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Traffic and Transport Assessment

Black Ash Park and Ride – Bus Interchange



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Executive Summary

CSEA has been appointed by the National Transport Authority's (NTA) Park and Ride Development Office (PRDO) to prepare a Traffic and Transport Assessment (TTA) for the upgrade of the existing Black Ash Park and Ride infrastructure and introduction of a bus interchange, including 4 new bus stops. The site is located adjacent to Mick Barry Rd, Black Ash, Co. Cork. It is anticipated that the proposal will become operational by Q4 2025.

The proposed development site is linked to the N27 South City Link Road and Kinsale Road via Mick Barry Rd. The existing site is served by bus route 213, which accommodates a maximum of 6 buses per hour.

The proposed bus interchange facility will consist of 4 new bus bays and associated passenger facilities. It is a part of the strategic locations for the provision of Park and Ride facilities in Cork Metropolitan Area, increasing opportunities to transfer between modes and services. The objective is to facilitate good public transport connectivity to and from Cork City Centre and surrounding areas, as proposed in the Cork Bus Network Redesign.

The site is currently operating below its approximately 940 parking space capacity. The proposed layout will reduce the capacity by 104 spaces by implementing the new bus interchange services along with new bus standing area.

The new bus interchange facility at Black Ash Park and Ride will support the delivery of BusConnects Cork through the provision of a new high quality bus interchange facility that is required to deliver the following improved Bus Services:

- 6 Bus Route – Two-way Grange Road – Douglas Road – UCC – Black Ash Loop2
- 13A Bus Route – Haulbowline to Kent Station, passing Black Ash P&R
- 13B Bus Route – Kinsale to Kent Station
- 13 Bus Route – Cork Airport to Kent Station, passing Black Ash P&R
- 14 Bus Route – CUH to Mahon Point, passing Black Ash P&R
- 23 Bus Route – Old Youghal Road to Black Ash P&R

The proposal is expected to generate a maximum of 50 no. trips during the peak hours between 08:00-09:00 and 16:00-17:00. These trips are associated with the additional bus routes expected to service the site.

12-hours Classified Junction Turning Counts were carried out on the area near the site on Thursday 30th November 2023, between 07:30-19:30. These surveys captured the existing traffic flows at Kinsale Rd/ Mick Barry Rd Junction (Junction 1) and the S City Link Rd/ Mick Barry Rd/ Tramore Valley Park Junction (Junction 2).

In addition to the above, 12-hours Classified Junction Turning Counts were carried out at the Park and Ride Access/Exit junctions with Mick Barry Rd on Thursday 3rd October 2024, between 07:30-19:30.

A LinSig junction analysis was carried out, considering the recorded traffic volumes in traffic surveys and the proposal's estimated trip generation. Table 1, Summarises the results obtained from the junction analysis.

Assessment Year	Junction 1	Junction 2
2025 Opening Year	<ul style="list-style-type: none"> Junction will operate within capacity and at acceptable level. Do- Something Max Degree of saturation (DoS) was recorded to be 57.3% in AM Peak. This compares to 55.6% in the do-nothing scenario, indicating a percentage difference of +1.7%. Do- Something Max Degree of saturation (DoS) was recorded to be 90.2% DoS in PM Peak. This compares to 85.7% in the do-nothing scenario, indicating a percentage difference of +4.5%. 	<ul style="list-style-type: none"> Junction will operate within capacity and at acceptable level. Do- Something Max Degree of saturation (DoS) was recorded to be 66.3% in AM Peak. This compares to 65.2% in the do-nothing scenario, indicating percentage difference of +1.1%. in PM Peak Max Degree of saturation (DoS) was recorded to be 92.3% in both Do-nothing and do-something scenarios. This indicates that the implementation of the proposed development will have no effect in the degree of saturation of the worst performing lane.

Table 1 Traffic Modelling Results Summary

The traffic modelling results obtained showed that the implementation of the proposed development will have no significant effects in the performance of the junctions under assessment. When comparing the 'do-nothing' and the 'do-something' scenario, the impacts of the proposed development were observed to be minimal.

A sensitivity test was undertaken to assess the performance of the network with a 20% increase in traffic. This was considered as the implementation of the proposed development, and the new bus routes to service the site, could increase the overall usage of the Park and Ride facilities. The results of this assessment showed that the junctions will remain operating within similar margins as existing and as forecasted in the do-something scenarios (See Table 1).

On that basis, the traffic impact of the operational phase of the proposed development can be described as **long-term, neutral** and **imperceptible**. During construction stage the impact of the proposed development is expected to be **short-term, negative** and **not significant**.

1 Introduction

1.1 Overview

CSEA has been appointed by the National Transport Authority's (NTA) Park and Ride Development Office (PRDO) to prepare a Traffic and Transport Assessment for the upgrade of the exiting Black Ash Park and Ride infrastructure and introduction of a new bus interchange, including 4 new bus stops, as proposed by BusConnects, at Black Ash, Co. Cork.

It is anticipated that the proposal will become operational by Q4 2025.

1.2 Site Location

The site is located near the Kinsale Road Interchange, N27 South City Link Road, 2.8km from Cork City Centre, 5.3km from Cork Airport and approximately 300m west of Tramore Valley Park. The site is within approximately half a kilometre of the N40 Southern Ring Road. Figure 1.1 and Figure 1.2, below, illustrate the location of the site in relation to the local road network.



Figure 1.1 Site Location



Figure 1.2 Site Location

1.3 Proposed Development Overview and Objectives

The proposed bus interchange facility will consist of 4 new bus bays and associated passenger facilities. It is a part of the strategic locations for the provision of Park and Ride facilities in Cork Metropolitan Area, increasing opportunities to transfer between modes and services.

The site is currently operating below its approximately 940 parking space capacity. The proposed layout will reduce the capacity by 104 spaces by implementing the new bus interchange services along with new bus standing area. The objective is to facilitate good public transport connectivity to and from Cork City Centre and surrounding areas, as proposed in the Cork Bus Network Redesign.

Proposal Objectives

The NTA PRDO aims to deliver the following benefits to Cork Metropolitan Area:

- Support economic vitality by improving overall accessibility to the City Centre area.
- Reduce road traffic congestion on radial routes.
- Facilitate good public transport connectivity to and from Cork City Centre and surrounding areas, as proposed in the BusConnects Cork, Sustainable Transport Corridor.
- Increase the attractiveness of the City Centre to visitors and shoppers.
- Meet shortfalls in urban parking capacity.
- Make the Cork Metropolitan Area public transportation more accessible and less reliant on private car and reducing traffic, congestion and vehicle noise.
- Increase the effective catchment area of the public transport network.
- Transfer commuting trips from private car to public transport.
- Improve access for those living on the city edge and in low density suburbs; and

- Maximise public transport patronage.

At a site level the objectives of the new bus interchange are to:

- Provide 4 additional bus bays to cater for the additional bus routes that will serve the site.
- Provide safe and convenient pedestrian routes within the interchange for all users.
- Provide for ease of interchange for bus-to-bus users and car-to-bus users.
- Minimise impact on the existing operation of the park and ride.
- Minimise impact on Mick Barry Road and surrounding road network.
- Address the engineering concerns of the Park and Ride Operator (Cork City Council).
- Address the operations concerns of the Park and Ride Operator (Cork City Council).

2 TTA Methodology

2.1 Policy Documents

This report has been prepared taking the following policy documents into account:

- Project Ireland 2040 – National Planning Framework;
- Cork City Development Plan 2022-2028;
- Cork Metropolitan Area Strategic Plan (MASP);
- Cork Metropolitan Area Transport Study;
- TII Traffic and Transport Assessment Guidelines, 2014;
- TII Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections
- Regional Spatial & Economic Strategy for the Southern Region.

2.2 Assessment Junctions

This traffic and transport assessment analyses the proposal's impacts to the Kinsale Rd/ Mick Barry Rd Junction and the N27 S City Link Rd/ Mick Barry Rd/ Tramore Valley Park Junction. The location of these junctions in relation to the site is presented in Figure 2.1.



Figure 2.1 Assessment Junctions

2.3 Assessment Methodology

The methodology used to conduct the assessment is as follows:

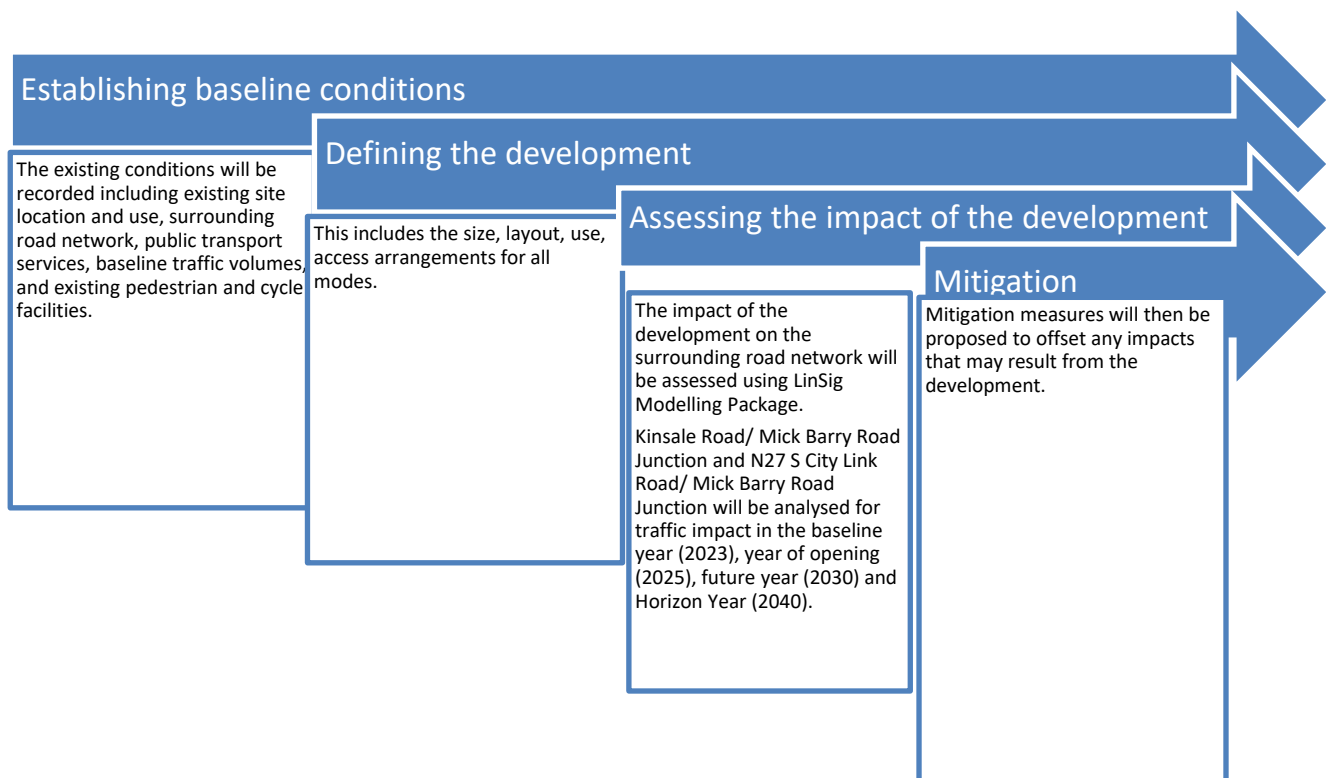


Figure 2.2 Assessment Methodology

2.4 Need for Transport Assessment

Table 1.4 of the Traffic Management Guidelines (DoT/ DoEHLG/ DTO, 2003) and Table 2.1 of TII's Traffic and Transport Assessment Guidelines (PE-PDV-02045), May 2014 sets out thresholds above which a transport assessment is automatically required (duplicated in Figure 2.3, below).

Table 2.1 Traffic Management Guidelines Thresholds For Transport Assessments
Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.
Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists or the location is sensitive.*
Residential development in excess of 200 dwellings.
Retail and leisure development in excess of 1,000m ² .
Office, education and hospital development in excess of 2,500m ² .
Industrial development in excess of 5,000m ² .
Distribution and warehousing in excess of 10,000m ² .
<small>* In locations that experience particularly heavy congestion and when traffic flows from a proposed development are less than 5% of the traffic flows on the adjoining road, a Transport Assessment may still be required. When in doubt, the requirement for a Transport Assessment should always be scoped with the relevant local authority.</small>

Figure 2.3 Threshold for Transport Assessments

The traffic to and from the development is not expected to be more than 5% of the traffic flow on the adjoining road, however, a TTA has been prepared to provide a complete picture of the potential impacts of the proposed development. More details on trip generation from the proposed park and ride facility can be found in Section 6.6 of this Report.

2.5 Scoping

Several pre-planning meetings were conducted with Cork City Council (CCC) in relation to the proposed scheme. The proposal's design and impacts have been discussed with CCC prior lodging the planning application.

3 Relevant Policy

3.1 National and Regional Policy

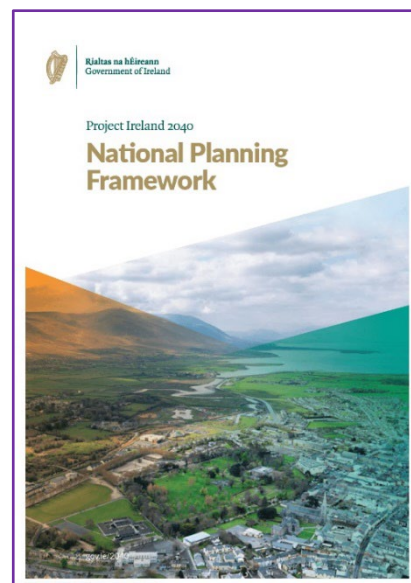
3.1.1 Project Ireland 2040 – National Planning Framework

The development of the proposed Park and Ride facility complies with the following policy set down in the Project Ireland 2040 – National Planning Framework. The NPF aims to “Enable more effective traffic management within and around cities and reallocation of inner-city road-space in favour of bus-based public transport services and walking/cycling facilities.” The following, relevant to the design of cities and sustainability, are listed within the NPF:

National Strategic Outcome 4: Sustainable Mobility - Public Transport: Expand attractive public transport alternatives to car transport to reduce congestion and emissions and enable the transport sector to cater for the demands associated with longer term population and employment growth in a sustainable manner.

In order to help achieve the ‘Sustainable Mobility’ NSO, the NPF sets a goal of expanding attractive public transport alternatives to car transport to reduce congestion and emissions and enable the transport sector to cater for the demands associated with longer term population and employment growth in a sustainable manner Climate Action Plan.

Local Authority Climate Action Plan Guidelines should include specific actions and indicators in respect of accessibility, modal shift and active travel. The local authority of each city should introduce park and ride schemes along major arterial roads (by 1 January 2030), as well as produce (by 1 January 2025) and deliver (by 1 January 2030) a plan to reduce the number of public city centre parking spaces.



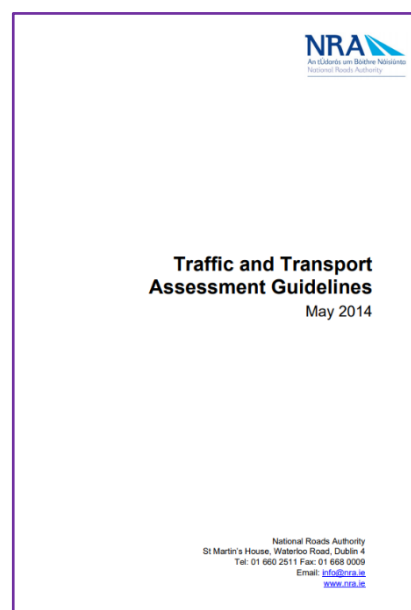
3.1.2 Traffic and Transport Assessment Guidelines (2014)

Transport Infrastructure Ireland's (TII's) *Traffic and Transport Assessment (TTA) Guidelines (May 2014)* provides guidelines for best practice in relation to the preparation of a Traffic and Transport Assessment.

In relation to scoping, the guidance states:

“The scoping study is a very important part of the TTA process. It is a precursor to the preparation of a TTA and should be undertaken at the earliest stages of planning for development. For a planning application, this phase may be the initial contact between the developer and the planning authority and, as such, the opportunity should be taken to emphasise the role of transport as both a possible asset and liability to the development. The planning authority should avail of such contact to address traffic and transport implications as an integral element of the development proposal.”

In relation to the Assessment:



“The Traffic and Transport Assessment should be written as an impartial assessment of the traffic impacts of a scheme, and it should not be seen to be a “best case” promotion of the development. All impacts, whether positive or negative, should be recorded. The level of detail to be included within the report should be sufficient to enable an experienced practitioner to be able to follow all stages of the assessment process and to reach a similar set of results and conclusions.”

Within Table 2.2 of the TTA Guidelines, the following threshold is provided in relation to the requirement for a full TTA “where national roads are affected” i.e., the most onerous thresholds presented in the Guidelines:

“Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive.”

The 5% threshold contained within the preceding Guidelines is unlikely to be exceeded by the proposed development, as such a TTA not required. However, a TTA has been prepared to provide a complete picture of the potential impacts of the proposed development.

3.1.3 Regional Spatial and Economic Strategy for the Southern Regions

The Regional Spatial and Economic Strategy for the Southern Regions establishes a broad framework for the way in which our society, environment, economy and the use of land should evolve. It includes Metropolitan Area Strategic Plans (MASPs) for Cork, Limerick-Shannon and Waterford and a regional strategy for our Key Towns, towns, villages and rural areas.

The RSES identifies regional assets, opportunities and pressures and provides policy responses in the form of Regional Policy Objectives. At this strategic level, it provides a policy framework for investment to meet current and future needs in the Region.

