BUS CONNECTS

TRANSFORMING CITY BUS SERVICES



Lucan > City Centre

Core Bus Corridor

Emerging Preferred Route
Public Consultation November 2018







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1. Introduction

1.1 Background

In June 2018 the National Transport Authority (NTA) published the Core Bus Corridors Project Report. The report was a discussion document outlining proposals for the delivery of a core bus corridor network across Dublin. It set out the vision for the provision of 230kms of dedicated bus lanes and 200km of cycle lanes/tracks on sixteen key bus corridors.

Continuous bus lanes and cycle tracks



Separately in July 2018 the **Dublin Area Bus Network Redesign**, which is the redesign of bus services, started its first public consultation phase. Around 30,000 submissions including signed petitions and online survey responses were received by the end of September. Over the coming months all of these submissions will be reviewed and assessed. Following that process a revised network design will be published during 2019 for a second public consultation. It is envisaged that the implementation of the final network will take place in 2020. The network redesign can be implemented on the existing road network with some enhancements at key interchange locations.

The public consultation for the sixteen radial core bus corridors will now take place on a phased basis from November 2018 until May 2019. Each phase will be for a set number of corridors to be consulted on over a period of months. These public consultations phases will be the start of a detailed process of engagement and communication. All of which will take place prior to detailed designs being finalised and planning permissions sought.

This document is one of a series of sixteen, each dedicated to a single core bus corridor. The document provides a written description of the emerging preferred route from start to finish with supporting route maps. It explains the step by step process for engagement and consultation for potentially impacted property owners and the general public. It also outlines the process for planning and construction of the core bus corridor network including expected timelines.

1.2 Why does Dublin need a core bus corridor network?

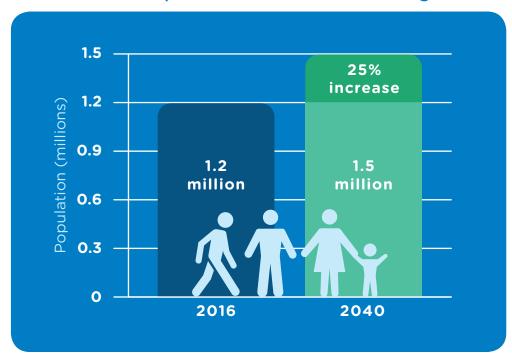
Congestion - Congestion is one of the most significant challenges facing the Dublin region and needs to be addressed to safeguard the growth of the Dublin region and keep people moving. Ireland's economic recovery from the recession is seeing significant increases in the number of people working and travelling across Dublin. The number of commercial vehicles continues to rise as does the number of tourists. The commuter areas surrounding Dublin continue to spread and grow in a low density manner. Growth areas can only be served in the short and medium term by the bus as opposed to long-term projects such as rail and Luas.

At present bus lanes are in place for less than one third of a bus journey on the busy corridors. This means buses are competing for space with general traffic and so are affected by the increasing levels of congestion.

• Growing Population - It is predicted that the population for the Dublin region will grow 25% by 2040, bringing it to almost 1.5m for the region. This huge growth in population has to be accommodated with a quality public transport system.

The bus system can deliver - We need to invest in the bus system because the bus system is the main component to meet our future transport needs. A good bus system has the reach and flexibility to service all the new housing developments, business parks, hospitals, colleges and retail shops across Dublin. It is a proven solution and is the main form of public transport across Dublin with 67% of public transport journeys each day made by bus. The bus system carries three and four times the number of people who travel on Luas or Dart and commuter rail.

Forecast Population Growth in Dublin Region

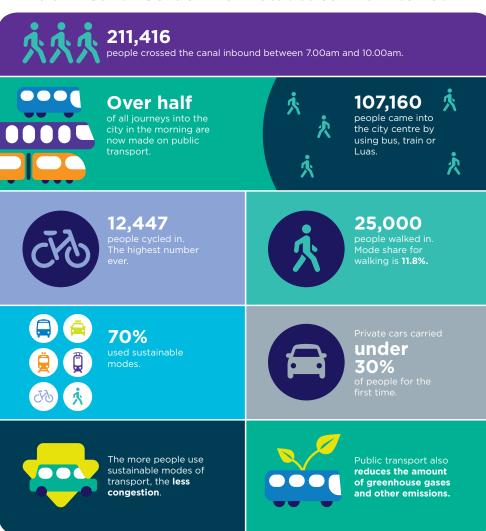


People want to cycle - The core bus corridor project is not just about the provision of bus lanes. Under this project we will also deliver 200km of segregated cycling infrastructure to make cycling safer and more attractive than ever before. This initiative is the foundation of the overall cycle network for the Greater Dublin Area.

Commuting to work by bicycle has increased by 43% since 2011. Again this growth represents a clear choice that people are making to cycle. This project will support that trend and is a vital component of creating a sustainable transport system for people across Dublin. Safe cycling facilities across the 16 key bus corridors will provide people, families and their children a suitable environment to cycle where they want and when they want

People want to use public transport - The need to build a core bus network is being driven by increases in congestion and also by the significant shift of people choosing to use public transport. People want to use it and should have a reliable and efficient bus system to travel on. Based on 2017 canal cordon figures over 70% of people travelling into the city each morning do so by sustainable transport modes and mostly by bus. Cars only account for 30% of travel into the city centre each day and therefore the amount of road space allocated to sustainable transport needs to reflect that position.

Dublin Canal Cordon 2017 Statistics - 7am to 10am



1.3 What is BusConnects Dublin?

BusConnects Dublin is a major investment programme to improve public transport in Dublin.

It aims to overhaul the current bus system in Dublin through a 10 year programme of integrated actions to deliver a more efficient, reliable and better bus system for more people.



- Building a network of new bus corridors to make journey's faster and more reliable.
- New network of cycle lanes/ tracks.



Redesign of the Dublin area bus network to provide a more efficient network with high frequency spines, new orbital routes and increased bus services.



- Develop a state-of-the-art ticketing system.
- Implementation of a cashless payment system.
- Simpler fare structure.



New bus livery providing a common style across different operators.



- New bus stops and shelters with better signage and information.
- Provision of bus based Park and Ride sites in key locations.

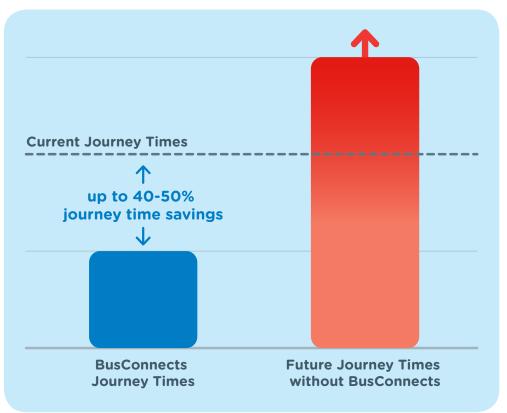


Transitioning to a new bus fleet with low emission vehicle technologies.

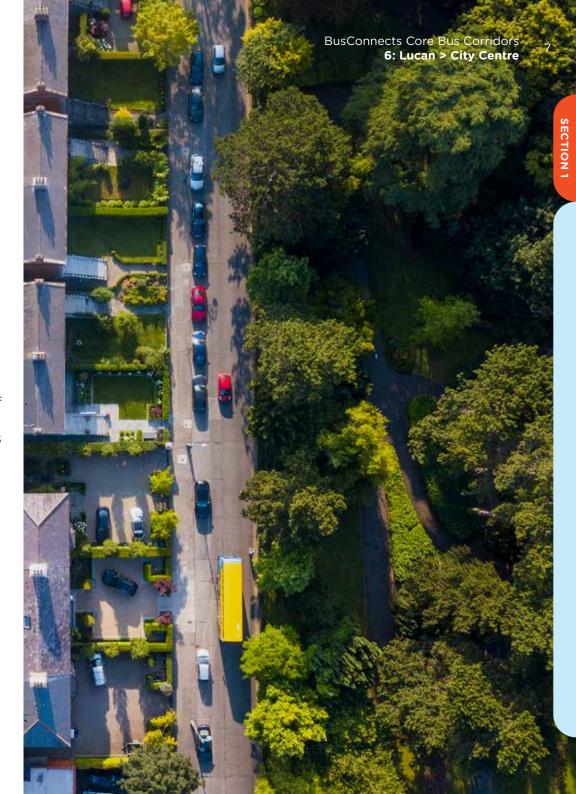
1.4 What are the benefits of this project?

- Dourney Time Savings The core bus corridor project will deliver journey time savings of up to 40-50% on each corridor. Dedicated bus lanes can significantly increase bus travel speeds and reliability. Improved journey times and reducing the amount of time people spend commuting will make bus travel more attractive and reduce our reliance on car travel. The more convenient the bus system is, the faster the modal shift will be for people from the car to the bus. Not only will current bus users and cyclists benefit but future commuters will be able to avail of a better system as the improved bus and cycle lanes are built.
- Accessibility for all Accessibility is about people's ability to reach the destinations and services they want to get to. This means both people's level of mobility and the costs of travelling. There are many tens of thousands of people across Dublin who cannot drive a car, do not have a car and are completely reliant on the bus service. The bus lane improvements will enhance accessibility for the elderly and mobility impaired because all buses are accessible and bus stops, bus shelters and footpaths will support easy boarding and disembarking of the buses.
- Detter cycling facilities This project will see the provision of much needed cycling facilities around the city region. Across the 16 radial bus corridors there will be over 200kms of high quality cycling facilities provided. These new or improved cycle lanes will be segregated from bus lanes and general traffic where feasible.

Journey Time Savings



- Pedestrians and Local Urban Centres In addition to bus lanes and cycling facilities this project is an opportunity to enhance and improve local areas. This project is focused on making things better for commuters and communities around the bus corridors. Along each route, improvements and enhancements will be made to footpaths, walkways and pedestrian crossings. Funding and investment for local urban centres with additional landscaping and outdoor amenities will be provided.
- ▶ Building a sustainable city and addressing climate change By providing a better bus system for Dublin we can make it a more attractive place to live, work and visit. A good public transport system is vital to support the economic activity of any city and can also address the need to improve air quality and reduce CO² emissions. Tackling the challenges of climate change is a priority for the Government and moving more people to public transport is a key component of the solution.



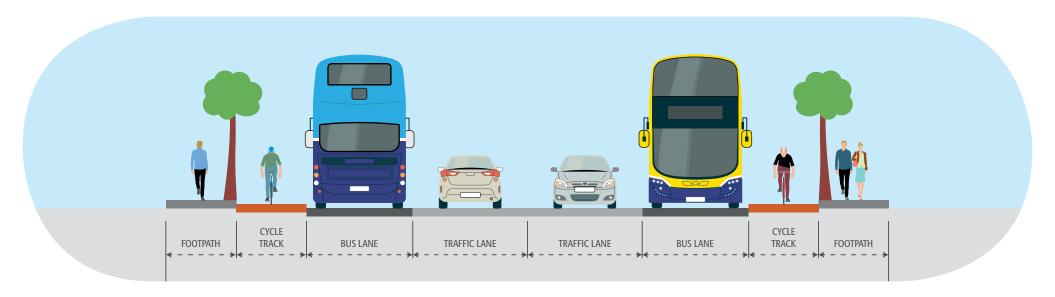
1.5 What does the core bus corridor project entail?

The core bus corridor project proposes the provision of 230 kilometres of bus lanes on sixteen of the busiest bus corridors and 200 kilometres of cycle lanes and tracks as published in the discussion document, Core Bus Corridor Project Report June 2018.

The layout below shows the arrangement that we are seeking to achieve on each corridor. However, this optimal layout is difficult to achieve in practice and we have proposed alternative solutions in various places to deliver the required bus and cycling lanes.

Bus lanes are needed to make the current and future bus system operate efficiently, reliably and punctually. Our intention is to develop these bus corridors so that each will have continuous bus priority – in other words, a continuous bus lane in each direction as well as maintaining two general traffic lanes. In addition we also want to provide safe cycling facilities, segregated where possible from other vehicular traffic. This will remove the delays currently experienced which will grow worse as congestion increases.

