Blanchardstown Interchange Hub

Options Assessment Report

February 2018

Údarás Náisiúnta Iompair
National Transport Authority

Quality information

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Glossary of Terms

- **CBC**: Core Bus Corridor
- **UCD**: University College Dublin
- **GDA**: Greater Dublin Area
- **NTA**: National Transport Authority

Definitions

- **CBC Infrastructure**: All physical facilities required to support the CBC system – stops, CBC lanes, public lighting, etc.
- **Options Assessment:** The assessment process for potentially viable options carried out in order to identify the nature and extent of the effects, both positive and negative, on the existing and planned transport infrastructure and receiving environment. The outcome of the options assessment study is a recommendation for a preferred option for the proposed scheme.

1. Introduction

This report presents the findings of an Options Assessment study that has been undertaken to recommend on the preferred option for a bus interchange hub facility in Blanchardstown Town Centre, which is envisaged as one of the key interchange hub locations as part of the 'BusConnects' plan for the Greater Dublin Area (GDA).

'BusConnects' plan comprises aspirations to transform Dublin's bus system, so that journeys by bus will be fast, reliable, punctual, convenient, affordable, and with greater scope for interconnection between routes (see **Figure 1.1**).

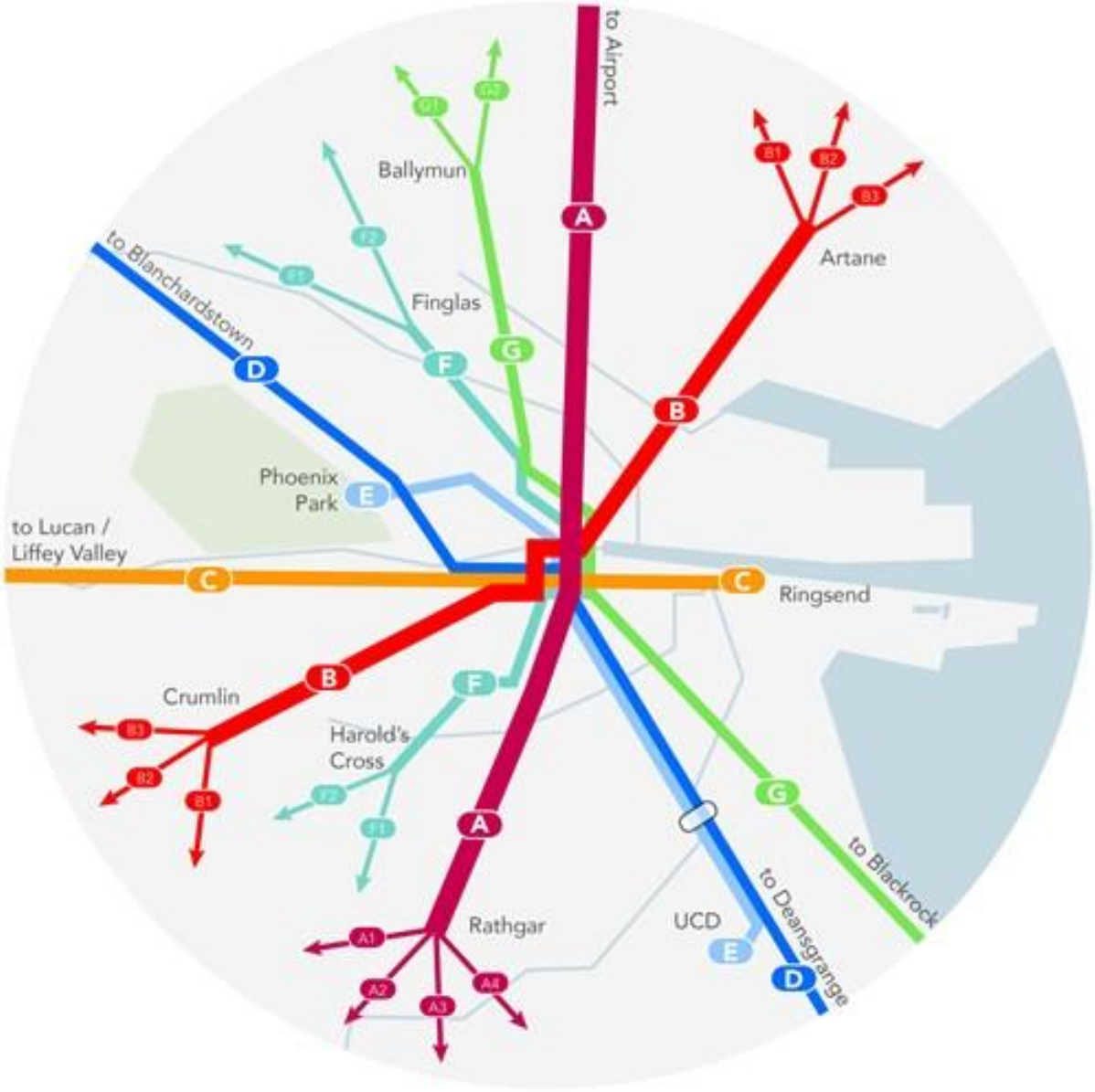

Figure 1.1: Figure 64 in the Dublin Area Bus Network Redesign Choices Report

This Options Assessment study took into account:

- data from existing bus operators that serve Blanchardstown Town Centre; and
- the proposed 'BusConnects' Next Generation Bus Corridors Transport plan.

This Options Assessment report discusses the study work undertaken identifying and assessing:

- bus interchange location options around Blanchardstown Town Centre; and
- layout options for an interchange hub facility, which would also facilitate bus turning movements.

