AtkinsRéalis

July 2025

0086381DG0124

ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Route B Feasibility, Option Selection and Appraisal Report

Westmeath County Council

Notice

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Document history

Document title: Route B Feasibility, Option Selection and Appraisal Report

Document reference: 0086381DG0124

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
0	Draft	KP	DP	AB	ST	April 2024
1	For Information	KP	DP	AB	ST	April 2024
2	For Part 8 Publication	KP	DP	AB	ST	July 2024

Client signoff

Client	Westmeath County Council
Project	ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE
Job number	0086381
Client signature/date	

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1. Introduction

1.1 Overview

Westmeath County Council (The Client/WCC) as the Contracting Authority and National Transport Authority (NTA), appointed AtkinsRéalis (the Consultant) to provide Engineering-led Multi-disciplinary Consultancy and Design services for the concept development & option selection, preliminary design and statutory processes of active travel provisions and associated works on the Athlone Active Travel Schemes Bundle.

The following are the key service requirements of the proposed project:

1. Identification of constraints and development of scheme options report including multi-criteria assessment of the proposed design options;
2. Development of a preliminary design and associated design report for the preferred option;
3. Obtain necessary statutory approval / consent for the proposed scheme;

The project is located in Athlone town, County Westmeath. The scheme extents and routes are highlighted in Figure 1-1. Figure 1-1 also outlines 6 separate routes.

This report outlies active travel and options relating to Route B.

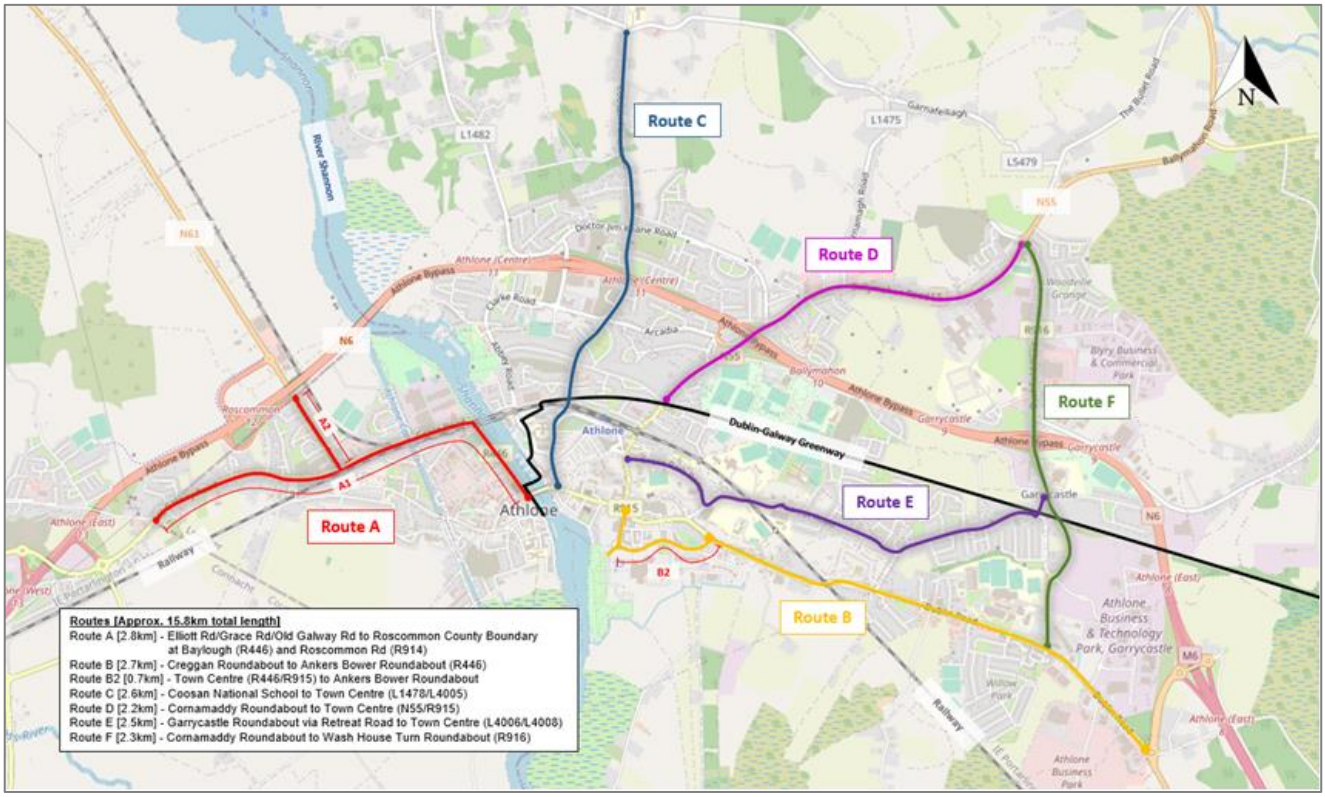


Figure 1-1 - Site Location and Pathfinder

The project is located in Athlone, a town on the border of counties Roscommon and Westmeath. It is situated on the southern coast of Lough Ree. In total there is approximately 15.8 km of active travel planned for Athlone. The 15.8 km identified has been divided into 6 separate sub routes, these routes are as follows:

- Route A [2.8 km] - Elliott Rd/Grace Rd/Old Galway Rd to Roscommon County Boundary at Baylough (R446) and Roscommon Rd (T914).
  - Route A1 [2.3 km] - Tesco Express in Boylough to Luan Gallery and St. Peter and Paul church (R446).
  - Route A2 [0.5 km] - Junction of the Old Galway Road (R446) and Roscommon Road (R914) to the Roscommon County boundary (R914).
- **Route B [2.7 km] - Creggan Roundabout to Anker Bower Roundabout (R446).**
- Route B2 [0.7km] - Town Centre (R446/R915) to Ankers Bower Roundabout. (Subject to approval and funding)
- Route C [2.6km] - Coosan National School to Town Centre (L1478/L4005).
- Route D [2.2km] - Cornamaddy Roundabout to Town Centre (N55/R915).
- Route E [2.5km] - Garrycastle Roundabout via Retreat Road to Town Centre (L4006/L4008).
- Route F [2.3km] - Cornamaddy Roundabout to Wash House Turn Roundabout (R916).

The purpose of this report is to present the feasibility study for the scheme; the options proposed; and the assessment and appraisal of these options for Route B.

1.2 Purpose of the Report

The purpose of this report is to present the feasibility study for Route B of the proposed scheme, the options proposed and the assessment and appraisal for the options, collectively referred to Route F under the project name: “Athlone Active Travel Schemes Bundle”. The report also comprises of the identification and evaluation of constraints following the methodology set in the National Transport Authority’s (NTA) 2020 Project Approval Guidelines (PAG).

1.3 Project Objectives and Expected Benefits

The overall purpose of the Athlone Active Travel Schemes Bundle is to provide upgraded pedestrian and cycling facilities in addition to facilitating any necessary infrastructure provisions to cater for future public transport upgrades.

The main aims of this project are:

- To design new/upgrade existing cycleways/pedestrian footpaths, in order to reduce public dependence on private vehicles as a primary mode of travel, using best practice standards and complementing the surrounding environment.
- To meet and accommodate WCC and stakeholder requirements.
- To meet planning, statutory and procurement requirements.

The Project Objectives are:

- Reduced public dependence on private vehicles as a primary mode of travel.
- Integration of safe and convenient alternatives.
- Enhance the area and contribute to a more attractive place.
- Provide safe pedestrian and cyclist facilities for school children and students to travel to and from school.
- Create opportunities to be physically active and reduce the negative consequences of car-based commuting.
- Provides sustainable travel options.
- Enhanced safety of Vulnerable Road Users.

The objectives for the scheme are based on multi criteria requirements outlined by the Department of Transport in their report *‘Transport Appraisal Framework (June 2023)’* (TAF). The multi-criteria headings are as follows:

- **Transport User Benefits and Other Economic Impacts:** To improve economic welfare of transport network users measuring the connectivity with existing and proposed public transport facilities as well as other economic impacts related to costs of construction and maintenance.
- **Accessibility Impacts:** To improve accessibility to key services, such as retail, healthcare and educational facilities and other high employment areas. Improvements for all road users and bring social inclusion benefits to those for whom non-motorised means are the predominate form of transit. This criterion will also assess four of the five main requirements for cycle-friendly infrastructure according to the Cycle Design Manual, which are: coherence, directness, comfort and attractiveness.
- **Social Impacts:** To improve accessibility for the socially, economically and physically disadvantaged groups; to provide increased health benefits by raising activity levels and to ensure gender impacts are addressed.
- **Land Use Impacts:** To integrate the scheme into strategic land use planning / strategies as set out in national and regional policies and guidelines.
- **Safety Impacts:** To reduce the potential for conflict between all road users along the routes through the provision of a facility which is in line with the current standards. The Scheme will seek to:
  - Improve safety and provide a better environment for vulnerable road users within the study area
  - Improve security by providing adequate lighting and visibility to deter anti-social behaviour.
- **Climate Change Impacts:** To reduce gas emissions in the transport sector by encouraging active travel through improved infrastructure and also to improve the robustness of infrastructure to be able to resist effects of climate change (extreme weather events).
- **Local Environmental Impacts:** To minimize impacts on the receiving environment, considering air quality, noise and vibration, biodiversity, water resources and soil quality, landscape and visual quality and cultural and heritage impacts.

2. Policy and Design Guidance

2.1 Policy Review

This chapter outlines the review of the relevant transport policies, guidance, and studies for the development of the Athlone Active Travel Schemes Bundle. Many long-lasting plans and policy objectives at all levels have been used to complete the policy review element of the Transport and Mobility Strategy. Furthermore, these will be used to inform the design decisions and to achieve the goals and objectives of the proposed network. The breakdown of the of policies reviewed and detailed in this section are listed in the following order:

- National Level Policy;
- Regional Level Policy; and
- Local Level Policy

2.2 National Level Policy

2.2.1 National Planning Framework (Project Ireland 2040)

Project Ireland 2040 – National Planning Framework (NPF) provides a high-level strategic planning framework to guide development and investment. Athlone is located at the Midland Region, which alongside the Eastern region, has experienced population growth at more than twice the national rate. A population of 2.85 million is forecast by 2040 in the Eastern and Midland Region; 500,000 more people than lives there at present.

The following policy objectives are relevant to the Athlone Active Travel Schemes Bundle:

- **National Policy Objective 4:** Ensure the creation of attractive, liveable, well-designed, high-quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and well-being.
- **National Policy Objective 27:** Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments and integrating physical activity facilities for all ages.
- **National Policy Objective 64**: Improve air quality and help prevent people being exposed to unacceptable levels of pollution in our urban and rural areas through integrated land use and spatial planning that supports public transport, walking and cycling as more favourable modes of transport to the private car, the promotion of energy efficient buildings and homes, heating systems with zero local emissions, green infrastructure planning and innovative design solutions.

2.2.2 National Development Plan 2021 – 2030

The National Development Plan 2021-2030 (NDP) sets out the investment priorities that will underpin the successful implementation of the NPF. The NDP steers planning policy and guides investment decisions at a national, regional, and local level. Relevant priorities identified in the NDP are summarized below.

- **NSO 2 Enhanced Regional Connectivity:** The NDP lists the strategic investment priorities with active travel being the most important, followed by public transport, and finally national roads. In line with this prioritization, the plan highlights the need to deliver high-quality greenways and additional walking and cycling infrastructure across Ireland to support the shift to active travel modes.
- **NSO 4 Sustainable Mobility**: The NDP puts the highest priority for mobility investment on active travel. It notes that increasing modal share of walking and cycling is critical in ensuring Ireland meets its climate action goals.

- **NSO 8 Transitioning to a Climate-Neutral and Climate-Resilient Society**: The NDP commits to encouraging a significant modal shift away from fossil-fuel based transport. A key part of this is the provision of cycling and walking routes to provide sustainable transport options.

2.2.3 National Investment Framework for Transport in Ireland (NIFTI)

The National Investment Framework for Transport in Ireland (NIFTI) defines the Department of Transport's priorities for the future investment in the transport network to support the implementation of the National Development Plan. NIFTI defines the investment priorities for transportation in Ireland as:

- Mobility of people and goods in urban areas
- Protection and renewal
- Enhanced regional and rural connectivity
- Decarbonisation

Figure 2-1 - NIFTI Four Investment Priorities (source: gov.ie/transport)

To achieve these goals, NIFTI defines the modal hierarchy and transportation investment priorities. NIFTI gives the highest modal priority to active travel followed by public transport and finally private vehicles. This means that, when possible, active transport options should be considered first when attempting to achieve the stated investment priorities.

In addition to modal priority, NIFTI also defines an intervention hierarchy. This hierarchy states that investments should be made in the following order:

- Maintenance of existing infrastructures and assets
- Optimisation of the existing network and infrastructure
- Improvements to the existing infrastructure
- Construction of new infrastructure.

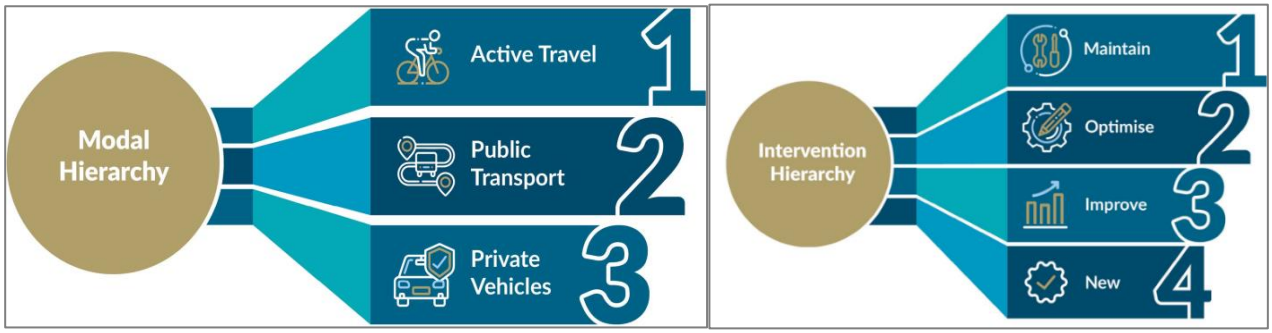


Figure 2-2 - NIFTI Modal and Intervention Hierarchies (source: gov.ie/transport)

As per the Intervention Hierarchy, NIFTI places emphasis on the use of existing assets (through maintenance, optimisation, or improvement), over the development of new. NIFTI recognises that investments in transport networks and services, and the policies that drive these investments, can impact on the environment, and several environmental assessments have been carried out in parallel with its development, which includes a Strategic Environmental Assessment (SEA), which highlighted a number of potential impacts associated with the outcomes, Investment Priorities and Hierarchies proposed by NIFTI, as follows:

- Negative Impacts include, but are not limited to:
  - Short-term/localised negative impacts on water quality and increased noise pollution during construction.
  - Localised increases in pollution or increased CO2 emissions, or localised climate vulnerability such as flooding.
  - Long-term impacts on biodiversity, landscape, or cultural heritage features as a result of new infrastructure developments.
  - Long-term impacts because of land-take and changes in land use required for new developments.
- Positive Impacts include, but are not limited to:
  - Positive impacts to population and human health because of increased safety, with improvements to signage, adequate road surfacing, junction upgrades or realignment works.
  - Benefits for the economy, tourism and regional connectivity providing better social inclusion.
  - Reduced carbon emissions and improved air quality because of sustainable mobility developments.
  - Reduction in localised noise pollution and vibration because of development in sustainable and active travel modes and actions to promote electric vehicles.

2.2.4 National Sustainable Mobility Policy

The Department of Transport published the National Sustainable Mobility Policy in April 2022. The Policy sets out the policy framework for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in greenhouse gas emissions by 2030. The new policy will primarily focus on measures to promote and facilitate active travel and public transport for all thereby encouraging less private car usage nationally to support the Government's climate commitment.

The policy will outline a set of actions to increase active travel infrastructure provision and improve public transport capacity and services across the country. These will be supported by behavioural change and demand management measures to make sustainable modes the preferred choice for as many people as possible. The Climate Action Plan sets out additional measures to promote other complementary transport mitigation measures such as the switch over to electric car usage and greater use of renewable fuels for transport. The Athlone Active Travel Schemes Bundle is in alignment with this plan and would contribute to the implementation of several key actions identified in the plan.

Figure 2-3 below illustrates the benefits of sustainable mobility which will be achieved by delivering the Athlone Active Travel Schemes Bundle.