Optimum Road Layout



Radial Core Bus Corridors Emerging Preferred Routes

- 1. Clongriffin to City Centre
- 2. Swords to City Centre
- 3. Ballymun to City Centre
- 4. Finglas to Phibsborough
- **5.** Blanchardstown to City Centre
- 6. Lucan to City Centre
- 7. Liffey Valley to City Centre
- 8. Clondalkin to Drimnagh
- 9. Greenhills to City Centre
- 10. Tallaght to Terenure
- 11. Kimmage to City Centre
- 12. Rathfarnham to City Centre
- 13. Bray to City Centre
- **14.** UCD Ballsbridge to City Centre
- 15. Blackrock to Merrion
- 16. Ringsend to City Centre

2. Emerging Preferred Route

2.1 Emerging Preferred Route for Lucan to City Centre

The Emerging Preferred Route set out in this consultation document was identified following an assessment of various alternatives.

The route selection process involved identification and consideration of possible options taking account of various criteria including local impacts on property frontage, existing traffic patterns and broad assessment of environmental impacts. A Feasibility Report setting out details of the assessment work undertaken is available on **www.BusConnects.ie**.

Arising from that work an Emerging Preferred Route has been identified for this corridor and public feedback on that proposal is now sought. It is important to know that this option is not adopted yet. Only following this public consultation and the review of the submissions received will a decision on the final Preferred Route be made.

2.2 Lucan to City Centre Overview

The Lucan to City Centre Core Bus Corridor (CBC) commences at Junction 3 on the N4 and it is routed via the N4 as far as Junction 1 (M50), and via the R148 along the Chapelizod Bypass, Con Colbert Road, St John's Road West and Frank Sherwin Bridge, where it will join the prevailing traffic management regime on the North Quays. Priority for buses is provided along the entire route, consisting primarily of dedicated bus lanes in both directions, with alternative measures proposed at particularly constrained locations.

2.2.1 Junction 3 to M50 Junction (Junction 7) - N4 Lucan Road

It is proposed to commence the this corridor at Junction 3 on the N4 Lucan Road. It is intended to retain the existing bus lane layout on the overbridge. It is proposed to extend the existing bus lane on Ballyowen Road as far as the junction with Lucan Road. The junction will be modified to accommodate this bus lane and improved cycle facilities. On the Lucan Road it is proposed to extend the existing bus lane as far as the existing roundabout junction. A new cycle track is also proposed to be provided. To accommodate this change it is proposed to use limited land take from the adjacent green space.

On the westbound off slip ramp, it is intended to provide a continuous bus lane from the N4 to the junction with Ballyowen Road. It is proposed to widen the off-ramp on both sides to provide for this bus lane and a new cycle track. It may require some landtake to the south of the off ramp. On a limited section of this route, a shared footway/cycleway will be provided to reduce the requirement of land take in this area.

On the N4 it is proposed to maintain the existing city centre bound bus lane. A new segregated cycle track is also proposed on this side of the existing road requiring some limited land take from the adjacent green space. For outbound traffic it is intended to retain the existing segregated general traffic lane and to introduce a bus lane to east of the Ballyowen Lane junction. This will tie back into the existing bus lane to the east of the existing footbridge adjacent to Mount Andrew Court. This existing footway and cycleway facility will be upgraded. The revised layout will require some limited land take from adjacent properties.

The indicative extents of this land take are shown on the drawings shown in the Appendix of this brochure.

At the Fonthill Road Junction, it intended to retain the existing bus lane and bus stop facilities on the eastbound off ramp and link the new cycle way to the existing cycle network at the junction. It is proposed to provide a new toucan crossing at this section of the junction, and to provide a new bus lane on the eastbound off slip road. It is also proposed to provide a bus lane in each direction on the overbridge. From the Fonthill Road junction, cyclists are directed onto the Lucan Road through the Quarryvale and Brooklawn area.

On the M50 junction, it is proposed to maintain the bus lane with two general traffic lanes in both directions through the junction. Cyclists will be directed over the existing foot/cycle bridge over M50 on to the Old Lucan Road.

2.2.2 M50 Junction (Junction 7) to Con Colbert Road - Chapelizod Bypass

Between the M50 Junction and Kennelsfort Road Junction, it is proposed to maintain a single bus lane and two general traffic lanes on the city centre bound route and one general traffic lane for through traffic & a bus lane on the outbound route. It is intended to modify the Kennelsfort Road Lower junction to improve pedestrian crossing facilities, and to provide new cycling facilities along Kennelsfort Road. Cyclist will be directed along Lucan Road and will be linked to an existing shared footway/cycleway located on the north of the Chapelizod Bypass. This cycle route links to the R112 Lucan Road at Glenaulin Drive.

Between Kennelsfort Road Junction and Con Colbert Road Junction, it is proposed to maintain a single bus lane and two general traffic lanes in both directions. It is intended to provide a bus lane on the R112 Kylemore Road on-ramp road. It is also proposed to provide new bus stop facility and pedestrian footbridge serving Chapelizod Hill Road. Some limited land take will be required to facilitate these works. It is proposed to provide cycle tracks on both the on and off ramps at Con Colbert Road. Similarly, cycle lanes can be provided on Memorial Road.

2.2.3 Con Colbert Road to Frank Sherwin Bridge - St. John's Road West

Between the Con Colbert Road Junction and the South Circular Road Junction continuous bus lanes, two general traffic lanes and cycle tracks will be maintained in their current configuration. The existing South Circular Road Junction is proposed to be modified to accommodate additional bus lane and cycle track.

Between the South Circular Road Junction and the junction into the Heuston South Quarter Development continuous bus lanes and two general traffic lanes will be maintained in their current configuration. Between Heuston South Quarter Development Junction and the Frank Sherwin Bridge one bus lane and one single general traffic lane is proposed to be provided on both inbound and outbound directions. Cycle tracks are intended to be provided in both directions. This new arrangement will be accommodated by widening the road into the existing central median. It is proposed to retain the existing taxi rank at Heuston Station and to locate the cycle track between the footway and the taxi rank spaces. The proposed works tie into the road network at Wolfe Tone Quay and Victoria Quay.

2.3 Key Facts:

- Approximate number of properties that may be impacted: 15
- Approximate number of on-street parking spaces that may be removed: 13
- Approximate number of roadside trees that may be removed: 44
- ♠ Approximate route length: 10kms
- ♠ Approximate new cycle lane length: 5kms
- Ourrent bus journey time: up to 50 mins
- ▶ BusConnects journey time: 30 35 mins
- Future bus journey time without BusConnects: 60 mins +





3. Challenges and Mitigations

3.1 The Challenges

It's important to acknowledge that the choices required to deliver this step-change in the performance of the bus system will be difficult. However, the decision-making needs to be done now and not postponed until the problem is far greater. Some of the decisions may be hard but they are being made because we believe that these plans have the potential to fundamentally transform the way public transport works in Dublin.

Our challenge now is to respond to the needs of a modern city by providing a fit-for-purpose bus system, built on a streetscape that dates back centuries. Needless to say the streets were not designed to move the number of people that now need to travel in and out of the city each day. Some of the city's inner suburbs date back to Victorian times, with road layouts suited to more modest levels of traffic than we see today.

- We will need to widen roads;
- We will have to convert current traffic lanes to bus lanes:
- We will need to restrict on-street parking;
- We will need to remove trees or parts of front gardens.

Not all the impacts will be felt equally and some locations will require more changes than others. Over the years those modifications that were easier to implement - the ones that caused little or no disruption - have been made. This means that there are no longer any simple changes which we can make that would generate meaningful benefits.

If we don't decide to make these changes now, then we need to accept that Dublin will become increasingly congested and a less attractive place to live and work, both for us now and for future generations.

3.2 Potential Impacts

3.2.1 Traffic changes

By creating more priority for buses and cycling there will be changes to how traffic currently moves around the streets. On some corridors, certain roads may become one-way, new bus-only sections will be introduced and in some places general traffic will have to take new routes in and out of the city. Additional cycle routes will be built, generally segregated from vehicular traffic, and pedestrian crossings will be added and moved in some areas.

3.2.2 Land take

Because there is so little unused space along these busy roads, it will often not be possible to accommodate the bus lanes and cycle lanes in the width available. In order to achieve the required space it will be necessary, in places, to acquire parts of front gardens, driveways and land in front of commercial properties to allow the bus and cycle lanes to be provided. This would require rebuilding new garden walls and driveways a short distance back from the existing road boundary.

3.2.3 Reduction of On-Street Parking and Loading Facilities

Because the roads that need widening travel through residential and business areas there will be a need to reduce the amount of on-street parking and loading facilities to accommodate the new layout.

3.2.4 Removal of Trees

As with the need to remove some parts of front gardens and footpaths there will be also be a need to remove trees along some of the corridors.

3.2.5 Road Works and Construction Sites

Widening roads, and building bus and cycle lanes, requires construction work. There will be excavation of the existing roads, plus parts of gardens and footpaths where needed. There will be resurfacing, kerbing, replanting and landscaping. As with any work site and road works, there will be a certain level of noise, dust and temporary traffic diversions.

3.3 How we will address those challenges

Obviously these challenges and impacts are significant. Every feasible option is being looked at to minimise the disruption to people, their property and the wider local community. Where there is simply no viable alternative, and where we know we have to remove trees, portions of gardens, driveways or parking, we will ensure appropriate mitigation measures are put in place, wherever practicable.

As part of this public consultation potentially impacted property owners will be contacted directly by the NTA and a direct dialogue will commence. As each individual property owner will have specific and personal issues there will be a dedicated liaison team to engage with this group on an individual basis.

There are principles for mitigation, statutory compensation and reparation which will be adhered to by the NTA as part of the statutory planning process. However, below are some of the measures that we envisage will be included. This list is not exhaustive and we anticipate that there will be other measures that will need to be put in place.

3.3.1 Traffic Changes

Where general traffic is diverted and re-routed, adequate signage and road markings will be provided for people to find their way. Measures will be implemented to ensure that "rat-runs" do not emerge as a consequence of the re-routed traffic. Also, local access will be maintained where new bus-only sections or one-way systems are brought in for residents and commercial properties.

3.3.2 Land take

Where lands, such as parts of gardens and driveways, are being acquired for widening we will purchase the portion of front gardens and driveways from property owners; ensure new landscaping and replanting of the gardens, reinstatement of driveways as well as providing compensation for the garden and driveway portion loss and disruption.

Where private and public walls or fencing are removed we will rebuild new garden walls and replace fencing where gardens have been affected and shortened. Also, where public or commercial walls and fencing have been taken they will be rebuilt and replaced.

3.3.3 On street parking and Loading Facilities

Where there is a loss of on-street parking and loading facilities we will seek to provide, where feasible, alternative arrangements close by for residents and businesses.

3.3.4 Trees

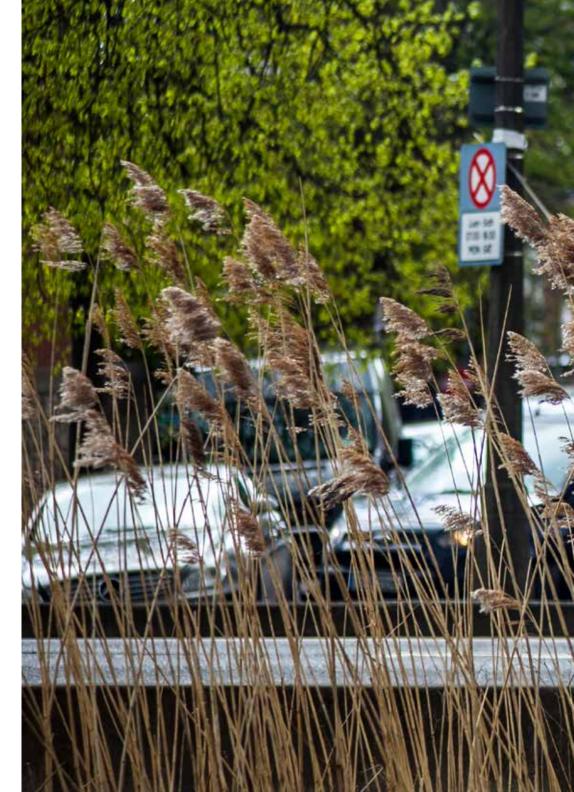
Where trees are removed from roadsides and footpaths we will put in place a comprehensive replanting programme. This programme will use mature or semi-mature ready-grown trees where appropriate and, where it is feasible, plant them as close as possible to the original locations.