2. Transport Context

2.1 Ireland 2040 – Our Plan

The 'National Planning Framework: Ireland 2040 – Our Plan' (Department of Housing Planning and Local Government, September 2017) sets the long-term context for Ireland's physical development and associated progress in economic, social and environmental terms and in an island. The objectives of 'National Planning Framework: Ireland 2040 – Our Plan', in relation to public transport, include:

- *"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…"*
- *"The provision of a well-functioning, integrated public transport system, enhancing competitiveness, sustaining economic progress and enabling sustainable mobility choices."*
- *"Deliver the key public transport objectives of the Transport Strategy for the Greater Dublin Area 2016-2035 by investing in projects such as New Metro North, DART Expansion Programme, BusConnects in Dublin and key bus based projects in the other cities and towns."*

2.2 Greater Dublin Area Transport Strategy 2016 – 2035

The 'Greater Dublin Area Transport Strategy 2016 – 2035' (NTA, 2015) identifies a Core Bus Network for the GDA. This core network represents the most important bus routes in the GDA, which are generally characterised by a high frequency of bus services, high passenger volumes and with significant trip attractors located along the route. The 'Greater Dublin Area Transport Strategy 2016 – 2035' includes objectives to develop the Core Bus Network to achieve, as far as practicable, continuous priority for bus movements on the sections of the Core Bus Network within the Metropolitan Area, with the goal of making the overall bus system more efficient and attractive to users including the core principle, which states: *"Development in the GDA shall be directly related to investment in integrated high quality public transport services and focused on compact urban form."* Section 2.2.1 of the 'Greater Dublin Area Transport Strategy 2016 – 2035' also states, as a Primary Policy: *"The Strategy must therefore, promote, within its legislative remit, transport options which provide for unit reductions in carbon emissions. This can most effectively be done by promoting public transport, walking and cycling, and by actively seeking to reduce car use in circumstances where alternative options are available."*

The identified core network comprises a number of radial, orbital and regional bus corridors.

2.3 BusConnects

'BusConnects' is a programme of priority investment for public transport in the 2018 budget, which plans to fundamentally transform Dublin's bus system. The objective of 'BusConnects' is to develop the radial and orbital bus corridors as identified in the 'Greater Dublin Area Transport Strategy 2016 – 2035', so that each will have continuous bus priority; i.e., a continuous bus lane in each direction. 'BusConnects' seeks the development of a more attractive and convenient bus system with greater scope for interconnection between routes, where connecting passengers don't necessarily have to travel to Dublin City Centre.

A section of the Blanchardstown to UCD corridor, which is identified as a continuous bus priority radial corridor in the 'Greater Dublin Area Transport Strategy 2016 – 2035', is proposed to be developed as the following separate CBCs;

- Blanchardstown Town Centre to the Liffey Quays (Ellis Quay), through Ashtown; and
- UCD to City Centre at St Stephens Green (Leeson Street Lower).

Interchange facilities are proposed at the UCD gate and Terminus in UCD Campus, and also at Blanchardstown Town Centre, as shown indicatively in **Figure 2.1**.

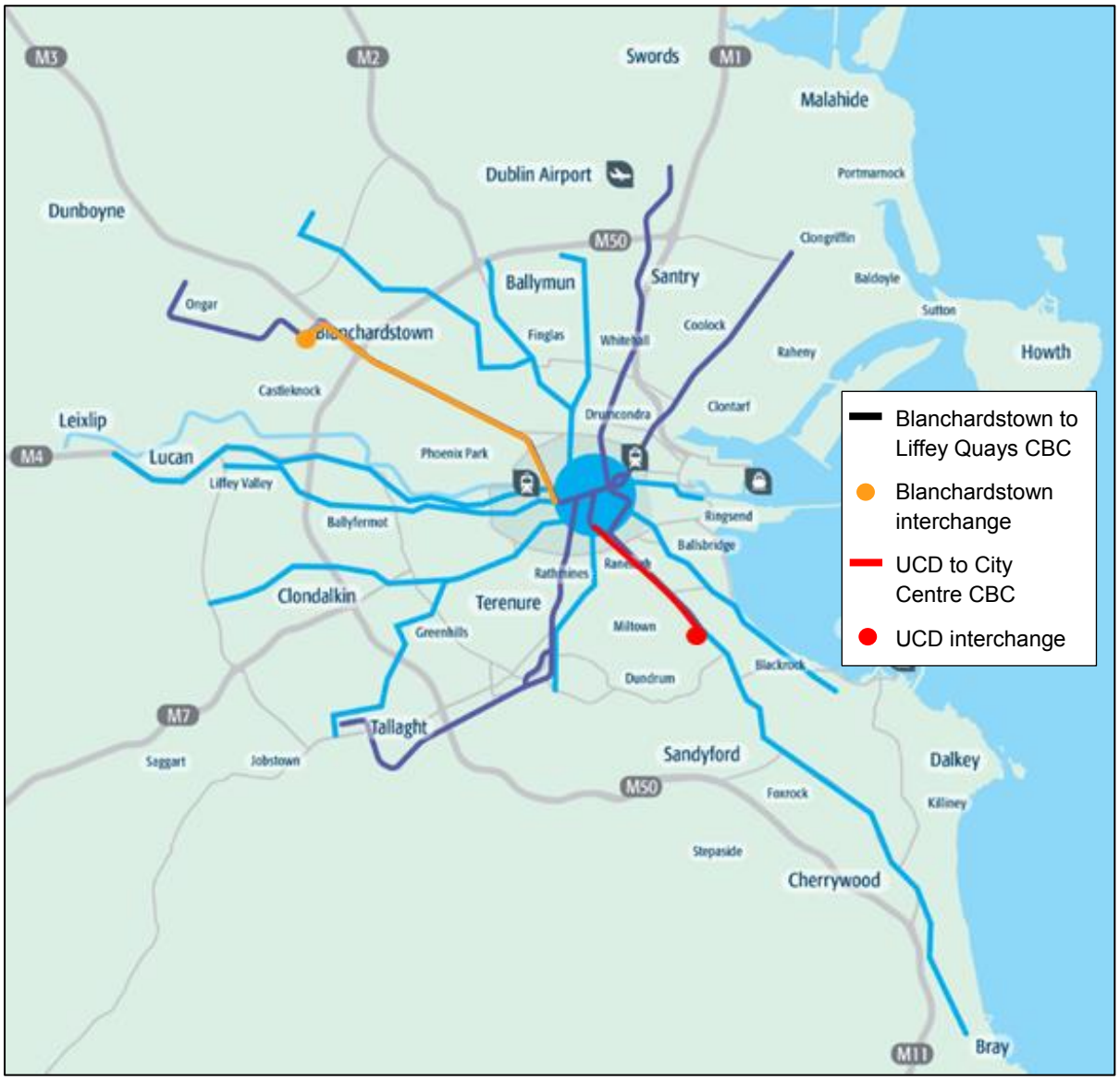

Figure 2.1: Radial Bus Corridors ('BusConnects' Next Generation Bus Corridors Fig. 1)