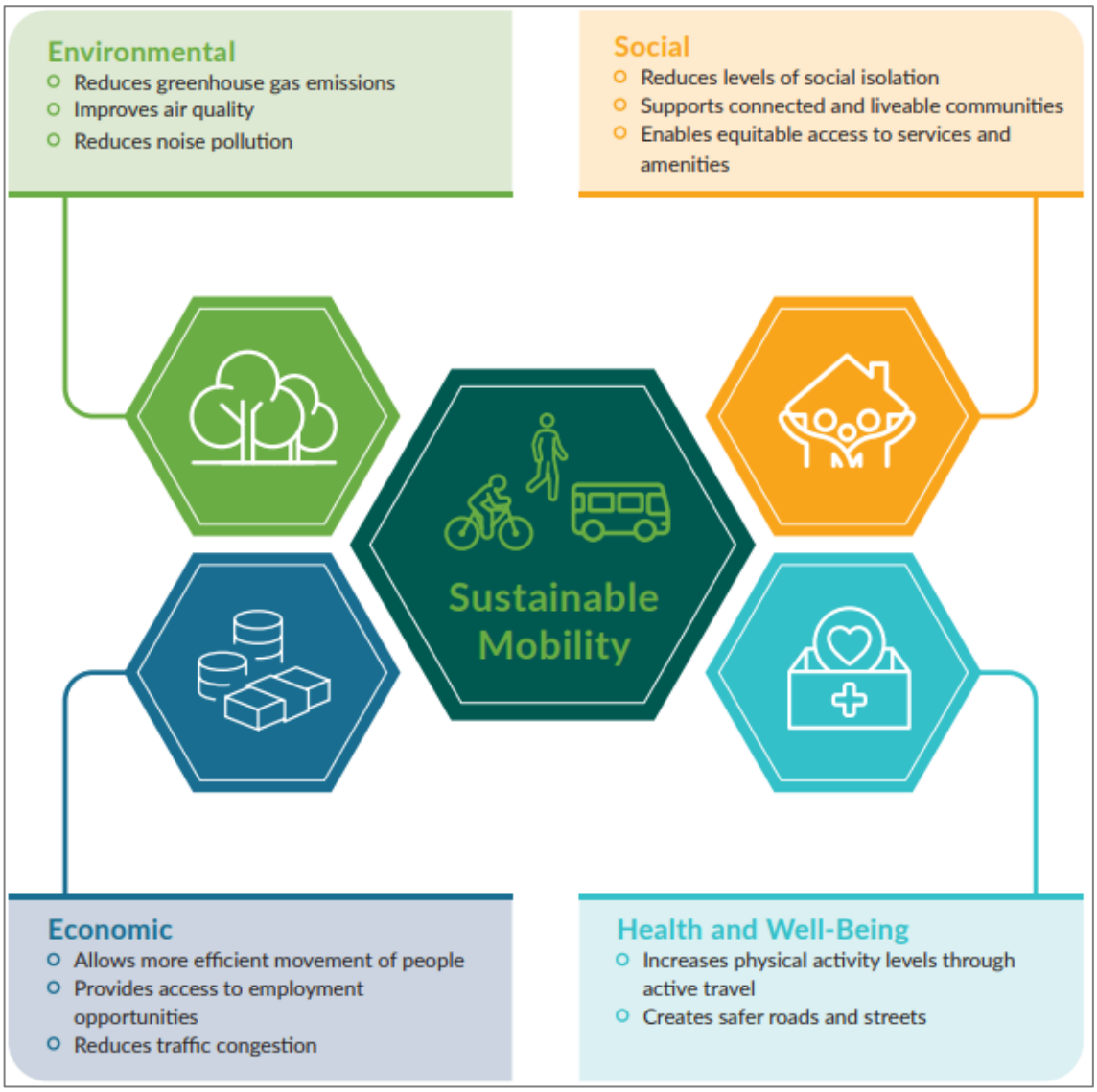


Figure 2-3 - Benefits of Sustainable Mobility

According to the NSMP, the above benefits can be achieved through ten goals, all of which are guided by three key principles, shown in Table 2-1.

Table 2-1 - NSMP Principles and Goals (source: National Sustainable Mobility Plan)

Principles	Goals
Safe and Green Mobility	1. Improve mobility safety.
	2. Decarbonise public transport.
	3. Expand availability of sustainable mobility in metropolitan areas.
	4. Expand availability of sustainable mobility in regional and rural areas.

	5. Encourage people to choose sustainable mobility over the private car. People Focused Mobility.
People Focused Mobility	**6. Take a whole of journey approach to mobility, promoting inclusive access for all.**
	7. Design infrastructure according to Universal Design Principles and the Hierarchy of Road Users model.
	8. Promote sustainable mobility through research and citizen engagement. Better Integrated Mobility.
Better Integrated Mobility	**9. Better integrate land use and transport planning at all levels.**
	10. Promote smart and integrated mobility through innovative technologies and development of appropriate regulation.

2.2.5 Climate Action Plan 2024

The Climate Action Plan (CAP24) sets out a course of action over the coming years to address climate disruption, which is acknowledged as having diverse and wide-ranging impacts. The document outlines the aims for each sector of industry in Ireland. Electricity, Transport, Built Environment, Industry, Agriculture and Land use have all been assessed in the document with a roadmap laid out to deliver a reduction of emissions in each of these sectors between 2021 and 2030, and to reach net zero nationally by no later than 2050.

As part of the plans for a significant cut in transport emissions, the CAP24 states an objective of 125,000 extra walking, cycling and public transport journeys per day by 2030.

The promotion of walking, cycling and public transport, and a modal shift from the use of private vehicles will all contribute to the achievement of the targets set out in relation to climate action. The CAP24 also mentions the Pathfinder Programme and how the projects will be delivered meeting key criteria as health, well-being, place-making, permeability and universal design.

Specific actions identified in the plan that relate to the Athlone Active Travel Schemes Bundle are listed below.

- **Action TR/24/11:** Advance roll-out of walking/cycling infrastructure in line with National Cycle Network and CycleConnects plans.
- **Action TR/24/08:** Support and promote a modal shift towards healthy active and sustainable mobility and sustainable mobility in the design and delivery of LDA developments. Plan to reduce travel by private car and design to optimise connectivity and access to sustainable and active travel. Promote mobility management planning and e-mobility as well as options for car sharing/clubs.

2.2.6 Healthy Ireland Strategic Action Plan 2021 – 2025

The vision of the 'Healthy Ireland Strategy 2021-2025' is to create a healthy Ireland, where everyone can enjoy physical and mental health and wellbeing to their full potential, where wellbeing is valued and supported at every level and is everyone's responsibility.

This policy is developed to encourage walking and cycling by developing physical activities into daily life and decreasing dependency on private cars and replacing this trip with cycling and walking includes public transport as well which will also improve local air quality. This can play a vital role in overall obesity reduction programme which also supports demand management study. This measure comprises of health, environmental and urban land aids. The document sets out four central goals for improved wellbeing and outlines clear routes and strategies to achieve these goals. These goals are as listed below:

- Increase the proportion of people who are healthy at all stages of life;
- Reduce health inequalities;
- Protect the public from threats to health and wellbeing; and
- Create an environment where every individual and sector of society can play their part in achieving a healthy Ireland.

2.2.7 NTA CycleConnects

The National Transport Authority (NTA) has opened the public consultation process for proposals to develop new cycle networks across 22 counties, forming part of the CycleConnects: Ireland's Cycle Network programme. This includes an urban cycle network in Athlone and a county network in the rest of Westmeath and Roscommon.

The Athlone network includes existing greenways, along with proposed primary and secondary routes. Primary urban routes are seen as high-quality cycle routes that can accommodate a high volume of cyclists typical in most urban areas. These will look to feature on major desire lines in town centres and form radial and orbital cycle routes in the major towns and cities. The inter urban routes are on-road cycle routes to link all key settlements and destinations outside urban areas both within the county and into adjacent counties. These may have potential to provide off-road/segregated routes parallel to the existing road in later years.

The draft proposals envisage an extensive cycling network across the 22 counties, complementing the cycling plans already developed for the Greater Dublin Area (Meath, Kildare, Wicklow and Dublin). Together these plans will create an overall comprehensive cycle network for Ireland.

This Proposals are in line with Action 28 of the Government's "National Sustainable Mobility Action Plan 2022-2025". They were developed following consultation with all local authorities and align with Transport Infrastructure Ireland's (TII) proposed National Cycle Network. The Athlone Active Travel Schemes Bundle extents form part of the following links as identified within the NTA's "Proposed Athlone Urban Cycle Network", as shown in Figure 2-4.

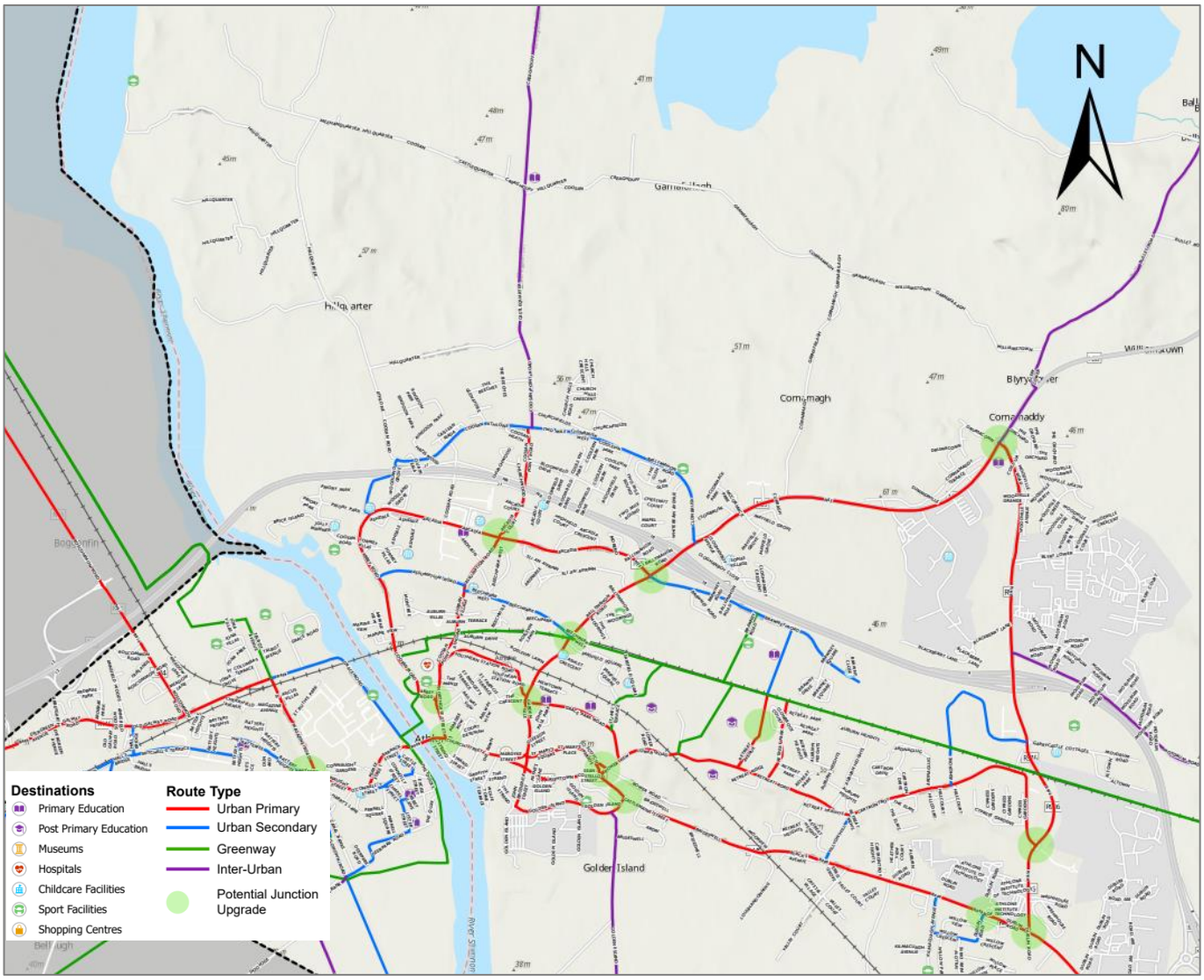


Figure 2-4 – NTA CycleConnects Routes in Athlone

The scheme extents form part of the following links as identified within the NTA's "Proposed Athlone Urban Cycle Network", as highlighted below for Routes B.

Figure 2-5– NTA CycleConnects Routes (Route B Highlighted)

2.2.8 National Cycle Policy Framework (NCPF) 2009 – 2020

The backdrop to this policy is the government's transport policy for Ireland. The NCPF sets out a suite of interventions to improve the ease and safety of cycling to achieve greater mode share going forward. The framework states that the focus needs to be on:

- Reducing volumes of through-traffic, especially HGVs, in city and town centres and especially in the vicinity of schools and colleges.
- Calming traffic/enforcing low traffic speeds in urban areas.
- Making junctions safe for cyclists and removing cyclist-unfriendly multi-lane one-way street systems.
- Paying special attention to integrating cycling and public transport.

Other interventions include the following:

- Schools will be a strong focus of the NCPF.
- Supporting the provision of dedicated signed rural cycle networks for Cycling Tourism.
- Ensuring surfaces used by cyclists are maintained to a high standard and are well lit.
- Ensuring that all cycling networks are sign-posted to a high standard.
- Supporting the provision of secure cycle parking at all destinations of importance.
- Integrating cycling and Public Transport, including cycle parking at stations, and the capability to carry bikes on Public Transport services.
- Creation of municipal bike systems to complement an improved Public Transport system.
- Ensuring proposals cater for a 10% modal share of cyclists.

The NCPF states that making provision for cyclists in the urban environment does not merely consist of providing dedicated cycling facilities, but also involves wider traffic interventions that benefit all vulnerable road users.

2.2.9 Get Ireland Active, 2016

- Healthy Ireland, a Framework for Improved health and wellbeing 2013-2025 is the national framework for seeking to improve the health and wellbeing of people living in Ireland. The framework identifies a number of broad inter-sectoral actions, one of which commits to the development of a plan to promote increased physical activity levels.
- Get Ireland Active aim is to increase physical activity levels across the entire population thereby helping to improve health and wellbeing. Get Ireland Active has developed a plan which will seek to ensure that no group is disadvantaged and recognises that targeted interventions are required to address and overcome barriers to participation which are experienced by some people.
- Get Ireland Active acknowledges the role that cycling can play in achieving physical activity targets. The plan highlights the importance of good planning to promote the use of cycling, stating that the layout of the environment has a significant impact on the levels of physical activity undertaken across age groups.
- “The built environment is an important determinant of physical activity behaviour. The way the built environment is designed, planned, and built can also act as a barrier to being active and can reinforce sedentary behaviour and car dependence.”
- Cycling for transport or leisure is a form of physical activity that can easily be incorporated into the daily activities of many people.
- The development of cycling facilities in Athlone is a positive example of how the built environment can be developed to promote physical activity, improving the health and well-being of those that choose to travel by bike. Facilities like this will be used for a variety of journey purposes including travelling to work and school, which is an ideal opportunity to increase physical activity through everyday journeys.

2.3 Regional Level Policy

2.3.1 Regional Spatial and Economic Strategy for the Eastern and Midland Region, 2019-2031

The Regional Spatial and Economic Strategy is a strategic plan and investment framework to shape and manage growth in the Eastern and Midland Region. The RSES provides a roadmap for effective regional development identifying key strategic assets, opportunities and challenges and sets out policy responses to ensure the people's needs are met.

The document delivers a combination of response, design, and innovation in how the Eastern & Midlands Region does business, delivers homes, builds communities and values land-use – creating healthy places and promoting sustainable communities. The RSES introduces the concept of a Growth Framework to achieve this integration as it is considered that regional growth cannot be achieved in linear steps.

The "10-minute" settlement concept is proposed throughout the RSES as a means for delivering the land use and transport planning objectives, whereby a range of community facilities and services are accessible in short walking and cycling timeframes from homes or are accessible by high quality public transport to services in larger settlements.

The Strategy promotes cycling and walking as environmentally friendly, fuel efficient and healthy modes of transport to work, school, shopping and for recreational purposes. There are several Regional Policy Objectives (RPO) specifically promote the development of greenways in both urban and rural areas, as follows:

- **Regional Policy Objective (RPO) 4.4:** A cross boundary statutory Joint Urban Area Plan (UAP) for the Regional Growth Centre of Athlone shall be jointly prepared by Westmeath and Roscommon County Councils in collaboration with EMRA and NWRA. The UAP will support, the development of Athlone as an attractive, vibrant and highly accessible Regional Centre and economic driver for the centre of the Country.
- **RPO 4.7:** Support the development of a cross sectoral approach to promote Athlone as a key tourism destination in the Midlands, building on Fáilte Ireland's Hidden Heartlands brand and the forthcoming Shannon Tourism Masterplan to develop the recreation and amenity potential of waterways including the River Shannon and Lough Ree and the development of a greenway network including the Galway to Dublin Cycleway.
- **RPO 6.30:** Support existing smart city initiatives such as Smart Dublin and the All-Ireland Smart Cities Forum and support the development of smart city programmes in Athlone, Dundalk and Drogheda.
- **RPO 7.24:** Promote the development of a sustainable Strategic Greenway Network of national and regional routes, with a number of high-capacity flagship routes that can be extended and / or linked with local greenways and other cycling and walking infrastructure, notwithstanding that capacity of a greenway is limited to what is ecologically sustainable.
- **RPO 7.25:** Support local authorities and state agencies in the delivery of sustainable strategic greenways, blueways, and peatways projects in the Region under the Strategy for the Future Development of National and Regional Greenways.
- **RPO 8.13:** Support the Local Link Rural Transport Programme throughout rural areas of the Region.

The Regional Spatial and Economic Strategy states the transition to a low carbon society is a key challenge facing the region. Several primary areas are at the core of the transition strategy, in particular relevance to the Athlone Active Travel Schemes Bundle are the following areas:

- Sustainable development patterns which promote compact growth, reduce transport demand and encourage low carbon transport modes.
- Sustainable transport systems (people and freight).

2.3.2 Regional Spatial and Economic Strategy for the Northern and Western Region, 2020-2032

- **Regional Policy Objective (RPO) 3.7.1:** A cross-boundary Joint Plan shall be prepared by Westmeath County Council and Roscommon County Council in collaboration with the two Regional Assemblies to provide a coordinated planning framework for the future physical, economic, and social development of Athlone. The plan shall identify Athlone's functional urban area and adopt a boundary for the plan area in addition to the identification of strategic housing and employment development areas and infrastructure and investment requirements to promote greater coordination and sequential delivery of serviced lands for development, to realise Athlone's status as a Regional Growth Centre.
- **RPO 3.7.4:** Support the development of a cross sectoral approach to promote Athlone as a key tourism destination in the Midlands, building on Fáilte Ireland's Hidden Heartlands brand and the forthcoming Shannon Tourism Masterplan to develop the recreation and amenity potential of waterways including the River Shannon and Lough Ree and the development of a greenway network including the Galway to Dublin Cycleway.
- **RPO 3.7.16:** Promote Athlone as a sustainable transport hub, of national and regional importance and support the preparation of a joint Local Transport Plan between Westmeath and Roscommon County Councils in collaboration with transport agencies and key stakeholders to improve sustainable mobility in the town.
- **RPO 4.9:** To ensure provision is made for the expansion in accommodation, and facilities within key destination towns, such as Carrick on Shannon, Cavan, Roscommon Town and Athlone, together with necessary supporting infrastructural investments, including improvements in the public realm, transport links, accommodation, the night-time economy, and sustainable development of our natural and built economy.
- **RPO 4.10:** To ensure Orientation and Information Points targeted at 'Slow Tourism' market are provided at key Towns, such as Carrick on Shannon, Athlone, and Ballinasloe as an enabler for increasing bed-nights, and visitor numbers.
- **RPO 4.14:** Promote the development of integrated walking, cycling and bridle routes throughout the region as an activity for both international visitors and local tourists in a manner that is compatible with nature conservation and other environmental policies.
- **RPO 5.18:** The Regional Assembly shall collaborate with Local Authorities, Fáilte Ireland, Waterways Ireland, DTAS, and other relevant stakeholders in developing an integrated network of Greenways across the region's catchments. To support, and enable the development of sustainable Greenway projects, the NWRA will encourage and promote:

  (a) The advancement and growth of Greenways through several Key National and Regional Greenway Projects, which are high capacity, and which can in the medium/long term be extended and interlinked across County Boundaries and with Local Greenways, and other cycling/walking infrastructure.

