

# **Proposed Build-To-Rent Residential Development – Cross Guns, Dublin**

**Client: Bindford Developments Limited**

**Traffic and Transportation Assessment & Mobility Management Plan**



## **PROPOSED RESIDENTIAL DEVELOPMENT, CROSS GUNS, DUBLIN**

Description:

**Traffic & Transport Assessment & Mobility Management Plan**

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## PROPOSED RESIDENTIAL DEVELOPMENT, CROSS GUNS

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## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 ILTP Consulting were commissioned by Bindford Developments Limited to undertake a new Traffic and Transport Assessment (TTA) for a proposed residential development on lands at Cross Guns, Phibsborough, Dublin.
- 1.1.2 The proposal is for a Strategic Housing Development for Build-To-Rent apartments and will comprise the demolition of all derelict buildings on site and the construction of a new residential development comprising 3 no. blocks ranging in height up to 12 storeys consisting of 205 no. dwellings and associated residential amenities, basement and surface carparking with vehicular and pedestrian access from the eastern end of the site off Phibsborough Road. Additional pedestrian only accesses to the north of the site off the Royal Canal Way.
- 1.1.3 A new café/ retail space will also be provided at the ground floor level of block C adjacent to a new public open space area to the east of the site. All associated site development works, landscaping, and boundary treatments, including alterations to the boundary Canal wall, bin stores, substation and service provision are included. A full description is set out in the statutory notices.

### 1.2 Purpose of Report

- 1.2.1 The primary purpose of this TTA is to assess the potential impact that the proposed development may have on the surrounding road network and to identify measures to mitigate these impacts and promote sustainable transport patterns.
- 1.2.2 This Traffic and Transport Assessment sets out to assess:
- Existing traffic conditions
  - Proposed access arrangements for the development
  - Proposed parking arrangements
  - Effect on road network of increased traffic volumes from proposed development

### 1.3 Methodology

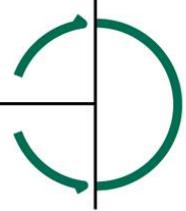
- 1.3.1 ILTP had pre-planning discussions with DCC Road Planning Division in June 2018. A tri-partite meeting was also held with An Bord Pleanála on 2<sup>nd</sup> September 2020 which was also attended by client representative, including ILTP and the Planning Authority. The final scheme had regard to all the issues raised by the Road Planning Division as set out in the earlier submission to the Board.
- 1.3.2 In order to assess the traffic impact of the proposed development it was first necessary to assess the current traffic situation in the area. Site visits were undertaken by ILTP in June 2018, and traffic count data was collated in the environs of the proposed development to determine traffic flows. 2020 traffic count data was not deemed reliable due to the fluctuation in travel patters as a result of the Covid-19 restrictions. However, as set out in the TTA the 2018 data represent a worse-case scenario as traffic demands on the surrounding road network have reduced over time.



1.3.3 ILTP calculated the estimated trip rates from the proposed development using TRICS and trip rates from comparable developments based on ILTP's own experience. The trip generation rates were added to the base flows. A Picady analysis was then undertaken to assess the capacity of the proposed access onto Phibsborough Road. The access layout to the proposed development was designed to accord with the *Design Manual for Urban Roads and Streets* (DMURS), and an AutoTURN assessment was also undertaken to ensure that the internal layout was designed appropriately. This included a Quality Audit assessment with any issues identified addressed in the final layouts.

#### 1.4 Report Structure

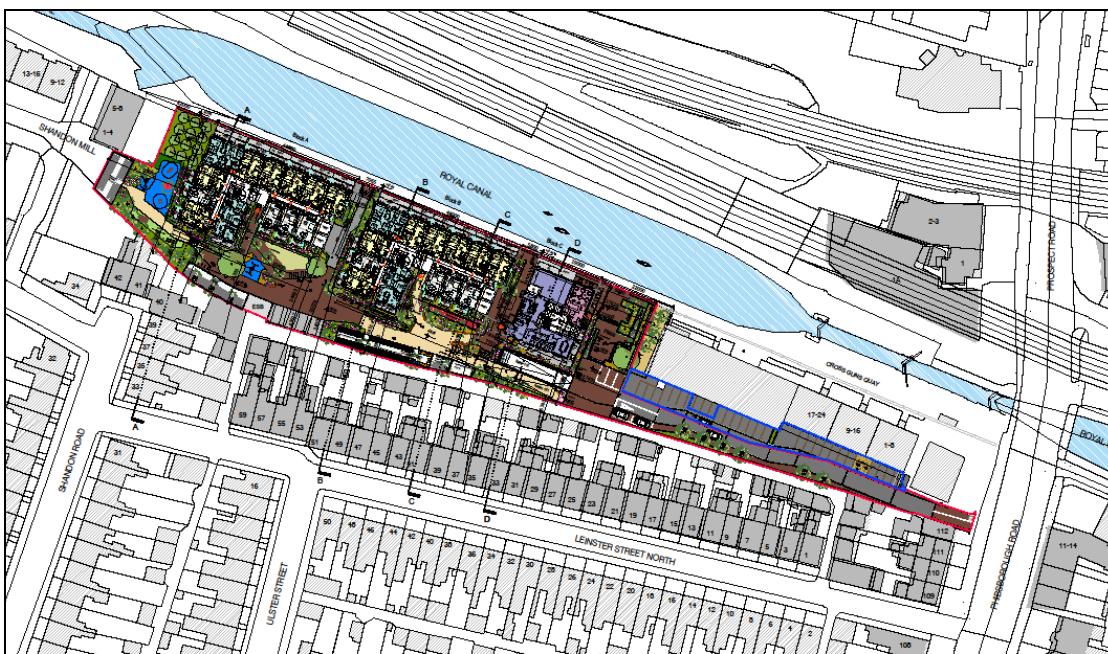
- 1.4.1 The proposed Phibsborough Road residential development and study area are described in Chapter 2.
- 1.4.2 Chapter 3 sets out the planning context for the proposed development.
- 1.4.3 Chapter 4 presents a description of proposed access arrangements for the development.
- 1.4.4 An assessment of car and cycle parking provision and arrangements is made in Chapter 5.
- 1.4.5 Chapter 6 summarises the results of the traffic surveys and projected trip generation.
- 1.4.6 The traffic impact assessment of the proposed development is set out in Chapter 7.
- 1.4.7 Chapter 8 contains the Travel Plan / Mobility Management Plan (MMP).
- 1.4.8 The summary and conclusions are outlined in Chapter 9.



## 2 OVERVIEW OF PROPOSED DEVELOPMENT AND STUDY AREA

### 2.1 Proposed Development

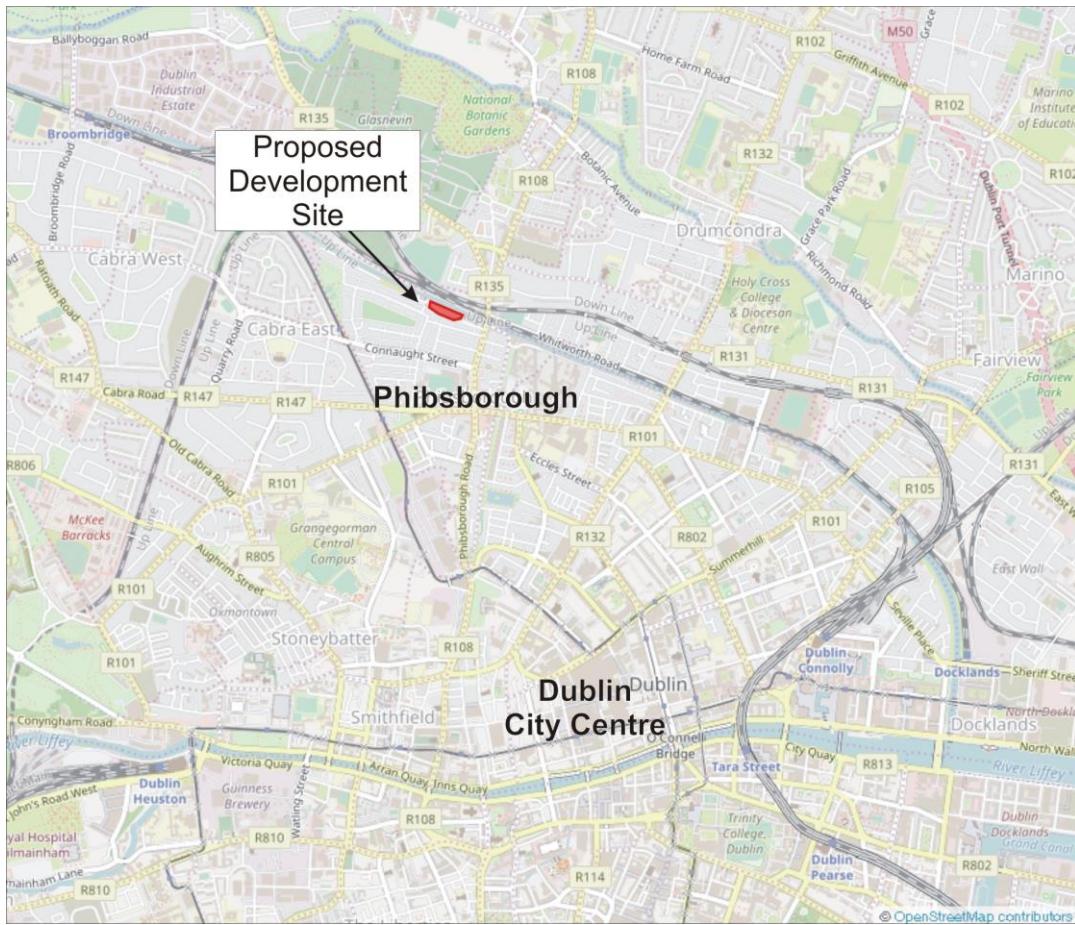
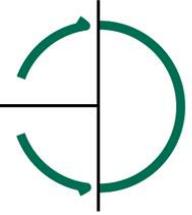
- 2.1.1 The development will consist of the demolition of existing buildings and the construction of a new build-to-rent residential development and some commercial uses. The proposed development is surrounded on three sides with existing residential uses and the Royal Canal Greenway to the north.
- 2.1.2 The proposed development will provide for 205 apartments consisting of 55 no. studios, 85 no. 1-beds and 65 no. 2-beds located in 3 separate blocks. In addition, a new public plaza and café/retail unit is also proposed.
- 2.1.3 The proposed development site outlined in red and shown in Figure 2.1.



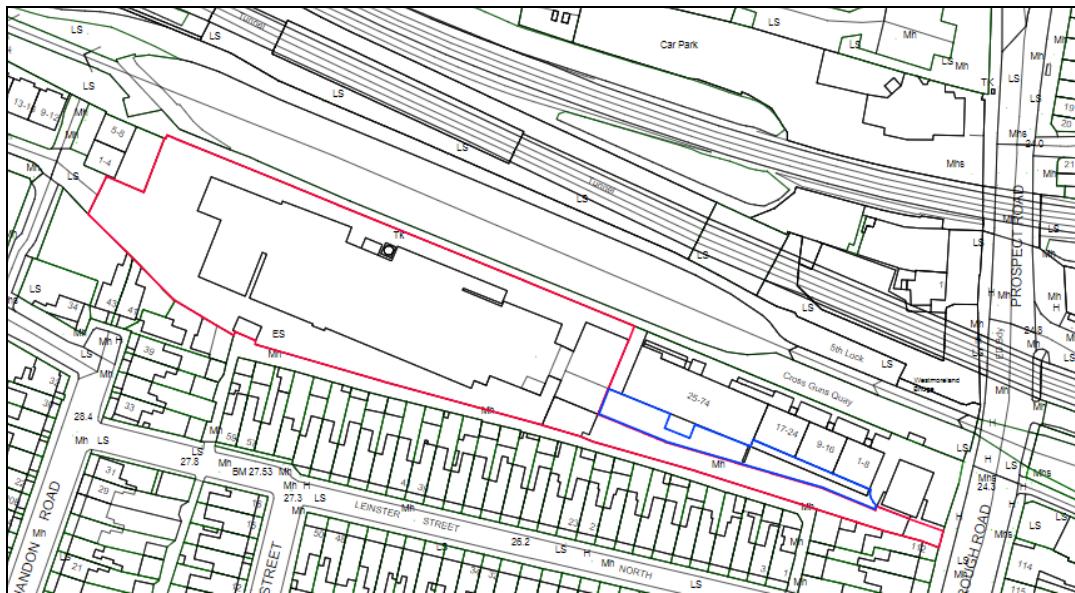
**Figure 2.1: Proposed Site Layout**

### 2.2 Description of the Receiving Environment

- 2.2.1 The site of the proposed development is located in Phibsborough, north of Dublin City Centre on the site of the former North City Flour Mill on the southern bank of the Royal Canal.
- 2.2.2 The proposed development site is located approximately 1.5km from the City Centre and it is located off the R135 one of the main arterial vehicular routes out of Dublin City Centre. The location of the proposed development site is shown in Figure 2.2 and the land boundary is illustrated in 2.3.



**Figure 2.2: Proposed Development Site Location**





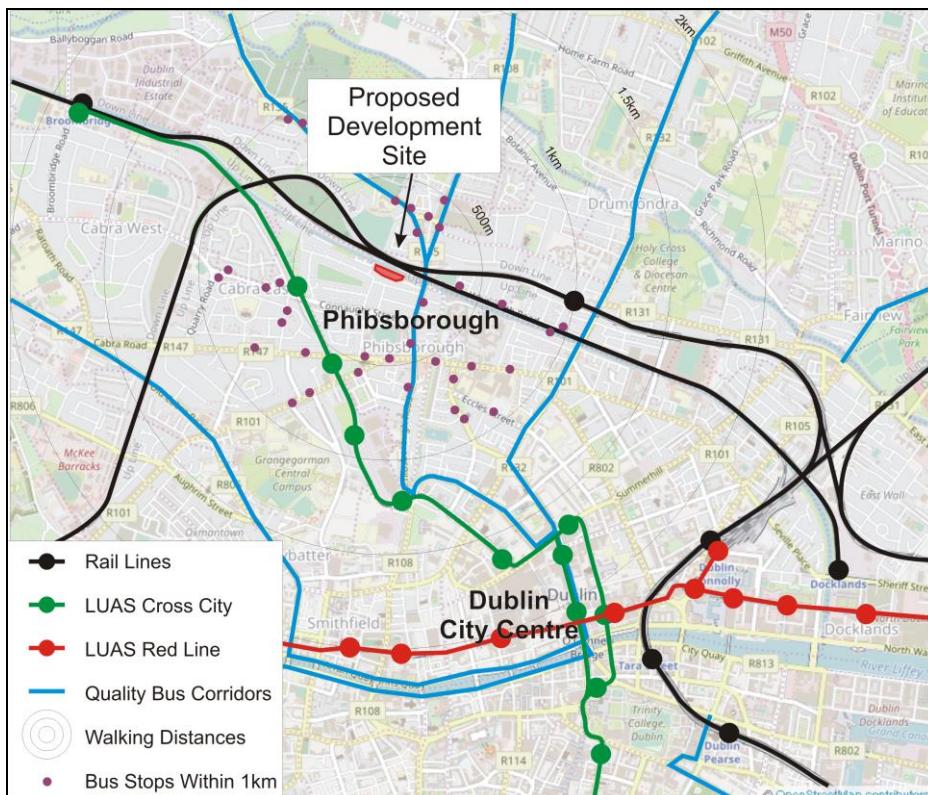
## 2.3 Public Transport

- 2.3.1 The proposed development site is well served by existing public transport services. The Ballymun and Finglas Quality Bus Corridors (QBC) run along Phibsborough Road in both directions and a number of buses pass directly adjacent to the proposed development site:

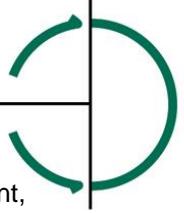
Bus Route	Distance to Stop	Frequency
<b>46A</b> Phoenix Park – Dun Laoghaire	7-minute walk	9-10 minutes
<b>4</b> Herristown – Towards Monkstown Avenue	4-minute walk	12-15 minutes
<b>9</b> Charlestown – Limekiln Ave	4-minute walk	15-20 minutes
<b>140</b> Palmerston Park – Ballymun	4-minute walk	10–15 minutes
<b>155</b> Ikea - Bray Rail Station	4-minute walk	Every 20 minutes
<b>40</b> Charlestown Shopping Centre – Liffey Valley Shopping Centre	4-minute walk	10 – 12 minutes
<b>40D</b> Parnell Street – Tyrrelstown	4-minute walk	15 – 30 minutes
<b>83</b> Harristown - Kimmage	4-minute walk	15
<b>83a</b> Harristown – Kimmage (Via Tolka Estate)	4-minute walk	Every 60 minutes

- 2.3.2 The recently opened LUAS Cross City is also located in the vicinity of the proposed development site with the nearest LUAS stop located within walking distance (500m).

- 2.3.3 Figure 2.4 shows all the existing public transport in the vicinity of the proposed development site.



**Figure 2.4: Public Transport in Vicinity of Subject Lands**



- 2.3.4 The existing Drumcondra Rail station is also located with 1km of the proposed development, which provide access to the national rail network. As part of the National Development Plan (NDP) it is also proposed to upgrade this rail line to DART standard.
- 2.3.5 The site currently accessed located off the Phibsborough Road as illustrated in Figure 2.5. Phibsborough Road generally has dedicated bus lanes on both sides of the road.



**Figure 2.5: Existing Access to Proposed Development Site off Phibsborough Road**

- 2.3.6 The existing access off the Phibsborough Road currently provides access to an adjacent apartment development and was also used to service the subject site, which was used as a bakery in the past.



## **2.4 Existing and Future Bicycle Network**

- 2.4.1 The planned cycle network in the vicinity of the subject site is shown in Figure 2.6. This shows that Phibsborough is a primary route on the planned cycle network for the area.



**Figure 2.6: Planned Cycle Network (Source: NTA – GDA Cycle Network Plan)**

- 2.4.2 The roll out of the cycle network by DCC over recent years has already resulted in large increases in cycling. Journeys by bicycle are ideal for travel destinations within 5km.



## 2.5 Bus Services & NTA Bus Connects Network and Corridors

- 2.5.1 The Finglas and Ballymun QBCs currently serve the development and provide excellent connectivity to and from the city centre and to a variety of other destinations served by these corridors.
- 2.5.2 The NTA recently announced the Bus Connects Network for the city, which is now being implemented on a phased basis. The new bus network for the immediate area is illustrated in Figure 2.7. This provides high frequency, with high frequency services proposed in the key spine/branch routes. The proposed development site is served by the E and F spine routes as illustrated in Figure 2.7. Therefore, the proposed development is well served by existing and the new high frequency bus network services which are currently at implementation stage.

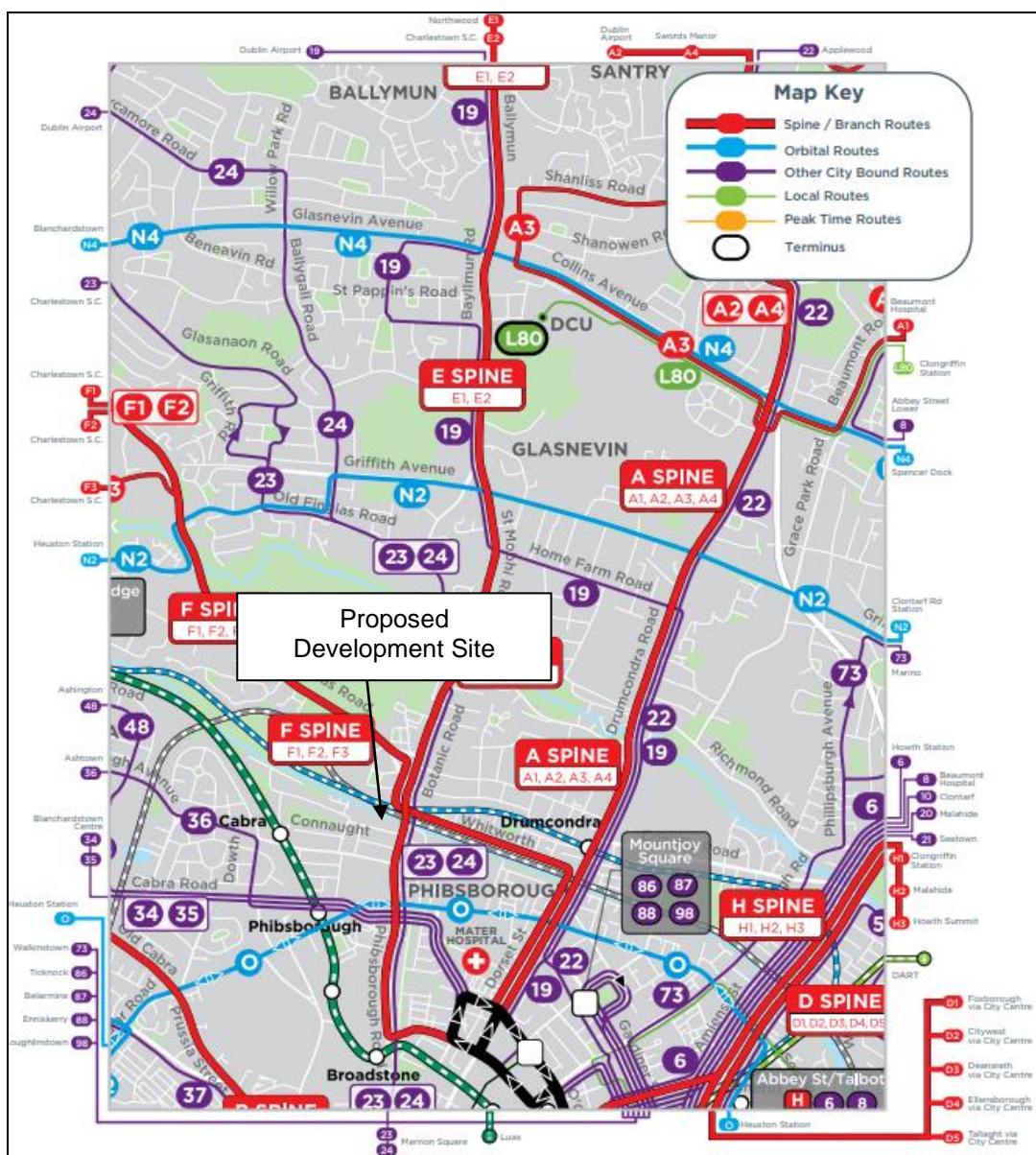


Figure 2.7: New Dublin Area Bus Network (Source: NTA)



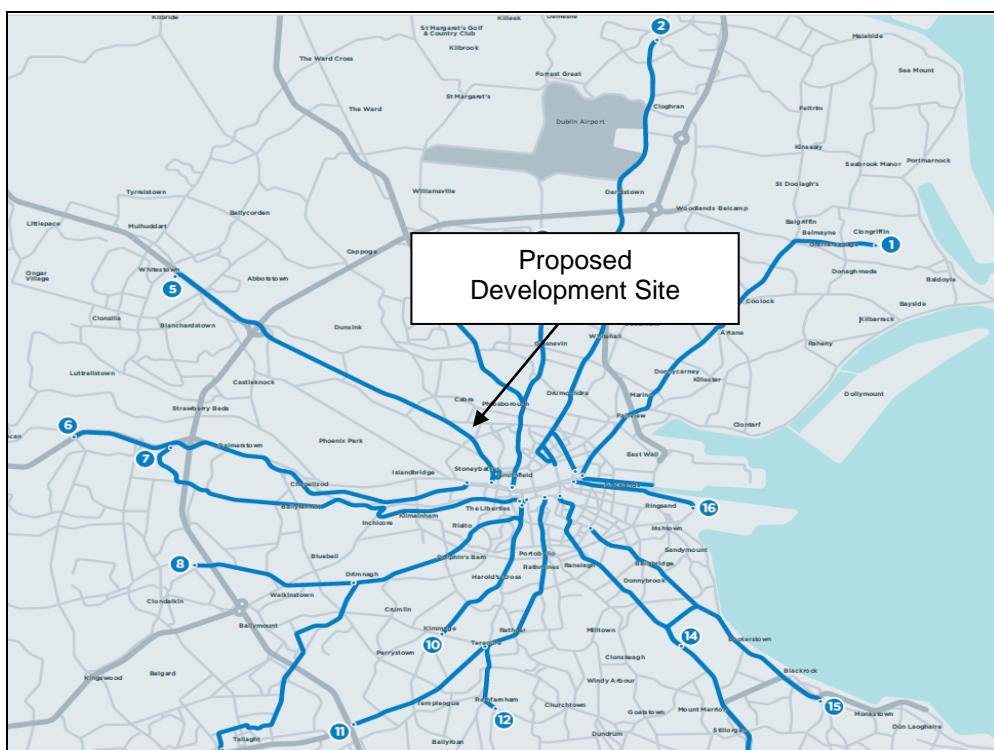
## 2.6 Proposed Bus Connects Core Bus Corridors

2.6.1 The Bus Connects Network which is at implementation stage will be augmented over time by upgrades to the main bus corridors, which are known as Bus Connects Core Bus Corridors (CBC), which are currently at consultation stage.

