Clifton Scannell Emerson Associates

Planning and Engineering Report

Black Ash Park and Ride – Bus Interchange

NTA
Údarás Náisiúnta Iompair
National Transport Authority

Client: National Transport Authority

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CONSULTING ENGINEERS

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1 Introduction

The National Transport Authority (NTA) Park and Ride Development Office (PRDO) was established in February 2020. The establishment of the office was an action recommended within the 2019 Climate Action Plan by the Department of the Environment, Climate and Communications. The NTA PRDO is responsible for the delivery of key park and ride sites by the NTA in collaboration with Local Authorities and Irish Rail and transport agencies in the Greater Dublin Area and Regional Cities (including Cork) by providing full time specialist resources on these projects.

In coordination with BusConnects Cork, a park and ride strategy is being developed to outline and deliver suitable bus and rail-based park and ride facilities within and outside Cork City to facilitate public transport intervention. The strategy includes upgrading the existing Black Ash Park and Ride. Clifton Scannell Emersons Associates (CSEA) have been appointed by the NTA PRDO to prepare a Planning and Engineering Report for the upgrade of the existing Black Ash Park and Ride.

2 Background

Park and rides can intercept car trips where people are reliant on a private car at an early viable point in their journey thereby reducing the distances travelled by private cars with a corresponding reduction in carbon emissions and congestion. Appropriately located and designed park and ride facilities can enable a modal shift by providing an opportunity for people to access public transport and enhance their transport options to a wide range of destinations in a sustainable manner.

The provision of high-quality park and ride facilities will enhance the accessibility of public transport to a wider catchment of people. This will increase the usage of public transport in the future in line with a variety of national and regional transport objectives and protect the investment in existing and new public transport schemes.

The scope of this project is to provide 4 additional bus bays, appropriate pedestrian wayfinding, cycle parking, lighting and servicing within the existing Black Ash Park and Ride. The Black Ash Park and Ride is accessible through Mick Barry Road, between Kinsale Road and N27 South City Link Road. 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.

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

Phase 2 of the NTA's Project Approval Guidelines was recently completed and involved the development of the project concept through options selection, including appraisal of the alternatives and options, and selection of the Preferred Option. The Options Selection Report was completed in October 2024 by CSEA.

3 Purpose of the Scheme

3.1 Project Needs

The 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 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.

There is currently an insufficient number of bus bays at the existing Black Ash Park and Ride to cater for the planned increase in buses calling to the site as part of BusConnects Cork. It has been determined

that an additional 4 bus bays will be required to allow for an optimised operation of all bus routes to serve the additional proposed bus traffic generated from BusConnects Cork.

The provision of an upgraded bus interchange in Black Ash Park and Ride for BusConnects Cork supports the Government's various policies to encourage modal shift and promote a more sustainable mode of transport by increasing ridership for buses that serve Cork. It is a part of the strategic locations for the provision of park and ride facilities in Cork Metropolitan Area, increasing opportunities to transfer to a more sustainable mode of transportation, by reducing traffic and air pollution. The proposed upgrade of Black Ash Park will provide a modal shift from private car to public transit use.

3.2 Project 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 Cork 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).

4 Planning Context

4.1 National Policy

4.1.1.1 Project Ireland 2040 – National Planning Framework

The development of the proposed bus interchange facility at Black Ash Park and Ride complies with the following policy set down in the Project Ireland 2040 – National Planning Framework (NPF). 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:

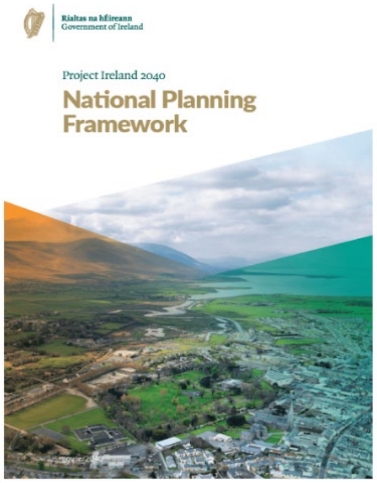

Figure 1 Project Ireland 2040 - NPF

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.

4.1.1.2 National Development Plan (2021-2030)

Transformed active travel and bus infrastructure and services in all five of Ireland's major cities is fundamental to achieving the overarching target of 500,000 additional active travel and public transport journeys by 2030. Increasing the attractiveness of the bus systems in the cities will encourage modal shift away from private car use, leading to a reduction in congestion and associated costs in the major urban areas.