The Strategy emphasizes “Sustainable regeneration and growth will be achieved through effective sustainable transport and spatial land use planning.”

3.2 Local Policy

3.2.1 Cork City Development Plan (2022-2028)

The Cork City Development Plan sets out the policy objectives and the overall strategy for the proper planning and sustainable development of Cork City from 2022 to 2028. This Plan is consistent with both the ‘National Planning Framework’ (2018) (NPF) and the ‘Regional Spatial and Economic Strategy’ (RSES). The core principles embodied in this Development Plan are sustainable development, health, compact growth, the creation of liveable communities and places, and the complimenting of nature and climate resilience.



The following objectives, goals and core strategies of the Cork Development Plan will be supported by upgrading the Black Ash Park Ride - Bus Interchange:

Objective 4.1: Cork City Council will work in cooperation with the NTA, TII and Cork County Council to fully implement the Cork Metropolitan Area Transport Strategy subject to detailed engineering design and environmental considerations, including the projects and programmes in relation to walking, cycling, public transport, BusConnects, suburban rail, light rail, park and rides and roads infrastructure, including the Northern Distributor Road and Southern Distributor Link Road.

Goal/Core Strategy 3.85 (Health): In accordance with wider sustainable transport objectives, measures to help reduce private car use and facilitate more sustainable transport use such as sustainable travel/mobility plans and park and ride facilities will be encouraged.

Goal/Core Strategy 4.48 (Public Transport)

The enhanced BusConnects network will comprise of a significantly increased bus network, bus priority routes and around 220 new double decker vehicles. The BusConnects programme represents an opportunity to overhaul the public bus service across Cork. This process has commenced, and the NTA has commissioned the redesign of the bus network. It will involve improvements on the core corridors and the provision of additional park and ride facilities. In addition to these infrastructural improvements, BusConnects will involve continued operational improvements, such as improvements in relation to ticketing, real-time information and passenger facilities, all of which are designed to improve the reliability and frequency of the service, thereby enhancing the appeal of public transport in the city.

Goal/Core Strategy 4.50 (Public Transport)

BusConnects will be interchangeable with the Cork Suburban Rail Network, Light Rail Network and the proposed park and ride services located around the Strategic Road Network.

Goal/Core Strategy 4.88 (Park and Ride)

Park and ride involves the provision of high capacity, car parking facilities at designated public transport interchanges to provide onward access to the city centre and other key destinations via high frequency public transport, walking or cycling.

Goal/Core Strategy 4.89 (Park and Ride)

Park and ride can deliver the following benefits for Cork City:

- Support economic vitality by improving overall accessibility to the city centre area;
- Reduce road traffic congestion on radial routes;
- Increase the attractiveness of the city centre to visitors and shoppers;
- Increase the effective catchment area of the public transport network;
- Transfer commuting trips from private car to public transport;
- Improve access for those living on the city edge and in low density suburbs; and
- Maximise public transport patronage.

Goal/Core Strategy 4.90 (Park and Ride)

CMATS is a means of increasing the accessibility of the transport network to a population that might not otherwise have access by walking, cycling or bus transfer.

Goal/Core Strategy 4.91 (Park and Ride)

At present, Cork has limited park and ride services with the existing Black Ash facility near the Kinsale Road Roundabout is operating below capacity. A number of strategic park and ride facilities are therefore proposed to address the shortcomings in recent provision.

Goal/Core Strategy 4.91 (Local Mobility Hubs)

The strategic PnR network will be complemented by a number of smaller, local facilities sometimes known as ‘mobility hubs’ in a European city context. Existing rail and bus stations may also be retrofitted as mobility hubs.

Goal/Core Strategy 10.311 (Transport and Land Use)

CMATS also details BusConnects – the delivery of crucial bus corridors and enhanced services. This includes proposals for higher frequency on the existing Ringaskiddy-Monkstown-Douglas-City route, the prioritisation of the Douglas Road and South Douglas Road bus corridor and an orbital bus corridor which would run from Cork University Hospital (CUH) via the Western Road to Hollyhill, Blackpool, Mayfield, through the Jack Lynch Tunnel, and on to Mahon Point, Douglas village and the Black Ash Park and Ride site, before returning to CUH.

3.2.2 BusC.onnects Cork

The National Transport Authority (NTA) launched its new design for the Cork Metropolitan Bus Network in June 2022. The new network, part of ‘BusConnects Cork’, is intended to transform the public transport network across the Cork Metropolitan Area. The



The new network will involve the creation of new bus routes and improved bus frequencies to help transform the public transport network to meet anticipated growth and future demand in the region.

‘BusConnects Cork’ is a transformative programme of investment in the existing bus system providing better bus services to more people. It is funded by ‘Project Ireland 2040’ and includes nine measures which will transform Cork’s bus system as shown in Figure 3.1.

The benefits of BusConnects Cork include:

- An increase of 53% in service as compared to the existing network.
- Residents will be able to reach 13% more jobs within an hour’s commute (including all waiting time), and 18% more within a half-hour’s commute.
- The number of education places the average young resident can reach within an hour’s journey (including all waiting time) will increase by 11%, and the number reachable within a half-hour’s journey will increase by 23%.
- The number of residents near frequent service will grow by 38%.
- For households without cars, those near frequent service will grow by 37%.
- Unemployed residents near frequent service will grow by 49%.

- The New Network includes a revision to the pattern of cross-city through-routing for the most frequent routes. This change is necessary to prepare for Luas.
- In addition to 24-hour routes to Carrigaline and Ballincollig (which are on the overnight route today), service will also be provided between Hollyhill and Mahon Point.
- Service between Carrigaline and Cork City Centre will become more frequent - with departures on local every 10 minutes, Monday to Saturday, and every 15 minutes on Sunday, in addition to express routes.

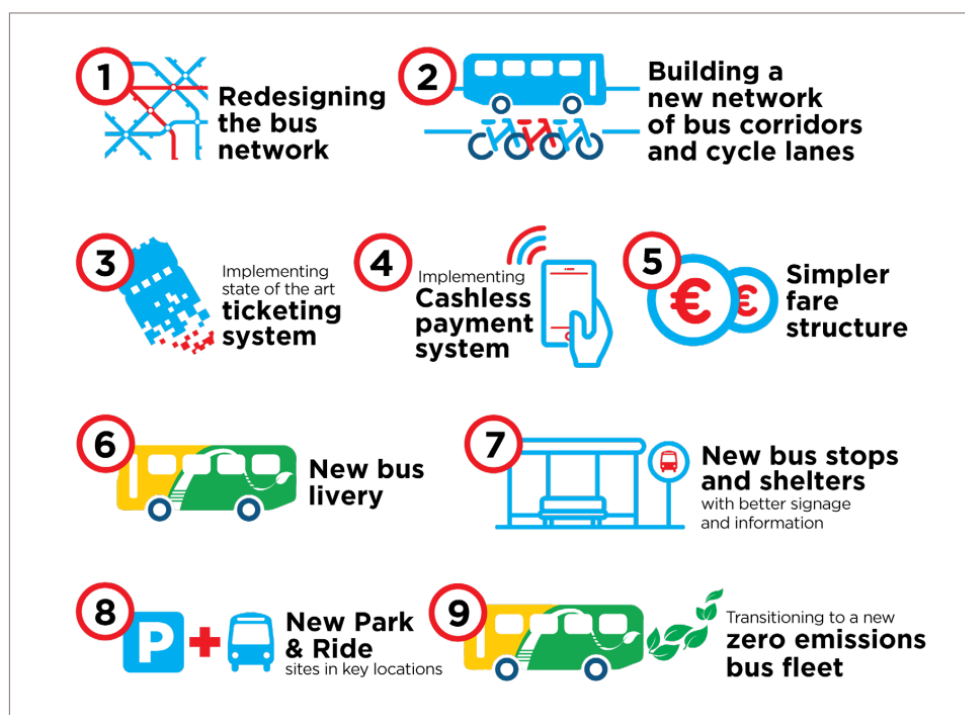


Figure 3.1 Measures transforming Cork's bus system

To maximise the potential of the BusConnects Cork programme, the greatest number of people need to be able to substitute private cars for the bus service. For those travelling long distances, park and ride facilities allow travellers to transfer to high frequency bus services at the earliest practical opportunity.

A park and ride strategy for Cork City is being developed to outline and deliver suitable bus and rail-based, park and ride facilities within and outside the city area to facilitate public transport intervention. The vision for the strategy is:

To support sustainable regional, urban, and rural growth through enhancing connectivity to high quality, accessible, low emission, and sustainable transport; empowering modal shift; and increasing the catchment areas of existing and future public transport by delivering a network of appropriate Park and Ride facilities.

The location of park and ride facilities is critical to their success. Important requirements for success include:

- High capacity and frequent bus service to ensure efficient service
- Fast and reliable times to commuter destinations to be attractive
- Sited away from congested locations to enable access

- Conveniently sited for drivers on-route to major destinations
- Sufficient capacity in local road network to accommodate extra demand
- Parking controls in nearby areas to discourage illegal parking/charge avoidance
- Combined price of fare and parking charge that are attractive to drivers
- Affordable costs of site acquisition, construction and on-going operation

The new bus interchange facility at Black Ash Park and Ride (the Proposed Scheme) will support the delivery of BusConnects Cork through the provision of a new high quality bus interchange facility that is required to deliver the improved bus services, specifically the bus routes listed in Table 3.1.

Bus Number	Route
6	Two-way Grange Road – Douglas Road – UCC – Black Ash Loop2
13A	Haulbowline to Kent Station, passing Black Ash P&R
13B	Kinsale to Kent Station
13	Cork Airport to Kent Station, passing Black Ash P&R
14	CUH to Mahon Point, passing Black Ash P&R
23	Old Youghal Road to Black Ash P&R

Table 3.1 Bus Routes

The aim of proposed scheme is to provide improved connectivity for interchange from bus to bus and from car to bus, which will enable efficient, safe, and integrated sustainable transport movement. Figure 3.2, below, highlights the sites location in relation to the Cork BusConnects Network.

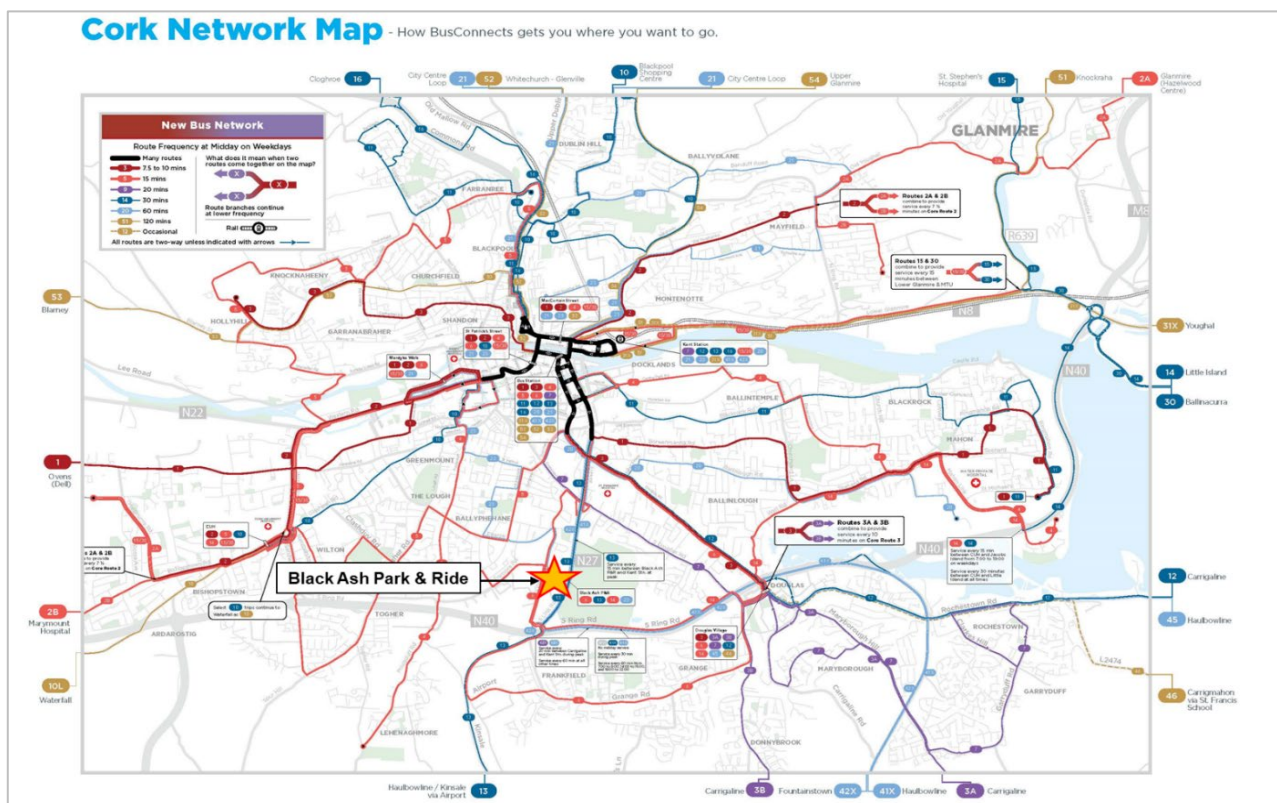


Figure 3.2 Cork BusConnects Network

3.2.2.1 Cork Metropolitan Area Strategic Plan MASP:

Key Transport Objective 8n:

Further measures to support the delivery of CMATS key transport objectives including parking management, park and ride, demand management, mobility management and behavioural change programmes.

3.2.2.2 Cork Metropolitan Area Transport Study (CMATS)

The study finds there is an over-reliance on the private car for relatively short trips. There are concerns that on-going congestion will inhibit the ability of the Cork Metropolitan Area to attract further inward investment. Cork has a very high mode share for car and unless the attractiveness of alternative modes of transport is enhanced, Metropolitan Cork will continue to have high levels of car dependency, journey delays, congestion and pollution, which all have impacts on quality of life.

Cork has a high proportion of motorised trips that originate outside the city centre and other strategic employment areas that contribute to local congestion, noise and air pollution.

At present, Cork has limited park and ride services with the existing Black Ash Park and Ride operating below capacity. Several strategic park and ride facilities are therefore proposed to address the obvious shortcomings in recent provision. Strategic park and ride facilities will be expected to cater for between 400-600 car parking spaces and in all cases, be serviced by reliable, high frequency public transport.

4 Existing Conditions

4.1 Existing Site Location and Use

The Black Ash Park and Ride is located approximately 500m north of Kinsale Road Roundabout, and 90m from the N27 South Link Road. Figure 4.1 illustrates the site location in relation to the surrounding road network.



Figure 4.1 Site Location

The site is well connected to the existing road network via the following road links:

- **N27 South Link Road** – A dual carriageway road beside the site connecting Cork City Centre to Cork Airport, and onto the R600 connecting to Kinsale.
- **Kinsale Road Roundabout** – A five-arm signalised roundabout located approximately 400m south of the site at the junction of N40 South Ring Road and the N27 South City Link/Airport Road.

The park and ride is currently owned and operated by Cork County Council and spans an area of 3.2 hectares. The site includes an administration building, 940 car parking spaces, bike stands, and 2 existing bus bays.

4.2 Existing Public Transport Services

Buses are the most convenient mode of public transport servicing the Black Ash Park and Ride. The site is served by bus route 213, which accommodates a maximum of 6 buses per hour. Frequency and route details are set out within Table 4.1.

Route		Frequency		Operator
Number	Inbound/Outbound	Mon - Sat	Sun	
213	St. Patrick Street/Black Ash P&R	10-15 minutes	No Service	TFI - Bus Eireann

Table 4.1 Existing Public Transport Services

4.3 Existing Traffic Volumes

4.3.1 Traffic Data Collection

12-hours Classified Junction Turning Counts were carried out on the area near the site on Thursday 30th November 2023, between 07:30-19:30. As shown in Figure 4.2, these surveys captured the existing traffic flows at Kinsale Rd/ Mick Barry Rd Junction and the S City Link Rd/ Mick Barry Rd/ Tramore Valley Park Junction.