2.6.2 The Bus Connects CBC project proposed to deliver the following for passengers:

- reliable and punctual bus services;
- faster journey times for passengers;
- comfortable, modern vehicles;
- high frequency service on busy routes;
- an easy to understand network;
- universal passenger information - at roadside, on apps and on vehicles;
- simpler fare structures and easier payment; and
- seamless integration with other transport types.

2.6.3 Should this scheme be brought forward it will further improve the public transport connectivity of the proposed development site. The proposed Bus Connects Core Bus Corridors are shown in Figure 2.8.



**Figure 2.8: Proposed Bus Connects Core Bus Corridors (Source: NTA)**

2.6.4 The individual route maps for the Ballymun to City Centre and Finglas to Phibsborough corridors are shown in Figure 2.9 and 2.10.

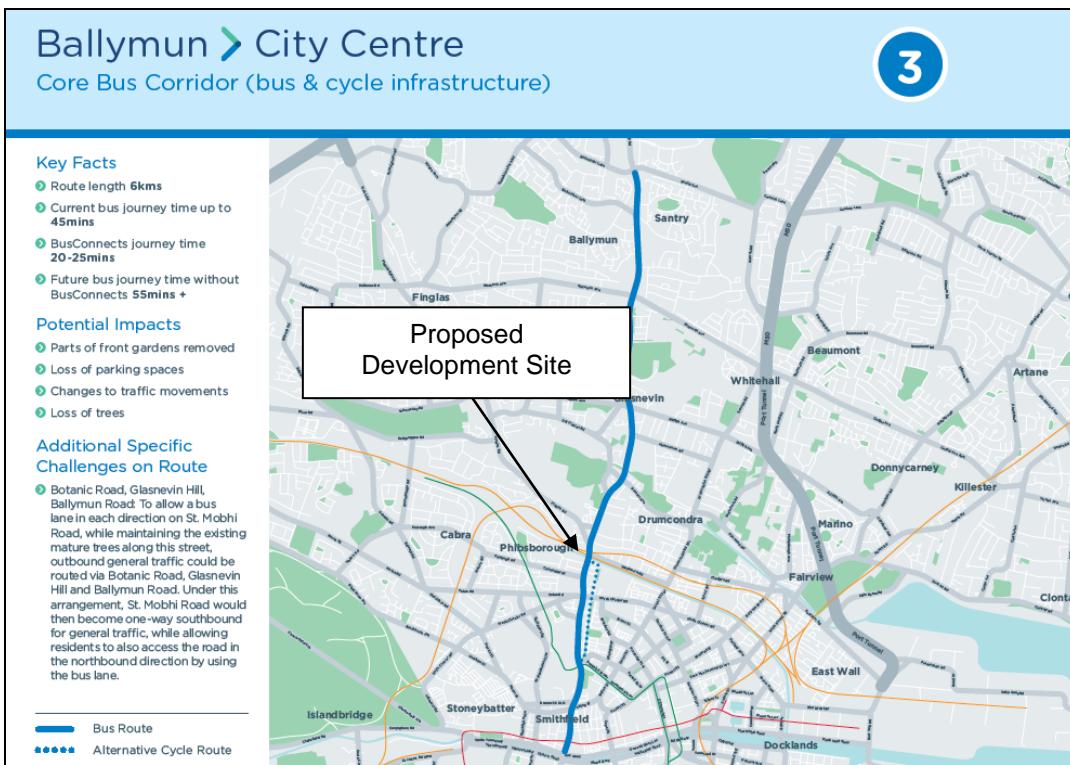
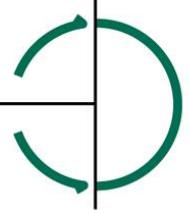


Figure 2.9: Proposed Bus Connects Core Bus Corridor – Ballymun to City Centre Route

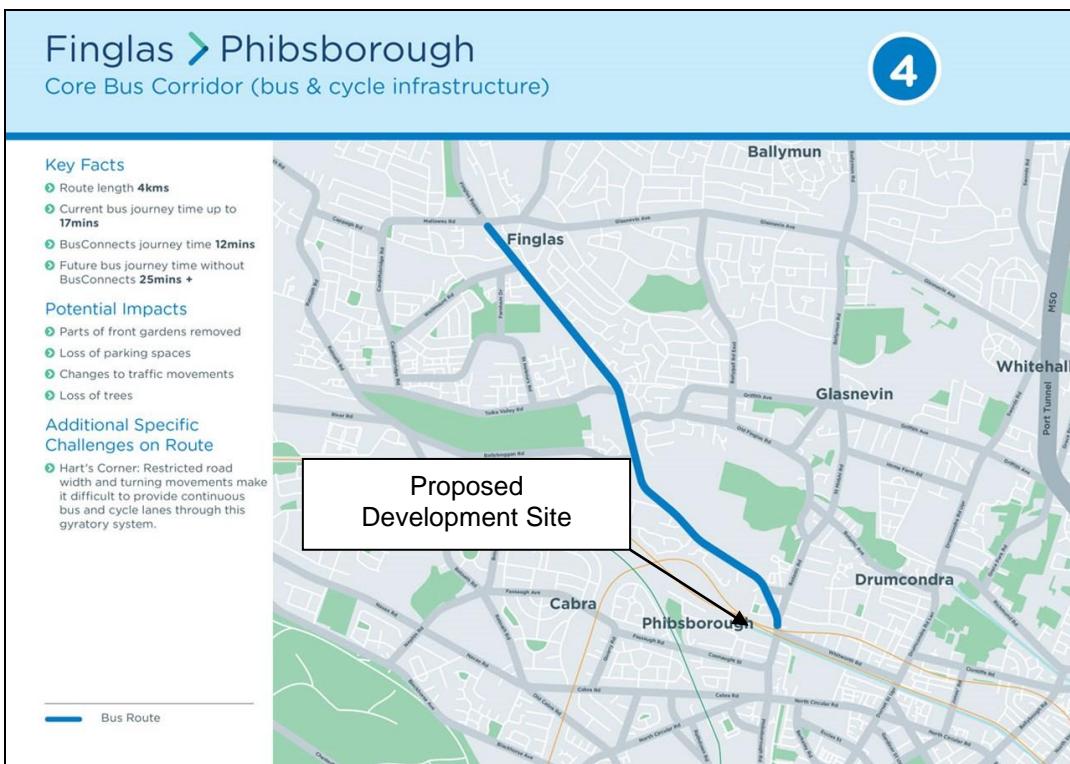
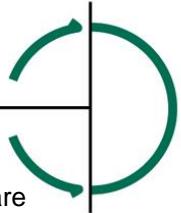


Figure 2.10: Proposed Bus Connects Core Bus Corridor – Finglas to Phibsborough Route



- 2.6.5 A non-statutory consultation on Bus Connects Core Bus Corridors is ongoing and the CBCs are proposed to go forward for planning in 2021, if approved they will be implemented in a phased basis.

## 2.7 Proposed Metrolink

- 2.7.1 The Metrolink between Lissenhall and Charlemont is currently at public consultation phase. The proposed Metrolink route as currently proposed is shown in Figure 2.11.



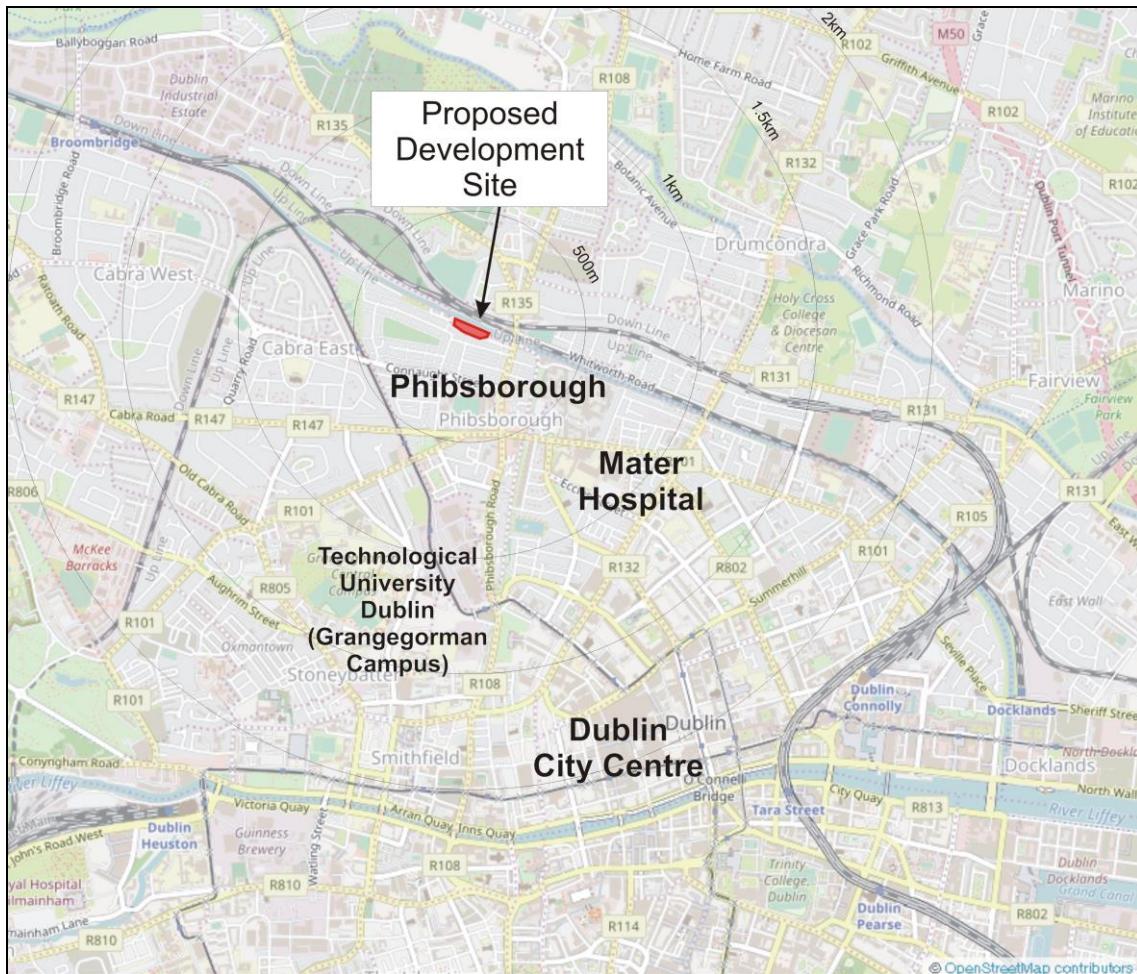
Figure 2.11: Proposed Metrolink – Preferred Route (Source: Metrolink.ie)



- 2.7.2 The nearest Metrolink stops currently proposed are immediately to the north and south of the subject site. While this will provide additional access to public transport, the proposed Metrolink in itself, will not materially enhance accessibility to public transport for this site owing to the fact that it is already excellently served by existing public transport services.

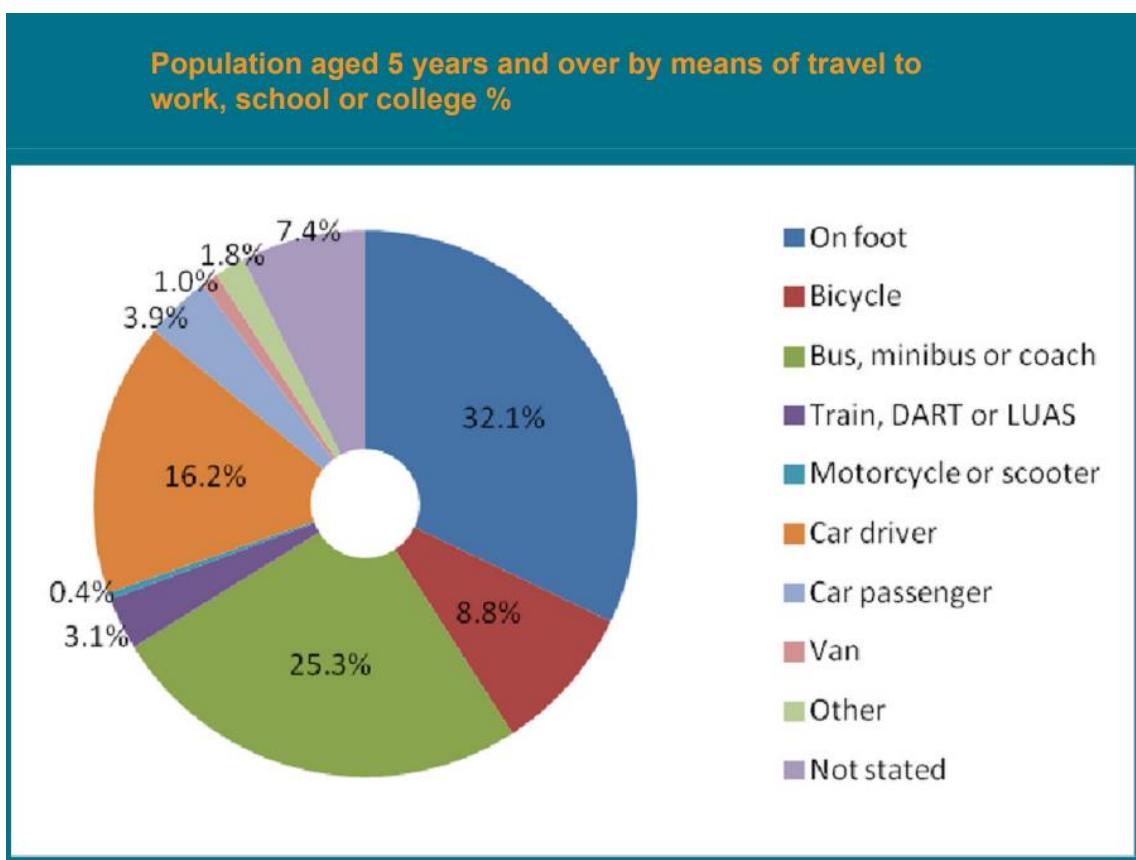
## 2.8 Location and Existing Travel Modes

- 2.8.1 The proposed development site is located approximately 1.5km of the Dublin city centre and a 5km catchment includes major shopping, recreation and employment destinations. This is shown in Figure 2.12.



**Figure 2.12: Catchments and Areas of Interest**

- 2.8.2 An analysis of Central Statistics Office (CSO) statistics on commuting published in the Phibsborough Local Environmental Improvement Plan (LEIP) show that there is already a large number of commuters in the area travelling to work/school using sustainable transport modes. These statistics have been reproduced as Figure 2.13.



**Figure 2.13: Phibsborough LEIP Commuter Mode Share**

- 2.8.3 This data shows that public transport, walking and cycle are already the main modes of travel in the surrounding area at present. Given the location of the proposed development and that it is proposed as a Built-to-Rent scheme, then clearly the subject lands are ideally located to accommodate the proposed development and to maximise and promote the use of sustainable travel modes.

## 2.9 Summary

- 2.9.1 The proposed development site is already excellently service by cycle, bus, rail and LUAS networks with planned future upgrades likely to further improve these services. The proposed development is within a short walk to existing public transport services and to the city centre and is ideally accessible by bicycle to a variety of major retail, leisure, educational and employment opportunities. Therefore, the proposed development is ideally located to provide for new residential development in close proximity to the city centre that does not require reliance or need for private cars, except for occasional use.



### 3 TRANSPORT PLANNING CONTEXT

#### 3.1 Overview

3.1.1 This study was prepared having regard to key policy documents at national, regional and local levels:

- Smarter Travel A Sustainable Transport Future
- Dublin City Development Plan 2016 – 2022

#### 3.2 Smarter Travel A Sustainable Transport Future 2009-2020

3.2.1 *Smarter Travel A Sustainable Transport Future 2009-2020*, recognises the vital importance of continued investment in transport to ensure an efficient economy and continued social development, but it also sets out the necessary steps to ensure that people choose more sustainable transport modes such as walking, cycling and public transport. The document and other government policies are a response to the fact that continued growth in demand for road transport is not sustainable from a number of perspectives as it will lead to further congestion, further local air pollution, contribute to global warming, and result in negative impacts to health through promoting increasingly sedentary lifestyles. The aim of policy is to;

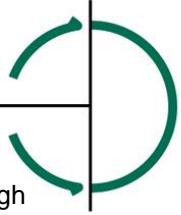
- Improve quality of life and accessibility to transport for all and, in particular, for people with reduced mobility and those who may experience isolation due to lack of transport.
- Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks.
- Minimise the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions.
- Reduce overall travel demand and commuting distances travelled by the private car by increasing density in central areas.
- Improve security of energy supply by reducing dependency on imported fossil fuels.

3.2.2 These are to be achieved by the following main actions;

- Actions to reduce distance travelled by private car and encourage smarter travel, including focusing population growth in central areas and areas of employment
- Actions aimed at ensuring that alternatives to the car are more widely available, mainly through improved public transport services and through investment in cycling and walking and increased city living,
- Actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies, such as the promotion of Electric Vehicles (EVs)

3.2.3 In order to ensure that the broad goals targets of the Smarter Travel document are met a series of policies and measures are recommended. These policies focus on co-coordinating land use and transport, the provision of high quality public transport and high quality routes for cycling and walking, aligning employment policy with transport planning, the implementation of mobility management plans and the use of fiscal measures to influence travel behaviour. These include:

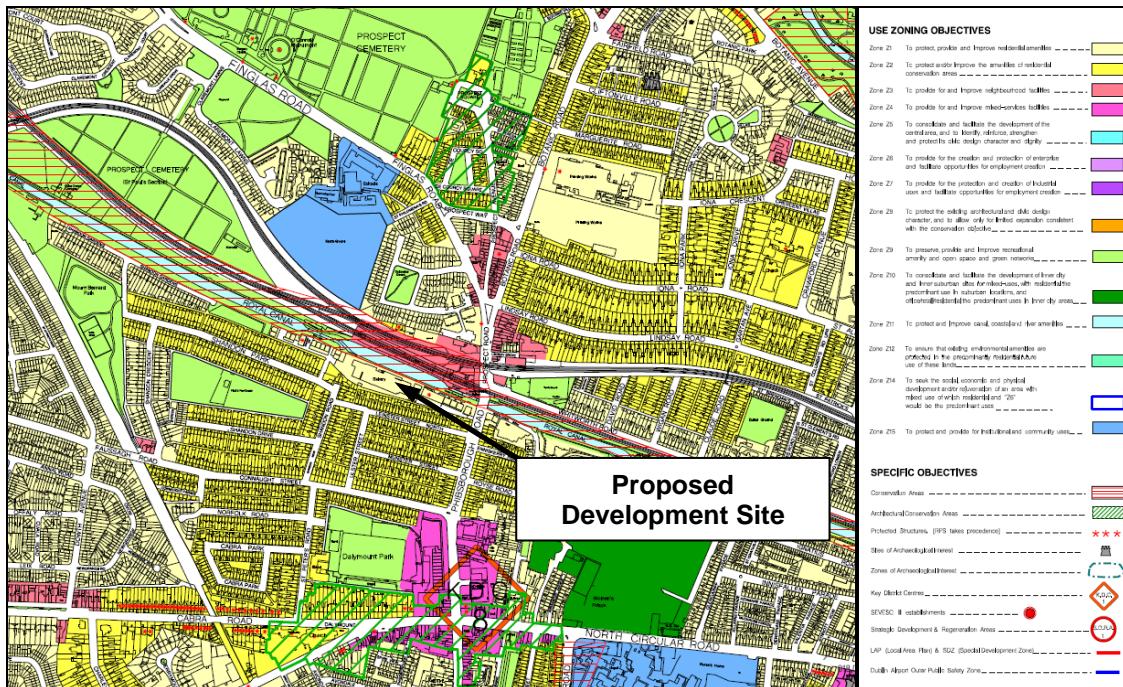
- That 10% of all trips be made by bicycle by 2020; and
- Work related commuting by car will be reduced from a current modal share of 65% to 45%.