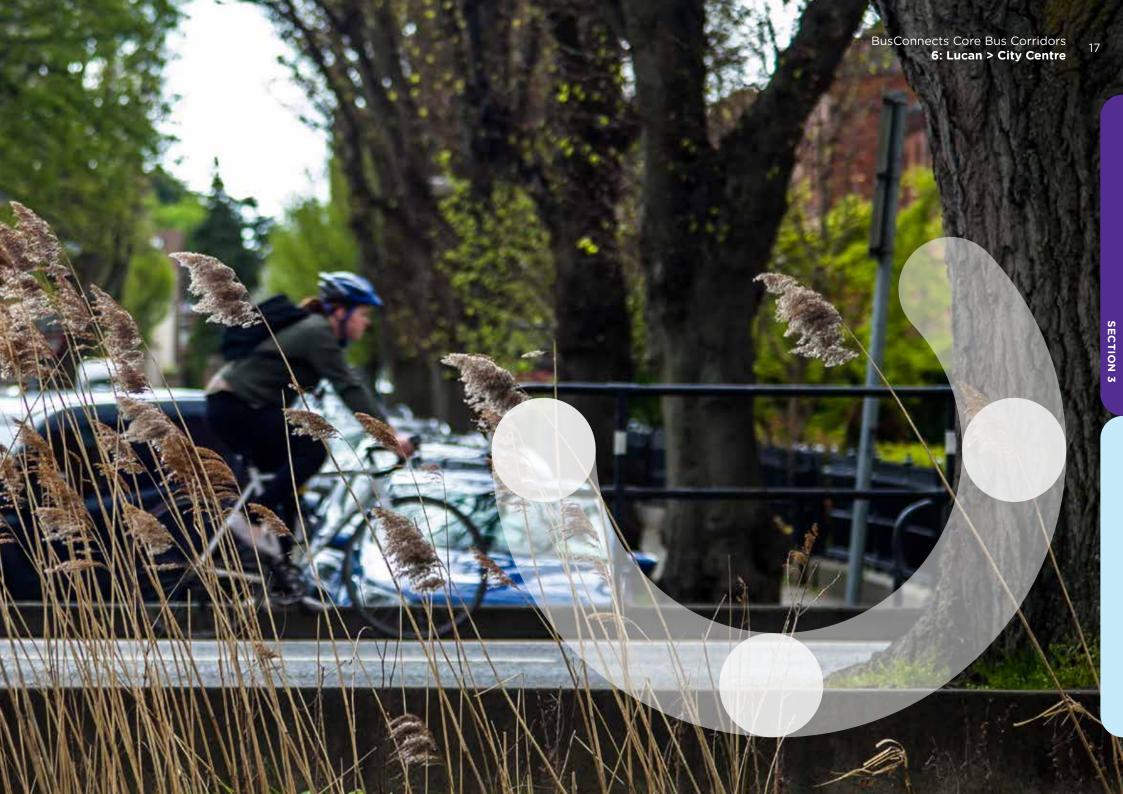
3.3.5 Urban Centre Improvements

We will look for areas along the busy corridors where it is possible to improve the existing local spaces and the existing landscaping. It is important to use this opportunity to not only replace what is removed but to enhance the local areas. To do so, we will consult with the local authorities on such urban centre improvements and collectively seek to create attractive local environments.

3.3.6 Road Works and Construction Sites

During the construction stages the construction sites will be localised and managed on a road by road basis. The size of each work site and the hours of working will have to take into consideration the residential nature of many of the roads. Traffic management will be very important to keep the traffic moving and ensuring local access for people and deliveries is always maintained.





4. The Process for the Acquisition of Land

Where the potential for impacts on private lands have been identified, the following process applies:

Q4 2018 - Q2 2019 NTA will issue information letters (not formal compulsory purchase order (CPO) notifications) to potentially impacted land owners and/or occupiers along each Core Bus Corridor. Potentially impacted includes for example, the acquisition of parts of front gardens, walls, fences, gates, driveways and the rebuilding of same to make way for street widening. The intention of this is to start a direct dialogue between NTA and the potentially impacted parties.

During 2019 to prepare the statutory planning documentation, the project design and environmental impact assessment will be progressed. During this time NTA will endeavour to minimise impacts on private lands. Direct dialogue between NTA and potentially impacted parties will continue to understand the likely impact of the proposed development and what arrangements can be made to minimise and where possible avoid those impacts.

End of 2019 / start of 2020 NTA will finalise the statutory planning documentation and will serve formal notice on the actual impacted owners of land proposed to be compulsorily purchased for the project. It will make a formal application to An Bord Pleanála for confirmation to compulsorily purchase necessary lands for purposes of constructing upgraded bus-lanes and bike-lanes.

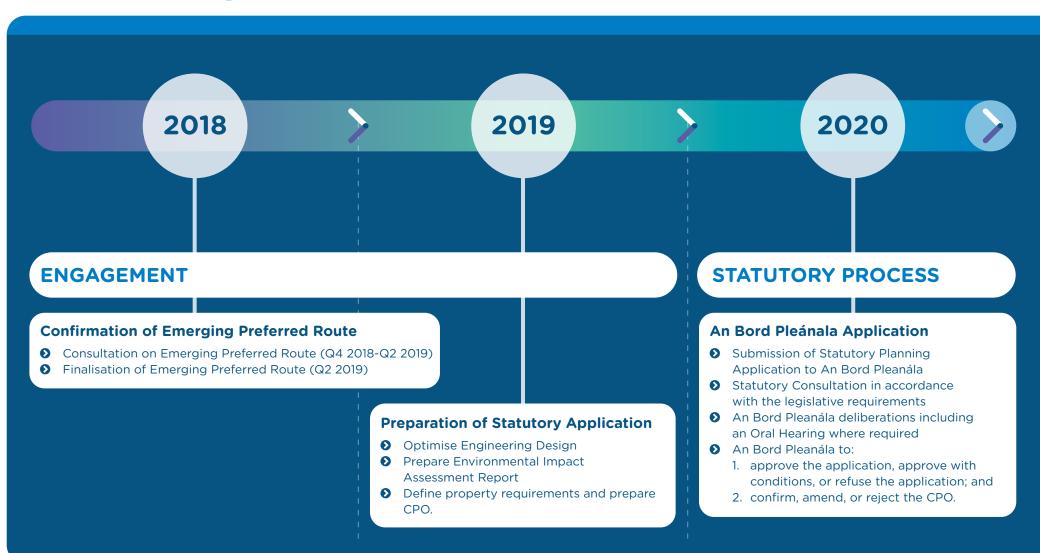
During 2020 An Bord Pleanála will consider the planning application. There will be a period of statutory public consultation to allow those notified as being subject to CPO, and the public at large, to make submissions and/or objections to An Bord Pleanála. This will be followed by an Oral Hearing by An Bord Pleanála if deemed necessary. The statutory process will conclude with a decision by An Bord Pleanála on whether to:

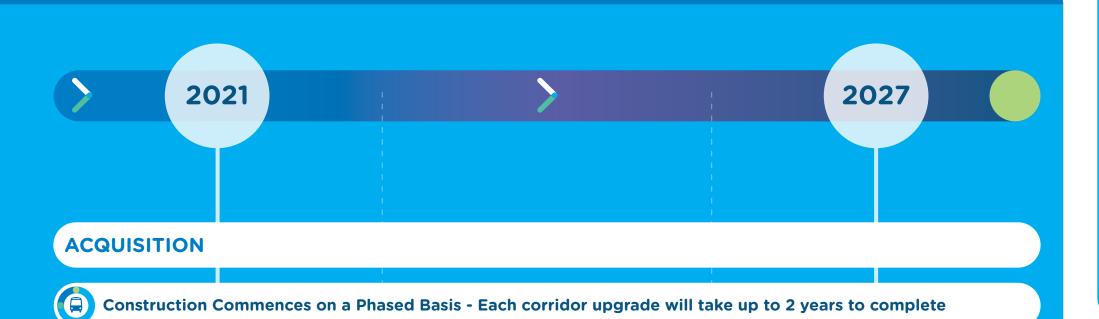
- 1. approve the application, approve with conditions, or refuse the application; and
- 2. confirm, amend, or reject the CPO.

From 2021 onwards if An Bord Pleanála grants approval NTA will commence valuations and negotiations to acquire the lands in the CPO, and progress construction of the project. The construction of each core bus corridor will take up to two years to complete. The construction start dates for each of the 16 corridors will be managed over the period 2021 through 2027.



How the project will progress How & when to get involved





Start of Property Acquisition and Construction

- NTA formally requests a compensations claim from the CPO affected parties and discussions commence about valuation
- Affected party appoints professional valuer to prepare and submit a compensation claim to NTA
- On reaching agreement, compensation is paid, otherwise the matter may be referred by either party to the property arbitrator to assess compensation
- Acquisition is finalised
- In parallel NTA will progress the construction of the Core Bus Corridors.

5. How to take part in the public consultation

Please remember that the plans that we are publishing are proposals and that no final decision has been made on these matters in advance of the public consultation. We welcome all of your views.

Where you do not like a proposal, please consider suggesting an alternative solution or other option for consideration. But do bear in mind that bus transport is, and will continue to be, the main form of public transport for most areas of the Dublin region and an alternative of providing an underground rail system is simply not a viable option for most parts of Dublin.

5.1 Potential impacted lands

If your property is potentially impacted by the proposals, a letter will have been hand delivered to the property and details of how to engage with the NTA are detailed in that letter. A dedicated property liaison representative will be available to meet with individual property owners and provide regular updates on the project.

5.2 General queries

The project website **www.busconnects.ie** has a dedicated section for the Core Bus Corridor project. Users can access the site to find out more about the project and download copies of the key studies that have been carried out.

General queries can be directed to a dedicated Freephone - **1800 303 653** or by email to **cbc@busconnects.ie**

5.3 How to engage

We are inviting submissions in relation to the proposals set out in this Public Consultation Document.

Written submissions and observations may be made by:

Online:

Through the online form in the "Public Consultation" section of the Core Bus Corridor page on our website: www.busconnects.ie

Or by email to:

cbc@busconnects.ie

Or by post to:

