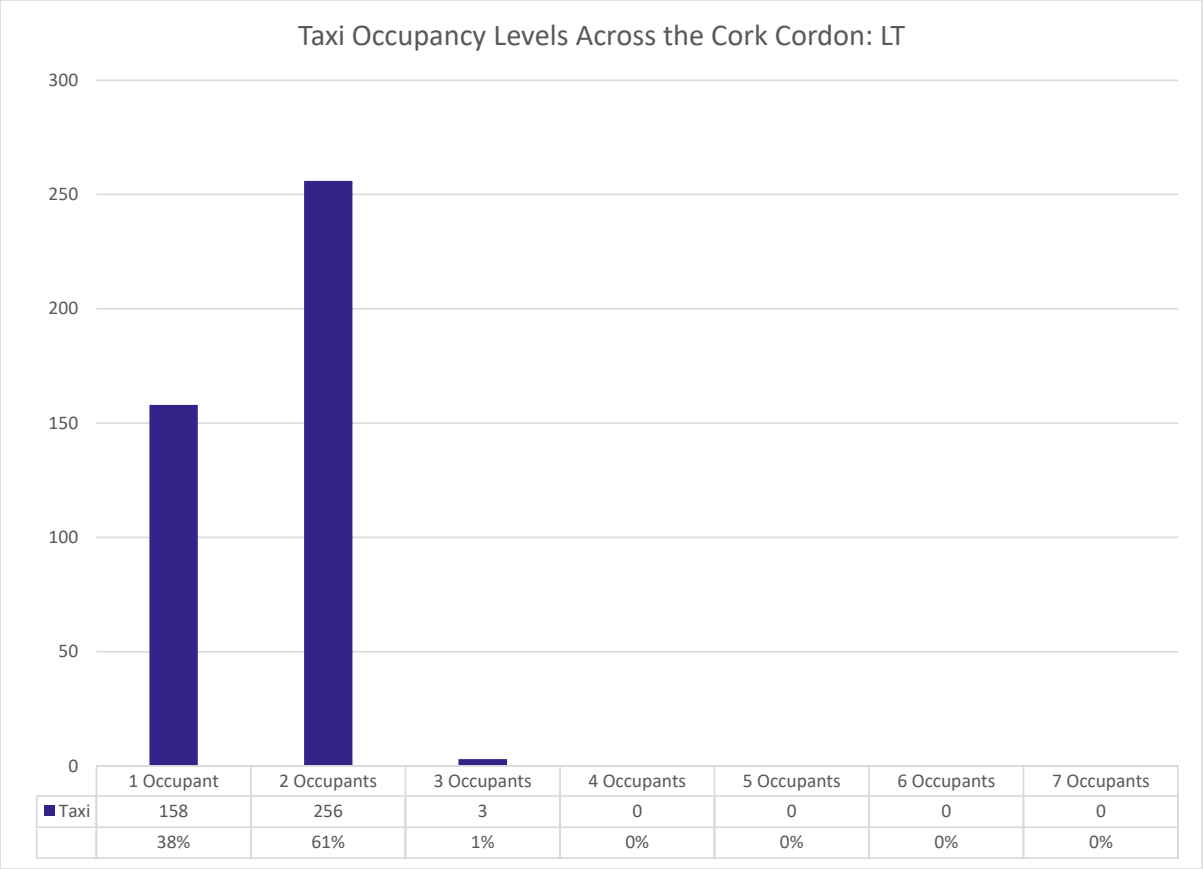


Figure 3-35:Taxi Occupancy: LT

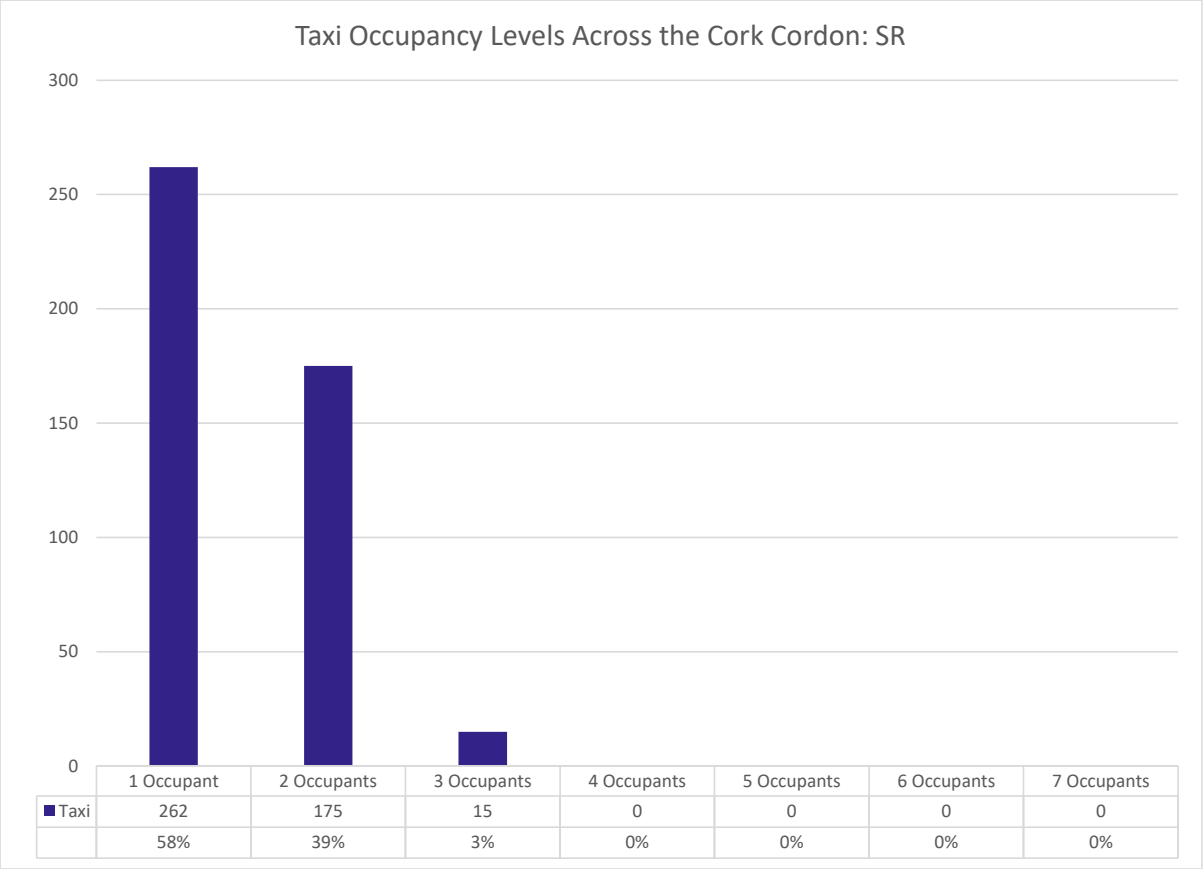


Figure 3-36:Taxi Occupancy: SR

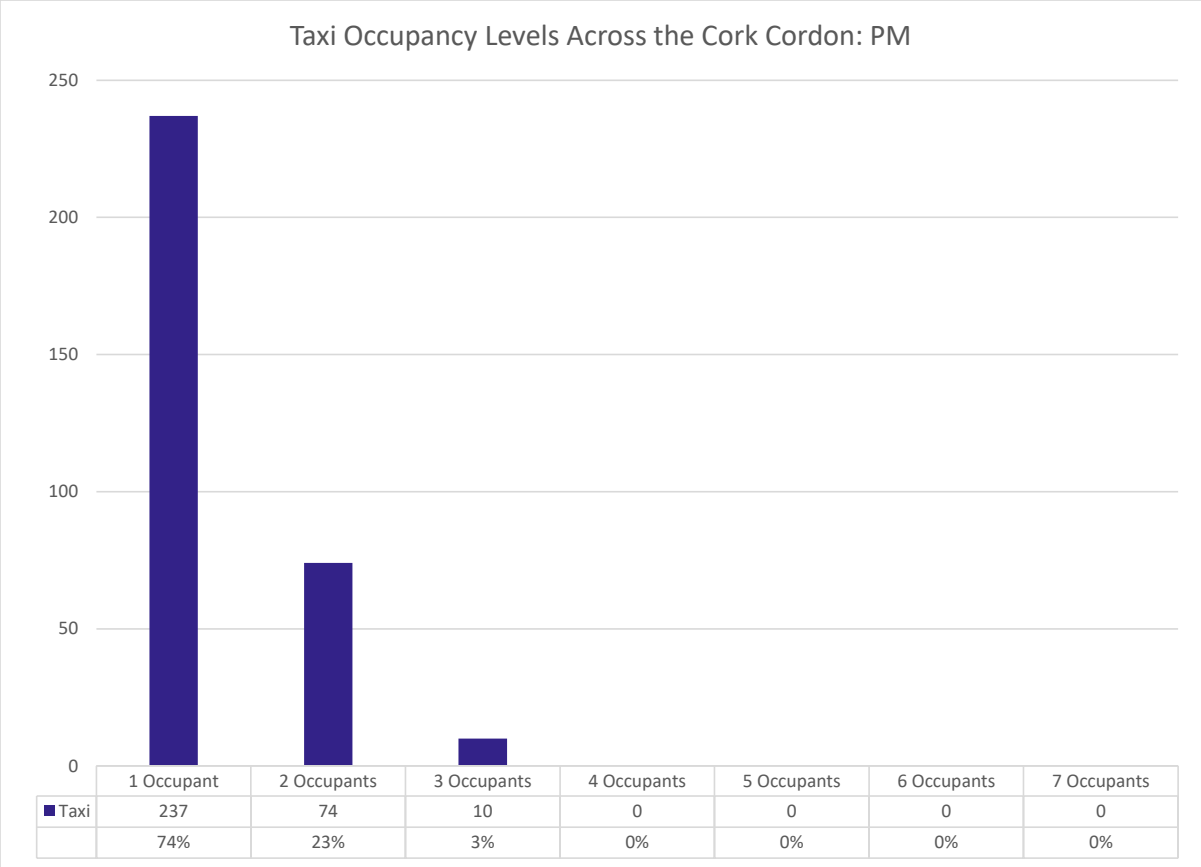


Figure 3-37:Taxi Occupancy: PM

Taxi Occupancy per site

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

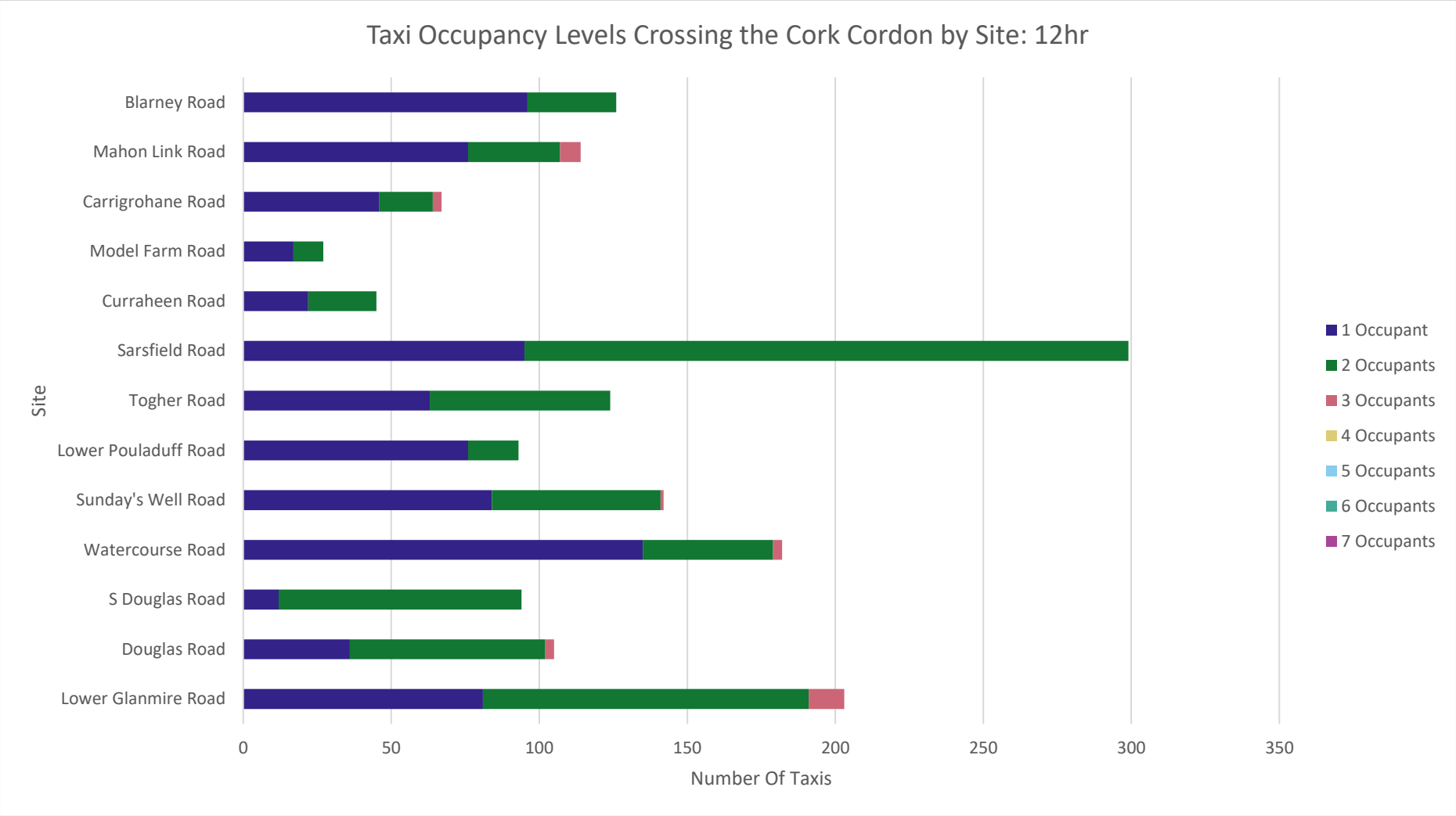


Figure 3-38:Taxi Occupancy per Site: 12 Hour

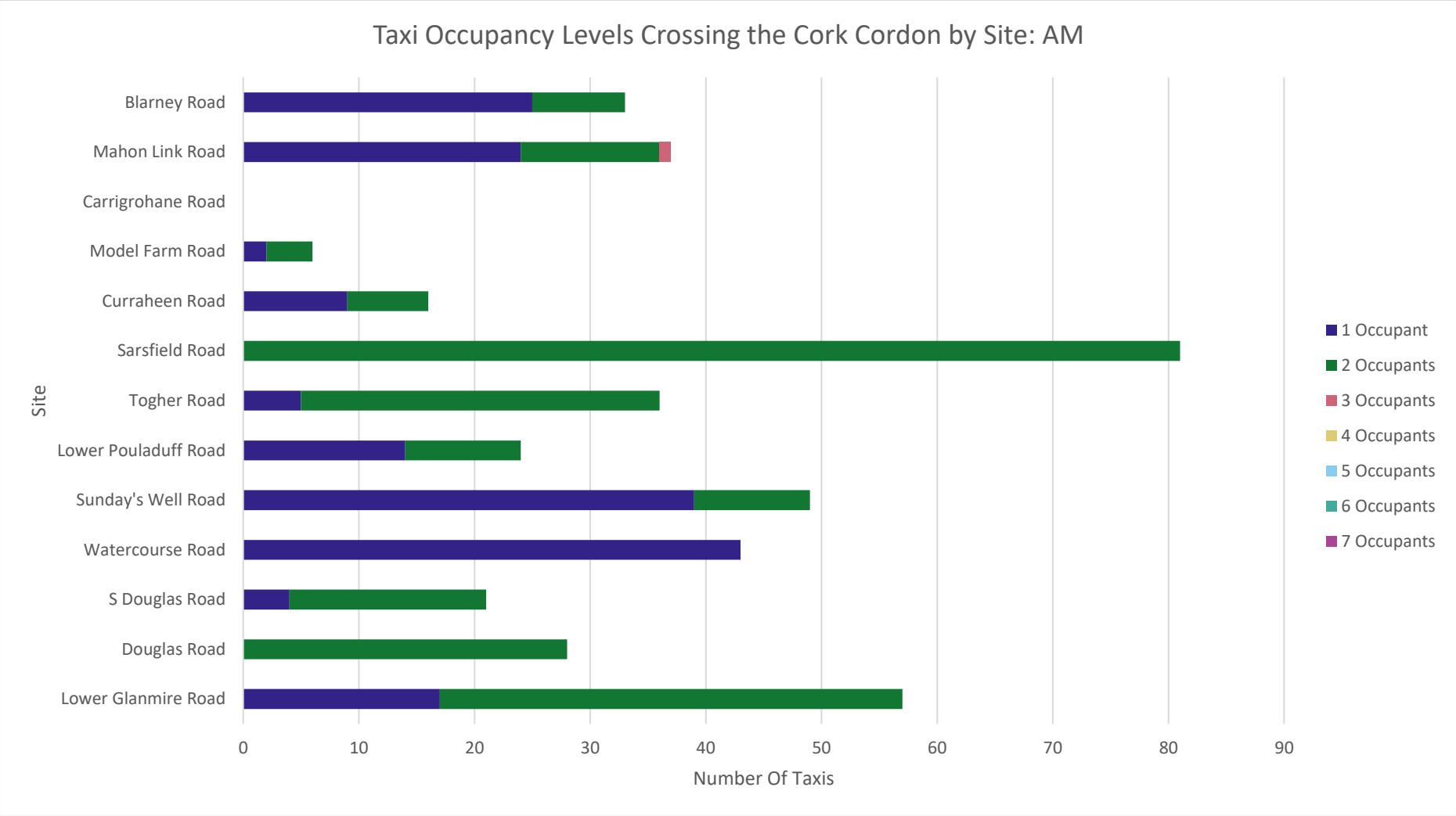


Figure 3-39:Taxi Occupancy per Site: AM

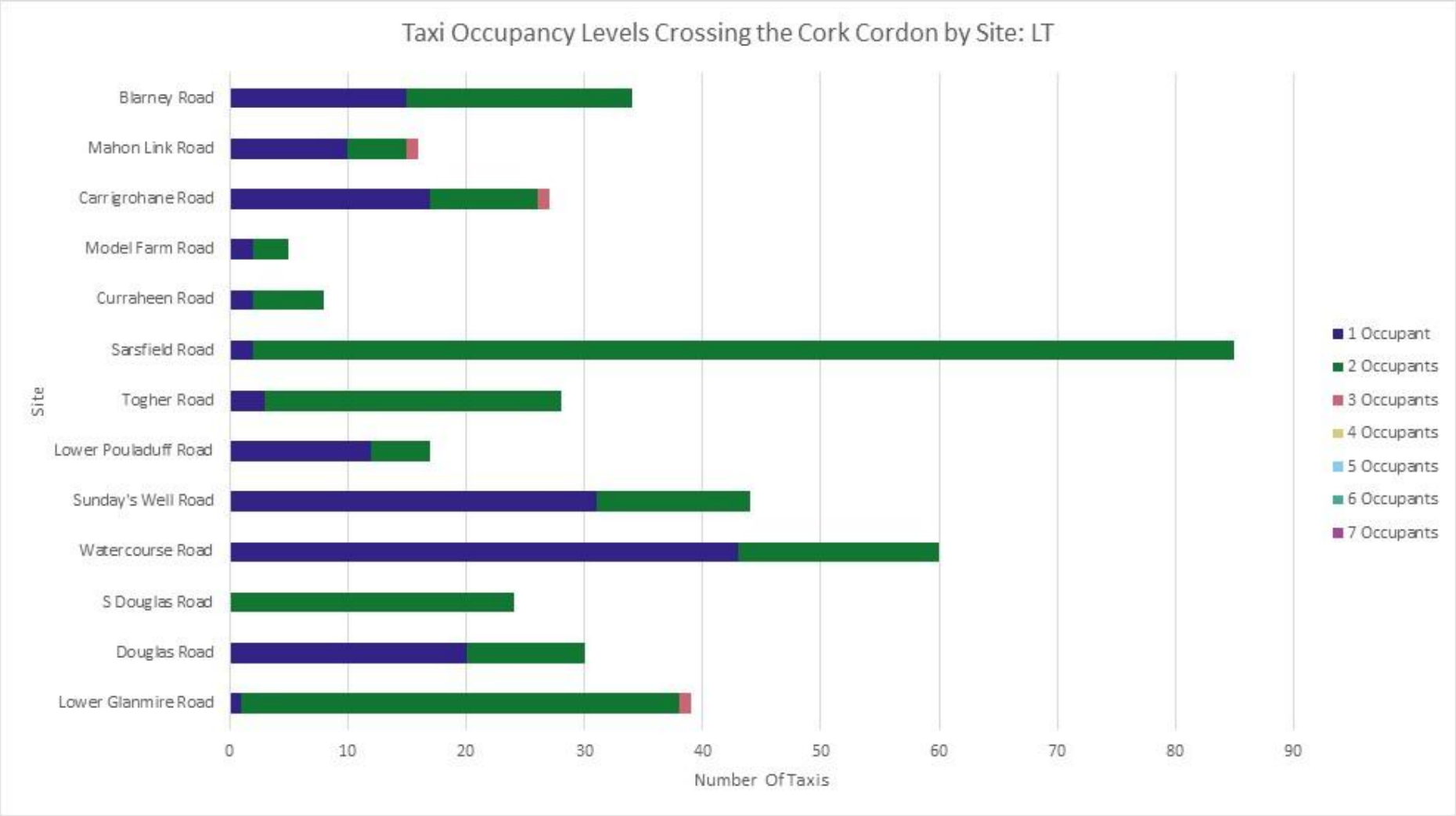


Figure 3-40:Taxi Occupancy per Site: LT

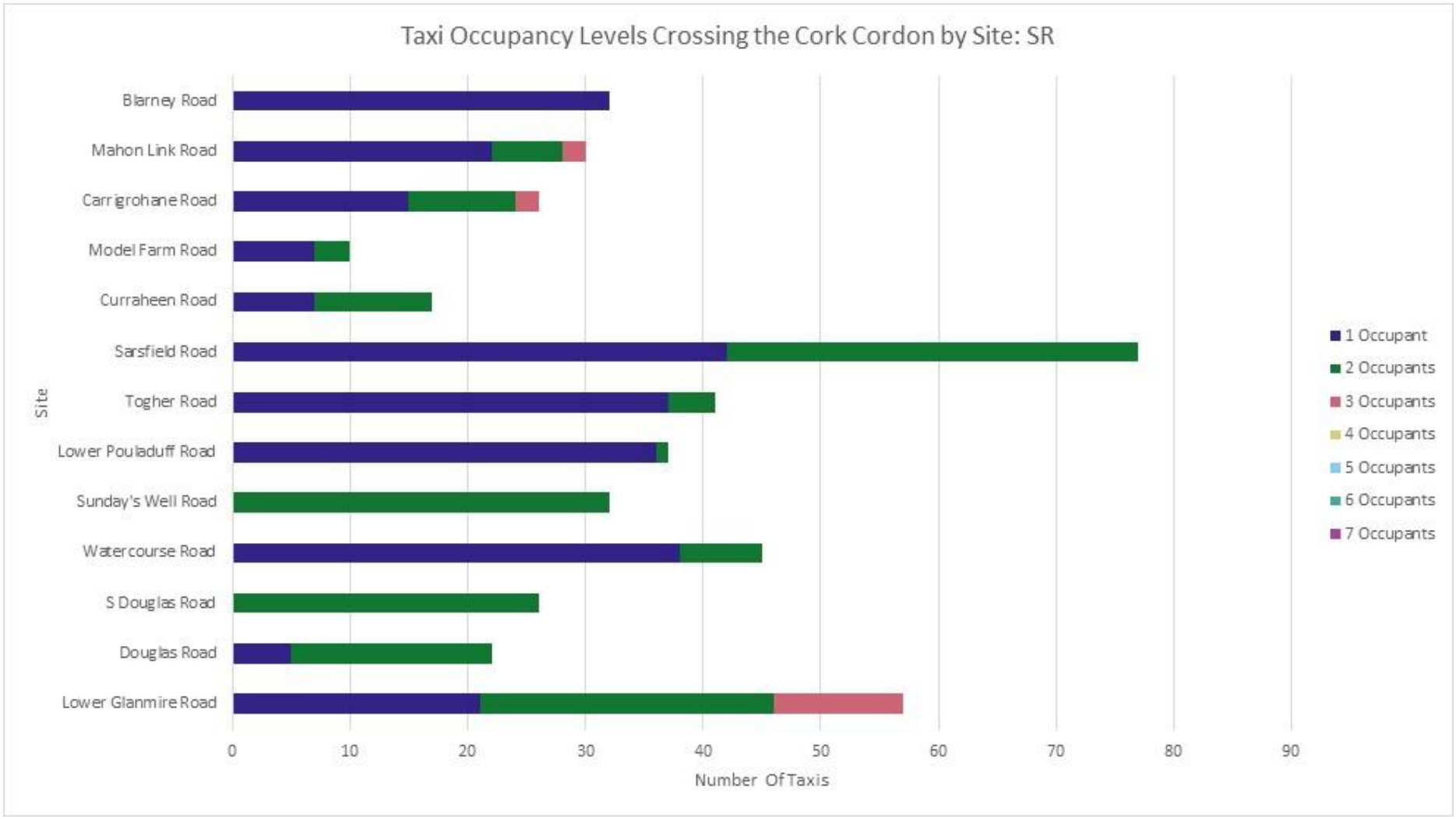


Figure 3-41:Taxi Occupancy per Site: SR

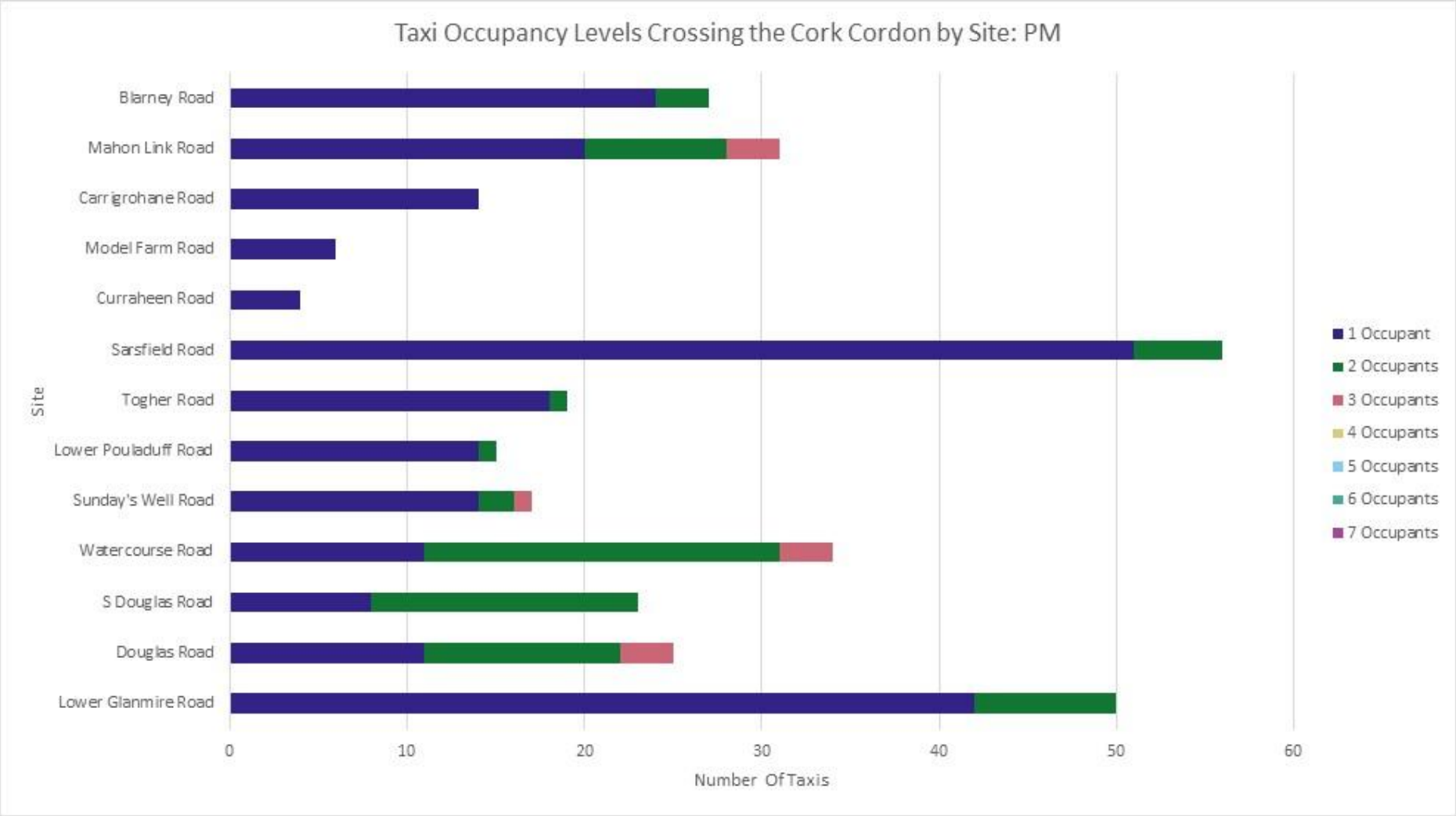
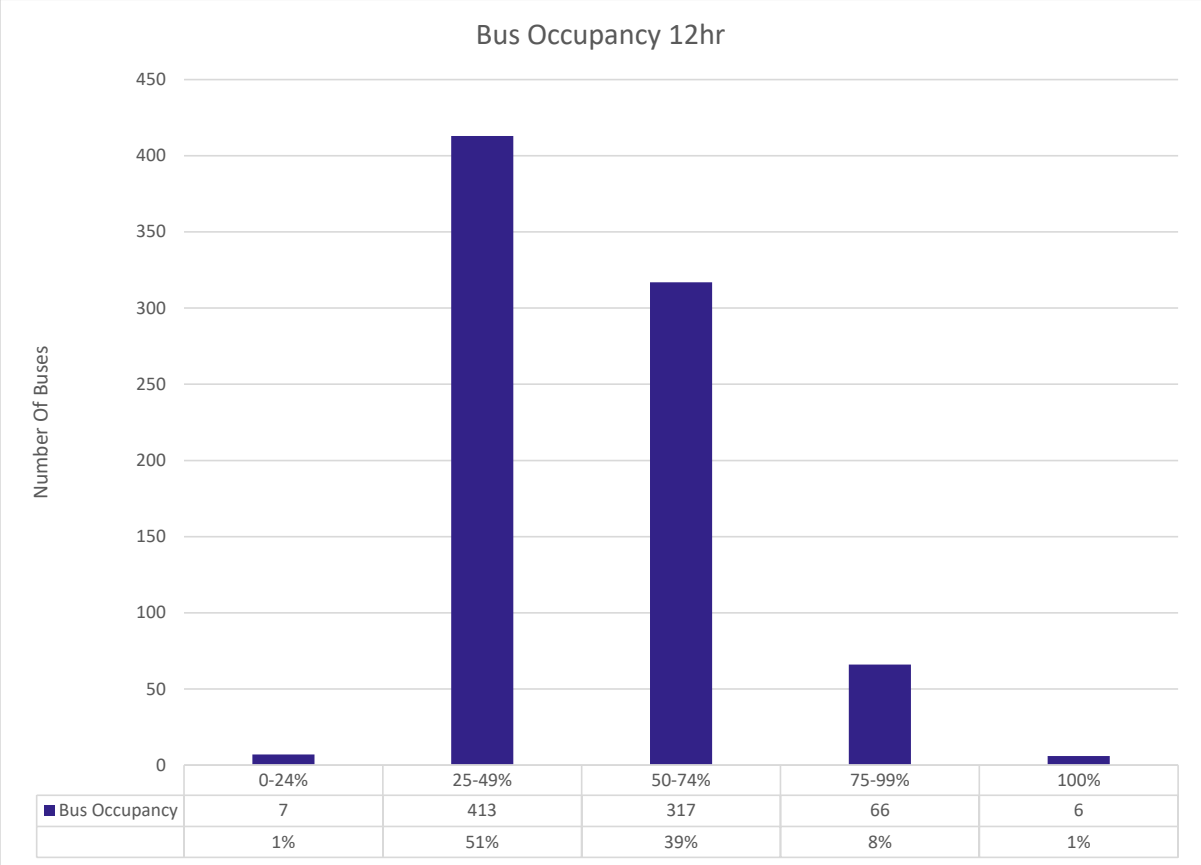


Figure 3-42:Taxi Occupancy per Site: PM

3.2.3 Bus Occupancy

Bus occupancy information was obtained from 12 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 3-43, Figure 3-44, Figure 3-45, Figure 3-46 and Figure 3-47 display the recorded bus occupancies crossing the Cork 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 1% of buses were at less than 25% capacity, 51% were at between 25% and 49% capacity, 39% were at between 50% and 74% capacity, 8% were at between 75% and 99% capacity and approximately 1% were full.



	0-24%	25-49%	50-74%	75-99%	100%
Bus Occupancy	7	413	317	66	6
	1%	51%	39%	8%	1%

Figure 3-43:Bus Occupancy: 12 Hour

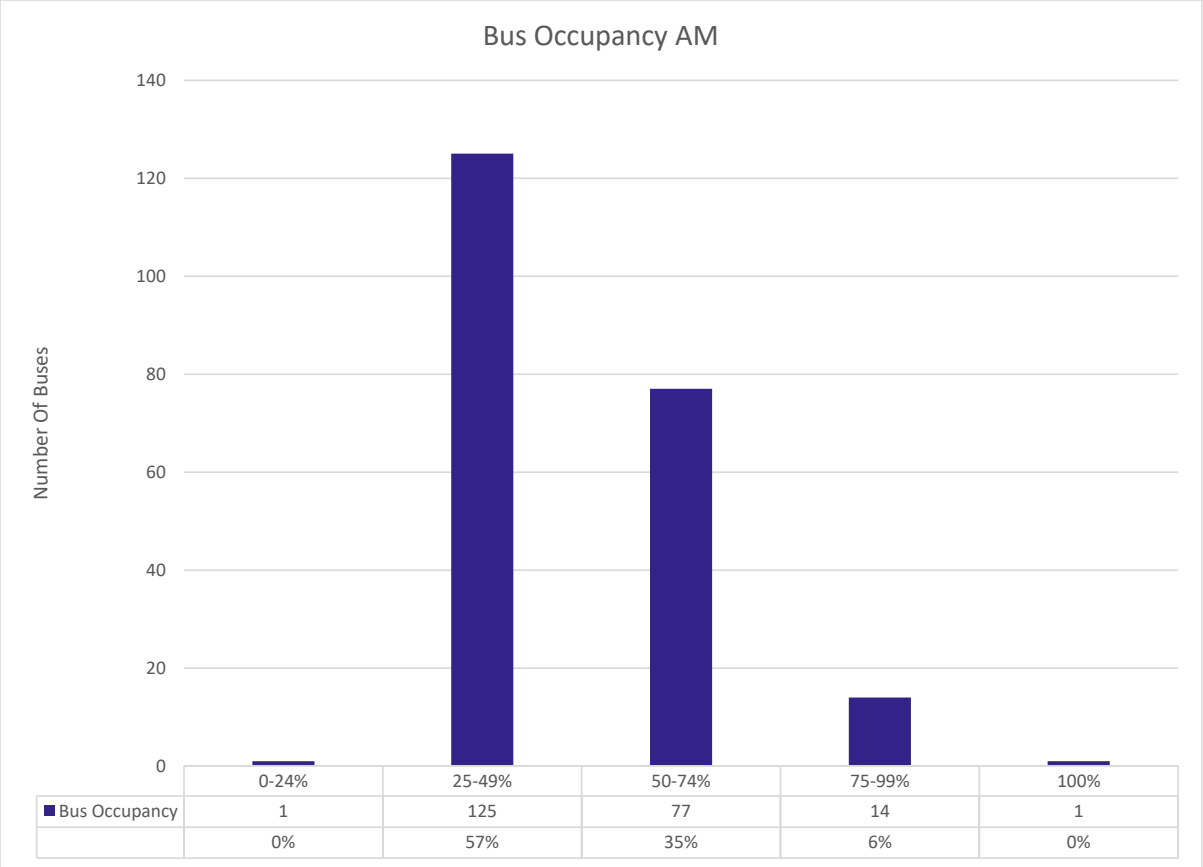


Figure 3-44:Bus Occupancy: AM

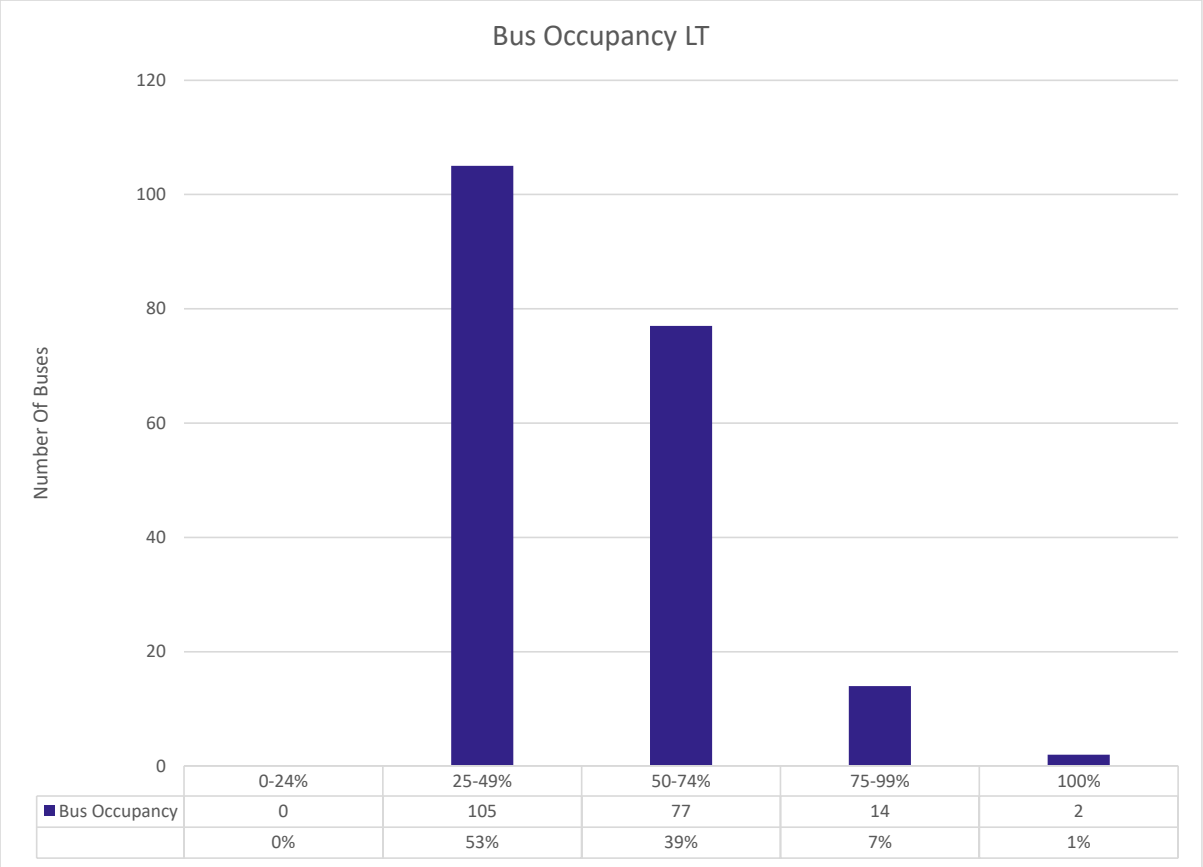


Figure 3-45:Bus Occupancy: LT

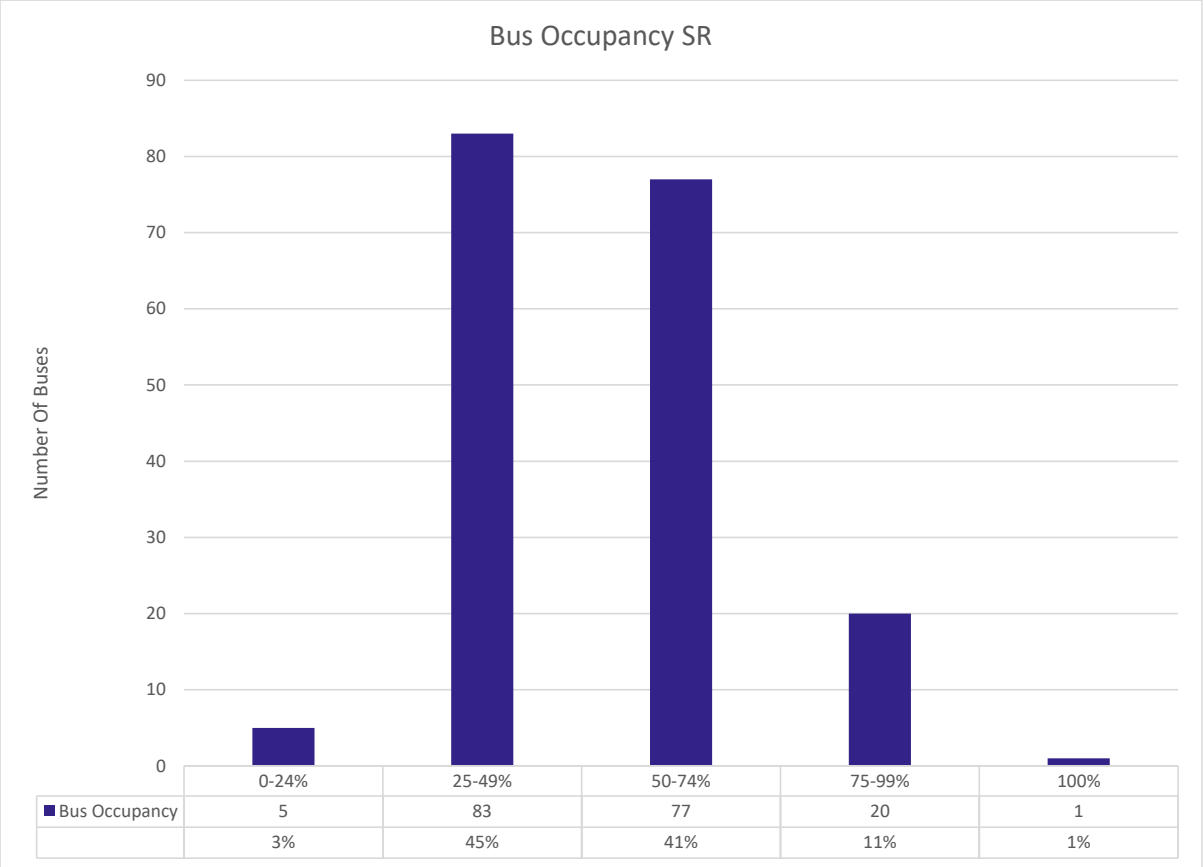


Figure 3-46:Bus Occupancy: SR

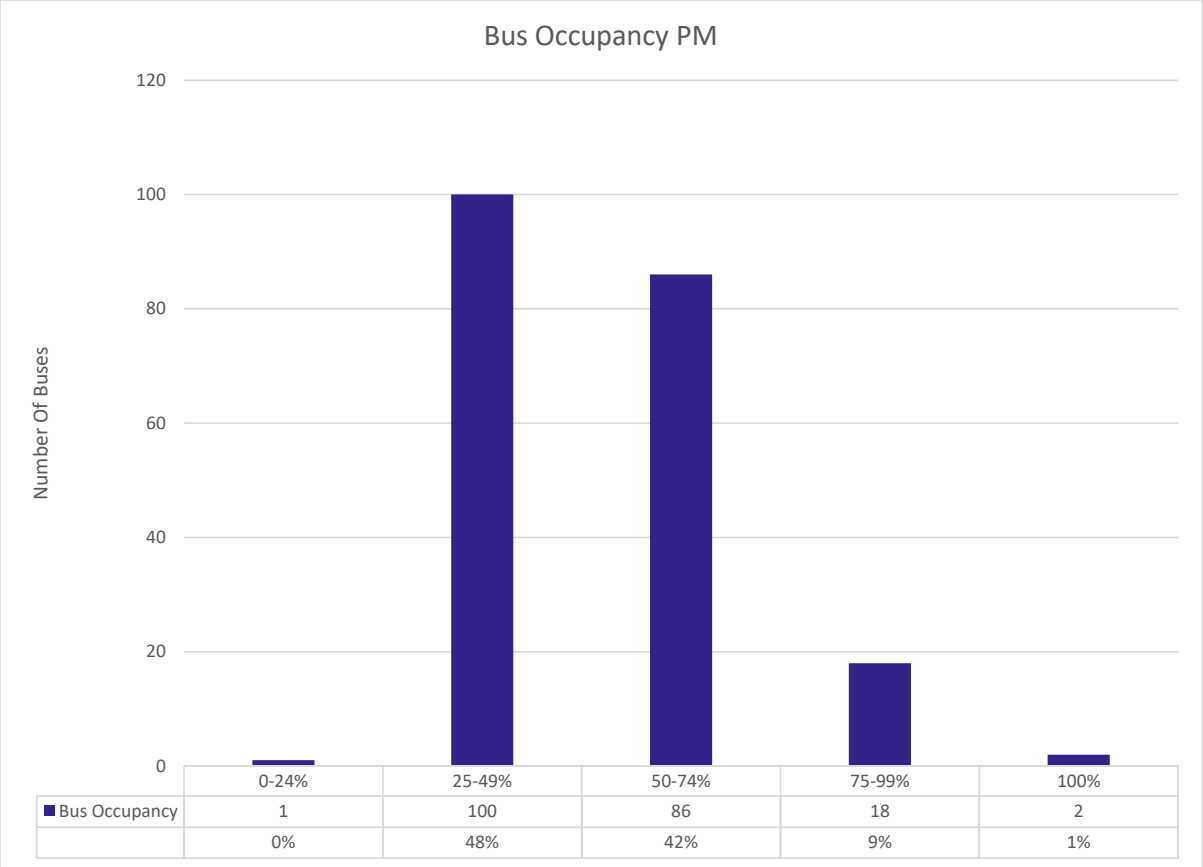


Figure 3-47:Bus Occupancy: PM

Bus Occupancy per Site

Figure 3-48, Figure 3-49, Figure 3-50, Figure 3-51 and Figure 3-52 display the vehicle occupancy for buses crossing the Cork City Cordon during the respective time periods, with further reference to each individual bus stop location.