2.4 Greater Dublin Area Cycle Network Plan

The GDA Cycle Network Plan (NTA, 2013) sets out the strategy for the development of an integrated cycle network. It identifies that the Blanchardstown Town Centre forms part of the primary and feeder cycle network and thus forms a key part of the strategic cycle network – see **Figure 2.2**.
It is therefore important that any bus interchange or upgrade to bus infrastructure along the corridor should take cognisance of these objectives and, where practical, provide cycle infrastructure to the appropriate level and quality of service (as defined by the NTA National Cycle Manual) required for a primary and secondary cycle route.

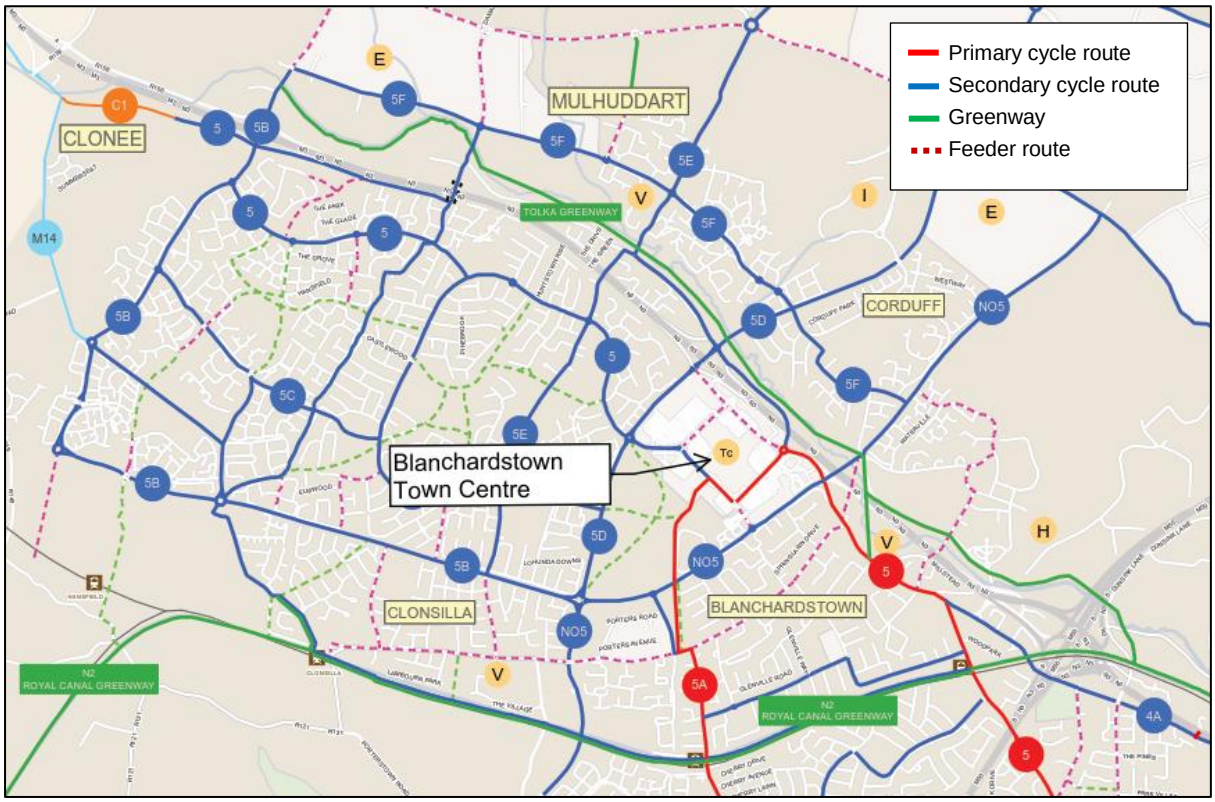

Figure 2.2 Proposed Greater Dublin Area Cycle Routes (Proposed Cycle Network Dublin North west Sheet N4)

2.5 Fingal Development Plan 2011 – 2017

The objectives pertinent to the proposed Blanchardstown interchange hub are listed as follows:

- Objective 516: Implement the Blanchardstown Town Centre Masterplan.
- Objective 526: Strengthen the pedestrian linkages between the core shopping centre and the adjacent retail park sites.
- Objective 529: Develop and implement the creation of a Civic Public Open Space at the cinema/library side of the Blanchardstown Shopping Centre.

2.6 Blanchardstown Town Centre Development Framework / Masterplan

Fingal County Council Planning Department published the Blanchardstown Town Centre Development Framework/Masterplan in April 2009. The purpose of this Development Framework/Masterplan is to *'Recommend criteria to access the delivery of an effective balance in the mix of uses in Fingal's urban streets.'* The Framework details the following objectives in relation to bus network improvement as part of the development strategy:

- Ensure that improved linkages to the centre will be promoted;
- Road space will be provided for bus priority measures, pedestrian and cyclist movements; and
- Ensure the Blanchardstown Centre is the focus for local bus services.

Economic and Administrative Advantages of Public Transport

The framework also states that "it is a key objective to improve and rationalise the bus service in the Blanchardstown Catchment and serving the Blanchardstown Town Centre." The framework also lists economic and administrative incentives to increase the use of public transport, walking and cycling, as follows:

- Reliability & Speed. The main incentive for public transport is reliability and speed.
- Reduction of congestion for public transport using the centre. Commuter bus services to the City Centre to be improved to reduce congestion around the Centre.

- Increased speed of journey to Centre City by bus.
- The provision of a local bus service. The delivery of a bus station together with a local bus network will allow better management of traffic flows.
- Better Pedestrian Access inside Master Plan Area.