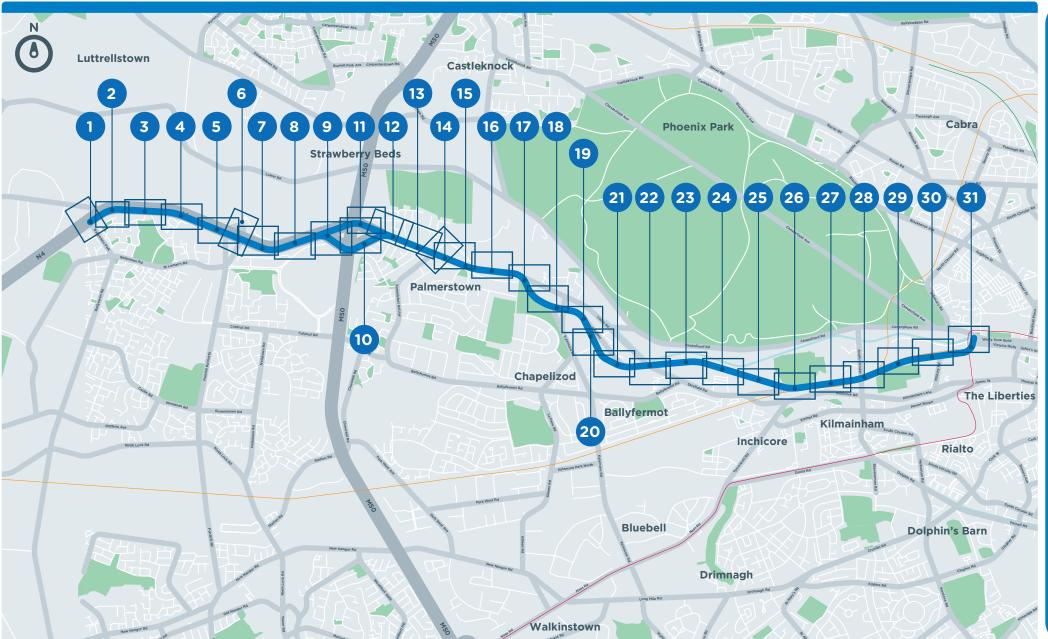
Core Bus Corridor Project

National Transport Authority Dún Scéine Harcourt Lane Dublin 2 D02 WT20



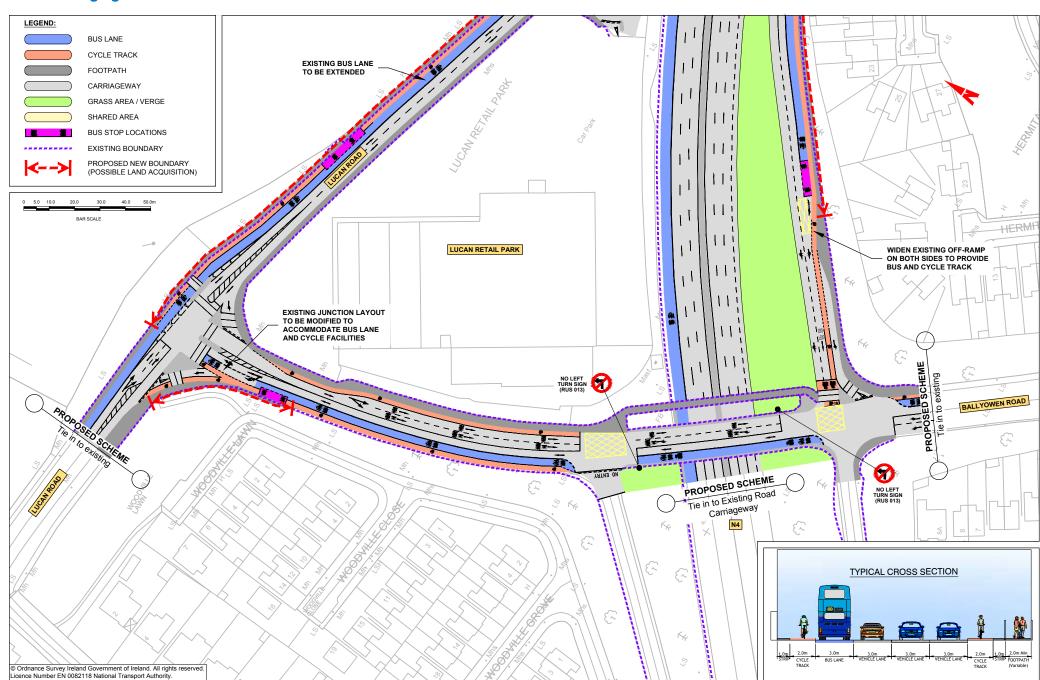


Lucan > City Centre Index Map

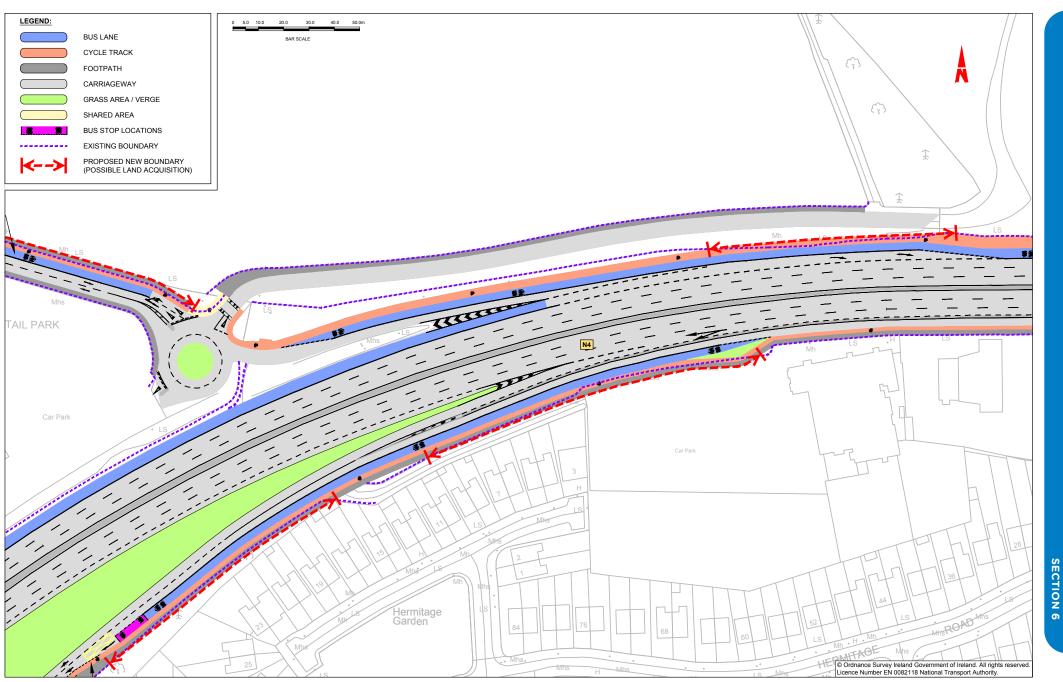


6: Lucan > City Centre

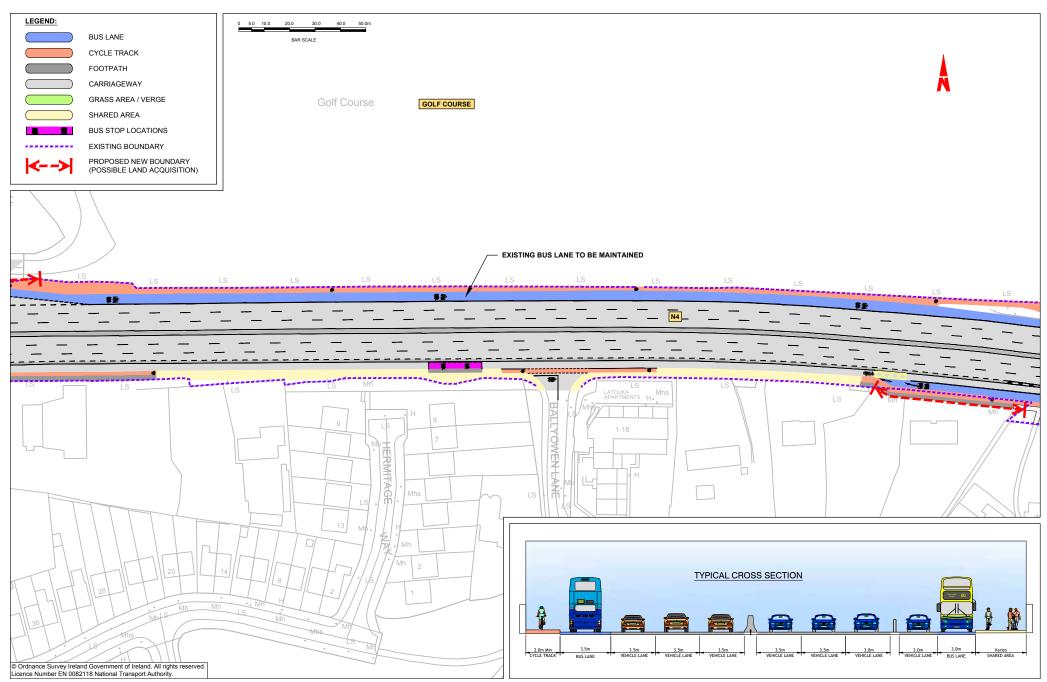
MAP 1: Emerging Preferred Route



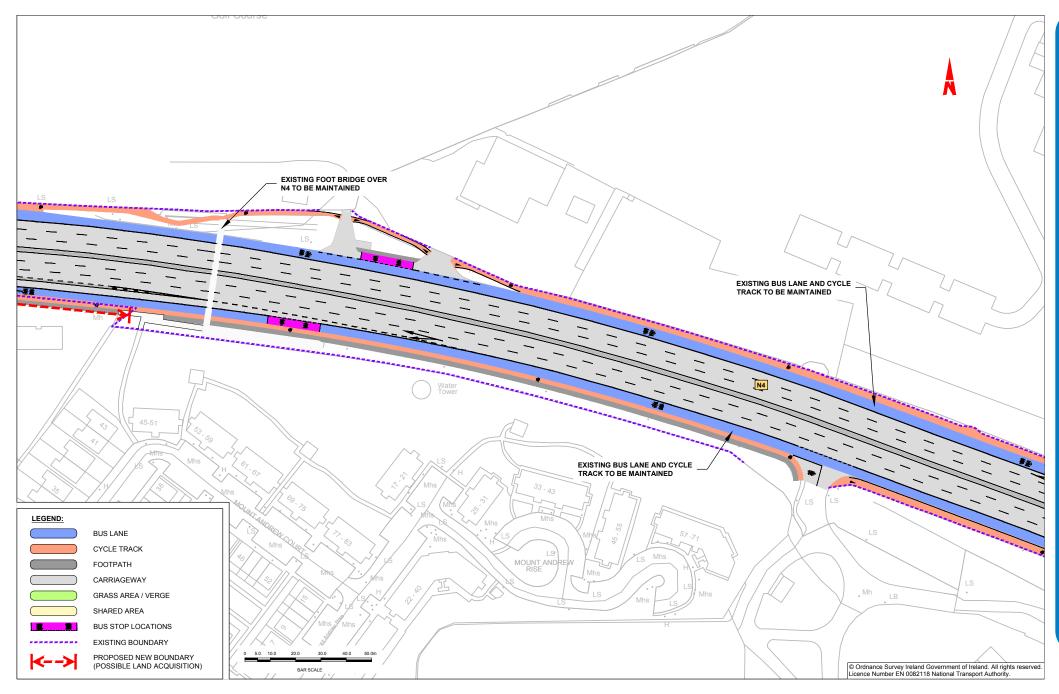
MAP 2: Emerging Preferred Route



MAP 3: Emerging Preferred Route

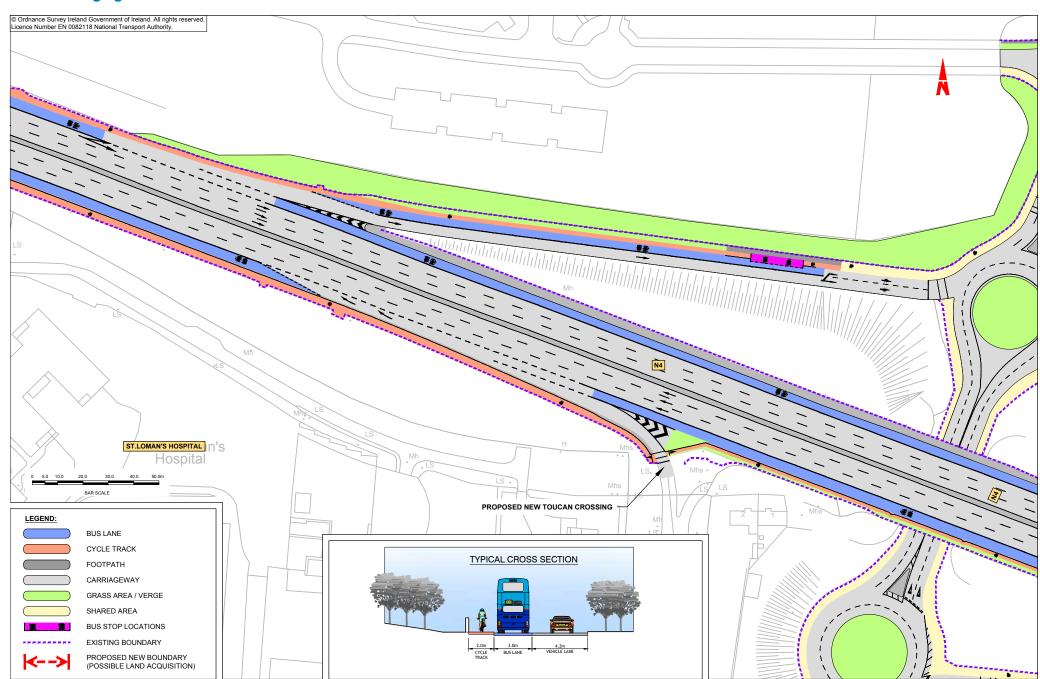