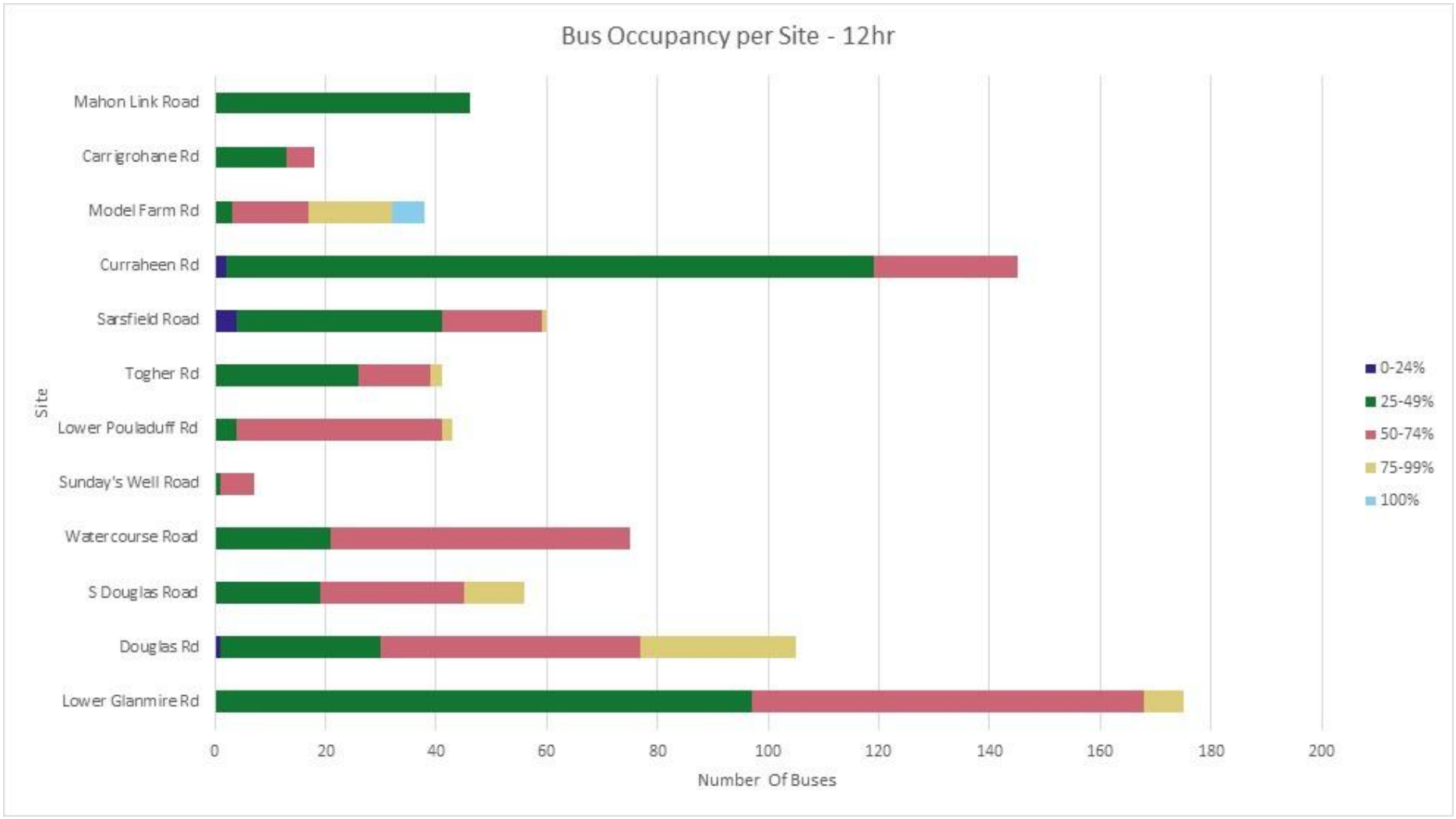


Figure 3-48:Bus Occupancy per Site: 12 Hour

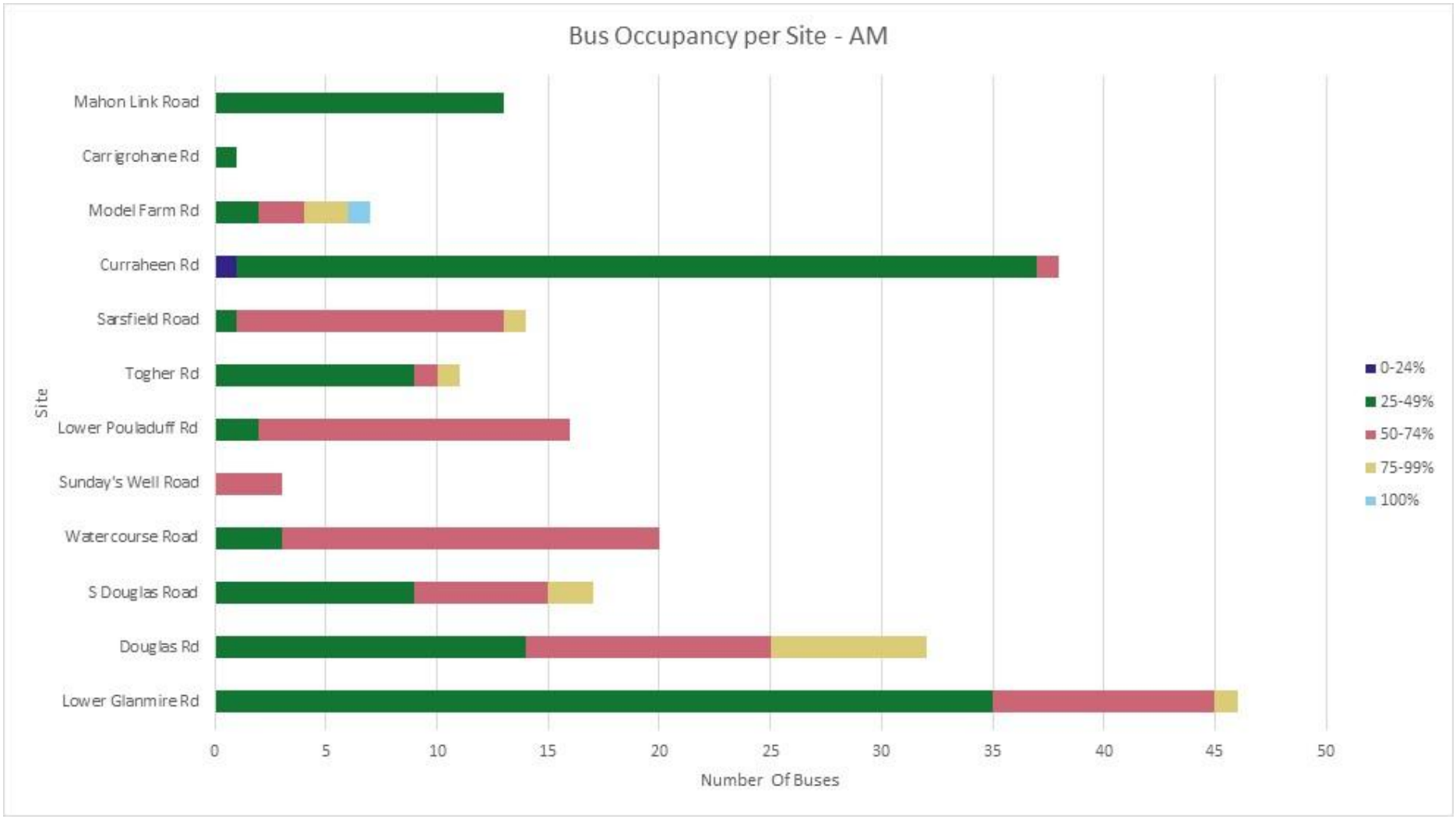


Figure 3-49:Bus Occupancy per Site: AM

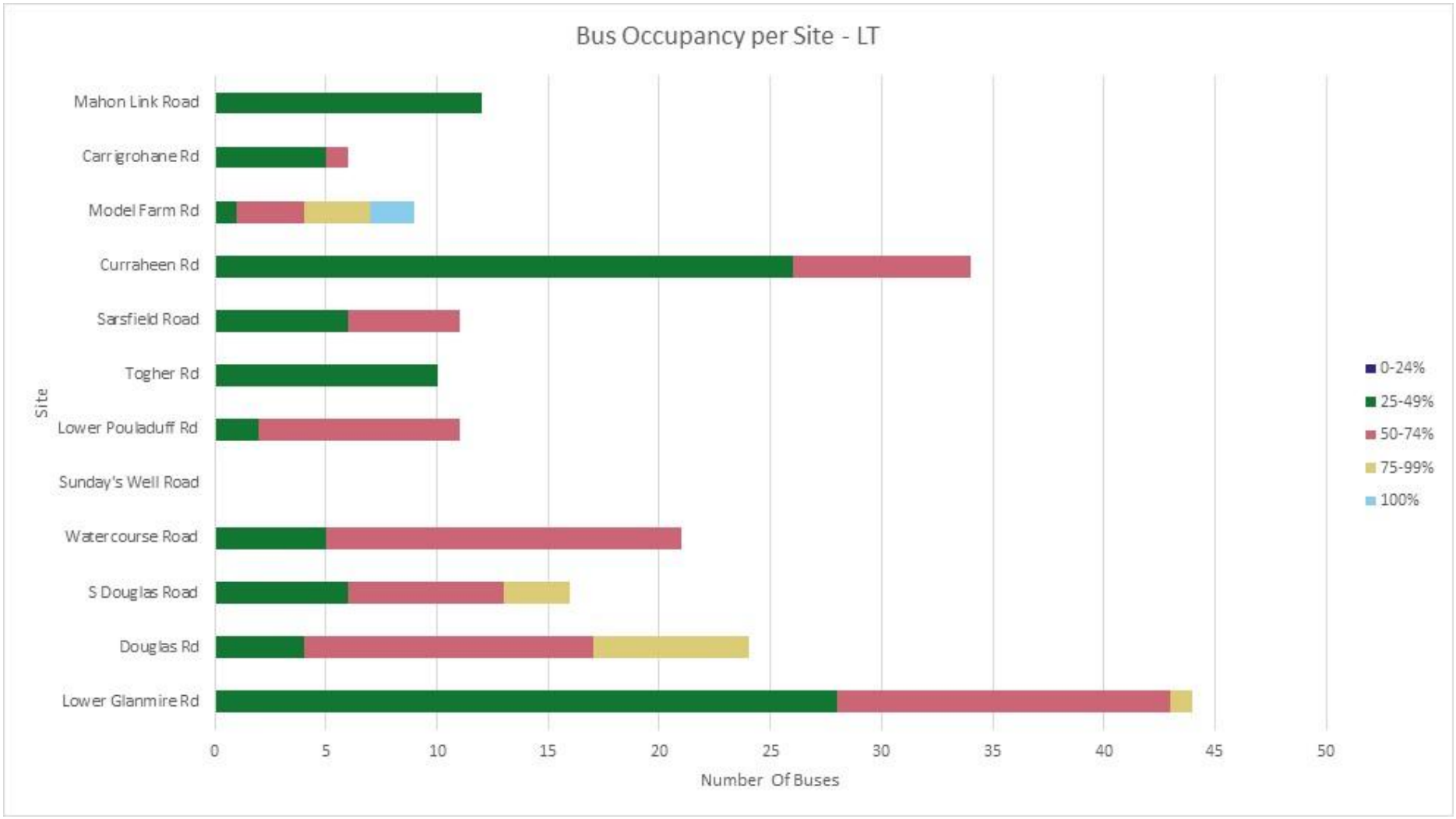


Figure 3-50:Bus Occupancy per Site: LT

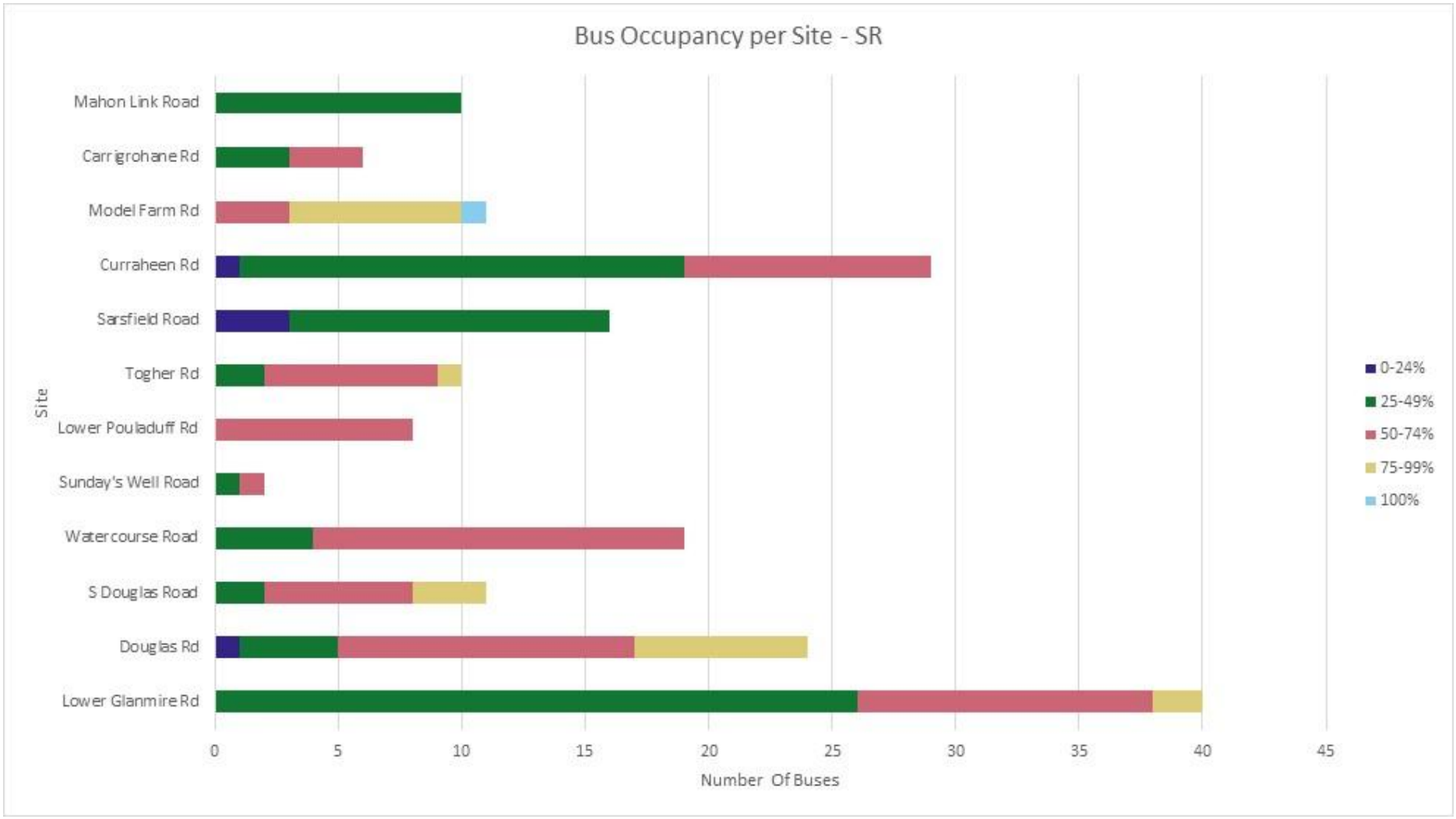


Figure 3-51:Bus Occupancy per Site: SR

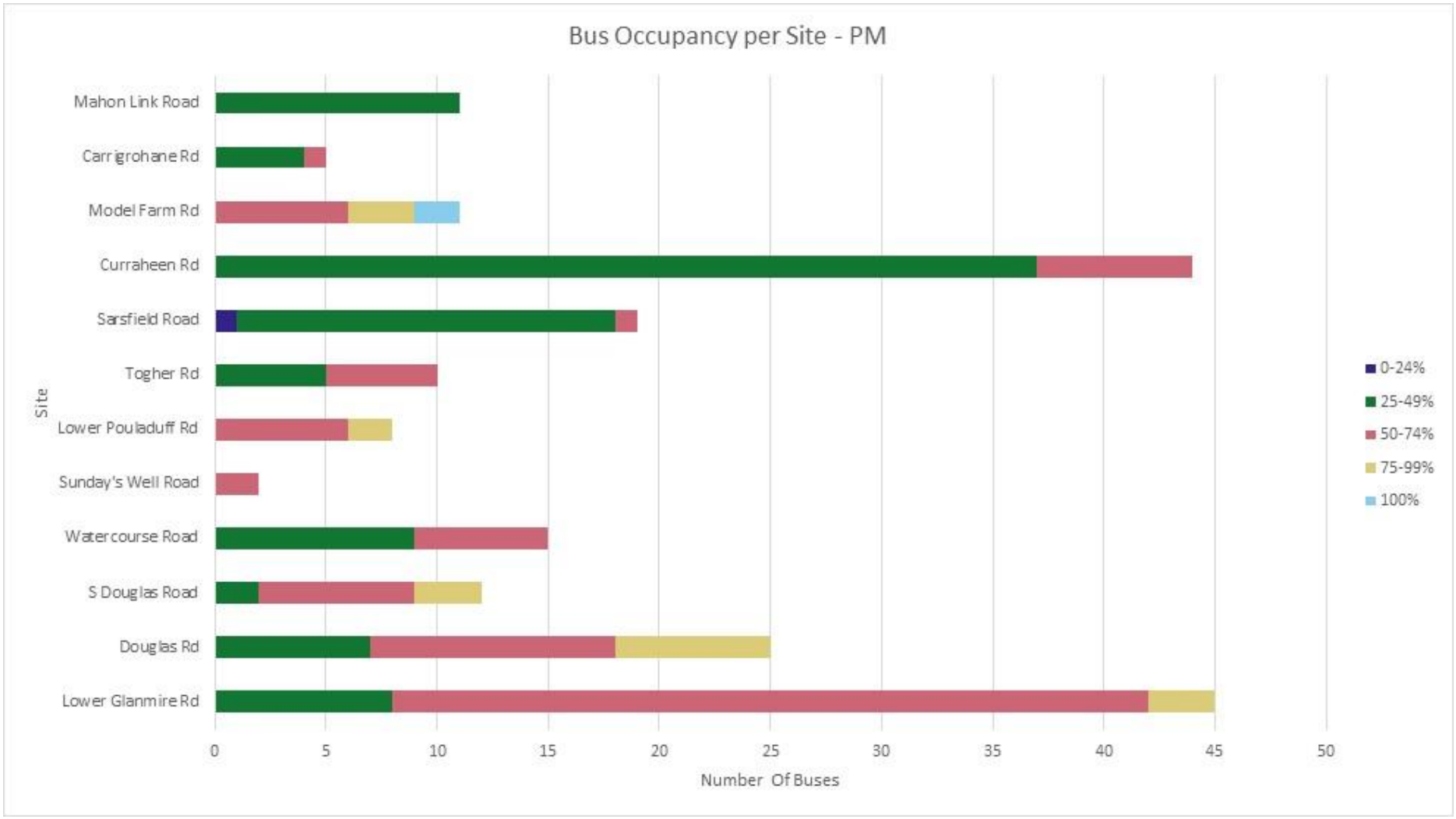


Figure 3-52:Bus Occupancy per Site: PM

4 People Movements

4.1 Methodology

Chapter 3 provided details on the number of vehicles, pedestrians and cyclists crossing the Cork 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:
    - Car and taxi people movements were calculated by taking the number of vehicles in the JTC surveys for each vehicle classification 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 ways:
    - 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 on the 14th of November 2024. While this is different to the dates of the other surveys, the Rail Census is considered a representative sample of 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 Cork City Cordon over the 12-hour survey period.

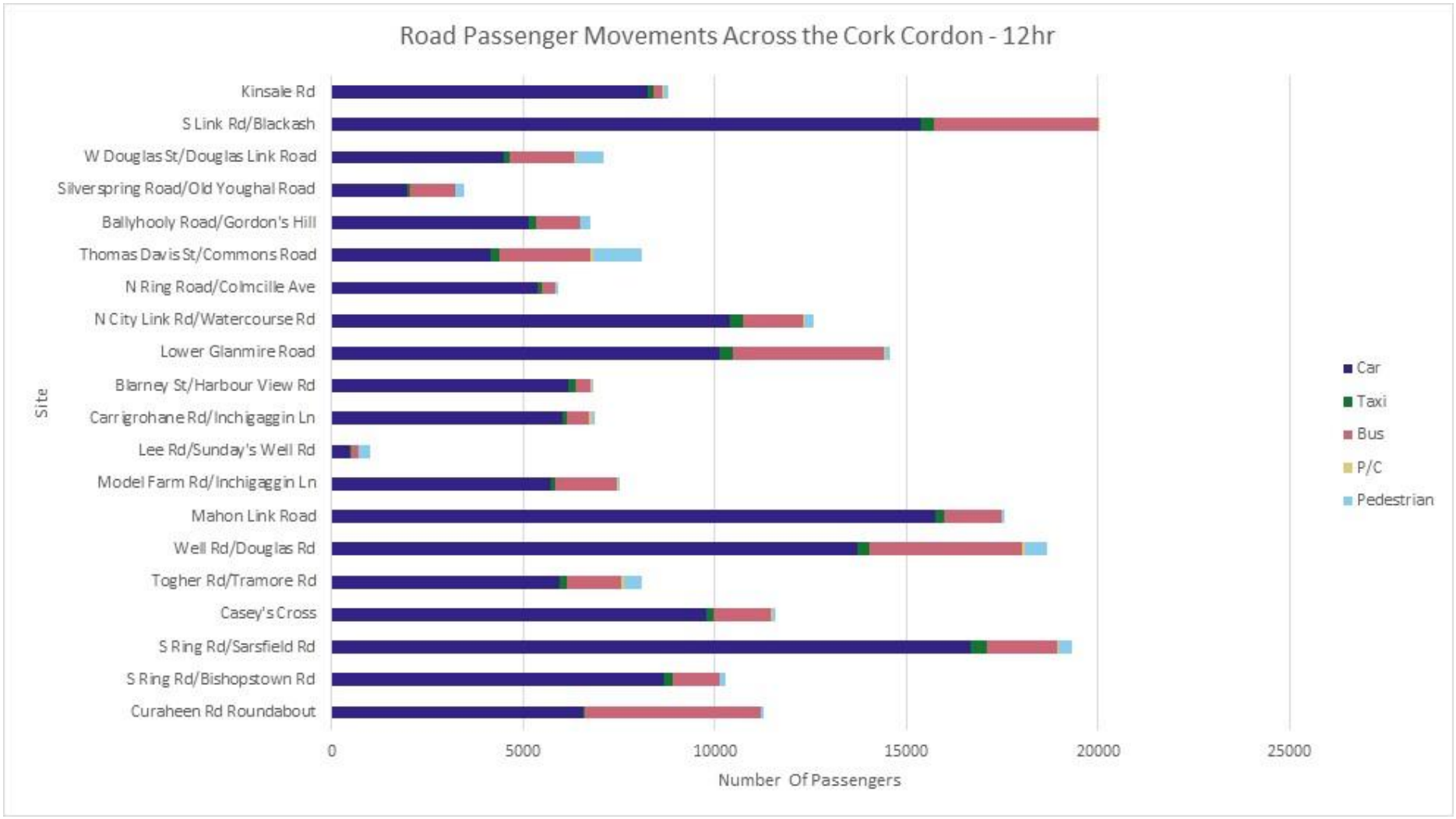


Figure 4-1:Road Passenger Movements per Mode per Site: 12 Hour

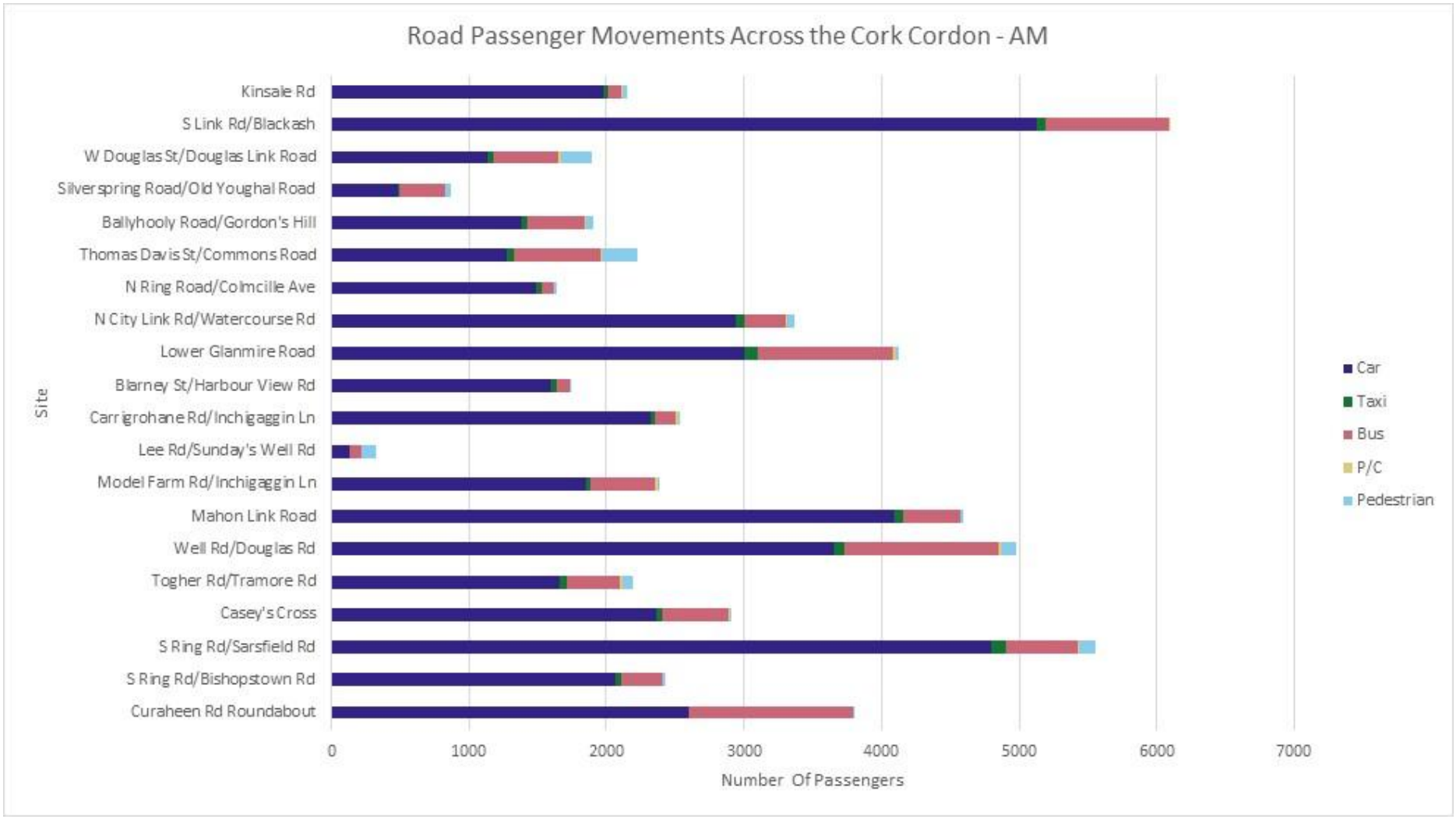


Figure 4-2:Road Passenger Movements per Mode per Site: AM

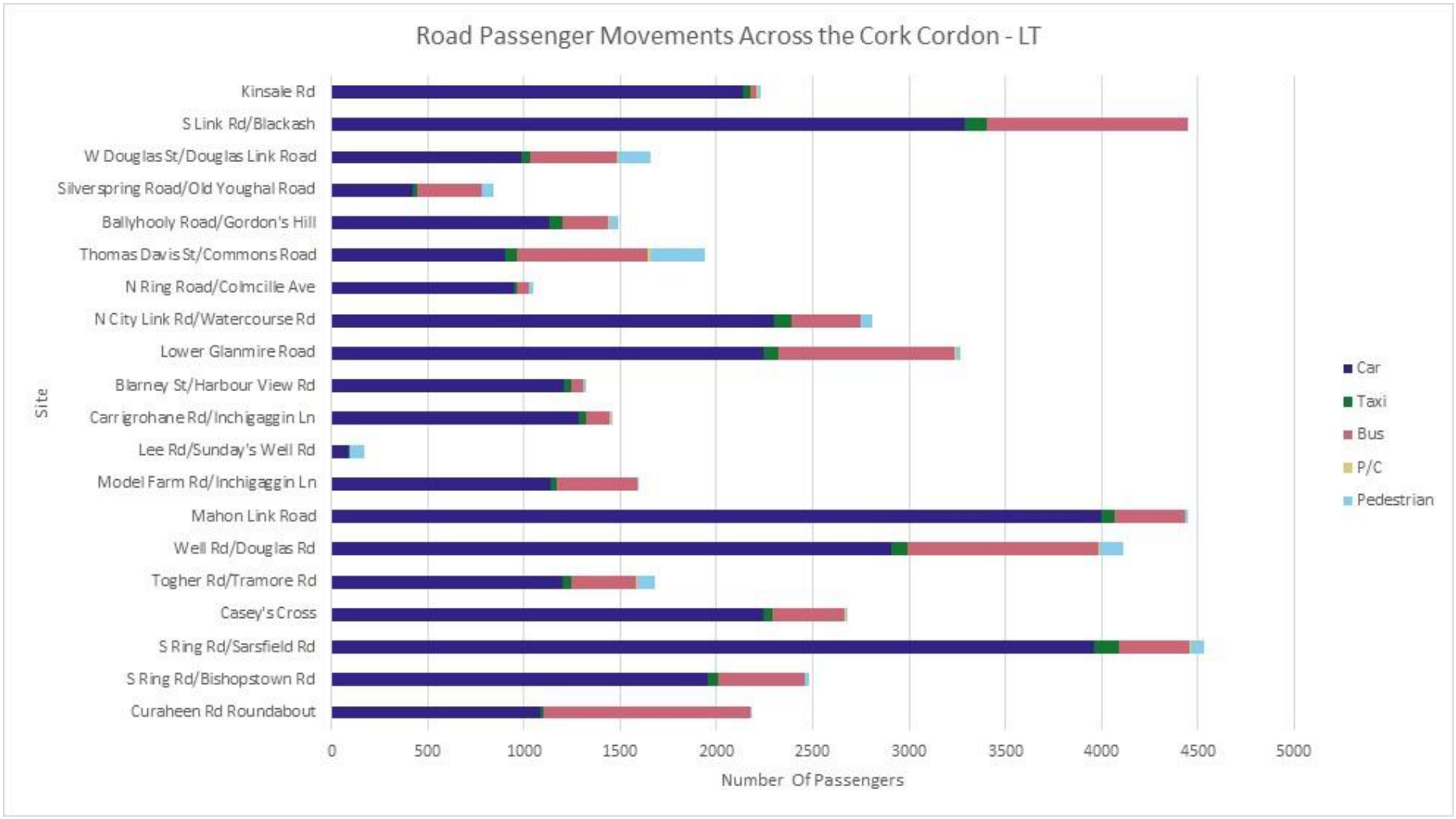


Figure 4-3:Road Passenger Movements per Mode per Site: LT

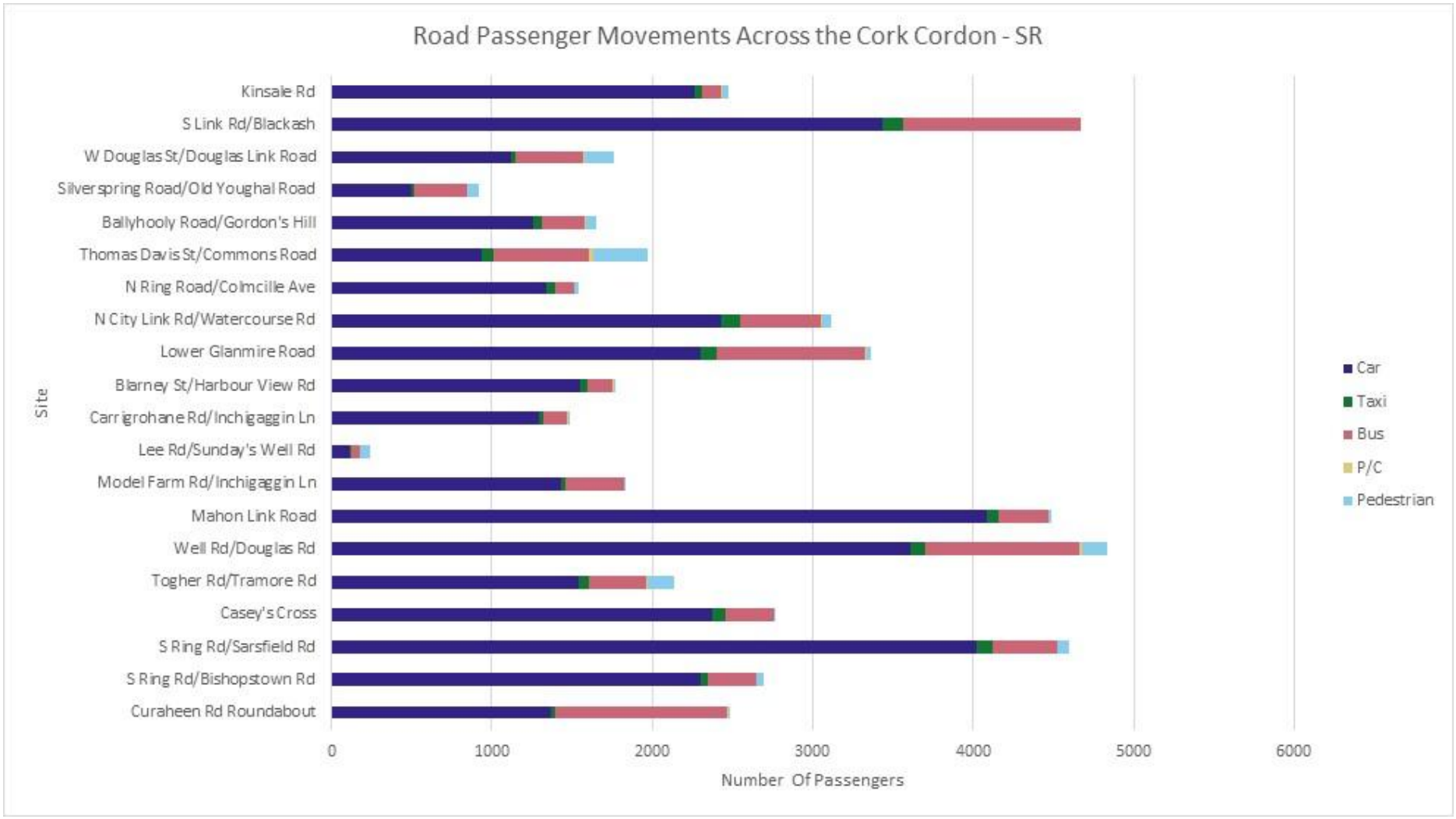


Figure 4-4:Road Passenger Movements per Mode per Site: SR

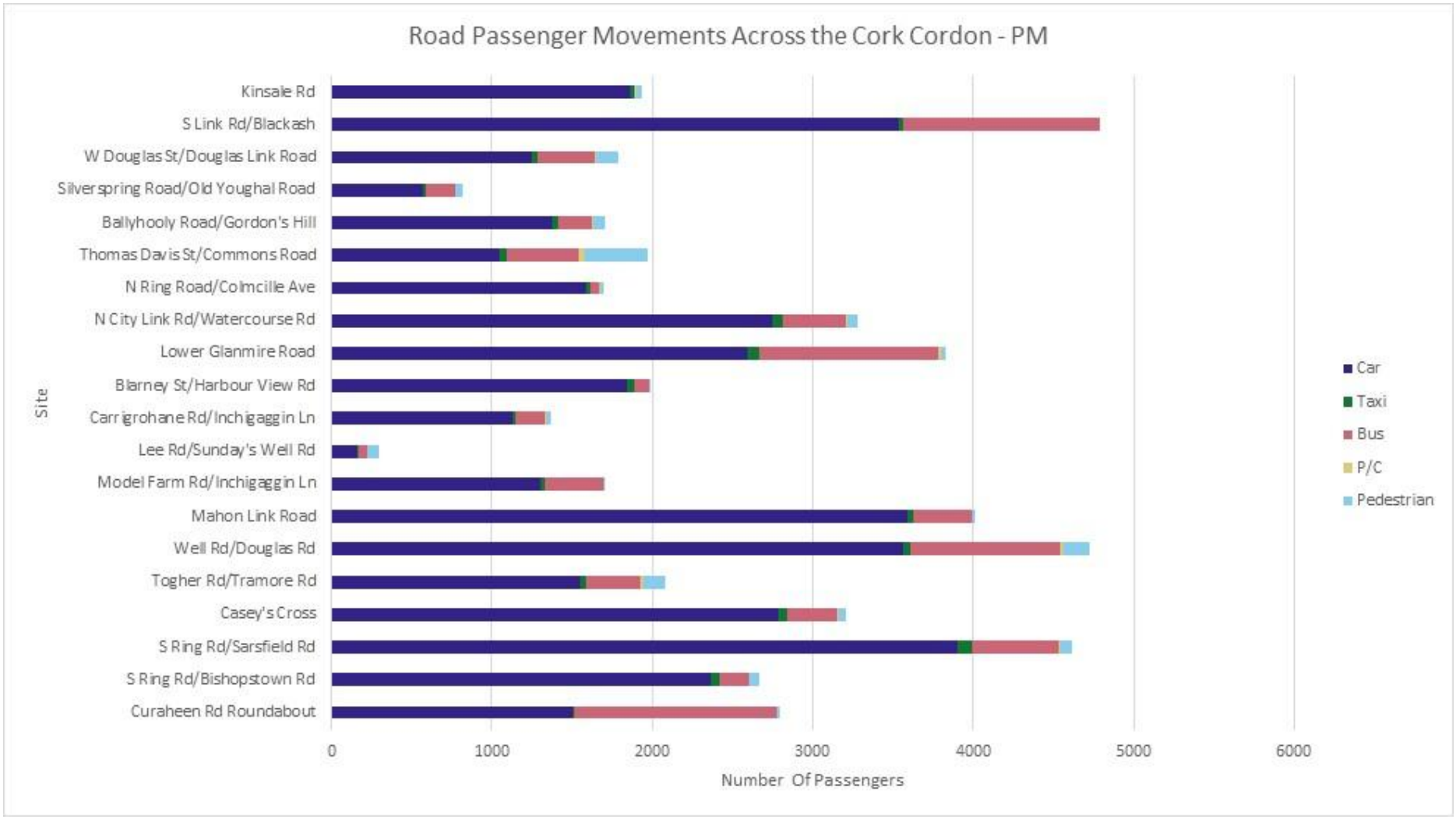


Figure 4-5:Road Passenger Movements per Mode per Site: PM

4.3 Rail Passenger Movements

4.3.1 Heavy Rail Passenger Movements

The National Rail Census is a survey carried out by Iarnród Éireann which records the boardings and alightings at every rail station in the country each year in November. This report extracts the number alighting passengers at Cork City Cordon from that survey.