Future Developments

The Blanchardstown Town Centre Development Framework/Masterplan also contains design guidance pertaining to future developments in the area including provision for:

- *"A new civic space to be created on the axis of pedestrian movement from Millennium Park through Co. Council offices to the retail core. This civic space is to be a forum of cultural and leisure activity".*

Direction has also been given as to the phasing of development as follows:

- *"In the short term, new edge development will be implemented in the undeveloped and peripheral areas of the centre."*
- *"In the short to medium term the underdeveloped areas including the car parking areas around the main centre will be developed."*
- *"In the long term the main centre will be redeveloped."*

The proposed 'centre' is highlighted in the open space development plan, shown in **Figure 2.3**.

Development Opportunity Areas

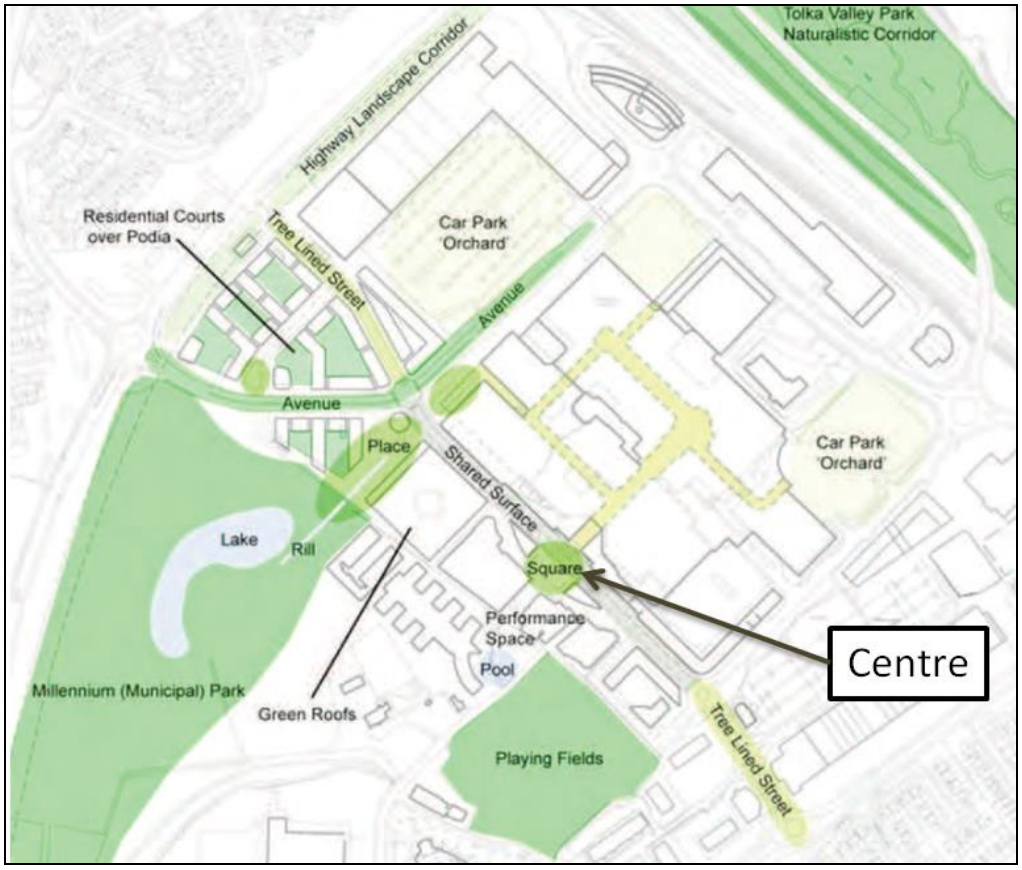

Figure 2.3 Proposed Redevelopment works to Blanchardstown Town Centre

The Blanchardstown Development Framework/Masterplan also addresses possible development opportunity areas, which would influence the future locations of a bus interchange hub facility. Of particular note is the shared space proposal at the Southern Block (around the 'centre') stretching from the "Heaven" Public House at the eastern limit, to McDonald's restaurant at the western limit, with priority to be given to non-retail development.
Proposed redevelopment works to the Town Centre include:

a) In-fill development of surface car-park east of the County Library and also west of the LeisurePlex.
b) Redevelopment of the LeisurePlex, the former Budabar and the McDonald's buildings, (in-filling of large set back areas from the roadside edge) forward of the existing building line of the County Library and Arts Centre, thus creating a street and civic square at these important Civic buildings.
c) Priority area for residential development to overlook the Town Park and the Verona FC playing fields to the south, addressing/fronting onto the street and the park.
d) Commercial development of 'smaller' office units and leisure uses with residential
e) To develop an 'outdoor' civic space capable of accommodating Performing Arts and a local market.
f) To alter the road alignment of the 'southern' service road, to create a 'street'.
g) Create a priority area for non-retail development, particularly, at the southern entrance to the 'leisure quarter' including the Multi-plex Cinema and Theatre/Arts centre.

3. Scheme Objectives and Design Criteria

3.1 Introduction

This report section discusses the Blanchardstown Town Centre bus interchange hub scheme objectives and their associated design criteria, which have been identified based on the 'BusConnects' plan, as listed and discussed in detail below:

- **Direct Bus Interchange**;
- **Improved Connectivity / Accessibility**;
- **Quality Passenger Waiting Facilities**; and
- **Efficient Operation**.

3.2 Direct Bus Interchange

Objective: A key objective of the proposed Blanchardstown Town Centre bus interchange hub is the maximisation of direct interchange between bus services.

Design Criteria: Interchange facilities design has been developed with this in mind and, in so far as possible seeks to provide for improved existing or new interchange opportunities between services.

3.3 Improved Connectivity and Accessibility

Objective: Another key objective is to improve connectivity and accessibility for both buses and users; i.e. minimise walking distances within the facility and to the attractors in Blanchardstown Town Centre and minimise potential conflict between pedestrian, cyclist and vehicle movements.