MAP 4: Emerging Preferred Route

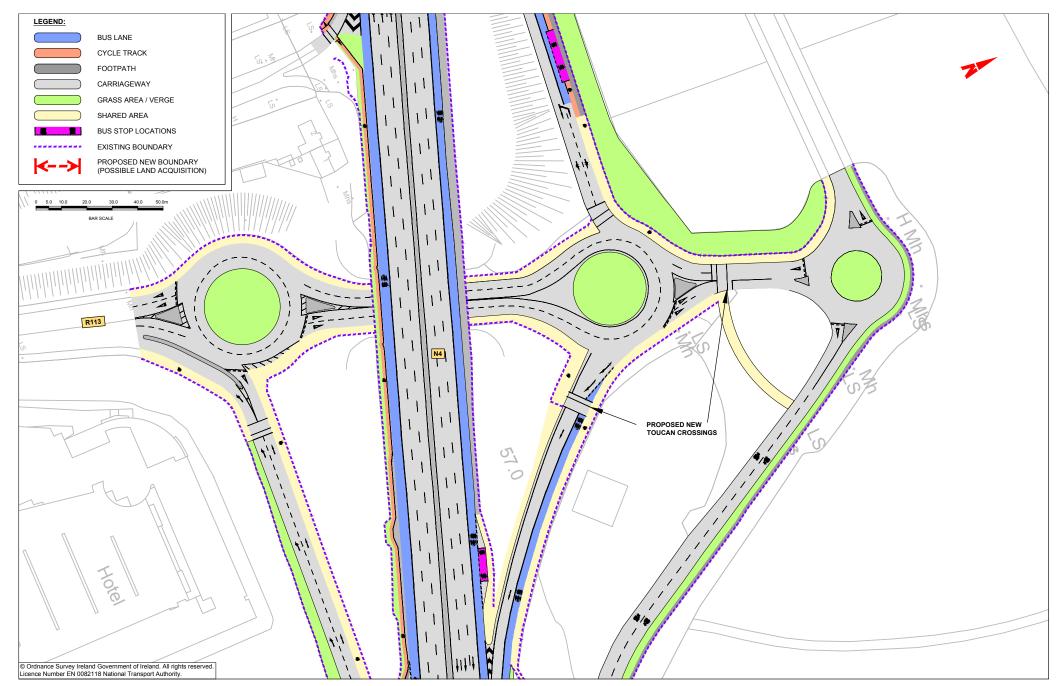


6: Lucan > City Centre

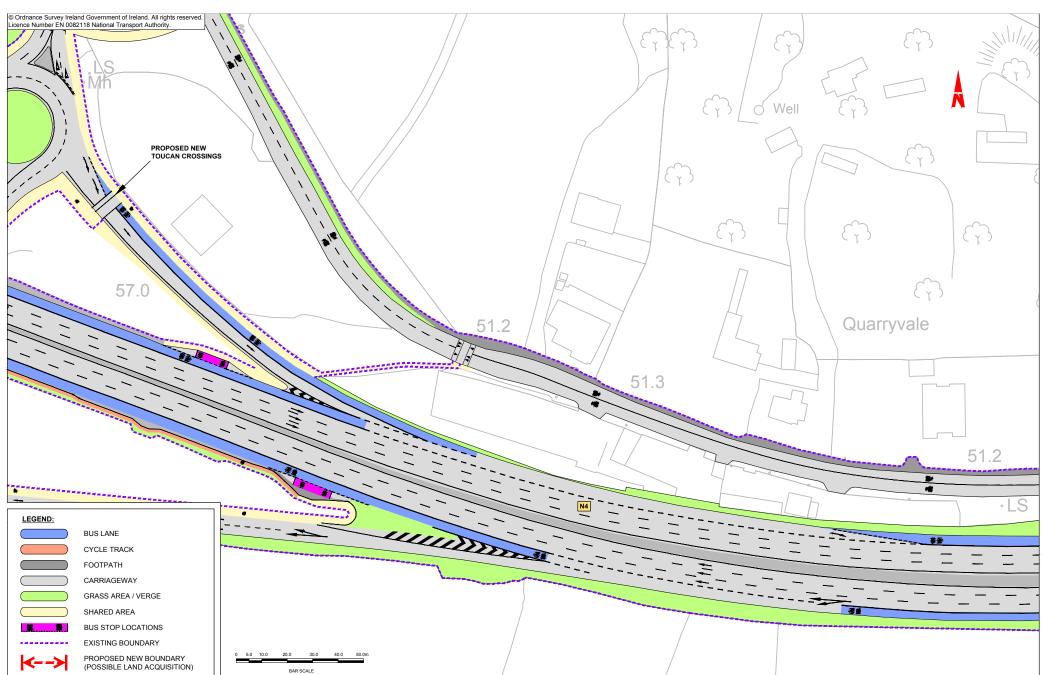
MAP 5: Emerging Preferred Route



MAP 6: Emerging Preferred Route

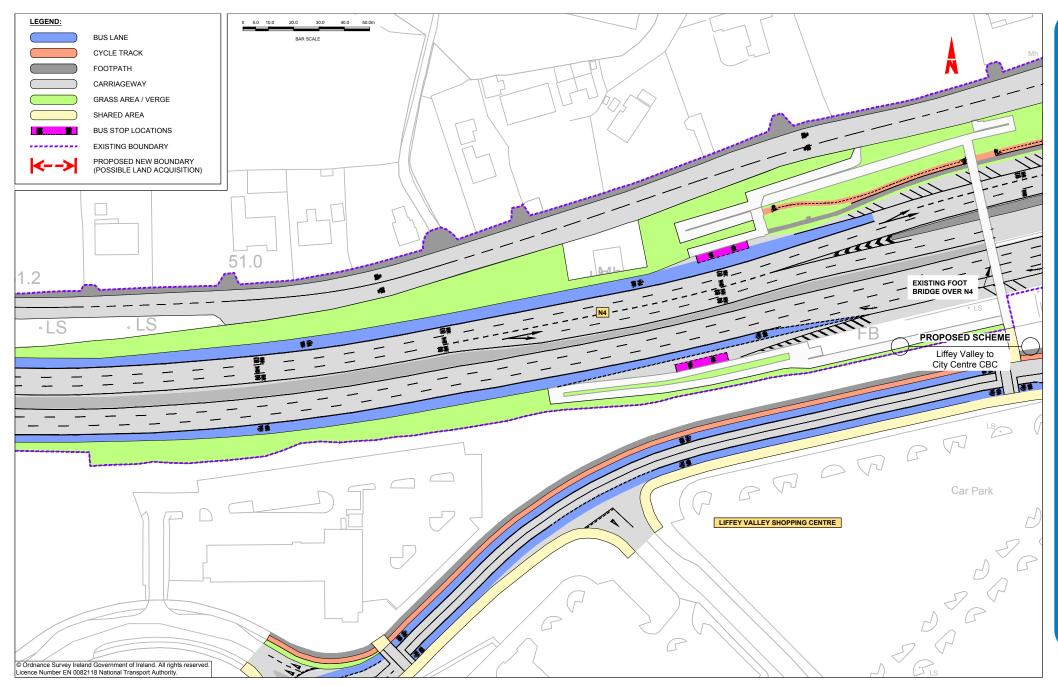


MAP 7: Emerging Preferred Route



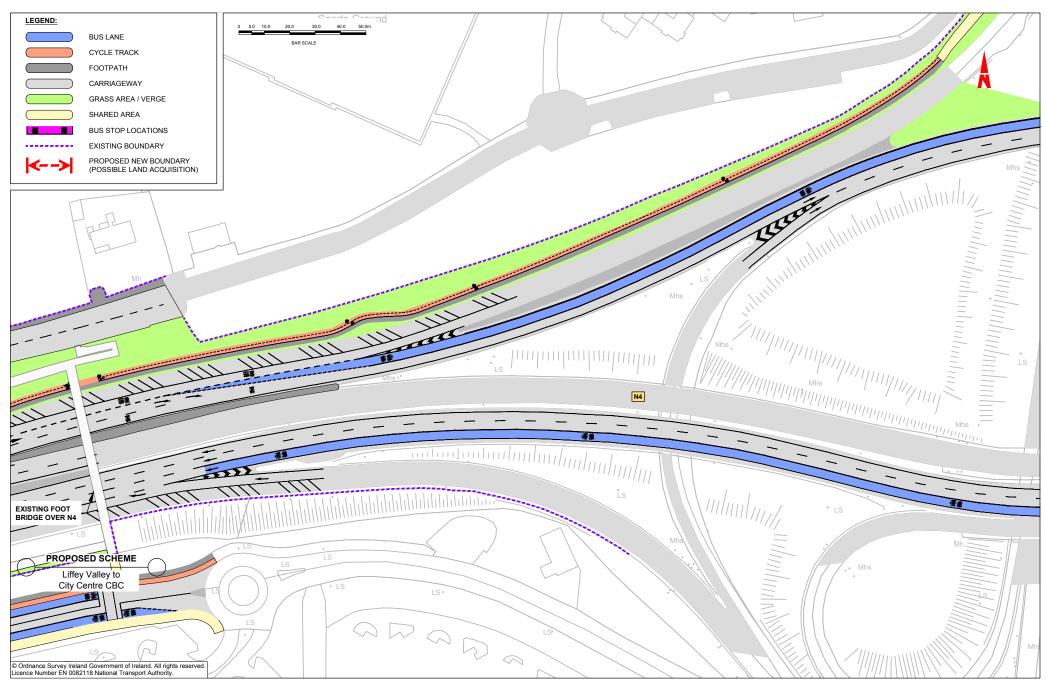
SECTION 6

MAP 8: Emerging Preferred Route

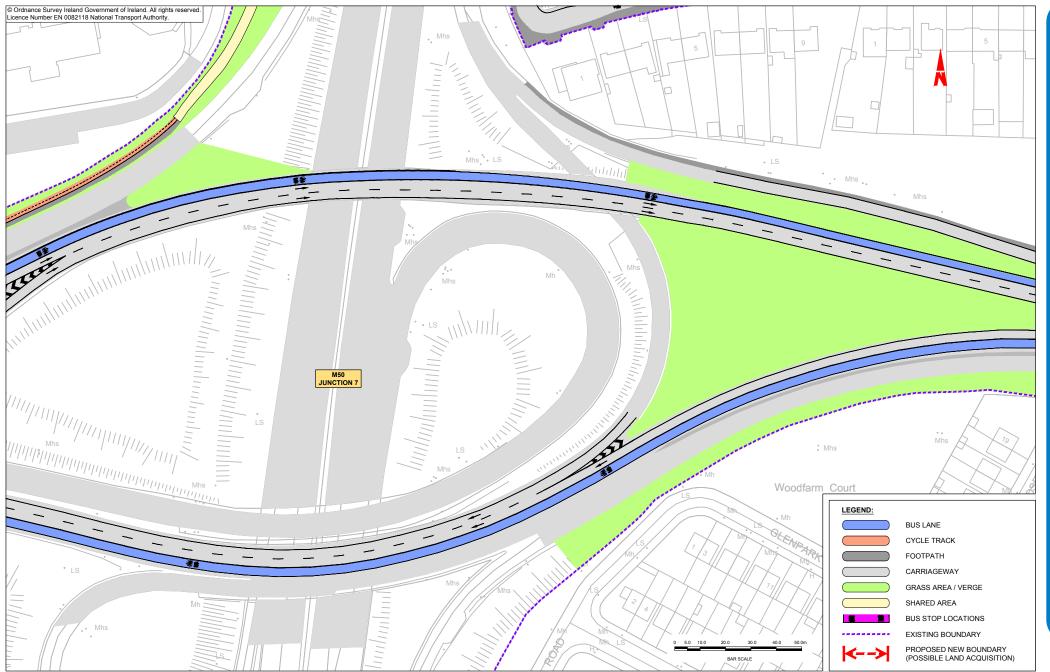


6: Lucan > City Centre

MAP 9: Emerging Preferred Route



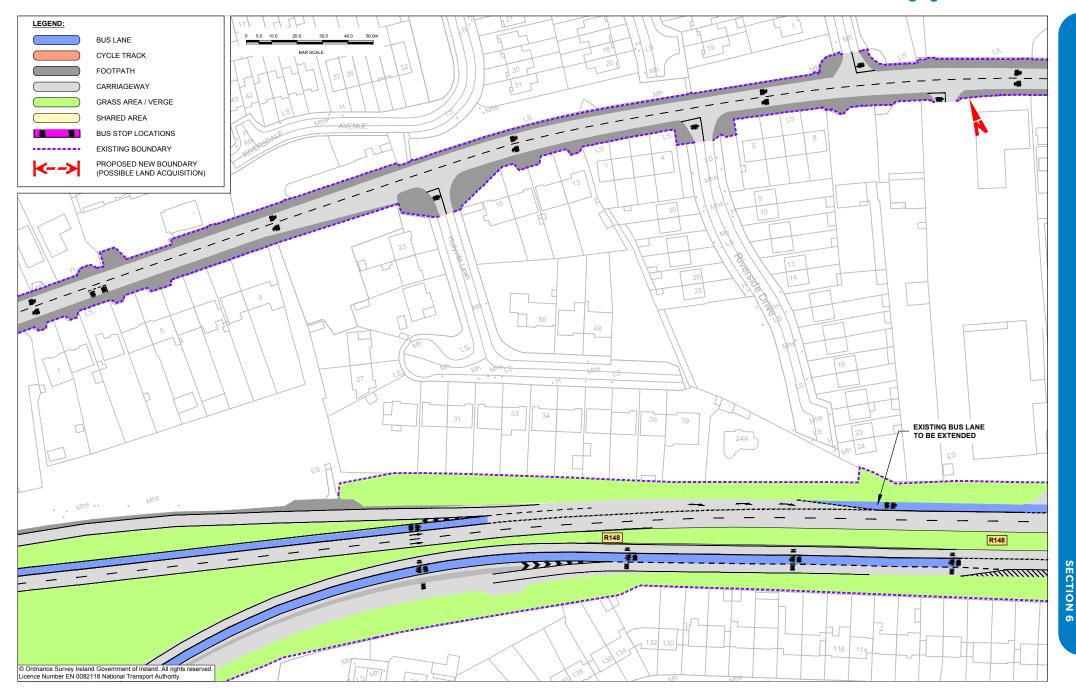