Cork Kent Station is served by trains on the Dublin Heuston - Cork line, trains on the Mallow - Cobh and Middleton line, as well as those originating from Waterford and transferring at Limerick Junction. It is served by 14 direct trains a day from Heuston, 9 trains a day from Mallow and 31 trains a day from Cobh.

Figure 4-6 shows the total number of people alighting at Kent station grouped by the origin of the service. In total, 5,202 people alighted at Cork Kent Station over the 12-hour survey period.

Note that Limerick Junction is a key interchange station for trains serving Cork. However, all passengers travelling to Cork by interchanging at Limerick Junction will board a Dublin train and, so, these passengers in the below figure will be included in the Dublin figures given that this is the ultimate origin of all trains stopping at Limerick Junction.

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

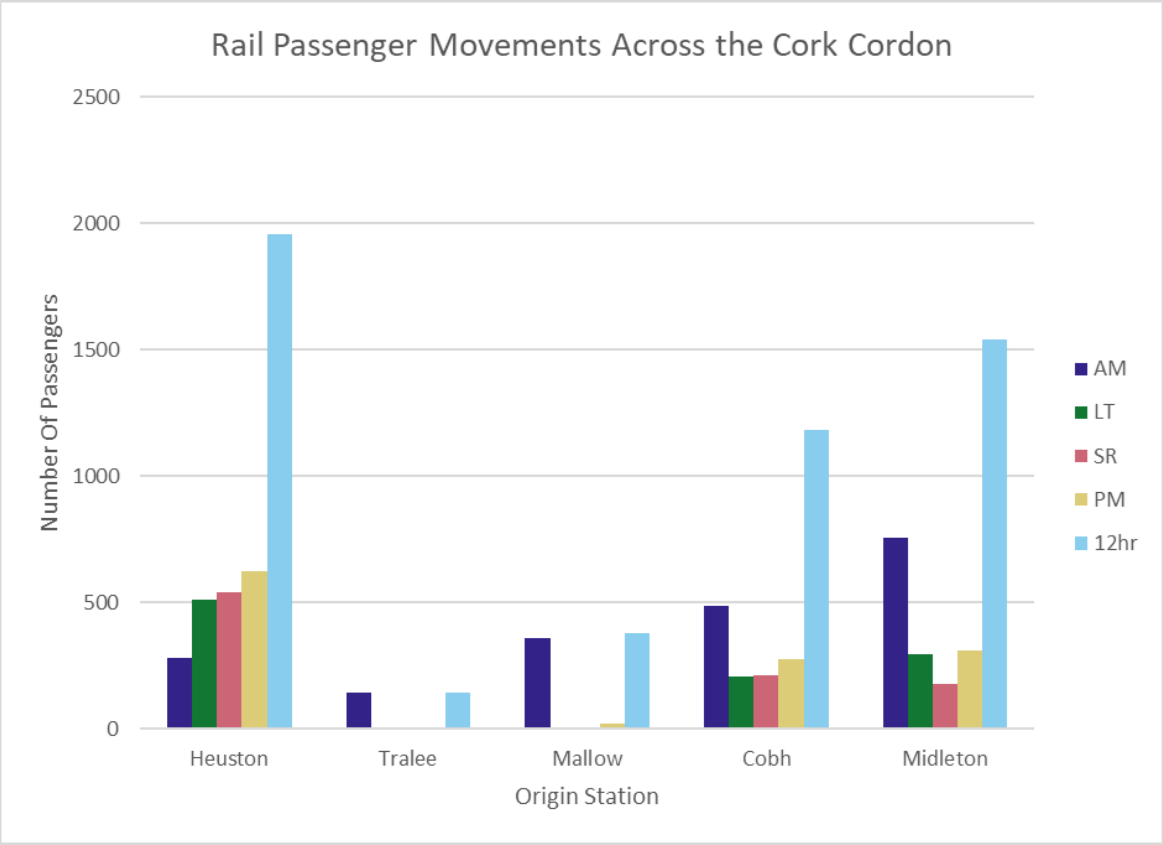


Figure 4-6:Heavy Rail Services - Passengers Inbound

4.4 Total Passenger Movements

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

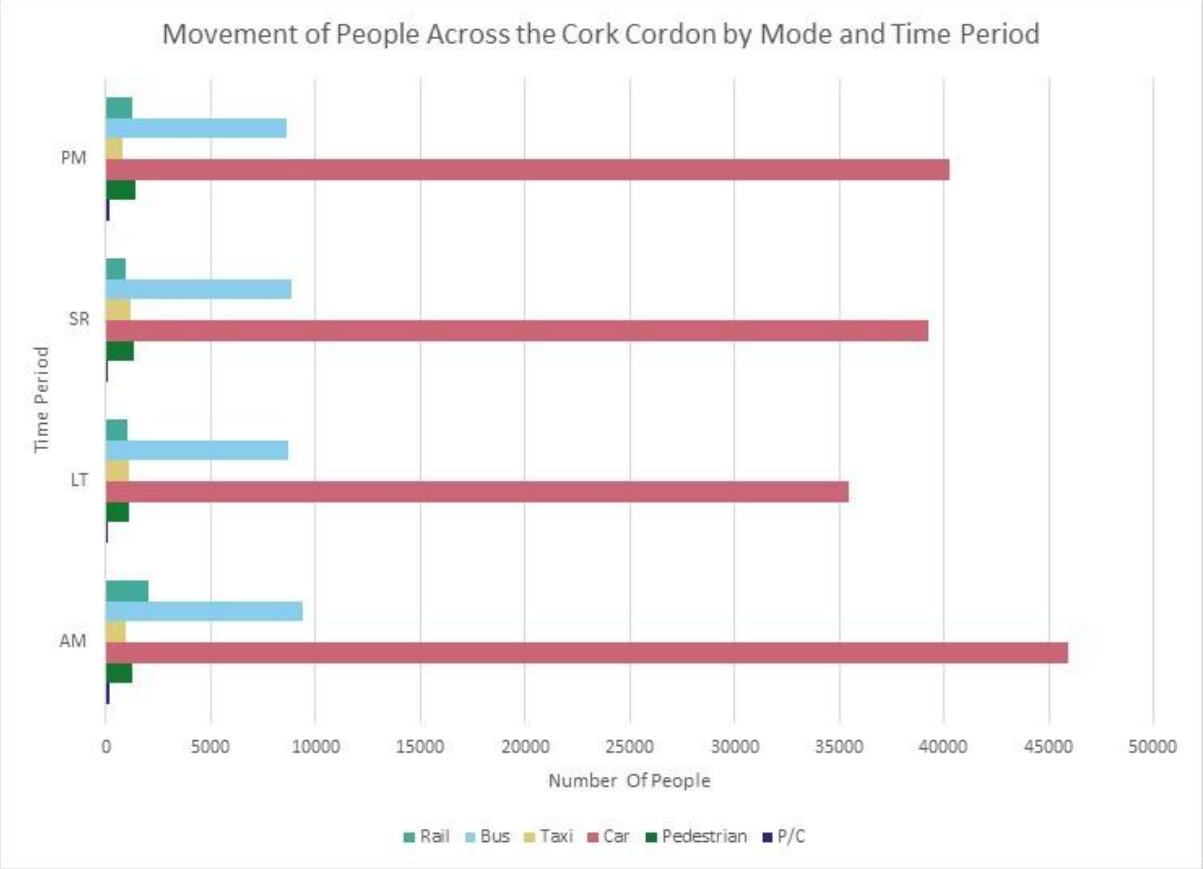


Figure 4-7:Car, Cycle, Taxi, Pedestrian and Rail Trips Inbound Across the Cork City Cordon During Each Time Period

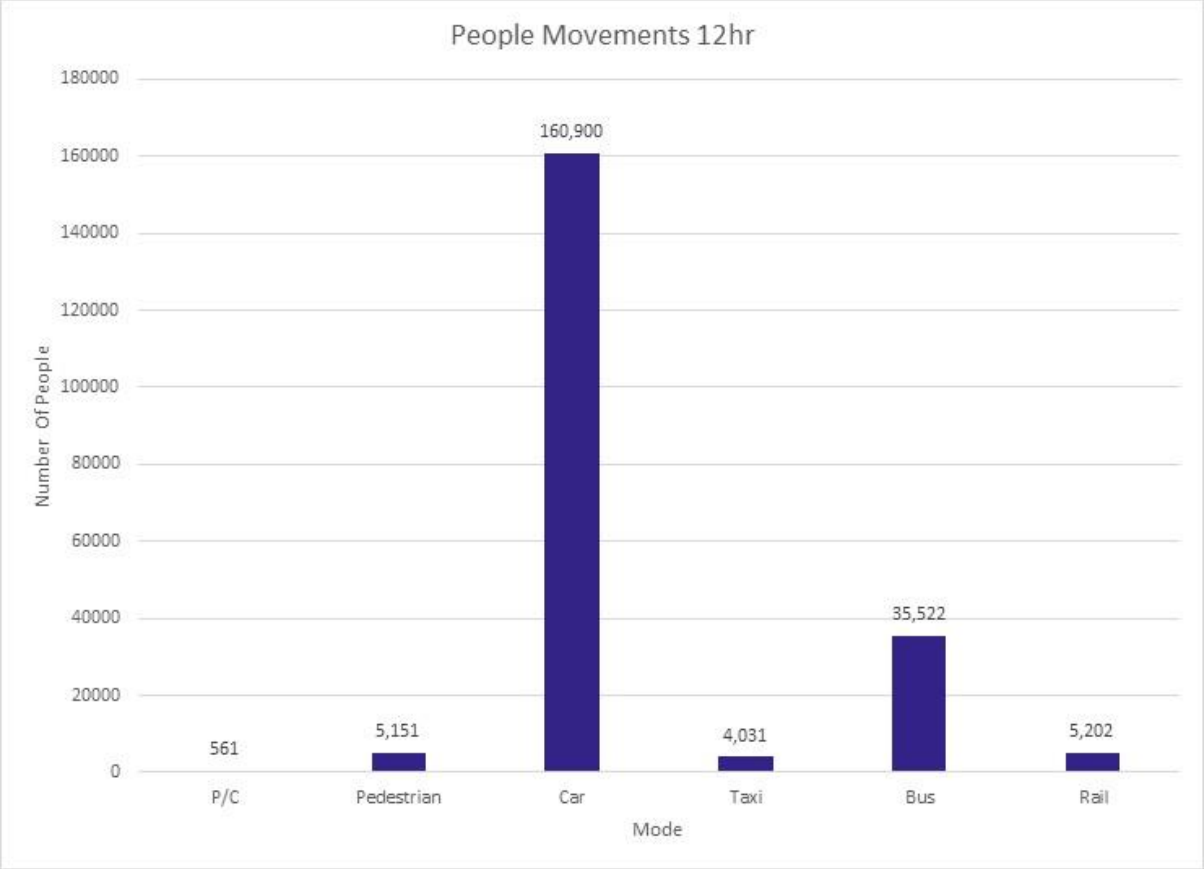


Figure 4-8:Trips Inbound across the Cork City Cordon: 12 Hour

4.5 Modal Split

Table 4-1 shows the number of sustainable and vehicular modes crossing the Cork City Cordon during the 12hr period.

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

Mode	Trips	% Trips
P/C	561	0%
Pedestrian	5,151	2%
Car	160,900	76%
Taxi	4,031	2%
Bus	35,522	17%
Rail	5,202	2%

As can be seen from Figure 4-9, the mode with the highest share over a 12-hr period is Car with 76%.

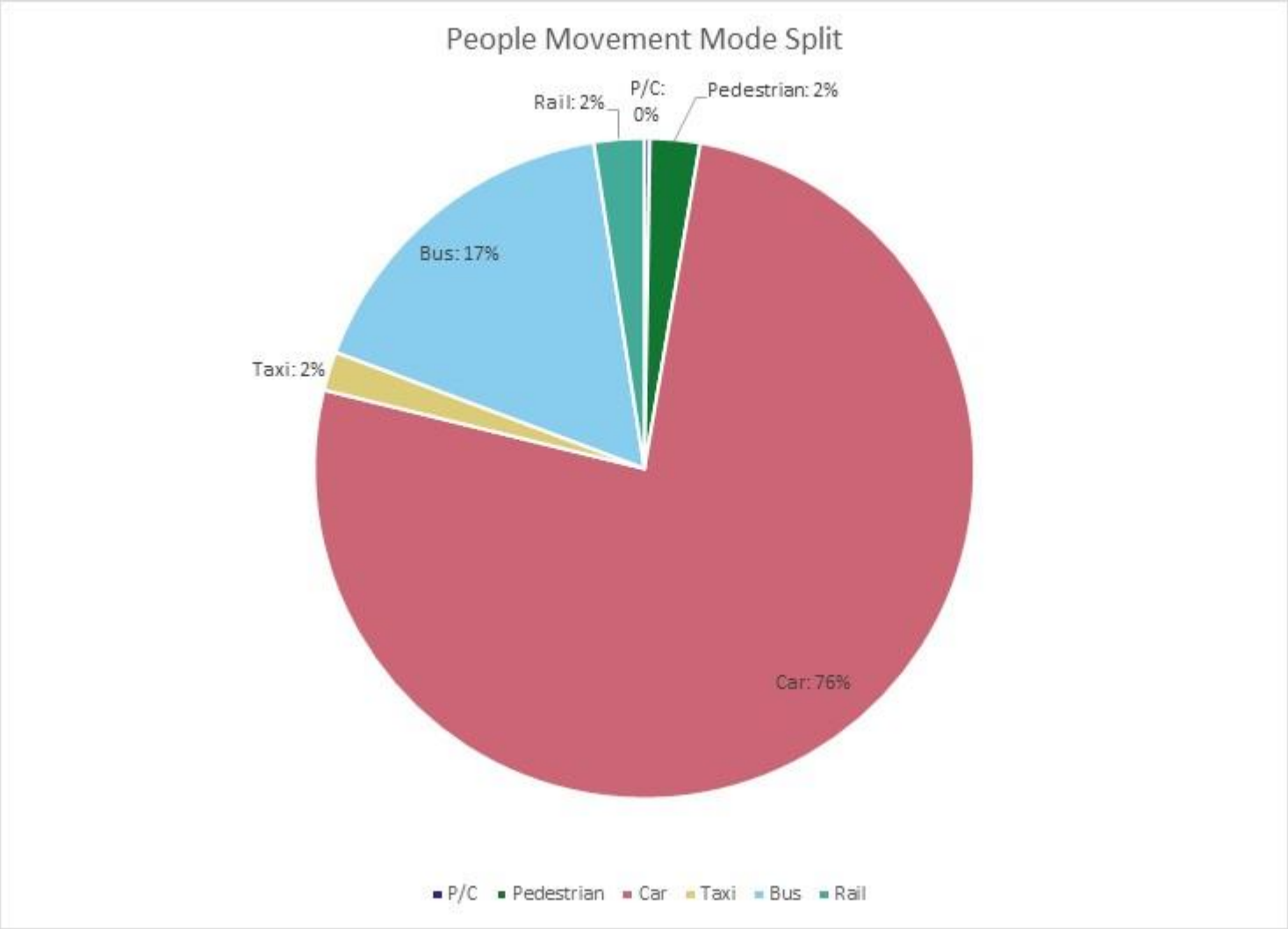


Figure 4-9:Mode share of people crossing the Cork City Cordon by Sustainable and Vehicular Modes

4.6 Trend Analysis

As the surveys used for this report were also conducted in 2023, a historical trend analysis of people movements for 2023 and 2024 can be performed. Table 4-2 and Figure 4-10 show the number of people crossing the Cork Cordon inbound by mode and year over the 12-hour time period.

People movements across all modes increased by 2,244, or 1%, between 2023 and 2024. The number of people using cars fell by 1,371 (1%) and the number of people using taxis increased by 642 (14%).

Walking and cycling saw a decrease in the number of users. Walking decreased by 288 people, or 5%, and cycling decreased by 125, or 18%. Conversely, public transport patronage increased with bus passengers rising by 3,867 (12%) and rail passengers rising by 803 (18%).

Sustainable (i.e. walking, cycling, bus and rail) mode share increased from 20% in 2023 to 22% in 2024. In total, 46,436 people out of a total of 211,367 used sustainable modes in the 2024 surveys, an increase of 4,257 over 2023.

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

Mode	2023 Trips	2024 Trips	% Difference between 2023 and 2024
P/C	686	561	-18%
Pedestrian	5,439	5,151	-5%
Car	162,271	160,900	-1%
Taxi	4,673	4,031	-14%
Bus	31,655	35,522	12%
Rail	4,399	5,202	18%
Total	**209,123**	**211,367**	**1%**

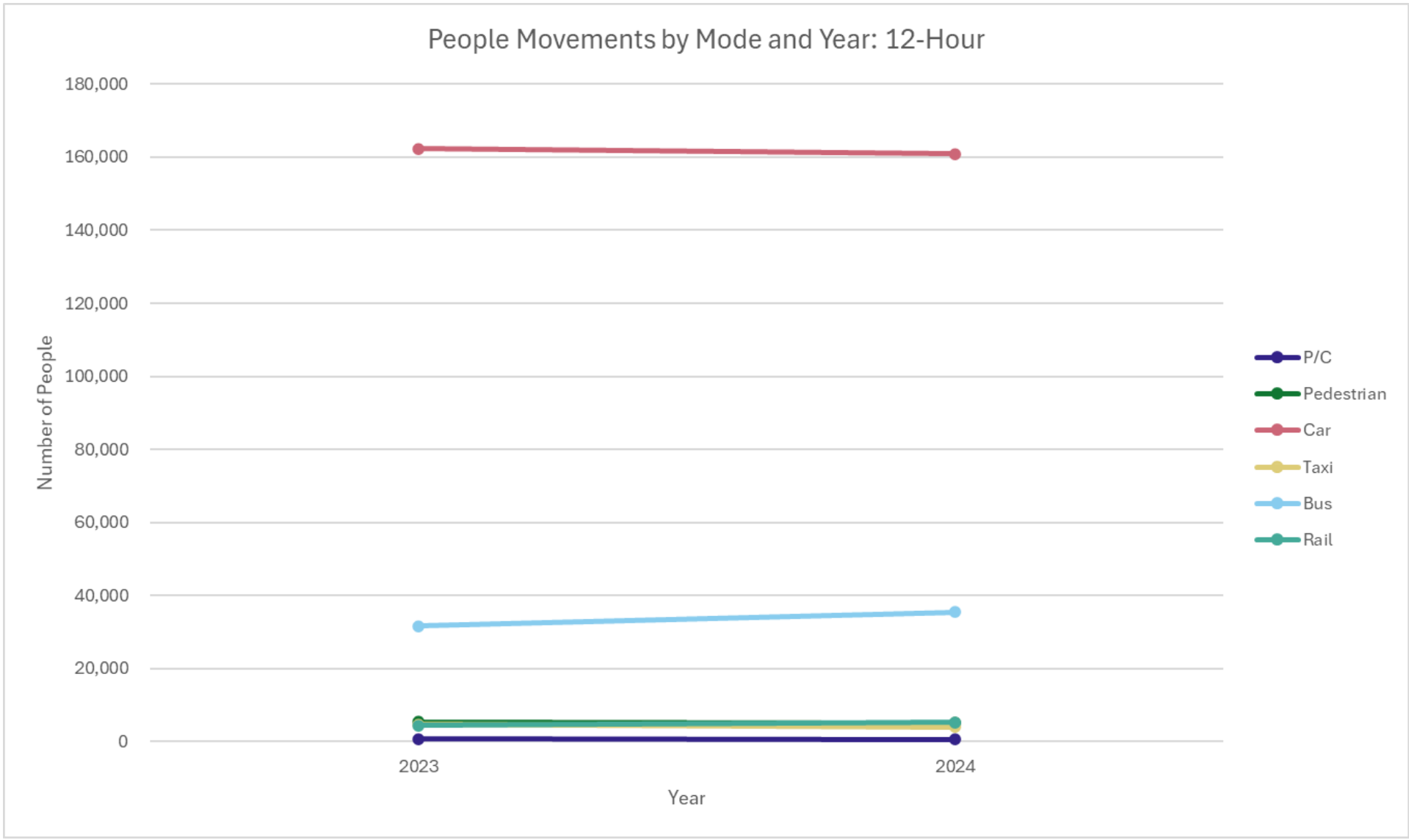


Figure 4-10 Number of People Crossing the Cork Cordon Inbound by Year and Mode

5 Summary Results

Based on the analysis of the 2024 traffic surveys, this report demonstrates the following:

- In terms of overall people movements, 46,436 (22%) of a total of 211,367 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 Cork Cordon inbound was 169,772 on the day of the survey.
- The busiest time period for vehicles and cyclists was the AM peak with 37,974 crossing the Cork City Cordon inbound towards the city. The busiest time period for Pedestrians was the PM peak with 1,448 crossing the Cork City Cordon inbound.
- Between the hours of 07:00 and 19:00, cars were recorded to have the highest vehicular traffic split, with 82% of the total inbound flows. Light Goods Vehicles (LGVs) recorded 9%, Ordinary Goods Vehicles 1 (OGV1) recorded 2%, Ordinary Goods Vehicles 2 (OGV2) recorded 1% and taxis recorded 2%. The remaining vehicle classifications recorded 1% or less of the total flows.
- In terms of vehicle occupancy over the 12-hour survey period:
    - 88% of cars crossing the Cork City Cordon inbound towards the City had single occupancy during the AM period (07:00 – 10:00) and 90% during the PM period (16:00 – 19:00)
    - 52% of taxis recorded single occupancy (i.e. driver-only)
- Between 07:00 and 19:00, 51% of buses were at 25-49% capacity. Approximately 1% of buses were at 0-24%. 39% were at 50-74% capacity, 8% were at 75-99% capacity and 1% were at 100% capacity.