4.1.2 Regional Policy

4.1.2.1 Regional Spatial and Economic Strategy (Southern Regional Assembly)

The scheme lies within Cork City and is therefore, part of the Southern Regional Assembly. 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."

The Key Transport Objectives for Cork are informed by the Cork Metropolitan Area Transport Study and will be discussed further in chapter 4.2.1.4.

Figure 2 Southern Region

4.2 Local Policy

4.2.1.1 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.

Figure 3 Southern Region

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.

4.2.1.2 BusConnects Cork

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 upgraded 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 improved services along the following bus services, as shown in Figure 5:

- 6 Bus Route – Two-way Grange Road – Douglas Road – UCC – Black Ash Loop
- 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 aim of the 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.

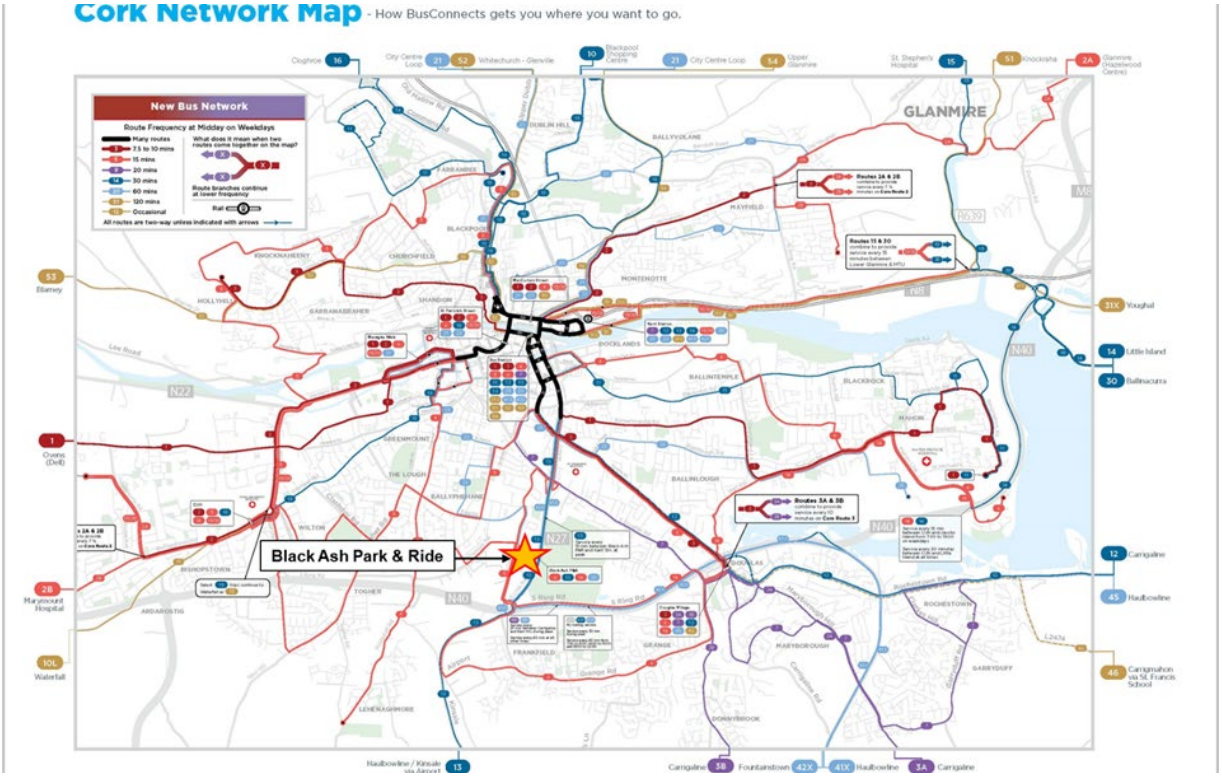

Figure 4 New Cork's Bus Network

4.2.1.3 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.

4.2.1.4 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.

5 Scheme Design Details

5.1 Location

The Black Ash Park and Ride is accessed approximately 500m north of Cork's Kinsale Road Roundabout, and 90m from the N27 South Link Road, offering convenient services to and from various trip attractors within the city. The park and ride is currently owned and operated by Cork City Council and spans an area of 3.2 hectares. The existing site includes an administration building, parking for cars, bike stands, and 2 bus bays. Figure 5 illustrates the site location in relation to the surrounding road network.

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 on to 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.