MAP 10: Emerging Preferred Route



SECTION 6



MAP 12: Emerging Preferred Route



SECTION 6

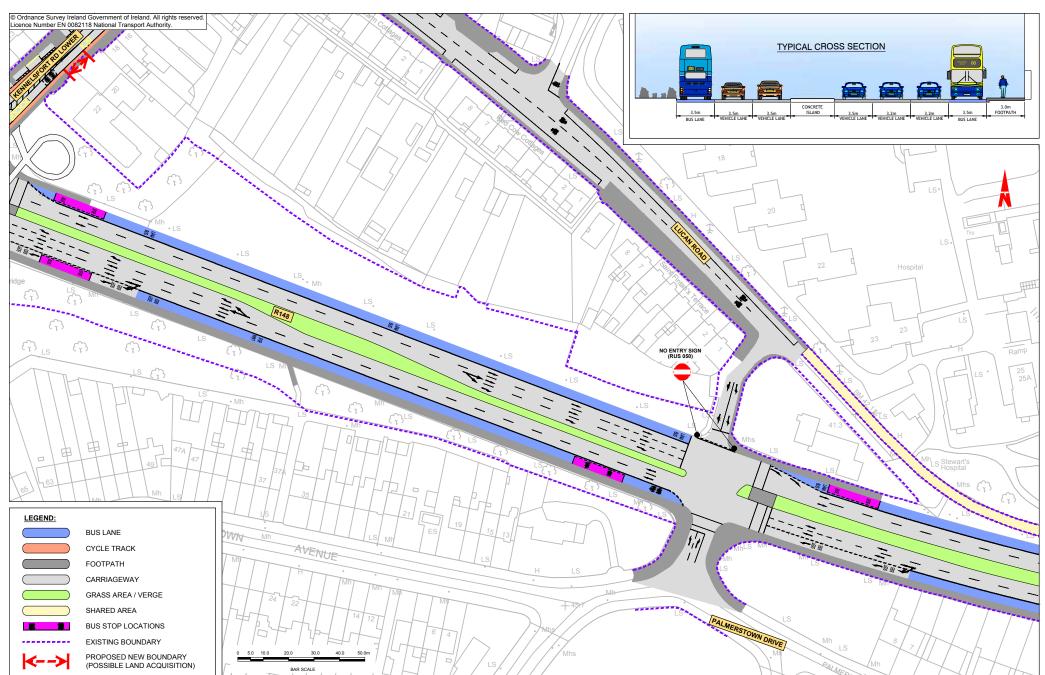
MAP 13: Emerging Preferred Route



MAP 14: Emerging Preferred Route

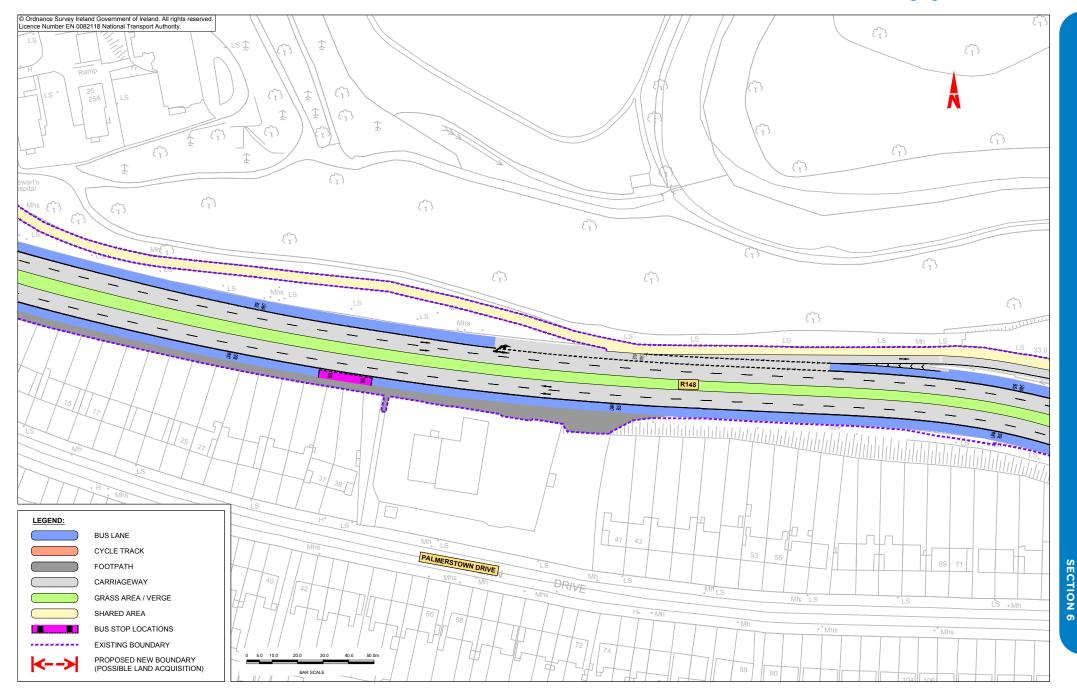


MAP 15: Emerging Preferred Route

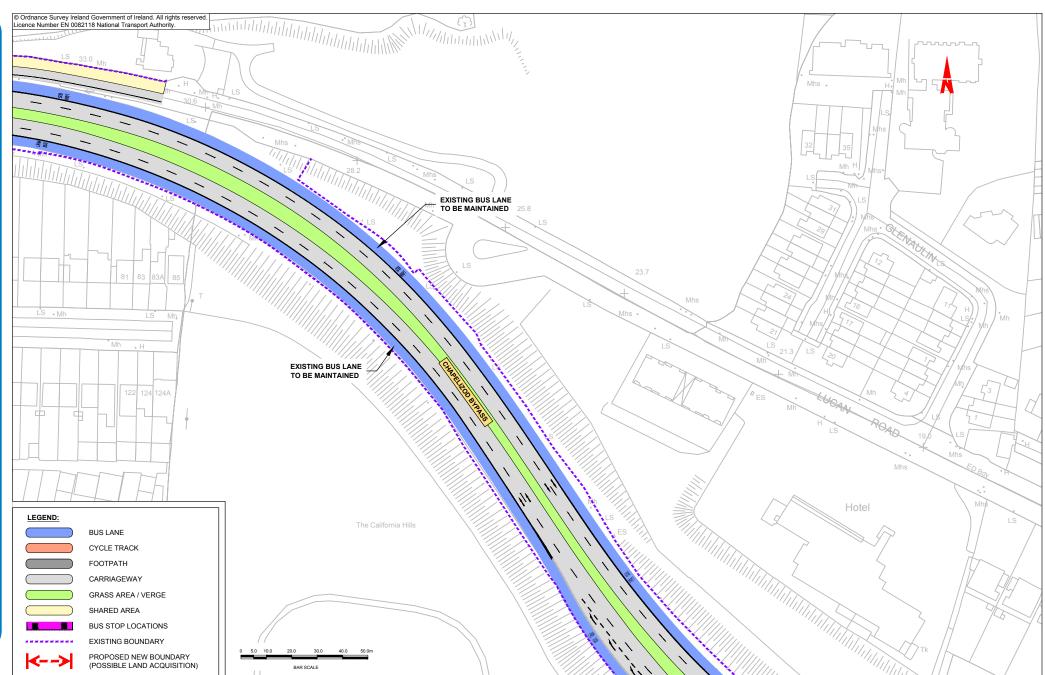


SECTION 6

MAP 16: Emerging Preferred Route

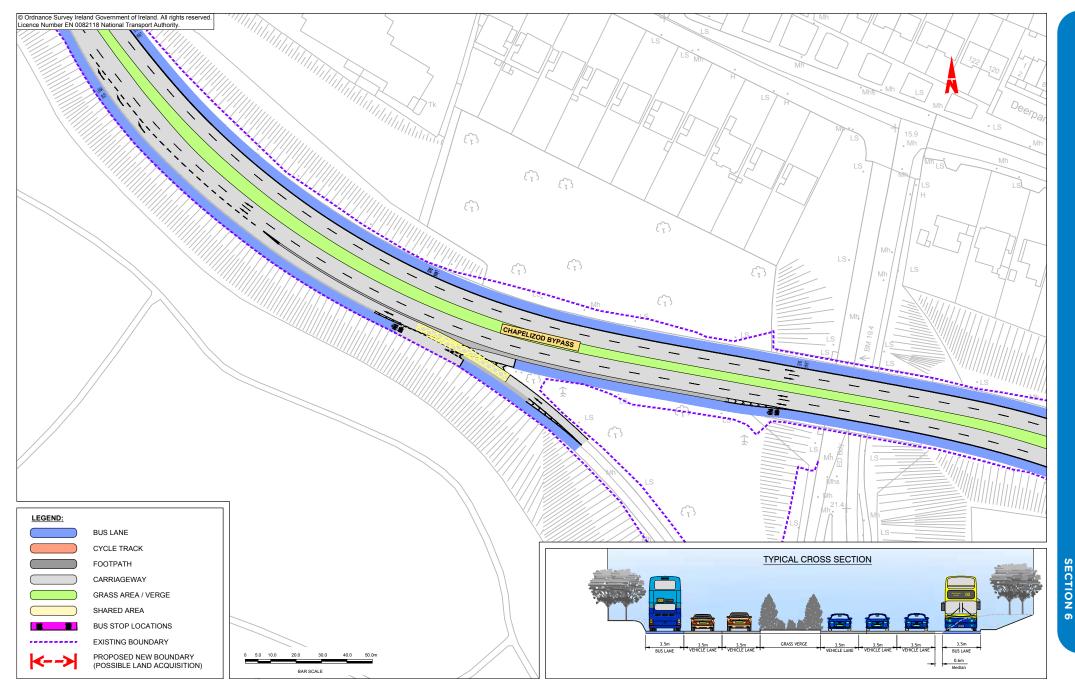


MAP 17: Emerging Preferred Route



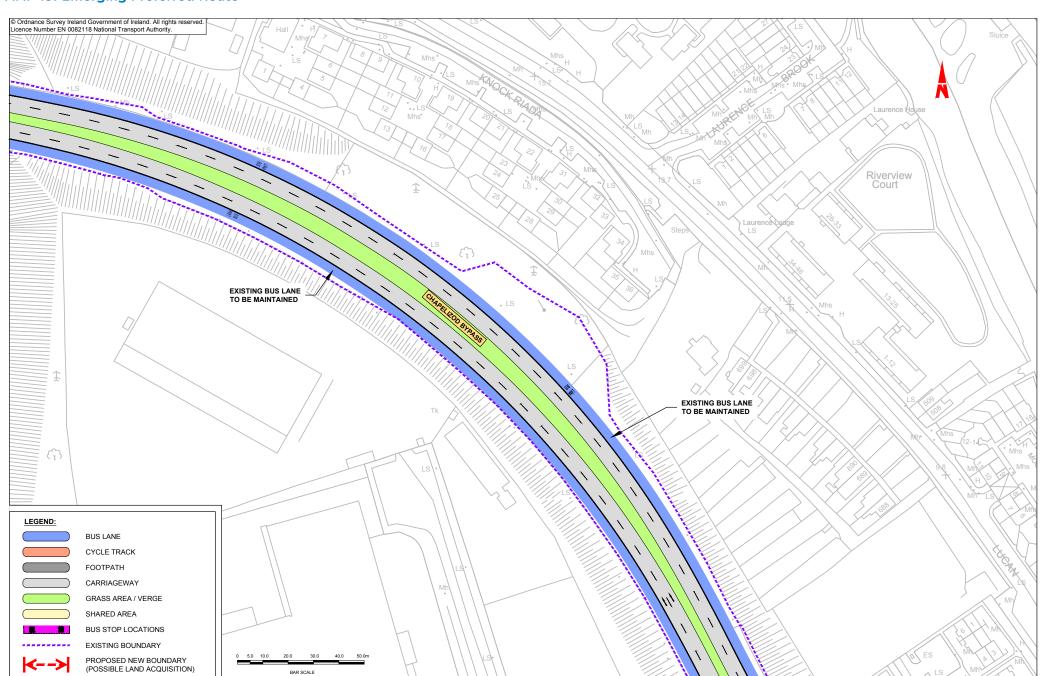