Design Criteria: The design issues that have been considered in developing layout options for the Blanchardstown Town Centre bus interchanges hub facility are:

- The existing / proposed road network; this determined the direction of bus vehicle flow within the interchange hub facility;
- The pedestrian 'desire lines' to and from the interchange hub facility, so allowance for pedestrian movements can be designed accordingly; the design of the interchange hub facility has sought to allow direct pedestrian movements to and from the waiting platforms, i.e. pedestrian crossing proposals maximise safety and minimise walking distances;
- Separation between pedestrians / cyclists and buses to improve safety and efficiency as well as helping reduce potential conflicts; e.g. designated entrances and exits for buses; and
- Quality cycle facility design to ensure safe and direct cycle access paths and provide adequate bicycle parking space.

3.4 Improved Passenger Waiting Facilities

Objective: The Blanchardstown interchange hub should be more than just a place to wait whilst transferring between bus services. Therefore, the aim is to provide safe and comfortable facilities, maximising quality, safety and security of the passenger and operating environment.

Design Criteria: The issues that have been considered in developing layout options for the Blanchardstown interchange hub facility are:

- Provision of adequate space to allow for comfortable and sheltered waiting areas, queuing, circulation, seating and any other facilities;
- Location of waiting areas as close as possible to bus boarding locations; and
- Orientation of waiting areas to be clearly visible from the surrounding road network (and adjacent buildings) and to provide clear views of buses arrivals and departures;

3.5 Efficient Operation

Objective: Provision of efficient movement of bus to and from the interchange hub is a key scheme objective.
Design Criteria: The issues that have been considered in developing layout options for the Blanchardstown interchange hub facilities are:

- Provision for multiple bus services operating;
- Provision of space to allow buses to move independently of each other between and within the bus bays;
- Provision of space to accommodate bus convoys due to unexpected adverse traffic conditions;
- Provision of space for bus layovers, if required; and
- Provision of bicycle facilities including bicycle paths leading to the interchange hub.

3.6 Design Assumptions

The 'BusConnects' plan has not been finalised at the time of this report being prepared (December 2017).
Therefore, a specific assumption has been made regarding the bus services the interchange/terminus facility is catering for; i.e.:

- maximum four high-frequency bus services utilising the facility simultaneously;
- frequency of 3-5 minutes; and
- double decker bus vehicles

4. Assessment Methodology

4.1 Introduction

This section of the report presents the methodology used for the assessment of potentially viable location options identified.
A two-stage assessment process was adopted.

4.2 Stage 1

The Stage 1 assessment was based on attaining the optimum physical location (on the north, south, east or west of Blanchardstown Town Centre, as shown in **Figure 4.1**) for a bus interchange facility, based on the following criteria:

a) Bus Network Operation and Integration (current and proposed);

b) Integration with the Blanchardstown Town Centre Development Framework/Masterplan; and

c) Location Attractiveness to Passengers.