  (b) Prioritisation of Greenways of scale and appropriate standard that have significant potential to deliver an increase in activity tourism to the region and are regularly used by overseas and domestic visitors, and locals, thereby contributing to a healthier society through increased physical activity.

  (c) The appropriate development of local businesses, and start-ups in the vicinity of Greenway Projects.

  (d) The development of Greenways in accordance with an agreed code of practice.

  (e) Collaborative development of Greenways and Blueways, including feasibility and route selection studies to minimise impacts on environmentally sensitive areas.
- **RPO 5.19:** The Assembly supports the further development of Greenways as part of the Outdoor Recreational Plan for Public Lands and Waters in Ireland 2017-2021', as part of an overall improvement of facilities to enhance health and wellbeing across society.
- **RPO 6.26:** The walking and cycling offer within the region shall be improved to encourage more people to walk and cycle, through:

  (a) Preparation and implementation of Local Transport Plans for Galway Metropolitan Area, Regional Growth Centres and Key Towns, which shall encourage a travel mode shift from private vehicular use towards sustainable travel modes of walking, cycling and use of public transport.

  (b) Safe walking and cycle infrastructure shall be provided in urban and rural areas, the design shall be informed by published design manuals, included the Design Manual for Urban Roads and Streets (DMURS) and the NTA Cycle Manual.

  (c) Development of a network of Greenways.

- **RPO 6.50**: Continue to encourage Active Travel initiatives and where possible leverage technology and digital platforms to enhance the delivery of cycleway and walking infrastructure, particularly in our urban centres.
- **RPO 7.9:** Promote the provision of high-quality, accessible and suitably proportioned areas of public open spaces and promote linkage with social, cultural and heritage sites and buildings. In this process prioritise access for walking and cycling.

2.3.3 Westmeath County Council Development Plan 2021 – 2027

The Westmeath County Development Plan 2021-2027 state as an aim to "*achieve a sustainable, integrated and low carbon transport system with excellent connectivity within and to Westmeath*" which will be achieved by improving existing transport infrastructure in the county. The delivery and maintenance of a multi-modal transport network is essential to improve life quality and social cohesion, according to the plan.

The census 2016 outlined Westmeath as one of the counties with highest car usage in Ireland, with 72.9% of commutes to work done by private cars and just 3.5% done by public transport. In order to promote a modal shift into more sustainable transport modes, the council is aiming to achieve a balanced and sustainable pattern of movement. The plan also highlights that walking and cycling are the most sustainable modes of transport and key components to movement and accessibility.

The following policies and objectives have relevance in relation to the Athlone Active Travel Schemes Bundle scheme:

- **Core Strategy Policy Objectives (CPO) 2.3:** Prepare a joint statutory Joint Urban Area Plan (UAP) for Athlone with Roscommon County Council in collaboration with EMRA and NWRA.
- **CPO 2.4:** Promote Athlone as a sustainable transport hub, of national and regional importance and support the preparation of a Joint Transport Plan between Westmeath and Roscommon County Councils in collaboration with transport agencies and key stakeholders to improve sustainable mobility in the town.
- **CPO 2.7:** Promote consolidation in Self-Sustaining Growth Towns coupled with targeted investment where required to improve local employment, services, and sustainable transport options and to become more self-sustaining settlements, in line with settlement specific policy contained within Chapter 8 of the plan.
- **CPO 2.16:** Promote the integration of land use and transportation policies and to prioritise provision for cycling and walking travel modes and the strengthening of public transport.
- **CPO 3.7:** Apply higher densities to the higher order settlements of Athlone and Mullingar to align with their roles as Regional Growth Centre and Key Town, subject to good design and development management standards being met.
- **CPO 4.1:** Support sustainable transport infrastructure, by developing mixed use schemes, higher densities close to public transport hubs, safe walking routes in developments, promoting alternative modes of transport and reduce the need to travel.
- **CPO 4.37:** Develop public open spaces that have good connectivity and are accessible by safe, secure walking and cycling routes.
- **CPO 4.40:** Facilitate and encourage open space to be planned for on a multi-functional basis incorporating ecosystem services, climate change measures, green infrastructure, and key landscape features in their design.
- **CPO 5.15:** Support the development of Joint Economic, Transport and Retail Plans in collaboration with Roscommon County Council and all other relevant agencies, to facilitate the growth of Athlone as a regional economic driver.
- **CPO 5.42:** Support the development of Smart City initiatives in Athlone and Mullingar.
- **CPO 6.49:** Support the provision of walking and cycling links between lakes and nearby villages, towns, and visitor attractions, provided such developments do not negatively impact on sensitive environments.
- **CPO 6.56:** Continue to augment the visitor experience on the county's greenways, through the provision of ancillary infrastructure as required, having regard to the DTTAS 'Greenways and Cycle Routes Ancillary Infrastructure Guidelines', along with high quality signage and links to nearby visitor attractions and places of interest.

- **CPO 6.57:** Support the provision of visitor services within existing towns and villages, such as cafes, accommodation etc, by providing linkages with greenways, trails etc where appropriate.
- **CPO 6.58:** Continue to support the development of the Galway to Dublin Cycleway, completing the connection to the west of the River Shannon in Athlone and working with neighbouring counties and national bodies to complete and promote the entire route. The development of the cycleway shall comply with the provisions of the Habitats Directive and the Department of Transport, Tourism and Sport's "Dublin to Galway Greenway Plan 2017" and associated measures relating to environmental management and sustainable development.
- **CPO 6.59:** Support increased opportunities for off-road walking, including looped walks and longer distance trails, taking account of 'positive control points' in trail design, such as areas of natural beauty, lakeshores or rivers, bogs, built heritage and archaeological features and with links to towns and villages where services may be provided for walkers and hikers. In designing walking trails, the Sport Ireland Guide to Planning and Developing Recreational Trails will be consulted.
- **CPO 6.60:** Continue to maintain and further enhance the County's walking and cycling trails, striving to achieve National Trails accreditation and other standards as set by Sport Ireland, in partnership with local communities and landowners.
- **CPO 6.61:** Support the re-routing and upgrade of the Westmeath Way walking trail, bringing it off-road and link to scenic areas where possible, ensuring its status as an accredited National Waymarked way in the long term and exploring options such as the Walks Scheme for future maintenance.
- **CPO 6.62:** Support the provision of visitor interpretation along walking and cycling trails, including storyboards, artworks, and other media, to create a greater sense of place, connecting and immersing visitors in our local heritage and stories.
- **CPO 6.63:** Support the provision of services for visitors using walking and cycling trails which are appropriate to the location and activity, including bike service points, picnic benches at scenic locations, public toilets in remote areas etc.
- **CPO 6.66:** Support the delivery of a River Shannon walking and / or trail, from Athlone to Clonmacnoise in collaboration with local communities and Offaly County Council and from Athlone to the Royal Canal at Ballymahon in collaboration with Longford County Council.
- **CPO 6.67:** Promote the principles of 'Leave no Trace' in all trail information panels, promotional materials and events and use all statutory procedures to deter negative environmental impact resulting from use of our trails and outdoor recreation amenities.
- **CPO 7.3:** Encourage transition towards sustainable and low carbon transport modes through the promotion of alternative modes of transport and 'walkable communities' whereby a range of facilities and services will be accessible within short walking or cycling distance.
- **CPO 10.1:** Promote and deliver a sustainable, integrated, and low carbon transport system with ease of movement throughout County Westmeath by enhancing the existing transport infrastructure in terms of road, bus, rail, cycling and pedestrian facilities.
- **CPO 10.2:** Support the development of a low carbon transport system by continuing to promote modal shift from private car use towards increased use of more sustainable forms of transport such as cycling, walking and public transport.
- **CPO 10.3:** Support the implementation of the following national and regional transport policies as they apply to Westmeath:

  - The National Planning Framework
  - The RSES for the Eastern and Midland Region
  - Smarter Travel, A Sustainable Transport Future 2009 – 2020
  - Design Manual for Urban Roads and Streets (DMURS)
  - Spatial Planning and National Roads - Guidelines for Planning Authorities 2012
  - National Cycling Policy Framework and National Cycle Manual
  - Strategy for the Future Development of National and Regional Greenways, 2018.
  - Local Link Rural Transport Programme Strategic Plan 2018 - 2022.

  The Council also supports the implementation of sustainable transport solutions.
- **CPO 10.4:** Seek to ensure primacy for transport options that 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.

- **CPO 10.5:** Encourage transition towards sustainable and low carbon transport modes, through the promotion of alternative modes of transport, and 'walkable communities' together with promotion of compact urban forms close to public transport corridors to encourage more sustainable patterns of movement.
- **CPO 10.11:** Promote walking and cycling as efficient, healthy, and environmentally friendly modes of transport by securing the development of a network of direct, comfortable, convenient, and safe cycle routes and footpaths, particularly in urban areas and in the vicinity of schools.
- **CPO 10.12:** Improve pedestrian and cycle connectivity to stations and other public transport interchanges and request Iarnród Éireann to provide accommodation for bicycles on inter-city and commuter trains.
- **CPO 10.13:** Design pedestrian and cycling infrastructure in accordance with the principles, approaches and standards set out in the National Cycle Manual[1], the Design Manual for Urban Roads and Streets and international best practice.
- **CPO 10.14:** Encourage and seek sustainable transport movement at the earliest design stage of development proposals, to ensure accessibility by all modes of transport and all sections of society and promote the provision of parking space for bicycles in development schemes.
- **CPO 10.15:** Improve the streetscape environment for pedestrians, cyclists, and people with special mobility needs by providing facilities to enhance safety and convenience, including separation for pedestrian infrastructure from vehicular traffic.
- **CPO 10.16:** Provide better sign posting and public lighting where considered appropriate and ensure that the upgrading of roads will not impact negatively on the safety and perceived safety of cyclists.
- **CPO 10.17:** Work with the National Trails Office, Coillte, the Department of Planning, Housing and Local Government, the Department of Transport, Tourism and Sport, and other relevant stakeholders, to improve on the existing level of infrastructure and facilities for walking and cycling.
- **CPO 10.18:** Continue to develop an integrated and connected network of sustainable greenways and green routes within Westmeath and to adjoining counties, in accordance with the "Strategy for the Future Development of National and Regional Greenways".
- **CPO 10.19:** Progress the expansion of the National Cycle Network westwards from Athlone to the Roscommon County boundary.
- **CPO 10.22:** Support and promote the development of additional greenway links from the various towns/villages to the Old Rail Trail and Royal Canal Cycleways, subject to Environment and Habitats Requirements.
- **CPO 10.23:** Maximise both pedestrian and cycle connectivity to the network of existing greenways within the County.
- **CPO 10.24:** Protect established Greenways within the County against inappropriate new vehicular accesses and increased traffic movements.
- **CPO 10.25:** Carry out a permeability and connectivity audit of existing pedestrian and cycle facilities in all towns and villages.
- **CPO 10.28:** Ensure that new development proposals for public transport infrastructure are designed to be fully accessible to people with disabilities and older persons by adopting a universal design approach to the built environment, including footpaths, roads, pedestrian crossing points, bus stops, seating, and interchange facilities.
- **CPO 10.30:** Continue to work with the relevant transport providers, agencies, and stakeholders to facilitate the integration of active travel (walking, cycling etc.) with public transport, thereby making it easier for people to access and use the public transport system.
- **CPO 12.82:** Support the development of an integrated Strategic Greenway Network of national and regional routes and maximise connectivity to existing greenways and link with cycling and walking infrastructure.
- **CPO 12.83:** Support the delivery of sustainable strategic greenways, blueways and peatways projects in the County in accordance with the Strategy for the Future Development of National and Regional Greenways.
- **CPO 12.85:** Support the development of implementation plans for greenways throughout the county together with supporting environmental assessments.

[1] The National Cycle Manual was current at the time of publication of the County Development Plan; but has since been replaced by the Cycle Design Manual.

2.3.4 Westmeath Climate Change Adaptation Strategy 2024 – 2029

Westmeath County Council has prepared this Climate Action Plan 2024-2029, to create a low carbon and climate resilient County, by delivering and promoting best practice in climate action, at the local level. This is aligned to the Government's overall National Climate Objective, which seeks to pursue and achieve, by no later than the end of 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy. As part of Irelands Climate Action and Low Carbon Development (Amendment) Act 2021 Westmeath County Council has committed to developing and implementing this county focused Climate Action Plan.

The plan focuses on five thematic areas with a view to assessing the actions which can be carried out in order to tackle climate breakdown at a local level by carrying out measures to decrease emissions and enhance biodiversity locally with a view to slowing down and ultimately reversing climate change while closely focusing on quality of life for Westmeath citizens.

- Theme 1: Governance and Leadership
- Theme 2: Built Environment and Transport
- Theme 3: Natural Environment and Green Infrastructure
- Theme 4: Resilience and Transition
- Theme 5: Sustainability and Resource Management

Several actions within the document are aligned with the proposed Athlone Active Travel Schemes Bundle. Under Theme 2 point 2.1, 2.9, 2.13, 2.16, 2.17, 2.18 the document states the intention to give priority to more sustainable transport options, reduce car use in County Westmeath, Promote and encourage a modal shift and increase active travel infrastructure to promote walking and cycling.

2.4 Local Level Policy

2.4.1 Athlone Local Area Plan 2014 – 2020 (Extended)

The Athlone Local Area Plan 2014-2020 set out a strategy for the sustainable development and planning of Athlone building upon the previous Athlone Town Plan 2008-2014. It also outlined the policies and objectives for the future development of the town and its environs.

Some objectives and policies from the town development plan that are still relevant to the Athlone Active Travel Schemes Bundle can be seen below:

- **Policy-EC10**: To continue to improve access to major areas of employment through sustainable transport modes.
- **Policy-AC1**: To create an environment in the Town Centre in which vehicles, cyclists and pedestrians can safely co-exist and share public space.
- **Policy-AC2**: To minimise vehicular traffic volumes in the town centre through traffic management measures. create an environment in the Town Centre in which vehicles, cyclists and pedestrians can safely co-exist and share public space.
- **Policy-TR2**: To promote the sustainable development of walking, cycling, public transport and other sustainable forms of transport in Athlone, as an alternative to the private car, by facilitating and promoting the development of necessary infrastructure and by promoting initiatives contained within “Smarter Travel, A Sustainable Transport Future 2009-2020”.
- **Policy-WC1**: To encourage and facilitate safe walking and cycling routes in Athlone, as a viable alternative to the private car, in accordance with initiatives contained within “Smarter Travel, A Sustainable Transport Future 2009-2020”
- **Policy-WC2**: To develop walking and cycling strategies within Athlone and between the Linked Gateway towns of Athlone and Mullingar and Athlone and Tullamore.
- **Policy-WC3**: To improve the streetscape environment for pedestrians, cyclists, and people with special mobility needs, by providing facilities to enhance safety and convenience.
- **Policy-WC4**: To provide for sustainable transport movement at the earliest design stage of development proposals to ensure accessibility by all modes of transport and all sections of society.
- **Policy-WC5**: To implement proposals for pedestrian and cycle routes along the River Shannon as prescribed in the Athlone Waterfront Strategy.
- **Policy-WC6**: To support and facilitate the development through Athlone of the National Cycle Network between Dublin and Galway, including the construction of a new pedestrian and cycle Bridge across the River Shannon, subject to the requirements of the Habitats Directive, Water Framework Directive and environmental sensitivities identified in the SEA being addressed.
- **Policy-WC7**: To support and facilitate the provision of a cycleway and walkway in Athlone within the corridor of the disused Mullingar to Athlone railway line, pending the re-opening of this line as a railway, subject to environmental sensitivities identified in the SEA being addressed.
- **Objective-PT12**: To provide pedestrian and cycle linkages across the River Shannon and canal.
- **Objective-WC1**: To further the development of an integrated cycle network in Athlone.
- **Objective-WC2**: To provide for signal-controlled pedestrian facilities at all crossing points with an audible signal and dished kerbs with tactile paving to assist visually and mobility-impaired persons in crossing roads.
- **Objective-WC14**: To provide a network of on-road and greenway pedestrian and cycle routes within the town.

2.4.2 Athlone Joint Urban Area Plan (with Roscommon Co. Co.) (Under Pre-Draft Public Consultation)

The Athlone Joint Urban Area Plan 2024-2030 will cover the broad aims of Westmeath County Council based on the national and regional objectives in relation to Athlone. Whilst the Athlone Joint Urban Area Plan is still being prepared a pre-draft Consultation Strategic Issues Paper has been published that presents an overview of the main issues and challenges affecting Athlone.

2.5 Design Guidance

2.5.1 Design Manual for Urban Roads and Streets

The Design Manual for Urban Road and Streets (DMURS) was updated in 2019 by department of Transport, Tourism and Sport. This document provides guidance regarding the integrated design approach for urban roads and streets focused on balancing the needs of all users and creating places that people want to live and spend time.

DMURS seeks to put well-designed streets at the heart of sustainable communities and supports boarder government policies on the environment, planning and transportation. DMURS provides the practical measures to achieve:

- Highly connected street which allow people to walk and cycle to key destinations in a direct and easy-to find manner.
- A safe and comfortable street environment for pedestrians and cyclists of all ages.
- Streets that contribute to the creation of attractive and lively communities.
- Streets that calm traffic via a range of design measures that make drivers more aware of their environment.

DMURS also supports Government policies on climate change by facilitating more sustainable forms of transportation such as walking, cycling and public transport so the need for car-borne trips is minimised in order to reduce greenhouse gas emissions and promote healthier lifestyles.

2.5.2 Cycle Design Manual

The Cycle Design Manual (CDM) was published by the NTA in September 2023 and provides guidance on the design of both on-road and off-road cycle facilities for both urban and rural locations. The CDM is to be used for the design of all new or improved cycle facilities in Ireland unless otherwise agreed with the relevant oversight body (e.g., NTA, TII, DoT, Local Authority).