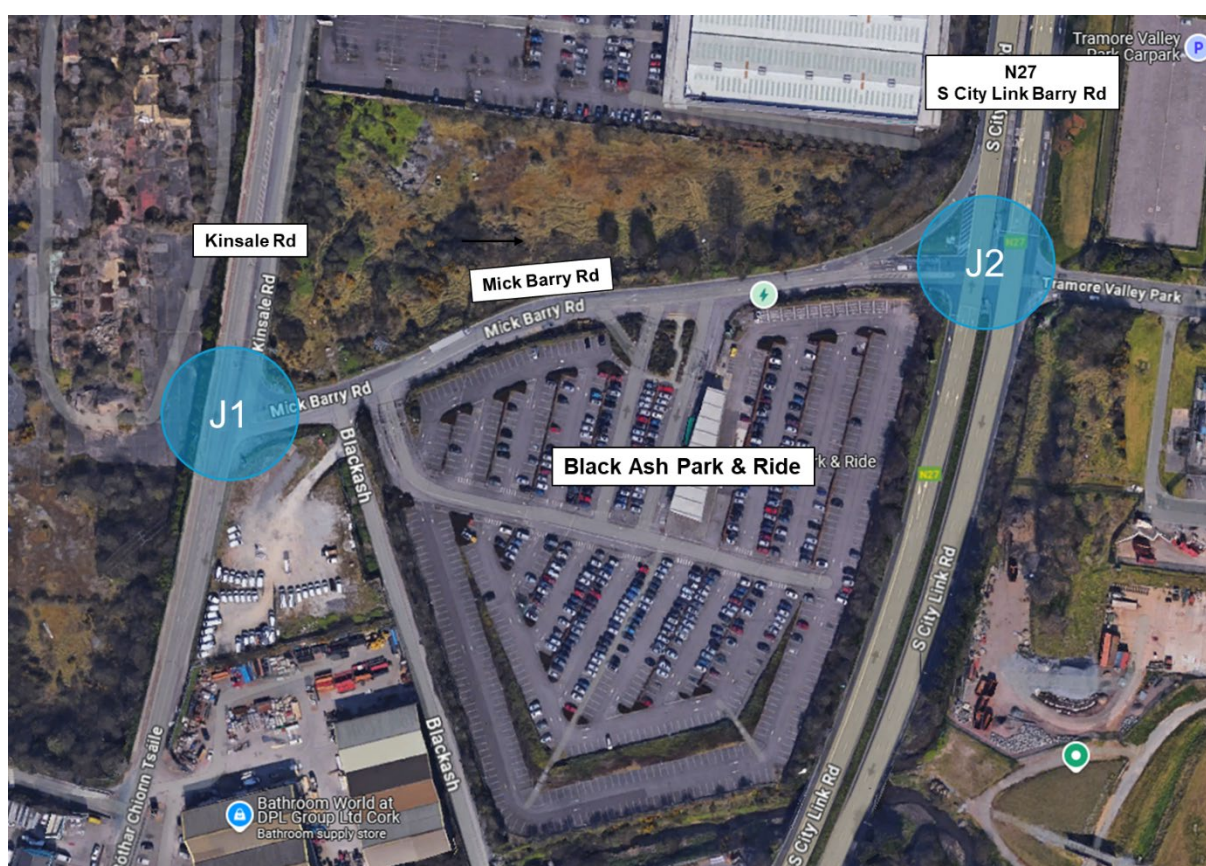


Figure 4.2 Assessment Junctions

4.3.2 Assessment Junctions Traffic Survey Results

Following the analysis of the traffic surveys, network peak hours were determined to occur between 08:00-09:00hrs for the AM peak, and 16:00-17:00hrs for the PM peak. The approach flows and turning movements recorded at the relevant junctions are summarised in Figure 4.3 and Figure 4.4. Detailed traffic survey results have been provided within Appendix A of this Report.



Figure 4.3 Traffic Survey Results Kinsale Rd/ Mick Barry Rd Junction

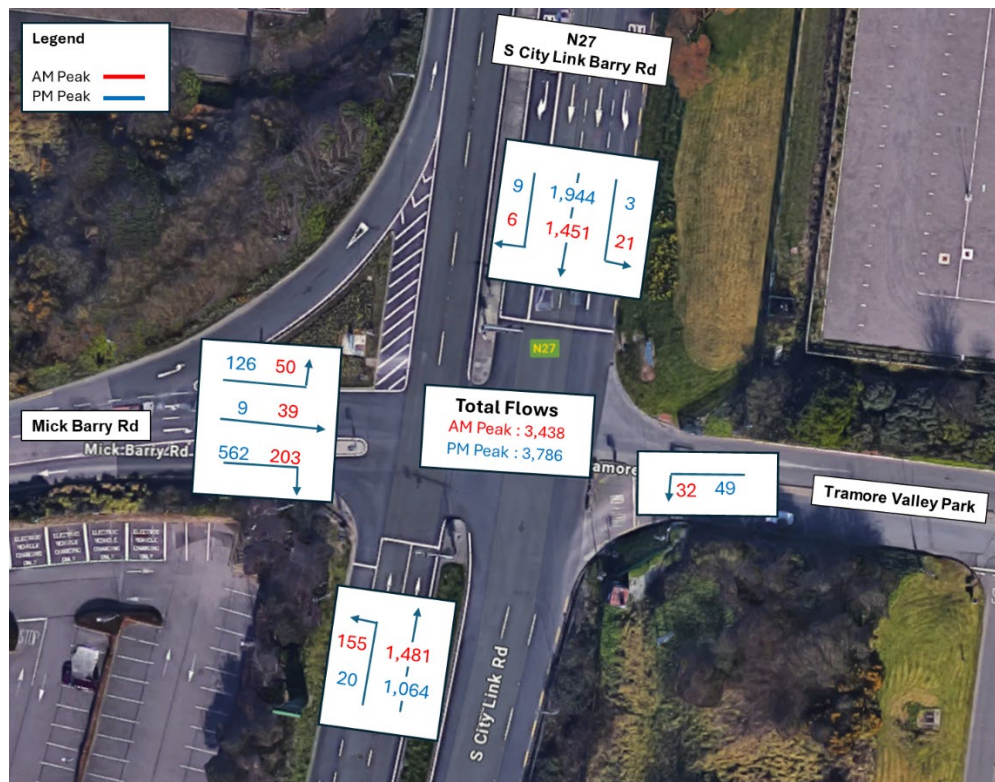


Figure 4.4 Traffic Survey Results S City Link Rd/ Mick Barry Rd/ Tramore Valley Park

4.3.3 Park and Ride Traffic Flows

12-hours Classified Junction Turning Counts were carried out at the Park and Ride Access/Exit junctions with Mick Barry Rd on Thursday 3rd October 2024, between 07:30-19:30. The turning movements recorded in the survey during network peak hours from/to the Park and Ride Facilities are presented in Figure 4.5.



Figure 4.5 Park and Ride Traffic Survey Results

4.4 Existing Pedestrian Network

The existing pedestrian network around the Black Ash Park and Ride is limited. A short length of footpath is available along Mick Barry Road, providing pedestrian access from this adjacent road. However, this footpath at the entrance of the Park and Ride facility lacks integration with the wider pedestrian network, as it is not connected to the footpaths on either the east or west side of the site. This disconnect restricts safe and convenient pedestrian movement to and from the Park and Ride, highlighting the need for improved footpath continuity and better linkage with surrounding areas to support safe pedestrian access.

4.5 Existing Cycle Network

The Black Ash Park and Ride currently lacks an established cycle network, limiting safe and direct cycling access to the site. While no dedicated cycle lanes or routes connect the park and ride to surrounding areas, the facility has installed six cycle stands at its entrance. These stands provide basic bicycle parking for those who do cycle to the site, though the absence of a comprehensive cycling infrastructure makes it less accessible and convenient for cyclists.

5 Proposed Development

5.1 General Description

The proposed bus interchange facility will consist of 4 new bus bays and associated passenger facilities. It is a part of the strategic locations for the provision of Park and Ride facilities in Cork Metropolitan Area, increasing opportunities to transfer between modes and services.

The proposal will support the delivery of BusConnects Cork through the provision of a new high quality bus interchange facility that is required to deliver the improved services along the following bus services:

- 6 Bus Route – Two-way Grange Road – Douglas Road – UCC – Black Ash Loop2
- 13A Bus Route – Haulbowline to Kent Station, passing Black Ash P&R
- 13B Bus Route – Kinsale to Kent Station
- 13 Bus Route – Cork Airport to Kent Station, passing Black Ash P&R
- 14 Bus Route – CUH to Mahon Point, passing Black Ash P&R
- 23 Bus Route – Old Youghal Road to Black Ash P&R

The Overall Layout of the proposal is shown in Figure 5.1, which follows.



Figure 5.1 Proposed Development Layout

The site is currently operating below its approximately 940 parking space capacity. The proposed layout will reduce the capacity by 104 spaces by implementing new bus interchange services along with new bus standing area. The existing 2 no. bus stops in front of the

crossings. As shown in Figure 5.2, these pedestrian areas allow for high quality public realm and link to additional facilities, such as sheltered cycle parking.

6 Proposed Development Traffic Impact

6.1 Introduction

This section of the TTA Report sets out the approach pursued in assessing the proposal's traffic impacts and its findings. The industry standard LinSig modelling software has been used for predicting capacities, queues, and delays of the Kinsale Rd/ Mick Barry Rd Junction and the S City Link Rd/ Mick Barry Rd/ Tramore Valley Park Junction.

6.2 Analysis Scope, Assessment Years and Time Periods, and Assessment Scenarios

Analysis Scope

The analysis presented within this Report has focused on assessing the traffic impact of the proposal to the operation of the following junctions:

- Junction 1: Kinsale Rd/ Mick Barry Rd Junction
- Junction 2: S City Link Rd/ Mick Barry Rd/ Tramore Valley Park Junction.

The location of the junctions included in the traffic model are shown in Figure 2.1 of this Report.

Assessment Years and Time Periods

TII's TTA Guidelines recommends that for TTA's four assessment years are considered, namely: base year (2023), year of opening (YoO) which is assumed to be 2025; future year (YoO+5) i.e., 2030, and a horizon year (YoO+15), i.e., 2040.

The assessment will focus on the critical time periods for the local road network (as determined by traffic survey) i.e., the AM peak (08:00-09:00hrs) and the PM peak period (16:00-17:00hrs) for assessing the proposed development's traffic impact.

Assessment Scenarios

The following scenarios have been developed in assessing the proposed development's traffic impacts:

- **Do-Nothing Scenario:** To assess the traffic impact of the development proposals on the local road network, it is first necessary to establish background traffic conditions without the proposed development, also referred to as the 'do-nothing' scenario. Such background traffic flows have been determined from the traffic survey detailed in section 4.3 of this report.
- **Do-Something Scenario:** The with-development or 'do-something' scenario represents traffic conditions following the completion and the start of operation of the proposal, i.e., do-nothing plus additional traffic expected to utilise the park and ride facility.

6.3 Baseline Traffic Growth Forecasting

In order to understand the impact of the development proposals on the local road network, it is first necessary to understand the without development or 'do-nothing' scenario for the base year (2023), the year of opening (YoO, 2025), future year (YoO+5, 2030) and horizon year (YoO+15),

i.e., 2040. Traffic levels in the do-nothing scenario comprise forecast background traffic flows, which is assumed to grow organically over the assessment period.

Forecast Background Traffic Flows

Existing traffic flows on the surrounding road network as determined via surveys discussed in Section 4.4 have been adjusted through application of appropriate growth factors to determine YoO and YoO+5 traffic flows. For this assessment, growth factors were determined from the *Transport Infrastructure Ireland (TII) Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections, October 2021 (PE-PAG-02017)*. Information within these guidelines is provided for Cork Metropolitan Area from 2016-2030 and 2030-2040 for low, central, and high sensitivity growth scenarios.

This information is provided for light vehicles (LVs) and heavy vehicles (HVs) and was used to determine the future year do-nothing traffic flows. Central growth factors were assumed for this assessment to determine future year background traffic flows on the surrounding road network. These factors are set out in Table 6.1, which follows.

Years	Growth Factor for LVs	Growth Factor for HVs
Annual growth factor	1.0169 (2016-2030)	1.0294 (2016-2030)
	1.0090 (2030-2040)	1.0149 (2030-2040)
2023 to 2025 (2 years)	1.0341	1.0597
2023 to 2030 (7 years)	1.1245	1.2249
2023 to 2040 (17 years)	1.2299	1.4201

Table 6.1 TII Growth Factors (Extract from PE-PAG-02017, October 2021)

6.4 Committed Developments Traffic

A review of the planning applications submitted in the area in proximity to the site, with information available within the CCC planning website, has been undertaken to identify committed developments (developments with planning permission, but not yet delivered).

No committed developments of significant scale/proximity have been identified in the local area at the time of the assessment.

6.5 Do-Nothing Traffic Flows

Based on the TII central growth factors presented in Table 6.1, 2023 traffic volumes have been factored to 2025, 2030, and 2040 levels, to determine the assumed year of opening, future year, and horizon year traffic volumes through assessment junctions, without the proposed development in place. Table 6.2 provides an overview of do-nothing approach flows for the assessment periods.

Assessment Junction	Assessment Period	Total Approach			
		Baseline Year	Year of Opening	YoO+5	YoO+15
		2023	2025	2030	2040
J1	AM Peak (08:00-09:00hrs)	1,170	1,211	1,321	1,448
	PM Peak (16:00-17:00hrs)	1,570	1,625	1,770	1,939
J2	AM Peak (08:00-09:00hrs)	3,438	3,558	3,877	4,250
	PM Peak (16:00-17:00hrs)	3,786	3,919	4,270	4,680

Table 6.2 Do-nothing Approach Traffic flows

6.6 Proposed Development Trip Generation and Distribution

The new bus interchange facility at Black Ash Park and Ride (the Proposed Scheme) will support the delivery of BusConnects Cork through the provision of a new high quality bus interchange facility that is required to deliver the improved bus services, specifically the bus routes listed in Table 6.3.

Bus Number	Route	Frequency
6	Two-way Grange Road – Douglas Road – UCC – Black Ash Loop2	15 mins
13/13A/13B	Cork Airport/ Haulbowline/ Kinsale to Kent Station, passing Black Ash P&R	15 mins
14	CUH to Mahon Point, passing Black Ash P&R	15 mins
23	Old Youghal Road to Black Ash P&R	60 mins

Table 6.3 Bus Routes to Use Black Ash P&R

Black Ash Park and Ride is the beginning and end point for Route 23, while Routes 6, 13/A/B, and 14 are expected to stop at the site, and then continue their journey. The latter bus services will also stop at Black Ash on their route back into Cork City.

Bus Services 6, 23 and 14 will access the site via Kinsale Road (Junction no.1). Bus services no. 13/A/B will access via S City Link Road (Junction no. 2). Figure 6.1 presents the local routes of the services presented above.

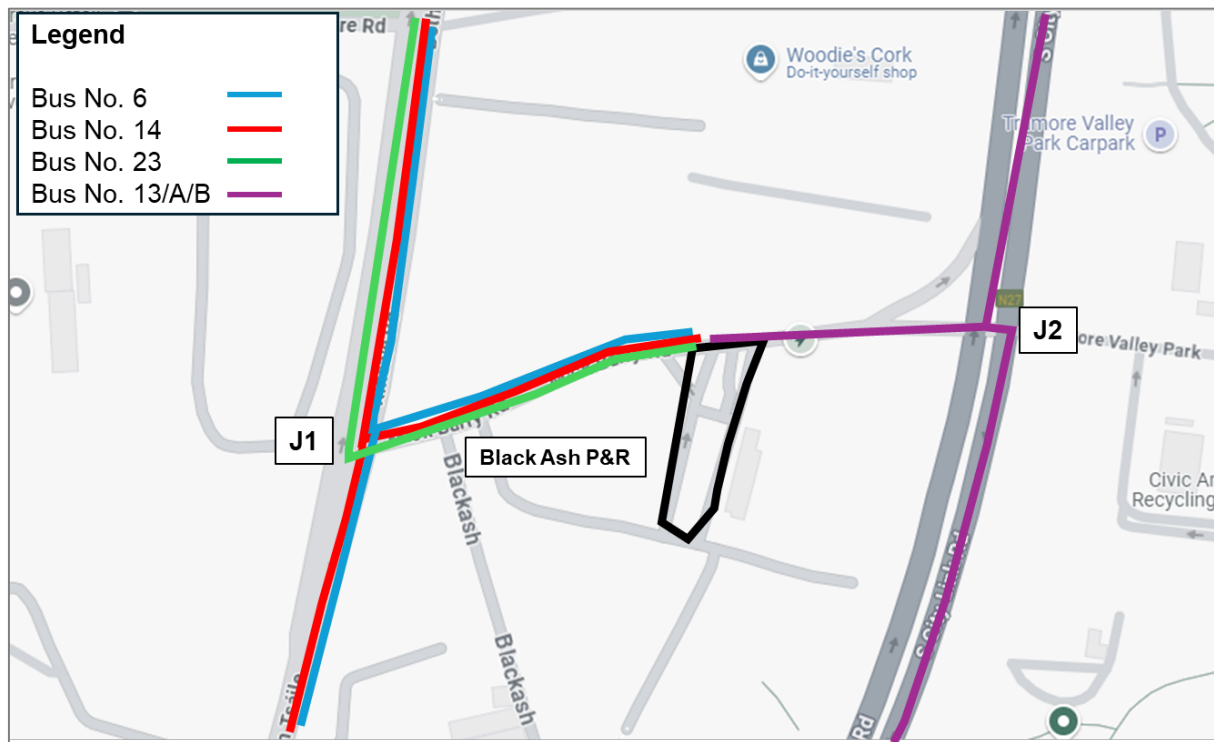


Figure 6.1 Bus Transit Routes near the Site

Considering the service frequency set out in Table 6.3 (two-way service), it is estimated that a total of 25 no. buses will access the site during the peak hours. In terms of trip generation at the assessment junctions, this has been calculated to be equivalent to 50 no. trips. This is given that the buses will detour to stop at Black Ash Park and Ride, and then return to the junctions to continue their route.

The additional traffic estimated to transit through each assessment junctions is presented in Table 6.4, which follows.

	Additional Traffic Through Junctions (Two-Way)
Junction 1	+34
Junction 2	+16
Total	+50

Table 6.4 Estimated Park and Ride Trip Generation

6.7 Do Something Traffic Flows

The do-something traffic flows have been calculated by adding the proposed development trip generation to the do-nothing traffic presented in Table 6.2. The traffic figures for 2025, 2030, and 2040, with the proposed development, in place are presented in Table 6.5.

Assessment Junction	Assessment Period	Total Approach Flows		
		Year of Opening	YoO+5	YoO+15
		2025	2030	2040
J1	AM Peak (08:00-09:00hrs)	1,245	1,355	1,482
	PM Peak (16:00-17:00hrs)	1,659	1,804	1,973
J2	AM Peak (08:00-09:00hrs)	3,574	3,893	4,266
	PM Peak (16:00-17:00hrs)	3,935	4,286	4,696

Table 6.5 Do-Something Traffic Flows

6.8 Traffic Modelling Software and Outputs

6.8.1 Traffic Modelling Software

The traffic impacts of the development have been assessed utilising the industry standard LinSig traffic modelling software. LinSig is a modelling software dedicated for analysing isolated signal-controlled junctions and small junction networks. The models analyse the junctions in relation to their geometry and traffic flows and calculate the degrees of saturation of the different links in the network.