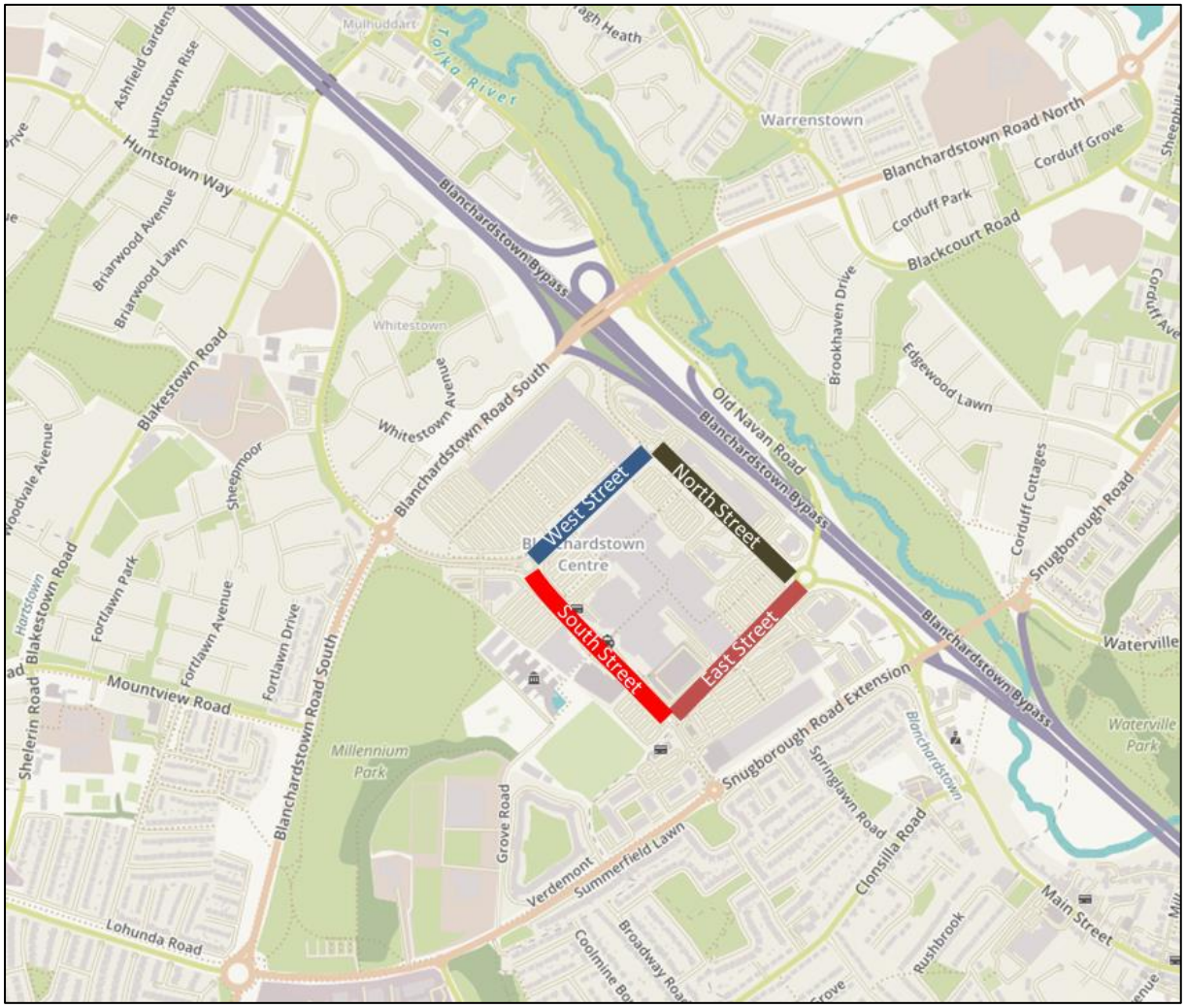

Figure 4.1 Location Options

Network Operation and Integration

- As shown in **Figure 4.2**, the existing bus services operate along the northern and eastern road links.
- Based on Greater Dublin Area Transport Strategy and understanding of the BusConnects plan aspirations at present (December 2017), it has be assumed that the proposed bus services will utilise the northern and eastern road links also, for the purposes of this assessment.

Figure 4.2 Existing bus routes in Blanchardstown Town Centre

Integration with the Blanchardstown Town Centre Development Framework/Masterplan

- This will assess the degree of compatibility and how well the location option adheres to the Blanchardstown Town Centre Development Framework/Masterplan.
- Proposals included in the Blanchardstown Town Centre Development Framework/Masterplan have been considered as part of the location options assessment under this criterion.

Location Attractiveness to Passengers and the General Public

- This will assess the location attractiveness for passengers and the general public to access amenities, facilities and retail in the area.
- Passenger interchanging between bus services will not be a factor in this assessment, as the chosen location (north, south, east or west of Blanchardstown Town Centre) will form a bus interchange hub and thus the level of service can be assumed to be neutral for all.

4.3 Stage 2

Assessment of Layout Options

When the location for the bus interchange hub has been chosen, layout option will be developed and assessed on the following criteria:

- Infrastructure Works Cost;
- Layover Space;
- Bus Vehicle Movements;
- Quality Passenger Waiting Facilities;
- User Safety; and
- Traffic Impact.

Table 4-1 shows the layout options assessment ranking.

Table 4-1: Layout Options Colour Coded Ranking Scale

Colour	Description
	Significant advantages over the other options
	Some advantages over other options
	Neutral compared to other options
	Some disadvantages compared to other options
	Significant disadvantages compared to other options

5. Stage 1: Interchange Location Options Assessment

Table 5-1: Options Assessment Table

Criteria	North ⇧	South ⇩
a) Network Operation and Integration (current and proposed)	Existing bus services (Routes 17A, 220 and 236) utilise this route. No designated cyclist facilities along this route.	No bus services currently utilise this route. No designated cyclist facilities along this route.
b) Integration with Blanchardstown Town Centre Development Framework / Masterplan	Potential works to include a proposal to alter the road alignment to create a "street" environment. Proposed works to the area include creating a priority area for commercial development or institutional use/facility.	The street is to be designed as a shared space and leisure area with proposed infill development of setback areas to accommodate a civic space. This civic space would encourage a high volume of pedestrians crossing and as such, would be unsuitable for frequent bus running and turning.
c) Location Attractiveness to Passengers / General Public	Proposed interchange location in close proximity to the entrance on the northern side of the Blanchardstown centre.	Proposed interchange location in close proximity to main entrance to Blanchardstown Centre.
Criteria	**West ⇦**	**East ⇨**
a) Network Operation and Integration (current and proposed)	Existing bus services (Routes 17A, 37, 220, 236 and 238) utilise this route. There is currently a two-way cycleway facility along this route.	No bus services currently utilise this route. No designated cyclist facilities along this route.
b) Integration with Blanchardstown Town Centre Development Framework / Masterplan	Potential works to include a proposal to alter the road alignment of the "western" service road, to create a "street" and covered bus station. Proposed works also include the in-fill of the surface car parks and "western buffer zones to cluster at bus terminus station."	Plan to open a minor street or landbridge pedestrian/cycleway from the Old Navan Road at Blanchardstown Village through the derelict bungalows site via the rear of the "Atrium" office block and the Westpoint Health and Fitness Club onto or towards the Red Mall extension of the Shopping Mall. This may result in the provision of a minor public space set between the existing office blocks. To alter the road alignment of the "eastern service road, to create a "street" with active frontages.
c) Location Attractiveness to Passengers / General Public	Proposed interchange location on the western side would be in close proximity to the western entrance and to the main entrance, in addition to the proposed new leisure space.	Proposed interchange location on the eastern side would be in close proximity to the eastern entrance and to the main entrance, in addition to the proposed new leisure space.

Following the location options assessment, the emerging preferred location for the proposed interchange hub is considered to be on the western side of the Blanchardstown Centre, for the following reasons:

- Utilisation of existing and proposed bus routes;
- Compatibility with Blanchardstown Town Centre Development Framework / Masterplan; and
- Proximity to a secondary and the main Blanchardstown Town Centre access, together with proximity to further proposed leisure quarter/centre.

6. Interchange Hub Layout Options

6.1 Interchange Hub Design Considerations

The interchange hub design options have been developed based on the key considerations:

- requirement for layover;
- vehicle movements;
- pedestrian movements;
- provision of cycle parking; and
- minimisation of the impact on local road network, which could otherwise impact on bus schedules and service consistency.

6.2 Proposed Layout Options

Following on from an assessment of the existing site, two interchange hub layout options have been developed and assessed:

- **Option 1**: In-line option – comprising of 7 No. Bays.
- **Option 2**: Off-line option – comprising 7 (+1) No. Bays – for Option 2, an existing bus bay on the eastern carriageway can also be maintained if required.

Appendix A includes drawings of all design options.

6.3 Layout Option 1: In-line

Layout Option 1, as shown in **Figure 6.1**, would provide the following features:

- 7 bus bays;
- Indented bus stops to facilitate ease of bus flow and alleviate the risk of possible congestion.