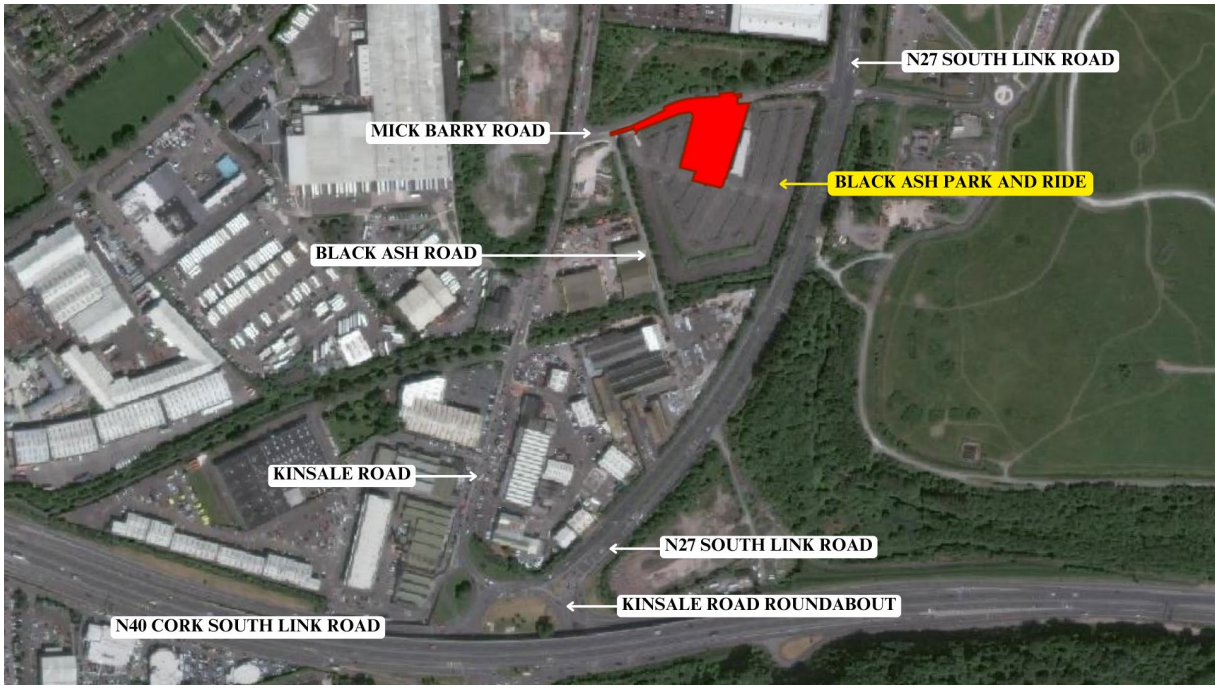

Figure 5 Site Location with Surrounding Road Network

5.1.1 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 only, details of which are summarised in Table 2:

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 1 Existing public transport services

5.1.2 Existing Pedestrian Network

The existing pedestrian network around the Black Ash Park and Ride is limited and presents connectivity challenges. 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. This disconnect restricts safe and convenient pedestrian movement to and from the park and ride.

5.1.3 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.

5.2 Constraints

5.2.1 Environmental Constraints

The Black Ash Park and Ride site presents significant environmental constraints due to its history as a former landfill.

There are both gas and leachate collection pipes running through the site, which must not be disturbed. As a result, careful consideration must be given to any new developments on the site, ensuring minimal disruption to the compacted ground while addressing environmental risks associated with the landfill's legacy.

There are also three gas monitoring stations and one ground water monitoring stations near the proposed works.

The existing road structure of the car parking area within the Black Ash Park and Ride consists of:

- 40mm wearing course
- 50mm base course and
- 150mm minimum sub-base and drainage layer
- 100mm reinforced A393 concrete (K35-20) slab
- Geotextile LLDPE layers
- Capping
- Compacted waste

The existing road structure of the roadway lanes within the Black Ash Park and Ride consists of:

- 40mm wearing course
- 50mm base course
- 90mm road base course (clause 903)
- 150mm minimum sub-base and drainage layer
- 100mm reinforced A393 concrete (K35-20) slab
- Geotextile LLDPE layers
- Capping
- Compacted waste

Above the gas drainage systems, the existing road construction detail consists of two layers of asphalt, 45mm and 55mm. Below this is 300mm of drainage layer on 100mm concrete layer reinforced with A393 mesh. Below the reinforced concrete layer, lies a geomembrane (Terram 500 or similar), a LLDPE layer and a second geomembrane (Terram 500 or similar) layer and a layer of ecomposite pozidrain. Under these layers, exist 300mm to 500mm of capping above 6m to 8m of waste material.