The following outputs were obtained from the LinSig models:

- **Degree of Saturation:** This output presents the ratio of demand flow to the maximum flow which can be passed through a junction from a particular approach i.e., number of vehicles that could cross the stop line in an hour on a particular lane. A lane with a degree of saturation greater than 90% is approaching its theoretical capacity.
- **Maximum Queue Length:** Queue lengths at junctions are measured in Passenger Car Units (PCU), which represents a standard vehicle length including a buffer length to the front and back. For the purposes of this assessment, a PCU length of 5.75 metres has been assumed.
- **Delay:** The delay is based on the estimated average delay per vehicle among all traffic passing through the junction. The delay per vehicle provides an insight into operational conditions within a traffic stream, generally in terms of such factors as speed and travel time, freedom to manoeuvre, traffic interruptions, comfort and convenience, and safety. Average delays greater than 80 seconds per vehicle is considered generally considered to be excessive for signalised intersections.
- **Practical Reserve Capacity (PRC):** The amount by which traffic demand can grow before Practical Capacity is reached. A PRC close to 0% suggest that the junction is operating at capacity. A negative PRC indicates the junction is operating over its practical capacity.

The traffic modelling results for the relevant links in the network are discussed within the remainder of this chapter. To simplify the reporting, the body of this report focuses on the analysis of the maximum degree of saturation of the different links. Details on the remaining performance indicators obtained from the model, i.e., Queue Lengths, Delays, and Practical Reserve Capacity, can be found within Appendix B of this Report.

6.9 Traffic Modelling Results

6.9.1 AM Peak

The maximum degrees of saturation recorded at the different links are presented in Table 6.6, below.

Junction no. 1	Max Degree of Saturation (%)						
	2023	2025		2030		2040	
	Base Year	DN*	DS*	DN*	DS*	DN*	DS*
Kinsale Rd (North)	42.2%	43.8%	46.1%	47.8%	50.1%	52.5%	54.9%
Mick Barry Rd	9.1%	13.1%	33.7%	22.9%	43.6%	35.3%	56.0%
Kinsale Rd (South)	53.6%	55.6%	57.3%	60.7%	62.4%	66.6%	68.3%
Junction no. 2	Max Degree of Saturation (%)						
	2023	2025		2030		2040	
	Base Year	DN*	DS*	DN*	DS*	DN*	DS*
S City Link Rd (North)	59.3%	61.4%	62.5%	67.1%	68.2%	74.9%	74.9%
Tramore Valley Park	13.1%	13.1%	13.1%	14.9%	14.9%	16.2%	16.2%
S City Link Rd (South)	62.9%	65.1%	66.3%	70.5%	71.9%	78.1%	78.4%
Mick Barry Rd	62.9%	65.2%	61.6%	70.8%	67.1%	72.2%	74.4%

Table 6.6 AM Peak Traffic Modelling Results

As shown in Table 6.6, the AM Peak traffic modelling results obtained showed that the implementation of the proposed development will have no significant effects in the performance of the junctions under assessment. When comparing the 'do-nothing' and the 'do-something' scenario, the impacts of the proposed development were observed to be minimal.

For junction no. 1, the maximum degree of saturation obtained for the year of opening, with the proposed development in place, was 57.3%, which compares to 55.6% in the do-nothing scenario. This indicates a percentage difference of 1.7%.

Furthermore, the maximum degree of saturation obtained for junction no. 2 in the do-something scenario was 66.3%. This compares to 65.2% in the do-nothing scenario, indicating a 1.1% increase.

The assessment indicates that both junctions will remain operating at satisfactory levels in all assessed scenarios.

6.9.2 PM PEAK

The maximum Degrees of Saturation recorded at the different links are presented in Table 6.7, below.

Junction no. 1	Max Degree of Saturation (%)						
	2023	2025		2030		2040	
	Base Year	DN*	DS*	DN*	DS*	DN*	DS*
Kinsale Rd (North)	82.7%	85.7%	90.2%	91.2%	93.7%	102.3%	104.8%
Mick Barry Rd	31.7%	33.0%	53.6%	35.5%	56.2%	34.5%	59.5%
Kinsale Rd (South)	74.6%	78.4%	81.0%	93.8%	100.9%	87.5%	102.5%
Junction no. 2	Max Degree of Saturation (%)						
	2023	2025		2030		2040	
	Base Year	DN*	DS*	DN*	DS*	DN*	DS*
S City Link Rd (North)	89.1%	92.3%	92.3%	100.6%	100.6%	108.4%	108.3%
Tramore Valley Park	20.5%	21.1%	21.1%	23.6%	23.6%	26.1%	26.1%
S City Link Rd (South)	46.8%	48.4%	48.8%	52.8%	53.2%	56.9%	57.4%
Mick Barry Rd	84.8%	88.0%	89.4%	95.1%	95.8%	107.0%	106.7%

Table 6.7 PM Peak Traffic Modelling Results

The PM Peak traffic modelling results obtained showed that the implementation of the proposed development will have no significant effects in the performance of the junctions under assessment. When comparing the 'do-nothing' and the 'do-something' scenario, the impacts of the proposed development were observed to be minimal.

For junction no. 1, the maximum degree of saturation obtained for the year of opening, with the proposed development in place, was 90.2%, which compares to 85.7% in the do-nothing scenario. This indicates a percentage difference of 4.5%.

Furthermore, Junction no.1 recorded a maximum degree of saturation of 102.5% in the 2040 do-something, which compares to 87.5% in the do-nothing. This can be attributed the increase in the number of northbound buses turning right towards the Park and Ride facilities. At present, the right turning lane has limited capacity, with ca. 50 metres length. This limits its performance during the peak hours.

As shown in Figure 6.2, Junction no. 1 will be redesigned as part of BusConnects Cork Project. Traffic capacity and volumes of the northbound right tuning lanes will need to be closely considered in the BusConnects Cork junction design. If it was required, the right turning capacity on junction no. 1 could be increased from their current proposal. If the northbound bus only lane commenced after the junction with Mick Barry Road, this would allow for two right tuning lanes and a straight lane for cars. Alternatively, or in addition, the proposed road mark hatch shown in the figure below could be removed and allow the right turning lane to be extended. This is

beyond the scope of the Black Ash Park and Ride but should be taken into consideration for the BusConnects Cork scheme.

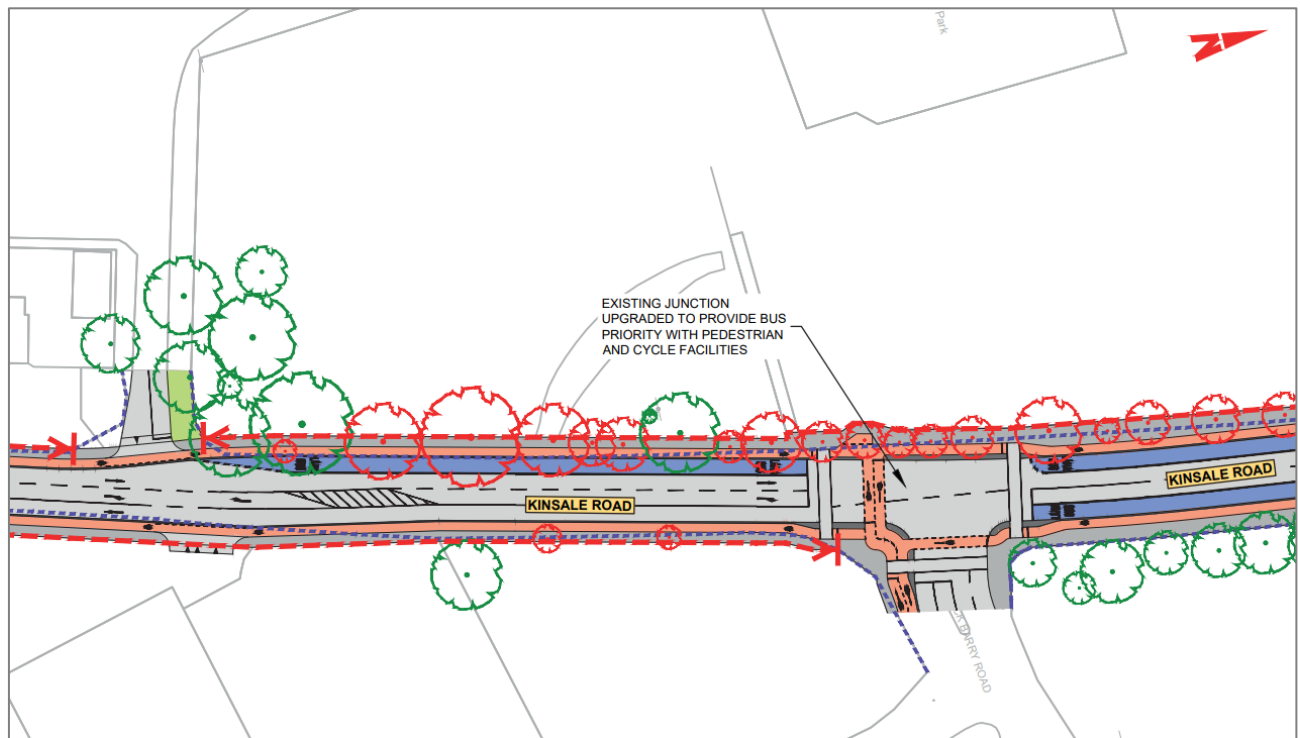


Figure 6.2 BusConnects Cork Sustainable Transport Corridor (Airport Road to City Centre)

Given there are infinite traffic variables between now and 2040, including the construction of a significant transportation project, BusConnects Cork, it is not immediately considered problematic that the degree of saturation is projected to be 102.5% in 2040. Overall, the scheme will still reduce traffic congestion on the greater metropolitan area as more users will have access to a modal shift from individual car to bus.

In relation to Junction no. 2, the maximum degree of saturation obtained in both assessment scenarios was 92.3%. This indicates that the implementation of the proposed development will have no effect in the degree of saturation of the worst performing lane.

Even though the performance of the junctions during the PM peak are recorded to be almost at capacity, the impacts of the proposed development can be described as insignificant. The capacity issues observed during this assessment scenario can be attributed mainly to the high volume of background traffic and forecasted increase in such turning movements.

On that basis, the traffic impact of the proposed development can be described as **long-term, neutral, and imperceptible**. Detailed modelling results of all the scenarios are included as Appendix B of this report.

6.10 Kinsale Road Roundabout Capacity Issues

A desktop review of the typical traffic in the network was undertaken, in order to validate the traffic modelling results recorded in the study area. The results obtained from this review suggests some capacity issues at the assessment junctions during both peak periods.

Following the review of the traffic patterns in the wider area near the site, it was concluded that these capacity issues can be attributed to long queues at the Kinsale Rd Roundabout. Given the that this is located only 500 metres to the south of the study area, the slow-moving traffic/queues currently handled by this roundabout have a direct impact on the traffic movements at the assessment junctions. This specially reflected on the typical queues at Mick Barry Rd and the S City Link Rd southbound movements during the PM peak.

Even though these issues are in place, when comparing the 'do-nothing' and the 'do-something' scenarios, the impacts of the proposed development were observed to be minimal. It must be noted that the proposal will only add a maximum of 50 no. additional trips to the study area, which are likely to be insignificant, when considering the existing traffic movements on the broader network.

6.11 Traffic Modelling Sensitivity Test

The implementation of the proposed development, and the new bus routes to service the site, could increase the overall usage of the Park and Ride facilities. Considering this, it was deemed relevant to test the performance of the network with a 20% increase in traffic accessing the site.

The turning movements presented in section 4.4.3 of this report have been used as a basis for this assessment. The traffic model including the 20% traffic increased considered the Year of Opening (2025). The results obtained for this assessment are presented in Table 6.8 and Table 6.9.

Junction no. 1	Max Degree of Saturation (%)		
	2023	2025	
	Base Year	DN*	DS*
Kinsale Rd (North)	42.2%	43.8%	46.5%
Mick Barry Rd	9.1%	13.1%	33.7%
Kinsale Rd (South)	53.6%	55.6%	57.4%
Junction no. 2	Max Degree of Saturation (%)		
	2023	2025	
	Base Year	DN*	DS*
S City Link Rd (North)	59.3%	61.4%	61.4%
Tramore Valley Park	13.1%	13.1%	13.1%
S City Link Rd (South)	62.9%	65.1%	66.5%
Mick Barry Rd	62.9%	65.2%	67.2%

Table 6.8 AM Peak Sensitivity Test Results

Junction no. 1	Max Degree of Saturation (%)		
	2023	2025	
	Base Year	DN*	DS*
Kinsale Rd (North)	82.7%	85.7%	90.2%
Mick Barry Rd	31.7%	33.0%	56.8%
Kinsale Rd (South)	74.6%	78.4%	81.0%
Junction no. 2	Max Degree of Saturation (%)		
	2023	2025	
	Base Year	DN*	DS*
S City Link Rd (North)	89.1%	92.3%	92.3%
Tramore Valley Park	20.5%	21.1%	21.1%
S City Link Rd (South)	46.8%	48.4%	48.8%
Mick Barry Rd	84.8%	88.0%	90.4%

Table 6.9 PM Peak Sensitivity Test Results

6.12 Other Impacts Associated with the Proposed Development

6.12.1 Environmental Impact

The proposed development will not generate a significant volume of additional vehicular traffic during construction or operational phases. The level of traffic increase is not likely to have any adverse transport-related environmental effects in terms of noise, air quality, vibrations, etc. The environmental impact of the construction period will be **short-term** and **not significant** in nature.

6.12.2 Construction Stage Impact

The potential impacts resulting from construction works for the proposed development are outlined in Table 6.10, below. It should be noted that these impacts would be **short-term**, **negative**, and **not significant**, and are not expected to result in significant residual impact.

Activities	Potential Impact	Significance of Effects	Duration of Effects
Transportation of site machinery and materials	<ul style="list-style-type: none"> Delay and inconvenience to existing traffic on the road network. Noise/disturbance to other properties in the area. Dust raised by construction traffic. 	not significant	Short-Term

Activities	Potential Impact	Significance of Effects	Duration of Effects
	<ul style="list-style-type: none"> Dirt and mud dragged onto the road by construction traffic. 		

Table 6.10 *Potential Impacts During Construction Stage*

Remedials and Mitigations

During the construction phase of the development, the following measures will be put in place to reduce the impact on the surrounding environment:

1. The contractor will be required to provide wheel cleaning facilities, and regular cleaning of the local road network will be carried out.
2. Temporary car parking facilities for the construction workforce will be provided within the site and the surface of the car park will be prepared and finished to a standard sufficient to avoid mud spillage onto adjoining roads.
3. Monitoring and control of construction traffic will be ongoing during construction works.

7 Conclusion

CSEA has been appointed by the National Transport Authority's (NTA) Park and Ride Development Office (PRDO) to prepare a Traffic and Transport Assessment for the upgrade of the exiting Black Ash Park and Ride infrastructure and introduction of a bus interchange, including 4 new bus stops, as proposed by BusConnects. It is anticipated that the proposal will become operational by Q4 2025.

The proposed bus interchange facility will consist of 4 new bus bays and associated passenger facilities. It is a part of the strategic locations for the provision of Park and Ride facilities in Cork Metropolitan Area, increasing opportunities to transfer between modes and services. The objective is to facilitate good public transport connectivity to and from Cork City Centre and surrounding areas, as proposed in the Cork Bus Network Redesign.

The proposal is expected to generate a maximum of 50 no. trips during the peak hours between 08:00-09:00 AM and 16:00-17:00 PM. These trips are associated with the additional bus routes expected to service the site.

12-hours Classified Junction Turning Counts were carried out on the area near the site on Thursday 30th November 2023, between 07:30-19:30. These surveys captured the existing traffic flows at Kinsale Rd/ Mick Barry Rd Junction (Junction 1) and the S City Link Rd/ Mick Barry Rd/ Tramore Valley Park Junction (Junction 2).

A LinSig junction analysis was carried out, taking into account the recorded traffic volumes in traffic surveys and the proposal's trip generation. The following findings were observed:

- Junction no. 1:
 - Junction will operate within capacity and at acceptable level.
 - Do- Something Max Degree of saturation (DoS) was recorded to be **57.3% in AM Peak**. This compares to 55.6% in the do-nothing scenario, indicating a percentage difference of 1.7%.
 - Do- Something Max Degree of saturation (DoS) was recorded to be **90.2% in PM Peak**. This compares to 85.7% in the do-nothing scenario, indicating a percentage difference of 4.5%.
- Junction no. 2:
 - Junction will operate within capacity and at acceptable level.
 - Do- Something Max Degree of saturation (DoS) was recorded to be 66.3% in AM Peak. This compares to 65.2% in the do-nothing scenario, indicating a 1.1% increase.
 - in PM Peak Max Degree of saturation (DoS) was recorded to be 92.3% in both Do-nothing and do-something scenarios. This indicates that the implementation of the proposed development will have no effect in the degree of saturation of the worst performing lane.

The traffic modelling results obtained showed that the implementation of the proposed development will have no significant effects in the performance of the junctions under assessment. When comparing the 'do-nothing' and the 'do-something' scenario, the impacts of the proposed development were observed to be minimal.