The CDM outlines the context of designing cycle facilities in Ireland and the increased emphasis on segregation of facilities from motor traffic and provides information on what designers need to be aware of in regard to every aspect of cycle infrastructure design.

The CDM outlines the five main requirements for a cycle-friendly infrastructure, which are: safety, coherence, directness, comfort and attractiveness. These requirements shall be followed to attract new users and to fulfil the needs of existing cyclists. Throughout the option selection and design process of this scheme the CDM is used.

2.5.3 Rapid Build Guidance

In February 2023, the NTA published the advice note ‘Rapid Build Active Travel Facilities’ to provide guidance on cost-effective measures to provide high-quality walking and cycling infrastructure using rapid-build methods. Since the publication of the note, all active travel schemes are required to include rapid build options in the Feasibility Report.

Rapid build options are typically faster to implement on the ground than traditional construction methods and do not typically involve major construction works, mostly being accommodated within kerb-to-kerb boundary of the existing roadway, with limited effect on existing drainage. These options may include road marking, traffic restrictions, narrowing the carriageway, conversion of on-street parking into active travel facilities, among others.

The proposal to use rapid build options rather than traditional construction methods has been proposed in order to increase the rollout of active travel schemes in a cost-effective manner in conjunction with goals set under the Climate Action Plan and the National Investment Framework for Transport in Ireland (NIFTI).

There are five principles that guide the rapid build process:

- **Network Approach**: A focus to develop an interconnected walking and cycling network;
- **Segregation**: Provide fully segregated walking and cycling facility to attract more users into active travel;
- **Everyday Mobility**: Provide infrastructure suitable for everyday activities;
- **Inclusive Mobility**: Design that is suitable for all users of different ages and abilities;
- **Place Making and Biodiversity**: Provide facilities that protect the biodiversity and enhance the public realm.

The rapid build options process should include as a minimum:

1. The implementation of traffic calming measures, e.g., chicanes, build-outs, ramps, raised tables, etc, to reduce traffic speeds and volumes in order to accommodate pedestrians and increase safety for cyclists in mixed traffic with motorised vehicles;
2. The reduction of the carriageway width for vehicle traffic to introduce one-way or two-way protected cycle lanes;

The rebalance of the road space, e.g., removal of on-street parking, introduction of a one-way system, etc, to improve safety for pedestrian and cyclists and introduce dedicated cycle lanes.

2.5.4 Other Relevant Design Guidelines

In addition to guidelines from above mentioned documents, the following documents were also referred for the analysis:

- Traffic Sign Manual by Department of Transport
- Traffic Management Guidelines by Department of Transport
- Part M of the Building regulations by Department of Housing, Local Government and Heritage
- Rapid Build SRTS Front of School Improvements Advice Note by NTA
- Roundabout Retrofit – Including Rapid Build Options by NTA
- Zebra Crossing Pilot Scheme Technical Literature Review by NTA
- Greening and Nature-based SuDS for Active Travel Schemes by NTA
- Draft Protected Cycle Lanes by NTA
- TII Standards Publications
- Safe Route to School Design Guide by NTA
- Permeability Best Practice by NTA
- Building for Everyone by the National Disability Authority
- UK DETR Guidance on the use of Tactile Paving Surfaces.

3. Constraints Study

This identification and evaluation of constraints was carried out following the methodology and requirements set forth in the National Transport Authority's (NTA's) 2020 Project Approval Guidelines (PAG). For organisational purposes, the discussion of constraints within this report is divided into three principal categories including:

- **Natural constraints**, which include naturally occurring landscapes and features;
- **Artificial constraints**, which include features forming part of the built environment; and
- **External parameters**, which include design standards, policy, procedural, financial, and legal considerations.

3.1 Natural Constraints

An Environmental Constraints Study have been prepared and is included in Appendix A. The Environmental Constraints Study identifies the key environmental constraints within the study area and its vicinity, as follows:

- Topography;
- Land, Soils and Geology;
- Hydrology and Hydrogeology (including Flood Risk);
- Biodiversity;
- Archaeology, Architecture and Cultural Heritage;
- Air and Climate;
- Noise and Vibration;
- Licenced Facilities;
- Radon; and
- Landscape & Visual.

3.1.1 Summary / Recommendations

In summary, study area is located entirely along existing roads within Athlone town within the following constraints identified as shown in Appendix A.

- Given the location, the proposed project will not result in any direct impacts to any European sites. There are 2 no. European sites with indirect hydrological connectivity from the proposed project; River Shannon Callows SAC and Middle Shannon Callows SPA. The River Al at Garrycastle Bridge and the existing surface water drainage infrastructure within the project site roadways provides potential connectivity to these sites. It should be noted that the proposed project will not likely interact with River Al at Garrycastle Bridge within the project site given that it is culverted under the roadway.
- The River Shannon Callows pNHA covers the same geographical area as the aforementioned SAC/SPA and the pNHA has the same indirect hydrological connectivity.
- Once preliminary design has been completed, the proposed project should be subject to the Appropriate Assessment process to determine if the project will result in likely significant effects to any European sites.
- As detailed above, there will not be any likely interaction with River Al at Garrycastle Bridge and as such significant water quality impacts are not anticipated.
- There will likely be some loss of landscape feature roadside trees and/or hedgerows as a result of the proposed project. There will likely be a loss of roadside grass verges as a result of the proposed project.
- As detailed above, the proposed project is almost entirely located within hardstanding areas including roadways and pathways. The proposed project will not result in the loss of any significant areas of semi natural habitats which could provide refuge or foraging sites for protected species. Trees and hedgerows will be required to be

surveyed to assess the capability of supporting bat roosts and nesting birds. No impacts will likely occur as a result of the proposed project on the River Al and as such significant impacts to protected aquatic species or otter are not anticipated.

- Invasive species Japanese knotweed has historically been recorded with the proposed project site. An invasive species survey will be required.
- The site of the proposed development is a sensitive area with respect to archaeology and cultural heritage as Route B within the vicinity of several SMRs, ZoNs, and NIAHs and borders the Athlone Architectural Conservation Area (ACA) and Zone of Architectural Potential. An appropriately qualified archaeologist / cultural heritage specialist will be appointed as the project progresses.
- There are 2no. Geological Heritage Area (GHAs) within the vicinity of the route. The River Shannon Callows GHA is located ca. 1.3km south of the route and Loughandonning Mushroom Rock GHA is located ca. 0.23km south of the route. As there are hydrological and hydrogeological connections to both of these areas, mitigation measures will be implemented during construction to minimise / avoid impacts on these areas.
- During a review of aerial imagery (Google Maps, 2025), a number of trees were identified along Route B. It is recommended that an Arboricultural Survey is undertaken along the route as the project progresses.
- Given the urban nature of Route B, there are numerous sensitive receptors of Air Quality and Noise and Vibration nuisance during the construction works. Mitigation / protection measures will be implemented during construction to minimise / avoid impacts on sensitive receptors.

3.2 Artificial Constraints

Artificial constraints are human constructed features which may impact on or may be impacted by potential changes to the study area. The list provided below shows the general artificial constraints within the Athlone Active Travel Schemes Bundle study area that have been considered.

- Bus services
- Traffic conditions
- Road widths and pinch points
- Land-use, zoning and planned developments
- Utilities
- Archaeology, architecture and cultural heritage
- Junctions
- Traffic collisions
- Pavement condition
- Existing infrastructure deficiencies.

3.2.1 Existing Road Network

This report includes an assessment of Routes B for the purpose of Multi Criteria Analysis and assessment of the preferred route option.

Route B, approximately 2.7km in length commences from the Old Rail Trail / R915 intersection and extended south towards Athlone town centre and east to the Ankers Bower Roundabout and Creggan Roundabout, travelling through Ballymahon Road, Sean Costello Street, Castlemaine Street, Brideswell Street, and Dublin Road. However, it was determined during the early part of the preliminary design stage that the first two segments of the route, Segment B1 and B2 were to be removed from the scope, effectively reducing the length of the scheme and reducing the proposed design. Additionally, some extent of Segment B3 were to be removed from the scope also.

Due to changes in the characteristics of the corridor, such as road width, presence of turning bays, presence of active travel facilities etc, Route B has been divided into four segments along with

3.3 Artificial Constraints

Artificial constraints are human constructed features which may impact on or may be impacted by potential changes to the study area. The list provided below shows the general artificial constraints within the Athlone Active Travel Schemes Bundle study area that have been considered.

- Bus services
- Traffic conditions
- Road widths and pinch points
- Land-use, zoning and planned developments
- Utilities
- Archaeology, architecture and cultural heritage
- Junctions
- Traffic collisions
- Pavement condition
- Existing infrastructure deficiencies.

3.3.1 Existing Road Network

This report includes an assessment of Route B through a Multi Criteria Analysis and followed by an evaluation of the preferred route option.

Route B, approximately 2.7km in length, commences at the west of the Ankers Bower Roundabout and terminates just west of the Creggan Roundabout (R446/N62). Due to the differences in road width and cross sections, Route B has been divided into four separate segments, with existing three roundabouts as shown in Figure 3-1. The following sections discuss the artificial constraints along each segment within the corridor.

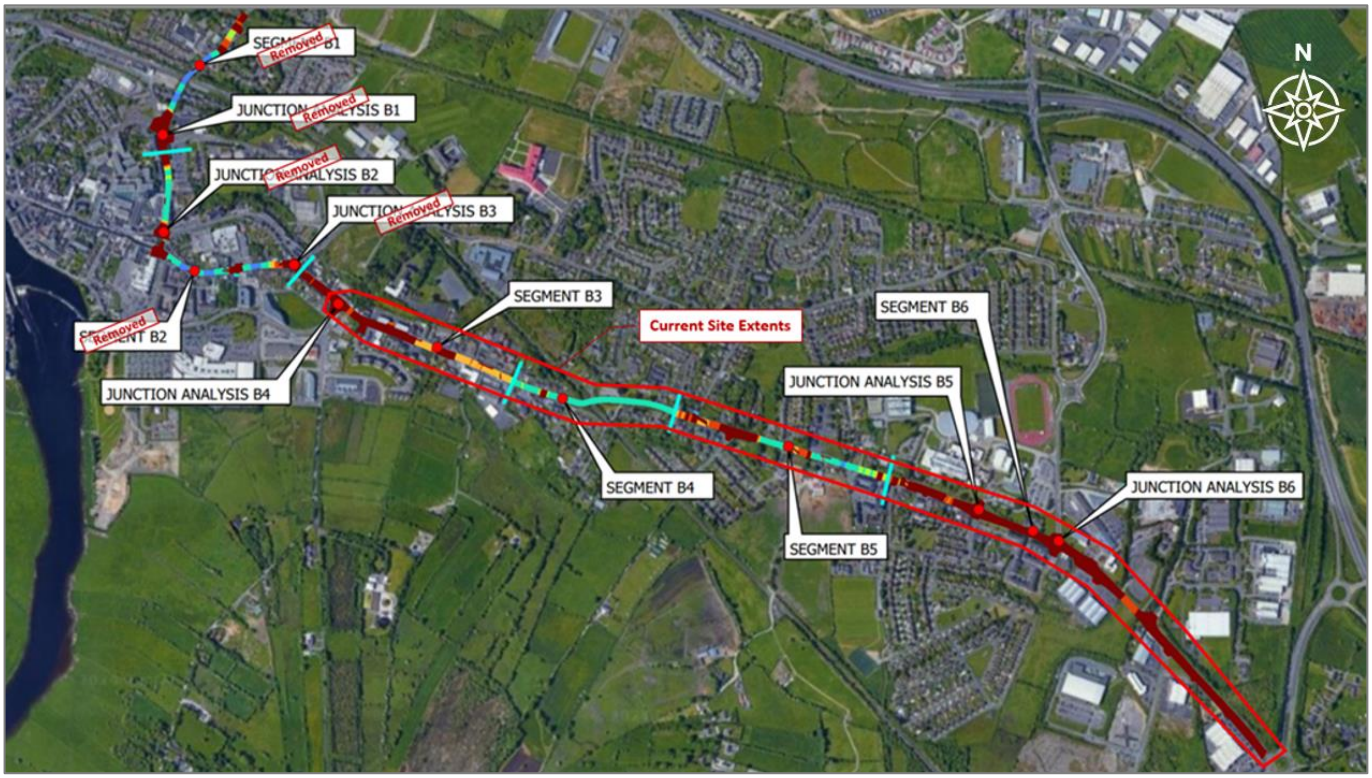


Figure 3-1 - Route B Segments and Width Analysis

To provide a baseline of the existing corridor, the general road arrangement was reviewed. This review included documenting key features including the general corridor width and cross section, the location and types of junctions and the location of bus stops, on-street parking and loading areas. For organisational purposes, this discussion is presented by segment as defined in Figure 3-1 above.

3.3.1.1 Segment B3: Irishtown Road – Ankers Bower Roundabout to Athlone Furniture World along Brideswell Street (R446)

Segment B3 extends from west of the Ankers Bower Roundabout to Athlone furniture world along Brideswell Street (R446), approximately 430m. This segment has one vehicular lane in each direction and the segment provides footpaths on both sides of the road. On the northern side the footpath is approximately 2.7m and on the southern side is approximately 2.0m. There is no dedicated cycle track/lane located along the segment but continuous parking present on both sides as well as one disabled parking bay and one bus bay along the segment. There are two pedestrian crossing with belisha beacons near the Ankers Bower Roundabout. There is a total of two junctions and one roundabout located along the segment. There is a total of three bus services running along the segment, which are ATH1, 72, 73 with only one bus stop located for the westbound commuters along the segment. The speed limit along the segment is 50km/h. The segment typical cross-sectional width is 13.5-14.4m.

Figure 3-2 provides an overview of the segment and Figure 3-3 shows the typical cross section.

Figure 3-2 – Segment B3 Overview

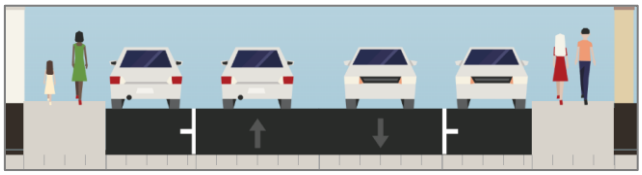


Figure 3-3 – Segment B3 Typical Cross Section

3.3.1.2 Segment B4: Athlone Furniture World to Elite Spa Gardens along (R446)

Segment B4 extends from Athlone Furniture World to Elite Spa Gardens along (R446), approximately 423m in length. This segment has one vehicular lane in each direction and the segment provides footpaths on both sides of the road. On the northern side the footpath is approximately 2.0m wide and on the southern side is approximately 1.9m wide. There is no dedicated cycle track/lane, on-street parking located along the segment. There is one uncontrolled pedestrian crossing in front of the Elite Spa Gardens. There are two junctions and no roundabouts within the segment. This segment of the Route B crosses the railway bridge near Moorview Junction as shown in Figure 3-5, There is a total of three bus services running along the segment, which are ATH1, 72, 73 with no bus stop located for the commuters along the segment. The speed limit along the segment is 50km/h. The segment typical cross-sectional width is 9.8-12.1m.

Figure 3-4 provides an overview of the segment and Figure 3-6 shows the typical cross section.

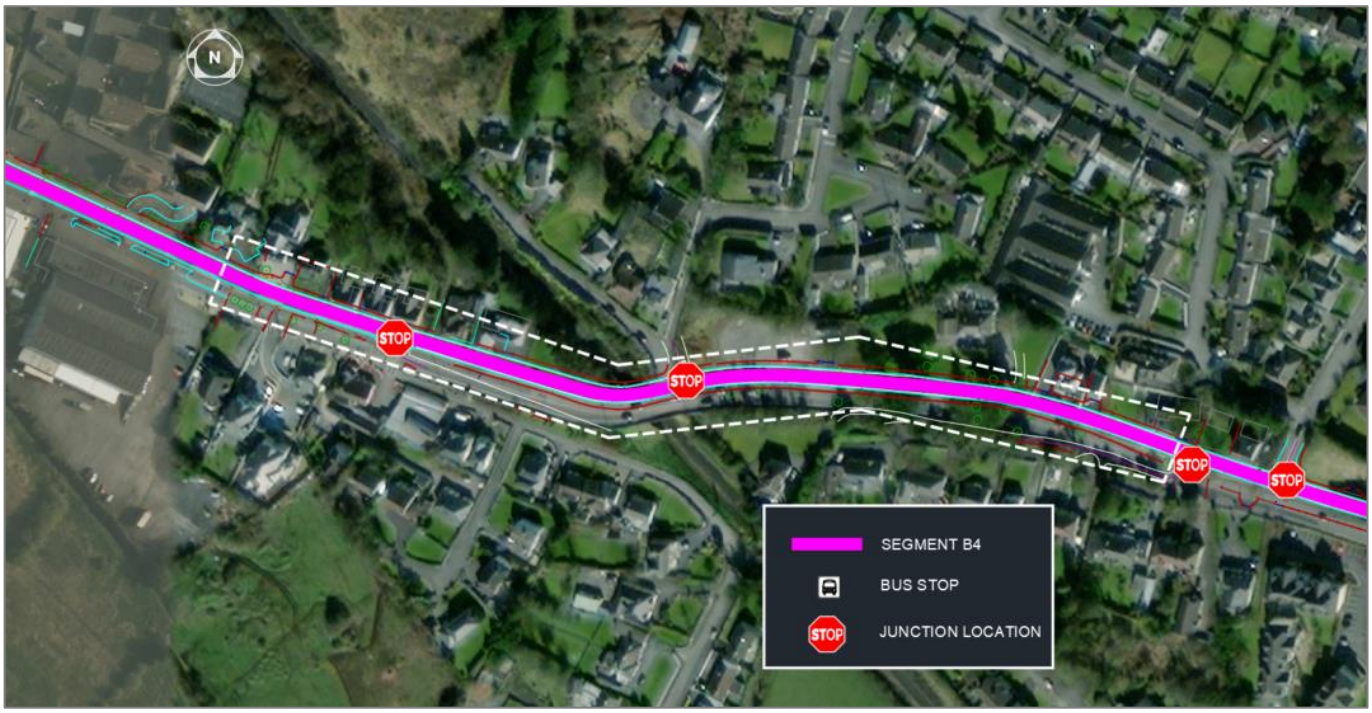


Figure 3-4 – Segment B4 Overview

Figure 3-5 – Segment B4 Railway bridge Location 3D

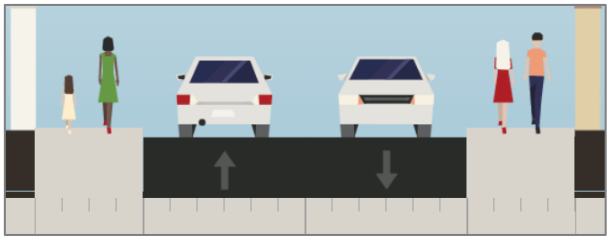


Figure 3-6 – Segment B4 Typical Cross Section

3.3.1.3 Segment B5: Elite Spa Gardens to TUS Roundabout along (R446)

Segment B5 extends from Elite Spa Gardens to TUS Roundabout along (R446), approximately 798m in length. This segment has one vehicular lane in each direction and, the segment provides footpaths on both sides of the road, on the northern side the footpath is approximately 1.8m wide and on the southern side is approximately 2.3m wide. There is no dedicated cycle track/lane or on-street parking along the segment. There is only one signalised pedestrian crossing near the Valley Court junction. There are a total of seven junctions and no roundabout located along the segment. There is total three bus services running along the segment, which are ATH1, 72, 73 with two bus stops located for the westbound commuters along the segment. The speed limit along the segment is 50km/h. The segment typical cross-sectional width is 9.8-14.4m in which there is a pinch point location near the auburn junction segment where the typical cross-sectional width reduces to even less than 9.8m.