- 3.2.4 Intensification of development within established urban areas served by high capacity, high quality public transport services accord with good planning and promotes sustainable transport modes. In addition, development close to city centre locations and built to rent development will need to achieve a far higher non car mode share than other forms of residential developments.

### 3.3 Dublin City Development Plan

- 3.3.1 The *Dublin City Development Plan 2016 – 2022* sets out the development context for the proposed development. The CDP zoning objectives for the area are shown in Figure 3.1



**Figure 3.1 Proposed Development in context of DCC Development Plan** (Source: *Dublin City Development Plan 2016 – 2022* Map E)

- 3.3.2 The subject site is part zoned Z1 “to protect, provide and improve residential amenities” which allows for new residential development to be considered.

- 3.3.3 In terms of mode share targets by Dublin City Council, the CDP states:

*“Increasing capacity on public transport including bus corridors, DART, suburban railway lines and Luas will continue to reduce the reliance on private car usage and provide opportunities for people to alter their travel behaviour and increase modal shift to more sustainable modes. Promoting modal change also encourages active travel (i.e. walking and cycling) in general and as a means to access public transport routes. Car clubs, whereby cars are rented for short periods, facilitate people who have limited need for a car and these clubs can help reduce car ownership levels and free up road space for more sustainable travel modes.”*

- 3.3.4 The priority of DCC to reduce private car mode share in Dublin City is further reinforced in Policy MT2 of the CDP which states:

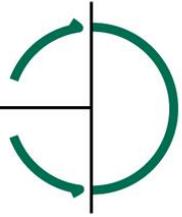


**“MT2:** Whilst having regard to the necessity for private car usage and the economic benefit to the city centre retail core as well as the city and national economy to continue to promote modal shift from private car use towards increased use of more sustainable forms of transport such as cycling, walking and public transport, and to co-operate with the NTA, Transport Infrastructure Ireland (TII) and other transport agencies in progressing an integrated set of transport objectives. Initiatives contained in the Government’s ‘Smarter Travel’ document and in the NTA’s Transport Strategy are key elements of this approach.”

- 3.3.5 These Government and Council policies and objectives reinforce the need for higher density of development particularly in existing developed areas close to the city centre and to existing and planned public transport infrastructure.

#### **3.4 Design Standards for New Apartments**

- 3.4.1 The Government Sustainable Urban Housing: Design Standards for New Apartments - Guidelines for Planning Authorities was published by the Department of Housing, Planning and Local Government in March 2018. This document includes guidelines for reduced car parking provision below CDP standards, particularly for developments in town centres and in areas with good public transport provision, such as the subject site.
- 3.4.2 This Government document has been taken into consideration, in conjunction with the current Dublin City Development Plan, in setting out the proposed car parking provision and rationale for the proposed development. The guidelines proposes that little if any car parking should be proposed for new built-to-rent schemes at locations well served by public transport, such as the subject site.



## 4 PROPOSED ACCESS LAYOUT & DMURS COMPLIANCE

### 4.1 Proposed Access Layout

- 4.1.1 The subject land previously received planning permission (2402/14) for DCC. Following on this grant of permission, compliance on the proposed access off Phibsborough Road was received from DCC.
- 4.1.2 The previously agreed access layout is shown in Figure 4.1 and a similar access arrangement is proposed for this development.



**Figure 4.1 Proposed Access Layout (Source: AIT Ref: 2402/14)**

- 4.1.3 The DCC Transport Planning Division Report, included as part of the DCC submission to the Board in advance of the tri-parties meeting, states:

*"It is stated that the proposed access arrangement as permitted under the previous grant of permission on the site will be utilised. The principle of this is acceptable, however the detailed design of this should be subject to the agreement of the Planning Authority in the event of a grant of permission on any forthcoming application."*

- 4.1.4 The access arrangements will be agreed with the planning Authority in advance of construction of any permitted development.



#### 4.2 DMURS Design Requirements

- 4.2.1 The proposed access is via a 4.8m wide shared access street into the proposed development. The visibility splays at access roads are provided for both capacity and safety reasons. Junction visibility splays are comprised of two elements; the 'X' Distance and the 'Y' Distance. DMURS proposes a range of values for these two design elements based on the design speed on the main road and the traffic flows that will use the proposed access.
- 4.2.2 The 'X' distance is the distance along the minor arm from which visibility is measured. The 'X' distance is measured back from the nearside edge of the main carriageway or the outer edge of the nearside footway. In the past the 'X' Distance was often interpreted as a safety requirement, but in fact the 'X' distance had more to do with capacity requirements for the access on to the main road.
- 4.2.3 The maximum 'X' distance recommended in urban areas is 2.4m. However, where the traffic flows on the minor arm are very low, as is the case for this proposed development, then this 'X' distance can be reduced to 2.0m from the nearside edge of footway or carriageway. In this case the 'X' distance was measured 2.0m back from the front edge of the footway. The reduced 'X' distance is also more appropriate to use for accesses that are used mainly by drivers who will be familiar with local road conditions, as will be the case for the proposed development.
- 4.2.4 The 'Y' Distance is the distance the driver can see to the right and left along the major road, which is Phibsborough Road. The 'Y' Distance is taken as the Stopping Sight Distance (SSD) for the given speed limit on the major road, as set out in Figure 4.2, which is an extract from Table 4.2 of DMURS.

SSD STANDARDS	
Design Speed (km/h)	SSD Standard (metres)
10	7
20	14
30	23
40	33
50	45
60	59

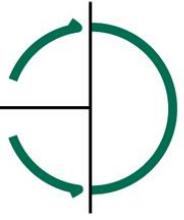
  

Forward Visibility	Forward Visibility on Bus Routes
Design Speed (km/h)	SSD Standard (metres)
10	8
20	15
30	24
40	36
50	49
60	65

Table 4.2: Reduced SSD standards for application within cities towns and villages. Reduced forward visibility increases driver caution and reduces vehicle speeds.

**Figure 4.2: DMURS Sightline Requirements**

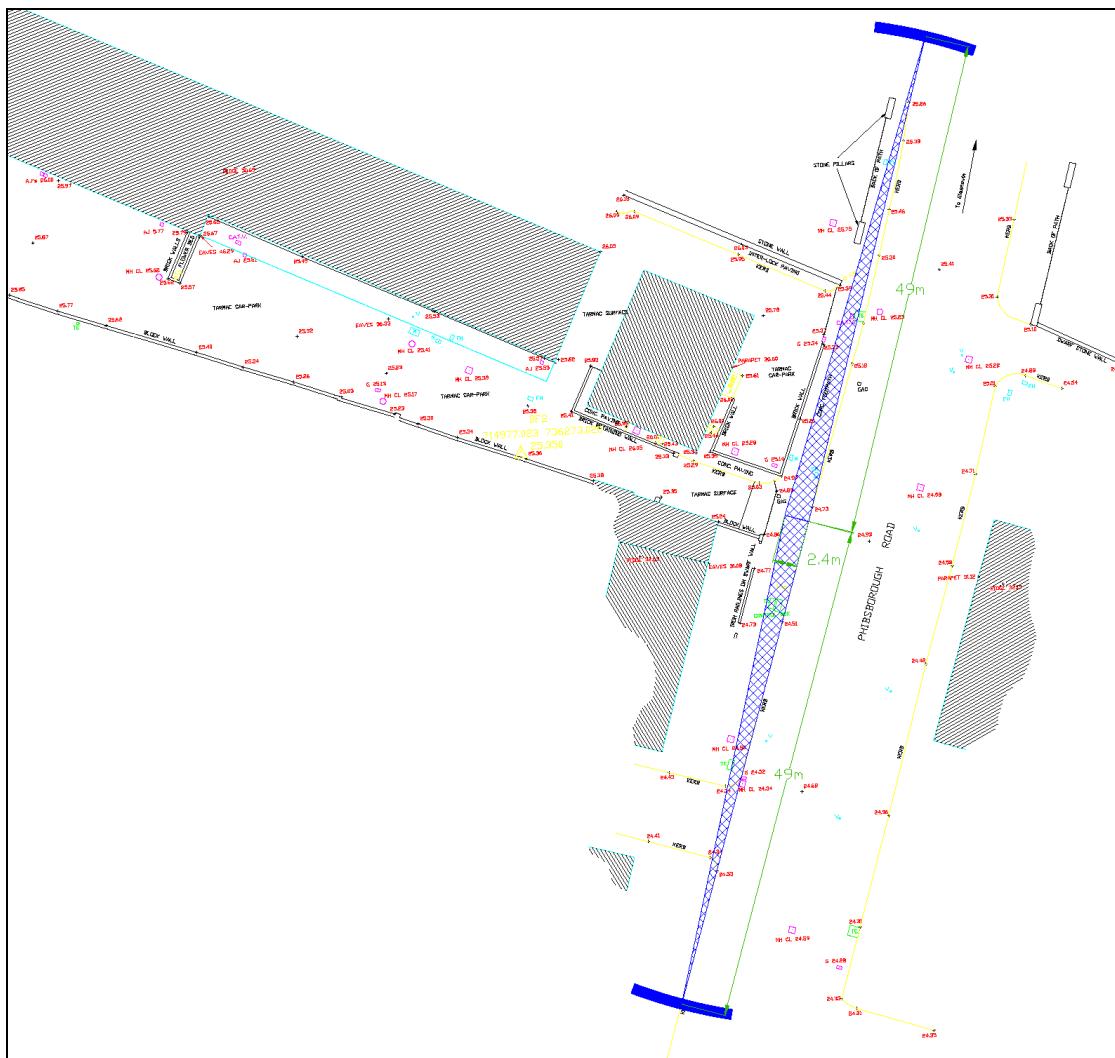
- 4.2.5 The Stopping Sight distance (SSD) is not the distance required for vehicles to perform an emergency stop but rather it is the distance required for traffic travelling on the main road to come to a controlled stop if required.
- 4.2.6 This is usually measured along the nearside edge of the footway of the main road or from the edge of the carriageway. In this case the proposed development is within a 50kph zone along Phibsborough Road and therefore the appropriate 'Y' Distance for the proposed access is 49m. Indeed, the footnote to the DMURS table acknowledges that reduced visibility increases drive caution and reduces vehicle speeds.



## 4.3 Proposed Sightlines

- 4.3.1 The appropriate DMURS visibility requirements for a proposed access located within a 50kph zone and where a low flow access is proposed, are 49m x 2.0m x 49m.

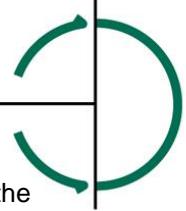
4.3.2 The proposed visibility splays from the proposed access location of 49m x 2.4m x 49.0m are illustrated in Figure 4.3 and also enclosed as **Appendix B** in larger format. Therefore, the proposed visibility splays at the existing access are more than adequate for the proposed development.



**Figure 4.3: DMURS Recommended Visibility Sightlines**

## **4.4 Proposed Internal Access Arrangements**

- 4.4.1 The proposed internal access road and layouts have also been designed in accordance with DMURS.



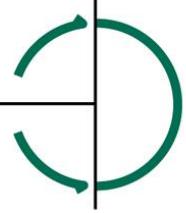
- 4.4.2 It is proposed that 20kph speed limits will apply to the access street. The access street in to the proposed development has been designed in accordance with the classification as a Local Street in accordance with Cl.3.2.1 of the Design Manual for Urban Roads and Streets. This will ensure that the development will be a slower nature of Local Street (i.e.10-30 km/h) with drivers more likely to maintain lower speeds over shorter distances and more likely to comply with lower speed limits on Local Streets. The standard carriageway width of internal streets is 4.8m in accordance with Cl.4.4.1 of DMURS which specifies a standard carriageway width on Local Streets with shared cycle use.
- 4.4.3 Design speeds are low and movements by larger vehicles are expected to be infrequent. The junction radii have been designed in accordance with Cl.4.3.3 of DMURS to be between 3 - 6 metres. By providing reduced corner radii this will improve pedestrian and cyclist safety at junctions by lowering the speed at which vehicles can turn corners.
- 4.4.4 The layout of the shared street linking the proposed development to Phibsborough Road is illustrated in Figure 4.4.



**Figure 4.4: Internal Site Layout (Source: AIT)**

#### 4.5 Linkage to Canal Walkway

- 4.5.1 The proposed development also allows for the provision of pedestrian link through the site to the Royal Canal. The proposed plaza area will integrate with the canal walkway. In addition, the lowering of the canal boundary wall and the proposed new residential development will further enhance the amenity of the canal walkway through improves passive supervision.

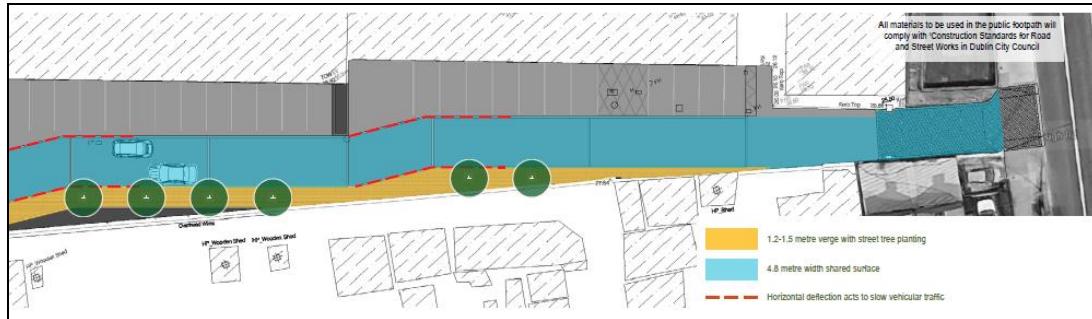


#### 4.6 Response to An Bord Pleanála Opinion

- 4.6.1 Following the tri-partite meeting with An Bord Pleanála on 2<sup>nd</sup> September 2020, ABP issued its opinion and requested clarification on a number of items. Item 9 related to DMURS and is reproduced below:

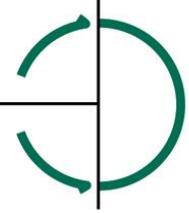
*"Further elaboration of the treatment of the access roadway between Phibsborough Road and the development site should be provided, which should be included in the DMURS design statement. Quality Assessments, particularly in respect of pedestrian and cycle access should be provided, in accordance with DMURS advice note 4. The final configuration of the entrance plaza and measures to avoid conflict between pedestrian and vehicle movements should be clearly defined."*

- 4.6.2 The DMURS Compliance set out the design process that resulted in the final layout of the proposed access street off Phibsborough in accordance with DMUS design note 4. This final layout is illustrated in Figure 4.5.



**Figure 4.5: Proposed Access Roadway**

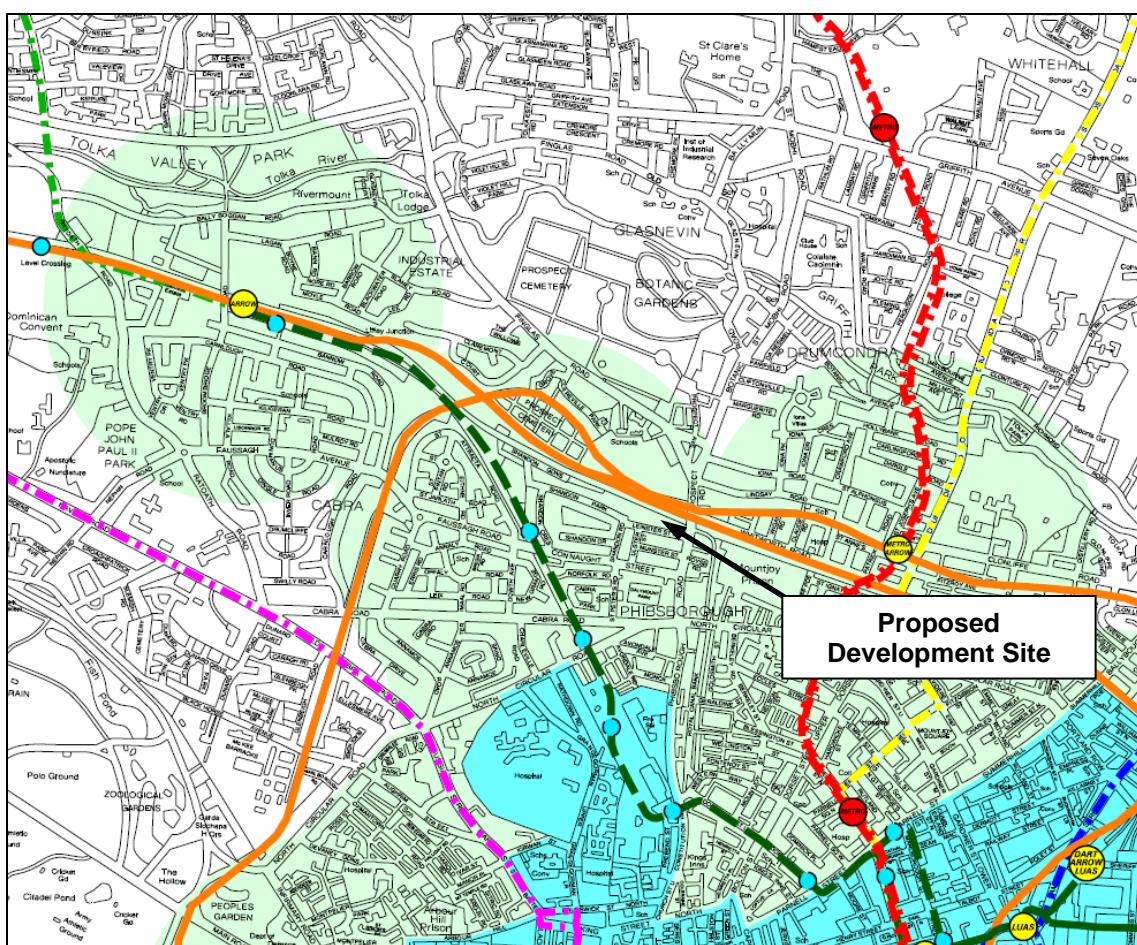
- 4.6.3 The design process is set out in more detail in the DMURS Statement, which is provided as a separate report.



## 5 CAR AND CYCLE PARKING ASSESSMENT

### 5.1 Introduction

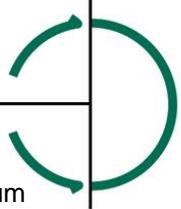
- 5.1.1 The required car parking provision was assessed having regard for the Design Standards for new Apartment 92018) and the Car Parking Standards section (Section 16.38) of the Dublin City Development Plan 2016 – 2022, the nature of the proposed development, the location of the proposed development.
- 5.1.2 The proposed development site is located just within the Area 2 (Zone 2) parking zone of the CDP Parking Standards, which is shown graphically on Map J - *Strategic Transport and Parking Areas* of the CDP and reproduced below in Figure 5.1.



**Figure 5.1 Proposed Development Site Within Area 2 Parking Zone** (Source: Dublin City Development Plan 2016 – 2022 Map J – Strategic Transport and Parking Areas)

### 5.2 Overview of Car Parking Standards and Proposed Car Parking

- 5.2.1 The required car parking provision was assessed having regard for the Car Parking Standards section (Section 16.38) of the Dublin City Development Plan 2016 – 2022, the nature of the proposed development, the location of the proposed development and the availability of alternative travel modes to serve the needs of the proposed development.



- 5.2.2 For Residential land-use, Table 16.1 of the CDP Parking Standards includes a maximum provision of 1 no. car parking space per dwelling for Parking Areas / Zones 1 and 2, and a maximum provision of 1.5 per dwelling for Zone 3. The relevant extract of Table 16.1 relating to Residential land-use is shown in Figure 3.1 below.

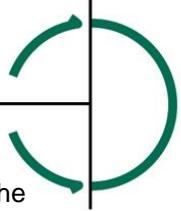
<b>Residential</b>	1 and 2	1 per dwelling
	3	1.5 per dwelling

**Figure 5.1: Maximum Car Parking Standard for Residential Land-Use for Parking Zones 1, 2 and 3 (Source: Dublin City Development Plan 2016 – 2022)**

- 5.2.3 It is further noted that the CDP residential parking standards do not differentiate between apartments and houses, nor do they differentiate between, studio apartments, 1-bed, 2-bed, 3-bed or 4-bedroom units. It is clear that family occupied apartments could also justify car parking provision, due to the increased number of occupants and the fact that family units are more likely to require the use of a car.
- 5.2.4 The Design Standards for New Apartments recommends reduced car parking provision for Build-to-Rent apartment schemes in particular. For Build-to-Rent (BTR) developments the Apartment Guidelines, recommend that the starting position for car parking provision assessment is zero car parking.
- 5.2.5 As this proposed development is proposed as a Build-to-Rent development and is relatively close to the city centre and is well served by existing public transport service the car parking provision should be kept to a minimum. Therefore, ILTP have sought to provide an appropriate balance of car parking provision having regard to the proposed nature and location of the development, the availability of sustainable travel modes, existing travel patterns and relevant policy documents, which is in accordance with the apartment guidelines.
- 5.2.6 It is further proposed that each car parking space will be able to accommodate an EV charge point to promote the use of Zero Emission vehicles in the city centre.
- 5.2.7 The proposed car parking provision and allocation are set out in Figure 5.1

**Table 5.1: Proposed Car Parking Provision**

<b>Car Parking</b>	
Residents	19 no. car spaces in basement car park 1 no. accessible space in basement car park 4 no. accessible spaces on surface in courtyard <b>24</b> no. car spaces
Other	2 no. GoCar Spaces on surface at plaza 3 no. set down spaces at plaza <b>5</b> no. car spaces
Total	<b>29</b> no. car spaces



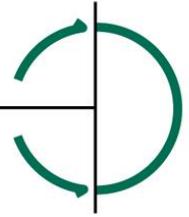
- 5.2.8 It is also proposed to include for 2no. 'Go Cars' in the proposed development at the outset. The provision of car sharing service will provide occasional access for residents who need the use of a car for specific occasions. 'Go Car' and other car sharing services are shown to be capable of accommodating between 10 to 15 trips per day and can, therefore, provide residents access to private cars when required. The management company will review the demand for 'Go Cars' on an ongoing basis and can increase the numbers provided in line with demand also.
- 5.2.9 The total car parking within the development is proposed to set at a total of 29 no. parking spaces. Inclusive of disabled spaces, 'Go-Cars' and car sharing. This is in line with other similar developments of similar scale, location and nature. An Bord Pleanála recently issued a grant of permission for a BTR development off the Cork South Ring Road (ref. ABP-305173-19) for 118 no. BTR units with 5 no. car parking spaces provided.