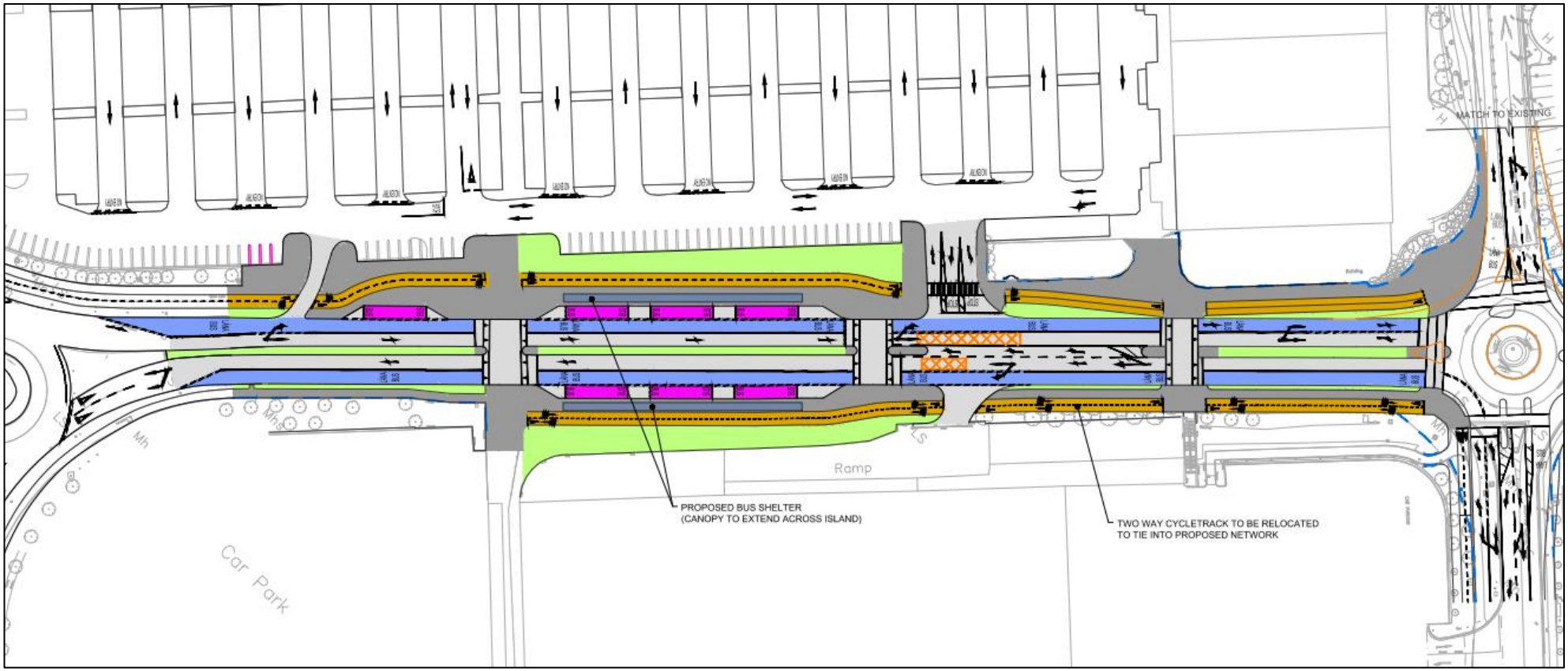

Figure 6.1: In-line Terminus Option

6.4 Layout Option 2: Offline

Layout Option 2, as shown in **Figure 6.2**, would provide the following features:

- 7 (+1) bus bays;
- Indented bus stops to facilitate ease of bus flow and alleviate the risk of possible congestion.
- Separate access and egress for buses using terminus.
- Single platform to facilitate ease of pedestrian movement between bus services.