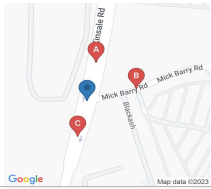
A sensitivity test was undertaken to assess the performance of the network with a 20% increase in traffic. This was considered as the implementation of the proposed development, and the new bus routes to service the site, could increase the overall usage of the park and ride facilities. The results of this assessment showed that the junctions will remain operating within similar margins as existing and as forecasted in the do-something scenario.

On that basis, the traffic impact of the operational phase of the proposed development can be described as **long-term, neutral** and **imperceptible**. During construction stage the impact of the proposed development is expected to be **short-term, negative** and **not significant**.

APPENDICES

Appendix A: Traffic Survey Results

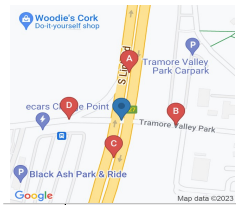
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IDASO

Survey Name: 393 23592 - Cork Outer & Mid Cordon 2023
Site: MC9
Location: Kinsale Road/Mick Barry Road
Date: Thu 30-Nov-2023

TIME	B ==> A										B ==> B										B ==> C									
	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU
07:30	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	3	0	2	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	4	0	1	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2.3
08:30	0	0	9	3	2	0	0	0	14	14	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	3
08:45	0	0	8	1	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
H/TOT	0	0	24	4	5	0	0	0	33	33	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	1	0	1	5	6.3
09:00	0	0	3	0	0	5	0	0	8	10.5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	4.3
09:15	0	0	2	0	0	1	0	0	3	3.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
09:30	0	0	4	0	1	0	0	1	6	7	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	3
09:45	0	0	7	0	1	1	0	1	10	11.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	16	0	2	7	0	2	27	32.5	0	0	0	0	0	0	0	0	0	0	0	0	4	0	3	0	1	0	8	9.3
10:00	0	0	4	0	1	0	0	1	6	7	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
10:15	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
10:30	0	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
10:45	0	0	3	0	2	0	0	1	6	7	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
H/TOT	0	0	10	0	5	0	0	2	17	19	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	0	7	7
11:00	1	0	3	0	2	1	0	0	7	6.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	5	0	0	1	1	1	8	10.8	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3	3.5
11:30	0	0	3	0	1	0	0	1	5	6	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	4
11:45	0	0	5	0	2	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
H/TOT	1	0	16	0	5	2	1	2	27	30.5	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	1	0	0	9	9.5
12:00	0	0	3	0	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	4
12:15	0	0	3	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	2
12:30	0	0	4	1	2	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	4	0	1	1	0	1	7	8.5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	4	4
H/TOT	0	0	14	1	3	1	0	2	21	23.5	0	0	0	0	0	0	0	0	0	0	0	0	7	0	3	0	0	0	10	10
13:00	0	0	8	1	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3
13:15	0	0	7	0	0	0	0	1	8	9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	3	3
13:30	0	0	9	0	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	4	4
13:45	0	0	5	1	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	4	4.5
H/TOT	0	0	29	2	0	0	0	1	32	33	0	0	0	0	0	0	0	0	0	0	0	0	10	0	3	1	0	0	14	14.5
14:00	0	0	2	0	0	0	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	2.5
14:15	0	0	7	0	1	0	0	1	9	10	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
14:30	0	0	2	1	2	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5
14:45	0	0	10	0	0	1	0	0	11	11.5	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	4
H/TOT	0	0	21	1	3	1	0	2	28	30.5	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	1	0	0	12	12.5
15:00	0	0	5	2	0	0	1	1	9	11.3	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	3	3
15:15	0	0	11	1	1	0	0	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	8	8
15:30	0	0	6	0	1	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	3
15:45	0	0	8	0	0	1	0	0	9	9.5	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	3	3
H/TOT	0	0	30	3	2	1	1	1	38	40.8	0	0	0	0	0	0	0	0	0	0	0	0	14	1	2	0	0	0	17	17
16:00	0	0	7	0	1	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	2
16:15	0	0	5	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	6	6
16:30	0	0	8	0	1	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3
16:45	0	0	3	0	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	5
H/TOT	0	0	23	0	2	0	0	1	26	27	0	0	0	0	0	0	0	0	0	0	0	0	14	1	1	0	0	0	16	16
17:00	0	0	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	6
17:15	0	0	8	0	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3
17:30	0	0	13	0	1	0	0	1	15	16	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
17:45	0	0	6	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3
H/TOT	0	0	31	0	1	0	0	1	33	34	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	13	13
18:00	0	0	9	0	1	0	0	1	11	12	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	3
18:15	0	0	1	0	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
18:30	0	0	4	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7	7
18:45	0	0	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
H/TOT</																														



IDASO

Survey Name: 393 23592 - Cork Outer & Mid Cordon 2023
Site: MC 18
Location: South City Link/N27/Mick Barry Road
Date: Thu 30-Nov-2023

TIME	A => A										A => B										A => C										A => D										
	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	234	4	50	7	5	1	301	312	0	0	0	0	0	0	0	1	1	2	
07:45	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	1	2	257	6	41	9	7	4	327	342.6	0	0	0	0	0	0	0	1	1	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	1	2	491	10	91	16	12	5	628	654.6	0	0	0	0	0	0	0	2	2	4
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	300	1	44	7	1	3	356	363.8	0	0	0	0	0	0	0	2	2	4	
08:15	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	5	0	1	315	6	36	2	6	1	367	376.2	0	0	0	0	0	0	0	1	1	2
08:30	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6	6	0	1	305	7	39	6	7	6	371	388.5	0	0	1	0	0	0	0	0	1	1
08:45	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	9	0	0	298	6	43	5	4	1	357	365.7	0	0	0	0	0	0	0	2	2	4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	20	0	1	0	0	0	0	21	21	0	2	1218	20	162	20	18	11	1451	1494.2	0	0	1	0	0	0	0	5	6	11
09:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	0	1	206	7	36	10	0	3	263	270.4	0	0	0	0	0	0	1	1	2	4.3
09:15	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	5	0	0	190	12	44	7	3	2	258	267.4	0	0	1	0	0	0	0	0	1	1
09:30	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0	5	5	0	0	174	8	68	7	5	2	264	276	0	0	0	0	0	0	1	1	2	
09:45	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	3	3	0	1	187	16	35	8	5	1	253	263.9	0	0	2	0	1	0	0	2	5	7
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	14	0	2	0	0	0	0	16	16	0	2	757	43	183	32	13	8	1038	1077.7	0	0	3	0	1	0	1	4	9	14.3
10:00	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	0	0	5	5	0	0	203	11	42	5	3	2	266	274.4	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	1	0	0	0	7	7.5	0	1	204	8	41	12	6	5	277	295.2	0	0	0	0	0	0	0	2	2	4
10:30	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6	6	0	0	195	14	47	8	6	1	271	283.8	0	0	1	0	0	0	0	1	2	3
10:45	0	0	0	0	0	0	0	0	0	0	0	0	9	0	2	0	0	0	0	11	11	0	2	225	15	33	4	5	3	287	297.3	0	0	0	0	0	0	0	2	2	4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	25	0	3	1	0	0	0	29	29.5	0	3	827	48	163	29	20	11	1101	1150.7	0	0	1	0	0	0	0	5	6	11
11:00	0	0	0	0	0	0	0	0	0	0	0	0	12	0	3	0	0	0	0	15	15	0	0	190	12	41	9	4	3	259	271.7	0	0	0	0	0	0	0	1	1	2
11:15	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	0	0	0	8	8	0	1	207	8	44	12	8	1	281	297.8	0	0	0	0	0	0	0	1	1	2
11:30	0	0	0	0	0	0	0	0	0	0	0	0	11	1	1	1	0	0	0	14	14.5	0	2	215	9	43	8	9	4	290	308.5	0	0	1	0	0	0	0	1	2	3
11:45	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	0	0	10	10.5	0	1	246	7	47	8	10	3	322	341.4	0	0	0	0	0	0	0	1	1	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	38	1	6	2	0	0	0	47	48	0	4	858	36	175	37	31	11	1152	1219.4	0	0	1	0	0	0	0	4	5	9
12:00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	3	3	0	2	216	10	29	3	4	4	268	277.5	0	0	1	0	0	0	0	2	3	5
12:15	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	5	1	1	231	13	43	8	8	4	309	326	0	0	0	0	1	0	0	0	1	1
12:30	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	0	0	0	8	8	0	1	275	8	38	11	6	1	340	353.7	0	0	0	0	0	0	0	2	2	4
12:45	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	9	0	2	232	11	37	8	8	2	300	315.2	0	0	1	0	0	0	0	1	2	3
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	23	0	2	0	0	0	0	25	25	1	6	954	42	147	30	26	11	1217	1272.4	0	0	2	0	1	0	0	5	8	13
13:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	0	4	274	7	43	12	8	4	352	370	0	0	0	0	0	0	0	2	2	4
13:15	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0	0	0	6	6	0	1	255	8	26	8	7	6	311	329.5	0	0	0	0	0	0	0	1	1	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	7	0	1	269	11	29	6	9	6	331	351.1	0	0	1	0	0	0	0	1	2	3
13:45	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	4	0	1	292	13	37	9	6	2	360	373.7	0	0	0	0	0	0	0	2	2	4
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	19	0	1	0	0	0	0	20	20	0	7	1090	39	135	35	30	18	1354	1424.3	0	0	1	0	0	0	0	6	7	13
14:00	0	0	0	0	0	0	0	0	0	0	0	0	5	0	1	0	0	0	0	6	6	0	1	290	9	39	6	3	5	353	364.3	0	0	0	0	0	0	0	1	1	2
14:15	0	0	0	0	0	0	0	0	0	0	0	0	12	0	1	1	0	0	0	14	14.5	0	0	258	15	39	8	3	2	325	334.9	0	0	0	0	0	0	0	1	1	2
14:30	0	0	0	0	0	0	0	0	0	0	0	0	12	0	3	0	0	0	0	15	15	0	1	281	10	31	4	9	2	338	353.1	0	0	0	0	1	0	0	1	2	3
14:45	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	8	0	0	330	15	43	10	7	2	407	423.1	0	0	3	0	0	0	0	2	5	7
H/TOT	0	0	0	0	0	0	0	0	0	0	0	0	37	0	5	1	0	0	0	43	43.5	0	2	1159	49	152	28	22	11	1423	1475.4	0	0	3	0	1	0	0	5	9	14
15:00	0	0	0	0	0	0	0	0	0	0	0	0	6	0	1	1	0	0	0	8	8.5	0	2	315	5	49	8	5	3	387	399.3	0	0	1	1	0	0	0	1	3	4
15:15	0	0	0	0	0	0	0	0	0	0	0																														

[illegible]

Map data ©2025										C >= A										C >= B										C >= C										C >= D									
TIME	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU									
07:30	1	0	349	2	31	2	4	3	392	400.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	18	18									
07:45	0	0	390	1	31	4	2	1	429	434.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0	21	21									
H/TOT	1	0	739	3	62	6	6	4	821	835	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0	0	0	0	0	39	39									
08:00	0	0	349	4	25	4	3	1	386	392.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	2	0	0	0	0	35	35									
08:15	0	0	334	5	17	5	4	2	367	376.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	1	0	0	0	43	43									
08:30	0	1	328	3	19	6	1	2	360	365.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	3	2	1	0	0	0	43	43.5									
08:45	0	2	325	9	26	2	3	1	368	372.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	1	1	1	0	0	0	34	34.5									
H/TOT	0	3	1336	21	87	17	11	6	1481	1508	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	143	4	6	2	0	0	0	155	156								
09:00	0	1	293	7	20	4	6	2	333	344.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	6	3	3	0	0	32	33.5									
09:15	0	1	263	14	27	5	4	6	320	333.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	1	0	0	0	14	14									
09:30	0	3	270	9	38	6	5	4	335	346.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	4	1	0	0	0	29	29.5								
09:45	0	0	220	8	29	11	4	0	272	282.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	1	0	0	0	0	19	19								
H/TOT	0	5	1046	38	114	26	19	12	1260	1306.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	0	9	4	0	0	0	94	96								
10:00	0	0	225	4	31	5	4	2	271	280.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	1	0	0	0	0	18	18								
10:15	0	3	204	10	29	6	6	4	262	275	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	2	0	0	0	0	12	12								
10:30	0	0	196	10	33	3	4	4	250	260.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	8								
10:45	0	0	190	7	18	1	8	2	226	238.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	3	0	0	0	0	24	24								
H/TOT	0	3	815	31	111	15	22	12	1009	1055.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	0	6	0	0	0	0	62	62								
11:00	0	0	155	8	27	6	6	0	202	212.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	2	1	0	0	0	15	15.5								
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11:30	0	0	174	7	23	2	5	3	214	224.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	1	0	0	0	0	11	11								
11:45	0	2	156	15	37	5	6	1	222	232.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12	12								
H/TOT	0	2	690	37	107	21	23	6	886	931.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	1	3	1	0	0	0	53	53.5							
12:00	0	1	137	9	32	10	5	1	195	206.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	13	13								
12:15	0	0	194	9	23	4	3	6	239	250.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	1	0	0	0	0	9	9								
12:30	0	1	185	8	29	10	5	3	241	254.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	1	0	0	0	10	10.5								
12:45	0	4	166	11	20	8	4	0	213	219.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	2	1	0	0	0	11	11.5								
H/TOT	0	6	682	37	104	32	17	10	888	932.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	1	5	2	0	0	0	43	44								
13:00	0	1	171	6	32	6	6	1	223	234.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	1	1	0	0	0	0	24	24								
13:15	0	2	186	5	30	4	3	3	233	240.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	2	0	0	0	0	8	8								
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H/TOT	0	5	722	29	110	27	17	11	921	964.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	2	4	2	0	0	0	58	59								
14:00	0	1	187	10	22	4	12	2	238	257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	1	0	0	0	8	8.5								
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14:30	0	0	162	11	24	9	5	2	213	226	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	1	0	0	0	0	9	9								
14:45	0	2	208	13	20	4	4	2	253	261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	7								
H/TOT	0	4	739	50	89	20	26	11	939	991.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	1	2	1	0	0	0	31	31.5							
15:00	0	0	200	8	22	0	7	1	238	248.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2	0	0	0	0	0	12	12								
15:15	0	0	189	9	24	5	4	1	232	240.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	1	0	0	0	0	0	14	14								
15:30	0	0	214	10	30	2	2	4	262	269.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2	2	0	0	0	0	17	17								
15:45	0	1	240	11	27	5	2	3	289	296.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	1	0	0	0	12	12.5								
H/TOT	0	1	843	38	103	12	15	9	1021	1054.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	5	2	1	0	0	0	55	55.5							
16:00	0	2	215	7	20	3	2	5	254	261.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	0	0	0	0	8	8								
16:15	0	0	202	11	31	0	2	3	249</																																								