### **5.3 Car Parking Management**

- 5.3.1 The car parking in the proposed build-to-rent scheme will be controlled by the Management Company. A car parking management plan will be developed and implemented by the Management Company. This will ensure that car parking will only be allocated to those with specific needs for car parking, such as those with disability. Residents of the apartment will be clearly informed in their lease agreement where no parking will be assigned for a particular apartment. In addition, residents of the apartments will be informed in their lease that they are not be entitled to apply for a permit for any on-street parking. The car share scheme will be established by the management company and residential will access and pay for occasional use for any allocated parking.
- 5.3.2 It is also proposed that 2% provision for motorcycle parking be provided for the residents. The proposed development includes for 5no. motorcycle parking space.

### **5.4 Proposed Cycle Parking Provision**

- 5.4.1 The required minimum cycle parking provision for the proposed residential development was also determined with regard to current Development Plan Standards and to recent guidance on cycle parking provision.
- 5.4.2 As per the current CDP a minimum of 1 bicycle space per residential unit is required (205 no. spaces). Given the nature of the development and the limited car parking provision it is proposed to provide cycle parking in excess of this:
- A secure cycle parking facility for each apartment within the development
  - Surface cycle parking for visitors
- 5.4.3 The proposed cycle parking provision is shown in Table 5.2 which is well in excess of current CDP requirements.

**Table 5.2: Proposed Cycle Parking Provision**

<b>Bicycle parking</b>	
Residents	118 no. spaces in store room at west end 90 no. spaces in store room opposite gable block A 64 no. spaces in store room in basement <b>272</b> no. bicycle spaces
Visitor	22 no. spaces in store room at top of ramp 50 no. spaces distributed throughout the site <b>72</b> no. bicycle spaces



## 6 TRAFFIC SURVEY RESULTS

### 6.1 Introduction

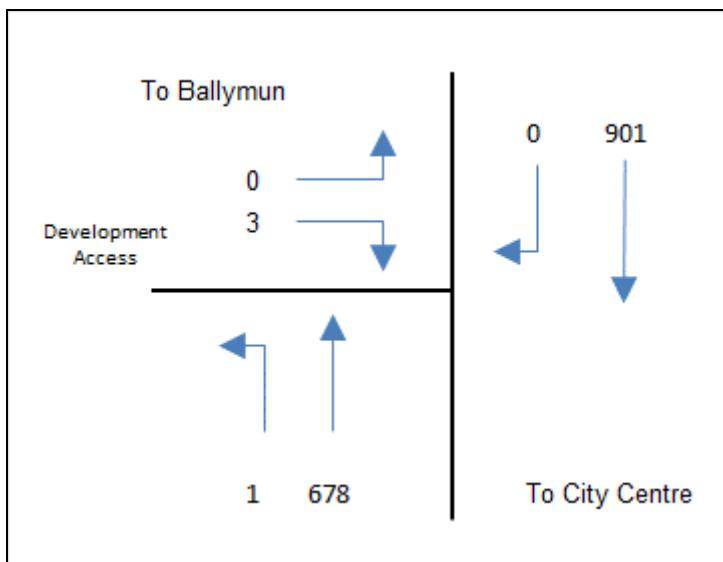
- 6.1.1 In order to assess the traffic impact of the proposed development it was first necessary to assess the current traffic situation in the area. Site appraisals and fully classified traffic counts in the environs of the proposed development were undertaken by ILTP in June 2018.
- 6.1.2 A Picady analysis was also undertaken to assess the capacity of the proposed residential development access and adjacent road network.

### 6.2 ILTP Traffic Count Surveys

- 6.2.1 ILTP carried out manual classified counts in November 2018 at the proposed access junction. Additional video traffic surveys were carried out by IDASO Data Solutions on Phibsborough Road in the vicinity of the proposed development. The full results of the video traffic surveys are included as an Appendix to this report.

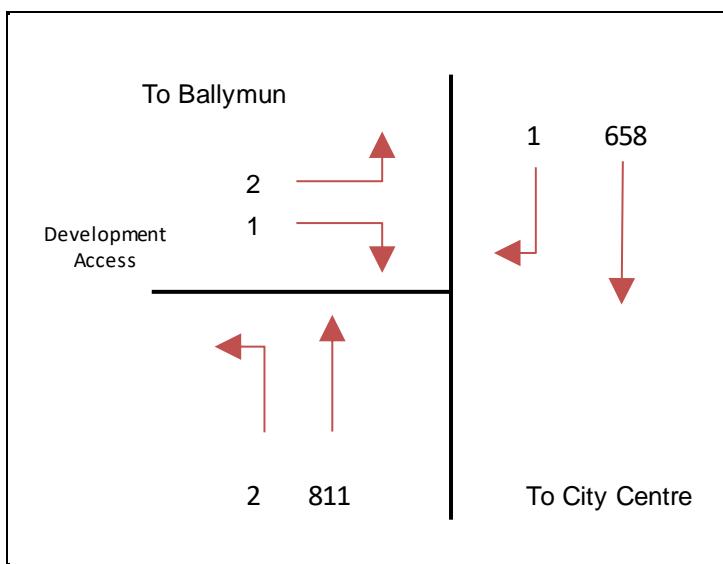
### 6.3 Traffic Flow Survey results

- 6.3.1 Detailed traffic flow survey results were obtained from the analysed survey data. The recorded traffic flows for the AM 08:00 – 09:00 peak hour are illustrated in Figure 6.1.



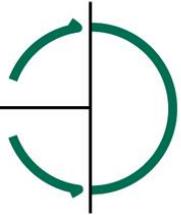
**Figure 6.1: AM Peak Hour Link Flows on Phibsborough Road**

- 6.3.2 The corresponding traffic flows for the PM 17:00 – 18:00 peak hour are shown in Figure 6.2.



**Figure 6.2: PM Peak Hour Link Flows on Phibsborough Road**

- 6.3.3 The traffic flows recorded by ILTP show are tidal in nature with higher traffic volumes travelling south bound (citybound) during the AM Peak and north bound (away from the city) during the evening peak traffic period.
- 6.3.4 ILTP also note that the exiting access also serves an adjacent residential development, the level of traffic generated by this development during both the AM and PM peak hours is quite low with a total of 4no. vehicles using this access in the AM peak and 6no. in the PM Peak.



## 7 TRAFFIC IMPACT ASSESSMENT

### 7.1 Trip Generation

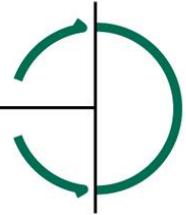
- 7.1.1 To calculate the likely increase in traffic volumes from the proposed development, trip rates were established for the proposed land use type and quantum, based on ILTP's experience of similar location and the TRICS (Trip Rate Information Computer System) database. TRICS is a computerised database package which can be used for transport planning and development control.
- 7.1.2 The database contains site and development information for approximately 1,800 development sites in the UK. Traffic entering and exiting each of these developments is recorded, and from this information trip rate calculations are carried out, which can be used to estimate traffic flows for a variety of development types.
- 7.1.3 In addition, ILTP's own experience of comparable developments of similar size and nature in Ireland. As a robust assessment ILTP have not reduced the trip generation in line with car parking reduction, but have used trip rates based on a 1:1 car to apartment ratio as build-to-rent apartments are also likely to generate more car share trips and more deliveries than apartment developments where generous car parking is provided. This however represents a worse case scenario.
- 7.1.4 The Trip Rates and resultant trips generated by the proposed development are set out in Table 7.1.

**Table 7.1: Estimated Trip Rates for Proposed Residential Development**

Land Use	Number of Units	AM Rate		PM Rate		AM Trips		PM Trips	
		Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
Residential (Apartment)	205	0.05	0.14	0.1	0.06	10	29	21	12
Café/Retial	67.3 sq.m	0.73 / 100 sq. m	0.21 / 100 sq. m	3.82 / 100 sq. m	3.51 / 100 sq. m	0	0	3	2
<b>Total</b>						<b>11</b>	<b>29</b>	<b>23</b>	<b>15</b>

\*Trip Rates for Trips All Assumed External to Proposed Development

- 7.1.5 The overall level of traffic that will be generated by the proposed development is very low and would not be regarded as material in traffic impact terms. Indeed, the level of trips from the development fall below the threshold levels where a traffic assessment would be required. However, for completeness ILTP have undertaken a capacity assessment of the proposed access, which is set out later in the report.
- 7.1.6 It should however be noted that the actual traffic generation of the development is likely to be far lower than these estimates. The café unit is likely to generate few if any external trips as it is intended for use by local residents and people using the nearby canal walkway. However, to ensure a robust assessment of the proposed access is undertake a worse-case scenario as outlined above was considered for TTA purposes.

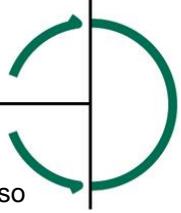


## 7.2 Wider Traffic Modelling Results

- 7.2.1 Using the NTA / DCC annual Cordon Count (*Report on Trends in Mode Share of Vehicles and People Crossing the Canal Cordon 2006 – 2018*, April 2020) and other data sources ILTP undertook a review of recent trends in traffic volumes for Dublin City Centre and the wider environs. The Cordon Count Report shows that in overall terms there has been a significant decline since 2006 in the number of people coming into Dublin during the Cordon Count period. In particular, car numbers crossing the canal cordon have continued to decline in recent years. The recently published NTA/DCC 2017 Cordon Data revealed that overall traffic flows in the city centre reduced by 3% between 2016 and 2017. Therefore, traffic levels entering the city centre continue to decline.
- 7.2.2 This decline in private car usage is promoted and supported by policy objectives at National and Local level. *Smarter Travel a Sustainable Transport Future* has as its goal a shift from car dependency to more sustainable modes of transport as such future planned development will have to have a high level of sustainability. This will in turn lead to a move away from car dependency particularly in city locations served by rail and bus public transport.
- 7.2.3 Furthermore the *Smarter Travel* document states that:
- "The total kilometres travelled by the car fleet in 2020 will not increase significantly from current total car kilometres."*
- 7.2.4 Traffic in the city centre and along radial routes to the centre have shown a continual decline over recent years. This is set to continue and is supported by policy at national and local level and by the planned roll out of increased rail, bus, cycle and pedestrian infrastructure in the area and city wide.
- 7.2.5 It is therefore considered that background traffic at the subject site will not grow in this area due to the availability of good bus and rail services and planned improvements in the cycling and pedestrian environment. This is in line the policies and objectives set down in *Smarter Travel - A Sustainable Transport Future 2009 – 2020* and also the current CDP.
- 7.2.6 Furthermore, current Government and DCC modal shift targets to more sustainable forms of transport are likely to yield a notable drop in background traffic in the short to medium term, particularly where frequent and reliable public transport services are in operation within a short walking distance.
- 7.2.7 Over time it is anticipated, based on current trends and in accordance with policy, that the overall background traffic will decrease further. Therefore, a worse case scenario in traffic impact terms is to assume that traffic will not decline on the surrounding road network over the coming years and remains.

## 7.3 PICADY Junction Analysis – Proposed Access Junction

- 7.3.1 In order to test the performance of the proposed access junction on Phibsborough Road with the proposed development in place, a Picady analysis was conducted.
- 7.3.2 Picady is a computer programme designed to assess the ratio of flow to capacity for priority controlled junctions. As recommended by the NRA: *Design Manual for Roads and Bridges (DMRB)*, the Institution of Highways & Transportation, and the *Transport Research Laboratory (TRL)*, the computer modelling program PICADY (Priority Intersection Capacity and DelaY) has been used for the assessment of major/minor priority junctions on the local road network.
- 7.3.3 In general terms this program operates on the gap acceptance theory. The output of PICADY provides information for roads designers and planners with regards to capacity, queuing and delay.



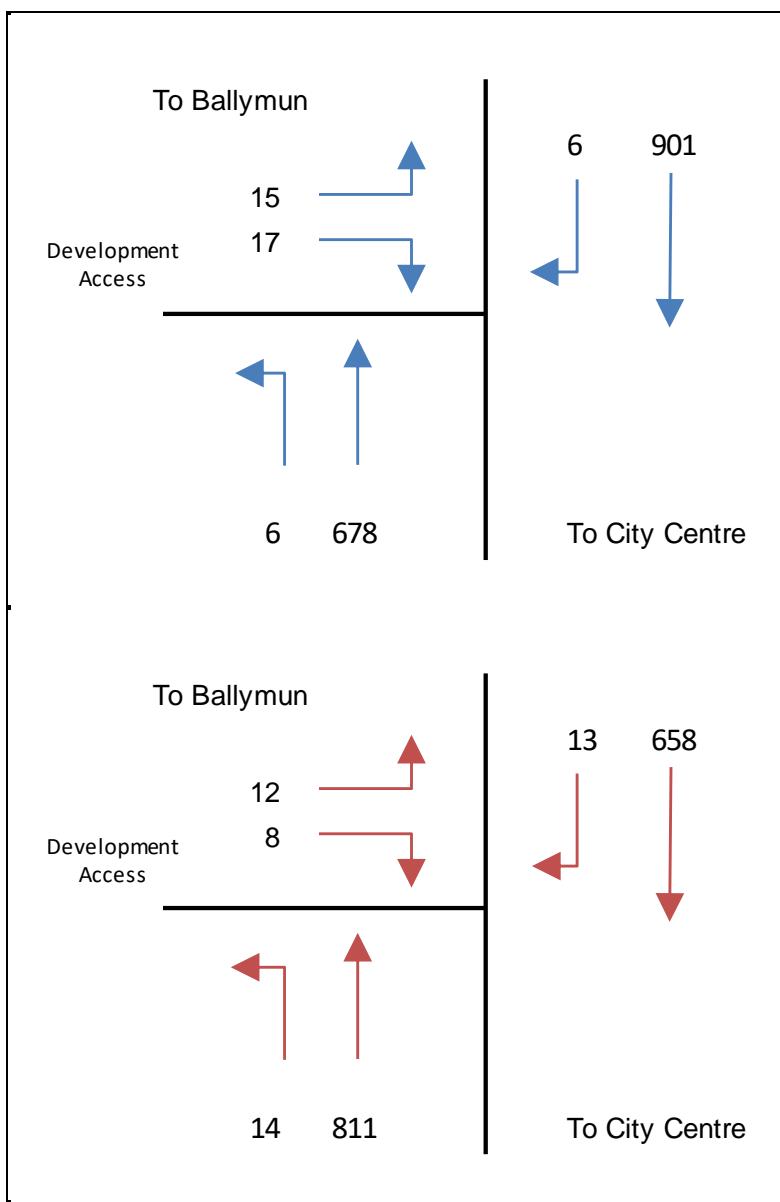
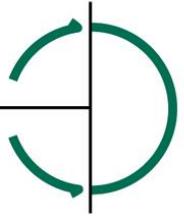
- 7.3.4 The program is intended primarily as a means of assessing junction performance and can also be used as an aid in junction design. Generally a level of saturation of 85-90% corresponding to a Ratio of Flow to Capacity (RFC) of 0.85 – 0.9 is accepted at priority junctions in urban areas.
- 7.3.5 The RFC (ratio of flow to capacity) factor is often used to assess highway capacity. This measures the observed flow of a link against the theoretical capacity of the link. RFC is calculated thus:-

$$\% \text{ RFC} = \frac{\text{Observed Flow}}{\text{Link capacity}} \times 100$$

- 7.3.6 In transport Terms, RFC values of 85% or less are considered satisfactory.

#### **7.4 PICADY Input and Results**

- 7.4.1 The traffic flows and turning movements for the proposed access junction, as input into Picady, are shown in Figure 7.1. These include the AM and PM periods.

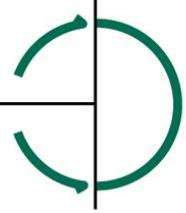


**Figure 7.1: Picady Input for Proposed Access Junction**

7.4.2 The results of the PICADY Assessment are shown in Tables 7.2 and 7.3.

**Table 7.2: AM Peak Hour PICADY Analysis**

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Start Queue (veh)	End Queue (veh)	Delay (veh.min/segment )	Mean Arriving Vehicle Delay (min)
08:00-09:00	B-AC	0.52	3.73	0.139	0	0.16	2.2	0.31
	C-AB	0.13	6.53	0.02	0	0.02	0.3	0.16
	C-A	-	-	-	-	-	-	-
	A-B	0.13	-	-	-	-	-	-
	A-C	11.3	-	-	-	-	-	-


**Table 7.3: PM Peak Hour PICADY Analysis**

<b>Segment</b>	<b>Stream</b>	<b>Demand (veh/min)</b>	<b>Capacity (veh/min)</b>	<b>RFC</b>	<b>Start Queue (veh)</b>	<b>End Queue (veh)</b>	<b>Delay (veh.min/segment )</b>	<b>Mean Arriving Vehicle Delay (min)</b>
17:00-18:00	B-AC	0.4	3.79	0.105	0	0.12	1.6	0.29
	C-AB	0.25	5.97	0.042	0	0.04	0.6	0.17
	C-A	-	-	-	-	-	-	-
	A-B	0.27	-	-	-	-	-	-
	A-C	13.51	-	-	-	-	-	-

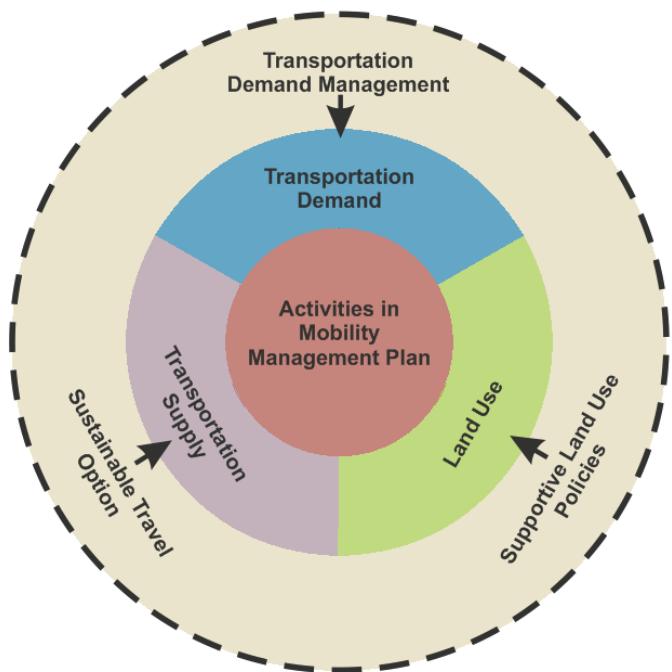
- 7.4.3 The full PICADY model input and output records are included in **Appendix C**.
- 7.4.4 The PICADY results for the junction show that the proposed junction will operate at or below 5% capacity with the peak hour development traffic in place, which is considerably below the 85% threshold capacity that usually signals that a junction is approaching its design capacity. This confirms the proposed access has more than adequate capacity for the proposed development and that no queues or delays will result for existing users of Phibsborough Road.



## 8 MOBILITY MANAGEMENT PLAN

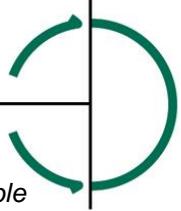
### 8.1 Introduction

- 8.1.1 A Travel Plan or Mobility Management Plan (MMP) is a wide range of policies, programmes, services and products that influence how, why, when & where people travel to make travel behaviour more sustainable.
- 8.1.2 Figure 8.1 represent graphically the interlinking approaches and strategies utilised in the preparation of a Travel Plan / Mobility Management Plan. Within this Travel Plan / MMP we have sought to consider transportation demand, transportation supply and land use.



**Figure 8.1: Mobility Management Plan Strategies**

- 8.1.3 Mobility Management can be described, as a transport demand management mechanism that seeks to provide for the transportation needs of people and goods. It can be applied as a strategic demand management tool or as a site-specific tool measure. The aim is to reduce the demand for and use of cars by increasing the attractiveness and practicality of other modes of transport. Mobility Management encourages individuals, companies or institutions to satisfy their transport needs by the efficient and integrated use of available transport facilities.
- 8.1.4 The UK Dept of Transport has produced a document entitled '*Making residential travel plans work – guidelines for new development*'. This document has guided the preparation and drafting of this Travel Plan / MMP strategy. In addition, the DTO guideline document "*Route to Sustainable Commuting: an Employer's guide to travel plans*" and "*A Sustainable Transport Future*" produced by the Department of Transport have influenced the preparation of this ravel Plan / MMP.
- 8.1.5 The use of a Travel Plan / MMP is an important element in meeting targets set down in the *Smarter Travel A Sustainable Transport Future*.



- 8.1.6 The Department of Transport published the policy document *Smarter Travel A Sustainable Transport Future – A New Transport Policy Document for Ireland 2009 –2020* in early 2009. This document sets down the policies and measures required to reduce travel demand and ensure that a far greater proportion of travel is done using sustainable modes of transport.

## 8.2 Person Trip Generation

- 8.2.1 Given the nature of the development (Build to Rent) and the low levels of car parking provided for residents it is important to understand the number of person trips generated by the residential aspect of the development. As with the vehicular trips discussed in chapter 7, the amount of person trips generated by the development was calculated using TRICS. The trips rates and trip generation for person-based trips are shown in Table 8.1.