Figure 3-7 provides an overview of the segment and Figure 3-8 shows the typical cross section.

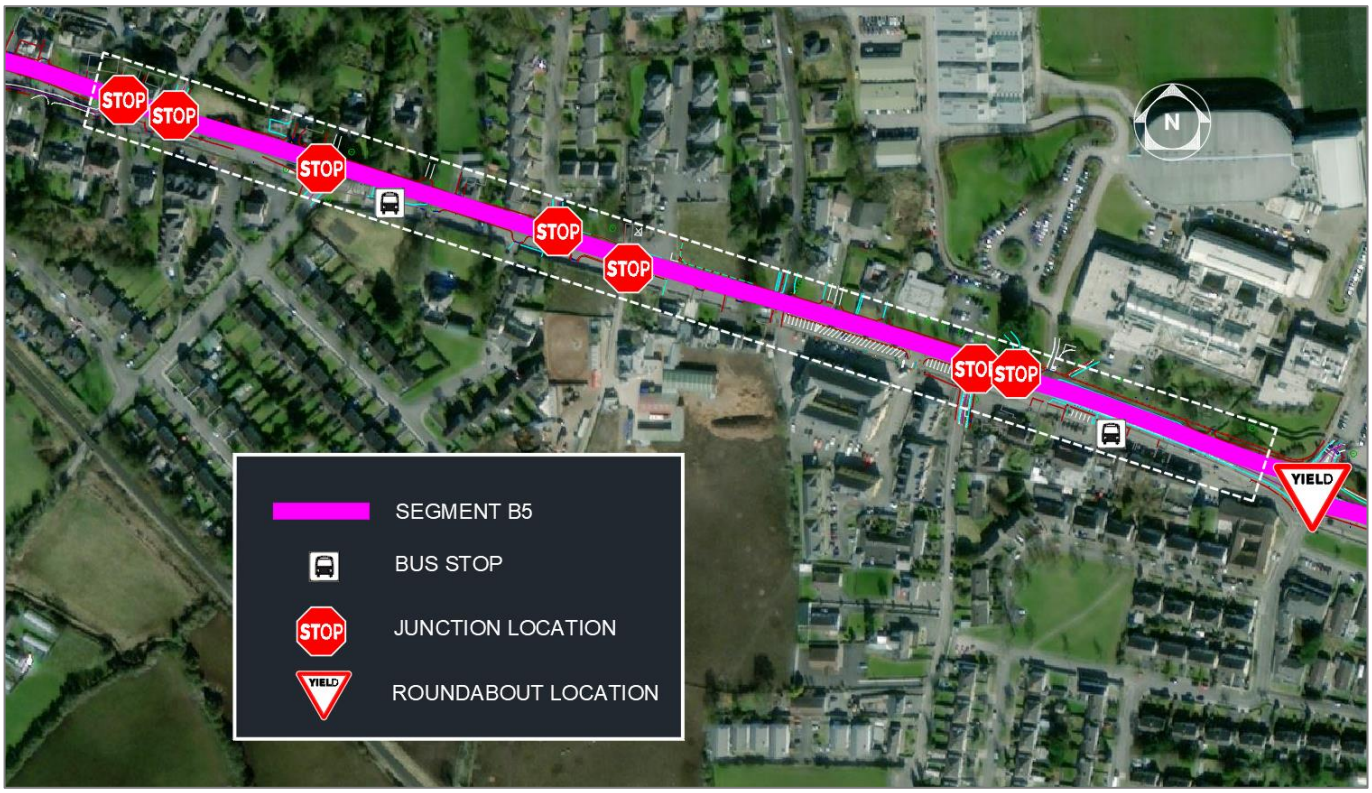


Figure 3-7 – Segment B5 Overview

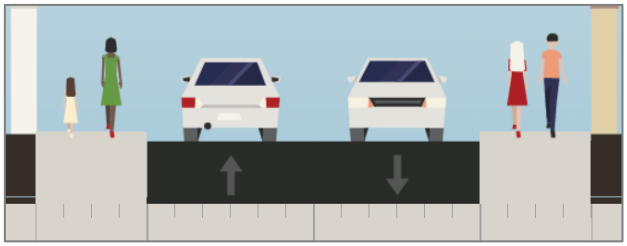


Figure 3-8 – Segment B5 Typical Cross Section

3.3.1.4 Segment B6: TUS Roundabout to Creggan Roundabout along Dublin Road (R446)

Segment B6 extends from TUS Roundabout to Creggan roundabout along Dublin Road (R446), approximately 998m. This segment has one vehicular lane in each direction and, the segment provides footpaths on both sides of the road, on the northern side the footpath is approximately 2.5m wide and on the southern side is approximately 3.0m wide. There is no dedicated cycle track/lane located along the segment, however adjacent to TU Shannon there is a short segment of cycle lane separated from the footpath by a white line, including segregated signage. Also, continuous parking present on both sides of the carriageway for the majority of the segment. There is one signalised pedestrian crossing along the segment. There is total six junction and two roundabouts, excluding the Creggan Roundabout, located along the segment. There are multiple bus services running along the segment, which are ATH1, A1, A2, A105, 70, 72, 73, 190, 706, 721, 763 as well as five bus stops located for the westbound commuters and two bus stops for eastbound commuters along the segment. Additionally, there are also private bus stops at the entrance to TU Shannon. The speed limit along the segment is 50km/h rising to 60km/h for the final 750m on approach to the Creggan roundabout. The segment typical cross-sectional width is 13.5-16.0m.

Figure 3-9 provides an overview of the segment and Figure 3-10 shows the typical cross section.

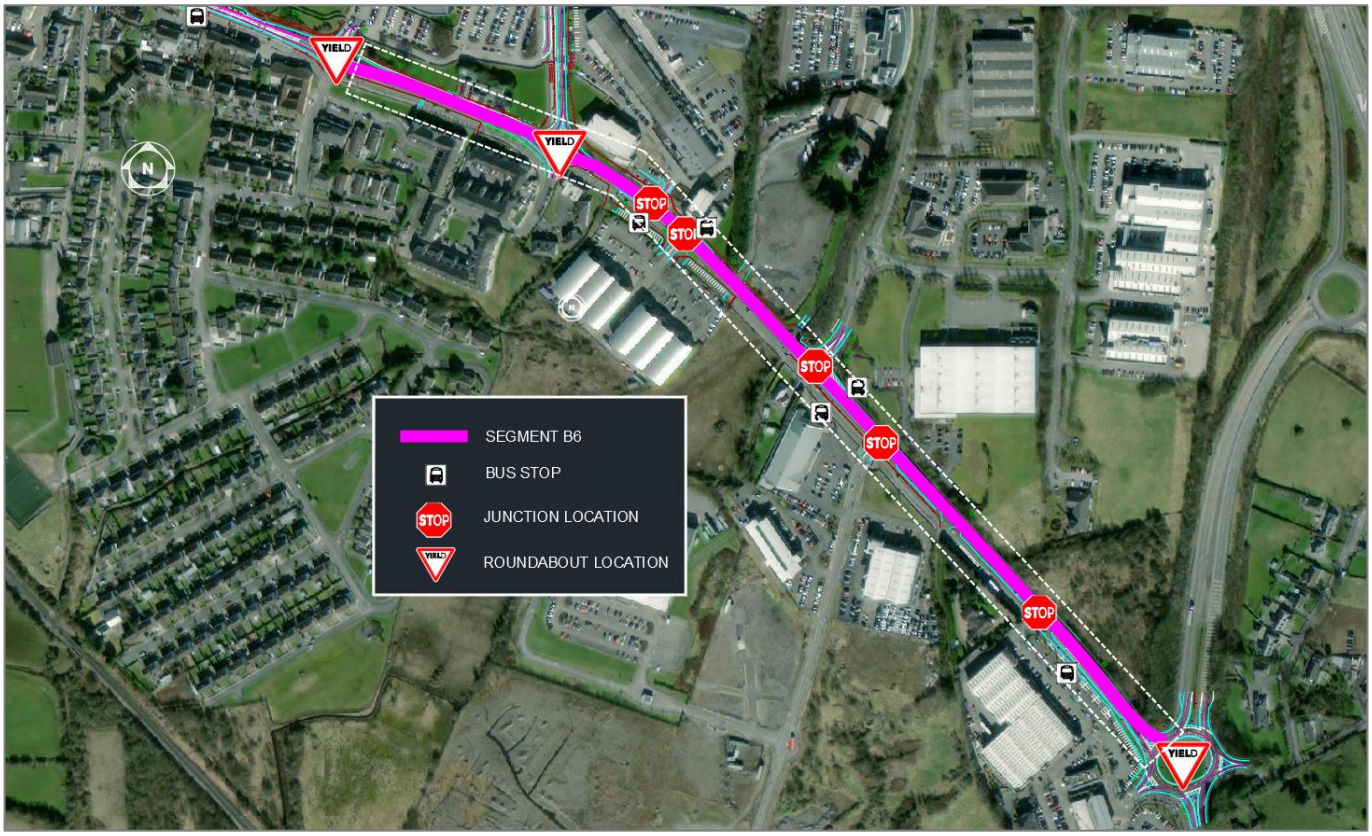


Figure 3-9 – Segment B6 Overview

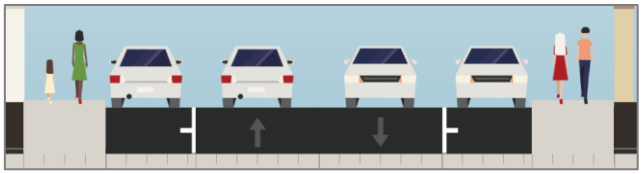


Figure 3-10 – Segment B6 Typical Cross Section

3.3.2 Cross Section Width Analysis

One of the most significant challenges to providing cycling infrastructure within an urban environment is the availability of space. To understand the space available along the existing corridors, a width analysis was completed using Geographic Information Systems (GIS) software and Lidar data. This analysis consisted of taking cross-section measurements from back of footpath to the corresponding back of footpath on the opposing side of the carriageway or boundary wall to boundary wall in some cases. This was carried out to identify the available road and footpath space at approximately one metre intervals along the corridor.

The results indicate the “typical” width of each segment of the corridor. This typical width was qualitatively determined based on engineering judgement and was taken to be the predominant width of the particular segment in Figure 3-1. There was portions of a Segment B5 that had a significantly narrower width than the typical, which are referred as pinch points and represent the most width-constrained areas. Figure 3-11 shows the cross-section width analysis on pinch points for Route B, as listed in Table 3-1 below.

Table 3-1 - Pinch Points

Pinch Point No.	Description	Segment	Narrowest Width (m)
1	Near Auburn Junction	B5	9.72

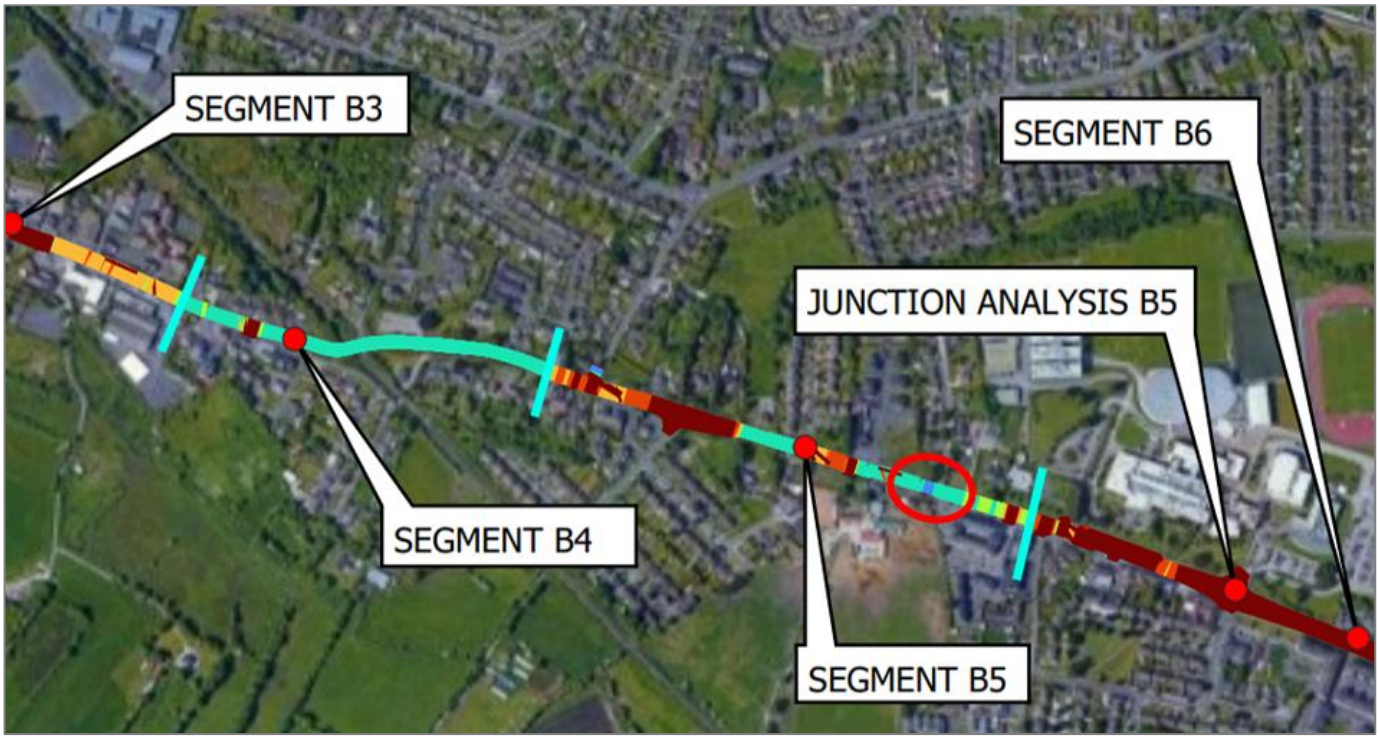


Figure 3-11 – Pinch Point Areas

3.3.3 Planned Developments

To understand planned changes to the corridor, existing planning applications were reviewed for a period extending back five years. For the proposes of this study, only significant new developments that are likely to generate a significant number of trips and developments that may encroach nearby to the existing corridor have been documented and are shown in Table 3-2 and outlined in Figure 3-12.

Table 3-2 - List of Relevant Planned Developments

Planning Ref No.	Approval Status	Decision Date	Development Description
21646	CONDITIONAL	09/07/2022	The development will consist of the following: (A) Demolition of 2 No. single storey dwelling houses and 1 No. domestic garage. (B) Construction of a 4 storey block of 20 No. apartments to accommodate 4 No. 1 bedroom and 16 No. 2 bedroom units along with the construction of a semi basement car park with provision of 19 car parking spaces, amenity space, communal open space, bicycle parking, bin storage and all ancillary site works. (C) Construction of a stand-alone 3 storey block of 6 No. 1 bedroom apartments and all ancillary site works
22403	CONDITIONAL	04/24/2023	Reconstruction of part demolished existing B & B bungalow type dwelling with basement to match existing together with proposed rear extensions at ground and basement floor levels. The proposed 35.70 sq.m extension to the rear of existing ground floor level to consist of 1 No. new bedroom & ensuite (number 7) together with extended kitchen, dining and living areas, along with revised internal layout providing new ensuite bathrooms with windows to each existing bedrooms (6 number). The proposed 44.32 sq.m extension to the existing basement floor level to consist of new storage area, utility and laundry room. New external retaining walls and access steps to basement area together with on-site parking, recessed entrance gates, landscaping and all associated site works. Retention Permission for part demolition of existing 6-bedroom B & B bungalow type dwelling with basement (circa 226 sq.m) together with all associated site works
2267	CONDITIONAL	05/25/2022	The change of use of existing retail unit from retail to café/bakery/retail use (gross floor area for change of use 138 sq.m) and associated works
2360015	CONDITIONAL	03/22/2023	Construction of an extension onto my existing medical practice consisting of a pharmacy ancillary

Planning Ref No.	Approval Status	Decision Date	Development Description
			to the existing medical practice and all ancillary site works
214	CONDITIONAL	06/21/2021	(i) The refurbishment of existing industrial teaching and maintenance facility building (1015 sqm) comprising internal alterations, upgrade of the toilet facilities, with minor alterations to north elevation of the building comprising a new proposed roller shutter door to workshop (ii) Proposed single storey extension to the south east corner of existing building comprising new entrance, reception space, with offices accommodation (275 sqm) (iii) Proposed boiler house extension (50 sqm) to the rear of the existing building (west façade), together with new external signage adjacent the proposed entrance and all associated site works.
197006	CONDITIONAL	03/10/2019	Construction of a new MV substation structure and associated site works.
2129	CONDITIONAL	06/06/2021	Permission for change of use of existing snooker/pool hall facility into student accommodation, including the demolition of some external walls and changes to elevations to incorporate windows to serve units. The proposed student accommodation will comprise three 4-bedroom units. Unit 1 (126sqm), Unit 2 (142sqm), Unit 3 (146sqm) including kitchens, dining, living rooms, stores, ensuite bathrooms and public/private open spaces provided in each unit including all associated site works
21107	CONDITIONAL	04/28/2021	Construction of an on-grade car park to accommodate 160 car spaces including site lighting, drainage and landscaping with a modified vehicle and pedestrian entrance off the R916 comprising wider internal access ramp. The proposal also includes a pedestrian link between the existing controlled pedestrian crossing on the R916 and the main campus comprising an opening to be formed in the existing campus boundary wall,