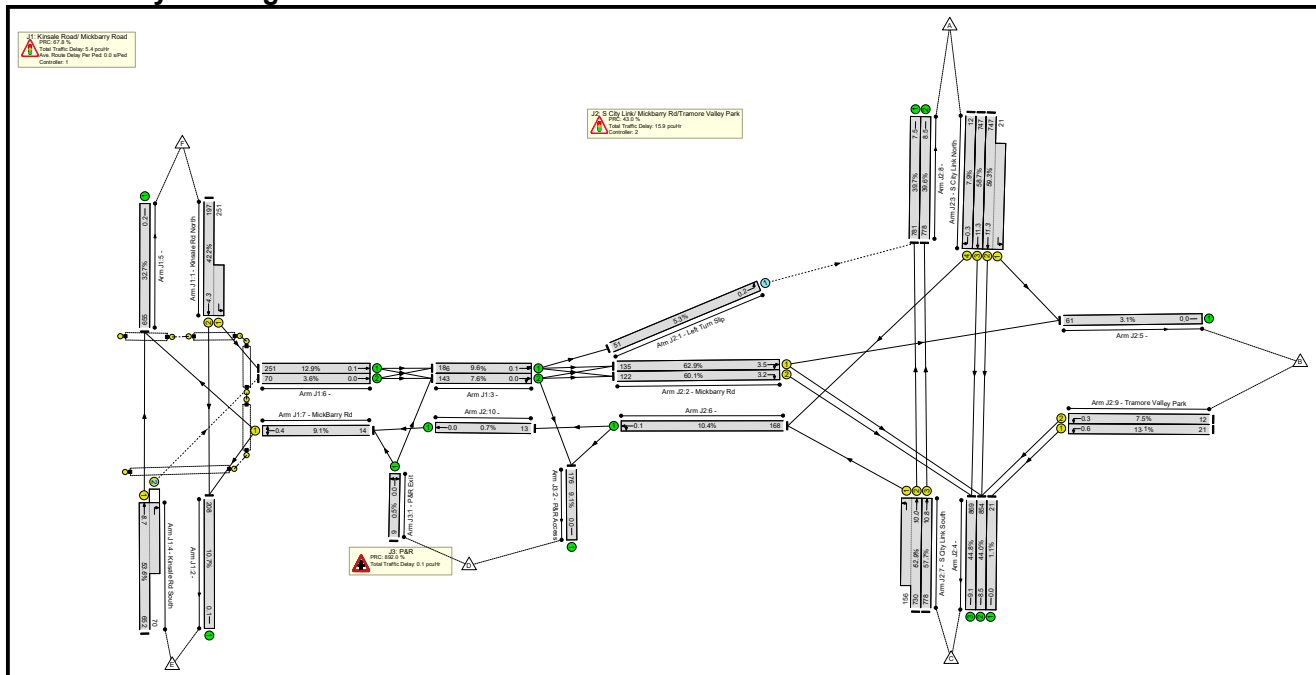
D ==> A										D ==> B										D ==> C										D ==> D												
TIME	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU	P/C	M/C	CAR	TAXI	LGV	OGV1	OGV2	PSV	TOT	PCU		
07:30	0	0	0	8	0	3	1	1	2	15	18.8	0	0	0	1	0	1	0	0	2	2	0	0	18	0	8	3	1	0	30	32.8	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	4	0	2	0	0	1	7	8	0	0	3	0	2	0	0	0	5	5	0	0	27	2	6	1	1	0	37	38.8	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	12	0	5	1	1	3	22	26.8	0	0	4	0	3	0	0	0	7	7	0	0	45	2	14	4	2	0	67	71.6	0	0	0	0	0	0	0	0	0	0	0	
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08:30	0	0	5	0	2	0	1	2	10	13.3	1	0	12	0	2	1	0	0	16	15.7	0	1	60	2	6	1	0	0	70	69.9	0	0	0	0	0	0	0	0	0	0	0	
08:45	1	0	5	0	5	1	1	0	13	14	0	0	5	0	1	0	0	0	6	6	0	0	49	0	8	3	0	0	60	61.5	0	0	0	0	0	0	0	0	0	0	0	
H/TOT	1	0	28	0	11	3	3	5	51	60.6	1	0	33	0	4	2	0	0	40	40.2	0	1	166	3	22	9	2	0	203	209.5	0	0	0	0	0	0	0	0	0	0	0	
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H/TOT	0	0	55	2	12	5	3	5	82	93.4	1	0	48	0	4	1	1	0	55	56	0	0	127	2	28	9	1	0	167	172.8	0	0	0	0	0	0	0	0	0	0	0	
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H/TOT	0	0	64	0	20	9	2	5	100	112.1	1	0	36	0	1	0	1	0	39	39.5	0	0	204	4	30	10	7	2	257	273.1	0	0	0	0	0	0	0	0	0	0	0	
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12:45	0	0	24	0	4	1	0	1	30	31.5	0	0	15	0	1	1	0	0	17	17.5	0	0	79	0	9	4	2	0	94	98.6	0	0	0	0	0	0	0	0	0	0	0	
H/TOT	0	1	92	0	22	5	2	5	127	136.5	1	0	56	0	4	1	1	0	63	64	0	0	328	2	29	13	6	0	378	392.3	0	0	0	0	0	0	0	0	0	0	0	
13:00	1	0	24	1	3	2	0	3	34	37.2	0	0	13	0	1	0	0	0	14	14	0	0	86	1	10	4	3	0	104	109.9	0	0	0	0	0	0	0	0	0	0	0	
13:15	0	0	21	0	11	3	1	1	37	40.8	0	0	13	0	2	2	0	0	17	18	0	0	97	1	6	5	0	1	110	113.5	0	0	0	0	0	0	0	0	0	0	0	
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13:45	0	0	19	0	4	0	0	1	24	25	0	0	7	0	1	0	0	0	8	8	0	0	74	0	8	3	1	0	86	88.8	0	0	0	0	0	0	0	0	0	0	0	
H/TOT	1	0	80	1	22	6	2	6	118	128.8	0	0	41	0	7	3	0	0	51	52.5	0	0	328	2	37	14	5	3	389	405.5	0	0	0	0	0	0	0	0	0	0	0	
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H/TOT	0	0	82	0	10	8	6	6	112	129.8	1	0	45	0	4	3	2	0	55	58.3	0	0	343	5	35	21	4	3	411	429.7	0	0	0	0	0	0	0	0	0	0	0	
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15:15	0	0	21	0	1	2	2	1	27	31.6	0	0	20	0	1	1	0	0	22	22.5	0	1	124	3	11	3	2	0	144	147.5	0	0	0	0	0	0	0	0	0	0	0	
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15:45	0	0	17	0	3	0	0	1	21	22	0	0	20	0	1	0	0	0	21	21	0	0	103	3	9	0	3	0	118	121.9	0	0	0	0	0	0	0	0	0	0	0	
H/TOT	0	0	91	1	14	6	2	5	119	129.6	0	0	74	2	3	1	1	0	81	82.8	0	1	401	11	35	7	10	1	466	482.9	0	0	0	0	0	0	0	0	0	0	0	
16:00	0	0	28	1	5	2	1	2	39	43.3	0	0	2	0	0	3	0	0	5	6.5	0	0	111	0	12	2	2	0	127	130.6	0	0	0	0	0	0	0	0	0	0		

Appendix B: LinSig Modelling Results

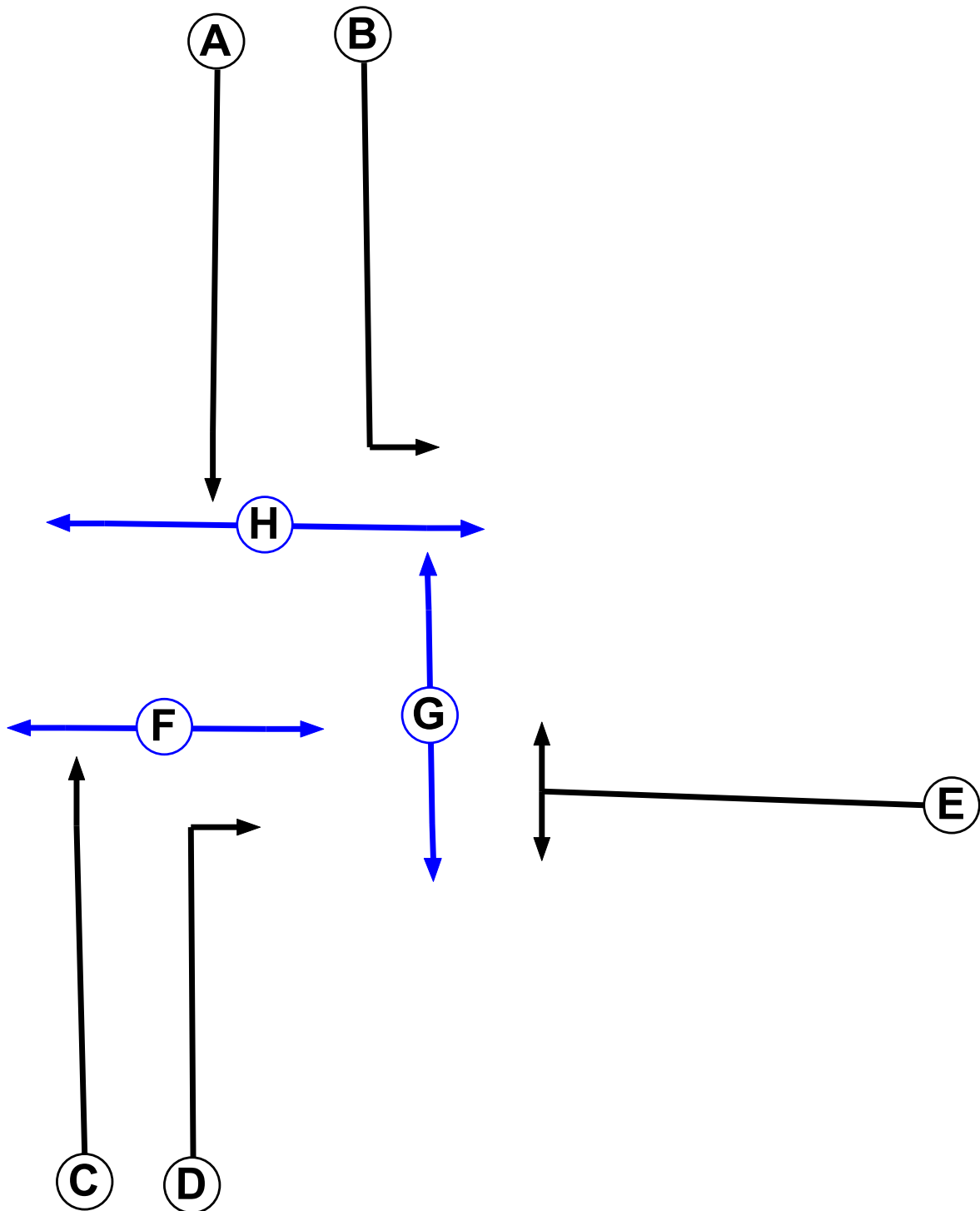
User and Project Details

Project:	Blackash Park and Ride- Interchange
Title:	
Location:	Blackash, Co. Cork
Additional detail:	
File name:	Blackash Park and Ride V2.lsg3x
Author:	Carol Diaz Rosario
Company:	Clifton Scannell Emerson
Address:	
Linsig Version:	3, 2, 44, 1

Network Layout Diagram



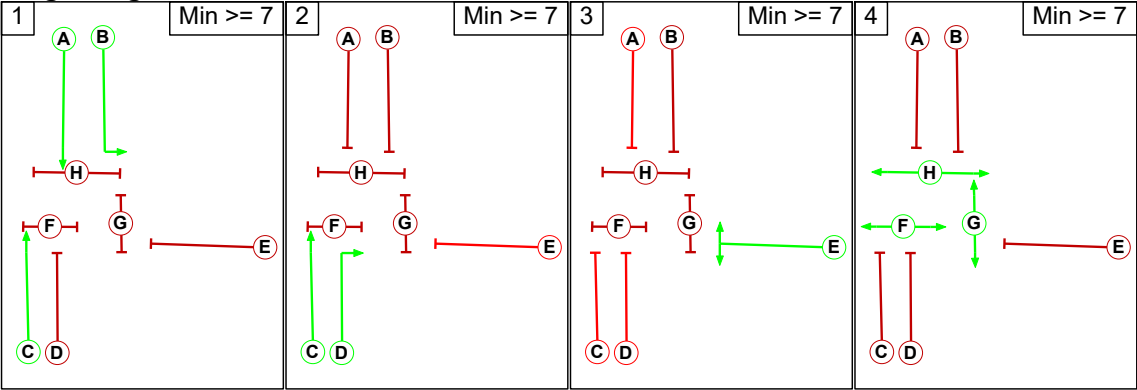
C1
Phase Diagram



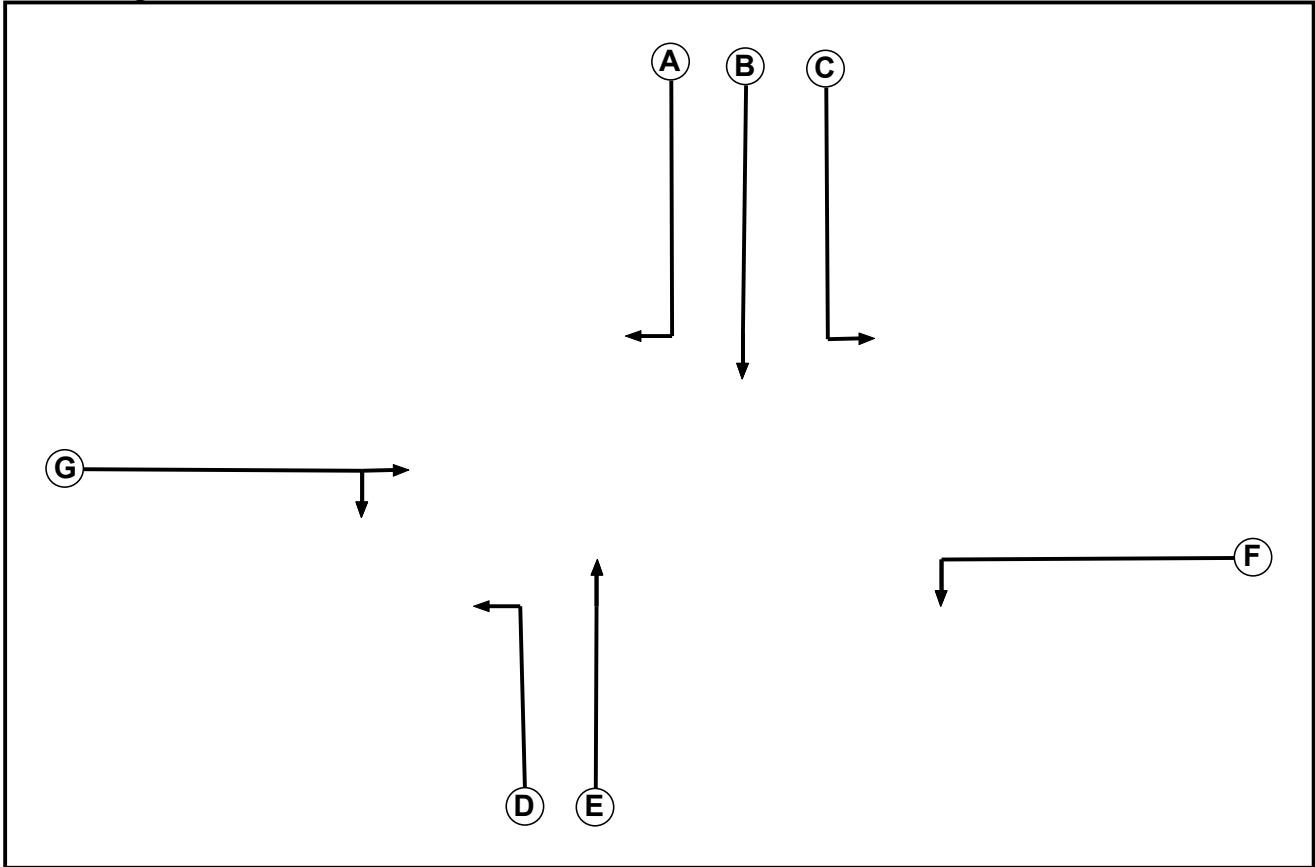
Phases in Stage

Stage No.	Phases in Stage
1	A B C
2	C D
3	E
4	F G H

Stage Diagram



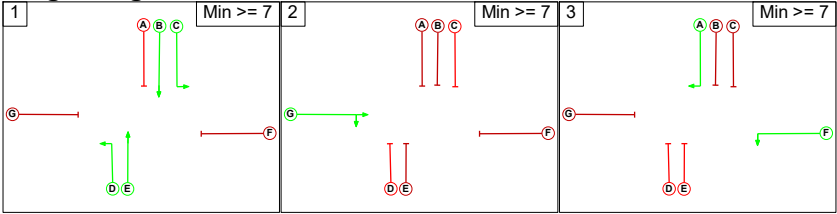
C2
Phase Diagram



Phases in Stage

Stage No.	Phases in Stage
1	B C D E
2	G
3	A F

Stage Diagram



Scenario 1: 'AM Peak Base 2023' (FG1: 'AM Peak Base 2023', Plan 1: 'Network Control Plan 1')												
SItem	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	62.9%	19	101	2	21.4	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	53.6%	0	68	2	5.4	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	448	1965:1657	1062	42.2%	-	-	-	2.0	16.4	4.3
2/1		U	208	1940	1940	10.7%	-	-	-	0.1	1.0	0.1
3/1	Ahead Ahead2	U	186	1940	1940	9.6%	-	-	-	0.1	1.0	0.1
3/2	Ahead Right	U	143	1881	1881	7.6%	-	-	-	0.0	1.0	0.0
4/1+4/2	Kinsale Rd South Ahead Right	U+O	722	1950:1599	1346	53.6%	0	68	2	2.7	13.5	8.7
5/1		U	655	2005	2005	32.7%	-	-	-	0.2	1.3	0.2
6/1	Ahead	U	251	1940	1940	12.9%	-	-	-	0.1	1.1	0.1
6/2	Ahead	U	70	1940	1940	3.6%	-	-	-	0.0	1.0	0.0
7/1	MickBarry Rd Left Right	U	14	1723	153	9.1%	-	-	-	0.2	42.6	0.4
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	62.9%	19	32	0	15.9	-	-
1/1	Left Turn Slip Left	O	51	2030	969	5.3%	19	32	0	0.0	3.3	0.2
2/1	Mickbarry Rd Right Ahead	U	135	1755	214	62.9%	-	-	-	1.8	49.3	3.5

Scenario 1: 'AM Peak Base 2023' (FG1: 'AM Peak Base 2023', Plan 1: 'Network Control Plan 1')												
2/2	Mickbarry Rd Right	U	122	1661	203	60.1%	-	-	-	1.7	49.0	3.2
3/2+3/1	S City Link North Ahead Left	U	768	1955:1753	1295	59.3%	-	-	-	2.7	12.5	11.3
3/3	S City Link North Ahead	U	747	1975	1273	58.7%	-	-	-	2.6	12.6	11.3
3/4	S City Link North Right	U	12	1709	152	7.9%	-	-	-	0.2	50.7	0.3
4/1		U	21	1940	1940	1.1%	-	-	-	0.0	0.9	0.0
4/2		U	854	1940	1940	44.0%	-	-	-	0.4	1.7	8.5
4/3		U	869	1940	1940	44.8%	-	-	-	0.4	1.7	9.1
5/1		U	61	1940	1940	3.1%	-	-	-	0.0	1.0	0.0
6/1	Ahead Left	U	168	1620	1620	10.4%	-	-	-	0.1	1.2	0.1
7/2+7/1	S City Link South Left Ahead	U	886	1990:1540	1409	62.9%	-	-	-	2.6	10.4	10.0
7/3	S City Link South Ahead	U	778	1990	1349	57.7%	-	-	-	2.3	10.8	10.8
8/1		U	781	1965	1965	39.7%	-	-	-	0.3	1.5	7.5
8/2		U	778	1965	1965	39.6%	-	-	-	0.3	1.5	8.5
9/1	Tramore Valley Park Left	U	21	1809	161	13.1%	-	-	-	0.3	50.7	0.6
9/2	Tramore Valley Park Left	U	12	1809	161	7.5%	-	-	-	0.2	49.9	0.3
10/1	Ahead	U	13	1995	1995	0.7%	-	-	-	0.0	0.9	0.0
J3: P&R	-	-	-	-	-	9.1%	0	0	0	0.1	-	-
1/1	P&R Exit Right Left	U	9	1741	1741	0.5%	-	-	-	0.0	1.0	0.0
2/1	P&R Access	U	176	1940	1940	9.1%	-	-	-	0.0	1.0	0.0
C1 C2 PRC for Signalled Lanes (%): 67.8 												