**Table 8.1: Person Based Trip Rates and Generation**

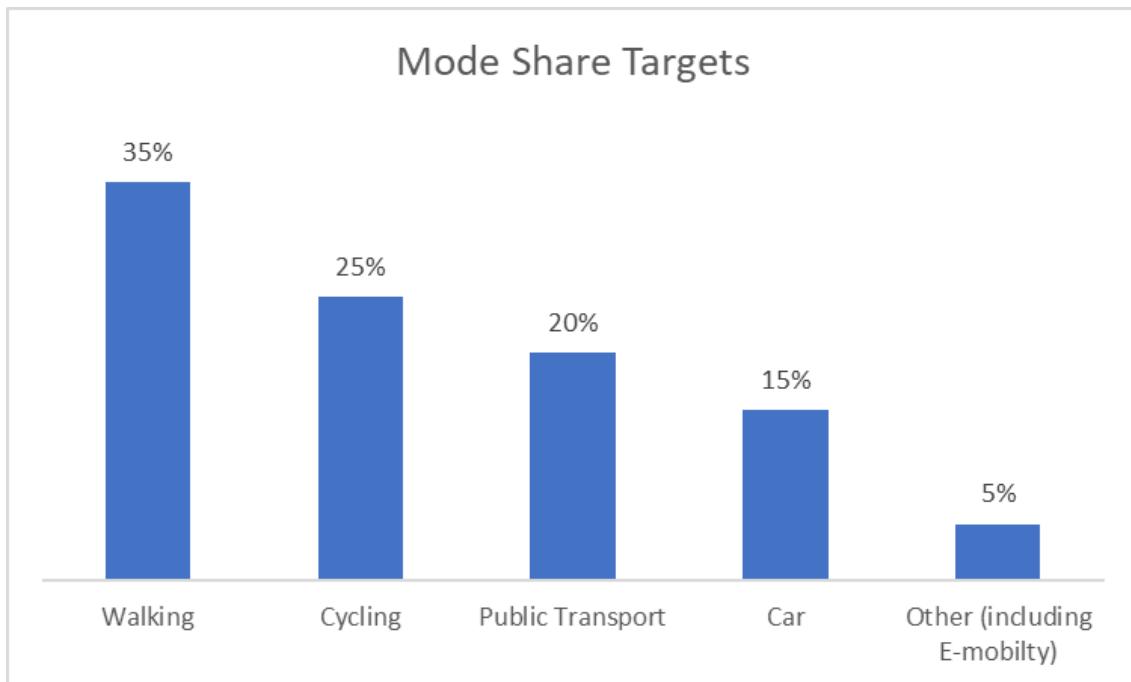
Person Based Trip Generation

Land Use	Number of Units	AM Rate		PM Rate		AM Trips		PM Trips	
		Arr	Dep	Arr	Dep	Arr	Dep	Arr	Dep
Residential (Apartment)	205	0.15	0.635	0.482	0.191	31	130	99	39

- 8.2.2 The analysis shows an anticipated 162 no. person trips in the AM Peak period and 140 no. person trips in the PM Peak period.

## 8.3 Mode Share Targets

- 8.3.1 As referenced earlier in this report there is already a high number of commuters in the Phibsborough area travelling to work/school using sustainable transport modes. Given this base combined with the proposed levels of car and cycle parking proposed, coupled with the location of the development and access to sustainable travel modes, ILTP have set the mode share targets for the proposed development accordingly.
- 8.3.2 The proposed mode share targets for the residential aspect of the development are shown in Figure 8.2. Achievement of these targets can be further reinforced through support measure as detailed below.



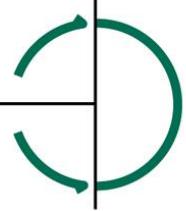
**Figure 8.2: Anticipated Mode Share Targets**

#### **8.4 Travel Plan / Mobility Management Plan Targets**

- 8.4.1 As per the Smarter Travel 2009 – 2020 policy document a transport modal split of 45% trips by car drivers (maximum) and 55% trips by public transport, walking, cycling and other sustainable modes (minimum) is proposed.
- 8.4.2 The mode share target anticipated for the proposed development are in excess of these overall targets. This is consistent with wider transport objectives to encourage and maximise greater use of sustainable travel modes in developments which are appropriately located and well served by sustainable travel modes.
- 8.4.3 It is considered that these are realistic mode share targets for the proposed, particularly given the close proximity of the proposed development to high capacity, high frequency public transport services, combined with the reduce car parking and increased cycle parking provision.

#### **8.5 Travel Plan / Mobility Management Plan Objectives**

- 8.5.1 A Travel Plan / Mobility Management Plan would have the effect of reducing in overall terms both the amount of trips generated by the proposed development, and would ensure that greater numbers use public transport. The mobility management strategy would therefore act as a form of mitigation by reducing the overall level of traffic that would be on the surrounding roads in the future.
- 8.5.2 This Travel Plan / Mobility Management Plan includes provision for the appointment of a Travel Plan Coordinator, details of access to the appointed Travel Plan Coordinator by the residents in the development and a report submitted on an annual basis on the achievement of the actual travel behaviour relative to the objectives of the Travel Plan / MMP.



## 8.6 Travel Plan / Mobility Management Plan Measures and Action Plan

8.6.1 In order to promote sustainable travel patterns and meet the proposed modal split targets a number of measures are recommended. These include:

- Appointment of a Travel Plan Coordinator
- Appropriate Car Parking and Cycle Parking Provision
- Promote Public Transport
- Promote Walking and Cycling initiatives
- Promote Walking initiatives
- Car Sharing
- Car Club & Electric Car Facilities

### Appointment of a Travel Plan Coordinator

8.6.2 The appointment of an active Travel Plan Coordinator is regarded as the principle means of developing and implementing a Travel Plan / MMP.

8.6.3 It is proposed that a Travel Plan Coordinator be appointed for the development by the management company, whose objective will be to encourage and facilitate sustainable travel for residents and visitors to the development.

8.6.4 The Travel Plan Coordinator will have a role in promoting and monitoring the Travel Plan / MMP. The Travel Plan Coordinator role will involve the ongoing implementation of the Travel Plan initiatives.

8.6.5 **Recommendation:** A Travel Plan Coordinator for the development will be appointed after the occupation of the first phase of the development.

8.6.6 **Recommendation:** The Travel Plan process will be subject to an annual review process to identify any amendments to the Travel Plan / MMP process as necessary.

8.6.7 **Recommendation:** The Travel Plan Coordinator will record Travel Modal Split through a resident travel survey on an annual basis. Surveys should be conducted over the same period every year, so conditions and results are comparable.

### Appropriate Car Parking and Cycle Parking Provision

8.6.8 It is proposed as part of this application that car and cycle parking be provided having regards the 2018 Government Apartment Guidelines and the DCC CDP requirements. The proposals include for modest car parking provision and higher cycle parking provision to increase greater mode transfer from private car to cycling.

### Public Transport Initiatives

8.6.9 As has been outlined in this report there are high capacity and high frequency Luas, bus and rail services within a short walk of the development. It is vital that such facilities are promoted and their usage maximised. The roll out of integrated ticketing and real-time travel information increases further the attractiveness of public transport.

8.6.10 **Recommendation:** Information on public transport serving the development will be made available to residents. Such information will be displayed on notice boards, where relevant.



- 8.6.11 **Recommendation:** Information on the tax benefits of commuter public transport tickets will be made available to all residents.

### **Walking and Cycling Initiatives**

- 8.6.12 The proposed development includes for the provision of bicycle parking facilities for all residential units. In addition to the provision of on-site facilities cycling can be further encouraged through various initiatives which include promoting education and awareness on cycling and providing information on cycle routes in the area. Pedestrian links to the canal tow-path are also included as part of the proposed development.
- 8.6.13 **Recommendation:** The Travel Plan Coordinator will implement appropriate walking and cycling initiatives that encourage a greater uptake of walking and cycling as more sustainable alternatives to the private car. This includes promoting education and awareness on cycling and circulating information on walking and cycle routes in the area. In addition, information on the Bike to Work scheme will be made available for all residents.

### **Car Sharing**

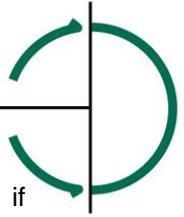
- 8.6.14 Car sharing provides an opportunity to save on fuel costs, and also to save time for parents travelling to school with children. This also serves to reduce congestion on the roads, particularly in and around the development itself during peak traffic hours. Car sharing also facilitates social interaction between residents.
- 8.6.15 As a potential strategy, the Travel Plan Coordinator could circulate information to all residents highlighting the benefits of car sharing and request information from residents in respect of their ability to car share. An initial meeting with possible car sharing partners could then be arranged to discuss arrangements for pick-up and collection, scheduling, contact details and agreeing trial periods.
- 8.6.16 The Travel Plan Coordinator will also evaluate on an ongoing basis the needs of residents and opportunities to reduce car dependency and maximise car sharing.
- 8.6.17 **Recommendation:** A formal procedure will be put in place and coordinated and monitored on an ongoing basis by the Travel Plan Coordinator to promote car sharing with the view to maximising the number of residents that travel in each car and minimising the number of vehicular trips.

### **Car Club and Electric Car Facilities**

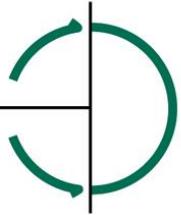
- 8.6.18 The proposed development also includes provision for dedicated electric car charge points at basement level to enable those residents who own electric cars to charge them overnight. In addition, a Car Club or 'Go Car' type facility is also included in the development in order to reduce the need for car ownership whilst making cars available for residents to meet periodic car needs.

## **8.7 Monitoring and Review**

- 8.7.1 The functioning of the Travel Plan / Mobility Management Plan will be overseen on an ongoing basis. This will ensure that travel notice boards are kept up to date and that new residents are provided with travel packs and a full induction session.
- 8.7.2 More formal measurements of the travel behaviour will be undertaken on an annual basis. This will determine if the objectives of the Travel Plan / MMP are being met. Input from the Local Authority and the Management Company will be sought.



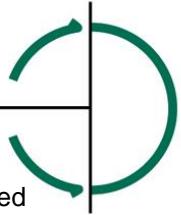
- 8.7.3 The modal split for the development will also be surveyed on an annual basis to ascertain if targets are being met and to identify methods by which the modal split may be further improved.
- 8.7.4 Following on from this analysis measures required to remedy any deficiencies will be identified and implemented.



## 9 SUMMARY & CONCLUSIONS

### 9.1 Summary

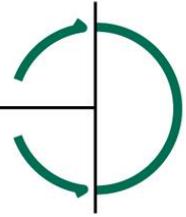
- 9.1.1 ILTP Consulting were commissioned by Bindford Developments Limited to undertake a Traffic and Transport Assessment (TTA) and Mobility management Plan (MMP) for a proposed infill residential development at Cross Guns, Phibsborough. The proposed development consists of 205 no. residential apartments, public plaza and new café/retail unit as part of a build-to rent scheme.
- 9.1.2 The proposed site is located adjacent and to the rear of an existing Apartment block that front on to Cross Guns/Phibsborough Road. The proposed Build-to-Rent development is bounded to the north by the Royal Canal and to the south and west by existing residential development. The proposed development is also located close to local facilities and has excellent bus linkage to the city centre making it an ideal location for a Build-to-Rent development.
- 9.1.3 ILTP firstly undertook a detailed site visit of the area to ascertain and observe local traffic conditions. The existing lands and adjacent apartment are currently accessed via an existing laneway located off the R108 Phibsborough Road and south of Cross Guns bridge. The existing entrance was observed to be performing adequately during the site visits and presented no traffic problems evident.
- 9.1.4 The proposed development is located immediately adjacent to the Finglas and Airport QBCs and is within walking distance of the city centre and local schools, and facilities. The site also adjoins the Royal Canal greenway and the wider Dublin cycle network and is also within walking distance of the LUAS cross city. The subject site is already excellently served by existing sustainable travel modes.
- 9.1.5 The development is proposed as a Build-to-Rent scheme which means that many residents are unlikely to need or own a car even if only for occasional use. The proposed car parking provision therefore seek to provide low car parking ratio in accordance with the Apartment Guidelines. Some visitor parking and a proposed GoCar facility is provided to allow residents occasional access to a car. The management will actively control and mange the available car parking and ensure that only residents with a specific car parking need or allocation will be allowed park within the development.
- 9.1.6 For the proposed café/retail unit it is not proposed to provide any dedicated car parking. Instead, some short stay car parking is proposed within the development, which can be used for drop-off, short stay car parking or by visitors to proposed development.
- 9.1.7 It is further proposed that each car parking space will be able to accommodate an EV charge point to promote the use of Zero Emission vehicles in the city centre. It is also proposed that MMP will be prepared for the development as outlined in this report.
- 9.1.8 Ample cycle parking is also proposed with one cycle space provide per bedroom. In addition, visitor and surface cycle parking are also provided in the development. Provision for future linkage to the canal and surrounding area for walking and cycle modes is also provided for. This will ensure that good permeability through the development can also be provided. The proposed lowering of the canal wall and the new developing overlooking same will provide improved passive surveillance for existing users of the canal walk.
- 9.1.9 It is also proposed that the access road would remain in private ownership and would not be taken in charge. The proposed new access off Phibsborough Road is designed in accordance with DMURS standard and allows sightlines of 49m x 2.4m x 49m to be achieved, which is more than adequate for the proposed development.



- 9.1.10 It should be noted that the access street onto Phibsborough Road has already achieved Compliance from DCC as part of a previously permitted development on the subject lands and the proposed layout is in accordance with principles as set out in DMURS.
- 9.1.11 To establish current traffic conditions ILTP undertook traffic surveys on Phibsborough Road in November 2018. The surveys found that traffic flows along Phibsborough Road, while heavy are not excessive.
- 9.1.12 The proposed traffic generation on the development was found to be very low and would from a TTA perspective be regarded as sub-threshold, and therefore not deemed requiring detailed analysis. However, for completeness ILTP have undertaken a capacity analysis of the proposed access on to Cross Guns, Phibsborough Road and the results included in the TTA. This confirms that the proposed access has more than adequate capacity to accommodate the proposed development and furthermore it will not result in any measurable delays to traffic on the adjoining road network.
- 9.1.13 The proposed development is located close to all services and many of the trips can be made on foot, bicycle or public transport. The proposed development is also well served by excellent public transport services. Therefore, the overall traffic generated by the development is likely to be lower than that assumed in the assessment undertaken. In addition, recent NTA/DCC data confirm that traffic flows into the city centre are continuing to decline, with increased usage of sustainable travel modes also evident. Therefore, it is likely that over time the actual traffic flow will decrease further on the surrounding road.
- 9.1.14 A Construction Traffic Management Plan will also be prepared, which will ensure that all construction related traffic will be directed away from the city centre along regional and national route only. In addition, it is proposed that specific working hours will be only allowed during construction period, to minimise the impact of local residents and the adjoining road network.

## 9.2 Conclusion

- 9.2.1 The proposed development will have minimal impact in traffic terms on the local road network.
- 9.2.2 The proposed access is designed to accord with DMURS design note 4 requirements. The overall development is fully consistent with the wider objections of DMURS and wider transport policies that seek to deliver sustainable living in close proximity to the city centre.
- 9.2.3 The proposed Build-to-Rent development is ideally located to promote walking and cycling trips and is excellently served by existing public transport services in the area.
- 9.2.4 The proposed infill development off Phibsborough Road provides appropriate densification of the urban area, which is supportive of Government and DCC policies and the Apartment Guidelines that seek to minimise car parking in developments such as this is proposed at Cross Guns. The proposed development by virtue of its location can avail of the excellent sustainable transport modes that exist in the area. Given to location of the proposed development very high use of sustainable travel modes will be achieved and these will be supported by the measure as set out on the MMP section of the report. ILTP see no reason on traffic or transportation grounds not to grant this development. Indeed, the densification of this residential area and the promotion of family living close to the city centre is fully in keeping with transportation and sustainability policies at both local and national level.



**A APPENDIX**

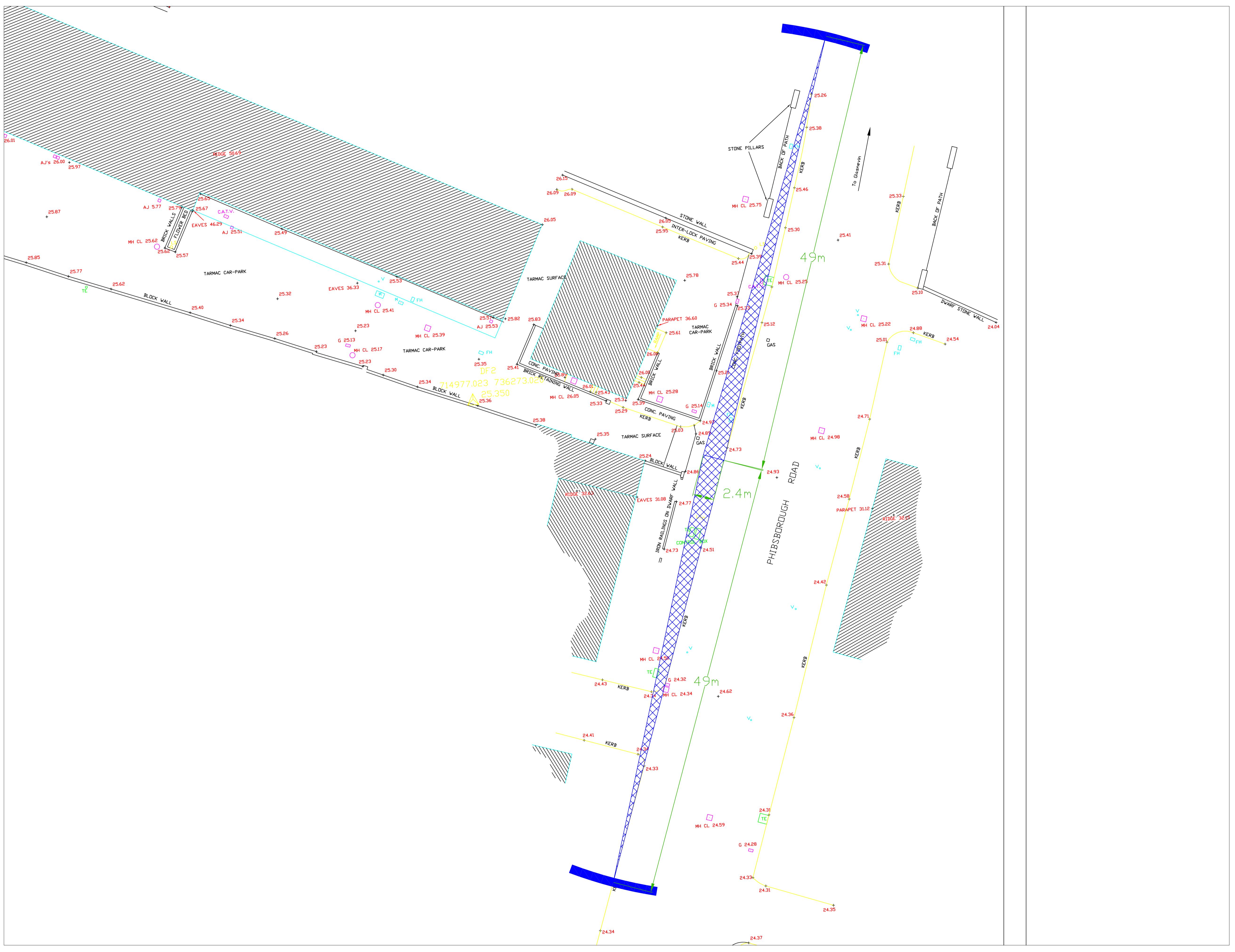
**A.1 Sightline Assessment**



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## Notes

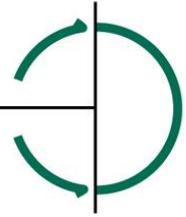
## Legend



Drawing Title:

# **49m Sightline Assessment 2.4. Setback**

Project Ref:	Drawing No:
<b>CrossGuns</b>	<b>001</b>
Rev:	Date:
<b>001</b>	<b>10/06/2020</b>
Drawn By:	Checked By:
<b>BW</b>	<b>COS</b>
Approved By:	Scale:
<b>COS</b>	<b>1 : 200 @ A1</b> <b>1 : 400 @ A3</b>



**B APPENDIX**

**B.1 PICADY Analysis**

<b>PICADY</b>		
GUI Version: 5.1 AE Analysis Program Release: 5.0 (MAY 2010)		
© Copyright TRL Limited, 2010 Adapted from PICADY/3 which is Crown Copyright by permission of the controller of HMSO		
For sales and distribution information, program advice and maintenance, contact:		
TRL Limited Crowthorne House Nine Mile Ride Wokingham, Berks. RG40 3GA, UK		Tel: +44 (0)1344 770758 Fax: +44 (0)1344 770864 E-mail: <a href="mailto:software@trl.co.uk">software@trl.co.uk</a> Web: <a href="http://www.trlsoftware.co.uk">www.trlsoftware.co.uk</a>

The user of this computer program for the solution of an engineering problem is in no way relieved of their responsibility for the correctness of the solution

## Run Analysis

Parameter	Values
File Run	I:\ILTP Projects\CrossGuns\Data\PICADY\CrossGuns.vpi
Date Run	16 June 2020
Time Run	10:53:07
Driving Side	Drive On The Left

## Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	R135	100
Arm B	Access	100
Arm C	R135	100

## Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

## Run Information

Parameter	Values
Run Title	Cross Guns
Location	-
Date	06 June 2020
Enumerator	Administrator [ILTP023]
Job Number	-
Status	-
Client	-
Description	-

## Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

## Geometric Data

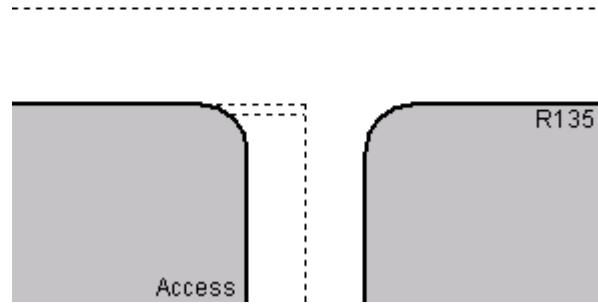
### Geometric Parameters

Parameter	Minor Arm B
Major Road Carriageway Width (m)	6.00
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	2.20
Minor Road First Lane Width (m)	2.40
Minor Road Visibility To Right (m)	60
Minor Road Visibility To Left (m)	60
Major Road Right Turn Visibility (m)	60
Major Road Right Turn Blocks Traffic	Yes (if over 2 veh)

### Slope and Intercept Values

Stream	Intercept for Stream	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	495.182	0.090	0.228	0.143	0.326
B-C	621.960	0.095	0.241	-	-
C-B	608.710	0.236	0.236	-	-

Note: Streams may be combined in which case capacity will be adjusted  
These values do not allow for any site-specific corrections

**Junction Diagram****Demand Data****Modelling Periods**

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	08:00-09:00	60	15
Second Modelling Period	17:00-18:00	60	15