The depth for constructing new infrastructure is restricted as excavation could disturb the underlying landfill material, potentially leading to ground instability or environmental contamination. It would be intrusive for any excavation under the 100mm thick concrete slab.

5.2.2 Traffic Constraints

Existing site access is on to Mick Barry Road and near junctions containing arterial or national roads, 170m from arterial Kinsale Road and 90m N27 South Link Road. The existing site egress is 50m from the Kinsale Road and 210m from the South Link Road.

Both junctions can already experience high traffic volumes during peak hours.

The traffic delays in the area are predominantly experienced at the Kinsale Road Roundabout. The traffic congestion from Kinsale Road Roundabout sometimes impacts the surrounding road network, including Mick Barry Road during peak times, both via Kinsale Road and the South Link Road. Traffic delays towards Cork City are typically less severe.

5.2.3 Geometry Constraints

There are several factors that will have a direct impact on the proposed layout and cross section of the proposed bus interchange in terms of design, to name a few:

- Existing road layout and junctions
- Grading constraints, notably the limitations of reducing the level due to the underground landfill
- Available widths of the entries and exits
- Sightlines at junctions

The design will adhere and follow the relevant design standards, such as DMURS, and will also consider the needs of the public who will be the main users and who will be benefitting from the project.

5.2.4 Geotechnical Constraints

The land was compacted to create a stable foundation for the current facility. There is evidence of ongoing settlement around the existing building. This appears to be a more localised issue under the paving blocks around the existing building. It is noted, the existing building is on a piled foundation while the ground immediately adjacent to the building does not have as extensive stabilization works, which is the likely cause of the differential settlement issue.

The existing settlement issue with an increase of frequency of heavy busses will need to be considered further at detailed design stage. A site visit performed by CSEA is September 2024, concluded that no significant wheel rutting has occurred in the existing bus bay or lane since construction in 2003. But consideration to the additional busses will still be given in the proposed pavement design.

5.3 Details of the Scheme

5.3.1 Overview

The proposed Bus Interchange facility will consist of the following:

- U-shaped bus only entry/exit.
- 4 new bus bays.
- 4 bus shelters.
- New bus standing area.
- 3 pedestrian crossings.

The Proposed Layout of the Park and Ride facility is detailed in drawing: 20_008Z - CSE - GEN - XX - DR - C – 2002.

5.3.2 Vehicular Access to the Site

Roughly 3000m² of existing parking bays, road landscape areas, roadway lanes will be converted to a U-shaped bus entrance/exit only with an island for pedestrians. The proposed bus turning circle will provide a circulating lane 8.75 metres wide with an internal radius of 15m, which will allow access to the 4 new bus bays.

The car parking area will continue to be accessed through the existing entrance from Mick Barry Road to the north-east. Egress will remain in its current arrangement through the exit to the north-west. The currently unused egress lanes midway alone the northern site boundary fall within the proposed works area and will be removed as part of the works.. The existing entrance lane at the north-west access will also remain closed.

The 2 existing bus bays adjacent to the existing building will remain. The busses using these existing bays will use the same entrance and exit as the cars.

A full Traffic Impact Assessment for the proposed scheme has been completed and it concludes that the proposed scheme will have a low impact on the existing and projected traffic movements of the local road network.

5.3.3 Cycle and Pedestrian Infrastructure

The drawings presented at the second round of public consultation of BusConnects Cork along the Airport Road to City Transport Corridor illustrate a two-way cycle track at the Mick Berry Road / Kinsale Road junction. The six existing Sheffield parking stand will remain and additional cycle parking will be provided within the bus interchange works area.

It is not planned in the current scope Black Ash Park and Ride project to connect cycling provision. This is because, given the preliminary stage of the BusConnects Cork scheme, the cyclist provision at the junction could still change. (i.e two one way tracks).