Scenario 2: 'AM Peak 2025 DN' (FG2: 'AM Peak 2025 DN', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	65.2%	20	105	2	22.8	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	55.6%	0	71	2	5.8	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	465	1965:1657	1061	43.8%	-	-	-	2.1	16.6	4.4
2/1		U	220	1940	1940	11.3%	-	-	-	0.1	1.0	0.1
3/1	Ahead Ahead2	U	200	1940	1940	10.3%	-	-	-	0.1	1.0	0.1
3/2	Ahead Right	U	142	1880	1880	7.6%	-	-	-	0.0	1.0	0.0
4/1+4/2	Kinsale Rd South Ahead Right	U+O	748	1950:1599	1346	55.6%	0	71	2	2.9	13.7	9.1
5/1		U	679	2005	2005	33.9%	-	-	-	0.3	1.4	0.3
6/1	Ahead	U	261	1940	1940	13.5%	-	-	-	0.1	1.1	0.1
6/2	Ahead	U	73	1940	1940	3.8%	-	-	-	0.0	1.0	0.0
7/1	MickBarry Rd Left Right	U	20	1722	153	13.1%	-	-	-	0.2	44.1	0.5
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	65.2%	20	34	0	17.0	-	-
1/1	Left Turn Slip Left	O	54	2030	948	5.7%	20	34	0	0.1	3.5	0.2

Scenario 2: 'AM Peak 2025 DN' (FG2: 'AM Peak 2025 DN', Plan 1: 'Network Control Plan 1')												
Network Results												
2/1	Mickbarry Rd Right Ahead	U	140	1756	215	65.2%	-	-	-	2.0	50.8	3.6
2/2	Mickbarry Rd Right	U	127	1661	203	62.6%	-	-	-	1.8	50.5	3.3
3/2+3/1	S City Link North Ahead Left	U	796	1955:1753	1296	61.4%	-	-	-	2.9	12.9	12.0
3/3	S City Link North Ahead	U	774	1975	1273	60.8%	-	-	-	2.8	13.0	12.0
3/4	S City Link North Right	U	12	1709	152	7.9%	-	-	-	0.2	50.7	0.3
4/1		U	21	1940	1940	1.1%	-	-	-	0.0	0.9	0.0
4/2		U	885	1940	1940	45.6%	-	-	-	0.4	1.7	9.1
4/3		U	901	1940	1940	46.4%	-	-	-	0.4	1.8	9.7
5/1		U	64	1940	1940	3.3%	-	-	-	0.0	1.0	0.0
6/1	Ahead Left	U	174	1629	1629	10.7%	-	-	-	0.1	1.2	0.1
7/2+7/1	S City Link South Left Ahead	U	917	1990:1540	1410	65.1%	-	-	-	2.7	10.8	10.6
7/3	S City Link South Ahead	U	806	1990	1349	59.8%	-	-	-	2.5	11.2	11.5
8/1		U	809	1965	1965	41.2%	-	-	-	0.4	1.6	8.0
8/2		U	806	1965	1965	41.0%	-	-	-	0.4	1.6	9.1
9/1	Tramore Valley Park Left	U	21	1809	161	13.1%	-	-	-	0.3	50.7	0.6
9/2	Tramore Valley Park Left	U	13	1809	161	8.1%	-	-	-	0.2	50.0	0.3
10/1	Ahead	U	19	1995	1995	1.0%	-	-	-	0.0	0.9	0.0
J3: P&R	-	-	-	-	-	9.1%	0	0	0	0.1	-	-
1/1	P&R Exit Right Left	U	9	1741	1741	0.5%	-	-	-	0.0	1.0	0.0
2/1	P&R Access	U	176	1940	1940	9.1%	-	-	-	0.0	1.0	0.0
C1		PRC for Signalled Lanes (%):		62.0	Total Delay for Signalled Lanes (pcuHr):		5.24	Cycle Time (s):		90		
C2		PRC for Signalled Lanes (%):		38.0	Total Delay for Signalled Lanes (pcuHr):		15.28	Cycle Time (s):		90		
		PRC Over All Lanes (%):		38.0	Total Delay Over All Lanes(pcuHr):		22.81					

Scenario 3: 'AM Peak 2025 DS' (FG3: 'AM Peak 2025 DS', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	66.3%	20	121	2	24.4	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	57.3%	0	87	2	6.7	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	483	1965:1657	1048	46.1%	-	-	-	2.3	16.9	4.8
2/1		U	238	1940	1940	12.3%	-	-	-	0.1	1.1	0.6
3/1	Ahead Ahead2	U	309	1940	1940	15.9%	-	-	-	0.1	1.1	0.1
3/2	Ahead Right	U	73	1679	1679	4.3%	-	-	-	0.0	1.1	0.0
4/1+4/2	Kinsale Rd South Ahead Right	U+O	766	1950:1599	1338	57.3%	0	87	2	3.1	14.5	9.1
5/1		U	697	2005	2005	34.8%	-	-	-	0.3	1.4	0.3
6/1	Ahead	U	277	1940	1940	14.3%	-	-	-	0.1	1.1	0.1
6/2	Ahead	U	89	1940	1940	4.6%	-	-	-	0.0	1.0	0.0
7/1	MickBarry Rd Left Right	U	52	1734	154	33.7%	-	-	-	0.8	53.1	1.5
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	66.3%	20	34	0	17.6	-	-
1/1	Left Turn Slip Left	O	54	2030	960	5.6%	20	34	0	0.1	3.5	0.2

Scenario 3: 'AM Peak 2025 DS' (FG3: 'AM Peak 2025 DS', Plan 1: 'Network Control Plan 1')
Network Results

[illegible]

Scenario 4: 'AM Peak 2030 DN' (FG4: 'AM Peak 2030 DN', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	70.8%	22	116	2	27.0	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	60.7%	0	78	2	6.7	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	507	1965:1657	1060	47.8%	-	-	-	2.4	17.0	5.0
2/1		U	252	1940	1940	13.0%	-	-	-	0.1	1.1	0.6
3/1	Ahead Ahead2	U	208	1940	1940	10.7%	-	-	-	0.1	1.0	0.1
3/2	Ahead Right	U	165	1888	1888	8.7%	-	-	-	0.0	1.0	0.0
4/1+4/2	Kinsale Rd South Ahead Right	U+O	817	1950:1599	1346	60.7%	0	78	2	3.3	14.5	10.6
5/1		U	742	2005	2005	37.0%	-	-	-	0.3	1.4	0.3
6/1	Ahead	U	285	1940	1940	14.7%	-	-	-	0.1	1.1	0.1
6/2	Ahead	U	80	1940	1940	4.1%	-	-	-	0.0	1.0	0.0
7/1	MickBarry Rd Left Right	U	35	1719	153	22.9%	-	-	-	0.5	46.4	1.0
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	70.8%	22	37	0	20.2	-	-
1/1	Left Turn Slip Left	O	59	2030	899	6.6%	22	37	0	0.1	4.0	0.2

Scenario 4: 'AM Peak 2030 DN' (FG4: 'AM Peak 2030 DN', Plan 1: 'Network Control Plan 1')
Network Results

[illegible]

Scenario 5: 'AM Peak 2030 DS' (FG5: 'AM Peak 2030 DS', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	71.9%	21	132	2	28.7	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	62.4%	0	94	2	7.7	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	525	1965:1657	1048	50.1%	-	-	-	2.5	17.4	5.3
2/1		U	270	1940	1940	13.9%	-	-	-	0.1	1.1	0.6
3/1	Ahead Ahead2	U	228	1940	1940	11.8%	-	-	-	0.1	1.1	0.1
3/2	Ahead Right	U	185	1828	1828	10.1%	-	-	-	0.1	1.1	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	835	1950:1599	1339	62.4%	0	94	2	3.5	15.3	10.7
5/1		U	760	2005	2005	37.9%	-	-	-	0.3	1.4	0.3
6/1	Ahead	U	301	1940	1940	15.5%	-	-	-	0.1	1.1	0.1
6/2	Ahead	U	96	1940	1940	4.9%	-	-	-	0.0	1.0	0.0
7/1	MickBarry Rd Left Right	U	67	1729	154	43.6%	-	-	-	1.0	55.5	2.0
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	71.9%	21	38	0	20.9	-	-
1/1	Left Turn Slip Left	O	59	2030	914	6.5%	21	38	0	0.1	4.0	0.2

Scenario 5: 'AM Peak 2030 DS' (FG5: 'AM Peak 2030 DS', Plan 1: 'Network Control Plan 1')
Network Results

[illegible]

Scenario 6: 'AM Peak 2040 DN' (FG6: 'AM Peak 2040 DN', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	78.1%	22	128	2	33.3	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	66.6%	0	86	2	8.0	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	557	1965:1657	1060	52.5%	-	-	-	2.7	17.6	5.7
2/1		U	290	1940	1940	14.9%	-	-	-	0.1	1.1	1.2
3/1	Ahead Ahead2	U	230	1940	1940	11.9%	-	-	-	0.1	1.1	0.1
3/2	Ahead Right	U	179	1892	1892	9.5%	-	-	-	0.1	1.1	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	897	1950:1599	1347	66.6%	0	86	2	3.9	15.6	12.5
5/1		U	817	2005	2005	40.7%	-	-	-	0.3	1.5	0.3
6/1	Ahead	U	313	1940	1940	16.1%	-	-	-	0.1	1.1	0.1
6/2	Ahead	U	88	1940	1940	4.5%	-	-	-	0.0	1.0	0.0
7/1	MickBarry Rd Left Right	U	54	1719	153	35.3%	-	-	-	0.7	49.4	1.5
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	78.1%	22	42	0	25.2	-	-
1/1	Left Turn Slip Left	O	64	2030	856	7.5%	22	42	0	0.1	4.7	0.4

Scenario 6: 'AM Peak 2040 DN' (FG6: 'AM Peak 2040 DN', Plan 1: 'Network Control Plan 1')
Network Results

[illegible]

Scenario 7: 'AM Peak 2040 DS' (FG7: 'AM Peak 2040 DS', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	78.4%	23	144	2	35.0	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	68.3%	0	102	2	9.2	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	576	1965:1657	1049	54.9%	-	-	-	2.9	18.0	6.0
2/1		U	308	1940	1940	15.9%	-	-	-	0.1	1.1	1.2
3/1	Ahead Ahead2	U	293	1940	1940	15.1%	-	-	-	0.1	1.1	0.1
3/2	Ahead Right	U	157	1809	1809	8.7%	-	-	-	0.0	1.1	0.0
4/1+4/2	Kinsale Rd South Ahead Right	U+O	915	1950:1599	1340	68.3%	0	102	2	4.2	16.3	12.6
5/1		U	835	2005	2005	41.6%	-	-	-	0.4	1.5	0.4
6/1	Ahead	U	330	1940	1940	17.0%	-	-	-	0.1	1.1	0.1
6/2	Ahead	U	104	1940	1940	5.4%	-	-	-	0.0	1.0	0.0
7/1	MickBarry Rd Left Right	U	86	1727	154	56.0%	-	-	-	1.5	61.0	2.7
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	78.4%	23	42	0	25.8	-	-
1/1	Left Turn Slip Left	O	65	2030	857	7.6%	23	42	0	0.1	4.7	0.3

Scenario 7: 'AM Peak 2040 DS' (FG7: 'AM Peak 2040 DS', Plan 1: 'Network Control Plan 1')
Network Results

[illegible]

Scenario 8: 'PM Peak Base 2023' (FG8: 'PM Peak Base 2023', Plan 1: 'Network Control Plan 1')

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	89.1%	39	264	4	46.0	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	82.7%	0	188	4	12.5	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	761	1965:1657	920	82.7%	-	-	-	6.5	30.9	13.0
2/1		U	342	1940	1940	17.6%	-	-	-	0.1	1.1	2.8
3/1	Ahead Ahead2	U	343	1940	1940	17.7%	-	-	-	0.1	1.1	0.1
3/2	Ahead Right	U	342	1938	1938	17.6%	-	-	-	0.1	1.1	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	790	1950:1599	1058	74.6%	0	188	4	4.6	21.0	8.6
5/1		U	622	2005	2005	31.0%	-	-	-	0.2	1.3	0.2
6/1	Ahead	U	444	1940	1940	22.9%	-	-	-	0.1	1.2	0.1
6/2	Ahead	U	192	1940	1940	9.9%	-	-	-	0.1	1.0	0.1
7/1	MickBarry Rd Left Right	U	49	1740	155	31.7%	-	-	-	0.7	47.9	1.4
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	89.1%	39	76	0	33.5	-	-
1/1	Left Turn Slip Left	O	115	2030	1193	9.6%	39	76	0	0.1	1.9	0.3

Scenario 8: 'PM Peak Base 2023' (FG8: 'PM Peak Base 2023', Plan 1: 'Network Control Plan 1')												
Network Results												
2/1	Mickbarry Rd Right Ahead	U	287	1693	339	84.8%	-	-	-	4.5	56.6	9.3
2/2	Mickbarry Rd Right	U	281	1661	332	84.6%	-	-	-	4.4	56.9	9.1
3/2+3/1	S City Link North Ahead Left	U	990	1955:1753	1111	89.1%	-	-	-	8.5	31.0	25.2
3/3	S City Link North Ahead	U	997	1975	1119	89.1%	-	-	-	8.6	30.9	25.4
3/4	S City Link North Right	U	14	1709	152	9.2%	-	-	-	0.2	50.9	0.4
4/1		U	33	1940	1940	1.7%	-	-	-	0.0	0.9	0.0
4/2		U	1283	1940	1940	66.1%	-	-	-	1.0	2.8	19.9
4/3		U	1278	1940	1940	65.9%	-	-	-	1.0	2.9	21.0
5/1		U	11	1940	1940	0.6%	-	-	-	0.0	0.9	0.0
6/1	Ahead Left	U	35	1818	1818	1.9%	-	-	-	0.0	1.0	0.0
7/2+7/1	S City Link South Left Ahead	U	560	1990:1540	1196	46.8%	-	-	-	2.0	12.6	7.8
7/3	S City Link South Ahead	U	555	1990	1194	46.5%	-	-	-	2.0	12.8	8.0
8/1		U	654	1965	1965	33.3%	-	-	-	0.3	1.4	5.2
8/2		U	555	1965	1965	28.2%	-	-	-	0.2	1.3	5.7
9/1	Tramore Valley Park Left	U	33	1809	161	20.5%	-	-	-	0.5	52.2	0.9
9/2	Tramore Valley Park Left	U	17	1809	161	10.6%	-	-	-	0.2	50.3	0.4
10/1	Ahead	U	24	1995	1995	1.2%	-	-	-	0.0	0.9	0.0
J3: P&R	-	-	-	-	-	4.3%	0	0	0	0.0	-	-
1/1	P&R Exit Right Left	U	74	1720	1720	4.3%	-	-	-	0.0	1.1	0.0
2/1	P&R Access	U	13	1940	1940	0.7%	-	-	-	0.0	0.9	0.0
C1			PRC for Signalled Lanes (%):		8.8	Total Delay for Signalled Lanes (pcuHr):		11.78	Cycle Time (s):		90	
C2			PRC for Signalled Lanes (%):		1.0	Total Delay for Signalled Lanes (pcuHr):		30.89	Cycle Time (s):		90	
			PRC Over All Lanes (%):		1.0	Total Delay Over All Lanes(pcuHr):		46.02				

Scenario 9: 'PM Peak 2025 DN' (FG9: 'PM Peak 2025 DN', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	92.3%	40	274	4	52.8	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	85.7%	0	196	4	13.9	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	788	1965:1657	920	85.7%	-	-	-	7.3	33.4	14.5
2/1		U	354	1940	1940	18.2%	-	-	-	0.1	1.1	2.8
3/1	Ahead Ahead2	U	363	1940	1940	18.7%	-	-	-	0.1	1.1	0.1
3/2	Ahead Right	U	346	1938	1938	17.9%	-	-	-	0.1	1.1	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	819	1950:1599	1044	78.4%	0	196	4	5.1	22.4	9.2
5/1		U	644	2005	2005	32.1%	-	-	-	0.2	1.3	0.2
6/1	Ahead	U	460	1940	1940	23.7%	-	-	-	0.2	1.2	0.2
6/2	Ahead	U	200	1940	1940	10.3%	-	-	-	0.1	1.0	0.1
7/1	MickBarry Rd Left Right	U	51	1740	155	33.0%	-	-	-	0.7	47.6	1.5
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	92.3%	40	79	0	38.9	-	-
1/1	Left Turn Slip Left	O	119	2030	1181	10.1%	40	79	0	0.1	2.0	0.3