**Direct Entry Flows**

**Demand Set:** Cross Guns  
**Modelling Period:** 08:00-09:00

**Segment:** 08:00-08:15

Arm	Flow (veh/min)
Arm A	11.43
Arm B	0.52
Arm C	15.02

**Segment:** 08:15-08:30

Arm	Flow (veh/min)
Arm A	11.43
Arm B	0.52
Arm C	15.02

**Segment:** 08:30-08:45

Arm	Flow (veh/min)
Arm A	11.43
Arm B	0.52
Arm C	15.02

**Segment:** 08:45-09:00

Arm	Flow (veh/min)
Arm A	11.43
Arm B	0.52
Arm C	15.02

**Demand Set:** Cross Guns Demand Set  
**Modelling Period:** 17:00-18:00

**Segment:** 17:00-17:15

Arm	Flow (veh/min)
Arm A	13.78
Arm B	0.40
Arm C	11.22

**Segment:** 17:15-17:30

<b>Arm</b>	<b>Flow (veh/min)</b>
Arm A	13.78
Arm B	0.40
Arm C	11.22

**Segment:** 17:30-17:45

<b>Arm</b>	<b>Flow (veh/min)</b>
Arm A	13.78
Arm B	0.40
Arm C	11.22

**Segment:** 17:45-18:00

<b>Arm</b>	<b>Flow (veh/min)</b>
Arm A	13.78
Arm B	0.40
Arm C	11.22

**Turning Counts****Demand Set:** Cross Guns**Modelling Period:** 08:00-09:00

<b>From/To</b>	<b>Arm A</b>	<b>Arm B</b>	<b>Arm C</b>
Arm A	-	8	678
Arm B	17	-	14
Arm C	901	8	-

**Demand Set:** Cross Guns Demand Set**Modelling Period:** 17:00-18:00

<b>From/To</b>	<b>Arm A</b>	<b>Arm B</b>	<b>Arm C</b>
Arm A	-	16	811
Arm B	12	-	12
Arm C	658	15	-

Turning proportions are calculated from turning count data

### Turning Proportions

**Demand Set:** Cross Guns  
**Modelling Period:** 08:00-09:00

From/To	Arm A	Arm B	Arm C
Arm A	0.000	0.012	0.988
Arm B	0.548	0.000	0.452
Arm C	0.991	0.009	0.000

**Demand Set:** Cross Guns Demand Set  
**Modelling Period:** 17:00-18:00

From/To	Arm A	Arm B	Arm C
Arm A	0.000	0.019	0.981
Arm B	0.500	0.000	0.500
Arm C	0.978	0.022	0.000

### Heavy Vehicles Percentages

**Demand Set:** Cross Guns  
**Modelling Period:** 08:00-09:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

**Demand Set:** Cross Guns Demand Set  
**Modelling Period:** 17:00-18:00

From/To	Arm A	Arm B	Arm C
Arm A	-	10.0	10.0
Arm B	10.0	-	10.0
Arm C	10.0	10.0	-

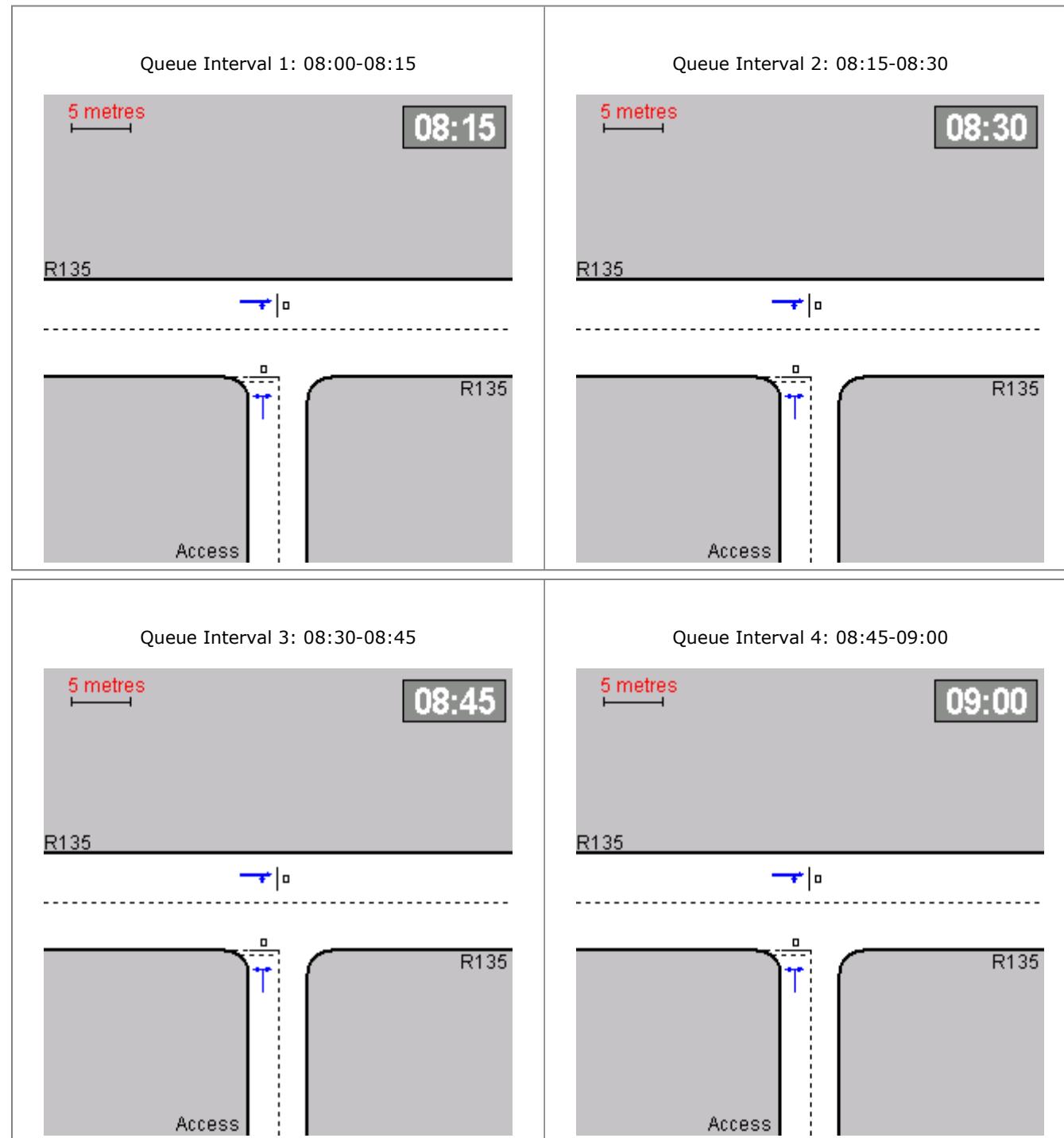
Default proportions of heavy vehicles are used

## Queue Diagrams

**Demand Set:** Sum of Demand Sets for Modelling Period: 08:00 - 09:00

**Modelling Period:** 08:00-09:00

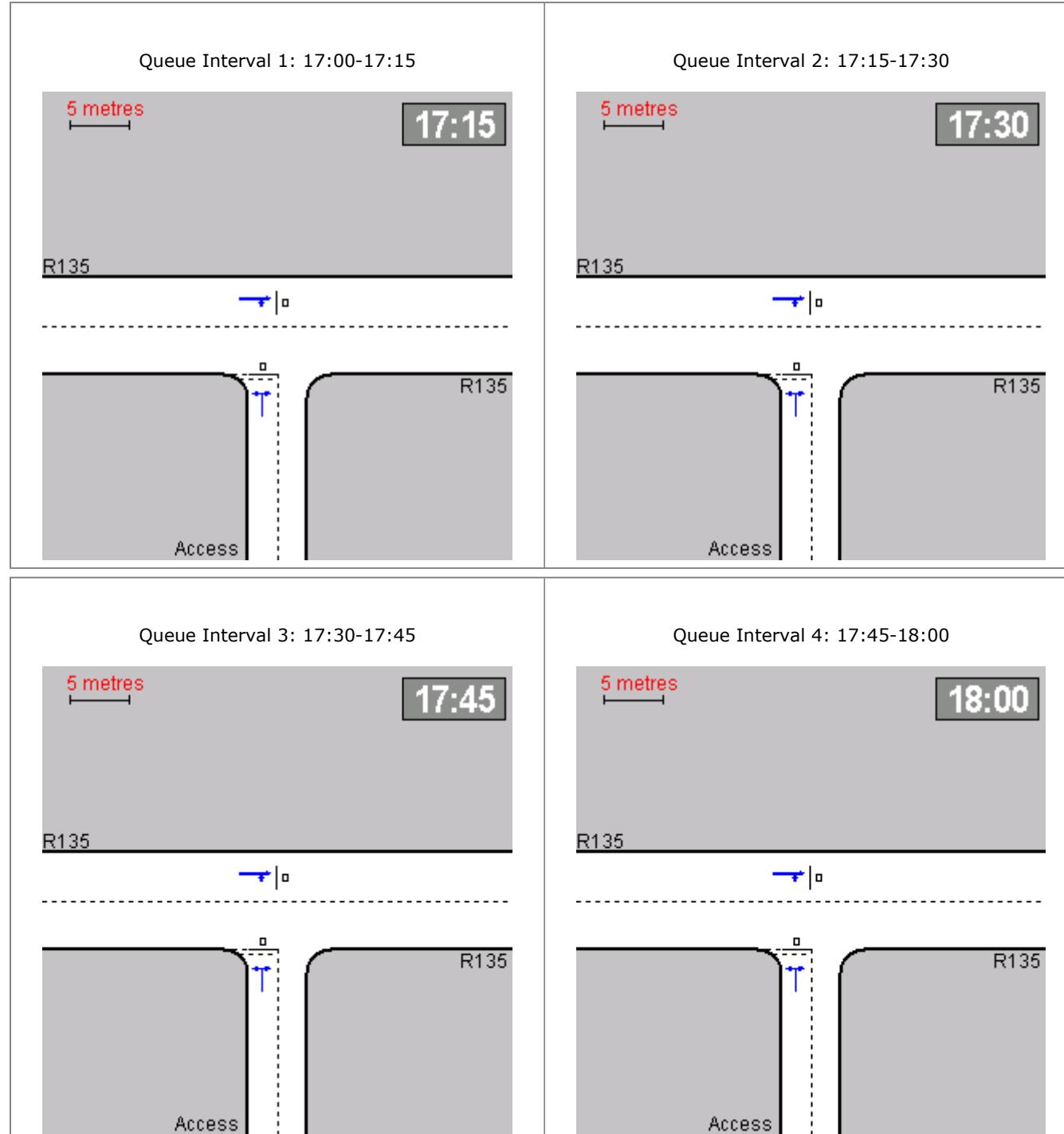
**View Extent:** 40m



**Demand Set:** Sum of Demand Sets for Modelling Period: 17:00 - 18:00

**Modelling Period:** 17:00-18:00

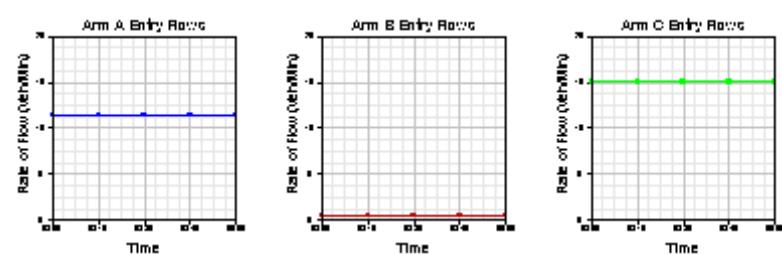
**View Extent:** 40m



### Demand Data Graph

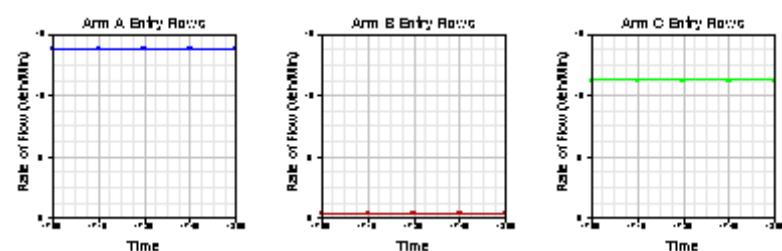
**Demand Set:** Cross Guns

**Modelling Period:** 08:00-09:00



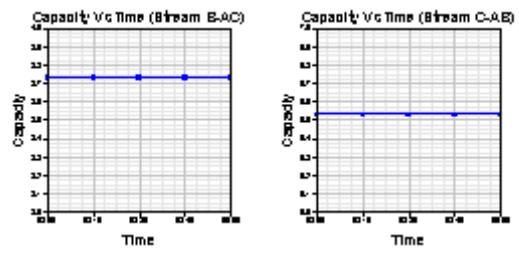
**Demand Set:** Cross Guns Demand Set

**Modelling Period:** 17:00-18:00

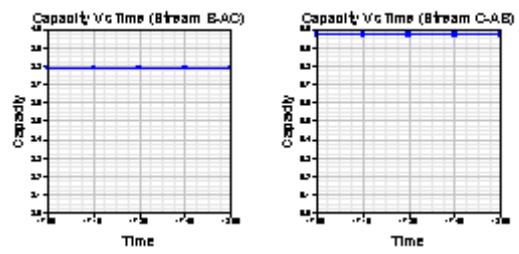


## Capacity Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 08:00 - 09:00  
**Modelling Period:** 08:00-09:00

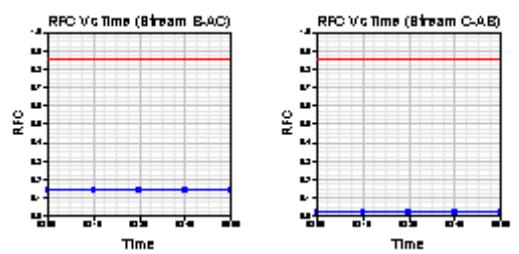


**Demand Set:** Sum of Demand Sets for Modelling Period: 17:00 - 18:00  
**Modelling Period:** 17:00-18:00

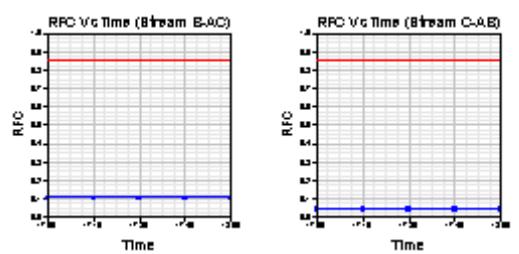


## RFC Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 08:00 - 09:00  
**Modelling Period:** 08:00-09:00



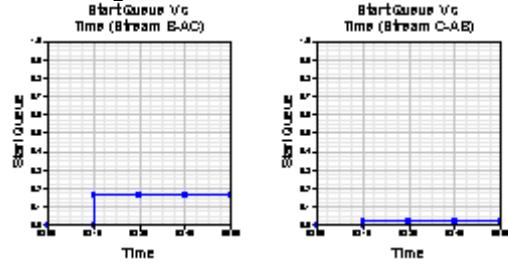
**Demand Set:** Sum of Demand Sets for Modelling Period: 17:00 - 18:00  
**Modelling Period:** 17:00-18:00



## Start Queue Graph

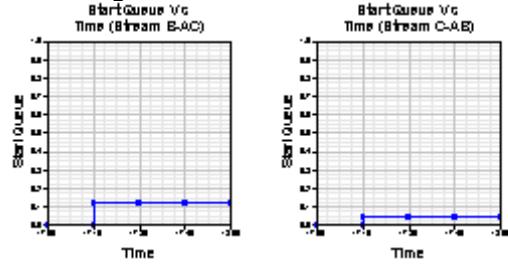
**Demand Set:** Sum of Demand Sets for Modelling Period: 08:00 - 09:00

**Modelling Period:** 08:00-09:00



**Demand Set:** Sum of Demand Sets for Modelling Period: 17:00 - 18:00

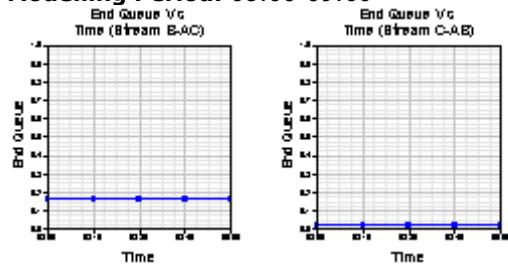
**Modelling Period:** 17:00-18:00



## End Queue Graph

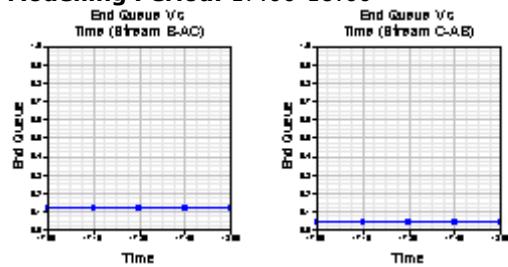
**Demand Set:** Sum of Demand Sets for Modelling Period: 08:00 - 09:00

**Modelling Period:** 08:00-09:00



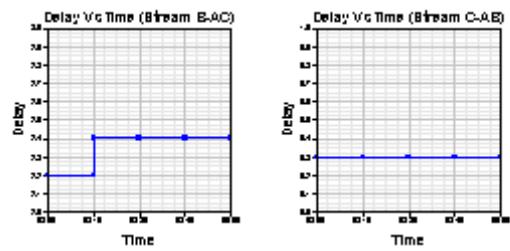
**Demand Set:** Sum of Demand Sets for Modelling Period: 17:00 - 18:00

**Modelling Period:** 17:00-18:00

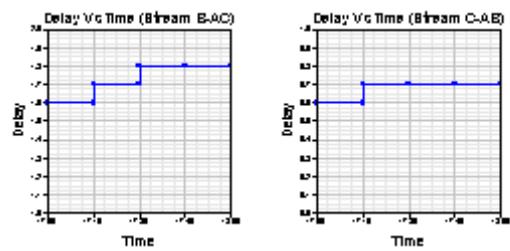


## Delay Graph

**Demand Set:** Sum of Demand Sets for Modelling Period: 08:00 - 09:00  
**Modelling Period:** 08:00-09:00



**Demand Set:** Sum of Demand Sets for Modelling Period: 17:00 - 18:00  
**Modelling Period:** 17:00-18:00



## Queues & Delays

**Demand Set:** Sum of Demand Sets for Modelling Period: 08:00 - 09:00  
**Modelling Period:** 08:00-09:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-AC	0.52	3.73	0.139	-	0.00	0.16	-	2.2	0.31
	C-AB	0.13	6.53	0.020	-	0.00	0.02	-	0.3	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	11.30	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/segment)	Delay (veh.min/segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-AC	0.52	3.73	0.139	-	0.16	0.16	-	2.4	0.31
	C-AB	0.13	6.53	0.020	-	0.02	0.02	-	0.3	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	11.30	-	-	-	-	-	-	-	-

<b>Segment</b>	<b>Stream</b>	<b>Demand (veh/min)</b>	<b>Capacity (veh/min)</b>	<b>RFC</b>	<b>Ped. Flow (ped/min)</b>	<b>Start Queue (veh)</b>	<b>End Queue (veh)</b>	<b>Geometric Delay (veh.min/ segment)</b>	<b>Delay (veh.min/ segment)</b>	<b>Mean Arriving Vehicle Delay (min)</b>
08:30-08:45	B-AC	0.52	3.73	0.139	-	0.16	0.16	-	2.4	0.31
	C-AB	0.13	6.53	0.020	-	0.02	0.02	-	0.3	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	11.30	-	-	-	-	-	-	-	-

<b>Segment</b>	<b>Stream</b>	<b>Demand (veh/min)</b>	<b>Capacity (veh/min)</b>	<b>RFC</b>	<b>Ped. Flow (ped/min)</b>	<b>Start Queue (veh)</b>	<b>End Queue (veh)</b>	<b>Geometric Delay (veh.min/ segment)</b>	<b>Delay (veh.min/ segment)</b>	<b>Mean Arriving Vehicle Delay (min)</b>
08:45-09:00	B-AC	0.52	3.73	0.139	-	0.16	0.16	-	2.4	0.31
	C-AB	0.13	6.53	0.020	-	0.02	0.02	-	0.3	0.16
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.13	-	-	-	-	-	-	-	-
	A-C	11.30	-	-	-	-	-	-	-	-

**Demand Set:** Sum of Demand Sets for Modelling Period: 17:00 - 18:00

**Modelling Period:** 17:00-18:00

<b>Segment</b>	<b>Stream</b>	<b>Demand (veh/min)</b>	<b>Capacity (veh/min)</b>	<b>RFC</b>	<b>Ped. Flow (ped/min)</b>	<b>Start Queue (veh)</b>	<b>End Queue (veh)</b>	<b>Geometric Delay (veh.min/ segment)</b>	<b>Delay (veh.min/ segment)</b>	<b>Mean Arriving Vehicle Delay (min)</b>
17:00-17:15	B-AC	0.40	3.79	0.105	-	0.00	0.12	-	1.6	0.29
	C-AB	0.25	5.97	0.042	-	0.00	0.04	-	0.6	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.27	-	-	-	-	-	-	-	-
	A-C	13.51	-	-	-	-	-	-	-	-

<b>Segment</b>	<b>Stream</b>	<b>Demand (veh/min)</b>	<b>Capacity (veh/min)</b>	<b>RFC</b>	<b>Ped. Flow (ped/min)</b>	<b>Start Queue (veh)</b>	<b>End Queue (veh)</b>	<b>Geometric Delay (veh.min/ segment)</b>	<b>Delay (veh.min/ segment)</b>	<b>Mean Arriving Vehicle Delay (min)</b>
17:15-17:30	B-AC	0.40	3.79	0.105	-	0.12	0.12	-	1.7	0.29
	C-AB	0.25	5.97	0.042	-	0.04	0.04	-	0.7	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.27	-	-	-	-	-	-	-	-
	A-C	13.51	-	-	-	-	-	-	-	-

<b>Segment</b>	<b>Stream</b>	<b>Demand (veh/min)</b>	<b>Capacity (veh/min)</b>	<b>RFC</b>	<b>Ped. Flow (ped/min)</b>	<b>Start Queue (veh)</b>	<b>End Queue (veh)</b>	<b>Geometric Delay (veh.min/ segment)</b>	<b>Delay (veh.min/ segment)</b>	<b>Mean Arriving Vehicle Delay (min)</b>
17:30-17:45	B-AC	0.40	3.79	0.105	-	0.12	0.12	-	1.8	0.29
	C-AB	0.25	5.97	0.042	-	0.04	0.04	-	0.7	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.27	-	-	-	-	-	-	-	-
	A-C	13.51	-	-	-	-	-	-	-	-
17:45-18:00	B-AC	0.40	3.79	0.105	-	0.12	0.12	-	1.8	0.29
	C-AB	0.25	5.97	0.042	-	0.04	0.04	-	0.7	0.17
	C-A	-	-	-	-	-	-	-	-	-
	A-B	0.27	-	-	-	-	-	-	-	-
	A-C	13.51	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.