Appendix A - Additional Graphs

Car Movements by Site and Period

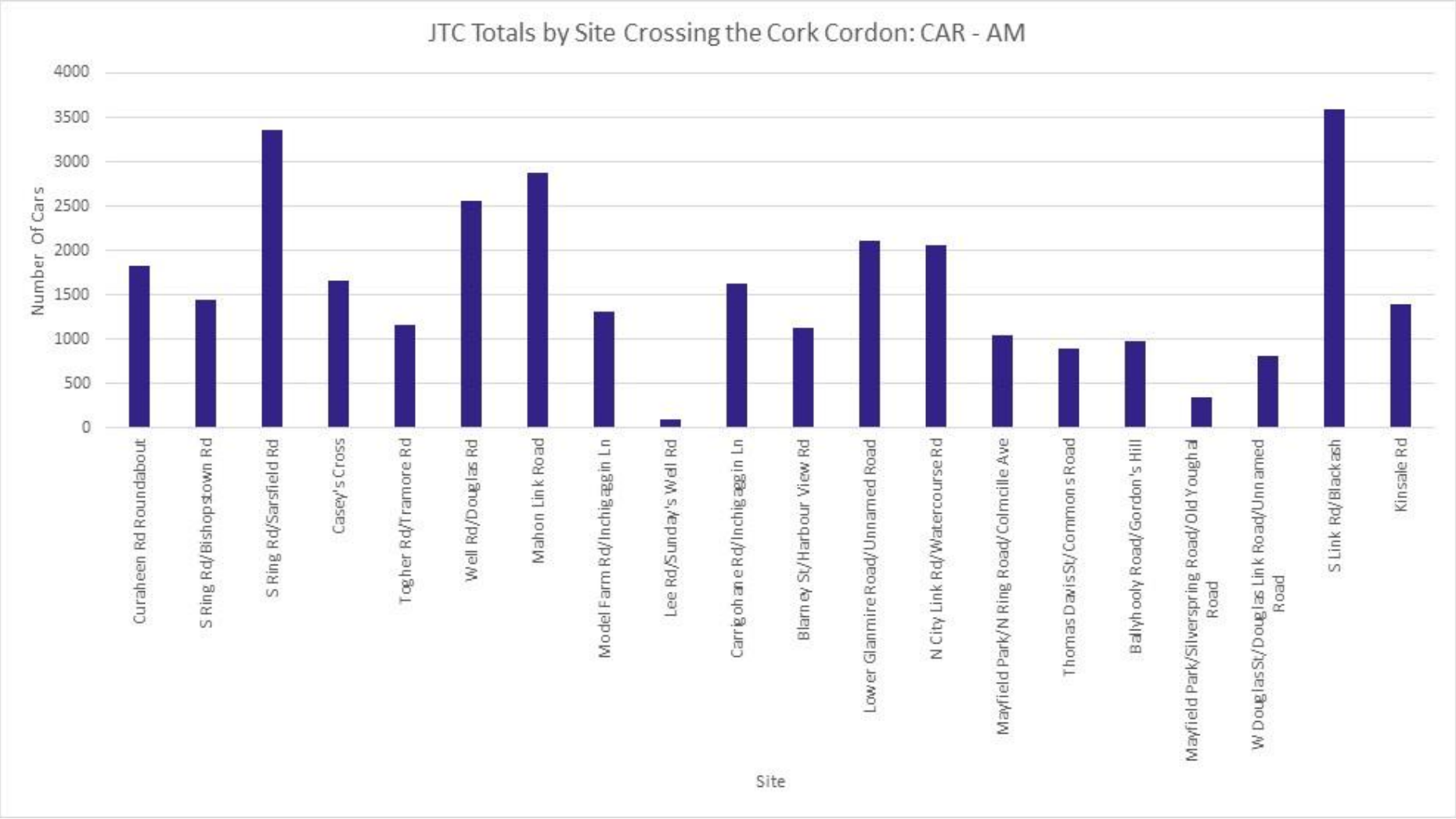


Figure A-1:Number of Car Journeys for JTC Surveys for AM per Site

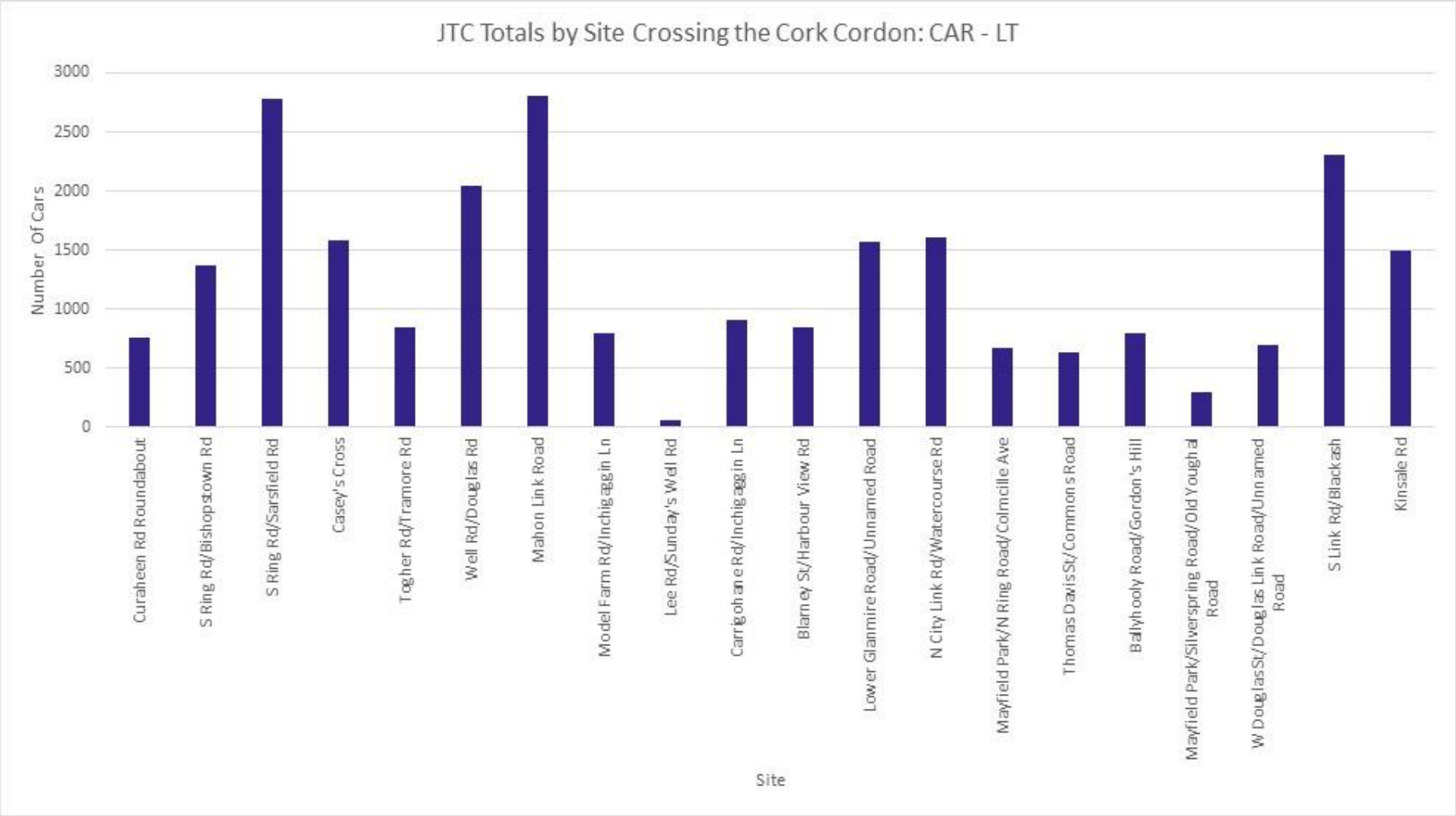


Figure A-2: Number of Car Journeys for JTC Surveys for LT per Site

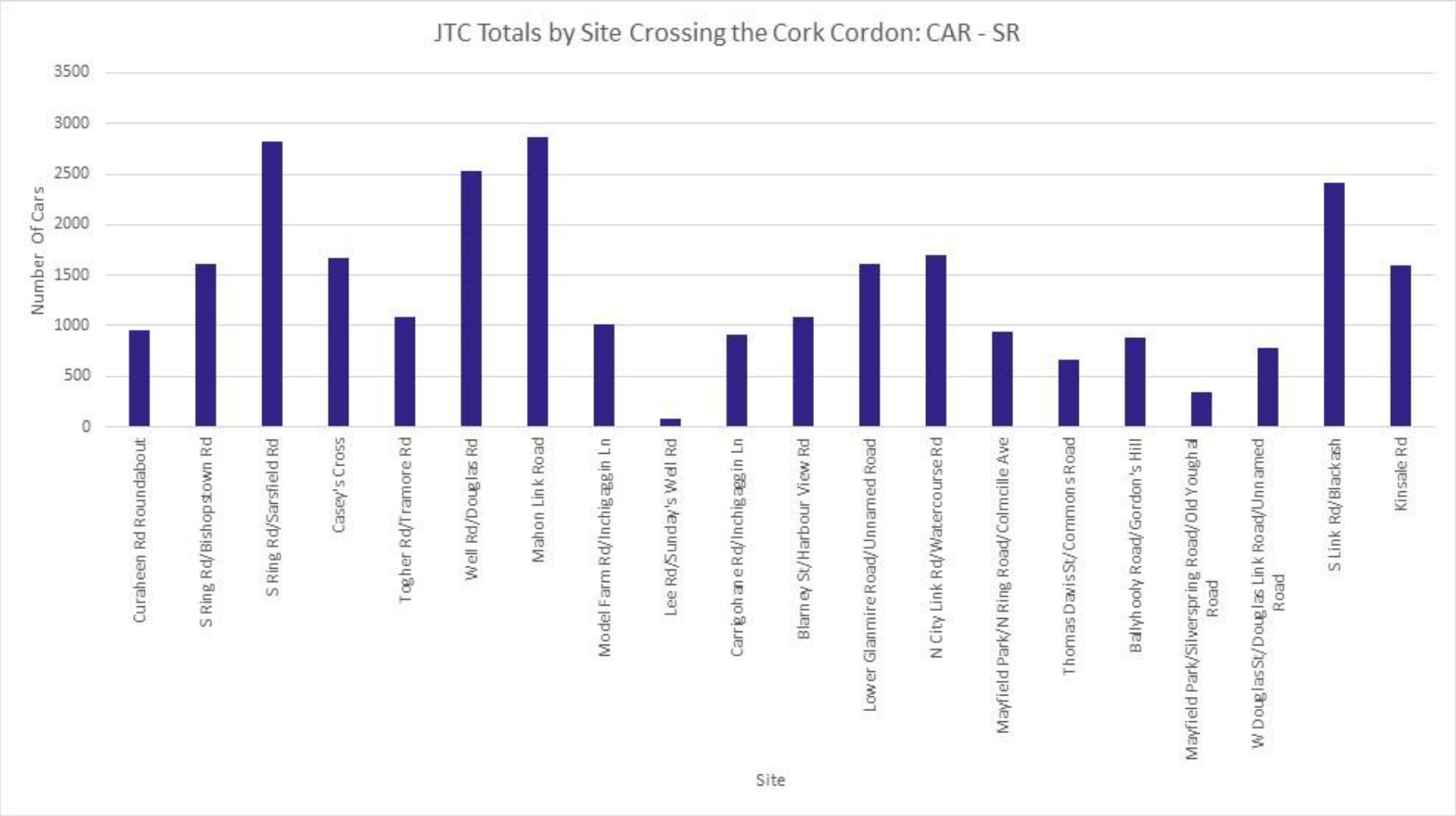


Figure A-3: Number of Car Journeys for JTC Surveys for SR per Site

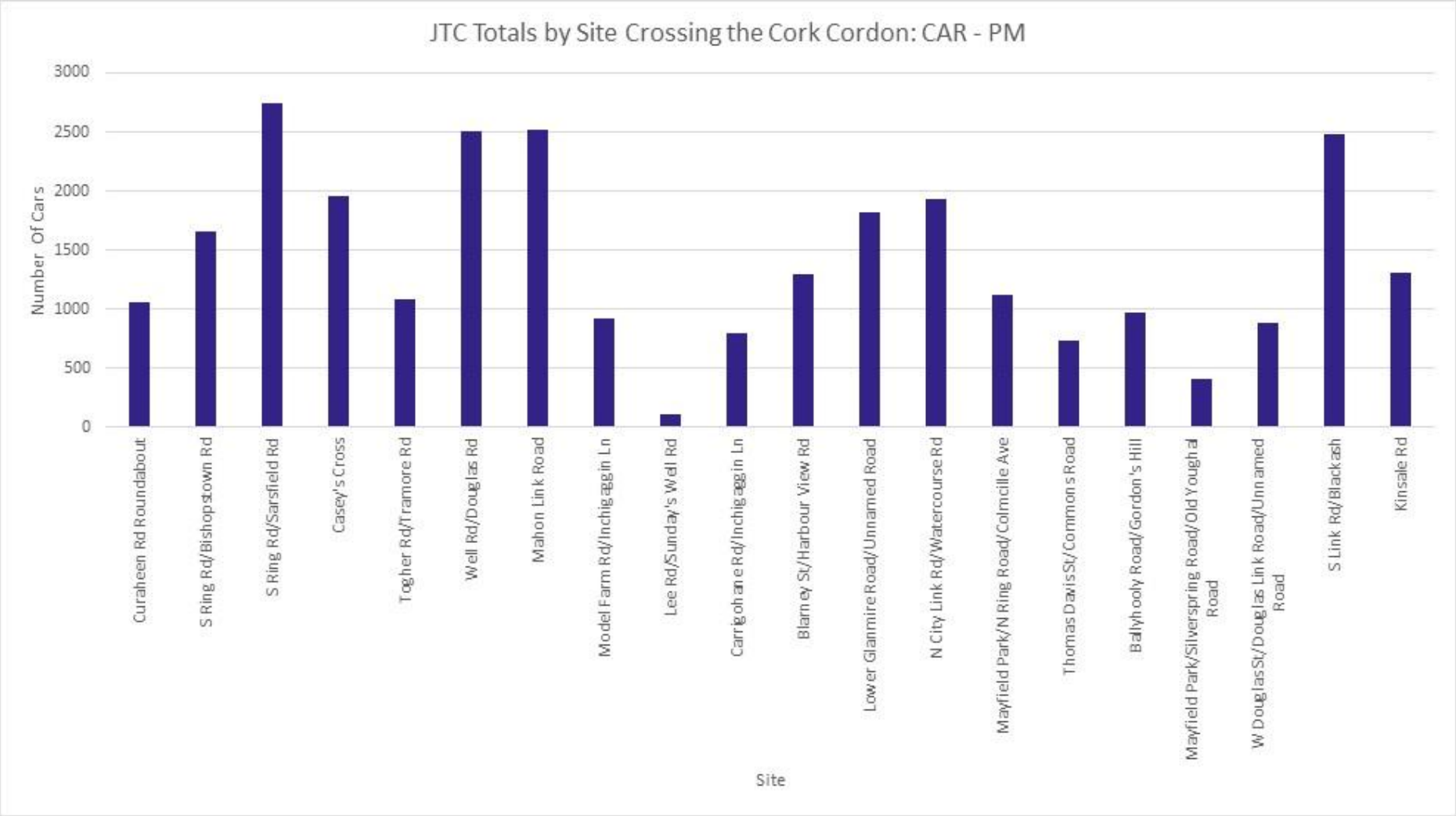


Figure A-4: Number of Car Journeys for JTC Surveys for PM per Site

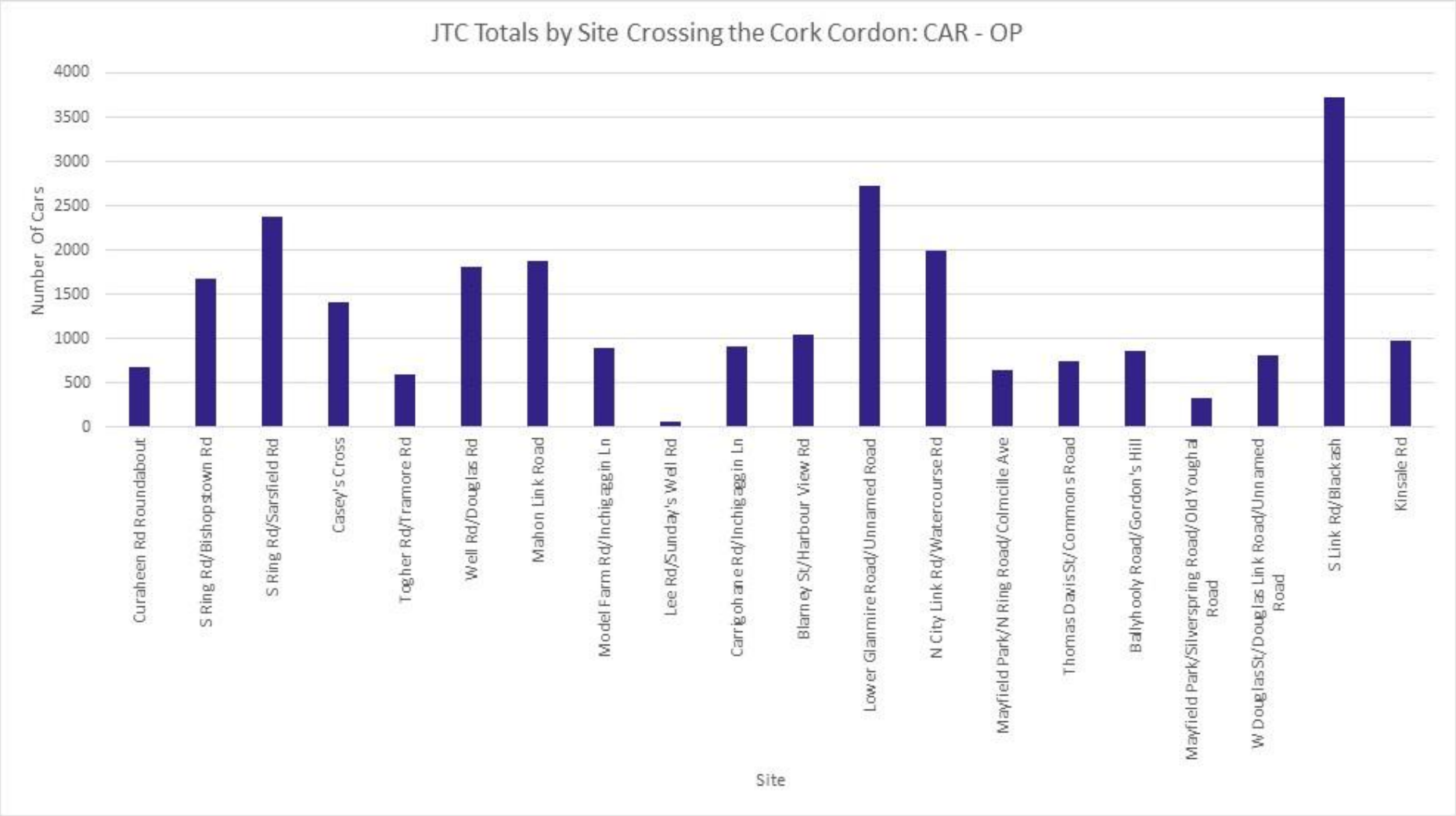


Figure A-5: Number of Car Journeys for JTC Surveys for OP per Site

Light Goods Vehicle Movements by Site and Period

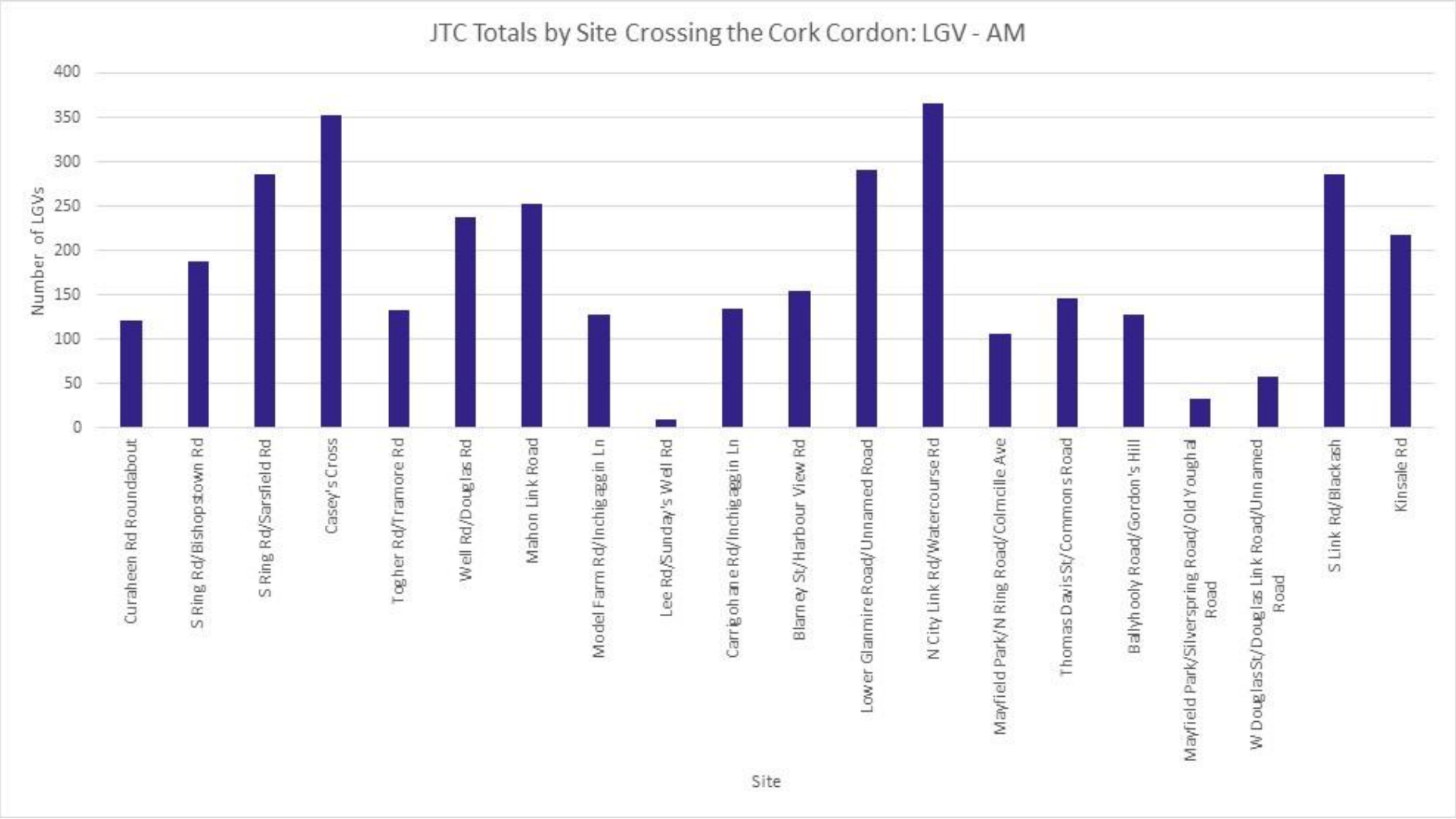


Figure A-6: Number of Light Goods Vehicle Journeys for JTC Surveys for AM per Site

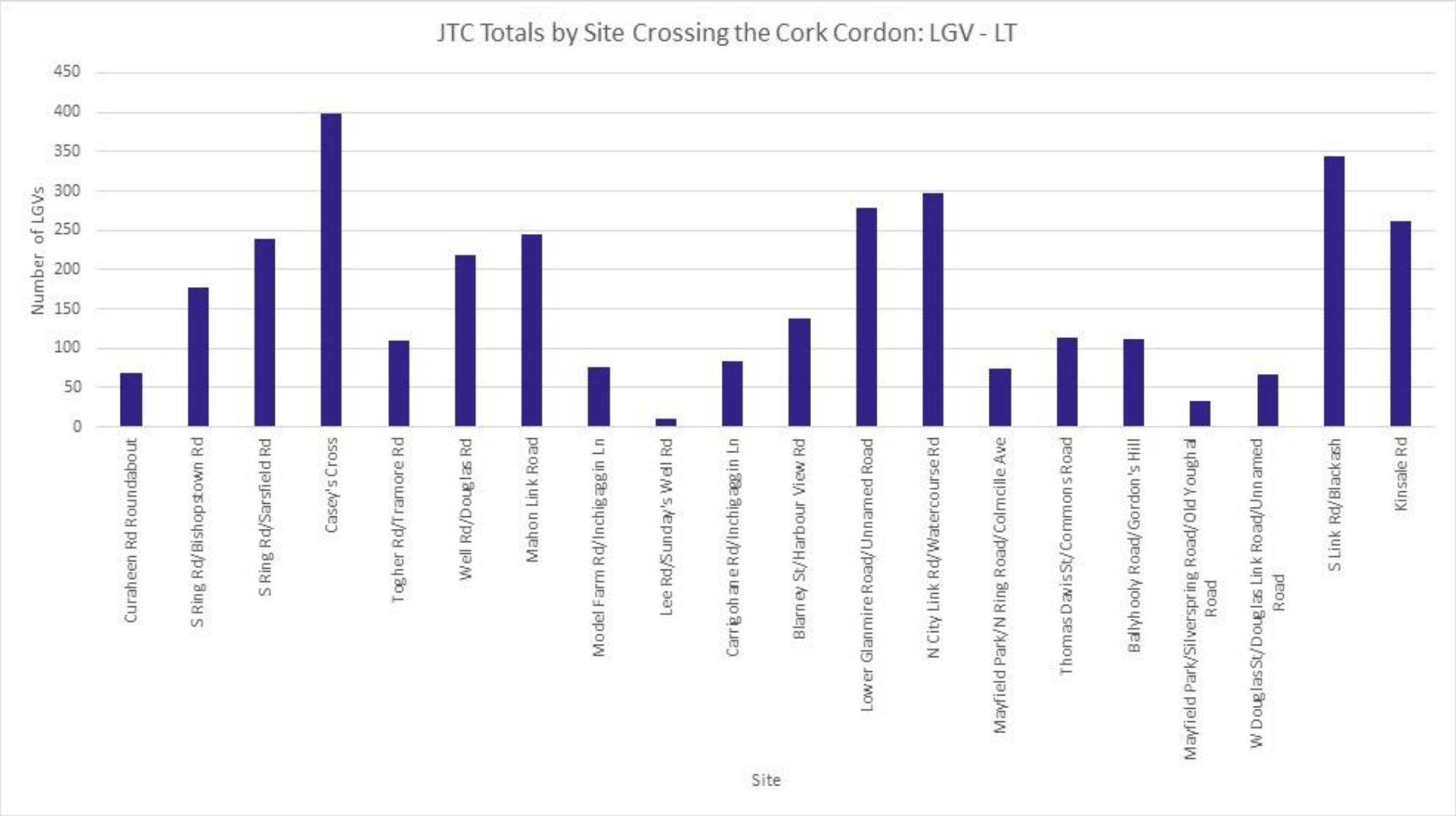


Figure A-7: Number of Light Goods Vehicle Journeys for JTC Surveys for LT per Site

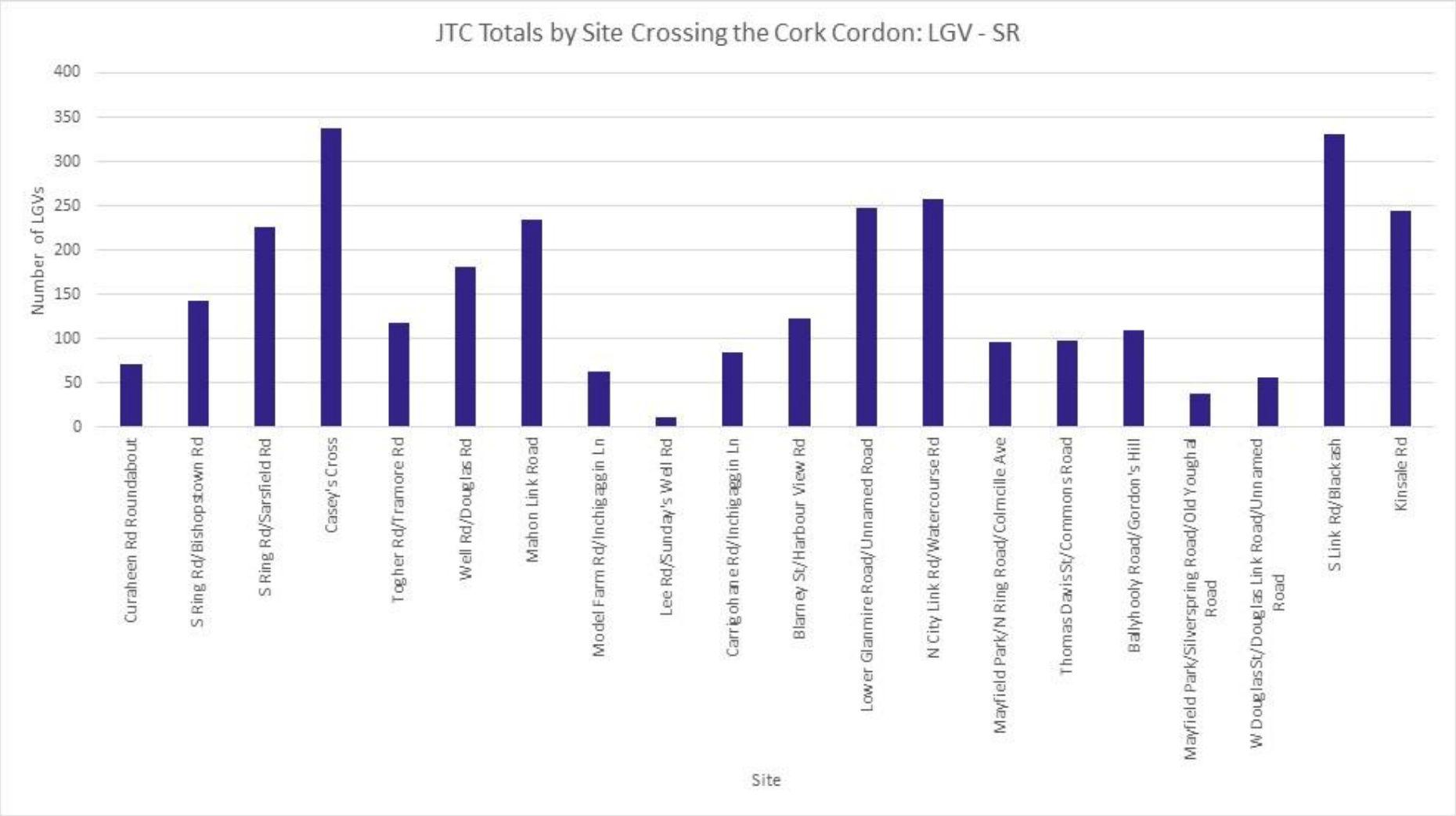


Figure A-8: Number of Light Goods Vehicle Journeys for JTC Surveys for SR per Site

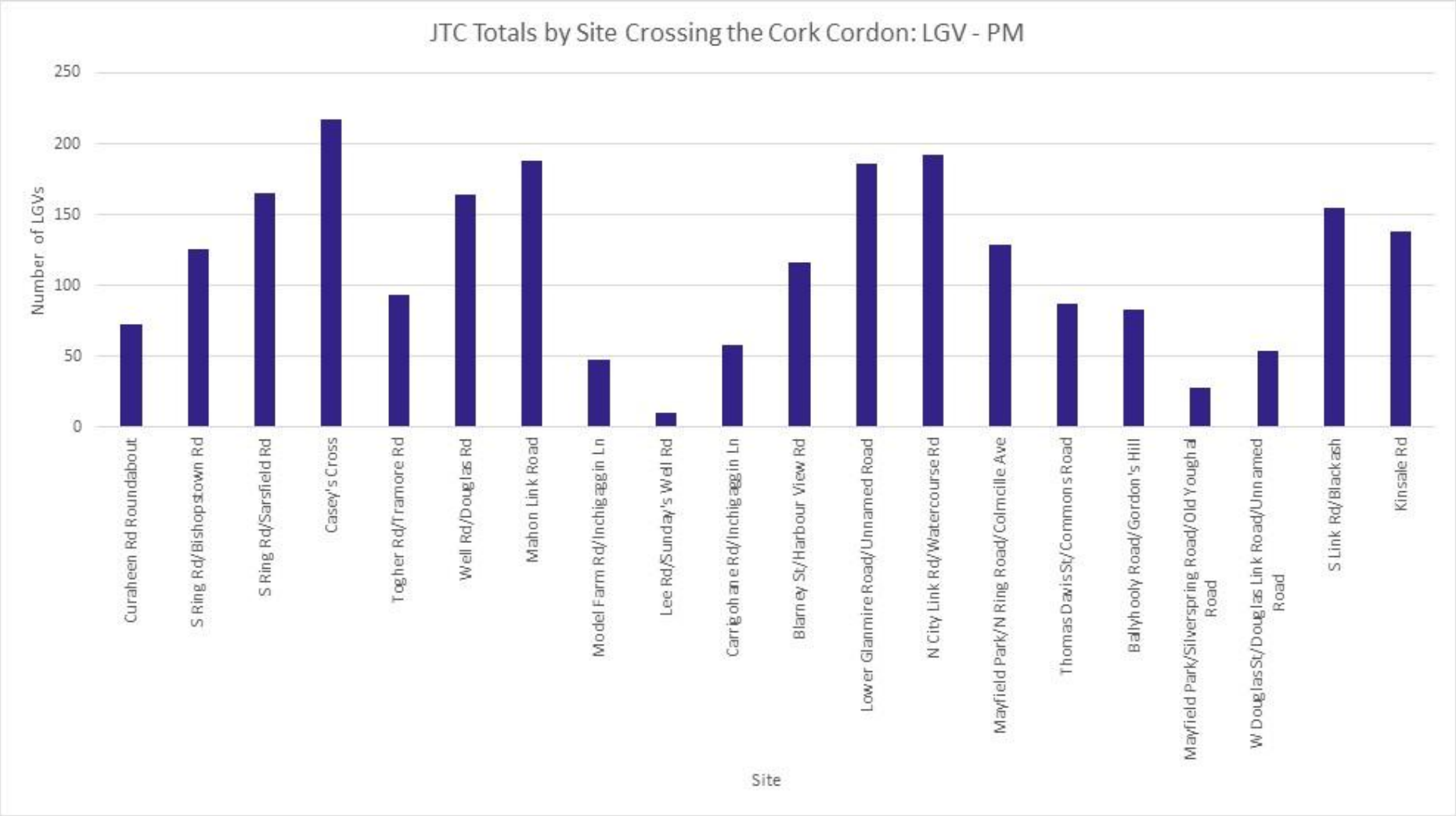


Figure A-9: Number of Light Goods Vehicle Journeys for JTC Surveys for PM per Site

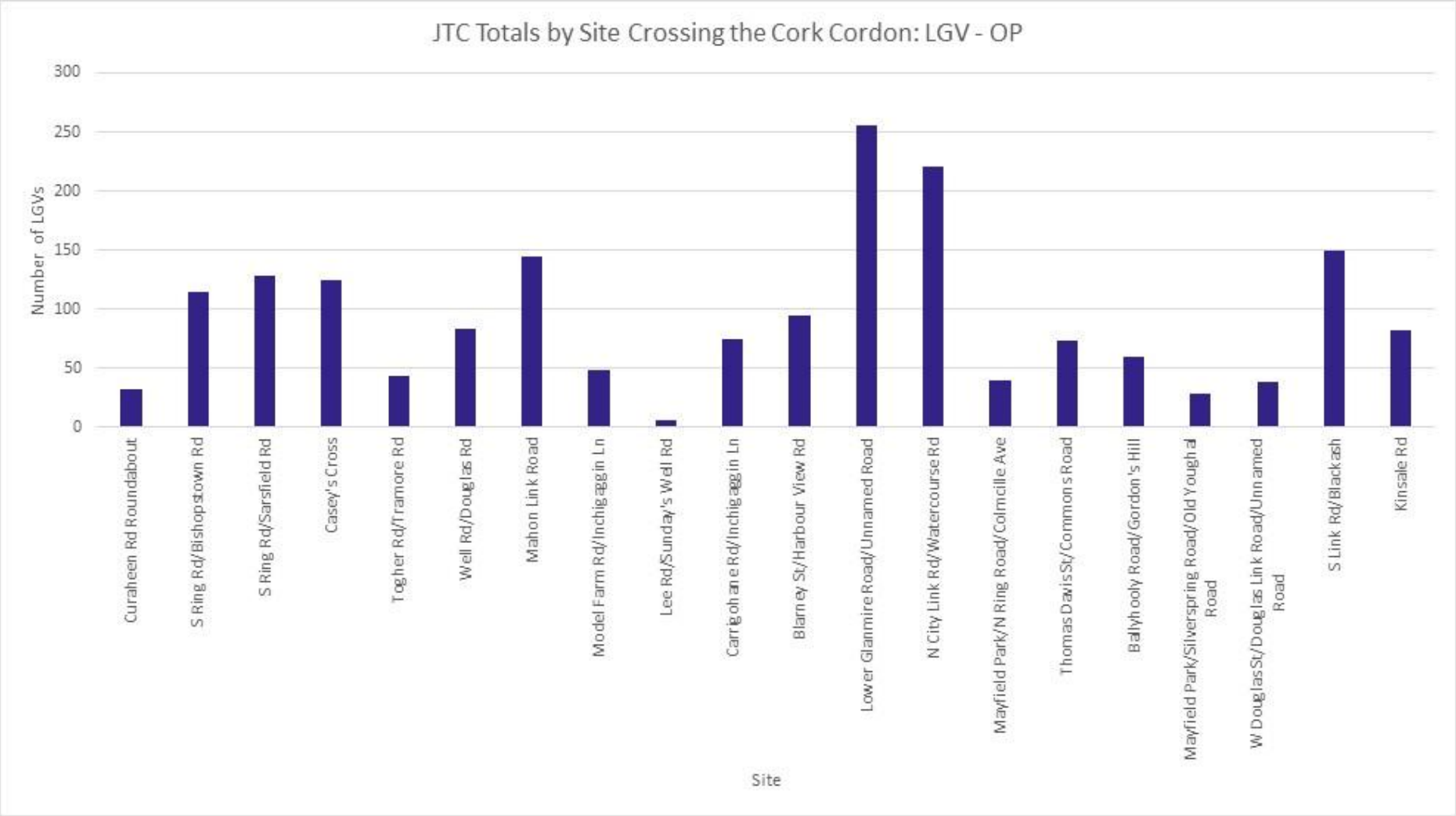


Figure A-10: Number of Light Goods Vehicle Journeys for JTC Surveys for OP per Site

Ordinary Goods Vehicle 1 Movements by Site and Period

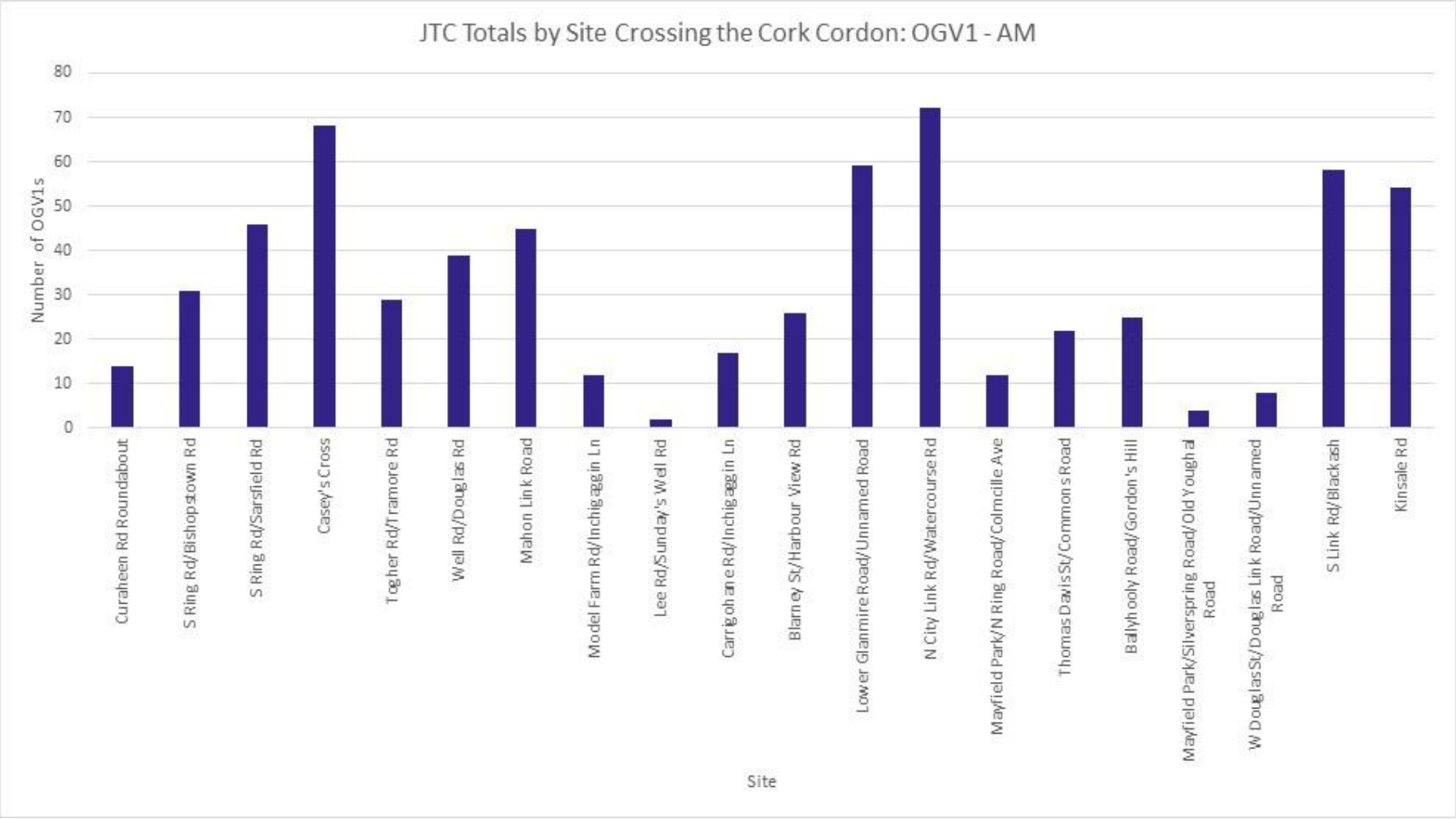


Figure A-11: Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for AM per Site

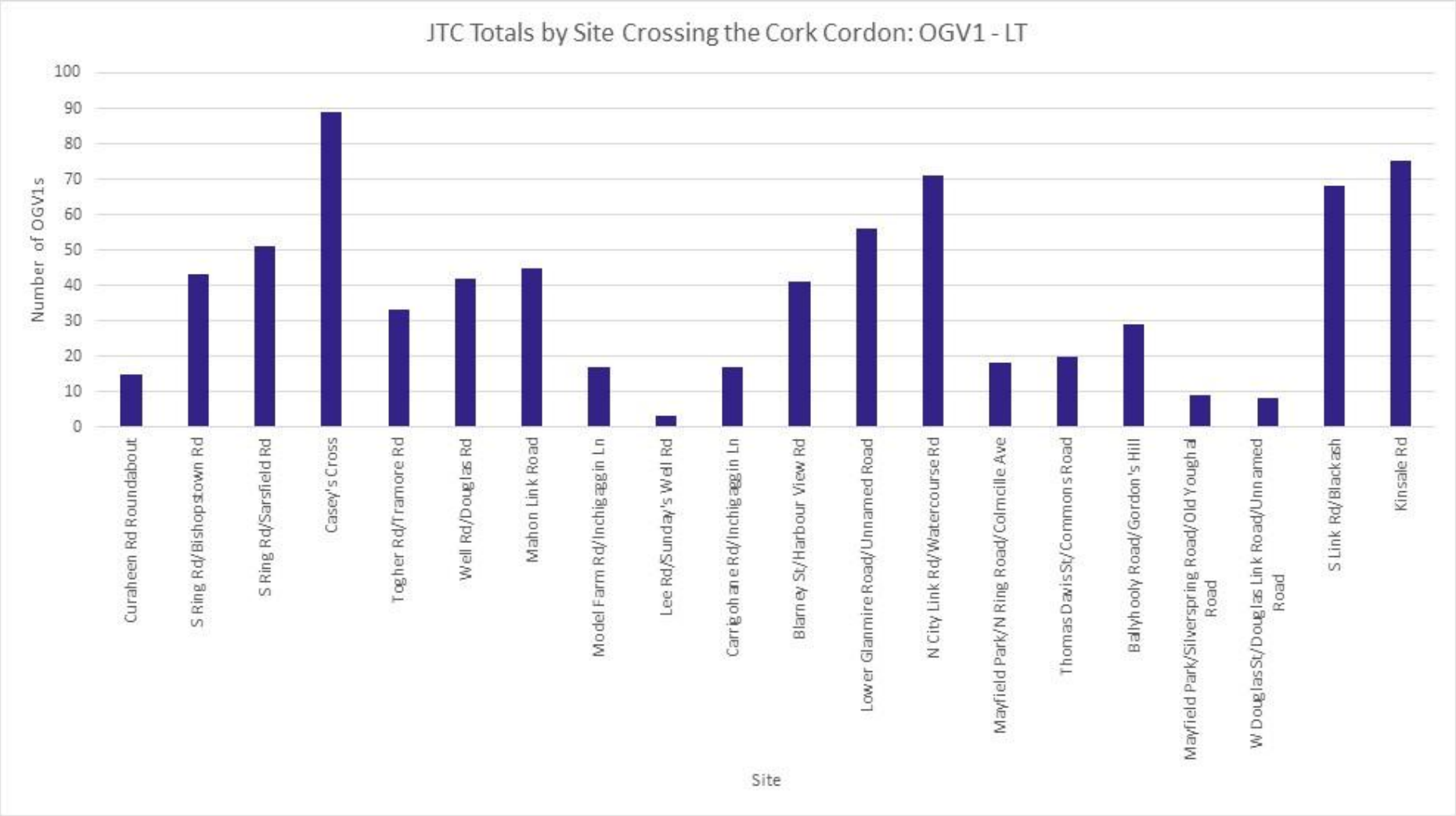


Figure A-12: Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for LT per Site

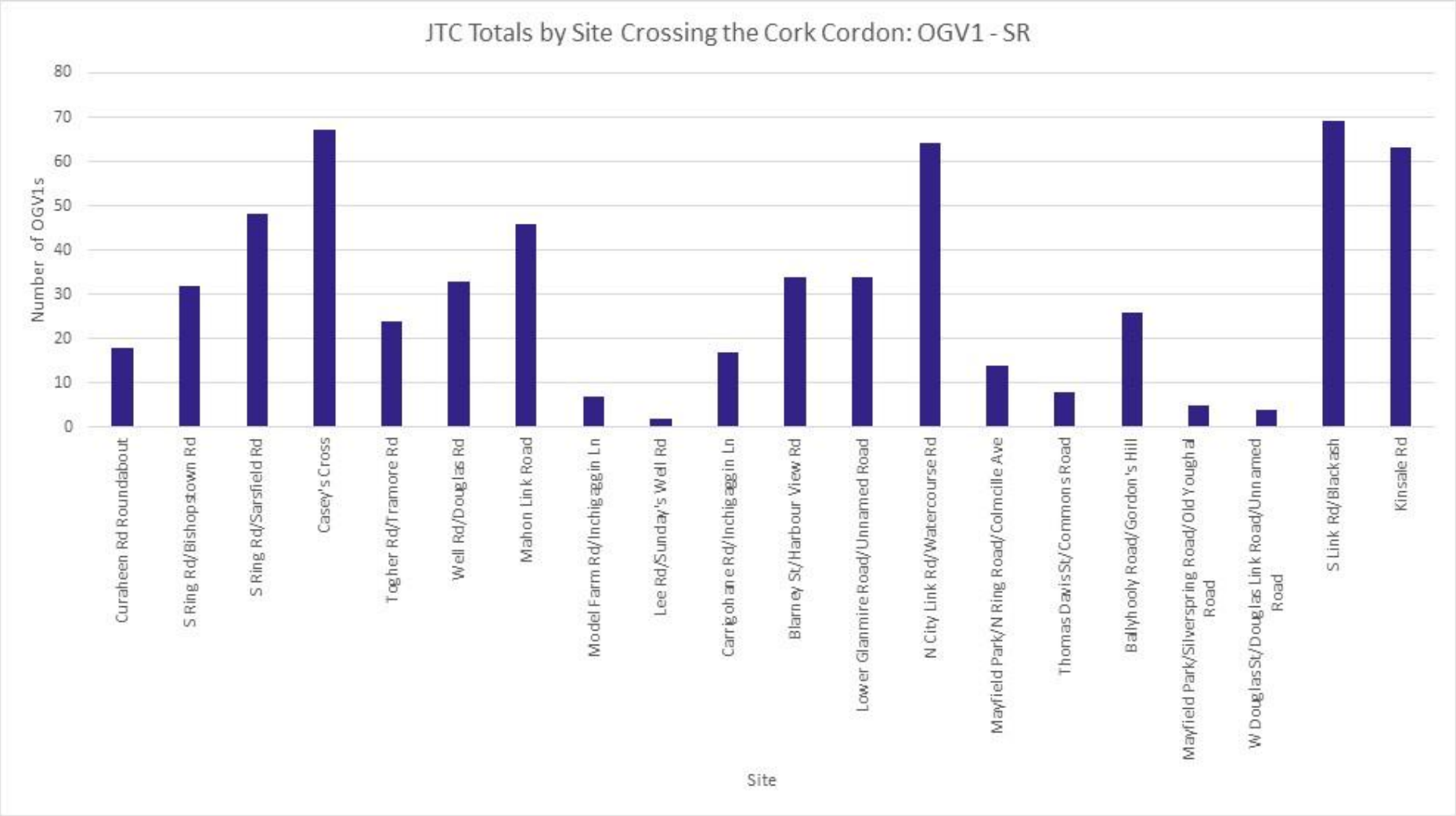


Figure A-13: Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for SR per Site

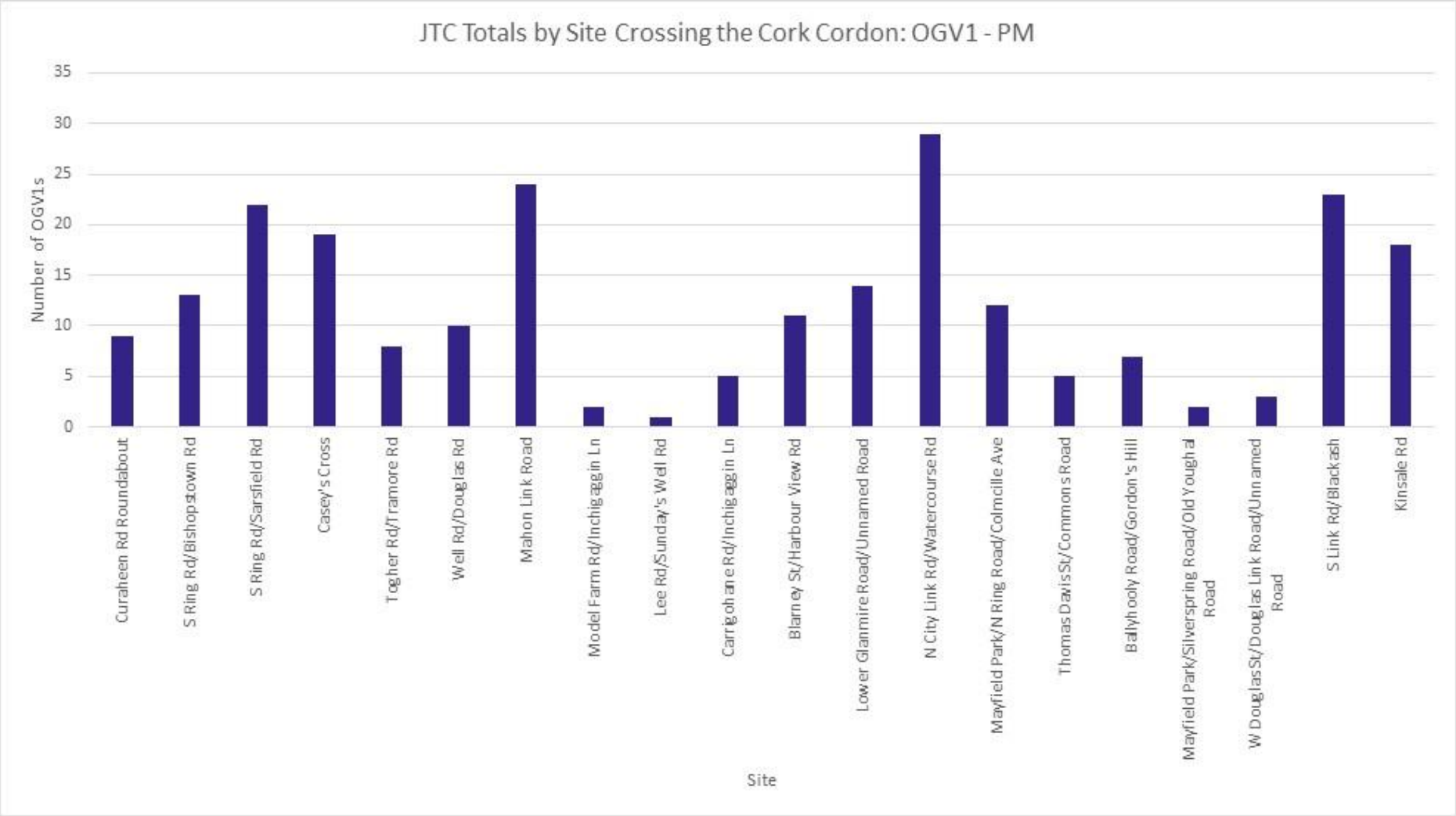


Figure A-14: Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for PM per Site

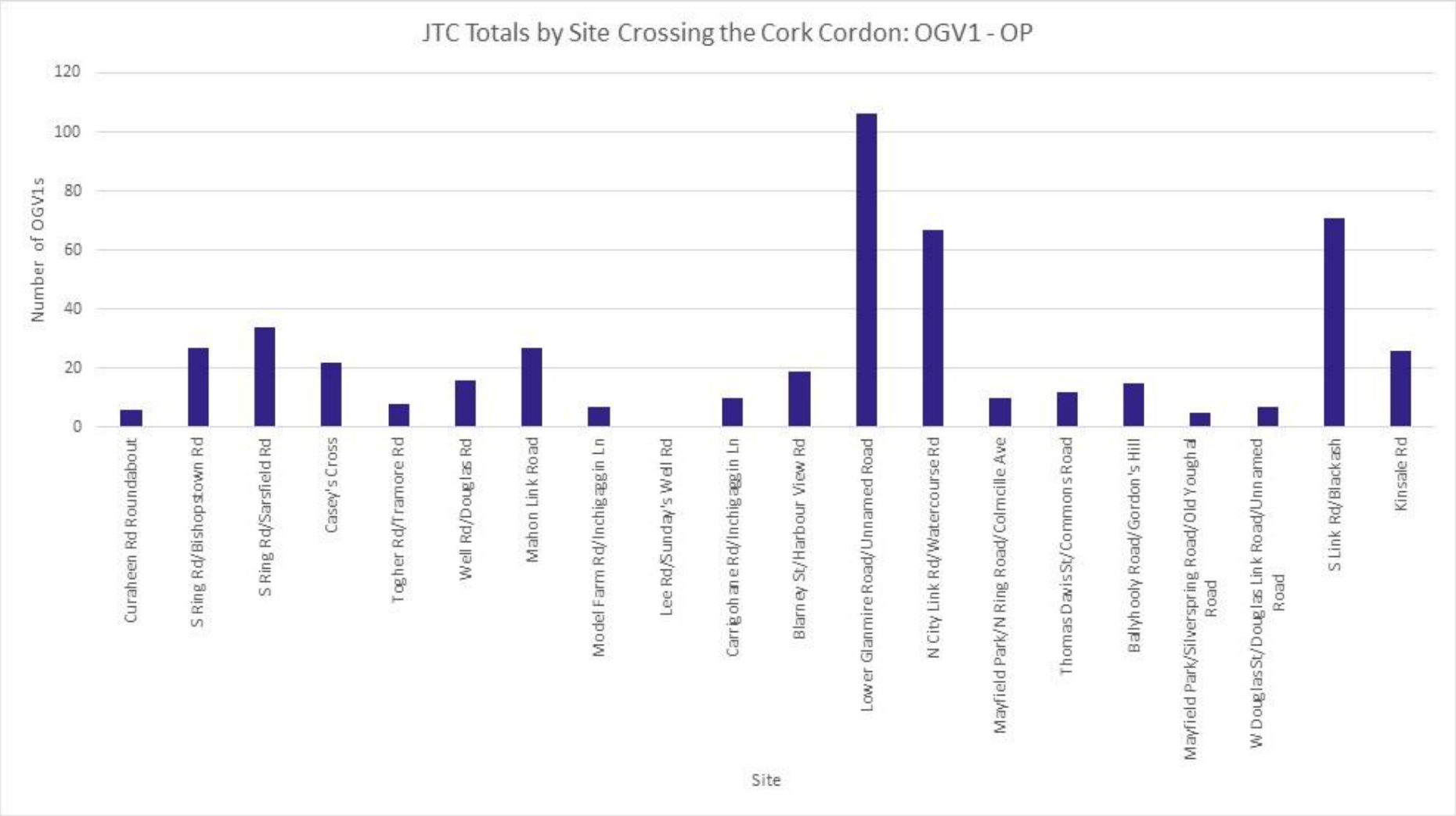


Figure A-15: Number of Ordinary Goods Vehicle 1 Journeys for JTC Surveys for OP per Site