Scenario 9: 'PM Peak 2025 DN' (FG9: 'PM Peak 2025 DN', Plan 1: 'Network Control Plan 1')												
Network Results												
2/1	Mickbarry Rd Right Ahead	U	298	1694	339	88.0%	-	-	-	5.2	63.4	10.2
2/2	Mickbarry Rd Right	U	290	1661	332	87.3%	-	-	-	5.1	63.2	9.8
3/2+3/1	S City Link North Ahead Left	U	1025	1955:1753	1111	92.3%	-	-	-	10.3	36.3	28.3
3/3	S City Link North Ahead	U	1032	1975	1119	92.2%	-	-	-	10.4	36.1	28.5
3/4	S City Link North Right	U	16	1709	152	10.5%	-	-	-	0.2	51.0	0.4
4/1		U	34	1940	1940	1.8%	-	-	-	0.0	0.9	0.0
4/2		U	1328	1940	1940	68.5%	-	-	-	1.1	3.0	21.7
4/3		U	1322	1940	1940	68.1%	-	-	-	1.1	3.1	22.8
5/1		U	12	1940	1940	0.6%	-	-	-	0.0	0.9	0.0
6/1	Ahead Left	U	37	1824	1824	2.0%	-	-	-	0.0	1.0	0.0
7/2+7/1	S City Link South Left Ahead	U	579	1990:1540	1196	48.4%	-	-	-	2.1	12.8	8.2
7/3	S City Link South Ahead	U	574	1990	1194	48.1%	-	-	-	2.1	13.0	8.4
8/1		U	677	1965	1965	34.5%	-	-	-	0.3	1.4	5.8
8/2		U	574	1965	1965	29.2%	-	-	-	0.2	1.3	5.7
9/1	Tramore Valley Park Left	U	34	1809	161	21.1%	-	-	-	0.5	52.3	0.9
9/2	Tramore Valley Park Left	U	17	1809	161	10.6%	-	-	-	0.2	50.3	0.4
10/1	Ahead	U	26	1995	1995	1.3%	-	-	-	0.0	0.9	0.0
J3: P&R	-	-	-	-	-	4.3%	0	0	0	0.0	-	-
1/1	P&R Exit Right Left	U	74	1720	1720	4.3%	-	-	-	0.0	1.1	0.0
2/1	P&R Access	U	13	1940	1940	0.7%	-	-	-	0.0	0.9	0.0
C1			PRC for Signalled Lanes (%):		5.1	Total Delay for Signalled Lanes (pcuHr):		13.07	Cycle Time (s):		90	
C2			PRC for Signalled Lanes (%):		-2.5	Total Delay for Signalled Lanes (pcuHr):		36.12	Cycle Time (s):		90	
			PRC Over All Lanes (%):		-2.5	Total Delay Over All Lanes(pcuHr):		52.83				

Scenario 10: 'PM Peak 2025 DS' (FG10: ' PM Peak 2025 DS', Plan 1: 'Network Control Plan 1')

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	92.3%	47	283	5	56.6	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	90.2%	0	211	5	16.7	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	806	1965:1657	894	90.2%	-	-	-	9.0	40.4	17.1
2/1		U	372	1940	1940	19.2%	-	-	-	0.1	1.2	2.8
3/1	Ahead Ahead2	U	394	1940	1940	20.3%	-	-	-	0.1	1.2	0.1
3/2	Ahead Right	U	355	1901	1901	18.7%	-	-	-	0.1	1.2	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	837	1950:1599	1033	81.0%	0	211	5	5.5	23.8	9.7
5/1		U	662	2005	2005	33.0%	-	-	-	0.2	1.3	0.2
6/1	Ahead	U	476	1940	1940	24.5%	-	-	-	0.2	1.2	0.2
6/2	Ahead	U	216	1940	1940	11.1%	-	-	-	0.1	1.0	0.1
7/1	MickBarry Rd Left Right	U	83	1741	155	53.6%	-	-	-	1.3	58.4	2.6
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	92.3%	47	72	0	39.8	-	-
1/1	Left Turn Slip Left	O	119	2030	1182	10.1%	47	72	0	0.1	2.5	0.6

Scenario 10: 'PM Peak 2025 DS' (FG10: ' PM Peak 2025 DS', Plan 1: 'Network Control Plan 1')
Network Results

[illegible]

Scenario 11: 'PM Peak 2030 DN' (FG11: 'PM Peak 2030 DN', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	100.6%	57	268	22	96.4	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	93.8%	0	195	22	21.2	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	858	1965:1657	941	91.2%	-	-	-	9.6	40.2	18.6
2/1		U	386	1940	1940	19.9%	-	-	-	0.1	1.2	2.8
3/1	Ahead Ahead2	U	389	1940	1940	20.1%	-	-	-	0.1	1.2	0.1
3/2	Ahead Right	U	377	1938	1938	19.5%	-	-	-	0.1	1.2	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	893	1950:1599	952	93.8%	0	195	22	10.0	40.3	14.7
5/1		U	703	2005	2005	35.1%	-	-	-	0.3	1.4	0.3
6/1	Ahead	U	500	1940	1940	25.8%	-	-	-	0.2	1.2	0.2
6/2	Ahead	U	217	1940	1940	11.2%	-	-	-	0.1	1.0	0.1
7/1	MickBarry Rd Left Right	U	55	1741	155	35.5%	-	-	-	0.7	46.5	1.5
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	100.6%	57	72	0	75.2	-	-
1/1	Left Turn Slip Left	O	129	2030	1139	11.3%	57	72	0	0.1	3.1	0.9

Scenario 11: 'PM Peak 2030 DN' (FG11: 'PM Peak 2030 DN', Plan 1: 'Network Control Plan 1')
Network Results

2/1	Mickbarry Rd Right Ahead	U	322	1693	339	95.1%	-	-	-	8.1	90.8	13.6
2/2	Mickbarry Rd Right	U	313	1661	332	94.2%	-	-	-	7.6	87.2	12.9
3/2+3/1	S City Link North Ahead Left	U	1118	1955:1753	1111	100.6%	-	-	-	25.0	80.5	46.7
3/3	S City Link North Ahead	U	1126	1975	1119	100.6%	-	-	-	25.0	79.9	46.9
3/4	S City Link North Right	U	18	1709	152	11.8%	-	-	-	0.3	51.2	0.5
4/1		U	38	1940	1940	2.0%	-	-	-	0.0	0.9	0.0
4/2		U	1446	1940	1940	74.2%	-	-	-	1.5	3.7	26.4
4/3		U	1439	1940	1940	73.8%	-	-	-	1.5	3.8	27.4
5/1		U	12	1940	1940	0.6%	-	-	-	0.0	0.9	0.0
6/1	Ahead Left	U	41	1835	1835	2.2%	-	-	-	0.0	1.0	0.0
7/2+7/1	S City Link South Left Ahead	U	632	1990:1540	1196	52.8%	-	-	-	2.4	13.5	9.2
7/3	S City Link South Ahead	U	627	1990	1194	52.5%	-	-	-	2.4	13.7	9.6
8/1		U	738	1965	1965	37.6%	-	-	-	0.3	1.5	6.9
8/2		U	627	1965	1965	31.9%	-	-	-	0.2	1.4	6.9
9/1	Tramore Valley Park Left	U	38	1809	161	23.6%	-	-	-	0.6	52.8	1.0
9/2	Tramore Valley Park Left	U	18	1809	161	11.2%	-	-	-	0.3	50.4	0.5
10/1	Ahead	U	30	1995	1995	1.5%	-	-	-	0.0	0.9	0.0
J3: P&R	-	-	-	-	-	4.3%	0	0	0	0.0	-	-
1/1	P&R Exit Right Left	U	74	1720	1720	4.3%	-	-	-	0.0	1.1	0.0
2/1	P&R Access	U	13	1940	1940	0.7%	-	-	-	0.0	0.9	0.0
C1 PRC for Signalled Lanes (%): -4.2 Total Delay for Signalled Lanes (pcuHr): 20.28 Cycle Time (s): 90 C2 PRC for Signalled Lanes (%): -11.8 Total Delay for Signalled Lanes (pcuHr): 71.53 Cycle Time (s): 90 PRC Over All Lanes (%): -11.8 Total Delay Over All Lanes(pcuHr): 96.39												

Scenario 12: 'PM Peak 2030 DS' (FG12: 'PM Peak 2030 DS', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	100.9%	62	262	36	111.4	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	100.9%	0	195	36	34.9	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	876	1965:1657	935	93.7%	-	-	-	11.3	46.5	21.4
2/1		U	404	1940	1940	20.8%	-	-	-	0.1	1.2	2.8
3/1	Ahead Ahead2	U	421	1940	1940	21.6%	-	-	-	0.1	1.2	0.1
3/2	Ahead Right	U	385	1904	1904	20.2%	-	-	-	0.1	1.2	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	911	1950:1599	903	100.9%	0	195	36	21.2	83.8	25.7
5/1		U	721	2005	2005	36.0%	-	-	-	0.3	1.4	0.3
6/1	Ahead	U	516	1940	1940	26.6%	-	-	-	0.2	1.3	0.2
6/2	Ahead	U	233	1940	1940	11.9%	-	-	-	0.1	1.1	0.1
7/1	MickBarry Rd Left Right	U	87	1741	155	56.2%	-	-	-	1.4	58.8	2.7
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	100.6%	62	67	0	76.5	-	-
1/1	Left Turn Slip Left	O	129	2030	1140	11.3%	62	67	0	0.1	3.5	1.0

Scenario 12: 'PM Peak 2030 DS' (FG12: 'PM Peak 2030 DS', Plan 1: 'Network Control Plan 1')
Network Results

[illegible]

Scenario 13: 'PM Peak 2040 DN' (FG13: 'PM Peak 2040 DN', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	108.4%	72	262	36	214.9	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	102.3%	0	195	36	38.0	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	941	1965:1657	920	102.3%	-	-	-	28.3	108.3	41.1
2/1		U	424	1940	1940	21.4%	-	-	-	0.1	1.2	2.9
3/1	Ahead Ahead2	U	420	1940	1940	21.1%	-	-	-	0.1	1.2	0.1
3/2	Ahead Right	U	417	1938	1938	21.0%	-	-	-	0.1	1.2	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	980	1950:1599	1120	87.5%	0	195	36	8.0	29.4	13.4
5/1		U	769	2005	2005	38.4%	-	-	-	0.3	1.5	0.3
6/1	Ahead	U	549	1940	1940	27.7%	-	-	-	0.2	1.3	0.2
6/2	Ahead	U	239	1940	1940	11.9%	-	-	-	0.1	1.1	0.1
7/1	MickBarry Rd Left Right	U	60	1739	174	34.5%	-	-	-	0.7	42.3	1.5
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	108.4%	72	66	0	176.8	-	-
1/1	Left Turn Slip Left	O	142	2030	1082	12.8%	72	66	0	0.2	4.9	1.1

Scenario 13: 'PM Peak 2040 DN' (FG13: 'PM Peak 2040 DN', Plan 1: 'Network Control Plan 1')
Network Results

[illegible]

Scenario 14: 'PM Peak 2040 DS' (FG14: 'PM Peak 2040 DS', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	108.3%	79	270	36	245.2	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	104.8%	0	213	36	68.1	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	959	1965:1657	915	104.8%	-	-	-	37.9	142.3	52.0
2/1		U	442	1940	1940	21.8%	-	-	-	0.1	1.2	2.3
3/1	Ahead Ahead2	U	458	1940	1940	22.7%	-	-	-	0.1	1.2	0.1
3/2	Ahead Right	U	419	1907	1907	21.2%	-	-	-	0.1	1.2	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	998	1950:1599	973	102.5%	0	213	36	27.6	99.7	33.0
5/1		U	787	2005	2005	39.3%	-	-	-	0.3	1.5	0.3
6/1	Ahead	U	565	1940	1940	27.8%	-	-	-	0.2	1.3	0.2
6/2	Ahead	U	255	1940	1940	12.8%	-	-	-	0.1	1.1	0.1
7/1	MickBarry Rd Left Right	U	92	1740	155	59.5%	-	-	-	1.6	61.0	2.8
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	108.3%	79	57	0	177.0	-	-
1/1	Left Turn Slip Left	O	142	2030	1082	12.6%	79	57	0	0.2	5.4	1.1

Scenario 15: 'AM Peak 2025 DS+20%' (FG15: 'AM Peak 2025 DS +20%', Plan 1: 'Network Control Plan 1')
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	67.2%	19	123	2	24.3	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	57.4%	0	88	2	6.7	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	486	1965:1657	1046	46.5%	-	-	-	2.3	17.0	4.9
2/1		U	238	1940	1940	12.3%	-	-	-	0.1	1.1	0.6
3/1	Ahead Ahead2	U	312	1940	1940	16.1%	-	-	-	0.1	1.1	0.1
3/2	Ahead Right	U	74	1665	1665	4.4%	-	-	-	0.0	1.1	0.0
4/1+4/2	Kinsale Rd South Ahead Right	U+O	767	1950:1599	1337	57.4%	0	88	2	3.1	14.6	9.1
5/1		U	697	2005	2005	34.8%	-	-	-	0.3	1.4	0.3
6/1	Ahead	U	280	1940	1940	14.4%	-	-	-	0.1	1.1	0.1
6/2	Ahead	U	90	1940	1940	4.6%	-	-	-	0.0	1.0	0.0
7/1	MickBarry Rd Left Right	U	52	1734	154	33.7%	-	-	-	0.8	53.0	1.5
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	67.2%	19	35	0	17.5	-	-
1/1	Left Turn Slip Left	O	54	2030	951	5.7%	19	35	0	0.1	3.4	0.2

Scenario 15: 'AM Peak 2025 DS+20%' (FG15: 'AM Peak 2025 DS +20%', Plan 1: 'Network Control Plan 1')
Network Results

2/1	Mickbarry Rd Right Ahead	U	144	1754	214	67.2%	-	-	-	2.1	52.0	4.2
2/2	Mickbarry Rd Right	U	131	1661	203	64.5%	-	-	-	1.9	51.7	3.8
3/2+3/1	S City Link North Ahead Left	U	796	1955:1753	1296	61.4%	-	-	-	2.9	12.9	12.0
3/3	S City Link North Ahead	U	774	1975	1273	60.8%	-	-	-	2.8	13.0	12.0
3/4	S City Link North Right	U	21	1709	152	13.8%	-	-	-	0.3	51.6	0.6
4/1		U	21	1940	1940	1.1%	-	-	-	0.0	0.9	0.0
4/2		U	889	1940	1940	45.8%	-	-	-	0.4	1.7	9.1
4/3		U	905	1940	1940	46.6%	-	-	-	0.5	1.8	9.7
5/1		U	64	1940	1940	3.3%	-	-	-	0.0	1.0	0.0
6/1	Ahead Left	U	221	1622	1622	13.6%	-	-	-	0.1	1.3	0.1
7/2+7/1	S City Link South Left Ahead	U	950	1990:1540	1429	66.5%	-	-	-	2.8	10.8	10.6
7/3	S City Link South Ahead	U	811	1990	1349	60.1%	-	-	-	2.5	11.2	11.6
8/1		U	804	1965	1965	40.9%	-	-	-	0.4	1.6	7.5
8/2		U	811	1965	1965	41.3%	-	-	-	0.4	1.6	9.2
9/1	Tramore Valley Park Left	U	21	1809	161	13.1%	-	-	-	0.3	50.7	0.6
9/2	Tramore Valley Park Left	U	13	1809	161	8.1%	-	-	-	0.2	50.0	0.3
10/1	Ahead	U	19	1995	1995	1.0%	-	-	-	0.0	0.9	0.0
J3: P&R	-	-	-	-	-	13.4%	0	0	0	0.1	-	-
1/1	P&R Exit Right Left	U	49	1689	1689	2.9%	-	-	-	0.0	1.1	0.0
2/1	P&R Access	U	259	1940	1940	13.4%	-	-	-	0.1	1.1	0.1
C1 C2 PRC for Signalled Lanes (%): 56.8 Total Delay for Signalled Lanes (pcuHr): 6.16 Cycle Time (s): 90 PRC for Signalled Lanes (%): 34.0 Total Delay for Signalled Lanes (pcuHr): 15.75 Cycle Time (s): 90 PRC Over All Lanes (%): 34.0 Total Delay Over All Lanes(pcuHr): 24.31												

Scenario 16: 'PM Peak 2025 DS+20%' (FG16: 'PM Peak 2025 DS +20%', Plan 1: 'Network Control Plan 1')

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-	-	-	92.3%	47	283	5	57.7	-	-
J1: Kinsale Road/ Mickbarry Road	-	-	-	-	-	90.2%	0	211	5	16.9	-	-
1/2+1/1	Kinsale Rd North Ahead Left	U	806	1965:1657	894	90.2%	-	-	-	9.0	40.4	17.1
2/1		U	373	1940	1940	19.2%	-	-	-	0.1	1.2	2.8
3/1	Ahead Ahead2	U	397	1940	1940	20.5%	-	-	-	0.1	1.2	0.1
3/2	Ahead Right	U	362	1902	1902	19.0%	-	-	-	0.1	1.2	0.1
4/1+4/2	Kinsale Rd South Ahead Right	U+O	837	1950:1599	1033	81.0%	0	211	5	5.5	23.8	9.7
5/1		U	666	2005	2005	33.2%	-	-	-	0.2	1.3	0.2
6/1	Ahead	U	476	1940	1940	24.5%	-	-	-	0.2	1.2	0.2
6/2	Ahead	U	216	1940	1940	11.1%	-	-	-	0.1	1.0	0.1
7/1	MickBarry Rd Left Right	U	88	1742	155	56.8%	-	-	-	1.5	60.6	2.8
Ped Link: P1	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P5	Unnamed Ped Link	-	0	-	0	0.0%	-	-	-	-	-	-
J2: S City Link/ Mickbarry Rd/Tramore Valley Park	-	-	-	-	-	92.3%	47	72	0	40.8	-	-
1/1	Left Turn Slip Left	O	119	2030	1182	10.1%	47	72	0	0.1	2.5	0.6

Scenario 16: 'PM Peak 2025 DS+20%' (FG16: 'PM Peak 2025 DS +20%', Plan 1: 'Network Control Plan 1')
Network Results

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