In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.

Delays marked with '# #' could not be calculated.

## Overall Queues & Delays

### Queueing Delay Information Over Whole Period

**Demand Set:** Sum of Demand Sets for Modelling Period: 08:00 - 09:00

**Modelling Period:** 08:00-09:00

<b>Stream</b>	<b>Total Demand (veh)</b>	<b>Total Demand (veh/h)</b>	<b>Queueing Delay (min)</b>	<b>Queueing Delay (min/veh)</b>	<b>Inclusive Delay (min)</b>	<b>Inclusive Delay (min/veh)</b>
B-AC	31.2	31.2	9.4	0.3	9.4	0.3
C-AB	7.9	7.9	1.2	0.2	1.2	0.2
C-A	-	-	-	-	-	-
A-B	8.0	8.0	-	-	-	-
A-C	677.8	677.8	-	-	-	-
<b>All</b>	<b>1618.2</b>	<b>1618.2</b>	<b>10.7</b>	<b>0.0</b>	<b>10.7</b>	<b>0.0</b>

**Demand Set:** Sum of Demand Sets for Modelling Period: 17:00 - 18:00

**Modelling Period:** 17:00-18:00

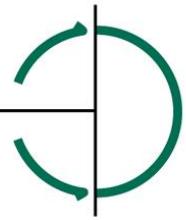
<b>Stream</b>	<b>Total Demand (veh)</b>	<b>Total Demand (veh/h)</b>	<b>Queueing Delay (min)</b>	<b>Queueing Delay (min/veh)</b>	<b>Inclusive Delay (min)</b>	<b>Inclusive Delay (min/veh)</b>
B-AC	24.0	24.0	6.9	0.3	6.9	0.3
C-AB	15.0	15.0	2.6	0.2	2.6	0.2
C-A	-	-	-	-	-	-
A-B	16.0	16.0	-	-	-	-
A-C	810.8	810.8	-	-	-	-
<b>All</b>	<b>1524.0</b>	<b>1524.0</b>	<b>9.5</b>	<b>0.0</b>	<b>9.5</b>	<b>0.0</b>

Delay is that occurring only within the time period.

Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.

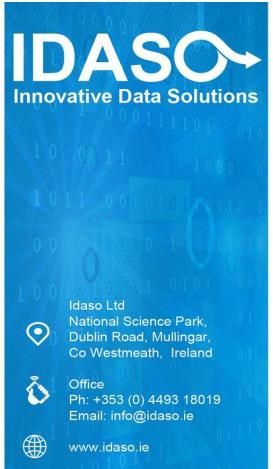
These will only be significantly different if there is a large queue remaining at the end of the time period.

**PICADY 5 Run Successful**



**C APPENDIX**

**C.1 IDASO Traffic Survey Results**

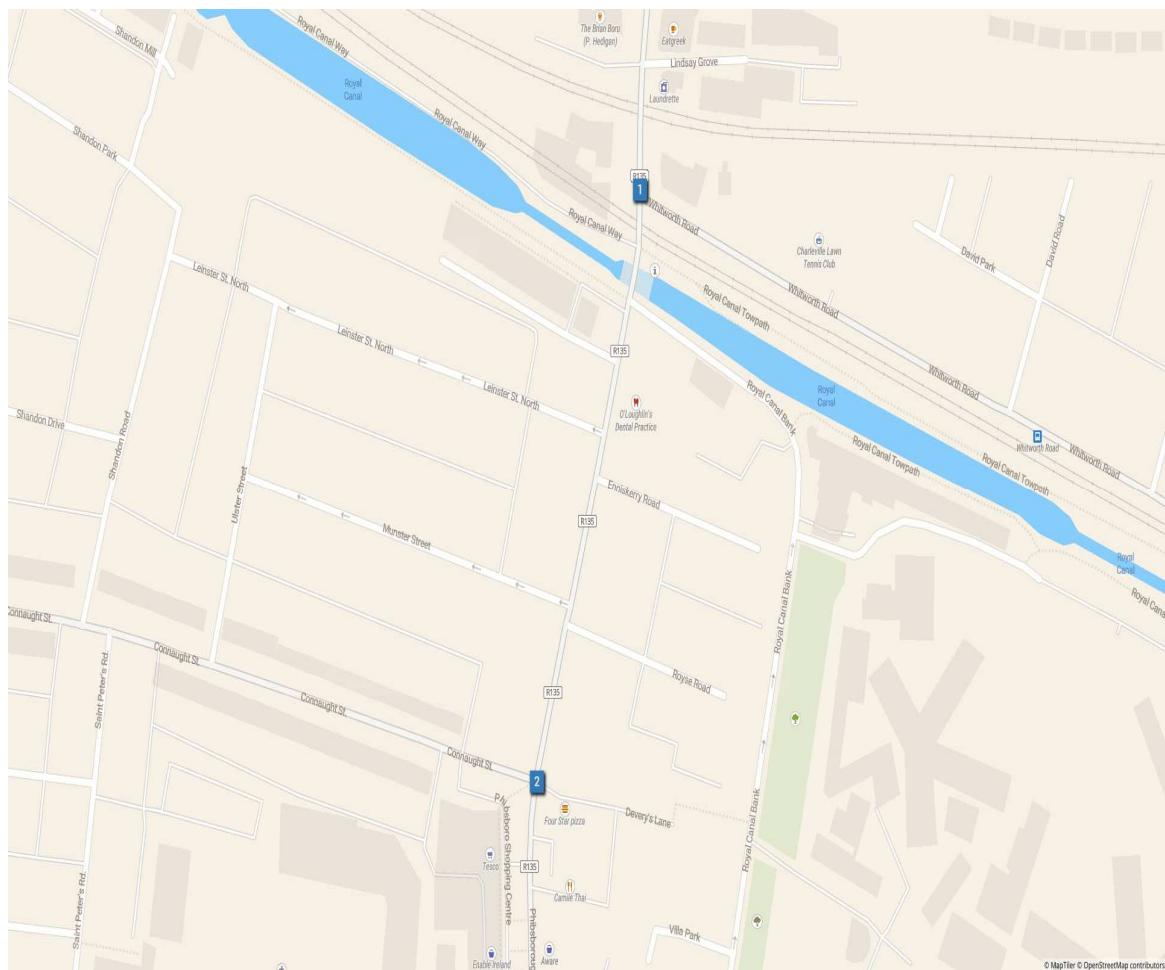


**Data Analysis Services**  
Traffic-Transportation- Commercial-Innovation

**IDA-18-152 Phibsborough**

**with compliments**

Survey Name: ID4-18-152 Phibsborough  
Date: 27-Nov-18





## IDASO

**Survey Name:** IDA-18-152 Phibsborough  
**Site:** 1  
**Location:** R108 / Whitworth Road  
**Date:** 27-Nov-2018

TIME	A => A					A => B					A => C								
	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	
07:00	0	0	0	0	0	0	1	1	0	0	2	2	32	2	2	7	43	52.6	
07:15	0	0	0	0	0	0	0	1	0	0	1	1	50	6	0	6	62	68	
07:30	0	0	0	0	0	0	2	1	0	0	3	3	33	6	1	4	44	49.3	
07:45	0	0	0	0	0	0	2	0	0	0	2	2	42	7	1	5	55	61.3	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>157</b>	<b>21</b>	<b>4</b>	<b>22</b>	<b>204</b>	<b>231.2</b>	
08:00	0	0	0	0	0	0	2	0	0	0	2	2	35	3	1	1	40	42.3	
08:15	0	0	0	0	0	0	0	0	0	0	0	0	54	4	2	2	62	66.6	
08:30	0	0	0	0	0	0	0	1	0	0	1	1	44	7	0	7	58	65	
08:45	0	0	0	0	0	0	0	0	0	0	0	0	71	8	2	3	84	89.6	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>204</b>	<b>22</b>	<b>5</b>	<b>13</b>	<b>244</b>	<b>263.5</b>	
09:00	0	0	0	0	0	0	5	0	0	0	5	5	37	7	2	2	48	52.6	
09:15	0	0	0	0	0	0	0	0	0	0	0	0	34	9	1	5	49	55.3	
09:30	0	0	0	0	0	0	1	0	0	0	1	1	37	9	1	3	50	54.3	
09:45	0	0	0	0	0	0	1	1	0	0	2	2	35	8	2	9	54	65.6	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>143</b>	<b>33</b>	<b>6</b>	<b>19</b>	<b>201</b>	<b>227.8</b>	
10:00	0	0	0	0	0	0	0	0	0	0	0	0	43	6	5	2	56	64.5	
10:15	0	0	0	0	0	0	0	2	0	0	2	2	43	5	1	9	58	68.3	
10:30	0	0	0	0	0	0	1	0	0	0	1	1	38	4	2	4	48	54.6	
10:45	0	0	0	0	0	0	1	1	0	0	2	2	39	8	8	6	61	77.4	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>163</b>	<b>23</b>	<b>16</b>	<b>21</b>	<b>223</b>	<b>264.8</b>	
11:00	0	0	0	0	0	0	3	0	0	0	3	3	50	6	3	2	61	66.9	
11:15	0	0	0	0	0	0	0	1	0	0	1	1	50	7	2	9	68	79.6	
11:30	0	0	0	0	0	0	0	1	2	0	0	3	3	59	12	0	3	74	77
11:45	0	0	0	0	0	0	0	5	1	0	0	6	6	48	10	4	5	67	77.2
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>13</b>	<b>207</b>	<b>35</b>	<b>9</b>	<b>19</b>	<b>270</b>	<b>300.7</b>	
12:00	0	0	0	0	0	0	0	0	0	0	0	0	54	16	3	9	82	94.9	
12:15	0	0	0	0	0	0	2	0	0	0	2	2	66	15	1	4	86	91.3	
12:30	0	0	0	0	0	0	0	1	0	0	1	1	43	9	2	10	64	76.6	
12:45	0	0	0	0	0	0	0	0	1	0	0	1	63	12	2	4	81	87.6	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>226</b>	<b>52</b>	<b>8</b>	<b>27</b>	<b>313</b>	<b>350.4</b>	
13:00	0	0	0	0	0	0	0	0	0	0	0	0	57	6	2	5	70	77.6	
13:15	0	0	0	0	0	0	1	0	0	0	1	1	66	11	2	1	80	83.6	
13:30	0	0	0	0	0	0	1	0	0	0	1	1	45	17	2	5	69	76.6	
13:45	0	0	0	0	0	0	2	0	0	0	2	2	57	8	5	3	73	82.5	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>225</b>	<b>42</b>	<b>11</b>	<b>14</b>	<b>292</b>	<b>320.3</b>	
14:00	0	0	0	0	0	0	2	0	0	0	2	2	66	20	0	4	90	94	
14:15	0	0	0	0	0	0	0	0	0	0	0	0	56	9	3	2	70	75.9	
14:30	0	0	0	0	0	0	0	0	0	0	0	0	64	13	1	6	84	91.3	
14:45	0	0	0	0	0	0	3	0	0	0	3	3	56	14	3	3	76	82.9	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>242</b>	<b>56</b>	<b>7</b>	<b>15</b>	<b>320</b>	<b>344.1</b>	
15:00	0	0	0	0	0	0	2	0	0	0	2	2	75	23	1	6	105	112.3	
15:15	0	0	0	0	0	0	0	1	0	0	1	1	59	11	5	0	75	81.5	
15:30	0	0	0	0	0	0	2	0	0	0	2	2	61	17	2	8	88	98.6	
15:45	0	0	0	0	0	0	1	0	0	0	1	1	75	25	5	3	108	117.5	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>270</b>	<b>76</b>	<b>13</b>	<b>17</b>	<b>376</b>	<b>409.9</b>	
16:00	0	0	0	0	0	0	0	1	0	0	1	1	110	17	3	6	136	145.9	
16:15	0	0	0	0	0	0	1	0	0	0	1	1	72	8	4	1	85	91.2	
16:30	0	0	0	0	0	0	0	0	0	0	0	0	102	14	1	7	124	132.3	
16:45	0	0	0	0	0	0	0	0	0	0	0	0	95	15	0	4	114	118	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>379</b>	<b>54</b>	<b>8</b>	<b>18</b>	<b>459</b>	<b>487.4</b>	
17:00	0	0	0	0	0	0	1	0	0	0	1	1	99	17	0	5	121	126	
17:15	0	0	0	0	0	0	0	0	0	0	0	0	103	9	0	4	116	120	
17:30	0	0	0	0	0	0	0	0	0	0	0	0	112	6	0	7	125	132	
17:45	0	0	0	0	0	0	0	0	0	0	0	0	90	11	1	5	107	113.3	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>404</b>	<b>43</b>	<b>1</b>	<b>21</b>	<b>469</b>	<b>491.3</b>	
18:00	0	0	0	0	0	0	2	0	0	0	2	2	100	6	0	10	116	126	
18:15	0	0	0	0	0	0	0	0	0	0	0	0	92	7	1	0	100	101.3	
18:30	0	0	0	0	0	0	0	0	0	0	0	0	89	8	0	12	109	121	
18:45	0	0	0	0	0	0	1	0	0	0	1	1	90	14	0	4	108	112	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>371</b>	<b>35</b>	<b>1</b>	<b>26</b>	<b>433</b>	<b>460.3</b>	
<b>12 TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>62</b>	<b>2991</b>	<b>492</b>	<b>89</b>	<b>232</b>	<b>3804</b>	<b>4152</b>	



## IDASO

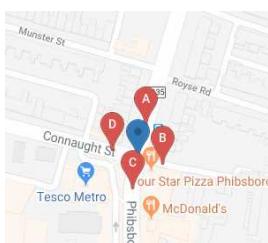
**Survey Name:** IDA-18-152 Phibsborough  
**Site:** 1  
**Location:** R108 / Whitworth Road  
**Date:** 27-Nov-2018

TIME	B => A					B => B					B => C					TIME		
	CAR	LGV	HGV	SV	TOT	PCU	CAR	LGV	HGV	SV	TOT	PCU	CAR	LGV	HGV	SV	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	76	16	5	4	101	111.5	
07:15	0	0	0	0	0	0	0	0	0	0	0	98	19	6	5	128	140.8	
07:30	0	0	0	0	0	0	0	0	0	0	0	117	17	5	7	146	159.5	
07:45	0	0	0	0	0	0	0	0	0	0	0	147	13	6	3	169	179.8	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>438</b>	<b>65</b>	<b>22</b>	<b>19</b>	<b>544</b>	<b>591.6</b>	
08:00	0	0	0	0	0	0	0	0	0	0	0	148	16	5	2	171	179.5	
08:15	0	0	0	0	0	0	0	0	0	0	0	156	14	4	7	181	193.2	
08:30	0	0	0	0	0	0	0	0	0	0	0	160	7	5	4	176	186.5	
08:45	1	0	0	0	1	1	0	0	0	0	0	150	15	5	4	174	184.5	
<b>H/TOT</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>614</b>	<b>52</b>	<b>19</b>	<b>17</b>	<b>702</b>	<b>743.1</b>	
09:00	0	0	0	0	0	0	0	0	0	0	0	123	23	9	3	158	172.7	
09:15	0	0	0	0	0	0	0	0	0	0	0	105	22	3	5	135	143.9	
09:30	0	0	0	0	0	0	0	0	0	0	0	109	13	4	7	133	145.2	
09:45	0	1	0	0	1	1	0	0	0	0	0	83	17	2	13	115	120.6	
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>420</b>	<b>75</b>	<b>18</b>	<b>28</b>	<b>541</b>	<b>592.4</b>	
10:00	0	0	0	0	0	0	0	0	0	0	0	118	24	6	9	157	173.8	
10:15	0	0	0	0	0	0	0	0	0	0	0	121	22	4	10	157	172.2	
10:30	1	0	0	0	1	1	0	0	0	0	0	135	12	2	9	158	169.6	
10:45	0	0	0	0	0	0	0	0	0	0	0	121	34	7	11	173	193.1	
<b>H/TOT</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>495</b>	<b>92</b>	<b>19</b>	<b>39</b>	<b>645</b>	<b>708.7</b>	
11:00	0	0	1	0	1	2.3	0	0	0	0	0	128	37	10	8	183	204	
11:15	0	0	0	0	0	0	0	0	0	0	0	136	27	4	14	181	200.2	
11:30	0	0	0	0	0	0	0	0	0	0	0	163	41	12	5	221	241.6	
11:45	1	1	0	0	2	2	0	0	0	0	0	184	46	9	6	245	262.7	
<b>H/TOT</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>4.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>611</b>	<b>151</b>	<b>35</b>	<b>33</b>	<b>830</b>	<b>908.5</b>	
12:00	0	0	0	0	0	0	0	0	0	0	0	182	39	11	3	235	252.3	
12:15	0	0	0	0	0	0	0	0	0	0	0	158	40	6	7	211	225.8	
12:30	0	0	0	0	0	0	0	0	0	0	0	156	34	5	9	204	219.5	
12:45	0	0	0	0	0	0	0	0	0	0	0	151	23	10	8	192	213	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>647</b>	<b>136</b>	<b>32</b>	<b>27</b>	<b>842</b>	<b>910.6</b>	
13:00	0	0	0	0	0	0	0	0	0	0	0	177	22	6	5	210	222.8	
13:15	0	0	0	0	0	0	0	0	0	0	0	162	19	6	5	192	204.8	
13:30	0	0	0	0	0	0	0	0	0	0	0	167	25	5	3	200	209.5	
13:45	0	0	0	0	0	0	0	0	0	0	0	165	24	11	6	206	226.3	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>671</b>	<b>90</b>	<b>28</b>	<b>19</b>	<b>808</b>	<b>863.4</b>	
14:00	0	0	0	0	0	0	0	0	0	0	0	182	30	7	5	224	238.1	
14:15	0	0	0	0	0	0	0	0	0	0	0	185	27	5	7	224	237.5	
14:30	0	0	0	0	0	0	0	0	0	0	0	175	17	3	6	201	210.9	
14:45	0	0	0	0	0	0	0	0	0	0	0	182	37	8	6	233	249.4	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>724</b>	<b>111</b>	<b>23</b>	<b>24</b>	<b>882</b>	<b>935.9</b>	
15:00	0	0	0	0	0	0	0	0	0	0	0	167	37	8	5	217	232.4	
15:15	0	0	0	0	0	0	0	0	0	0	0	226	47	3	5	281	289.9	
15:30	0	0	0	0	0	0	0	0	0	0	0	185	34	7	5	231	245.1	
15:45	0	0	0	0	0	0	0	0	0	0	0	216	30	4	4	254	263.2	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>794</b>	<b>148</b>	<b>22</b>	<b>19</b>	<b>983</b>	<b>1031</b>	
16:00	0	0	0	0	0	0	0	0	0	0	0	188	34	5	3	230	239.5	
16:15	0	0	0	0	0	0	0	0	0	0	0	219	37	6	8	270	285.8	
16:30	1	0	0	0	1	1	0	0	0	0	0	181	33	2	6	222	230.6	
16:45	1	0	0	0	1	1	0	0	0	0	0	219	25	3	4	251	258.9	
<b>H/TOT</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>807</b>	<b>129</b>	<b>16</b>	<b>21</b>	<b>973</b>	<b>1015</b>	
17:00	0	0	0	0	0	0	0	0	0	0	0	211	22	1	5	239	245.3	
17:15	0	0	0	0	0	0	0	0	0	0	0	226	25	3	9	263	275.9	
17:30	0	0	0	0	0	0	0	0	0	0	0	194	14	4	3	215	223.2	
17:45	0	0	0	0	0	0	0	0	0	0	0	212	20	2	10	244	256.6	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>843</b>	<b>81</b>	<b>10</b>	<b>27</b>	<b>961</b>	<b>1001</b>	
18:00	0	0	0	0	0	0	0	0	0	0	0	201	20	1	7	229	237.3	
18:15	0	0	0	0	0	0	0	0	0	0	0	223	20	1	3	247	251.3	
18:30	0	0	0	0	0	0	0	0	0	0	0	195	19	2	7	223	232.6	
18:45	0	0	0	0	0	0	0	0	0	0	0	222	28	1	10	261	272.3	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>841</b>	<b>87</b>	<b>5</b>	<b>27</b>	<b>960</b>	<b>993.5</b>	
<b>12 TOT</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>9.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7905</b>	<b>1217</b>	<b>249</b>	<b>300</b>	<b>9671</b>	<b>10295</b>	