Ordinary Goods Vehicle 2 Movements by Site and Period

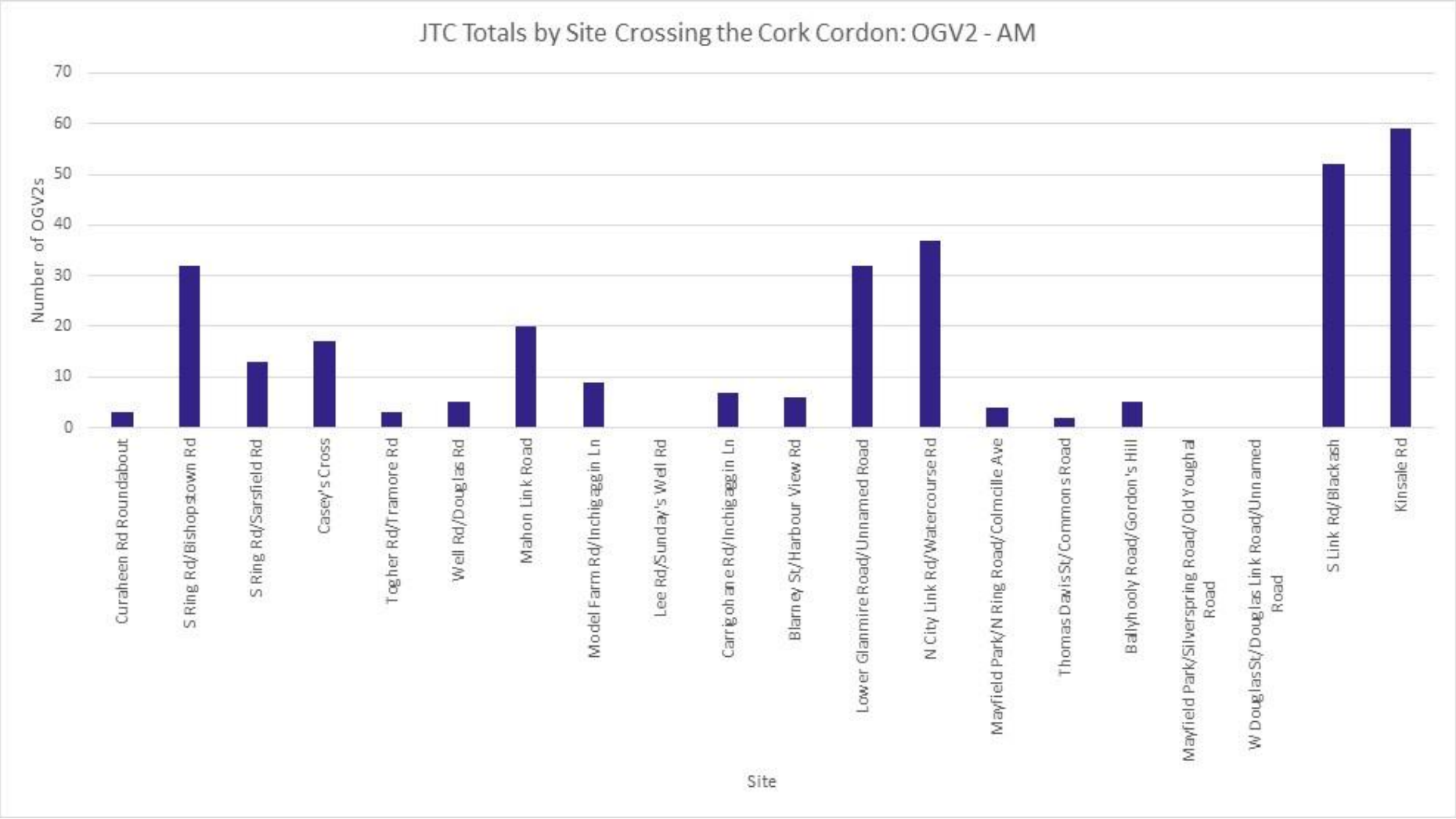


Figure A-16: Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for AM per Site

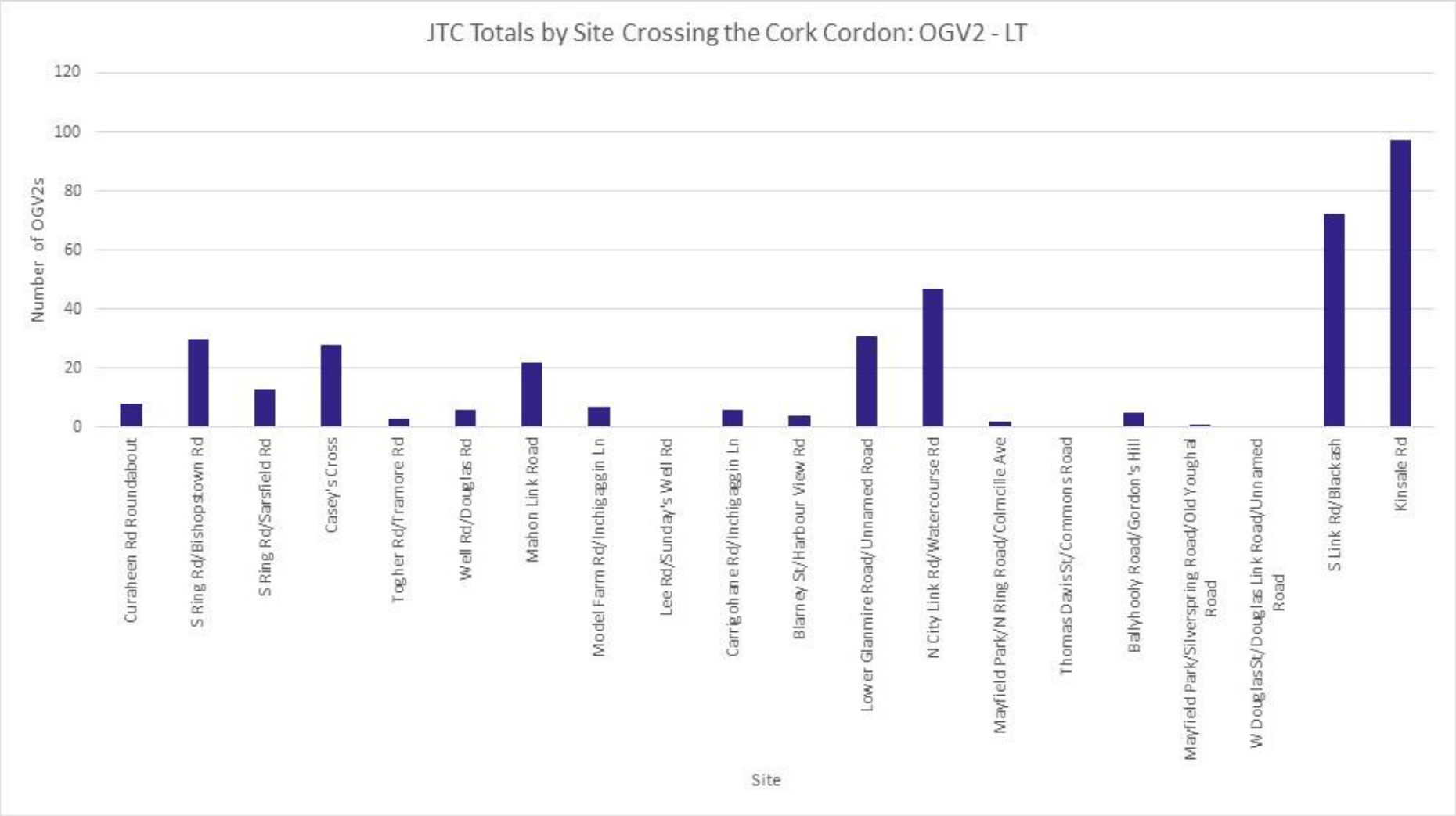


Figure A-17: Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for LT per Site

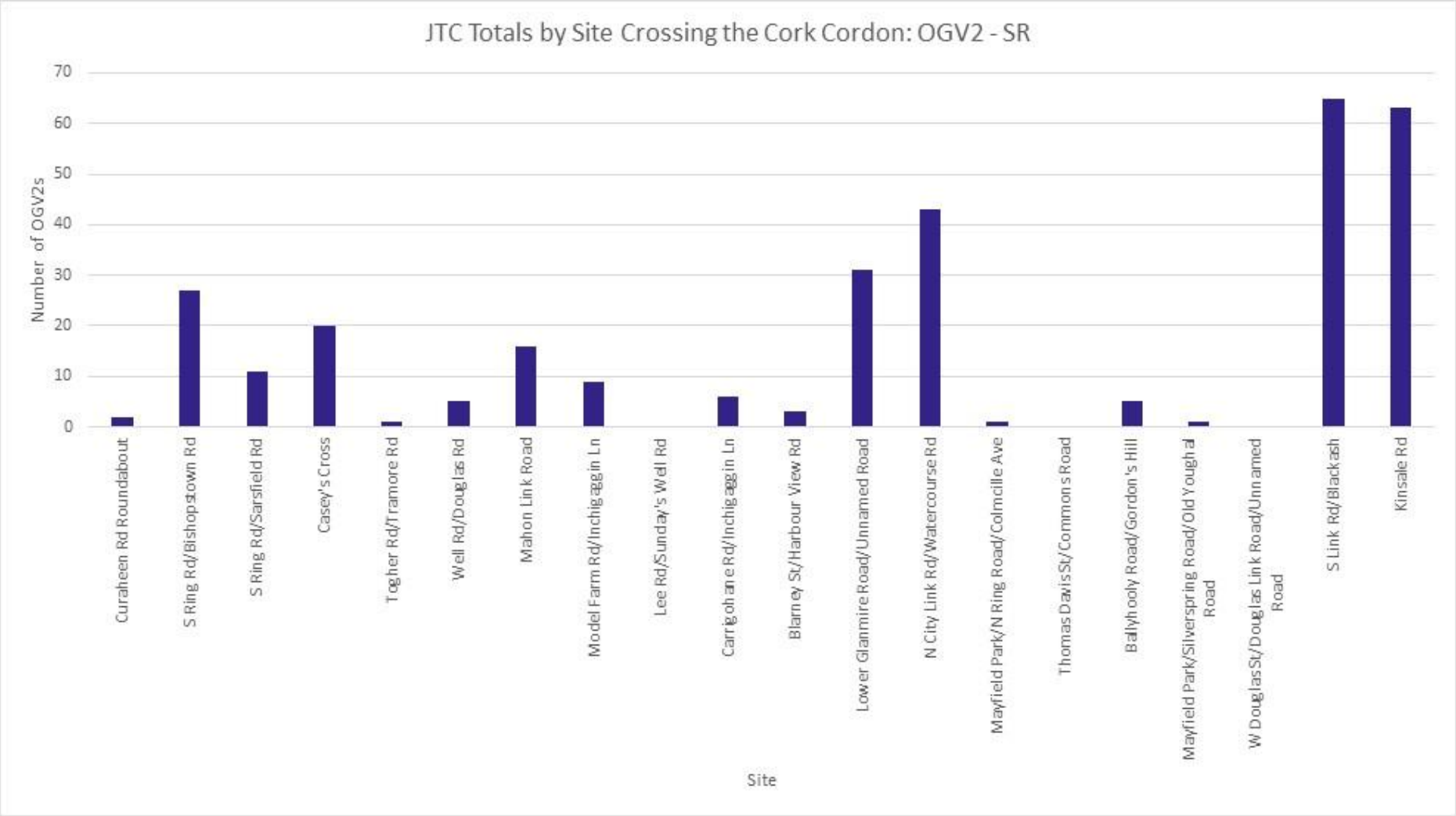


Figure A-182: Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for SR per Site

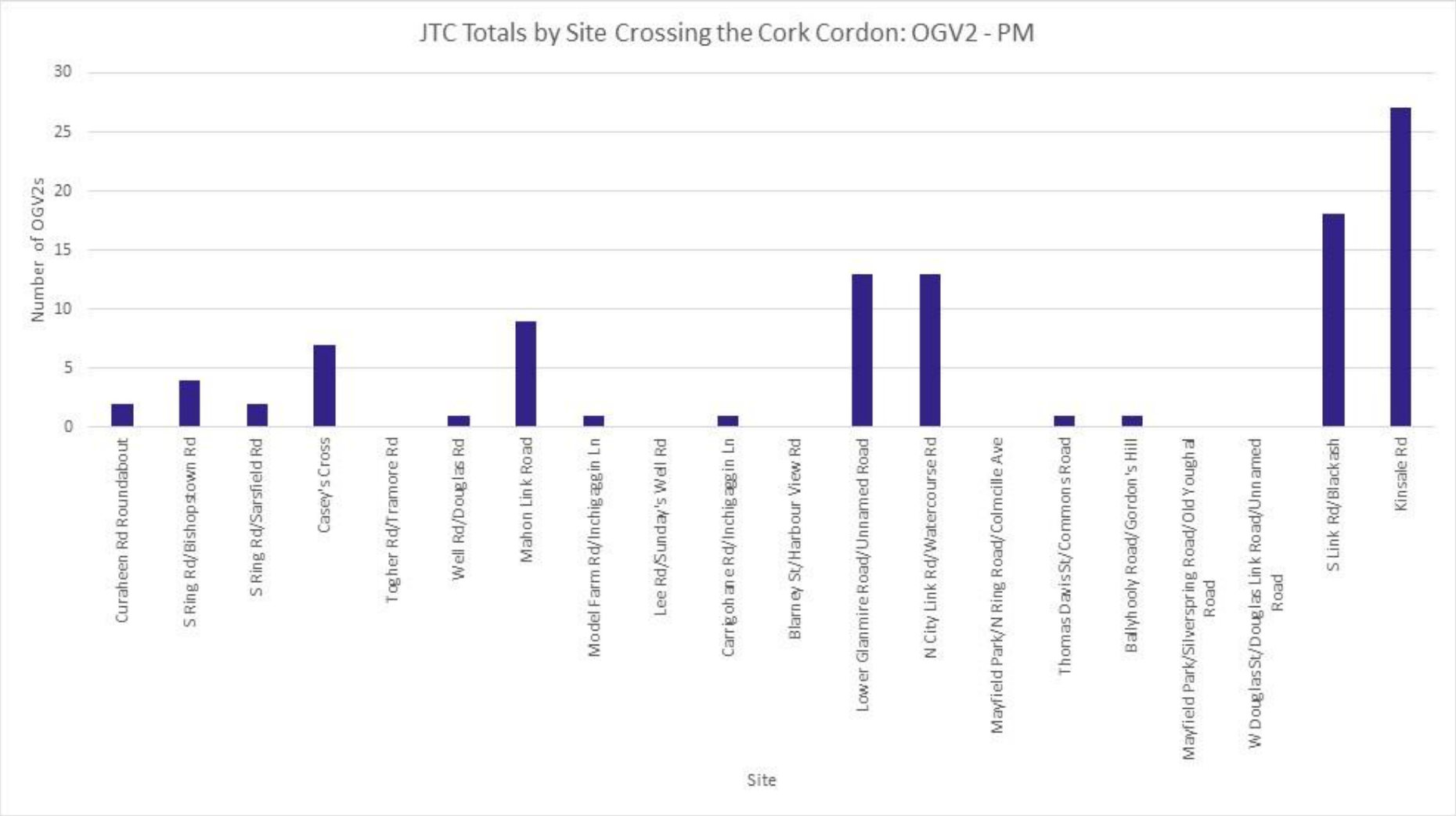


Figure A-19: Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for PM per Site

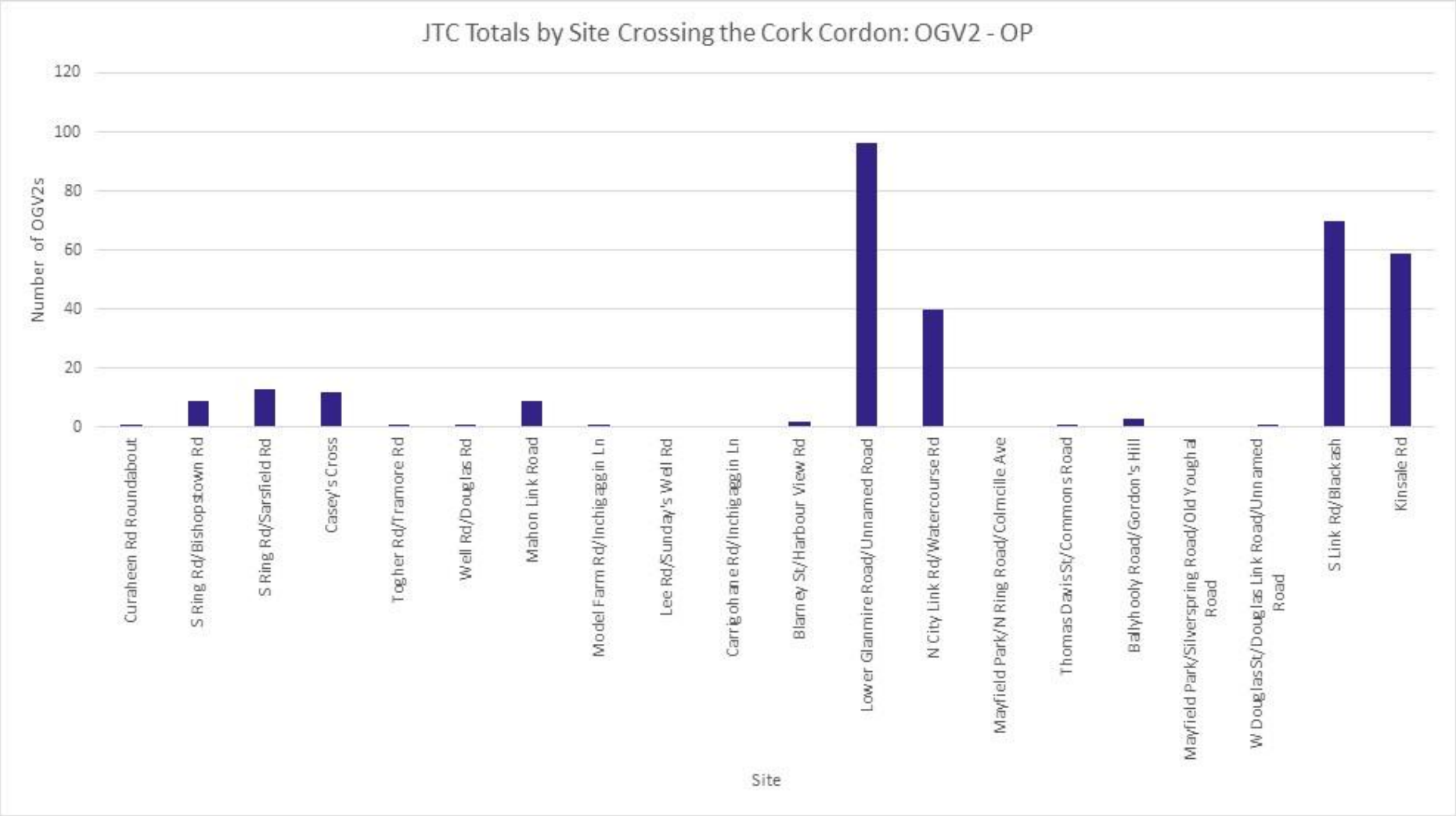


Figure A-20: Number of Ordinary Goods Vehicle 2 Journeys for JTC Surveys for OP per Site