SECTION 6

MAP 18: Emerging Preferred Route

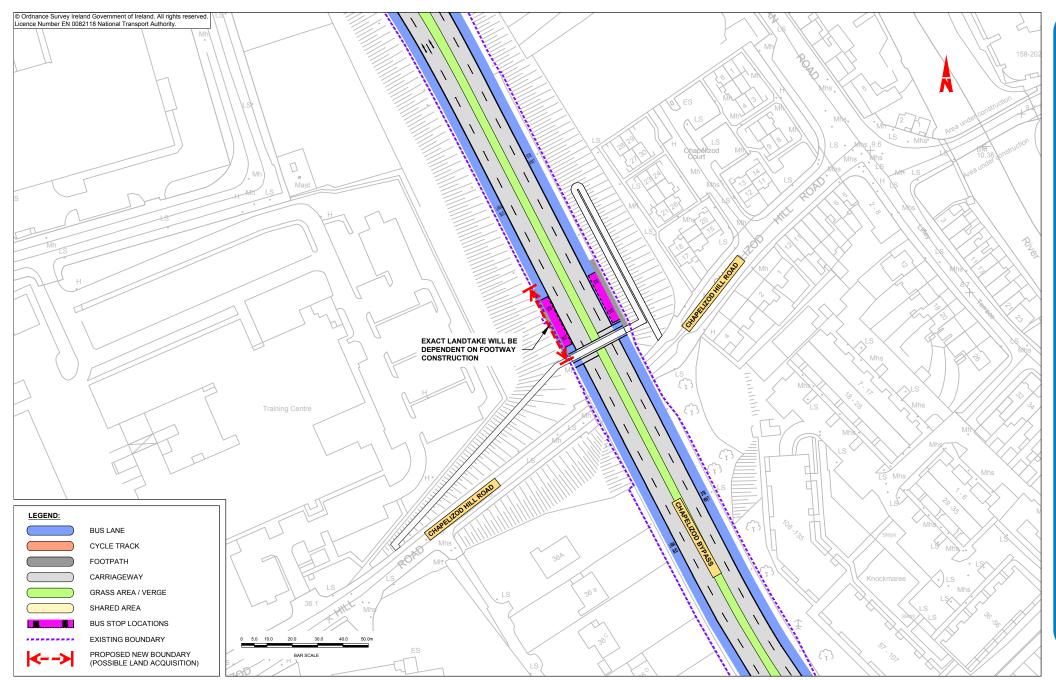


6: Lucan > City Centre

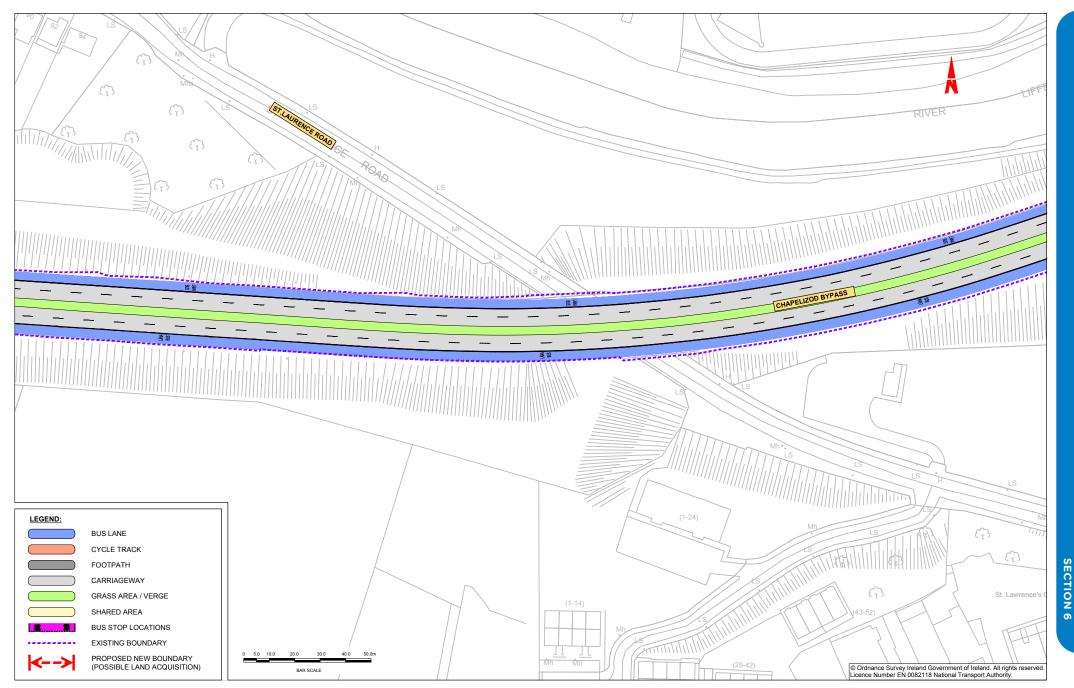
MAP 19: Emerging Preferred Route



MAP 20: Emerging Preferred Route

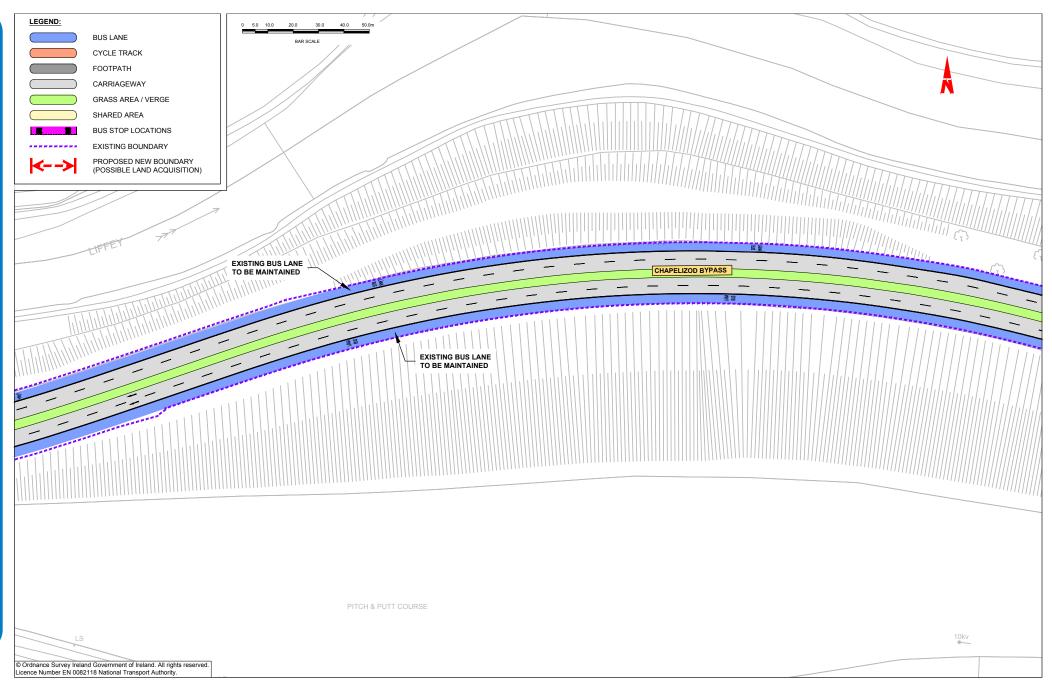


MAP 22: Emerging Preferred Route

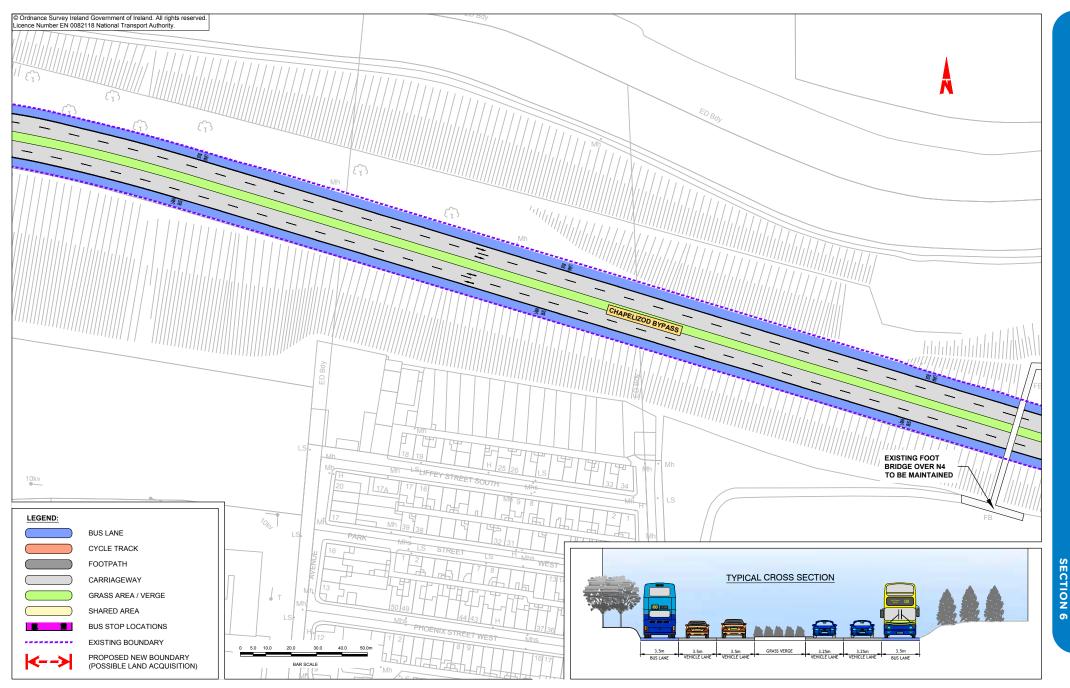


6: Lucan > City Centre

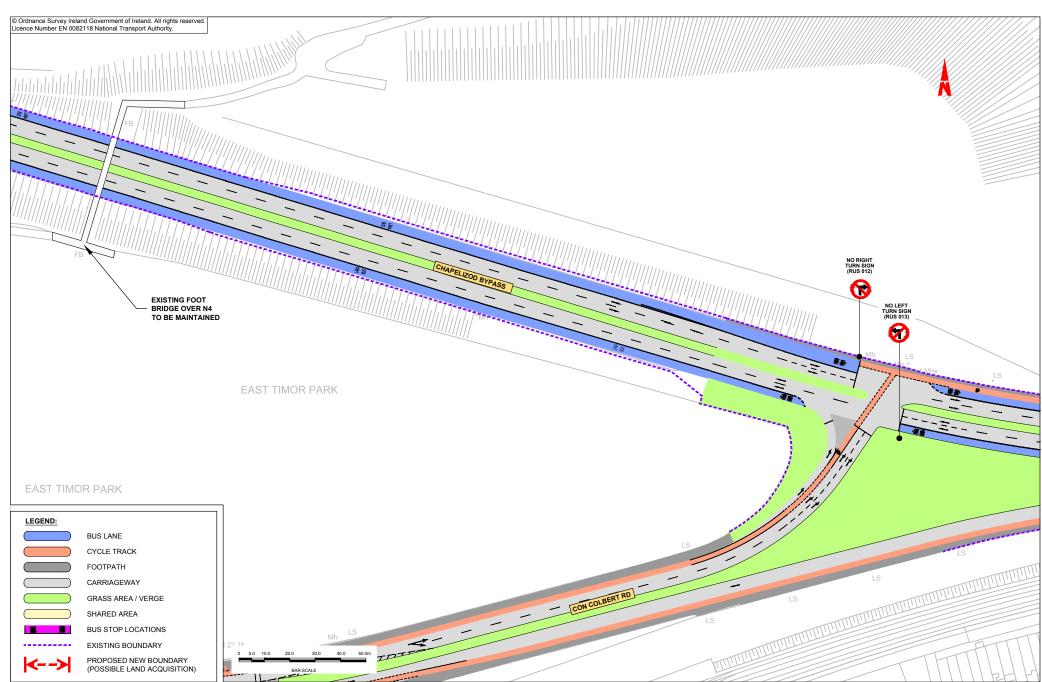
MAP 23: Emerging Preferred Route



MAP 24: Emerging Preferred Route