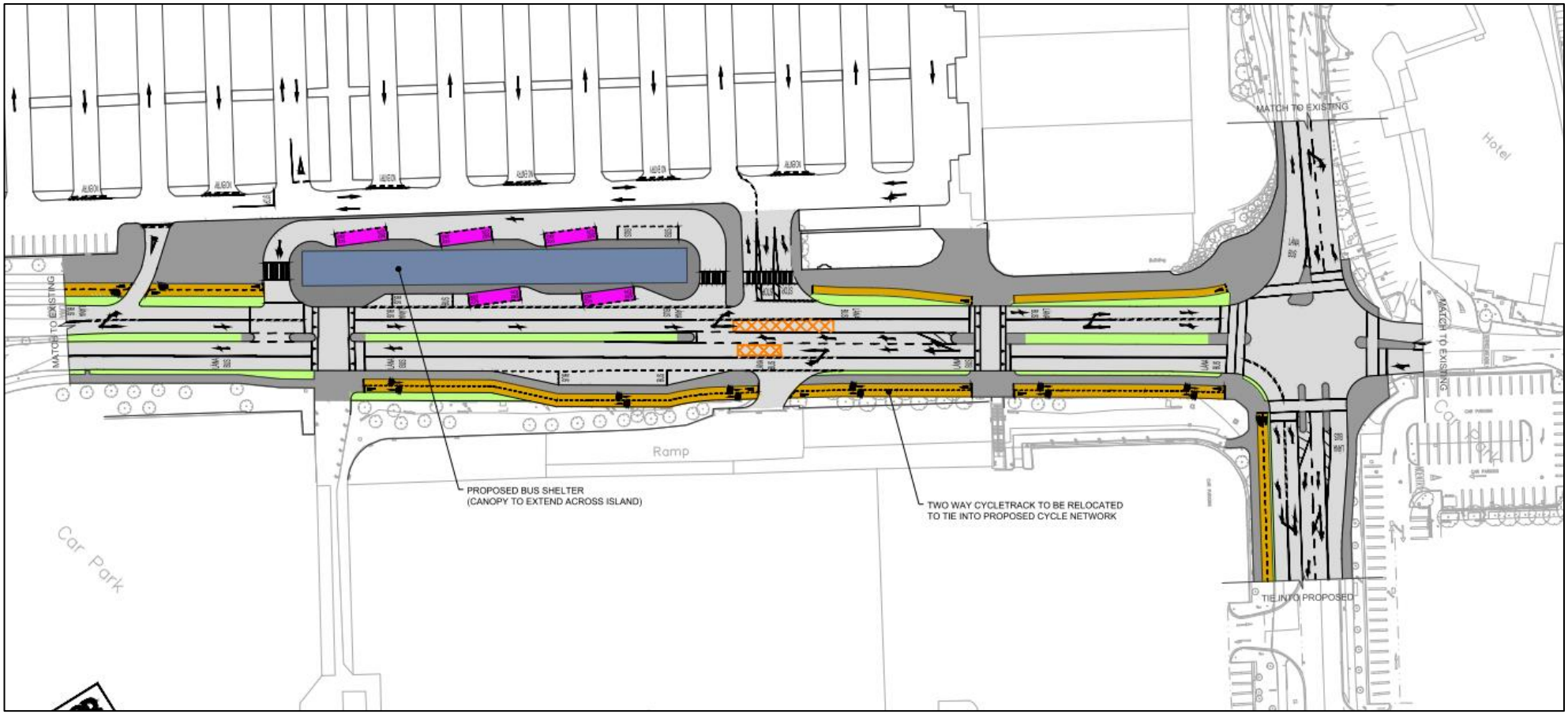

Figure 6.2: Off-line Terminus Option

6.5 Proposed Layover for Option 1 and 2

A site that is shown in **Figure 6.3** has been identified for proposed layover for both Option 1 and 2.

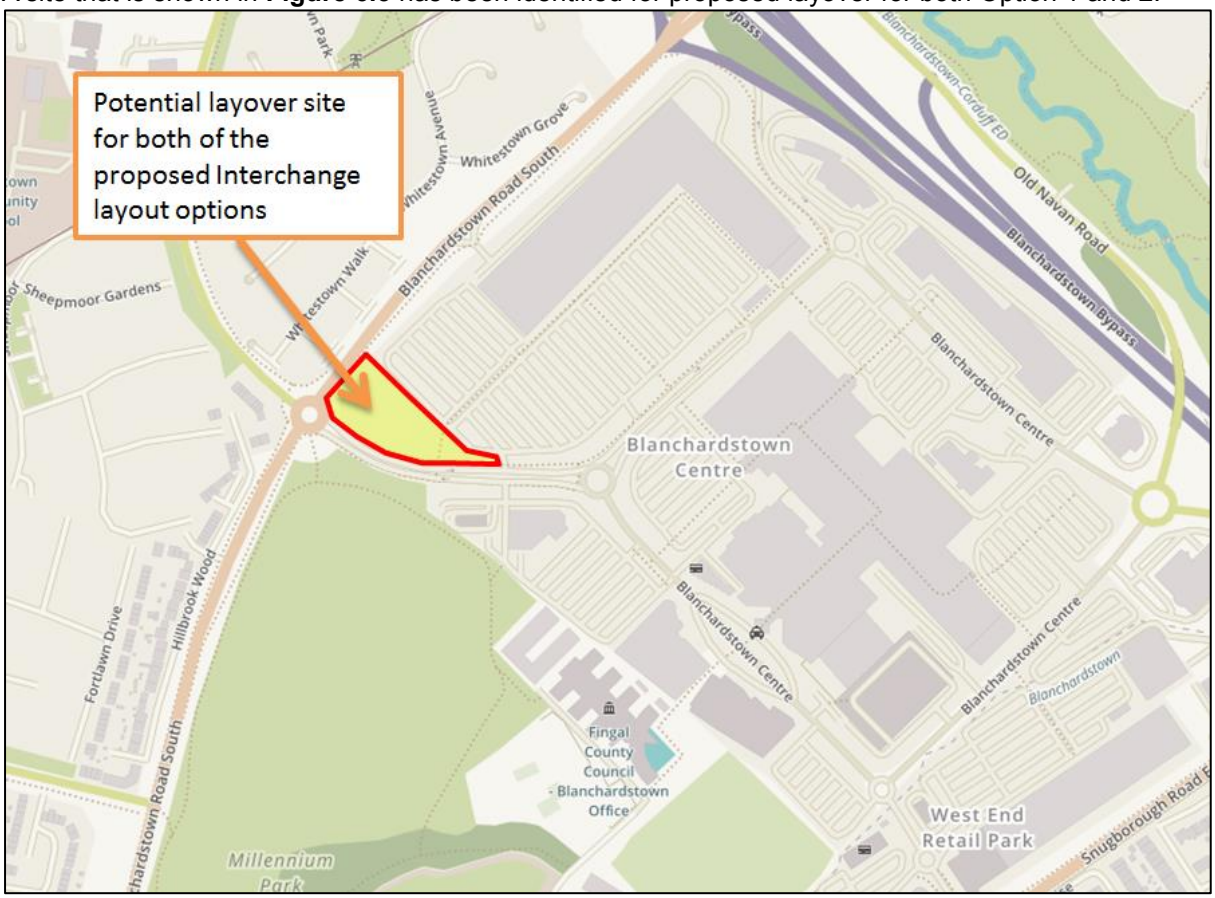

Figure 6.3: Proposed Layover Option

6.6 Assessment of Layout Options

The layout options have been assessed based on the following methodology listed in Section 4.3. **Table 6-1** shows the layout options assessment ranking.

Table 6-1: Layout Options assessment

Criteria	Option 1	Option 2
Infrastructure Works Cost		
Layover Space		
Bus Vehicle Movements		
Quality Passenger Waiting Facilities		
User Safety		
Traffic Impact		

6.7 Preferred Layout Option

When comparing the layout Options 1 and 2, based on the key design criteria identified for a bus interchange layouts in Blanchardstown Town Centre, Option 2 is deemed to be the preferred option. Compared to Option 1, Option 2:

- provides adequate space for bus movements (including bus turning) compared to Options 1;
- includes a shared platform, which provides a higher level of passengers comfort during interchange between bus services as well as a higher level of pedestrian safety and aligns pedestrian desire lines to raised crossing; and
- has a reduced impact on local road network.

Appendix A Drawings

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