Motorcycle Movements by Site and Period

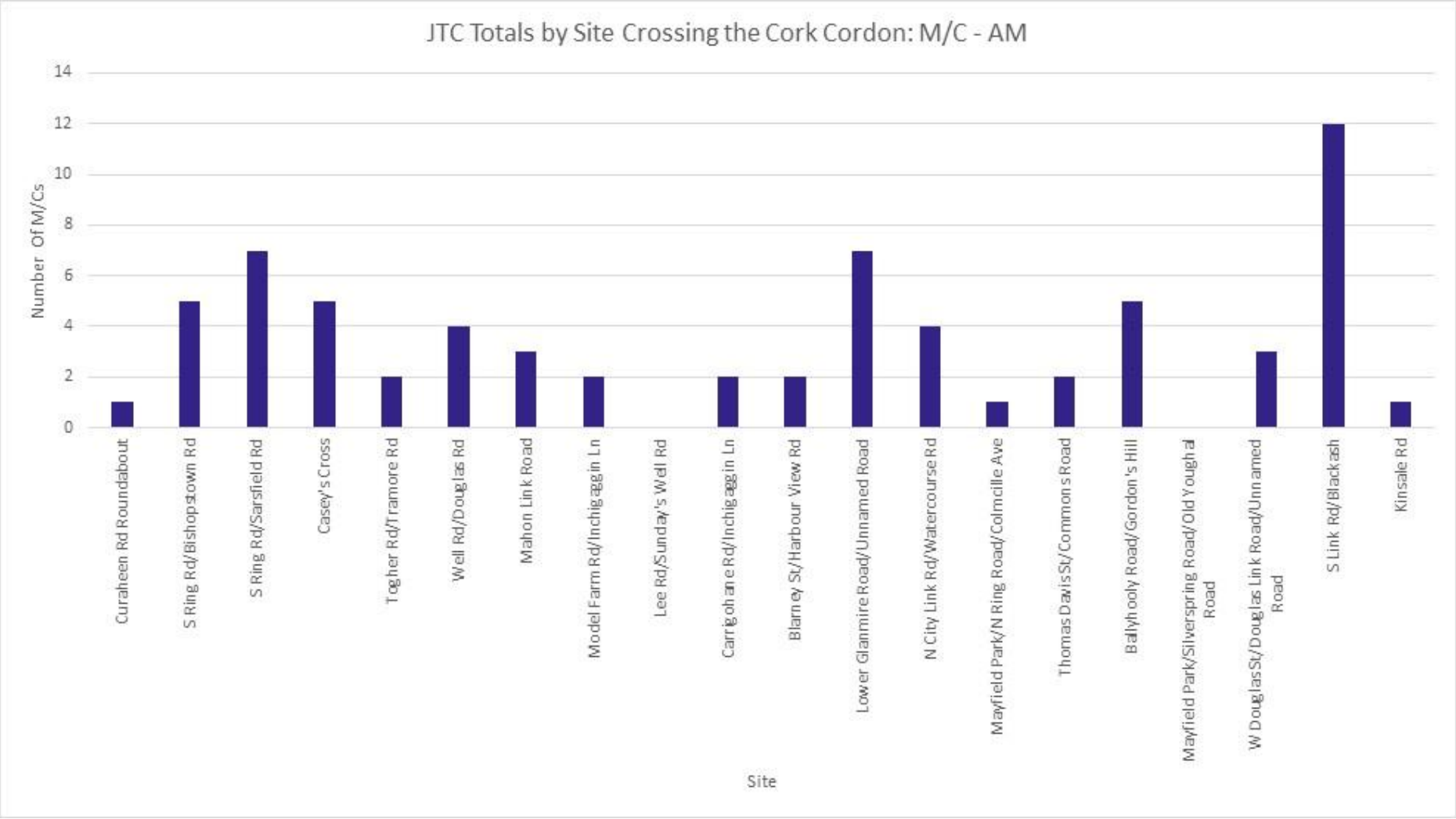


Figure A-21: Number of Motorcycle Journeys for JTC Surveys for AM per Site

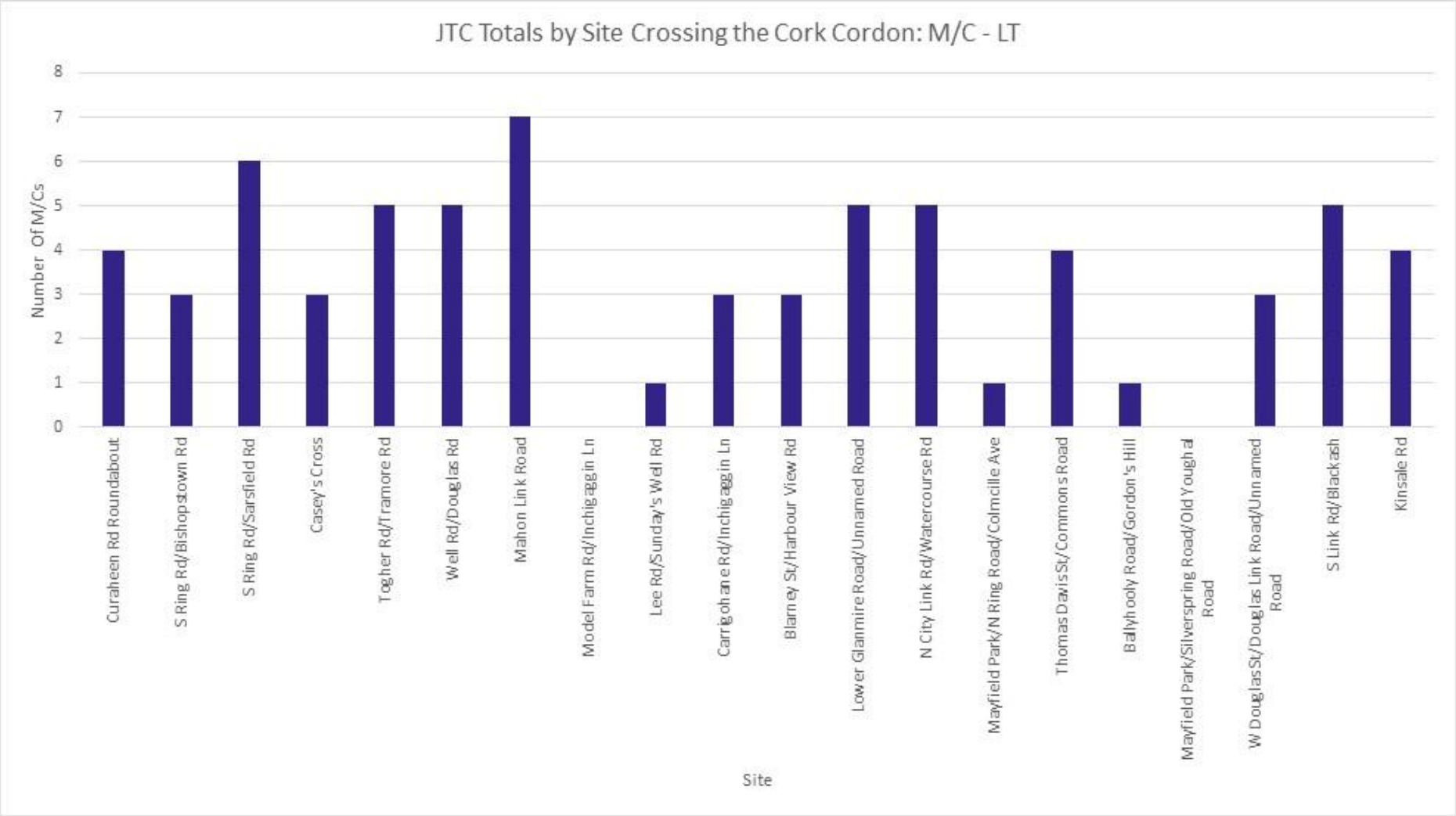


Figure A-22: Number of Motorcycle Journeys for JTC Surveys for LT per Site

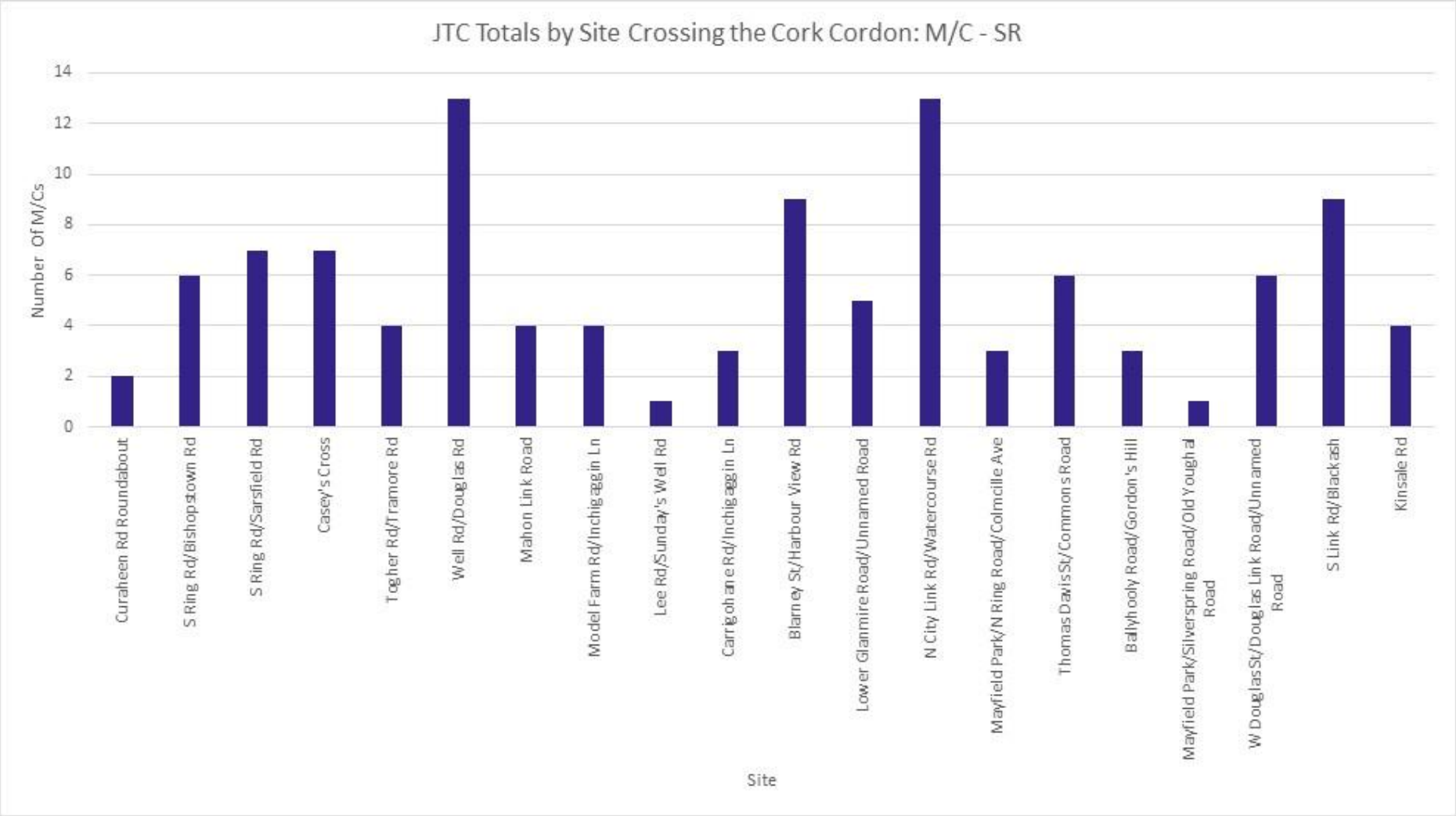


Figure A-23: Number of Motorcycle Journeys for JTC Surveys for SR per Site

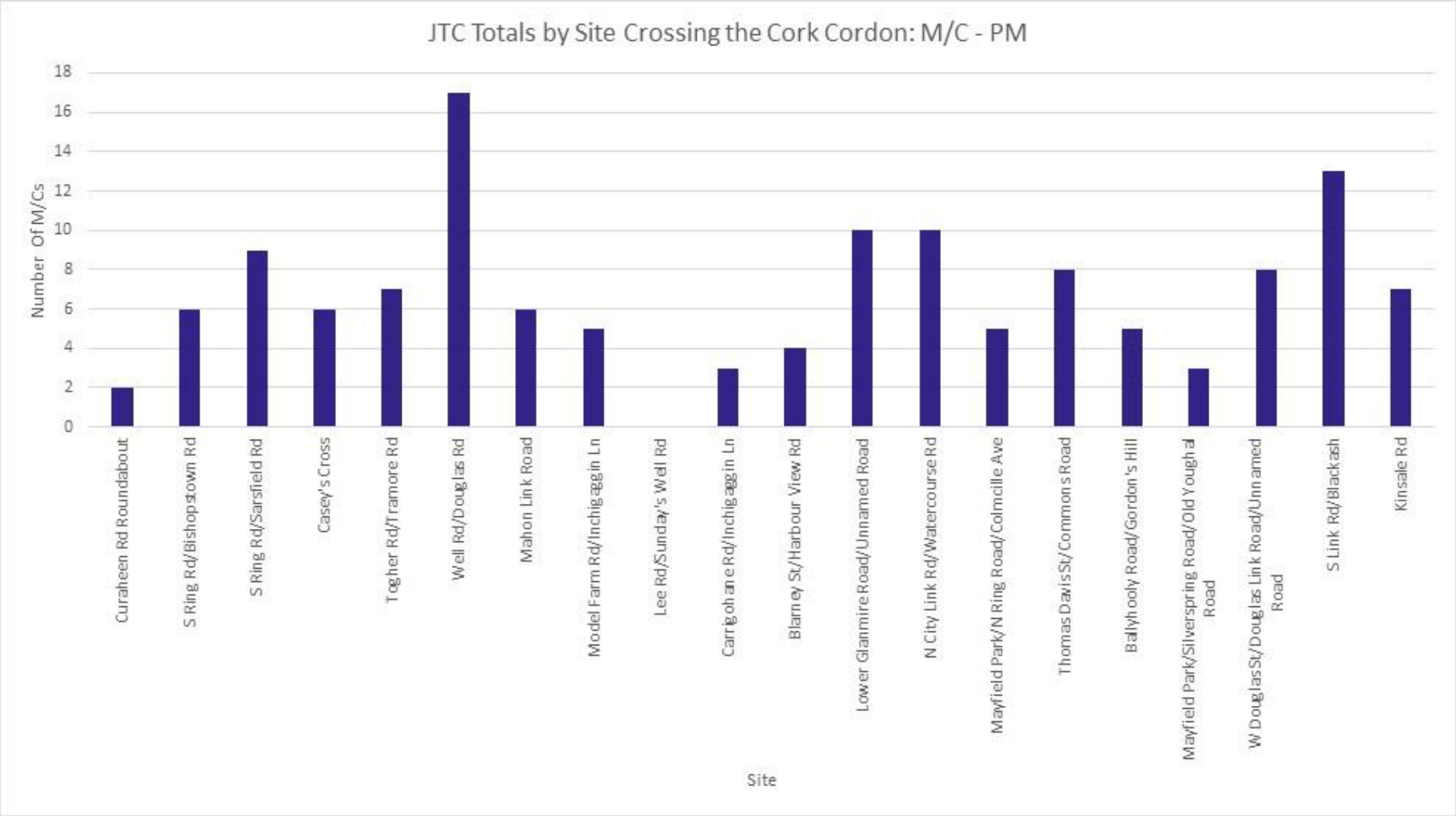


Figure A-24: Number of Motorcycle Journeys for JTC Surveys for PM per Site

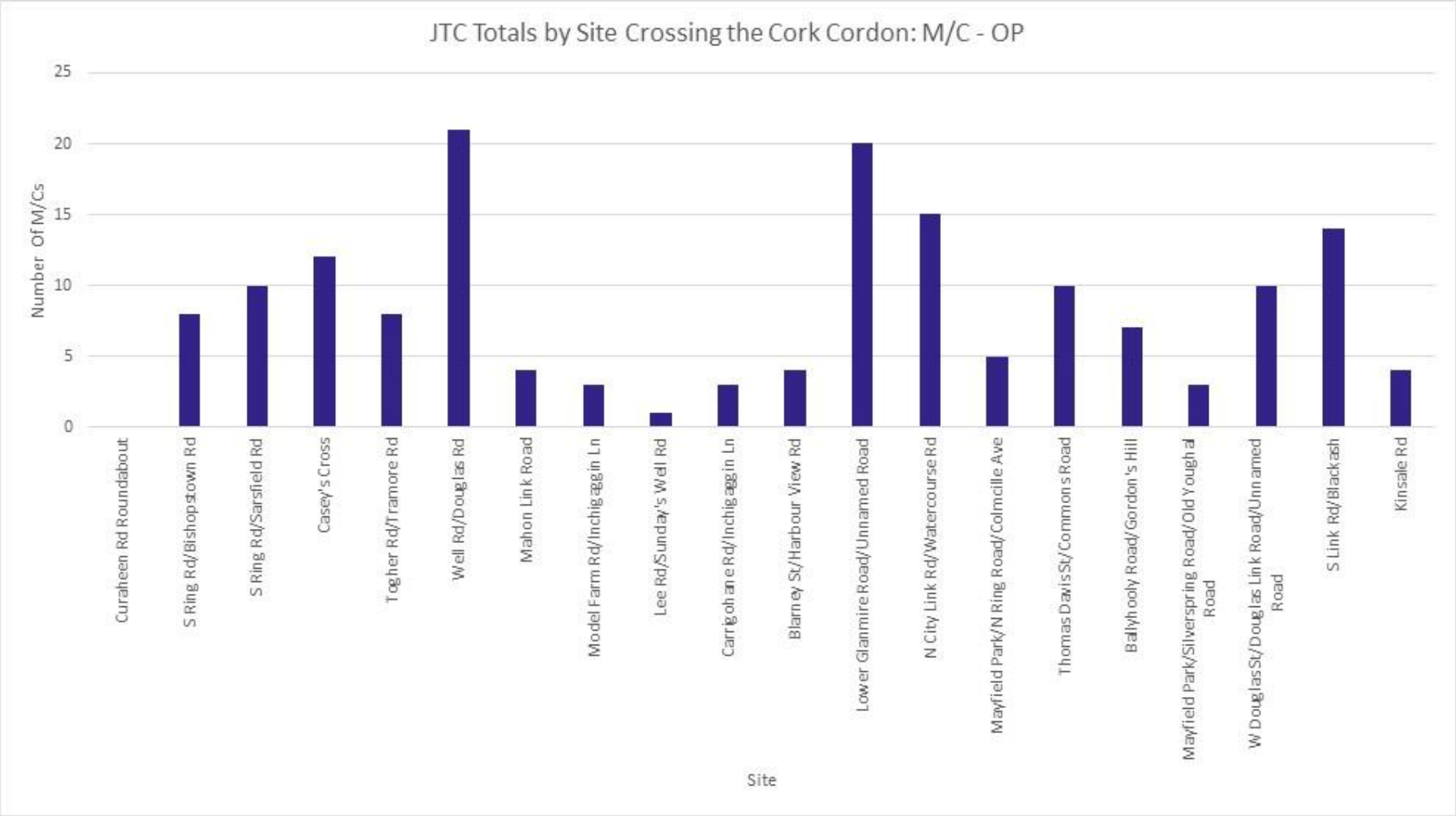


Figure A-25: Number of Motorcycle Journeys for JTC Surveys for OP per Site

Pedal Cycle Movements by Site and Period

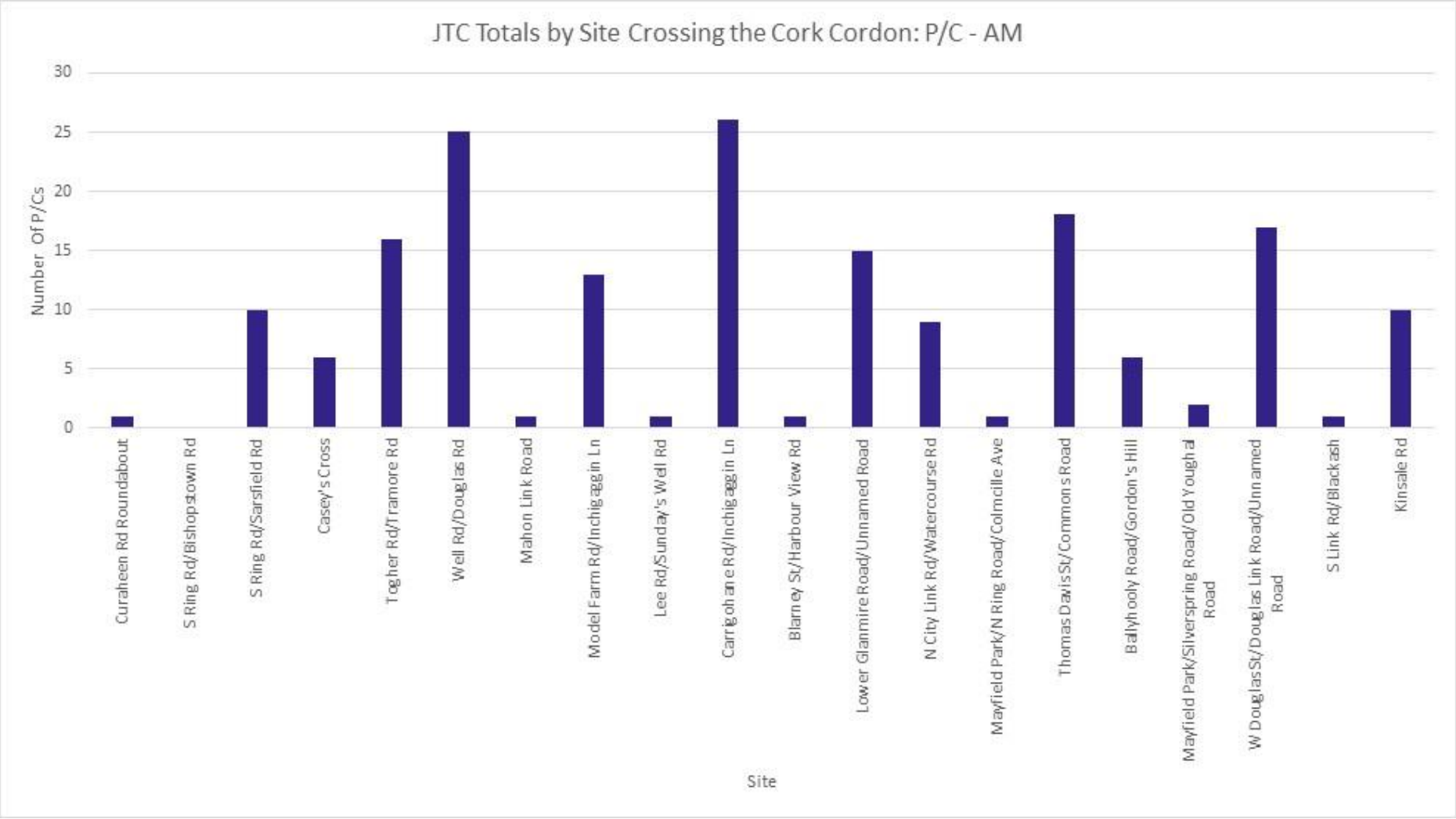


Figure A-26: Number of Pedal Cycle Journeys for JTC Surveys for AM per Site

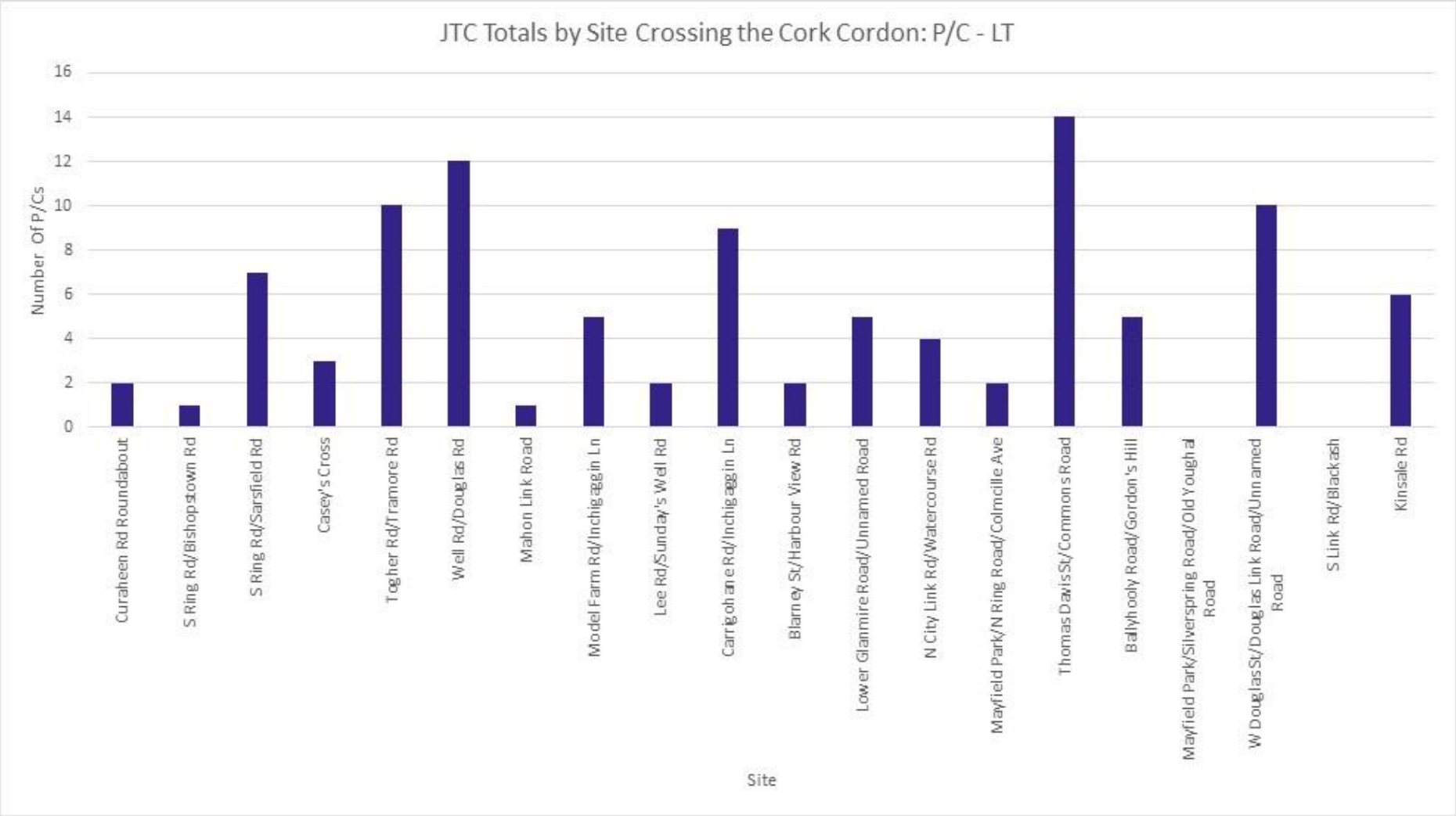


Figure A-27: Number of Pedal Cycle Journeys for JTC Surveys for LT per Site

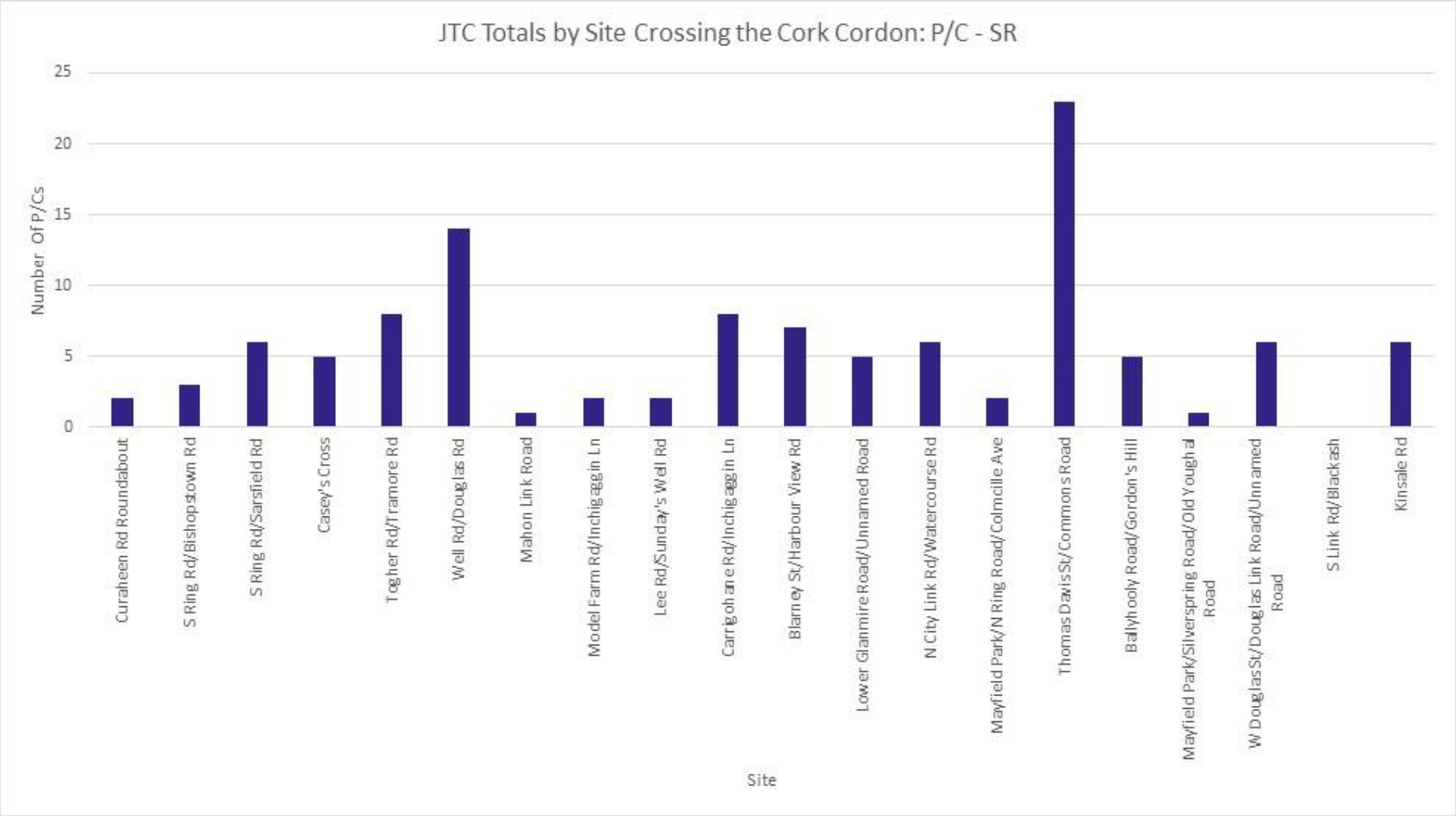


Figure A-28: Number of Pedal Cycle Journeys for JTC Surveys for SR per Site

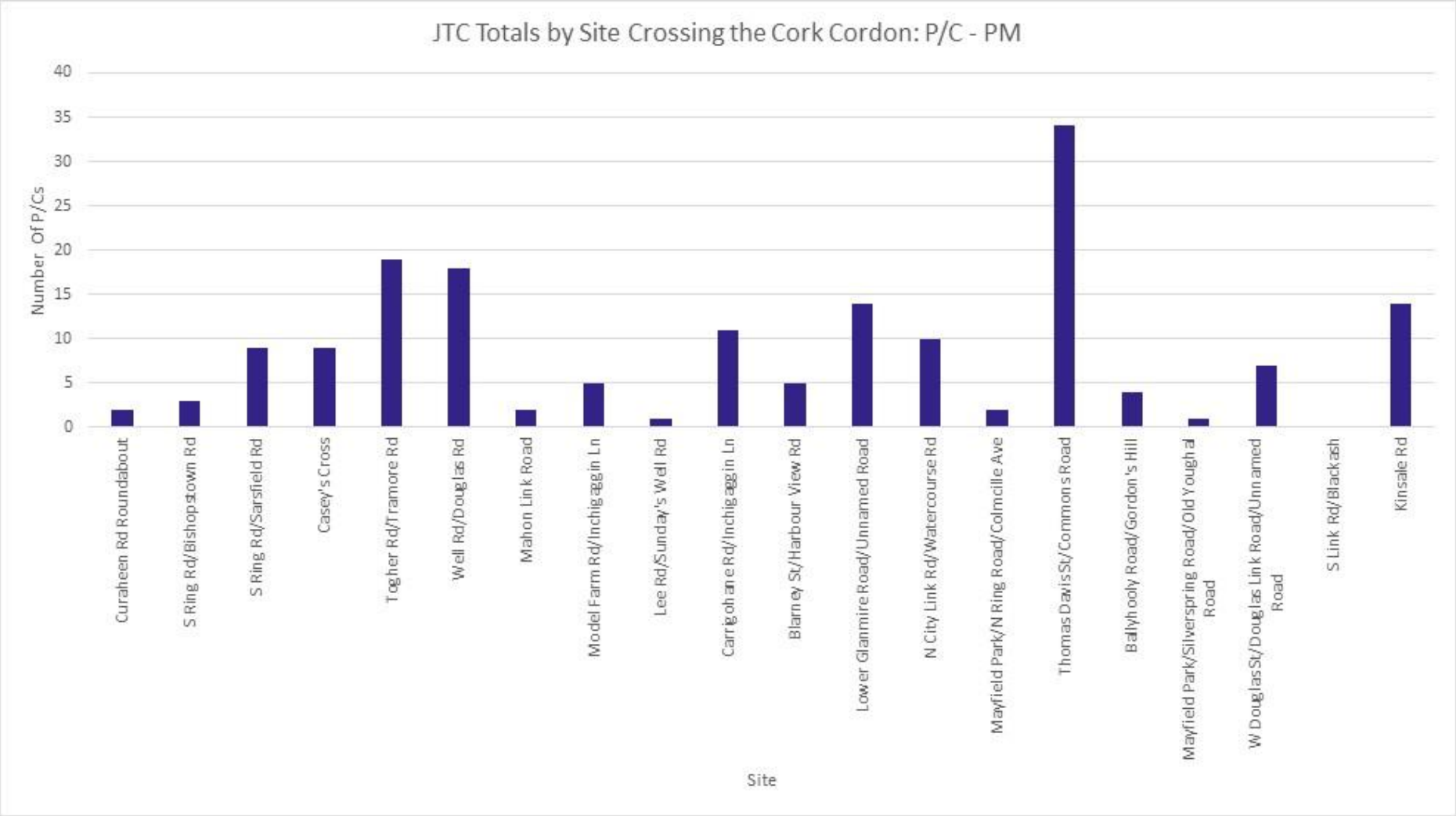


Figure A-29: Number of Pedal Cycle Journeys for JTC Surveys for PM per Site

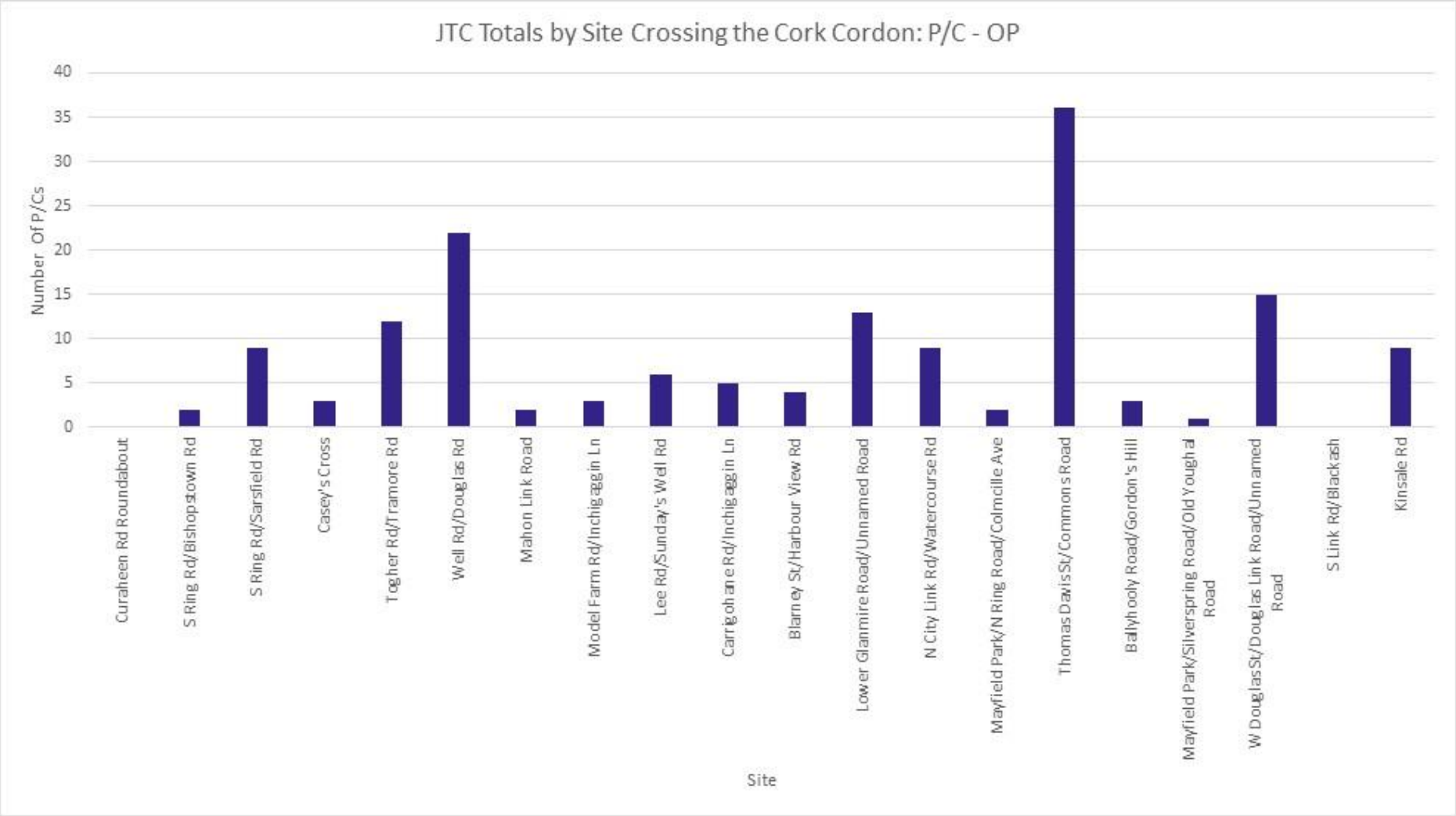


Figure A-30: Number of Pedal Cycle Journeys for JTC Surveys for OP per Site

Taxi Movements by Site and Period

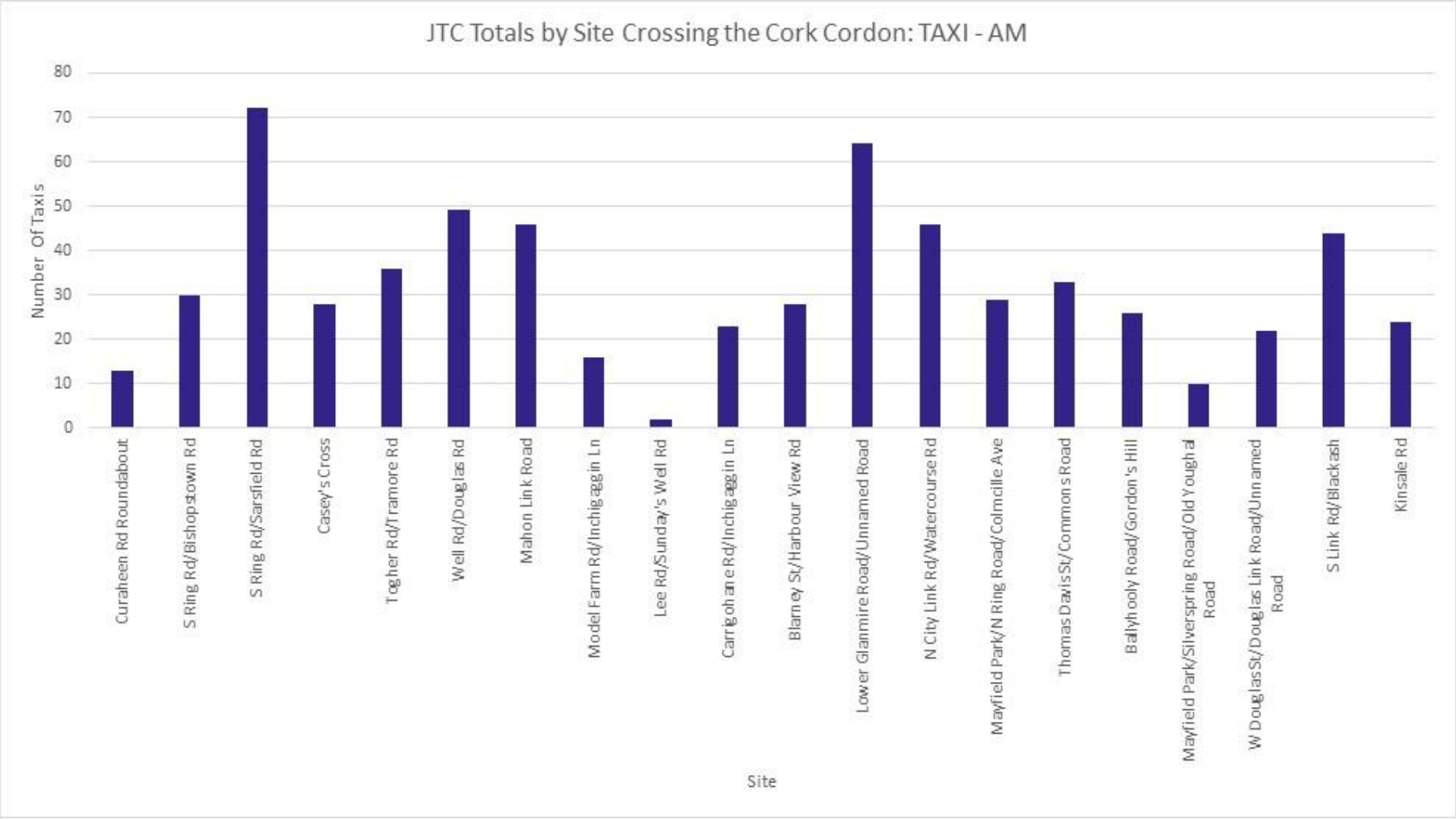


Figure A-31: Number of Taxi Journeys for JTC Surveys for AM per Site

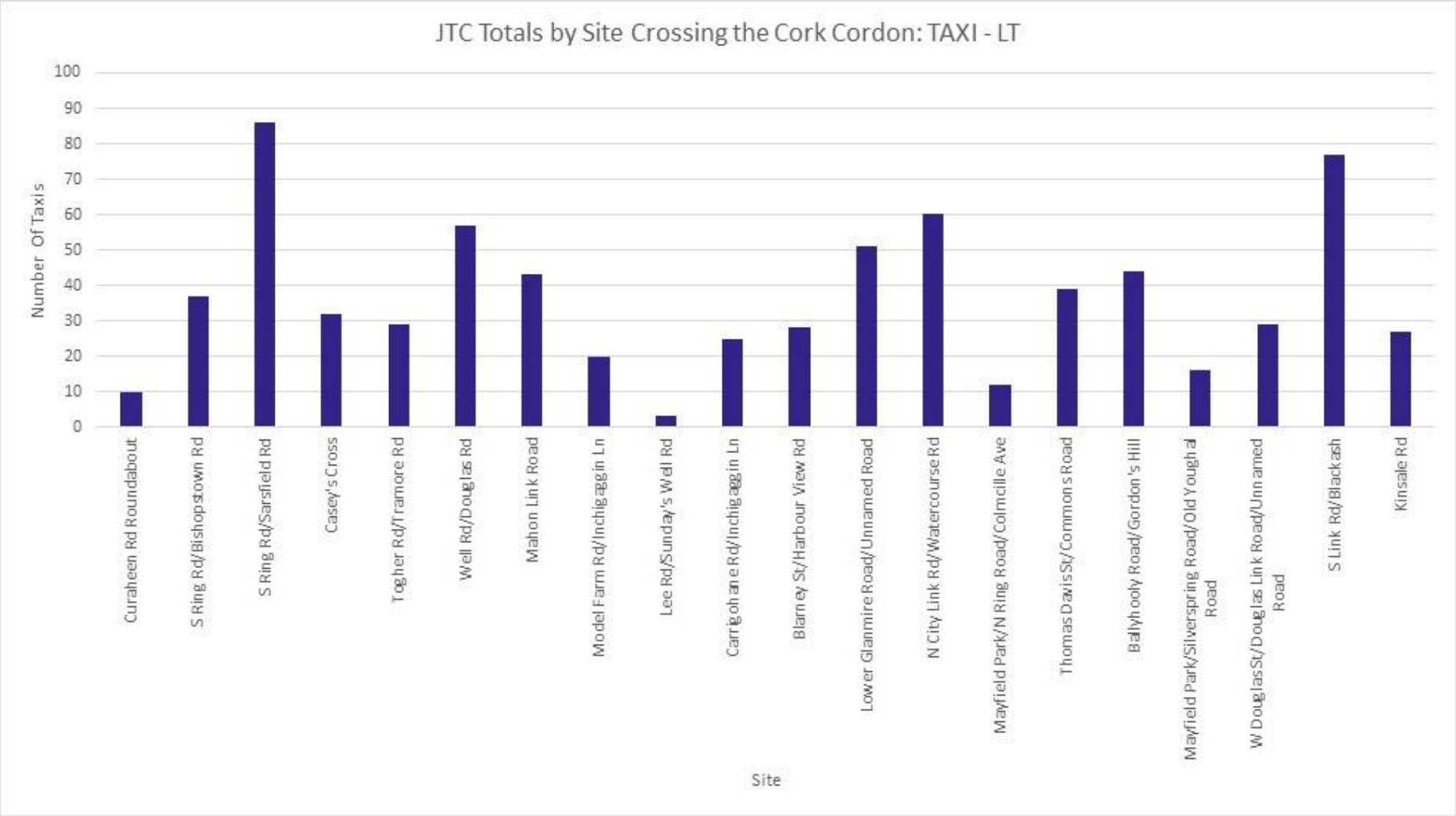


Figure A-32: Number of Taxi Journeys for JTC Surveys for LT per Site

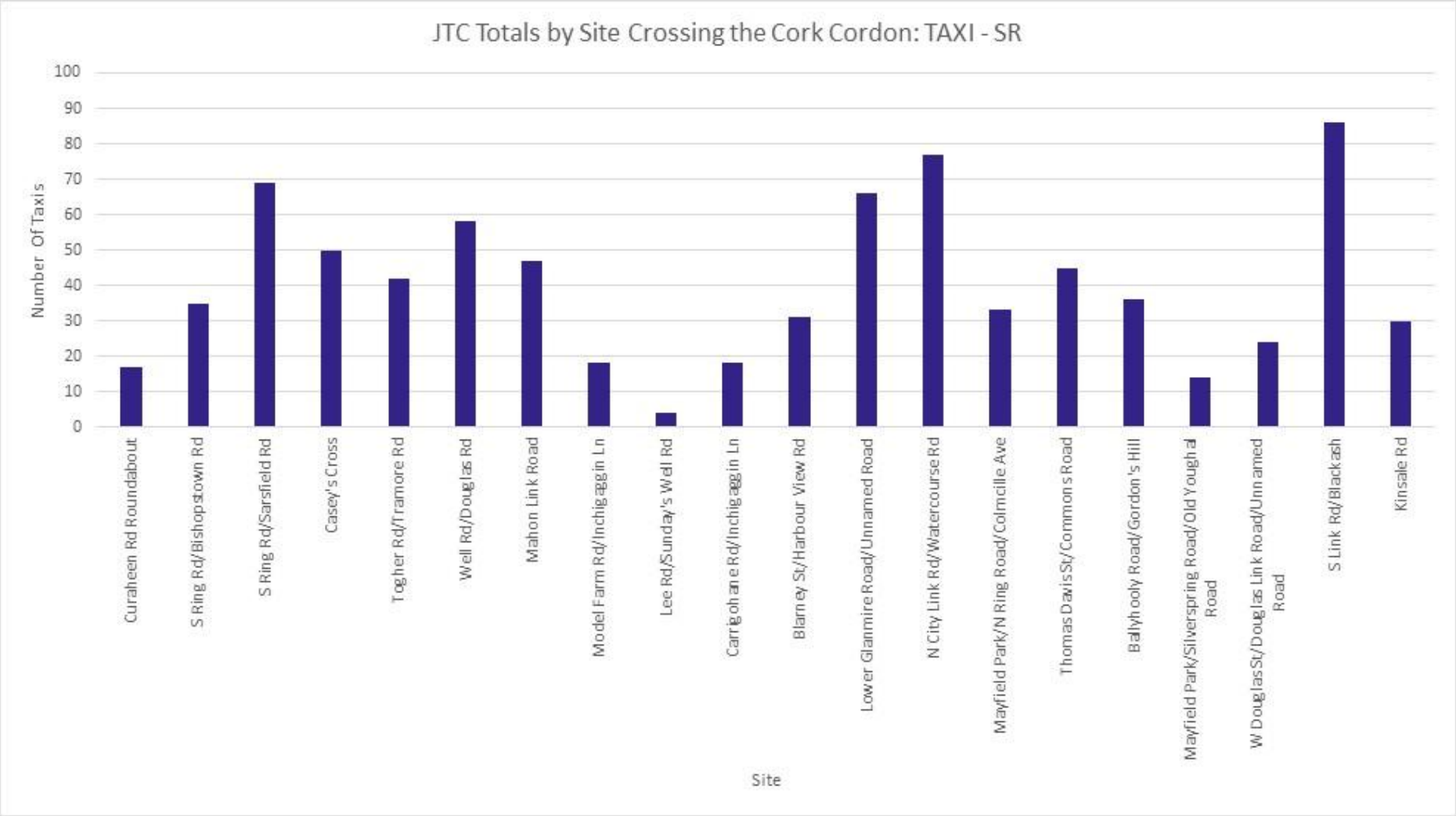


Figure A-33: Number of Taxi Journeys for JTC Surveys for SR per Site

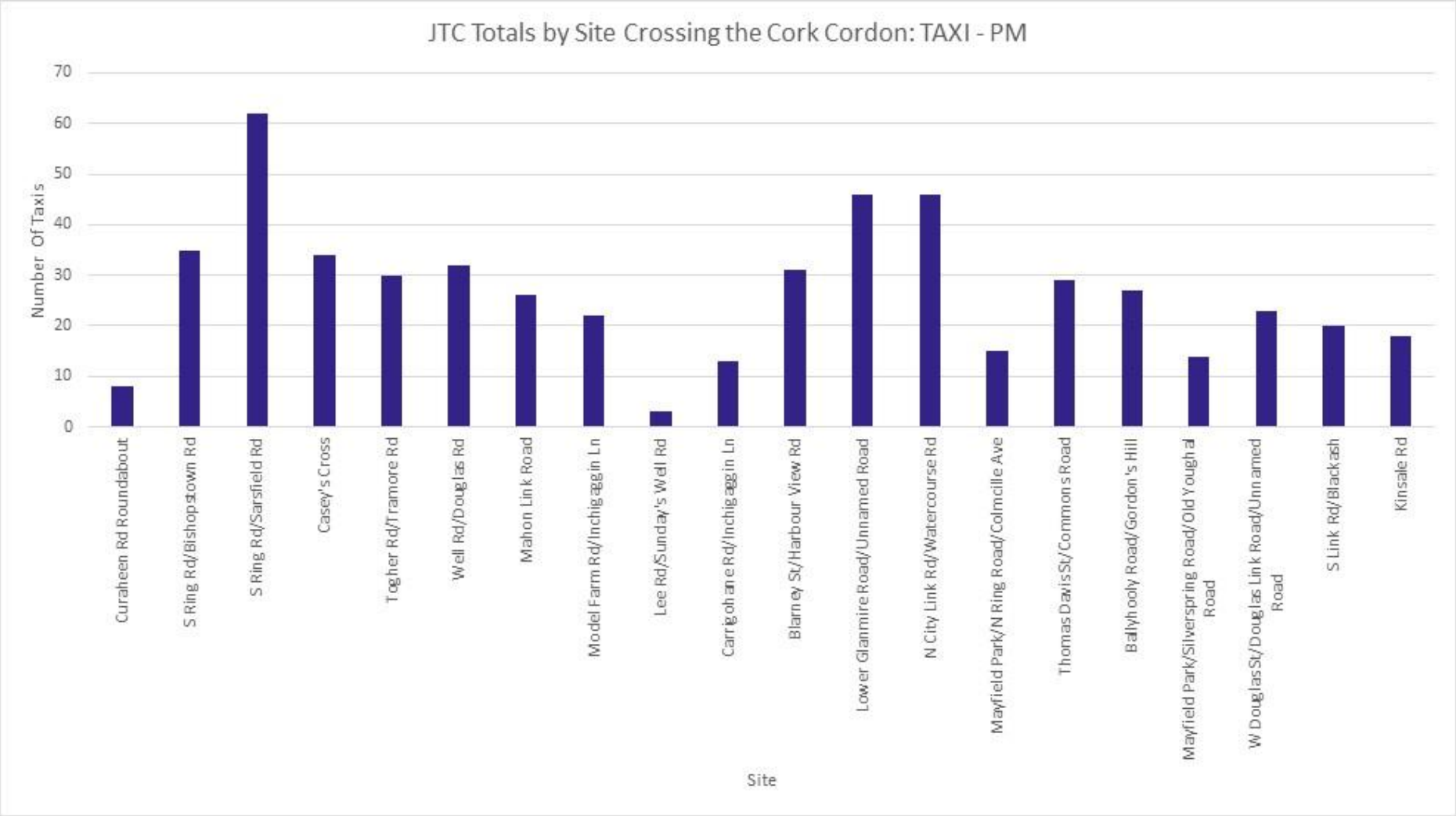


Figure A-34: Number of Taxi Journeys for JTC Surveys for PM per Site

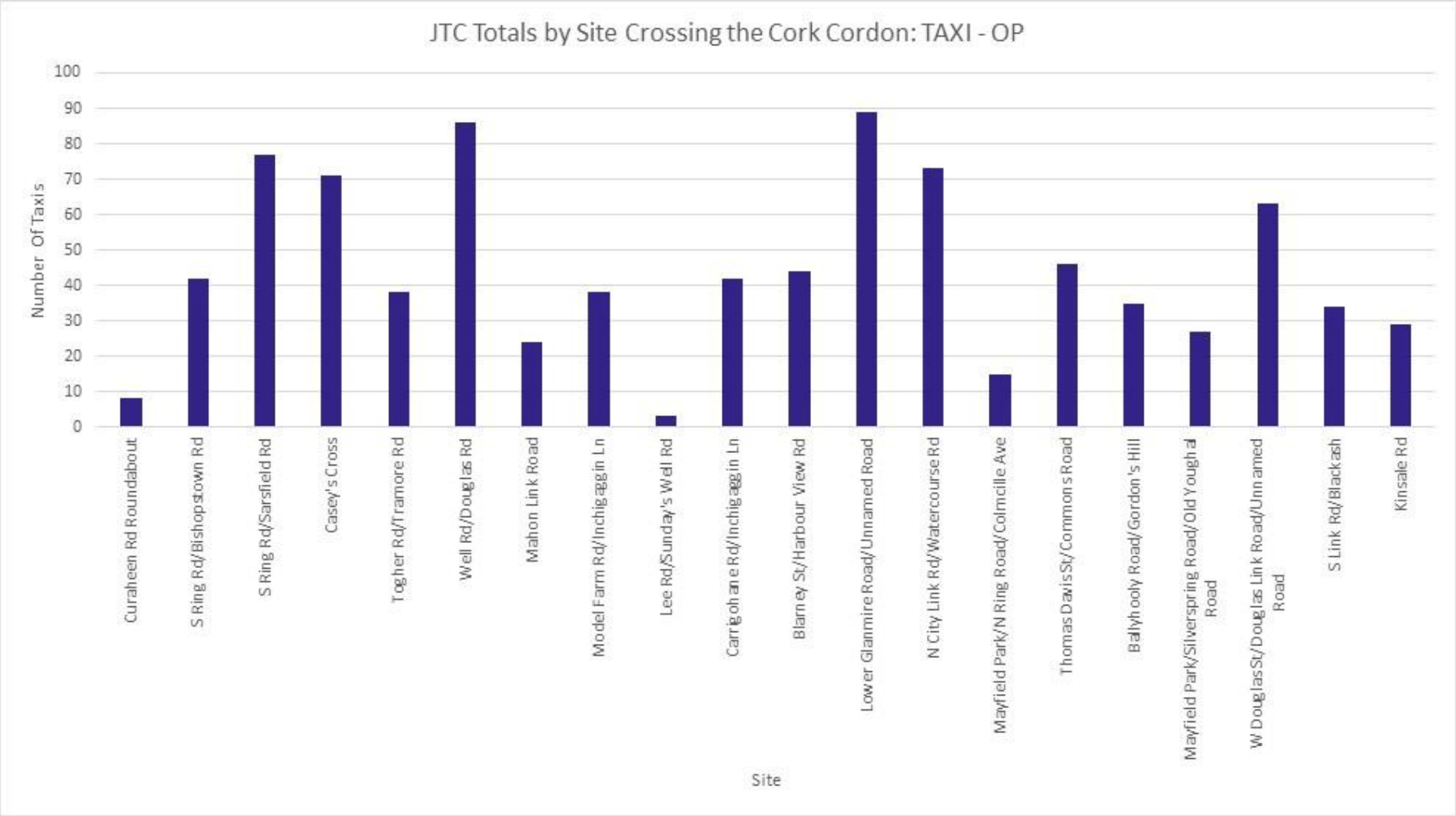


Figure A-35: Number of Taxi Journeys for JTC Surveys for OP per Site