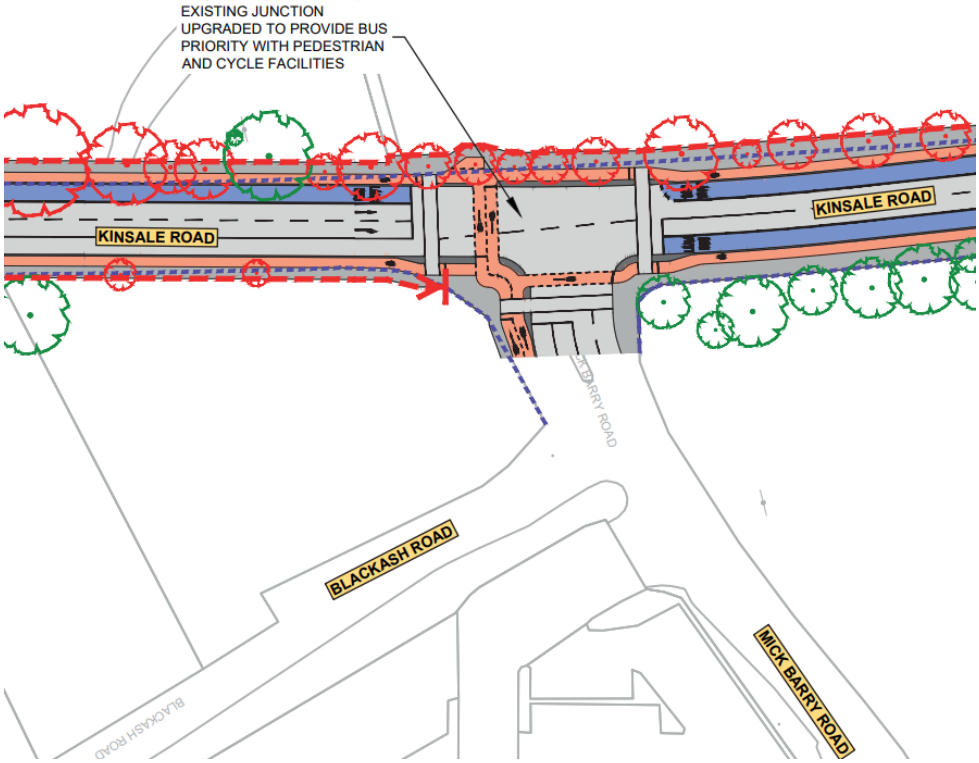

Figure 12 BusConnects Cork – Sustainable Transport Corridor - Airport Road to Cork City Centre

5.3.4 Public Lighting, Utilities and Closed-Circuit Television (CCTV)

Lighting levels within the interchange will be upgraded. Some streetlights and associated ducts will need to be relocated. The traffic control barriers at the access point being closed will need to be removed.

The existing CCTV system will also be adjusted to face the new bus interchange area and throughout the car parking area to enhance safety of the users and provide security for parked vehicles and bicycles.

5.3.5 Electric Vehicle Charging

The existing charging points for Electric Vehicles will remain.

5.3.6 Provision for Parking for the Mobility Impaired

The existing parking for mobility impaired users will remain.

5.3.7 Proposed Surface Water Drainage

There are existing beany block combined kerb and drainage systems throughout the car park positioned at the top of the car park rows. These will remain intact along the existing car parking spaces that are not being removed. Where the proposed U-shaped bus turning bay is positioned, A similar system of shallow drainage will be implemented. These will outlet to the nearest existing drainage pipe.

5.3.8 Proposed Foul Drainage

The nearby existing foul water infrastructure from the building falls outside of the lands made available site boundary and will therefore remain in existing condition. Any existing leachate and methane gas pipes within the lands made available site boundary will also remain undisturbed.

5.3.9 Potable Water

The existing potable water service to the existing building will remain.

5.3.10 Bus Services at the facility

25 busses per hour are anticipated, as per the table below:

Bus Connects Summary		
Route No.	**No. 2-way Buses (Hourly)**	**Frequency**
6	8	15 mins
14	8	15 mins
23	1	60 mins
13/13A/13B	8	15 mins
	25	

Table 3 BusConnects Frequency

5.3.11 Operation of the facility

The business model for the operation and maintenance of the Park and Ride facility is currently under development. It is anticipated that a parking fee will be charged at the facility, along with a standard bus fare consistent with the current fare structure. The day-to-day operation and maintenance of the facility will continue to be managed by Cork City Council.

6 FLOOD RISK ASSESSMENT

We have assessed the available information and inspected the site and its environment. The proposed development is not deemed to be at any significant risk of flooding. This is mainly attributable to the local topography and therefore a stage 2 assessment in not required in relation to this site. The proposed works are unlikely to raise significant flooding issues and do not obstruct existing flow paths. The surface water discharge from the site will be managed in the same manner as the existing and therefore does not adversely affect or increase the flood risk to adjacent or downstream sites.

There was an incident of nearby flooding occurred on Dec 30th, 2009, at Tramore Stream Culvert where 100m of road was flooded for a depth of 0.1m. This is located roughly 250m away from the Black Ash Park and Ride – Bus Interchange.

There have also been some flooding events noted at the Kinsale Road Roundabout further to the south of the Tramore Stream.

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