Planning Ref No.	Approval Status	Decision Date	Development Description
			a stairs and ramp off the R916 and an internal campus footpath.
2360199	CONDITIONAL	10/03/2023	Development which will consist of : The Construction of a Temporary Car parking Facility for 195 cars complete with new entrance off existing road network, new fencing, gates, public lighting, landscaping and all associated site works
2441	CONDITIONAL	11/12/2024	Development which will consist of amendments and extension to the existing car park (c. 2,517sqm) to provide segregated parking for 13 no. HGV's a dedicated pedestrian route and all associated site development works
197013	CONDITIONAL	08/07/2019	The erection of a steel frame & cladding for a wheelie bin storage area (28sq m) & the erection of 7 no. bike racks to the west side of the NCT centre together with all associated site works.
197210	CONDITIONAL	12/01/2019	Demolition of the existing building on site and provision of a new Advance Technology Building at the IDA Business & Technology Park, Garrycastle, Athlone. Permission is also sought for signage, car parking, cycle shelter, landscaping, underground water storage tank, ESB substation/switch room and all associated site works
187213	CONDITIONAL	01/16/2019	Construction of a 3 storey extension to the existing Midlands Innovation and Research Centre, as part of the Athlone Institute of Technology Campus. The extension comprises of 919sqm of office/technology and innovation accommodation-located over 2 floors , which links through to the existing innovation and research building , with a screened enclosed plant area at the roof level. The proposed development includes relocation of the existing 12 no. car park spaces, and provision for 10 no. new car park spaces-both to be located to the rear of the site, 10 no. new bicycle spaces and associated site works and landscaping
23113	CONDITIONAL	02/06/2024	Demolition of existing non-habitable dwelling and associated buildings, and construction of the following; building A single storey motor vehicle service and sales facility, 1780 sq.m. Building C a detached single storey ancillary building,(310 sq.m) Building B a partially two storey motor vehicle service and sales facility, (952 sq.m)

Planning Ref No.	Approval Status	Decision Date	Development Description
			service and sales building and building D a detached single storey ancillary building (326 sq.m.). Both building C and D will be used for valeting and washing vehicles solely in the operation of building A and B. The development also includes the construction of an access road off the N62, on-grade car parking, free standing signage and flag poles, boundary treatments, associated drainage andancillary site works. A Natura Impact Statement(NIS) accompanies this application

Figure 3-12 - Relevant Planning Applications

3.3.4 Pavement Condition Survey

The pavement condition survey will be undertaken in advance of Phase 5 – Detailed Design Stage, to inform the detailed design.

3.3.5 Road Collision Data

At the time of the constraints study being completed, historical collision data, which is provided by the Road Safety Authority (RSA), was not available. Therefore, no collisions analysis has been completed. At this time, the RSA has

not indicated when collision data will be available. Should this data become available during the continued progression of this project, the information will be evaluated, and a supplemental safety assessment addendum will be included as part of a future project-related report.

3.3.6 Traffic Data Survey

Westmeath County Council provided AtkinsRéalis with Automatic Traffic Counts (ATC) data at several locations within the town which were carried out in Feb/Mar 2022. For the purpose of this report ATC data for Route B will be examined. Figure 3-13 indicates the locations of the survey data provided by WCC along the route corridor.

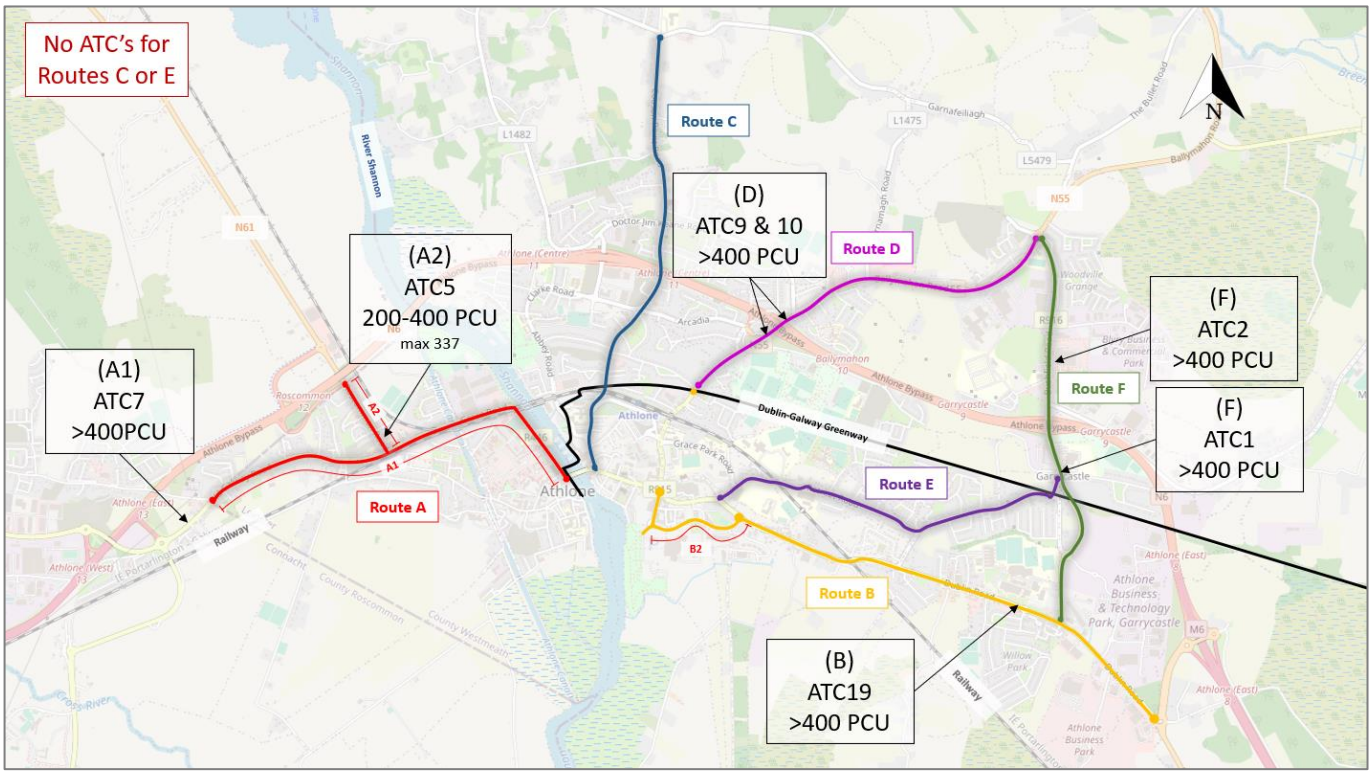


Figure 3-13 – Traffic Survey Location

The ATC data provided by Westmeath County Council are used to for the following data figures, specifically ATC 19 which is near Athlone Furniture World along R446 Dublin Road. The data presented in this section is representative of the average data for the weekdays, Monday to Friday, as it represents a more robust analysis.

Additional ATC and on-street parking beat surveys were requested to Westmeath Co. Co. and were carried out in January 2024. To identify the baseline traffic conditions along the corridor, these ATCs and parking data will be used. Figure 3-14 and Figure 3-15 indicates the location for the survey data provided by IDASO.

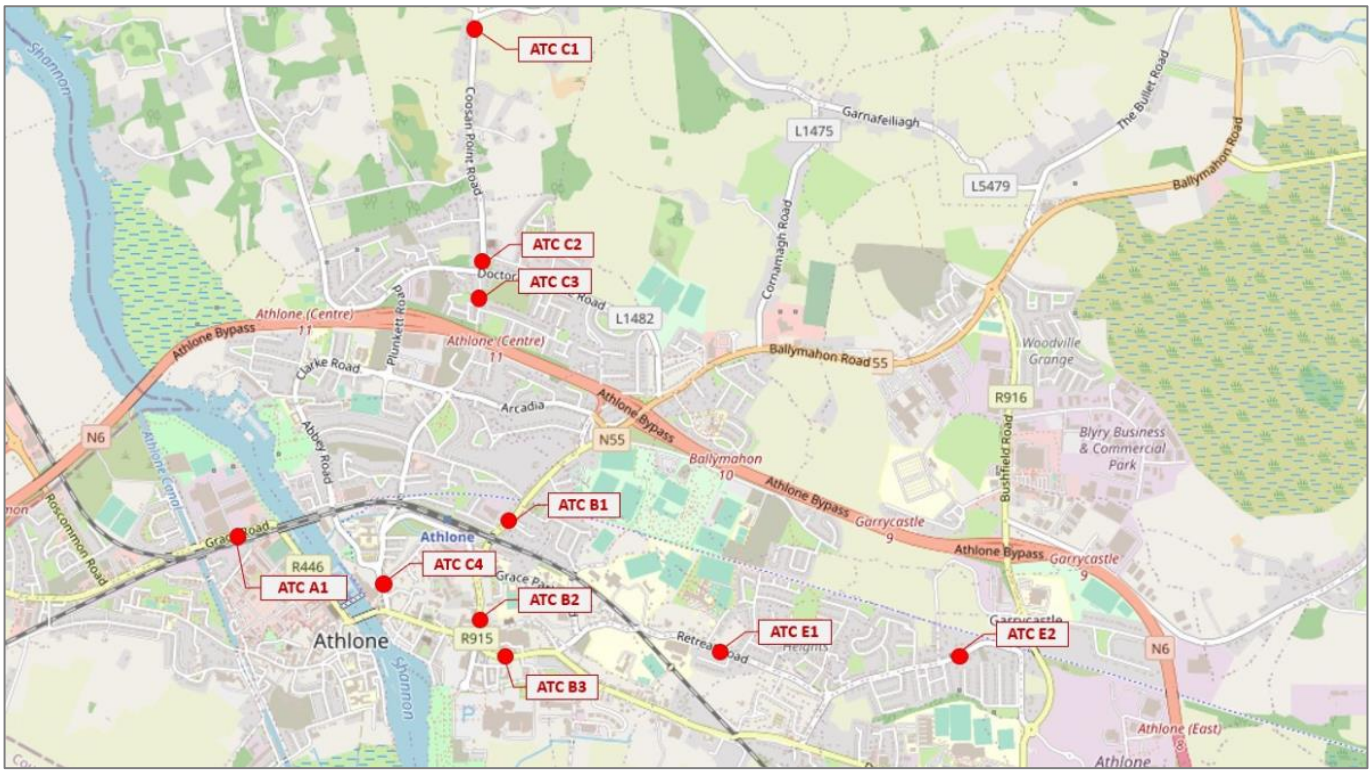


Figure 3-14 – ATC Survey Location

Figure 3-15 – Parking Survey Location

ATC data was obtained at the 1no. locations along Route B. The data presented in this section is representative of the average data for the weekdays, Monday to Friday, as it represents a more robust analysis.

A summary figure of the recorded vehicular volume is shown below in Figure 3-16. It is noted that traffic volumes are high at ATC B1 with an average weekday vehicular volume of 12,921.

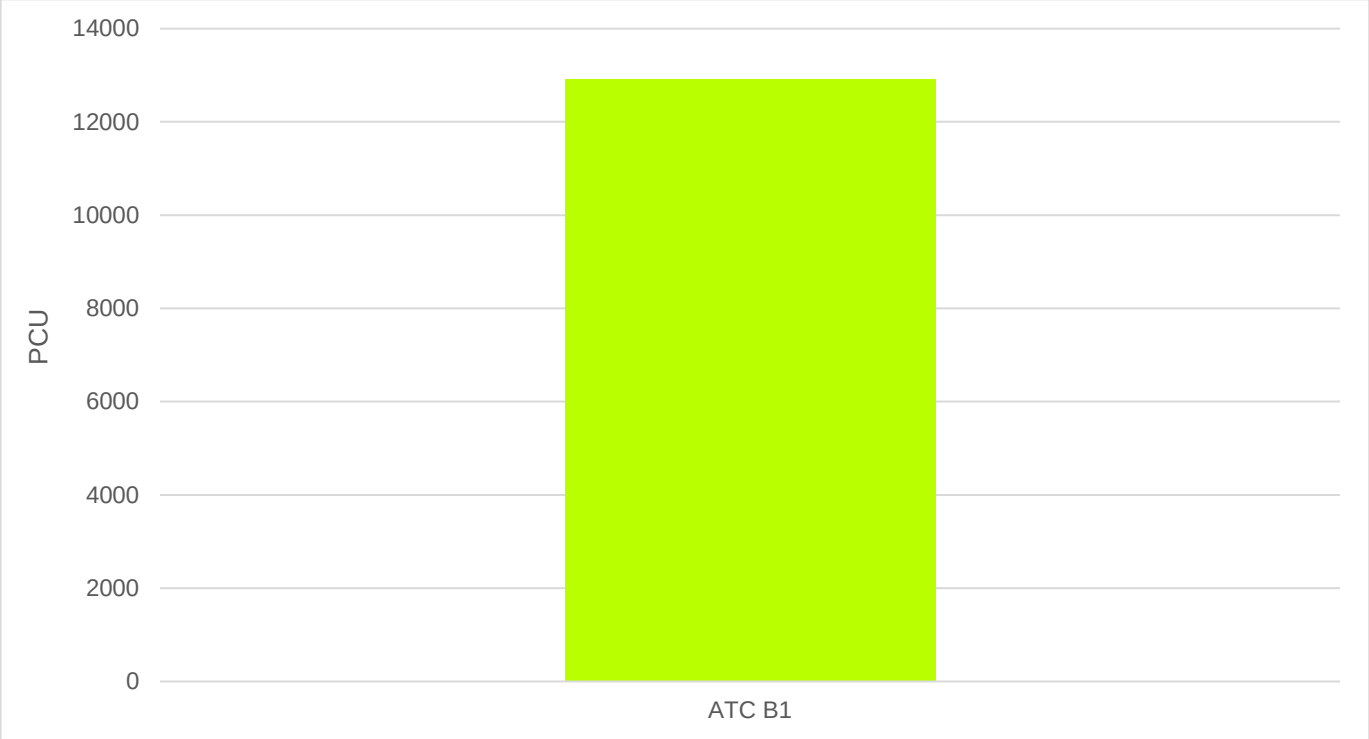


Figure 3-16 – Average Weekday Vehicle Volumes

Based on the traffic data, a comparison figure between vehicle classification was created as indicated in Figure 3-17. Regarding HGV volumes, the highest percentage was observed at ATC B1 comprising an average of 2.46% of the total volume of weekday traffic.

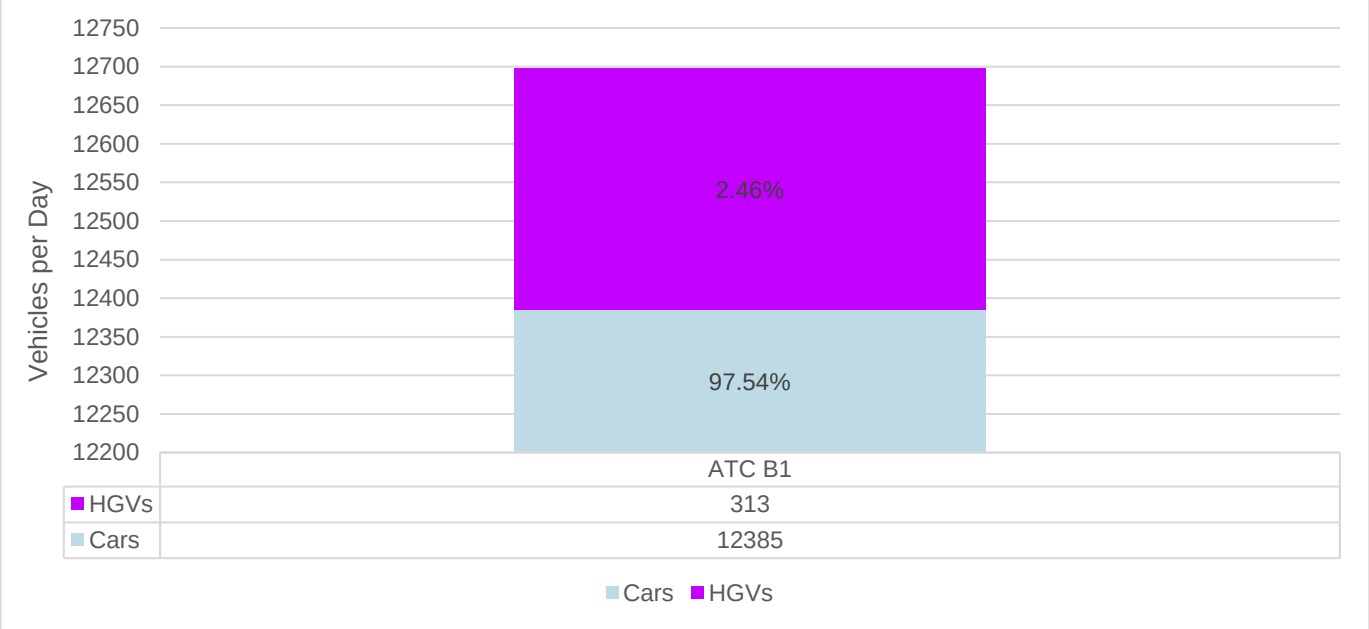


Figure 3-17 – Average Weekday Vehicle Volumes by Classification

A traffic data comparison was also made based on traffic direction, as indicated in Figure 3-18. Traffic direction at ATC B1 indicates a slightly higher number of eastbound traffic, with compared to the westbound route.

Figure 3-18 – Average Weekday Vehicle Volumes by Direction

The surveyed speed data are summarized below in Table 3-3. As mentioned previously, the speeds captured at ATC B1 is noted to be relatively high compared to the other locations.

Table 3-3 - Typical Speeds

Location	Direction	Posted Speed Limit (km/h)	Average Speed (km/h)	85th Percentile Speed (km/h)
ATC B1	Eastbound	50	48.89	56.90
	Westbound	50	44.79	53.42

3.3.7 Utilities

Existing utility information was collected from relevant providers, shown in Table 3-4. Maps of the available utility information is provided in Appendix B and cover the whole extent of Athlone town.