Bus Movements by Site and Period

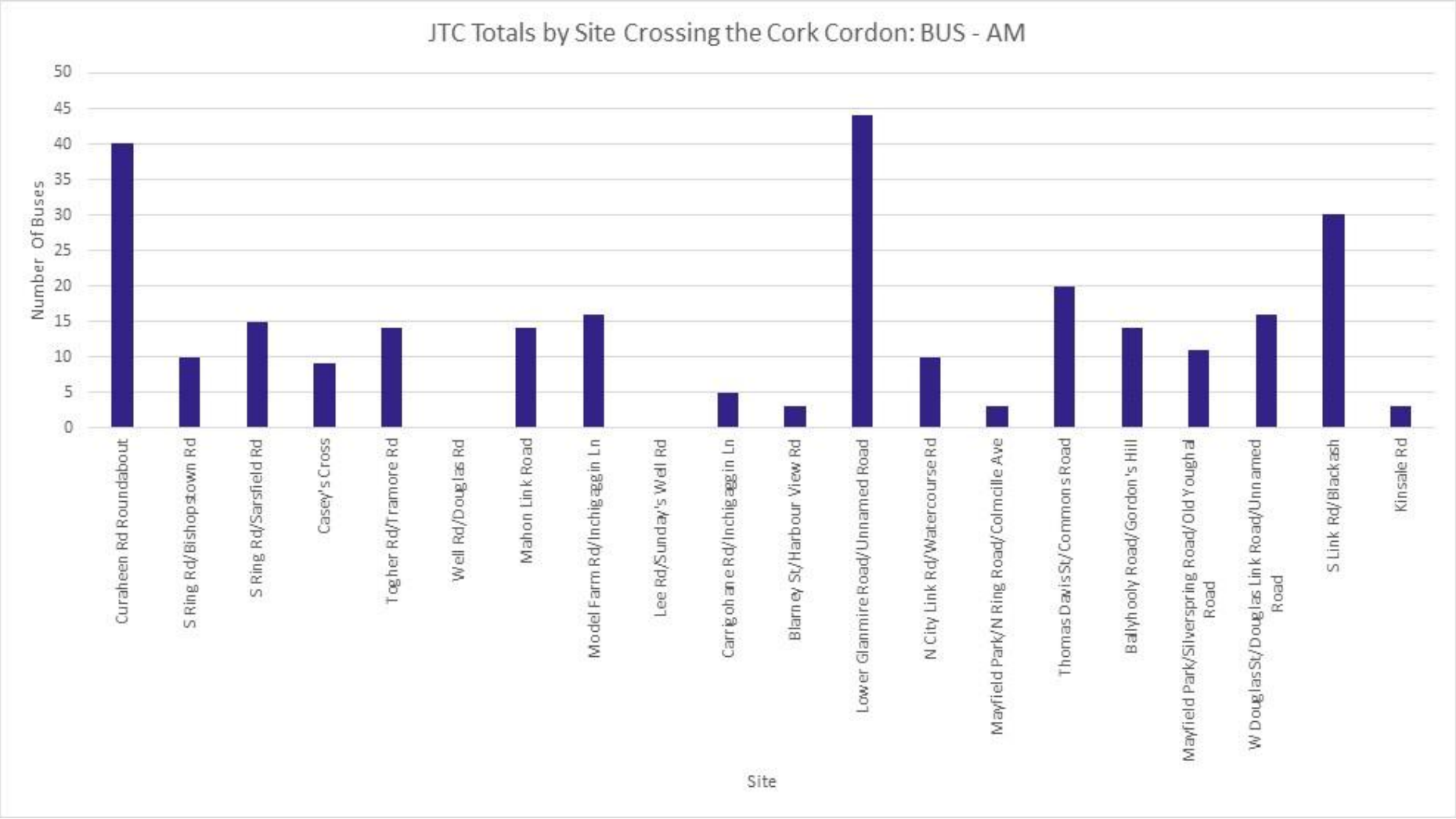


Figure A-36: Number of Bus Journeys for JTC Surveys for AM per Site

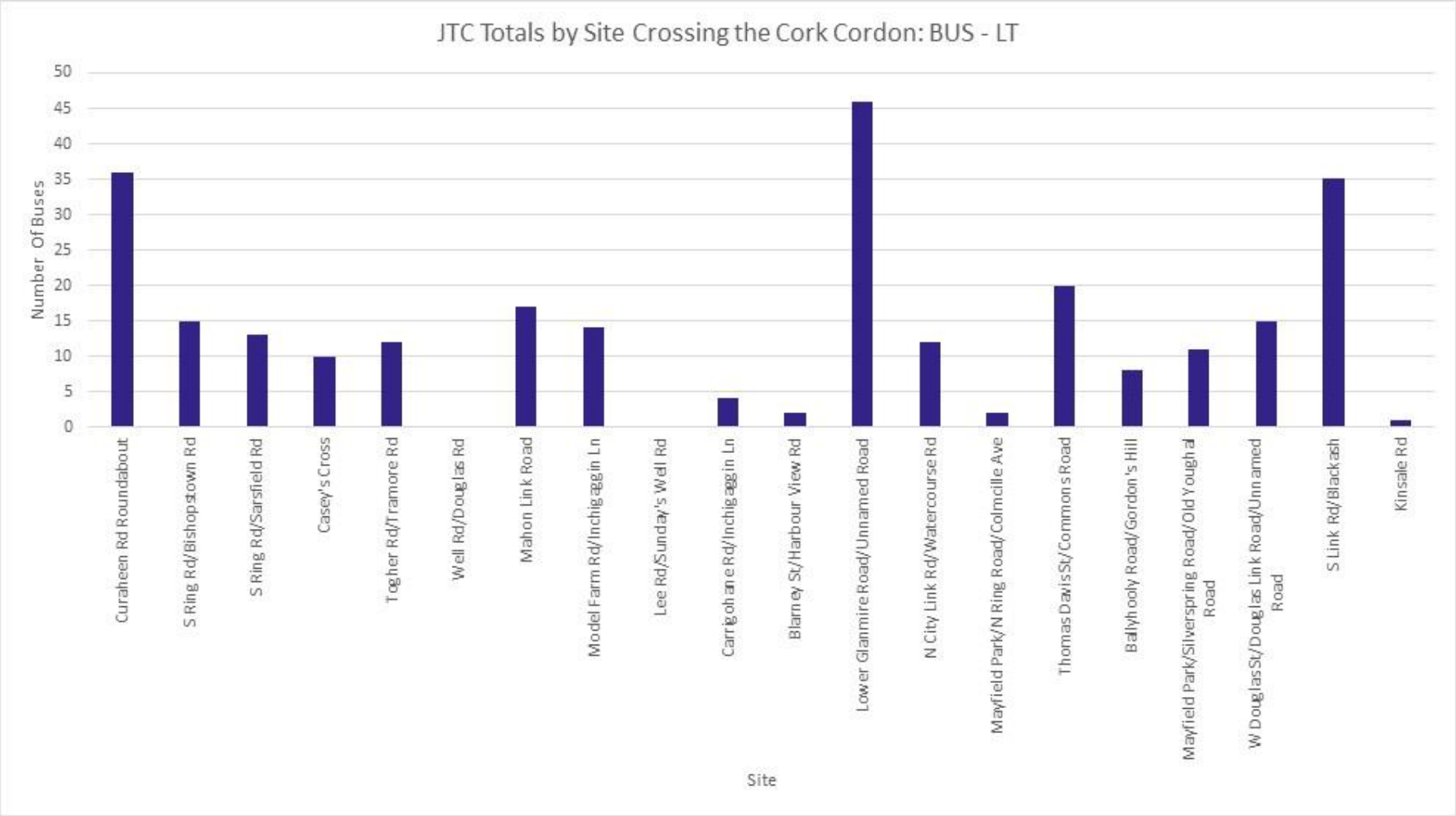


Figure A-37: Number of Bus Journeys for JTC Surveys for LT per Site

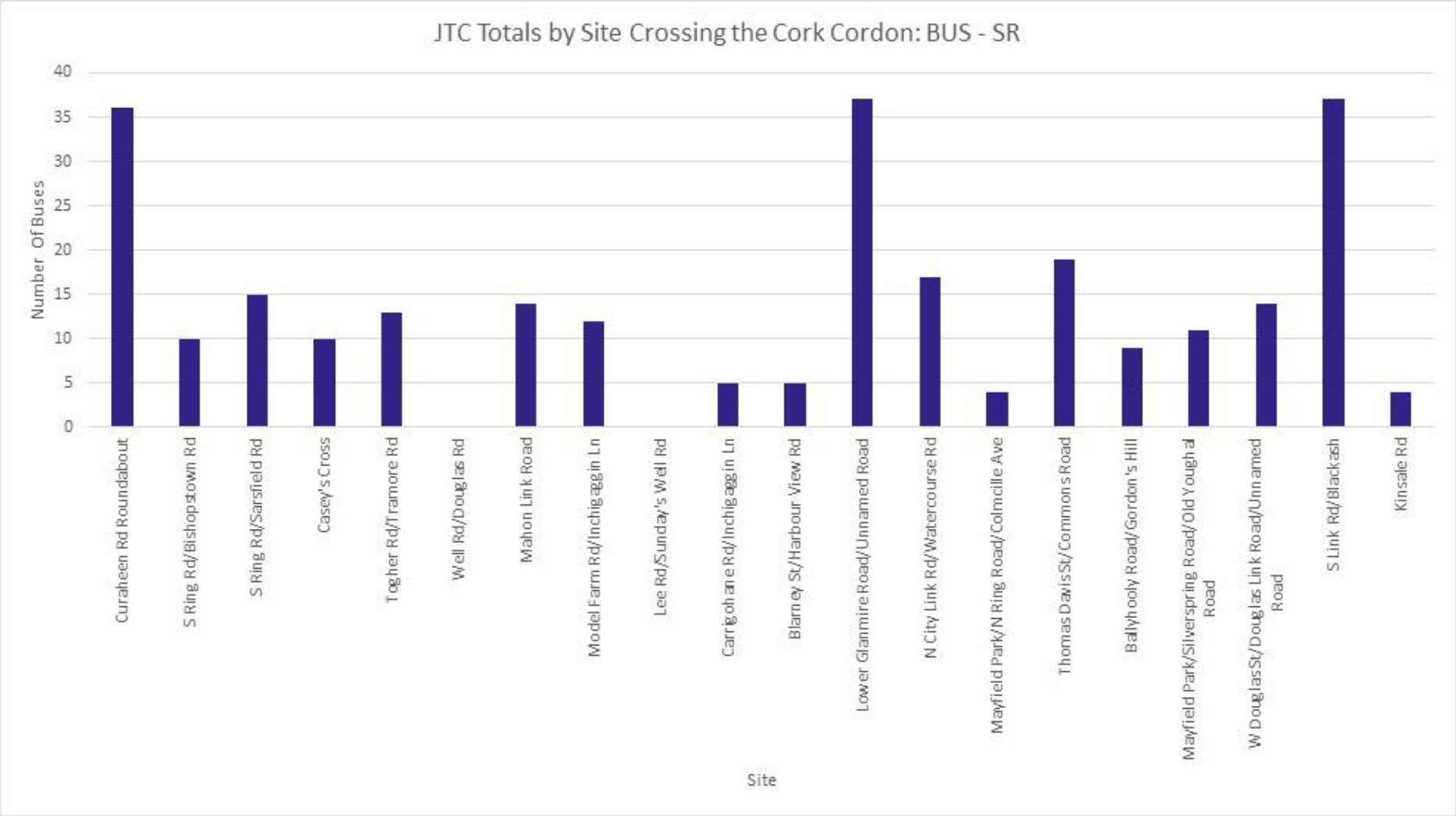


Figure A-38: Number of Bus Journeys for JTC Surveys for SR per Site

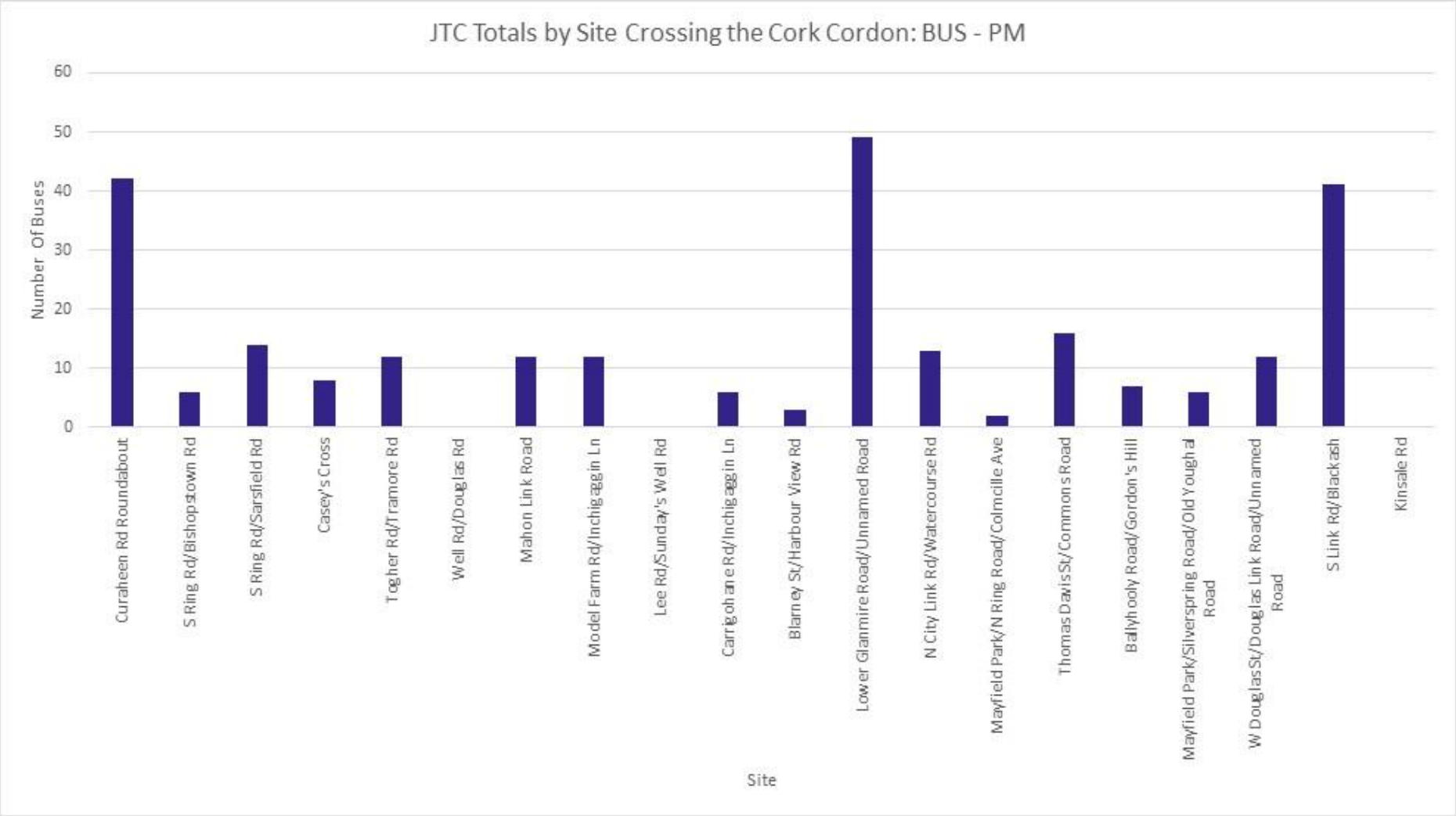


Figure A-39: Number of Bus Journeys for JTC Surveys for PM per Site

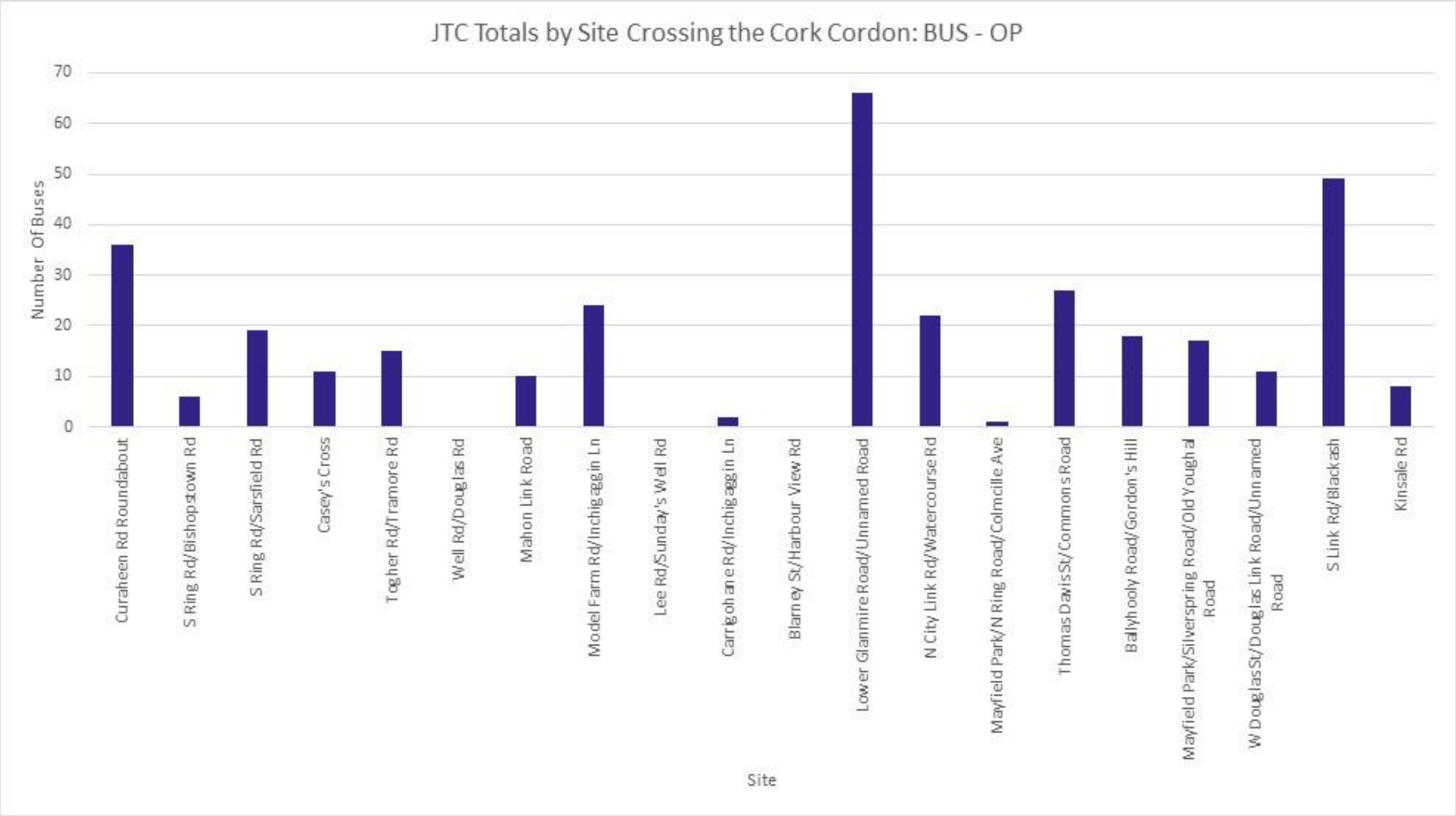


Figure A-40: Number of Bus Journeys for JTC Surveys for OP per Site

Pedestrian Movements by Site and Period

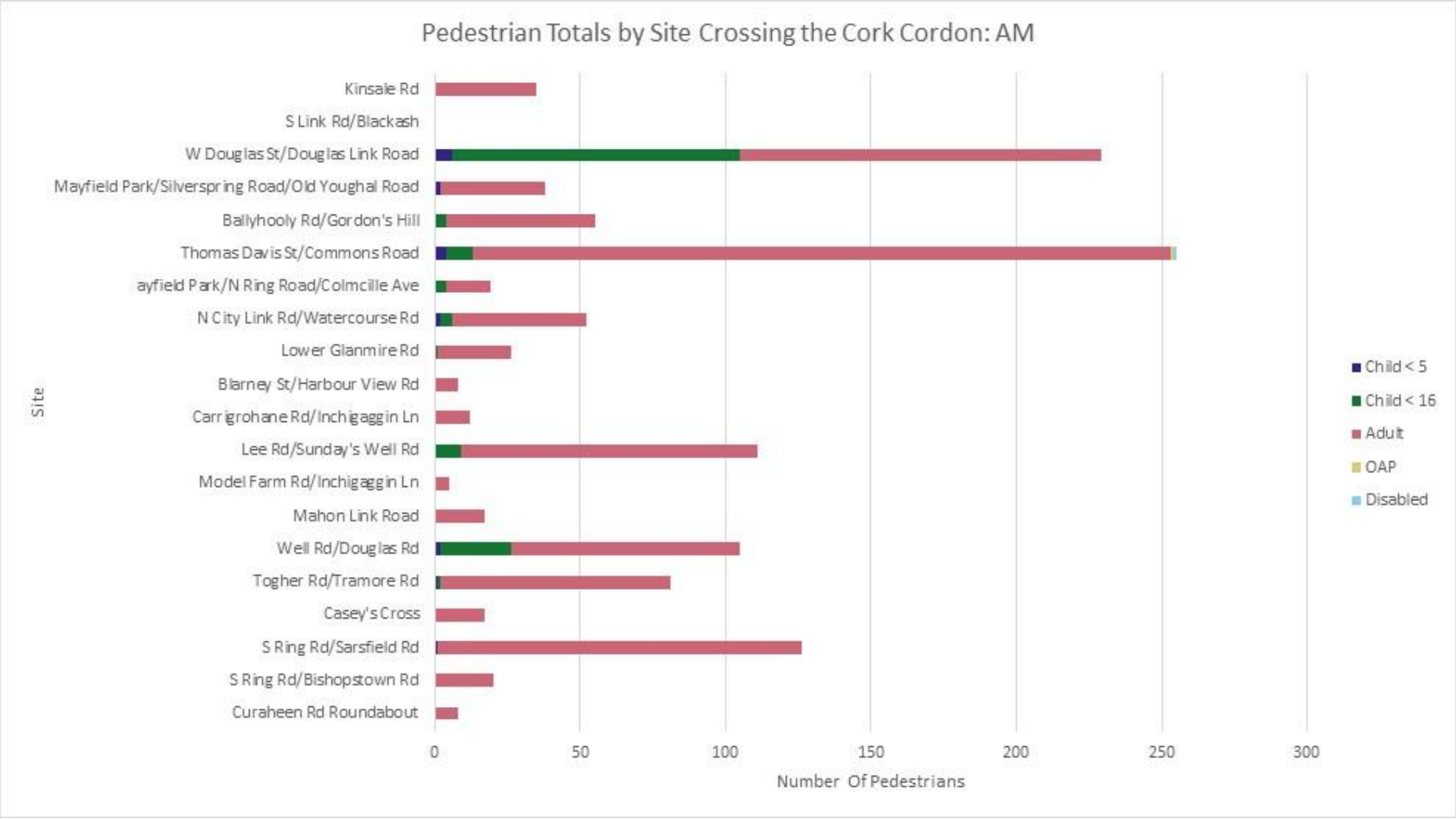


Figure A-41: Number of Pedestrian Journeys for Ped Surveys for AM per Site

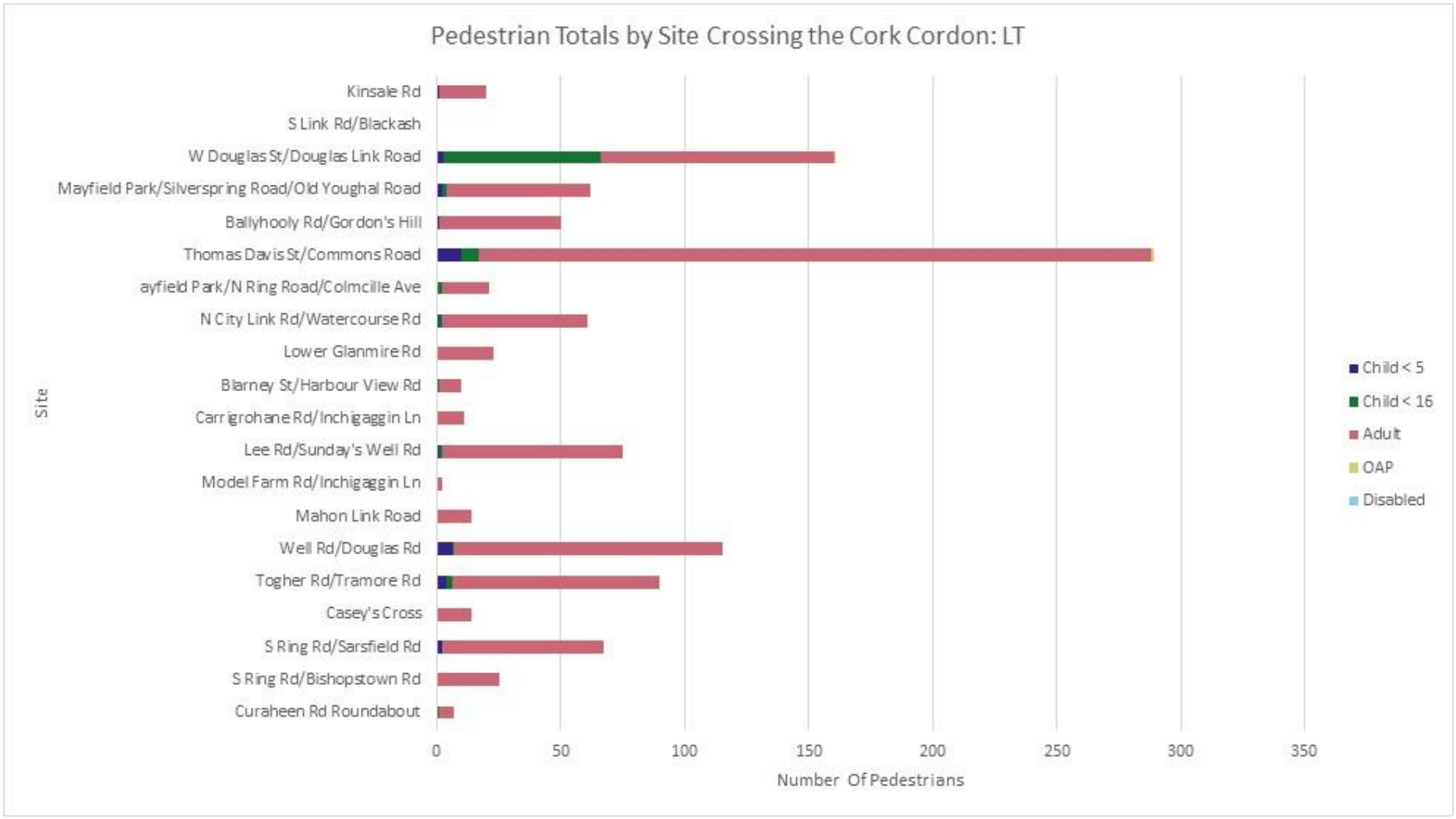


Figure A-42:Number of Pedestrian Journeys for Ped Surveys for LT per Site

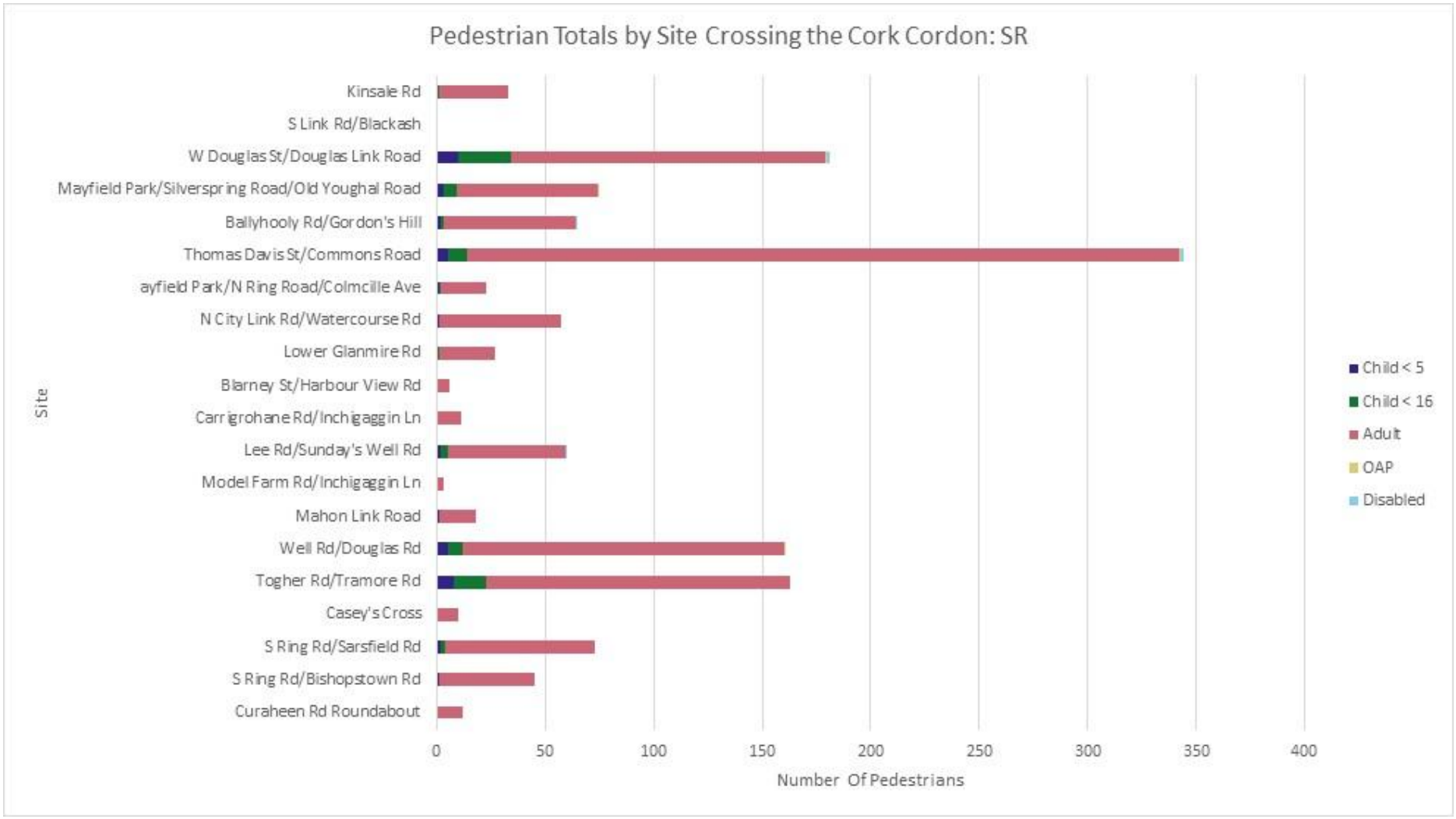


Figure A-43: Number of Pedestrian Journeys for Ped Surveys for SR per Site

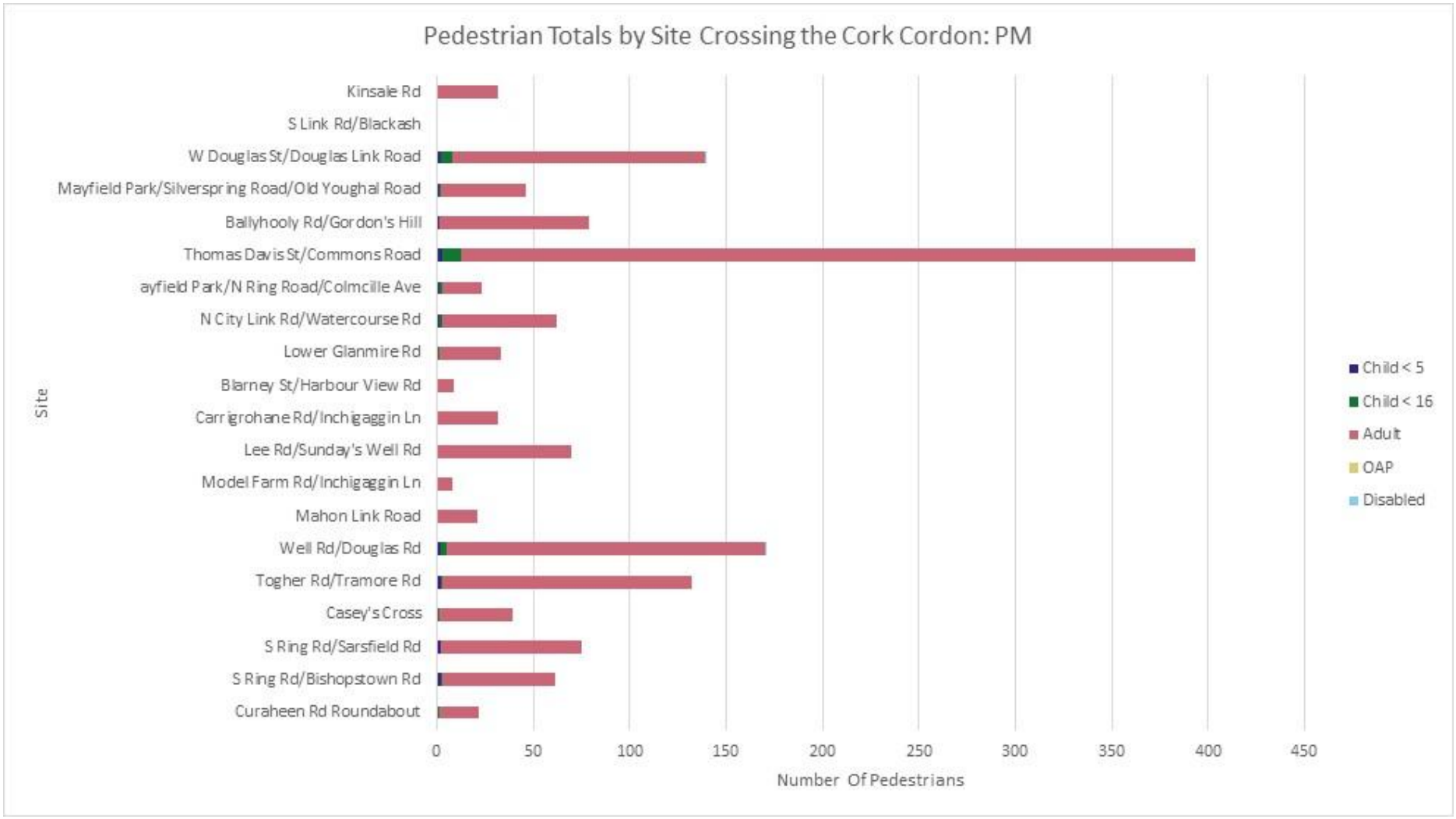


Figure A-44: Number of Pedestrian Journeys for Ped Surveys for PM per Site

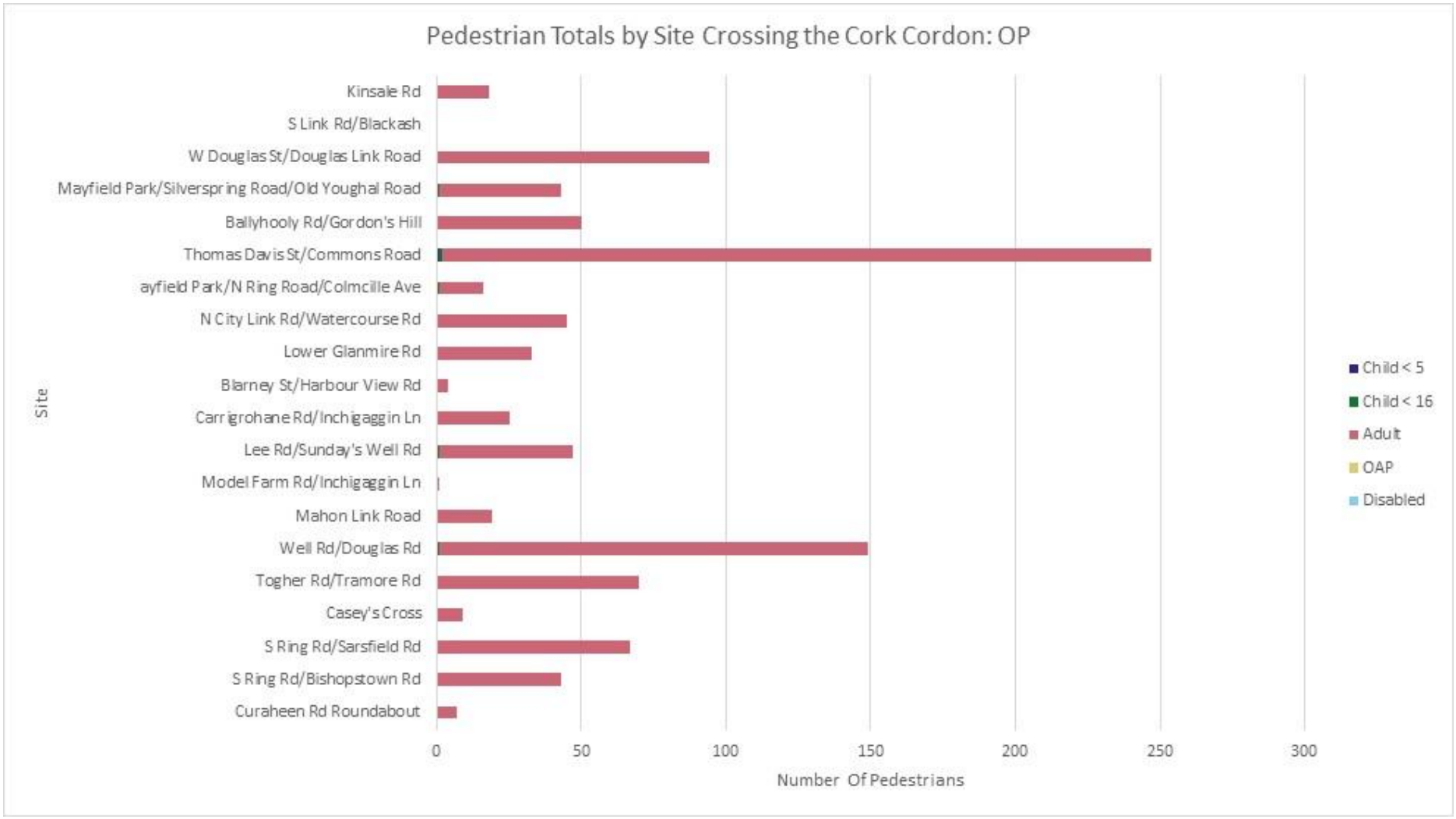


Figure A-45: Number of Pedestrian Journeys for Ped Surveys for OP per Site

Total Person Trips by Time Period

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

Mode	Trips	% Trips
P/C	179	0%
Pedestrian	1,219	2%
Car	45,935	77%
Taxi	943	2%
Bus	9,431	16%
Rail	2,031	3%

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

Mode	Trips	% Trips
P/C	100	0%
Pedestrian	1,117	2%
Car	35,429	77%
Taxi	1,088	2%
Bus	8,663	16%
Rail	1,009	3%

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

Mode	Trips	% Trips
P/C	112	0%
Pedestrian	1,367	2%
Car	39,277	77%
Taxi	1,201	2%
Bus	8,826	16%
Rail	932	3%

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

Mode	Trips	% Trips
P/C	170	0%
Pedestrian	1,448	2%
Car	40,259	77%
Taxi	799	2%
Bus	8,602	16%
Rail	1,230	3%