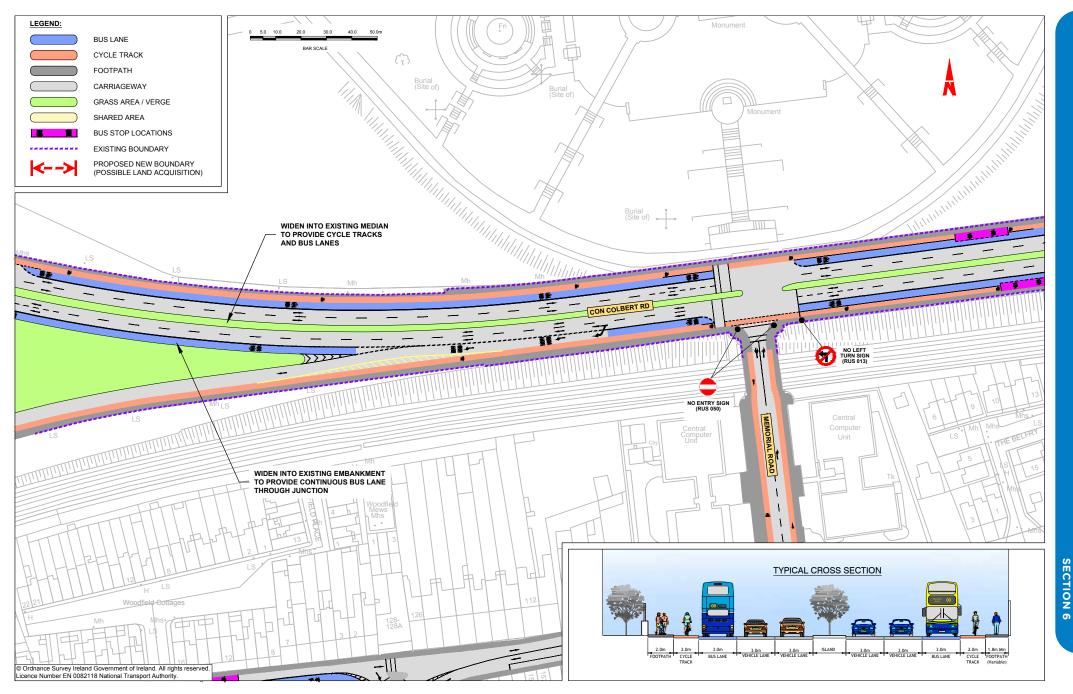


MAP 25: Emerging Preferred Route



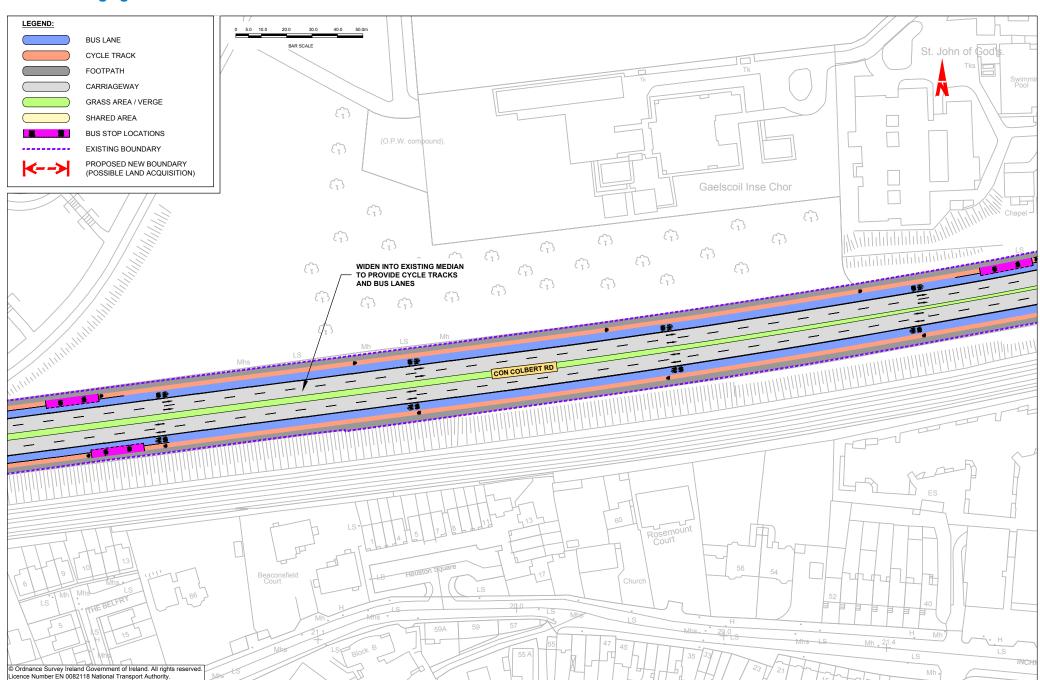
SECTION 6

MAP 26: Emerging Preferred Route

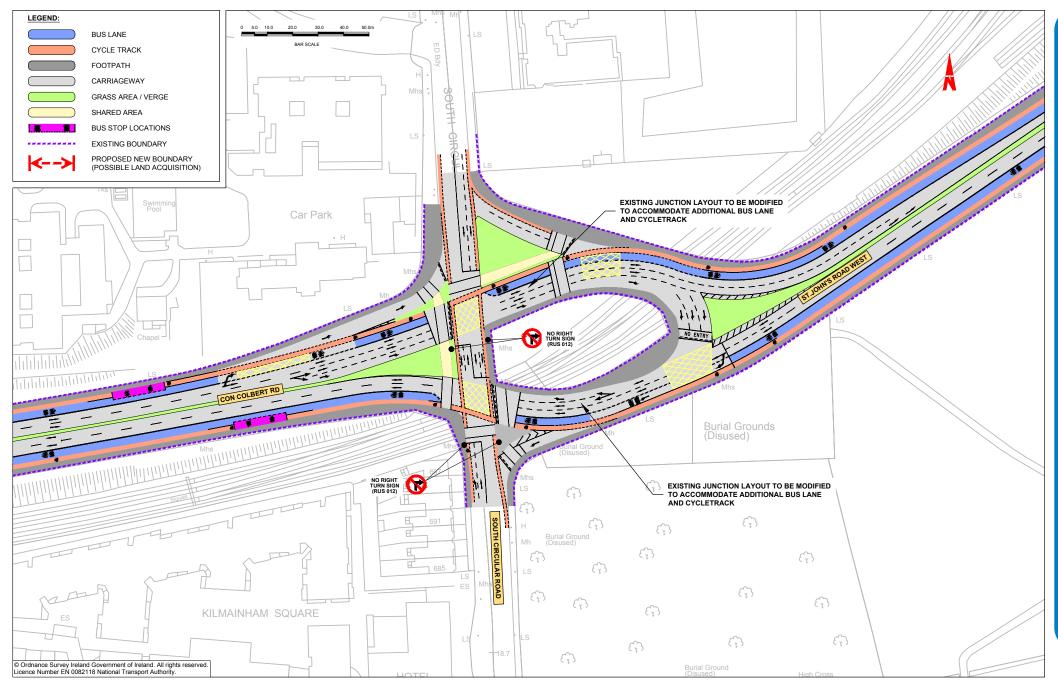


SECTION 6

MAP 27: Emerging Preferred Route

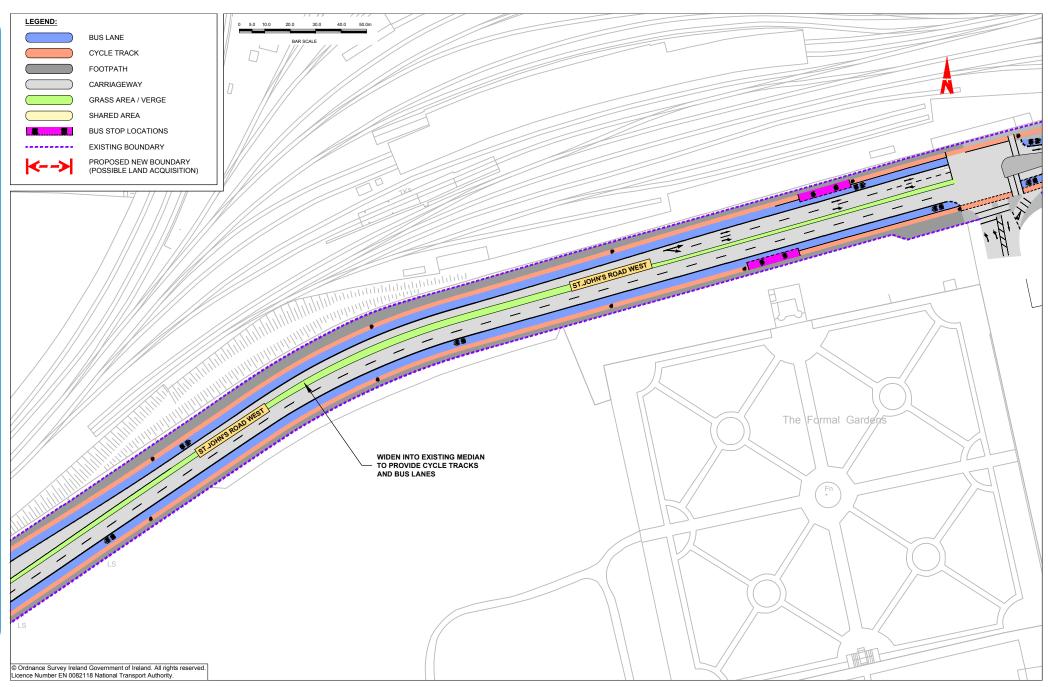


MAP 28: Emerging Preferred Route

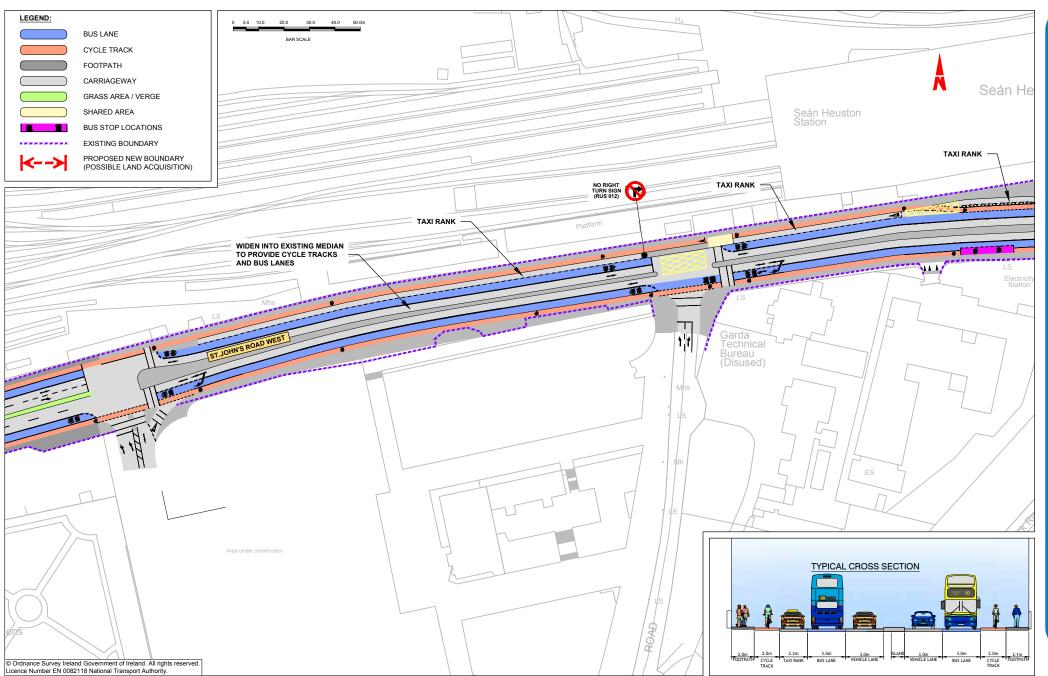


6: Lucan > City Centre

MAP 29: Emerging Preferred Route



MAP 30: Emerging Preferred Route







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