Table 3-4 - Existing Utilities in Athlone town

Utility Provider	Description
Electricity Supply Board (ESB)	Electricity
Eircom Ltd. (EIR)	Telecoms
Gas Networks Ireland	Gas distribution and transmission
Irish Water	Water Main and Wastewater
E-net	Telecoms
Aurora Telecoms	Telecoms

Utility Provider	Description
Virgin Media	Telecoms
BT Telecoms	Telecoms
Westmeath County Council	Stormwater
Siro	Telecoms
EU Networks	Telecoms

3.3.8 Public Transport

There are several bus routes operating in Athlone town, offering connection to Dublin City, Sligo, Mullingar, Dundalk, Galway, among other towns. The services are indicated in Figure 3-19.

Route A1 and Route A2 are the main local bus services operating within Athlone, both operated by Bus Éireann. Both routes connect from Bellanamulla to Athlone Station, and finally to Kilmartin Centre, with each route utilizing different pathways as indicated in Figure 3-19. Both services operate at 30-minute intervals, with around 26 services from 7am to 8pm per day in each direction for each route.

Route 70 primarily connects Athlone and Mullingar. There are 3 services throughout the day each way that connects the two town centres. Notably, these services utilize two separate regional roads depending on the time of day. Two of the services each day would use the R390 through Drumraney, Ballymore and Loughnavalley, while the third service would use the R446 through Moate, Kilbeggan, and Tyrrellspass. The services are operated by Bus Éireann.

Route 72 connects Athlone further south towards Limerick via Ballynahown, Ferbane, Cloghan, Birr, Borrisokane, Nenagh, and Birdhill. There are only 3 services each way per day along this route and is operated by Bus Éireann.

Route 73 provides linkage from Athlone to Waterford, with connections at Tullamore, Portlaoise, Carlow, Kilkenny, and Thomastown. There are only 2 services each way along this route from Monday to Saturday, and only 1 service on Sunday. This route is operated under Bus Éireann.

Route 190, also operated by Bus Éireann, links Athlone to Drogheda, with stops in Mullingar and Navan. The route has 10 services each day per route at approximately 2-hour intervals.

Route 440 provides a connection towards the northwest town of Westport in Co. Mayo and is operated under Bus Éireann. The route makes stops at Roscommon, Castlerea, Claremorris, Knock, Charlestown, and Castlebar among other rural towns. This route has 4 services between different time intervals.

Route 461 connects Athlone to Roscommon through the N61 with several stops along the way including Kiltoom, Knockcroghery, and Ballymurray. This route is only operating once per day between 7am - 8am through Bus Éireann.

Route 466 provides a linkage between Athlone and Cavan through Ballymahon, Longford, and Edgeworthtown. There are 6 services per day each way at approximately 2.5-hour intervals. This route is operated by Bus Éireann.

Route 706 and Route 706X both passes through Athlone when connecting between Dublin Airport, Dublin City, and Galway. Route 706 has additional stops at Ballinasloe and Maynooth and has 4 services each way per day, while Route 706X has 6 services. Both routes are operated under Aircoach.

Route 721 which is also operated by Citylink, connects Dublin Airport to Castlebar through Athlone and Claremorris. This route also has 8 services per day each way.

Route 763, which is operated by Citylink, makes the same connection between Dublin Airport, Dublin City, Athlone, and Galway, however, would make several other stops along the route in more rural areas, including stops at Lucan, Kinnegad, Kilbeggan, Mullingar, Ballisnasloe, Loughrea, and Oranmore. This route has 8 services per day along each direction.

Route 819 is another route that connects Athlone to Mullingar. This route, however, is operated by TFI Local Link Longford Westmeath Roscommon. It has 6 services each way per day at 4-hour intervals. The route provides connection through Baylin, Walderstown, Ballymore, Killare, Castletown Geoghegan, and Ballina.

Route 850 connects Athlone towards Roscrea via Ballynahown, Shannonbridge, Cloghan, Banagher, Birr, and Shinrone. There are 6 services each way throughout the day at 3-hour intervals and is operated by TFI Local Link Laois Offaly.

Athlone town is also serviced by 2 private bus companies on a regular time schedule, specifically Walsh's Executive Travel and Flagline Coaches.

Route AI05 is operated by Walshs Executive Travel and provides a connection between Athlone and Edenderry. The route has a total of 8 stops and departs once a day for each direction (7:30am from Edenderry to Athlone, 5:15pm from Athlone to Edenderry).

Route ATH1 is a bus service that operates within Athlone by Flagline Coaches. The service is a circular line with 7 stops from Golden Island Centre to Kilmartin Centre and back to Golden Island Centre. The route has a total of 41 services per day from approximately 8am to 7pm, with one service every 15 minutes.

Athlone also has a railway station that provides rail services for between Galway-Dublin, and Westport/Ballina-Dublin.

The Galway-Dublin Line has 14 stops in total and has 11 services at the Athlone Railway Station per day in each direction.

The Westport/Ballina-Dublin Line has 19 stops in total and has 7 services at the Athlone Railway Station per day in each direction.

-

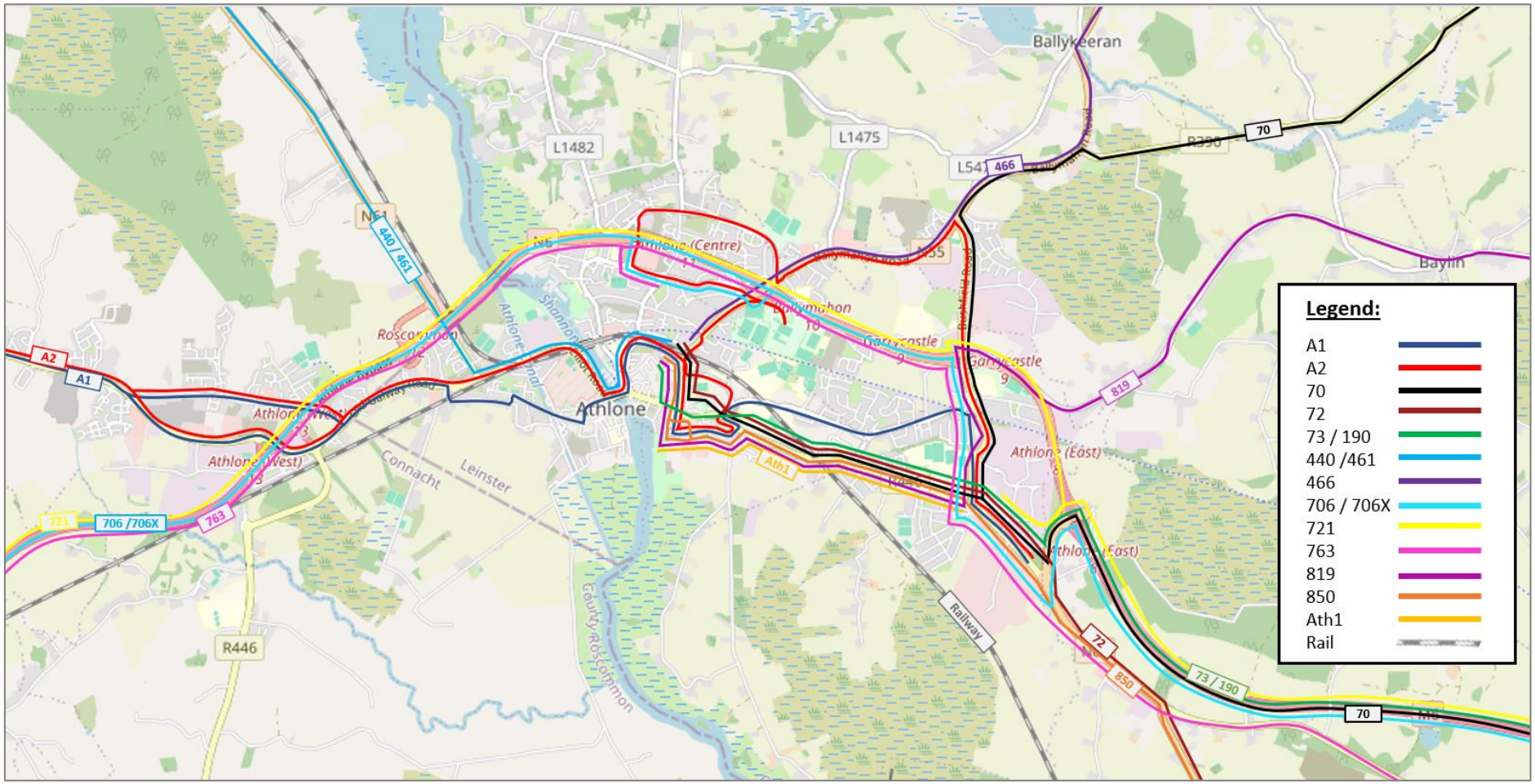


Figure 3-19 – Bus Services in Athlone

3.3.9 Land Use and Zoning

The Land Use Zoning Map for Athlone was consulted to obtain information on existing land use zoning and to obtain information of main trip generation areas within the town. Figure 3-20 shows the Athlone Land Use Zoning Map prepared as part of the Westmeath County Development Plan 2014 – 2020. The County Development Plan has been replaced to an updated version published in 2021, however, the land use map for Athlone is still currently valid until 2025.

Land-use along Route B primarily comprises of Existing & Proposed Residential areas, Sporting Recreational areas, and Mixed Use areas. There are also small areas for Commercial and Open Space use.

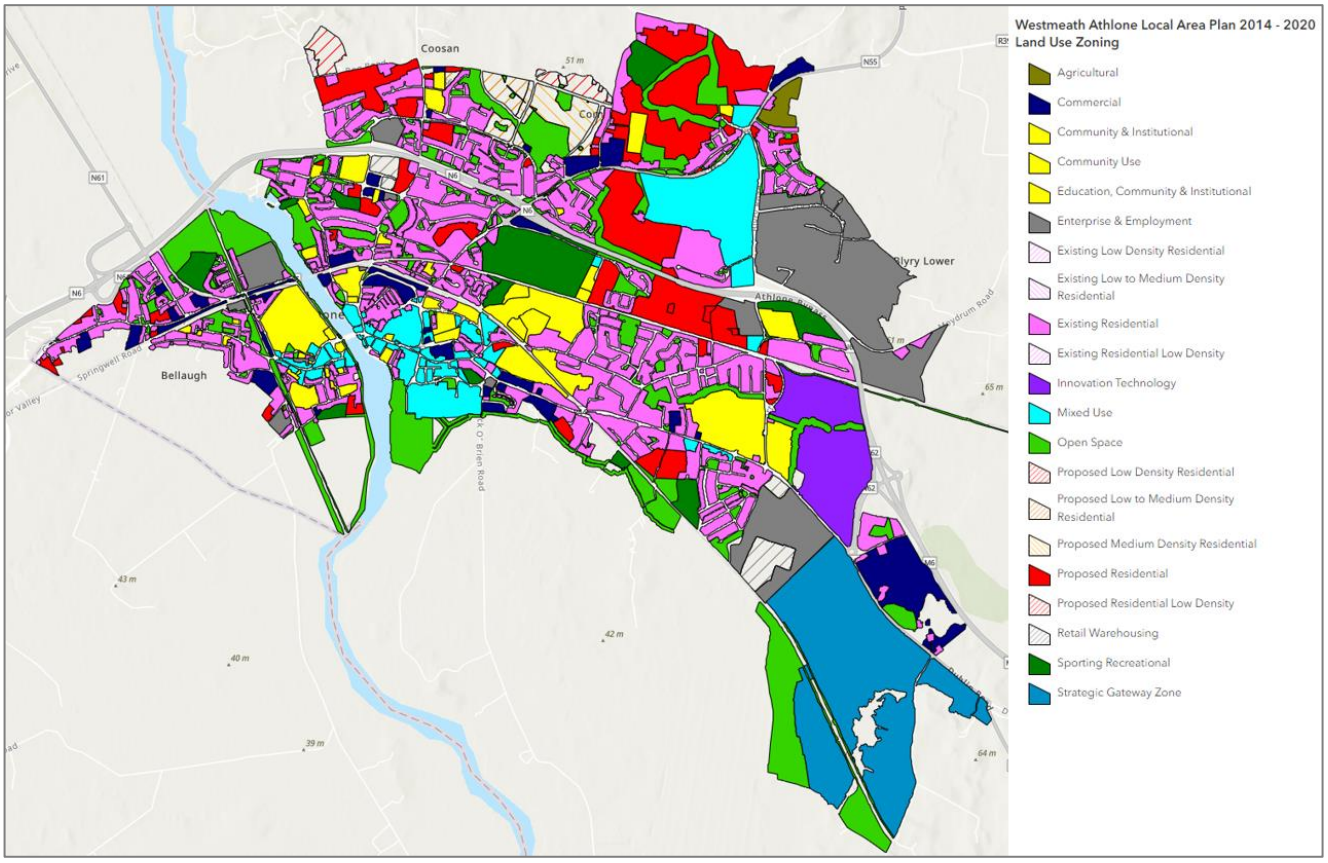


Figure 3-20 – Athlone Land Use Zoning Map

3.3.10 Invasive Species

Invasive Alien Plant Species (IAPS) are species that are introduced intentionally or unintentionally that can threaten native biodiversity, human health and ecosystem services, and potentially damage infrastructure, agricultural practices and forestry. The Technical Document (**The Management of Invasive Alien Plant Species on National Roads – Technical Guidance)** is based on an extensive literature review and analysis of best practice throughout Europe, and aims to provide the following:

- An overview of IAPS and their interactions with existing and proposed national roads.
- An outline of relevant legislation that both drives and regulates the management of IAPS in Ireland.
- An outline of the key IAPS management strategies that must be incorporated into the planning, construction practices and maintenance regimes of national roads.
- The processes for managing IAPS on national roads in Ireland.
- Information on the identification and ecology of IAPS present on Ireland's roadsides.

An Invasive Species Survey have been prepared and is included in Appendix E.

3.4 Disability Audit

The existing conditions for visually and mobility impaired pedestrians along Route B do not align with the current design standards. The following issues have been identified:

- The majority of the existing footpath surface is in relatively good condition, with minor sections having sub-standard surface conditions.
- Tactile paving has been provided in most locations, however, are relatively inconsistent (see example in Figure 3-21)
- Footpaths terminate prematurely with inadequate crossing facility provision (see example in Figure 3-22)
- Several existing roundabouts do not have any crossing facilities at the arms of the roundabout (see example in Figure 3-23)
- Relatively large corner radii are present at most junctions along the route which results in increased crossing times for vulnerable road users and higher entry/exit speeds for vehicles (see example in Figure 3-24).

Figure 3-21 – Lack of Tactile Provisions

Figure 3-22 – Shared Area between Pedestrians and Cyclists

Figure 3-23 – Footpath Terminates (Left) w/ No Crossing Facilities Provided

Figure 3-24 – Large Junction Radii with no Crossing Facilities/Tactile Provision

3.5 External Parameters

There are numerous other factors that influence the proposed scheme and therefore should be considered. The factors, referred to as external parameters, include other on-going projects in the area, funding considerations, construction phasing considerations, technical standards, and procedural and legal requirements. Each of these is discussed further in the following chapter.

3.5.1 Other Projects

There are no known additional transport infrastructures currently being developed within the site extents that could influence/impact the proposed scheme at the time of writing.

Westmeath County Council will seek funding for the network from the National Transport Authority (NTA) once approvals for the various stages identified in Project Approval Guidelines are obtained.

3.5.2 Construction Phasing

The construction phase timelines will be subject to funding, and approvals of preceding phases. The works will be phased to mitigate against disruption to all road users and adjacent commercial and residential premises, insofar as possible.

3.5.3 Technical Standards

The network will be designed to current design standards outlines in the Cycle Design Manual (CDM), Design Manual for Urban Roads and Streets (DMURS), National Transport Authority (NTA) publications and all relevant guidelines.

Throughout all stages, the developed design will comply with the following:

- The Westmeath County Development Plan policies and objectives, in particular with respect to visual standards in design, protected structures, and the natural and built environment.
- The requirements (reporting, meetings, statutory consents, approvals and cost management) of the NTA PAGs, and Appropriate protection of all National and EU designated sites and species of ecological importance and to include for any assessments required in accordance with the Habitat Directive 92/43 EEC and the Birds Directive (2009/147/EC)
- At this phase, the information regarding compound for construction is currently unavailable. However, it will be considered that the location will not impinge on protected sites such as SAC and proximate to invasive species.

3.5.4 Procedural and Legal Requirements

The scheme will be reviewed and developed in line with current procedural and legal requirements during all stages of the project lifecycle. All relevant local, regional, national and European legislation, guidelines, best practices and procedures will be reviewed and complied with where required.

3.6 Summary of Constraints

The findings concluded that the following **Environmental Constraints** must be considered in the development of feasible options and the preliminary design of the scheme:

The following **Artificial Constraints** must be considered in the development of feasible options of the proposed scheme:

- Existing engineering infrastructure (roads, junctions, private and commercial accesses, buildings and property lines etc)
- Existing public and private land ownership
- Existing public transport links
- Existing utilities
- Existing planning permissions
- Current traffic volumes.

The following **External Parameters** must be considered in the development of the design options for the proposed scheme:

- All other projects currently envisaged for the study area
- All technical standards requirements
- All procedural and legal requirements.

4. Option Selection Methodology

4.1 Overall Approach

The approach used to identify the Emerging Preferred Option for the Athlone Active Travel Schemes Bundle is aligned with the Transport Appraisal Framework (TAF), the Public Spending Code (PSC), and the NTA Project Approval Guidelines (PAGs).

Figure 4-1 outlines the option selection methodology to identify the Emerging Preferred Option for each route of the Athlone Active Travel Schemes Bundle. The appraisal will be completed in only one stage, Stage 1 Detailed Option Assessment, which aligns with the TAF. The Stage 1 will comprise the assessment of the link types as well as the pinch point locations and major junctions, where bespoke options have to be considered.