IDASO

**Survey Name:** IDA-18-152 Phibsborough  
**Site:** 1  
**Location:** R108 / Whitworth Road  
**Date:** 27-Nov-2018



## IDASO

**Survey Name:** IDA-18-152 Phibsborough  
**Site:** 2  
**Location:** R108 / Connaught Street  
**Date:** 27-Nov-2018

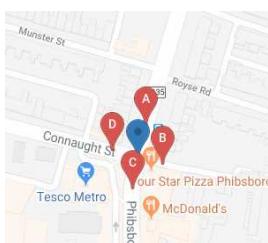
TIME	A => A					A => B					A => C					A => D									
	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	
07:00	0	0	0	0	0	0	0	0	0	0	0	156	31	4	6	197	208.2	28	3	0	0	0	31	31	
07:15	0	0	0	0	0	0	0	0	0	0	0	159	23	5	5	192	203.5	31	3	0	0	0	34	34	
07:30	0	0	0	0	0	0	0	0	0	0	0	157	24	4	5	190	200.2	27	4	1	0	0	32	33.3	
07:45	0	0	0	0	0	0	0	0	0	0	0	127	24	9	8	168	187.7	40	4	0	0	0	44	44	
<b>H/TOT</b>	<b>0</b>	<b>599</b>	<b>102</b>	<b>22</b>	<b>24</b>	<b>747</b>	<b>799.6</b>	<b>126</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>141</b>	<b>142.3</b>												
08:00	0	0	0	0	0	0	1	0	0	0	1	134	20	2	9	165	176.6	45	5	0	0	0	50	50	
08:15	0	0	0	0	0	0	0	0	0	0	0	154	15	0	8	177	185	55	5	0	0	0	60	60	
08:30	0	0	0	0	0	0	0	0	0	0	0	135	20	3	12	170	185.9	77	7	1	0	0	85	86.3	
08:45	0	0	0	0	0	0	0	0	0	0	0	163	16	2	8	189	199.6	49	5	1	0	0	55	56.3	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>586</b>	<b>71</b>	<b>7</b>	<b>37</b>	<b>701</b>	<b>747.1</b>	<b>226</b>	<b>22</b>	<b>2</b>	<b>0</b>	<b>250</b>	<b>252.6</b>	
09:00	0	0	0	0	0	0	2	0	0	0	2	122	22	2	12	158	172.6	44	0	0	0	0	44	44	
09:15	0	0	0	0	0	0	1	0	0	0	1	151	14	3	5	173	181.9	46	2	1	0	0	49	50.3	
09:30	0	0	0	0	0	0	0	0	0	0	0	121	19	0	12	152	164	36	5	1	0	0	42	43.3	
09:45	0	0	0	0	0	0	0	0	0	0	0	142	25	1	7	175	182.3	30	7	1	0	0	38	39.3	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>536</b>	<b>80</b>	<b>6</b>	<b>36</b>	<b>658</b>	<b>701.8</b>	<b>156</b>	<b>14</b>	<b>3</b>	<b>0</b>	<b>173</b>	<b>176.9</b>	
10:00	0	0	0	0	0	0	0	0	0	0	0	124	19	4	11	158	174.2	29	1	0	0	0	30	30	
10:15	0	0	0	0	0	0	0	0	0	0	0	130	21	3	8	162	173.9	44	7	2	0	0	53	55.6	
10:30	0	0	0	0	0	0	0	0	0	0	0	112	15	6	6	139	152.8	20	6	0	0	0	26	26	
10:45	0	0	0	0	0	0	2	0	0	0	2	100	16	2	6	124	132.6	25	2	0	0	0	27	27	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>466</b>	<b>71</b>	<b>15</b>	<b>31</b>	<b>583</b>	<b>633.5</b>	<b>118</b>	<b>16</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>136</b>	<b>138.6</b>	
11:00	0	0	0	0	0	0	0	0	0	0	0	103	24	4	10	141	156.2	40	4	1	0	0	45	46.3	
11:15	0	0	0	0	0	0	0	0	0	0	0	120	23	5	5	153	164.5	30	2	0	0	0	32	32	
11:30	0	0	0	0	0	0	0	0	0	0	0	105	17	4	8	134	147.2	31	6	1	0	0	38	39.3	
11:45	0	0	0	0	0	0	0	0	0	0	0	128	17	4	10	159	174.2	42	5	1	0	0	48	49.3	
<b>H/TOT</b>	<b>0</b>	<b>456</b>	<b>81</b>	<b>17</b>	<b>33</b>	<b>587</b>	<b>642.1</b>	<b>143</b>	<b>17</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>163</b>	<b>166.9</b>											
12:00	0	0	0	0	0	0	0	0	0	0	0	110	21	2	9	142	153.6	35	8	0	0	0	43	43	
12:15	0	0	0	0	0	0	0	0	0	0	0	119	25	3	9	156	168.9	29	3	1	0	0	33	34.3	
12:30	0	0	0	0	0	0	0	0	0	0	0	122	20	8	8	158	176.4	35	5	3	0	0	43	46.9	
12:45	0	0	0	0	0	0	0	0	0	0	0	124	22	4	6	156	167.2	55	12	0	0	0	67	67	
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>475</b>	<b>88</b>	<b>17</b>	<b>32</b>	<b>612</b>	<b>666.1</b>	<b>154</b>	<b>28</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>186</b>	<b>191.2</b>								
13:00	0	0	0	0	0	0	0	0	0	0	0	131	17	3	6	157	166.9	34	9	1	0	0	44	45.3	
13:15	0	0	0	0	0	0	0	0	0	0	0	119	12	1	7	139	147.3	29	5	0	0	0	34	34	
13:30	0	0	0	0	0	0	1	0	0	0	1	124	19	3	5	151	159.9	40	7	1	0	0	48	49.3	
13:45	0	0	0	0	0	0	0	1	0	0	1	119	14	4	6	143	154.2	47	7	2	0	0	56	56.6	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>493</b>	<b>62</b>	<b>11</b>	<b>24</b>	<b>590</b>	<b>628.3</b>	<b>150</b>	<b>28</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>182</b>	<b>187.2</b>	
14:00	0	0	0	0	0	0	0	0	0	0	0	133	18	1	9	161	171.3	36	6	1	0	0	43	44.3	
14:15	0	0	0	0	0	0	0	0	0	0	0	116	16	0	8	140	148	41	2	1	0	0	44	45.3	
14:30	0	0	0	0	0	0	1	0	0	0	1	109	16	3	9	137	149.9	52	3	1	0	0	56	57.3	
14:45	0	0	0	0	0	0	0	0	0	0	0	103	18	6	11	138	156.8	54	4	0	0	0	58	58	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>461</b>	<b>68</b>	<b>10</b>	<b>37</b>	<b>576</b>	<b>626</b>	<b>183</b>	<b>15</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>201</b>	<b>204.9</b>	
15:00	0	0	0	0	0	0	0	0	0	0	0	139	21	3	8	171	182.9	44	5	2	0	0	51	53.6	
15:15	0	0	0	0	0	0	0	0	0	0	0	121	22	3	5	151	159.9	39	7	0	0	0	46	46	
15:30	0	0	0	0	0	0	0	0	0	0	0	102	18	2	7	129	138.6	41	5	0	0	0	46	46	
15:45	0	0	0	0	0	0	2	0	0	0	2	100	9	3	9	121	133.9	48	3	0	0	0	51	51	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>462</b>	<b>70</b>	<b>11</b>	<b>29</b>	<b>572</b>	<b>615.3</b>	<b>172</b>	<b>20</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>194</b>	<b>196.6</b>	
16:00	0	0	0	0	0	0	0	0	0	0	0	120	18	1	11	150	162.3	38	7	0	1	0	46	47	
16:15	0	0	0	0	0	0	1	0	0	0	1	126	23	0	6	155	161	49	6	0	0	0	55	55	
16:30	0	0	0	0	0	0	0	0	0	0	0	116	21	2	7	146	155.6	47	7	0	0	0	54	54	
16:45	0	0	0	0	0	0	0	0	0	0	0	124	10	2	6	142	150.6	45	8	0	0	0	53	53	
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>486</b>	<b>72</b>	<b>5</b>	<b>30</b>	<b>593</b>	<b>629.5</b>	<b>179</b>	<b>28</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>208</b>	<b>209</b>	
17:00	0	0	0	0	0	0	1	0	0	0	1	115	16	2	10	143	155.6	50	9	0	0	0	59	59	
17:15	0	0	0	0	0	0	0	0	0	0	0	143	12	2	4	161	167.6	40	1	0	0	0	41	41	
17:30	0	0	0	0	0	0	0	0	0	0	0	118	11	1	7	137	145.3	58	2	0	0	0			



IDASO

**Survey Name:** IDA-18-152 Phibsborough  
**Site:** 2  
**Location:** R108 / Connaught Street  
**Date:** 27-Nov-2018

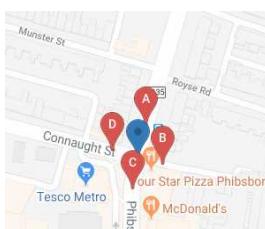
	Map data ©2018 Google												Map data ©2018 Google											
TIME	B => A						B => B						B => C						B => D					
	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0
11:15	1	1	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	1
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
11:45	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	1	0	0	3	3	0	0	0	0	0	0	0	1	1	0	0	2	2	1	1	0	0	2
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
H/TOT	1	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	0
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	1	0	0	0	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	3	0	0	0	3
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
17:15	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
17:45	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	3	0	0	0	3	3	0	0	0	0	0	0	0	2	0	0	0	2	2	1	0	0	0	1
18:00	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0
18:30	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	2	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0
12 TOT	9	1	0	0	10	10	0	0	0	0	0	0	0	14	2	0	0	16	16	7	1	0	0	8



## IDASO

**Survey Name:** IDA-18-152 Phibsborough  
**Site:** 2  
**Location:** R108 / Connaught Street  
**Date:** 27-Nov-2018

TIME	C => A					C => B					C => C					C => D									
	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	
07:00	72	14	3	5	94	102.9	0	0	0	0	0	0	0	0	0	0	0	0	8	1	1	0	10	11.3	
07:15	78	17	6	7	108	122.8	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	0	8	8	
07:30	97	12	4	3	116	124.2	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	8	9.3	
07:45	91	11	7	3	112	124.1	1	0	0	0	1	1	0	0	0	0	0	0	7	0	0	0	7	7	
<b>H/TOT</b>	<b>338</b>	<b>54</b>	<b>20</b>	<b>18</b>	<b>430</b>	<b>474</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>33</b>	<b>35.6</b>	
08:00	104	12	4	2	122	129.2	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	5	
08:15	114	12	5	7	138	151.5	0	0	0	0	0	0	0	0	0	0	0	0	9	1	0	0	10	10	
08:30	98	8	6	5	117	129.8	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	17	17	
08:45	95	9	3	3	110	116.9	1	0	0	0	1	1	0	0	0	0	0	0	12	3	0	0	15	15	
<b>H/TOT</b>	<b>411</b>	<b>41</b>	<b>18</b>	<b>17</b>	<b>487</b>	<b>527.4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>42</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>47</b>	
09:00	74	17	8	3	102	115.4	0	0	0	0	0	0	0	0	0	0	0	0	9	3	0	0	12	12	
09:15	73	11	3	8	95	106.9	0	0	0	0	0	0	0	0	0	0	0	0	6	3	0	0	9	9	
09:30	91	10	3	4	108	115.9	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	9	9	
09:45	53	10	2	12	78	93.6	0	0	0	0	0	0	0	0	0	0	0	0	12	2	0	0	14	14	
<b>H/TOT</b>	<b>291</b>	<b>48</b>	<b>16</b>	<b>28</b>	<b>383</b>	<b>431.8</b>	<b>0</b>	<b>34</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>44</b>	<b>44</b>												
10:00	78	16	4	8	106	119.2	0	0	0	0	0	0	0	0	0	0	0	0	18	4	0	1	23	24	
10:15	86	12	4	11	113	129.2	1	0	0	0	1	1	0	0	0	0	0	0	12	0	1	0	13	14.3	
10:30	101	10	2	8	121	131.6	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	21	21	
10:45	79	19	8	12	118	140.4	0	1	0	0	1	1	0	0	0	0	0	0	10	2	0	0	12	12	
<b>H/TOT</b>	<b>344</b>	<b>57</b>	<b>18</b>	<b>39</b>	<b>458</b>	<b>520.4</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>69</b>	<b>71.3</b>	
11:00	96	24	8	8	136	154.4	0	0	0	0	0	0	0	0	0	0	0	0	21	1	0	0	22	22	
11:15	96	23	2	14	135	151.6	0	0	0	0	0	0	0	0	0	0	0	0	19	6	0	0	25	25	
11:30	109	24	14	5	152	175.2	1	0	0	0	1	1	0	0	0	0	0	0	31	1	1	0	33	34.3	
11:45	129	37	8	6	180	196.4	0	0	0	0	0	0	0	0	0	0	0	0	10	4	0	0	14	14	
<b>H/TOT</b>	<b>430</b>	<b>108</b>	<b>32</b>	<b>33</b>	<b>603</b>	<b>677.6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>81</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>94</b>	<b>95.3</b>	
12:00	120	27	11	6	164	184.3	0	0	0	0	0	0	0	0	0	0	0	0	16	4	0	0	20	20	
12:15	118	29	4	6	157	168.2	0	0	0	0	0	0	0	0	0	0	0	0	20	4	0	0	24	24	
12:30	118	23	4	8	153	166.2	0	0	0	0	0	0	0	0	0	0	0	0	15	2	0	0	17	17	
12:45	102	19	8	7	136	153.4	0	0	0	0	0	0	0	0	0	0	0	0	23	5	0	0	28	28	
<b>H/TOT</b>	<b>458</b>	<b>98</b>	<b>27</b>	<b>27</b>	<b>610</b>	<b>672.1</b>	<b>0</b>	<b>74</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>89</b>	<b>89</b>												
13:00	137	17	6	5	165	177.8	0	0	0	0	0	0	0	0	0	0	0	0	26	3	0	0	29	29	
13:15	98	17	5	6	126	138.5	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	22	22	
13:30	123	20	4	2	149	156.2	0	0	0	0	0	0	0	0	0	0	0	0	25	1	0	0	26	26	
13:45	101	18	13	6	138	150.9	0	0	0	0	0	0	0	0	0	0	0	0	16	5	0	0	21	21	
<b>H/TOT</b>	<b>459</b>	<b>72</b>	<b>28</b>	<b>19</b>	<b>578</b>	<b>633.4</b>	<b>0</b>	<b>89</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>98</b>	<b>98</b>												
14:00	131	22	5	5	163	174.5	0	0	0	0	0	0	0	0	0	0	0	0	23	1	0	0	24	24	
14:15	130	25	6	7	168	182.8	0	0	0	0	0	0	0	0	0	0	0	0	23	4	1	0	28	29.3	
14:30	114	12	4	6	136	147.2	0	0	0	0	0	0	0	0	0	0	0	0	23	4	0	0	27	27	
14:45	102	28	6	6	142	155.8	1	0	0	0	1	1	0	0	0	0	0	0	27	3	0	0	30	30	
<b>H/TOT</b>	<b>477</b>	<b>87</b>	<b>21</b>	<b>24</b>	<b>609</b>	<b>660.3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>96</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>109</b>	<b>110.3</b>	
15:00	135	22	7	6	170	185.1	1	0	0	0	1	1	0	0	0	0	0	0	27	2	0	0	29	29	
15:15	147	38	4	4	193	202.2	0	0	0	0	0	0	0	0	0	0	0	0	29	4	0	0	33	33	
15:30	145	23	6	6	180	193.8	0	0	0	0	0	0	0	0	0	0	0	0	20	4	0	0	24	24	
15:45	130	24	2	4	160	166.6	0	0	0	0	0	0	0	0	0	0	0	0	19	1	0	0	20	20	
<b>H/TOT</b>	<b>557</b>	<b>107</b>	<b>19</b>	<b>20</b>	<b>703</b>	<b>747.7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>106</b>	<b>106</b>	
16:00	125	20	3	3	151	157.9	0	0	0	0	0	0	0	0	0	0	0	0	26	2	0	0	28	28	
16:15	146	26	5	7	184	197.5	1	0	0	0	1	1	0	0	0	0	0	0	18	3	0	0	21	21	
16:30	118	28	3	6	155	164.9	0	0	0	0	0	0	0	0	0	0	0	0	17	2	0	0	19	19	
16:45	130	18	2	4	154	160.6	1	0	0	0	1	1	0	0	0	0	0	0	19	1	0	0	20	20	
<b>H/TOT</b>	<b>519</b>	<b>92</b>	<b>13</b>	<b>20</b>	<b>644</b>	<b>680.9</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>88</b>	<b>88</b>	
17:00	143	13	2	4	162	168.6	0	0	0	0	0	0	0	0	0	0	0	0	21	1	0	0	22	22	
17:15	144	21	2	9	176	187.6	0	0	0	0	0	0	0	0	0	0	0	0	23	3	0	0	26	26	
17:30	141	13	5	4	163	173.5	0	0	0	0	0	0	0	0	0	0	0	0	23	3	0	0	26	26	
17:45	129	13	0	10	152	162	0	0	0	0</td															



## IDASO

**Survey Name:** IDA-18-152 Phibsborough  
**Site:** 2  
**Location:** R108 / Connaught Street  
**Date:** 27-Nov-2018

TIME	D => A					D => B					D => C					D => D										
	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU	CAR	LGV	HGV	SV (BUS)	TOT	PCU		
07:00	9	2	0	0	11	11	0	0	0	0	0	30	4	1	0	35	36.3	0	0	0	0	0	0	0	0	
07:15	32	2	0	0	34	34	0	0	0	0	0	36	5	0	0	41	41	0	0	0	0	0	0	0	0	
07:30	23	1	0	1	25	26	0	0	0	0	0	33	4	0	0	37	37	0	0	0	0	0	0	0	0	
07:45	30	2	1	0	33	34.3	0	0	0	0	0	43	4	1	0	48	49.3	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>94</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>103</b>	<b>105.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>142</b>	<b>17</b>	<b>2</b>	<b>0</b>	<b>161</b>	<b>163.6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
08:00	34	3	1	0	38	39.3	0	0	0	0	0	28	6	0	0	34	34	0	0	0	0	0	0	0	0	
08:15	34	3	0	0	37	37	0	0	0	0	0	35	3	1	0	39	40.3	0	0	0	0	0	0	0	0	
08:30	53	1	0	0	54	54	0	0	0	0	0	31	4	1	0	36	37.3	0	0	0	0	0	0	0	0	
08:45	41	3	0	0	44	44	0	0	0	0	0	36	4	0	0	40	40	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>162</b>	<b>10</b>	<b>1</b>	<b>0</b>	<b>173</b>	<b>174.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>130</b>	<b>17</b>	<b>2</b>	<b>0</b>	<b>149</b>	<b>151.6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
09:00	42	6	0	0	48	48	0	0	0	0	0	29	3	0	0	32	32	0	0	0	0	0	0	0	0	
09:15	33	7	0	0	40	40	0	0	0	0	0	38	2	0	0	40	40	0	0	0	0	0	0	0	0	
09:30	20	2	0	0	22	22	0	0	0	0	0	25	3	0	0	28	28	0	0	0	0	0	0	0	0	
09:45	39	6	0	0	35	35	0	0	0	0	0	37	3	0	0	40	40	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>124</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>145</b>	<b>145</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>129</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>140</b>	<b>140</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
10:00	30	15	2	0	47	49.6	0	0	0	0	0	31	6	0	0	37	37	0	0	0	0	0	0	0	0	
10:15	36	4	0	0	40	40	0	0	0	0	0	32	5	0	0	37	37	0	0	0	0	0	0	0	0	
10:30	31	5	0	0	36	36	0	0	0	0	0	19	9	1	0	29	30.3	0	0	0	0	0	0	0	0	
10:45	38	14	1	0	53	54.3	0	0	0	0	0	26	5	1	0	32	33.3	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>135</b>	<b>38</b>	<b>3</b>	<b>0</b>	<b>176</b>	<b>179.9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>108</b>	<b>25</b>	<b>2</b>	<b>0</b>	<b>135</b>	<b>137.6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
11:00	38	5	1	0	44	45.3	0	0	0	0	0	24	7	0	0	31	31	0	0	0	0	0	0	0	0	
11:15	36	6	2	0	44	46.6	1	0	0	0	1	1	29	2	0	0	31	31	0	0	0	0	0	0	0	0
11:30	42	10	1	0	53	54.3	0	0	0	0	0	25	7	0	0	32	32	0	0	0	0	0	0	0	0	
11:45	49	9	0	0	58	58	0	0	0	0	0	26	6	0	0	32	32	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>165</b>	<b>30</b>	<b>4</b>	<b>0</b>	<b>199</b>	<b>204.2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>104</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>126</b>	<b>126</b>	<b>0</b>							
12:00	42	8	1	0	51	52.3	0	0	0	0	0	20	3	0	0	23	23	0	0	0	0	0	0	0	0	
12:15	50	6	3	0	59	62.9	2	0	0	0	2	14	9	0	0	23	23	0	0	0	0	0	0	0	0	
12:30	38	8	2	0	48	50.6	0	0	0	0	0	15	6	0	0	21	21	0	0	0	0	0	0	0	0	
12:45	34	4	0	0	38	38	0	0	0	0	0	23	4	0	0	27	27	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>164</b>	<b>26</b>	<b>6</b>	<b>0</b>	<b>196</b>	<b>203.8</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>72</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>94</b>	<b>0</b>							
13:00	38	2	0	0	40	40	0	1	0	0	1	16	1	1	0	18	19.3	0	0	0	0	0	0	0	0	
13:15	55	5	0	0	60	60	1	0	0	0	1	1	29	5	0	0	34	34	0	0	0	0	0	0	0	0
13:30	48	4	1	0	53	54.3	0	0	0	0	0	32	3	0	0	35	35	0	0	0	0	0	0	0	0	
13:45	56	4	0	0	60	60	0	0	0	0	0	27	6	1	0	34	35.3	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>197</b>	<b>15</b>	<b>1</b>	<b>0</b>	<b>213</b>	<b>214.3</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>104</b>	<b>15</b>	<b>2</b>	<b>0</b>	<b>121</b>	<b>123.6</b>	<b>0</b>							
14:00	60	3	1	0	64	65.3	0	0	0	0	0	28	3	0	0	31	31	0	0	0	0	0	0	0	0	
14:15	55	4	0	0	59	59	0	0	0	0	0	21	3	0	0	24	24	0	0	0	0	0	0	0	0	
14:30	53	1	0	0	54	54	0	0	0	0	0	21	5	0	0	26	26	0	0	0	0	0	0	0	0	
14:45	63	5	0	0	68	68	0	0	0	0	0	23	5	0	0	28	28	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>231</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>245</b>	<b>246.3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>93</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>109</b>	<b>109</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
15:00	41	12	0	0	53	53	2	0	0	0	2	17	6	3	0	26	29.9	0	0	0	0	0	0	0	0	
15:15	57	3	0	0	60	60	1	0	0	0	1	24	2	0	0	26	26	0	0	0	0	0	0	0	0	
15:30	57	9	0	0	66	66	0	0	0	0	0	24	5	0	0	29	29	0	0	0	0	0	0	0	0	
15:45	62	5	2	0	69	71.6	0	0	0	0	0	24	2	0	0	26	26	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>217</b>	<b>29</b>	<b>2</b>	<b>0</b>	<b>248</b>	<b>250.6</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>89</b>	<b>15</b>	<b>3</b>	<b>0</b>	<b>107</b>	<b>110.9</b>	<b>0</b>							
16:00	63	9	1	0	73	74.3	0	0	0	0	0	27	5	0	0	32	32	0	0	0	0	0	0	0	0	
16:15	54	8	0	0	62	62	0	0	0	0	0	22	4	0	0	26	26	0	0	0	0	0	0	0	0	
16:30	70	7	0	0	77	77	1	0	0	0	1	12	2	1	0	15	16.3	0	0	0	0	0	0	0	0	
16:45	55	5	0	0	60	60	0	0	0	0	0	18	2	0	0	20	20	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	<b>242</b>	<b>29</b>	<b>1</b>	<b>0</b>	<b>272</b>	<b>273.3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>79</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>93</b>	<b>94.3</b>	<b>0</b>							
17:00	73	2	0	0	75	75	0	0	0	0	0	29	0	0	0	29	29	0	0	0	0	0	0	0	0	
17:15	59	3	0	0	62	62	0	0	0	0	0	18	3	0	0	21	21	0	0	0	0	0	0	0	0	
1																										