Appendix B - Additional Bus Stop Survey Data

Bus Stop Flow Data

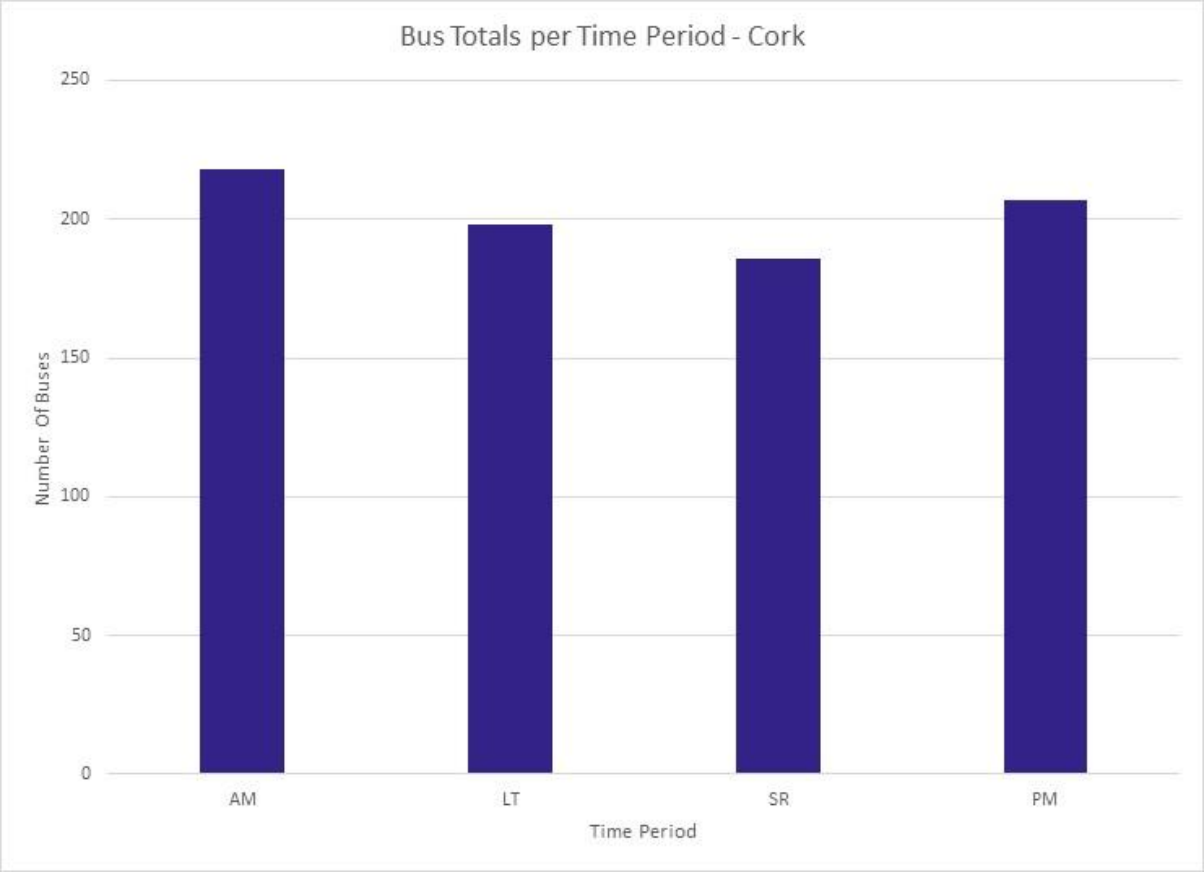


Figure B-1:Total Buses per Time Period - Cork

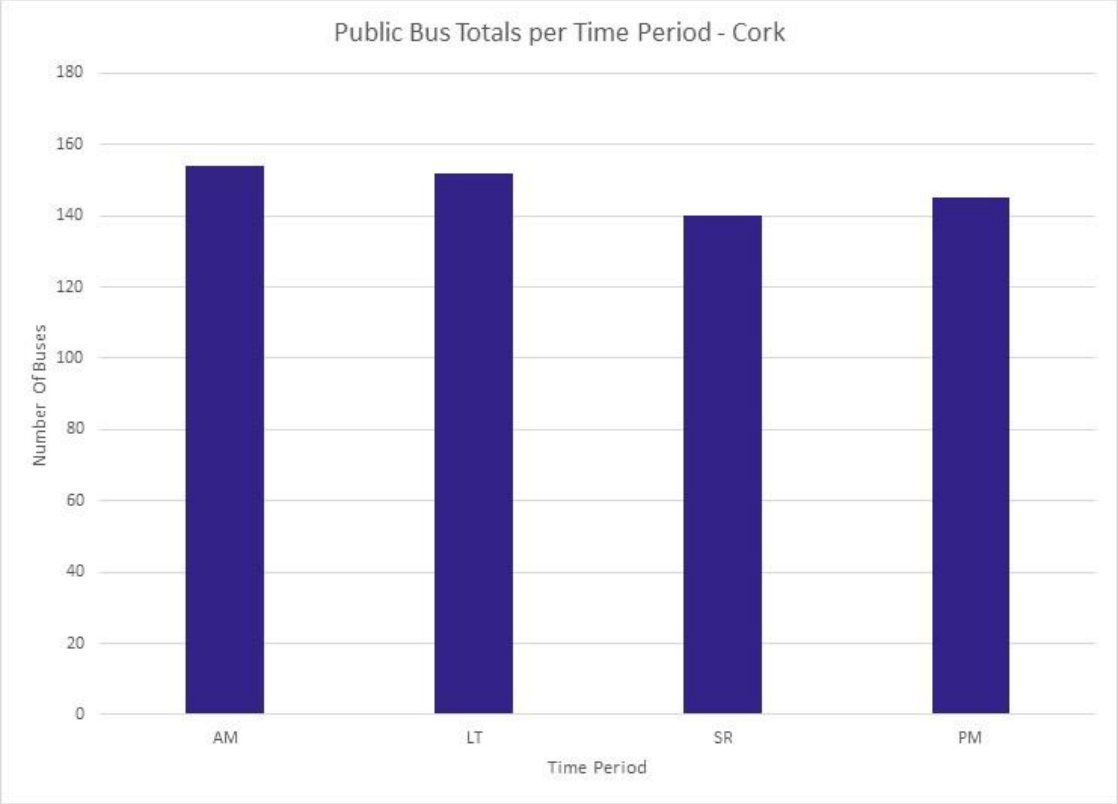


Figure B-2: Public Buses Total per Time Period - Cork

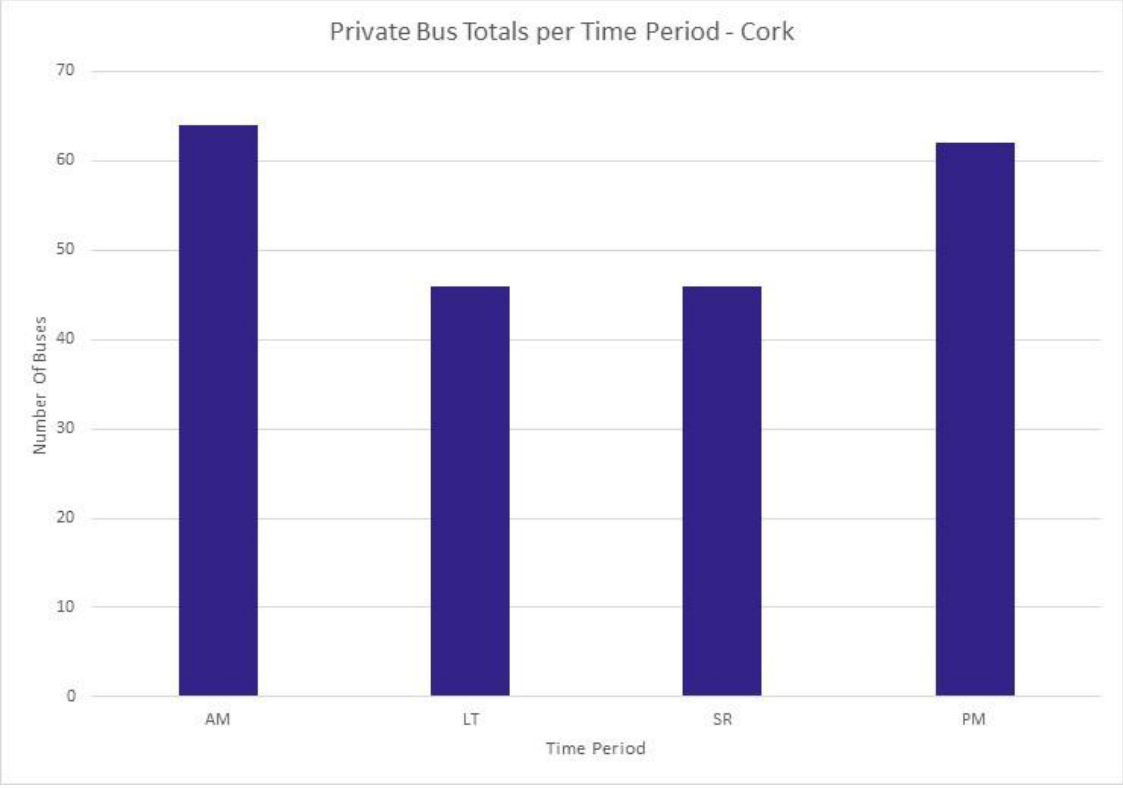


Figure B-3: Private Buses Total per Time Period - Cork

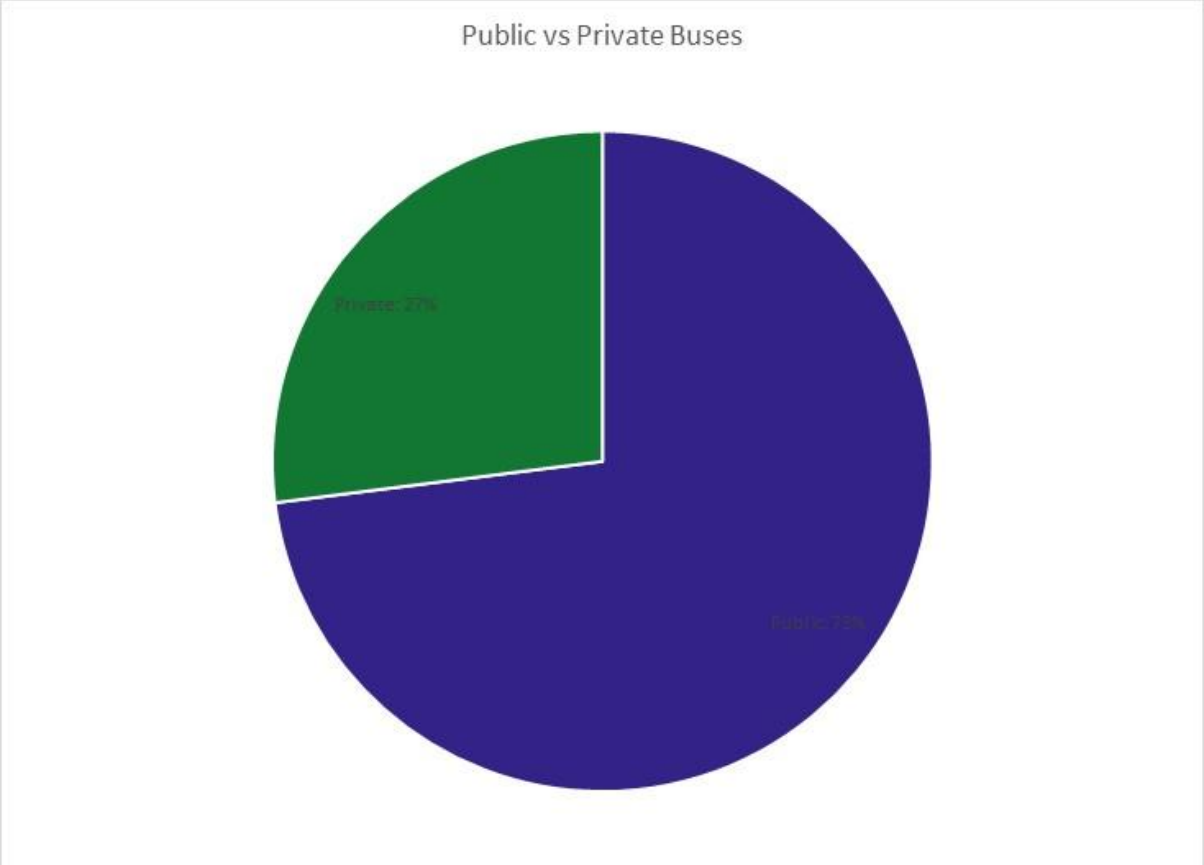


Figure B-4:Private Buses vs Public Buses - Cork

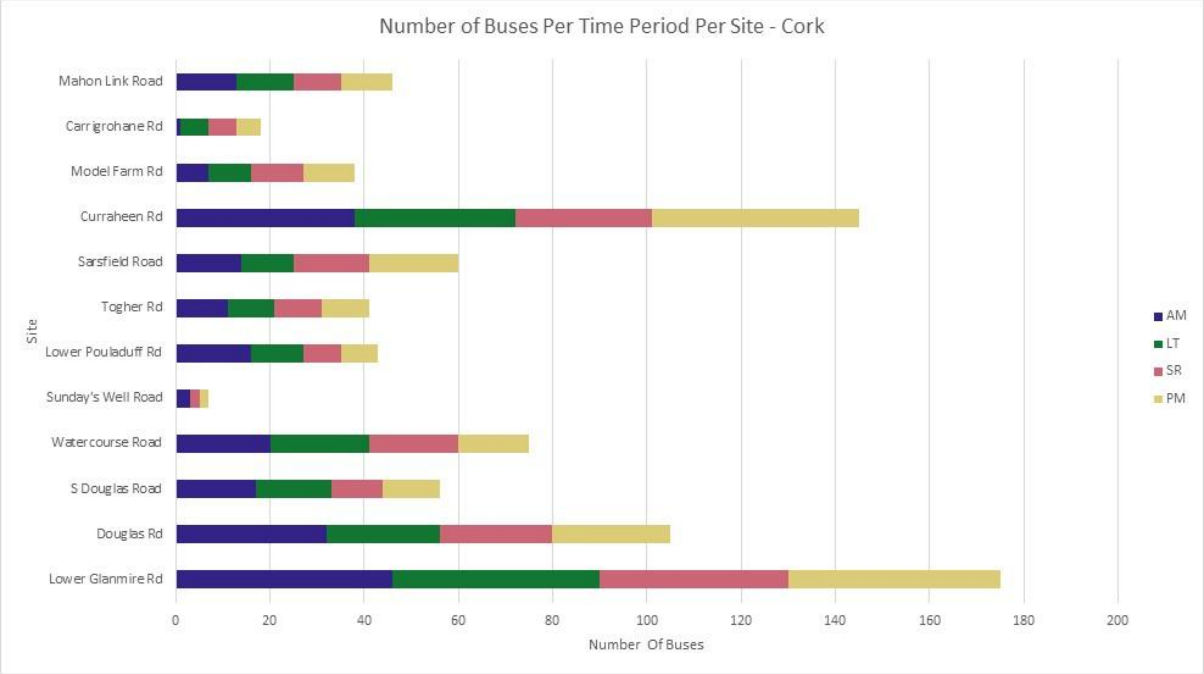


Figure B-5: Number of Buses per Time Period Per Site - Cork

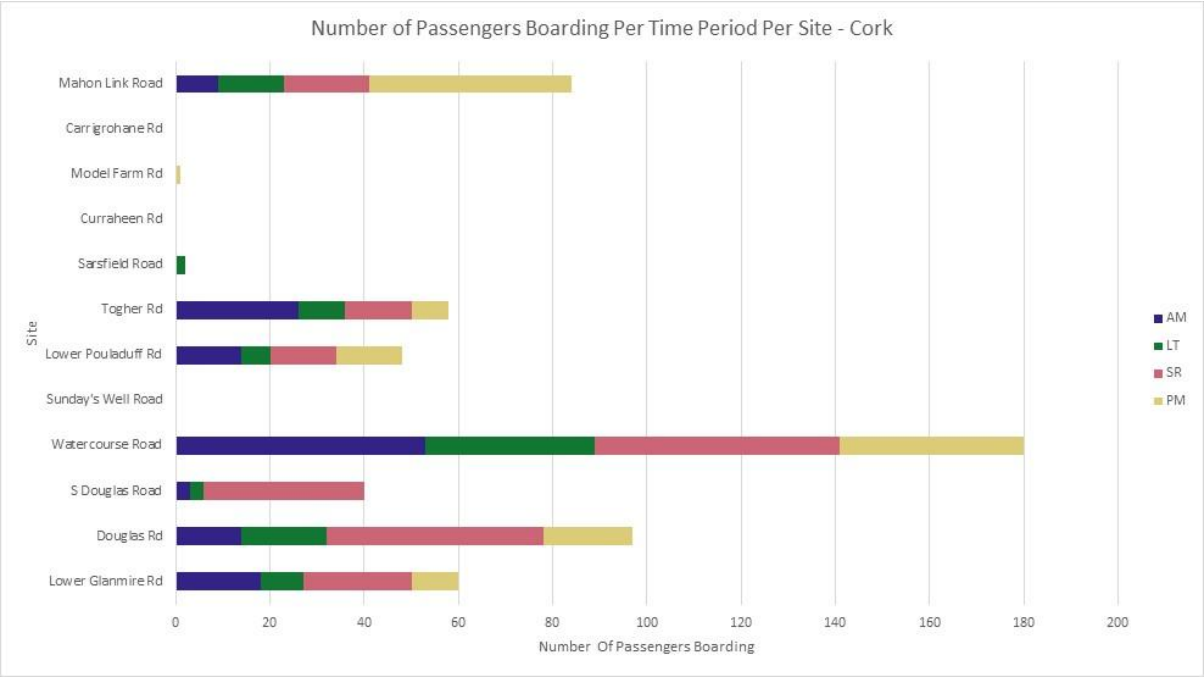


Figure B-6: Number of Passengers Boarding per Time Period Per Site - Cork

Bus Occupancy Methodology

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

First the average number of passengers for each bus type was calculated. These are standard industry bus occupancy values and are shown in the table below.

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

Average Occupancy 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 number of passengers per bus type, a value was calculated which corresponds with each occupancy percentage that was recorded in the bus 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 each 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.

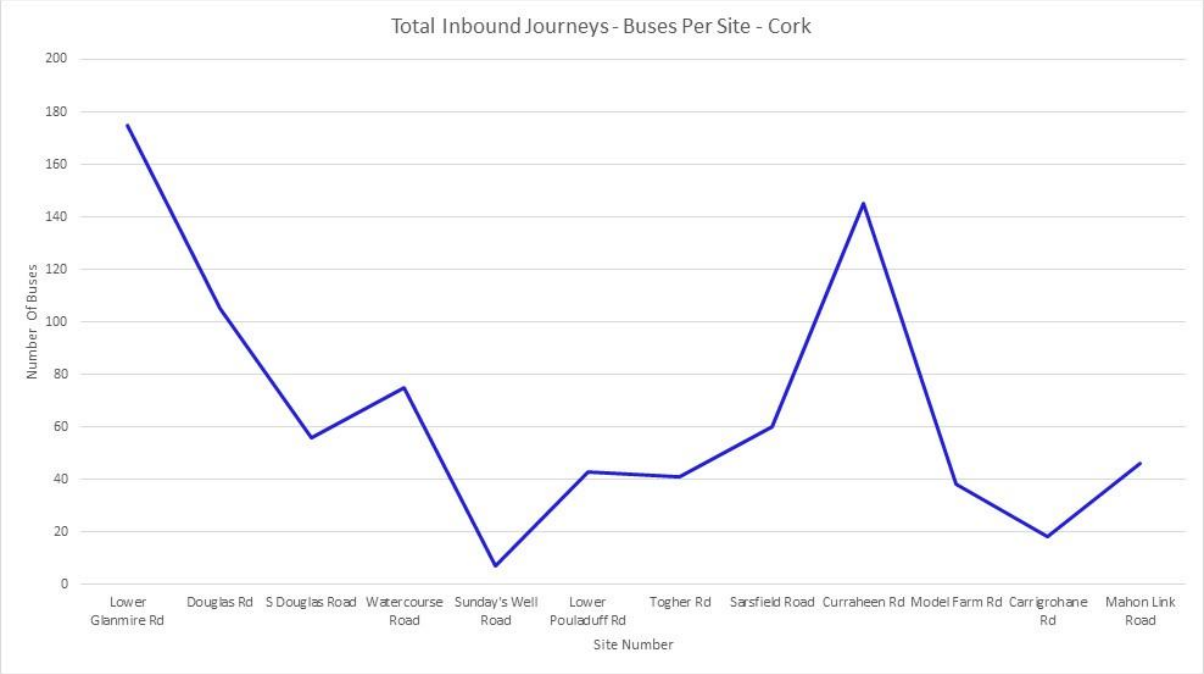


Figure B-7: Total Inbound Journeys – Buses Per Site - Cork

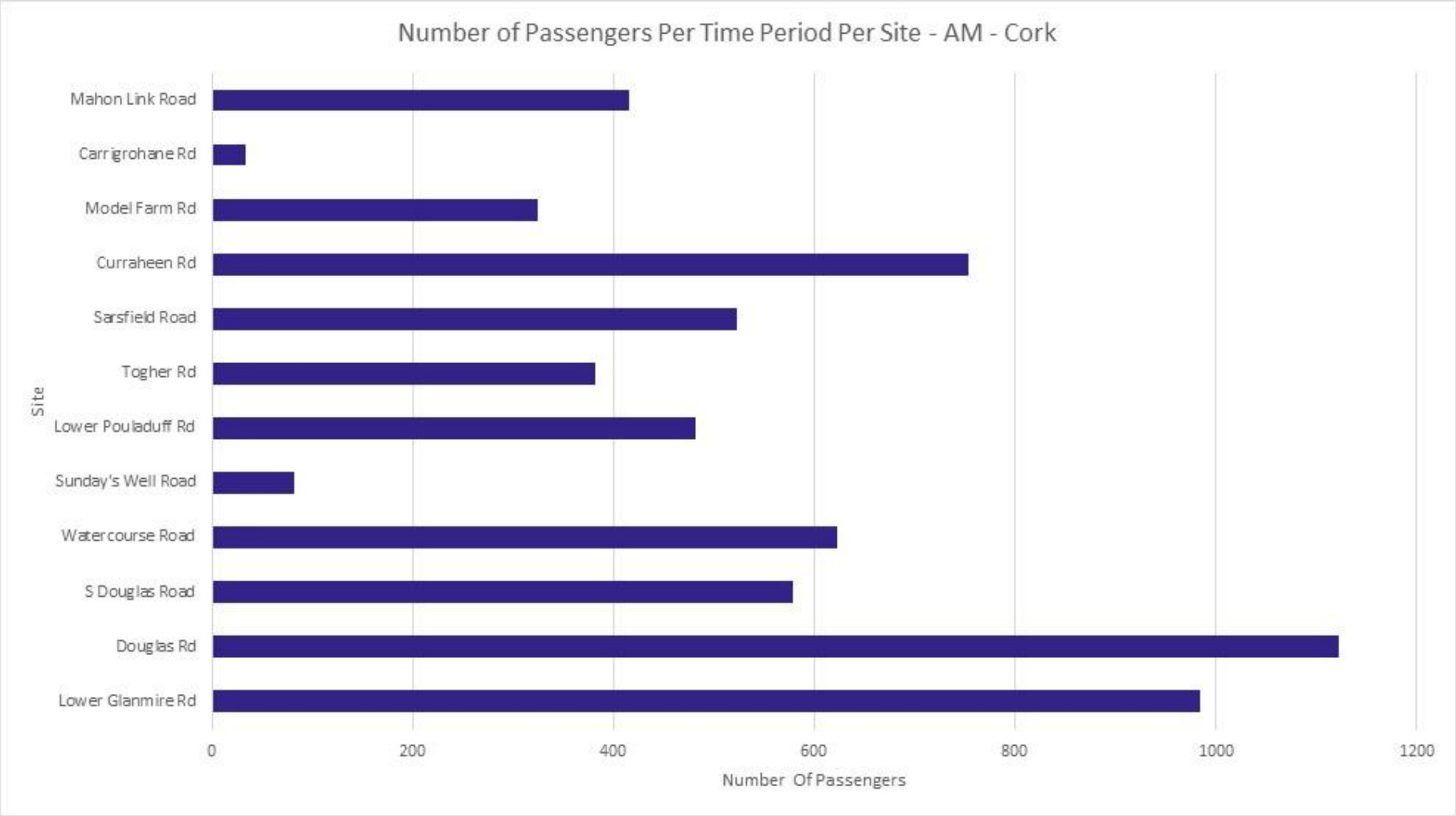


Figure B-8: Bus Passengers - AM - Cork

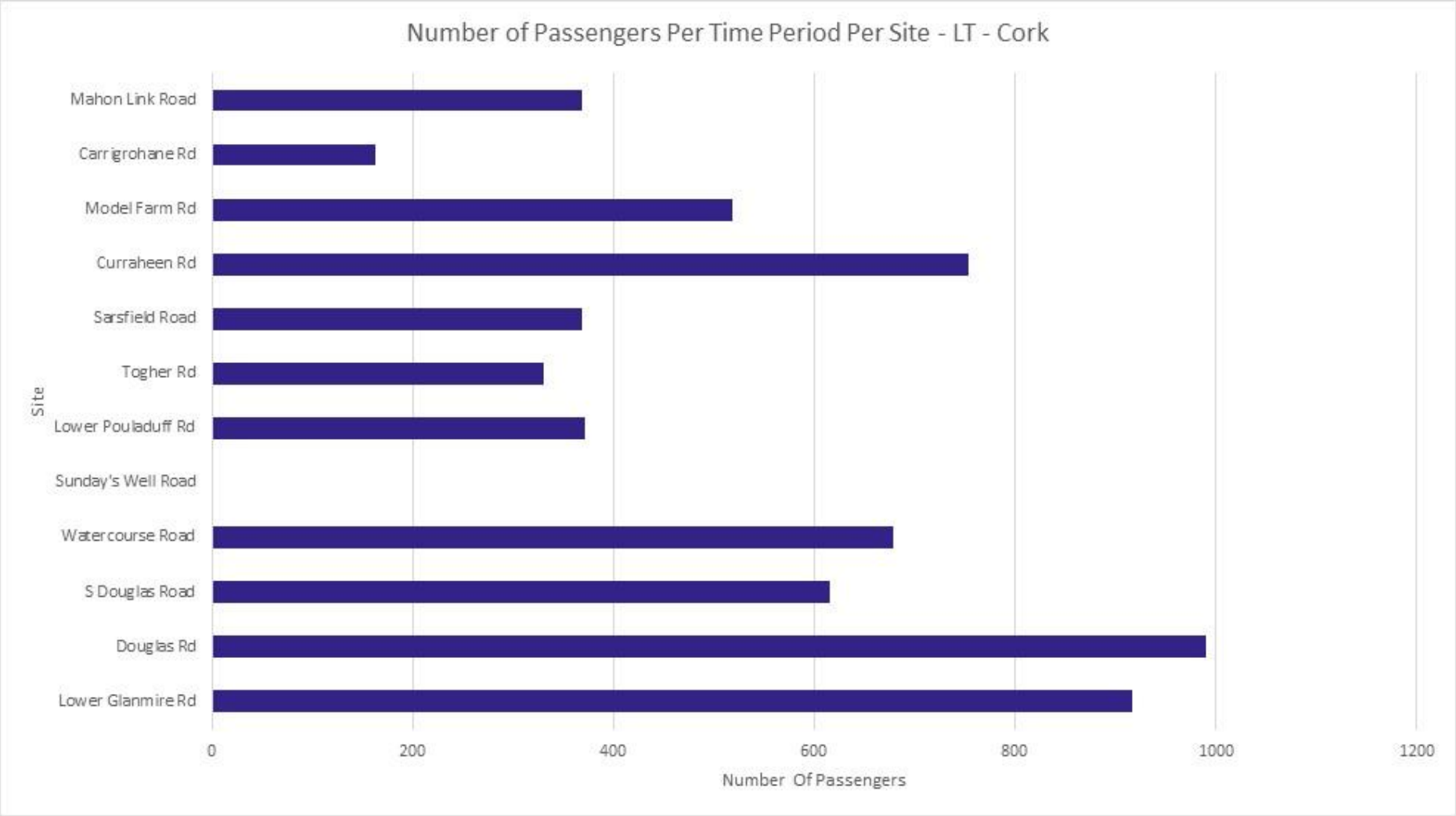


Figure B-9: Bus Passengers - LT - Cork

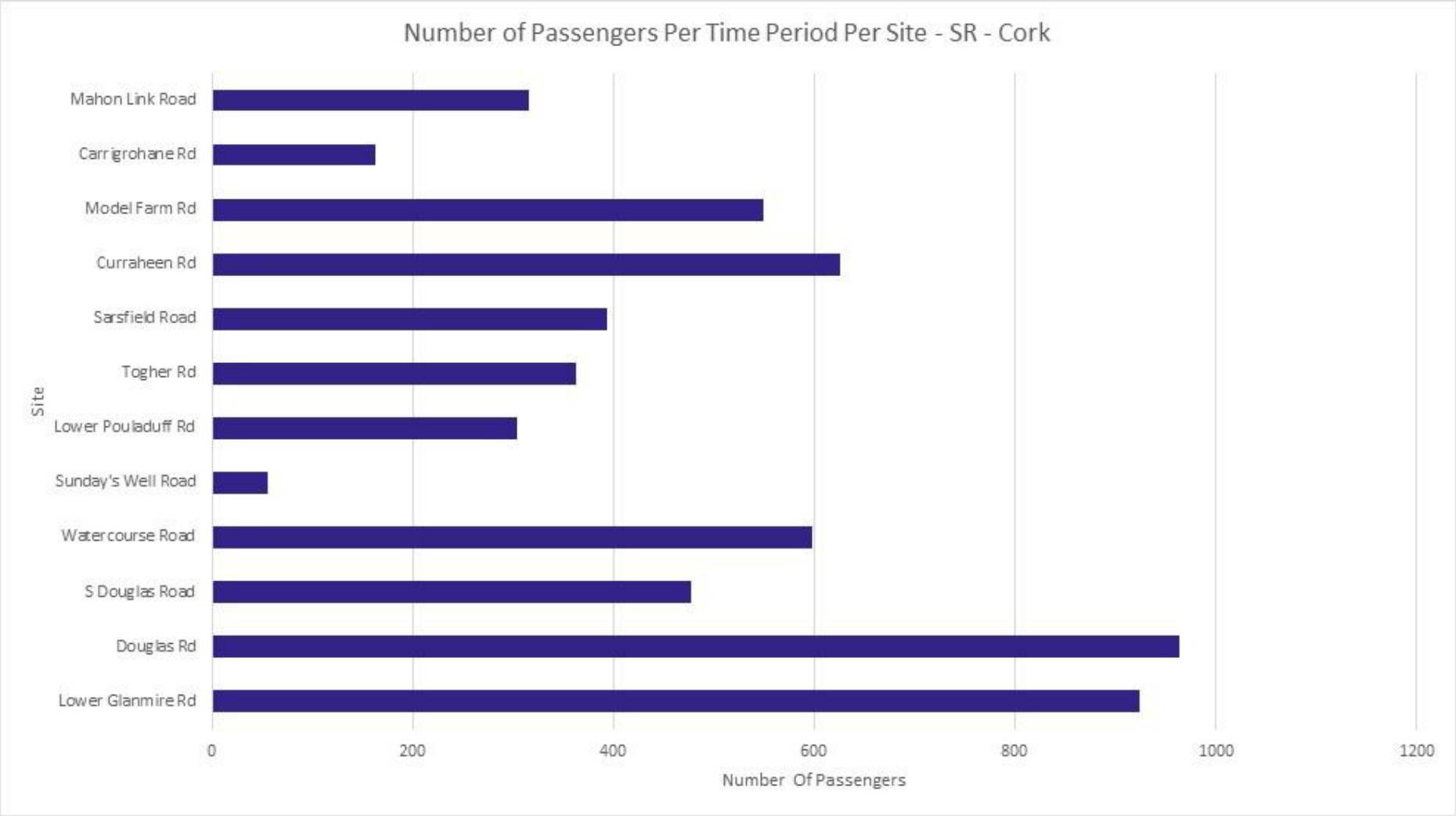


Figure B-10: Bus Passengers - SR - Cork

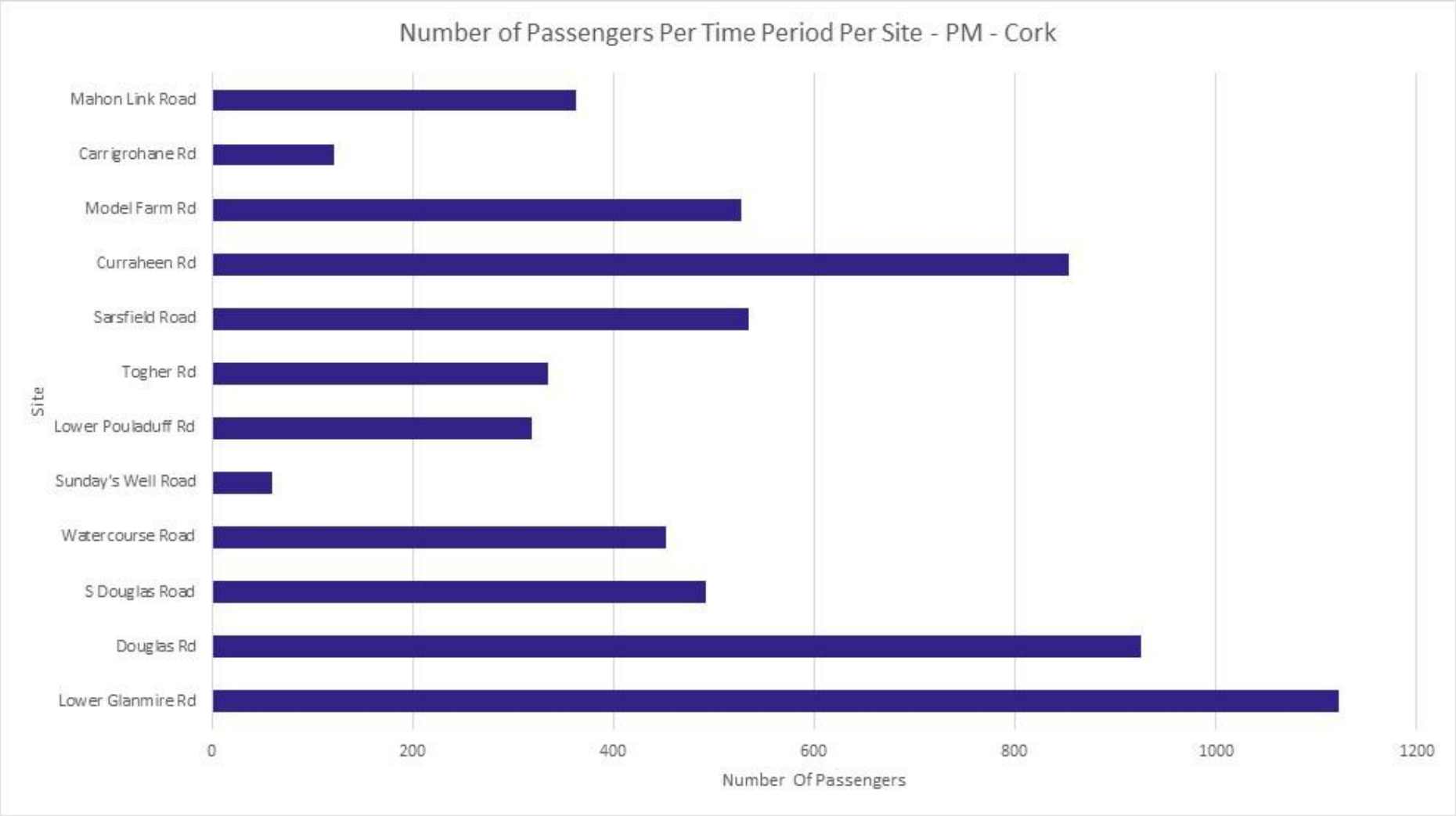


Figure B-11: Bus Passengers - PM - Cork

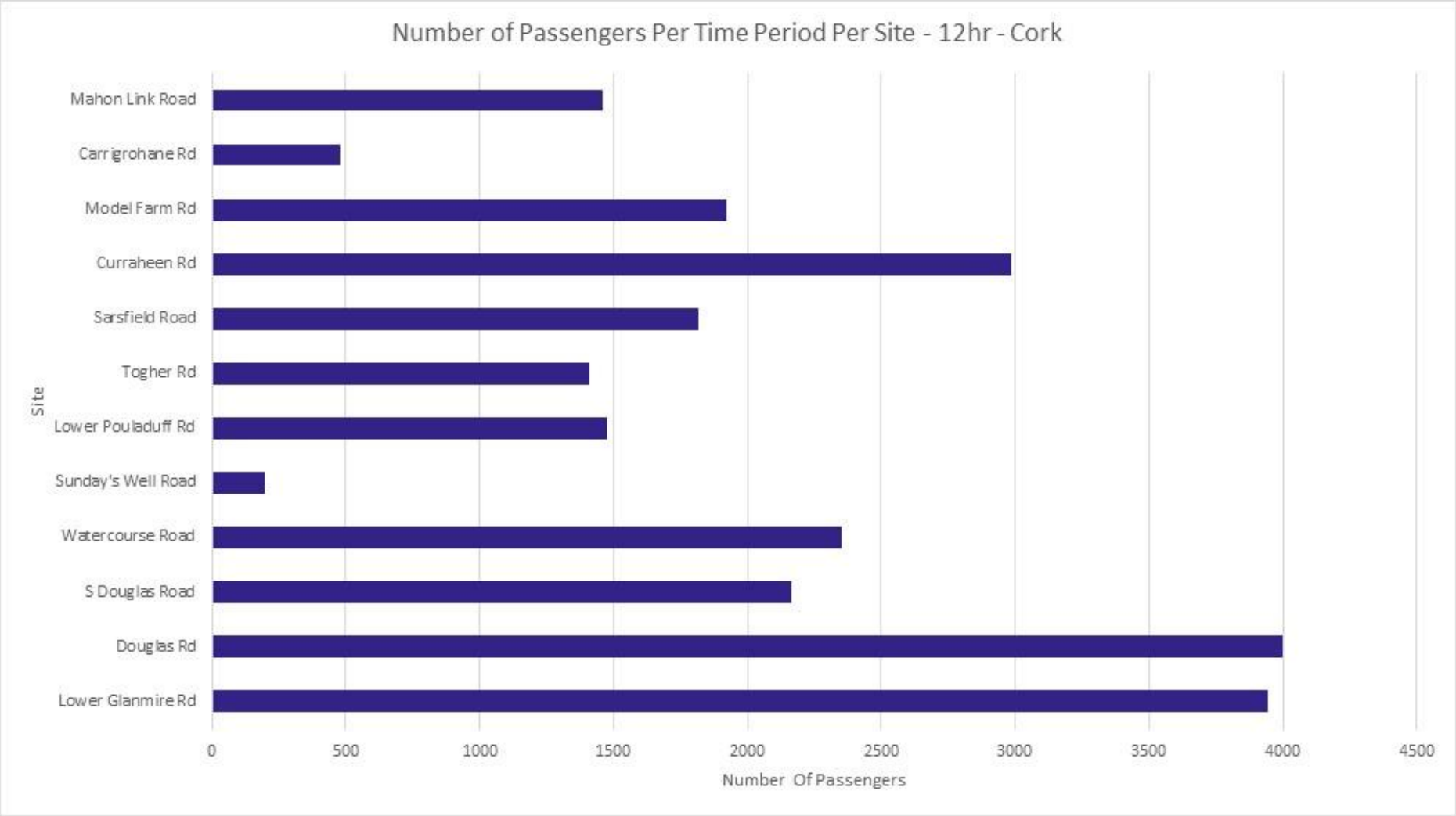


Figure B-12: Bus Passengers - 12hr - Cork

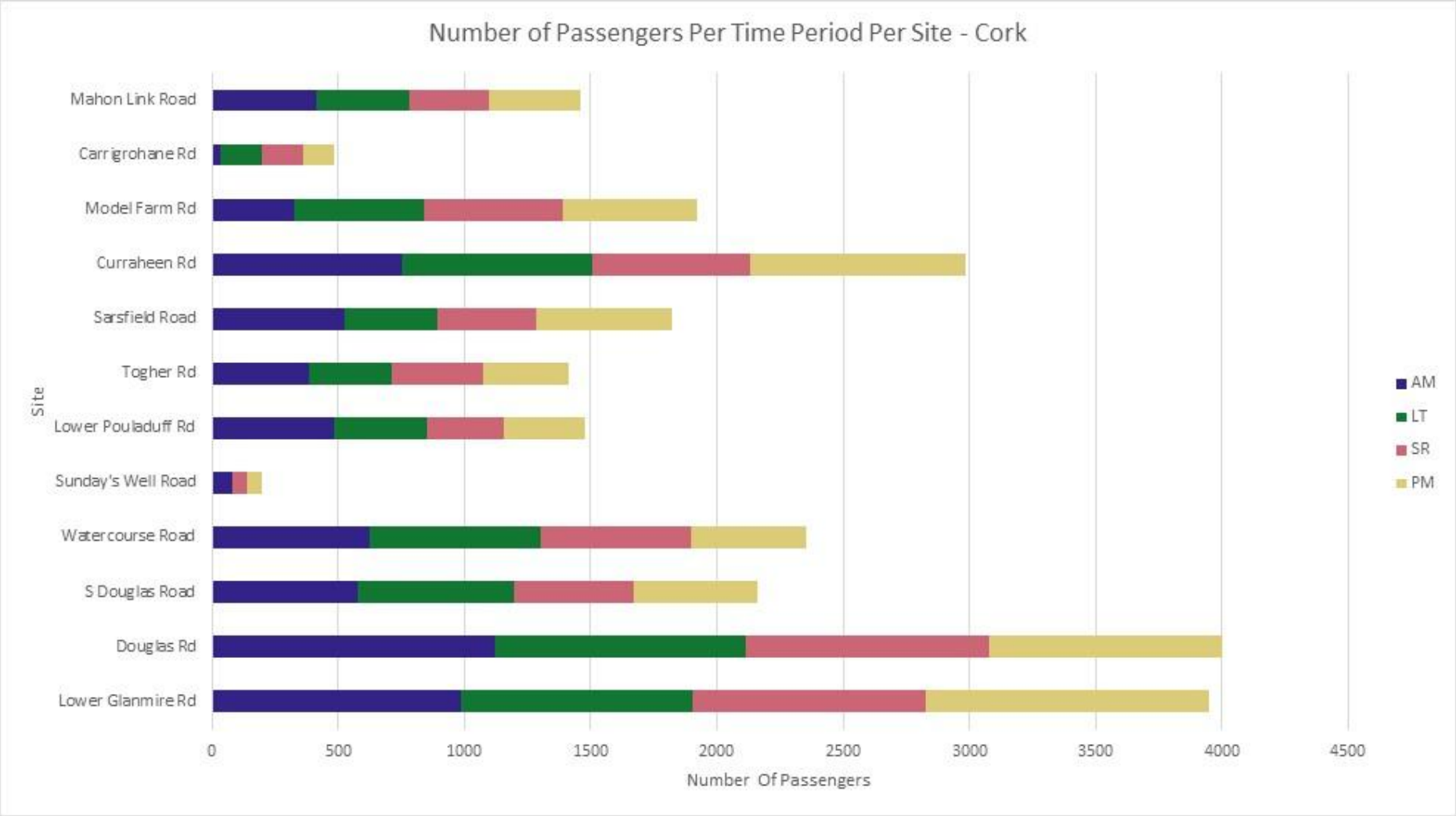


Figure B-13: Total Passenger Trips Per Site Per Time Period - Cork

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 from the following stations, where the train crossed the Cork City Cordon, or the first station that the train stopped at. In this case, the station used was Cork Kent Train Station.

The total number of people alighting at Cork Kent 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	2,031
LT	1,009
SR	932
PM	1,230
12hr	5,202

Table C-2: Rail Passengers by Origin

Origin	AM	LT	SR	PM	12hr
Heuston	282	509	542	624	1,957
Tralee	145	0	0	0	145
Mallow	360	0	0	20	380
Cobh	488	205	210	278	1,181
Midleton	756	295	180	308	1,539