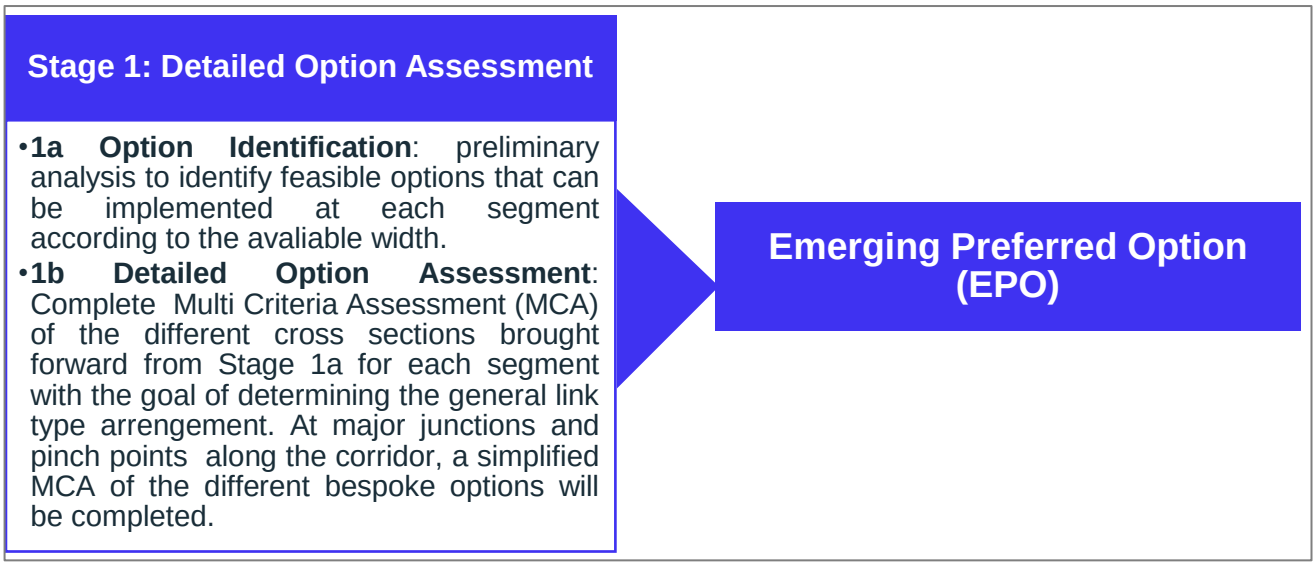


Figure 4-1 – Option Selection Methodology

4.2 Stage 1 Detailed Option Assessment Methodology

The Detailed Option Assessment process will focus on evaluating both link types (inclusive of pinch points) and major junctions. The aim of this process is to develop and investigate the feasibility of alternative options based on other route development principles.

The initial process of the Stage 1 assessment, Stage 1a, will be to identify possible link type options for each segment based on the available width, obtained from topographical survey data (Lidar) and aerial imagery. This initial process is identified as a “Identification Process” and no weighting system will be applied to this process.

The next step is the Stage 1b Detailed Option Assessment. The methodology for the Stage 1b process focused on the following principles:

- Consideration of the user-hierarchy that promotes and prioritises sustainable forms of transportation starting with pedestrians, followed by cyclists, buses and private cars considered last. This is in line with Table 2.21 of DMURS. This inclusive approach was guided by DMURS section 2.2.2 which highlights children, elderly and disabled as the groups that are disproportionately affected by the threat of accident, community severance and the loss of social cohesion.

- Consideration of the link options depending on adjoining traffic regime, the need for segregation and the target quality of services as per Chapter 2.5 of the Cycle Design Manual.
- Consideration of PRAI landownership maps, Ordnance Survey and available Topographical Survey information, in terms of land take and the number of properties, accesses, etc that will be impacted with the proposed scheme.
- Consideration of likely construction costs associated with each option based on an internal cost database incorporating similar projects in Ireland in the last 5 years.
- Consideration to local environment and climate change aspects associated with each option assessed, based on the principles outlined in the TAF.

The Stage 1 MCA will consider six TAF criteria, obtained from the Transport Appraisal Framework Module 7.0 Detailed Guidance on Appraisal Techniques, published by the Department of Transport. The Climate Change criteria has been removed from the assessment as change in modal shift is already being assessed as part of Social Impacts, which cumulatively compares possible reduction in carbon emissions.

- Transport User Benefits and Other Economic Impacts
- Accessibility Impacts
- Social Impacts
- Land Use Impacts
- Safety Impacts
- Local Environmental Impacts.

Table 4-1 outlines the criteria and key impacts to be measured to assess the Stage 1b. The sub-criteria and key impacts to be measured have been developed by AtkinsRéalis based on the TAF publication, the NTA PAG, project objectives and the principles outlined above. Therefore, the outcome of the Stage 1b assessment is to compare the options brough forward from Stage 1a against project objectives through a detailed and rigorous assessment process in order to identify the Emerging Preferred Option for the scheme.

Table 4-1 - Stage 1b Detailed Option Assessment Criteria and Key Impacts

Criteria	Sub-criteria	Key Impacts to be Measured
Transport User Benefits and Other Economic Impacts	Cost and Programme Impacts	Land acquisition area
		Construction and maintenance
		Programme Impacts
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact
	Connectivity with public transport facilities	Connections to existing and proposed public transport
Accessibility Impacts	Access to Key Services	Access to key services (retail, groceries, banks, educational, healthcare, recreational facilities and employment areas)
		Impacts on loading and parking bays
	Coherence	Route consistency and continuity
	Directness	Directness along route and though junctions and maintenance of cyclist progression
	Comfort	Provision of comfort for pedestrians and cyclists through assessment of width
	Attractiveness	Attractiveness of the route

Criteria	Sub-criteria	Key Impacts to be Measured
Social Impacts	Social inclusion for groups with deprived needs	Opportunities for social, community and recreational activity participation
	Health impacts	Impact on modal Shift/activity levels (i.e., Cars to Cyclists)
	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities
	Gender Impacts	How the proposal may have gender specific impacts
Land Use Impacts	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI
		Impact on green areas
Safety Impacts	Safety Impact	Segregation between cyclists and vehicles
		Segregation between cyclists and pedestrians
		Safety for all users regarding traffic volumes and speeds along route
		Conflicts at junctions and side roads between vehicles and cyclists
	Traffic	Impact on traffic capacity due to the proposals
Local Environmental Impacts	Air Quality	Air Quality Impact
	Noise and Vibration	Potential Sensitive receptors including residential, commercial, education, healthcare properties
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas
	Biodiversity	Impact on Biodiversity along scheme extents
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows
	Landscape and Visual Quality	Landscape and visual assessment
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA).

4.2.1 Stage 1b at Pinch Points and Major Junctions

At locations constrained in width and at major junctions, a similar process as discussed above will be utilised, however, as the process will only involve specific locations at short distances and junctions, it will be simplified with some sub-criteria removed and others unified however still maintaining six TAF criteria, as shown in Table 4-2.

Table 4-2 - Stage 1 Pinch Points and Major Junctions Criteria and Considerations

Criteria	Sub-criteria	Key Impacts to be Measured
Transport User benefits and Other Economic Impacts	Cost impacts	Land acquisition area
		Construction and maintenance
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact
Accessibility Impacts	Coherence and Directness	Consistency, continuity, and directness along the route and through junctions and the maintenance of cyclists' progression
	Comfort and Attractiveness	Provision of comfort for pedestrians and cyclists through assessment of width and its attractiveness
Social Impacts	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities
	Gender Impacts	How the proposal may have gender specific impacts
Land Use Impact	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI
		Impact on green areas
Safety Impact	Safety Impact	Segregation between cyclists and vehicles
		Segregation between cyclists and pedestrians
		Safety for all users regarding traffic volumes and speeds along route
	Traffic	Impact on traffic capacity due to the proposals
Local Environmental Impact	Air Quality	Air Quality Impact
	Noise and Vibration	Potential Sensitive receptors including residential, commercial, education, healthcare properties
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas
	Biodiversity	Impact on Biodiversity along scheme extents
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows
	Landscape and Visual Quality	Landscape and visual assessment

Criteria	Sub-criteria	Key Impacts to be Measured
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA)

4.2.2 Scoring System

Each option is assessed relative to one another at the Stage 1b Detailed Option on a five-point ranking scale, shown in Table 4-3. The options were assessed against the above criteria in a performance matrix which describes how each option performs against the defined sub criteria in comparison with other options.

The performance matrix describes how each route performs against one another, showing their strengths and weaknesses compared to other options. The preferred option in segment was then determined based on which option is most advantageous compared to others. Consistency across adjacent segments will also be considered when determining the most appropriate cross-section typology for the route corridor.

Table 4-3 - Detailed Option Assessment Scoring Scale

Colour Coding	Rank Description
	Significant advantages to other options
	Some advantages to other options
	Neutral compared to other options
	Some disadvantages to other options
	Significant disadvantages to other options

5. Design Principles

5.1 Cycle Flows

The CDM states that in order to determine the width of the cycle facility, there needs to be an estimation of the cycle flows along the route. The CDM divides the cycle flows into two categories: higher or lower than 300 cyclists per hour. In order to obtain the estimated number of cyclists along each route, traffic count data from March 2022 and the NTA Cycle Propensity Tool[2] for the Western Region were used. The NTA cycle propensity tool provides a reference and two future scenarios, the high propensity and the high propensity with e-bikes. The reference scenario is the NTA model for 2028 which considers cycling attitudes not significantly changed from the present. The two future scenarios increase the cycling usage, with the provision of safe cycle parking, growth of bike hire, increase of acceptance of cycling and financial supports similar to the Cycle to Work Scheme. The high propensity scenario with e-bikes also consider an increase in the speed by 4 km/h in a scenario where electric bicycles are more accessible.

5.1.1 Cycle Flows along Route B

Traffic volumes were obtained from ATCs undertaken along Castlemaine Street (R446) along the Segment B3 for Route B. According to the ATCs, on the busiest day, the maximum ATC recorded was 14,574 vehicles travelling along the road on Friday the 25th of March 2022. The reference scenario in the cycle propensity tool zone located along Route B indicates that 74.3% of the trips along the area comprise of motorised vehicles and that 1.9% are cyclists during a 24-hour period. Therefore, based on the ATC and the cycle propensity values, it can be calculated that a total of 19,615 users travel along the road, be it by private cars, HGVs, bicycles or on foot. Based on the number of cyclists representing 1.9% of the total trips along the segment, it's expected that a total of 373 cyclists travelled along the road during the 24-hour period.

The high propensity with e-bike scenario of the cycle propensity tool along the route expects an increase in the cycle usage from the existing 1.9% to 4.2% with the improvement of existing cycle facility, creation of new networks and expansion of incentives to cycle rather than using private cars. Based on this, the expected number of cyclists along the route increases to 833 users during a 24-hour period.

At peak hours, Route B registered a maximum of 1,290 vehicles on Saturday the 26th of March, which represents 8.8% of the total max. vehicles during the 24-hour period. When bringing the numbers presented above to the peak period, the maximum number of cyclists expected is approximately 74 cyclists per hour (i.e., 833 x 8.8%). As for the Route B, Castlemaine Street (R446) was the busiest segment along, and the maximum number of cyclists expected based on the cycle propensity tool is 74 users per hour, it can be considered appropriate to base the calculations for the width of the cycle facility to cater for less than 300 users per hour.

[2]https://www.nationaltransport.ie/planning-and-investment/transport-modelling/regional-modelling-system/cycle-propensity-scenarios/

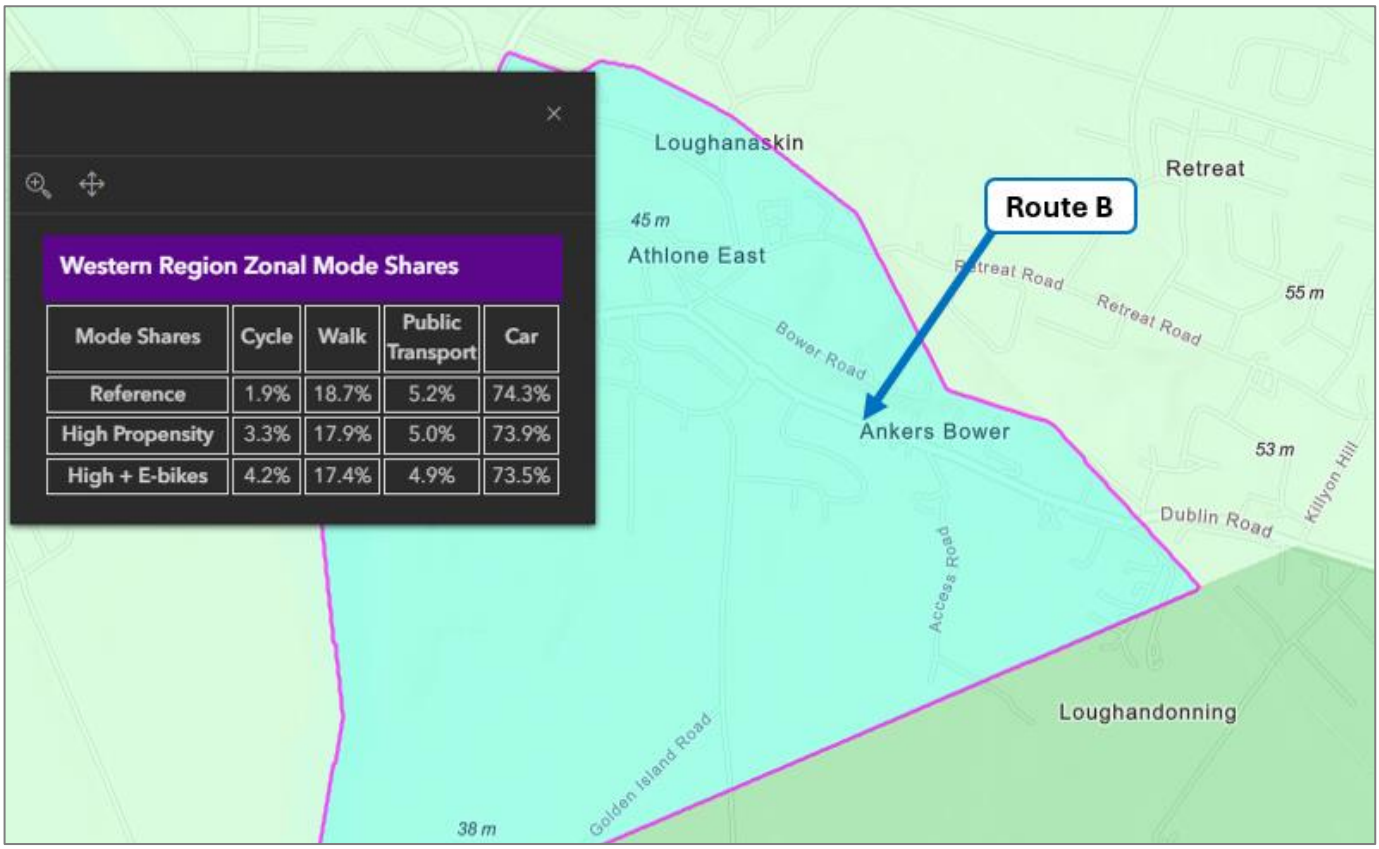


Figure 5-1 – Cycle Propensity Scenario Tool at Route B

Table 5-1 - Cycle Flows calculations (Route B)

ATC 19 R446 Dublin Road		Cycle Propensity Scenarios (Base reference)				Cycle Propensity Scenarios (High propensity)				Cycle Propensity Scenarios (High + E-bike propensity)			
	Total vehicles	% Car	Total trips based on CPS	% Base scenario	Cyclist' s base scenario	% Car	Total trips based on CPS	% High propensity	Cyclist' s base scenario	% Car	Total trips based on CPS	% High + E-bike propensity	Cyclist' s base scenario
Peak Hour (Fri 25-Mar-2022)	1290	74.3	1736	1.9	33	73.9	1746	3.3	58	73.5	1755	4.2	74
24h (Sat 26-Mar-2022)	14574	74.3	19615	1.9	373	73.9	19721	3.3	651	73.5	19829	4.2	833

5.2 Design Principles and Approaches

The following principles were considered in line with the Cycle Design Manual:

- Quality of service – Quality of Service is a measurement of the degree to which the attributes and needs of the cyclist are met. The aim of the scheme is to achieve the highest Quality of service available on each route.
- Effective Width calculator - The designed width of a cycle facility is comprised of the effective width, i.e. the space that is “usable” by cyclists, as well as the clearances that will be required in different circumstances.
- Segregation - Segregation refers to the physical separation of cyclists from motorised traffic. Where possible throughout the scheme a segregated cycle facility is to be provided.
- Transitions - Cyclists may frequently be required to make a transition to the right or left, from on-road to off-road etc. The scheme will be designed to limit the occurrence of transitions and where required, transitions will be designed to provide continuity, comfort and safety to cyclists.
- Impacts on other road users – The scheme will look to minimise the impact on other road users while making a safer environment for all road users.
- Universal Design and Inclusive Mobility – The scheme shall be designed to be usable by all types of road users and all types of bicycles and wheeling equipment, where possible.

5.3 Link Types Options

Based on the constraints identified for Routes A and B, as outlined in Section 3 and the project objectives and expected benefits, outlined in Section 1.3, the options considered were based on an appropriately detailed assessment of each segment based on Lidar survey and online mapping, with the aim to provide high quality segregated cycle and pedestrian provision.

Thus, to define the width dimensions of the cross sections used in the study, the Cycle Design Manual (CDM) was used as the base document regarding the detail and width of the cycle facilities and the Design Manual for Urban Roads and Streets (DMURS) was used regarding to the detail and width of footpaths and carriageways. The NTA publication ‘Rapid Build Active Travel Facilities’ was also utilised regarding rapid build facility options.

The approach to the development of the cross-section options was to consider the highest provision of segregated cycle provision in the first instance, and to consider cross-section options that provide incrementally lower quality of service, as well as to consider options with sufficient width to provide rapid build options, in accordance with Table 2.1 of the CDM.

The following lists the cross-section typology options considered in order of highest quality of service to lowest:

- Standard Cycle Track
- Stepped Cycle Track
- Protected Cycle Lanes
- Shared Active Travel Facilities
- Cycling in Mixed Traffic.
- Mandatory Cycle Lane

For each of the above cross-section options, a range of cross-section widths were also considered in order to provide flexibility in terms of the physical network constraints. The CDM states that the desirable minimum width should be used, however, where it cannot be achieved, incremental reductions can be applied towards the absolute minimum

width. To facilitate the assessment, the cross-section option widths are based on CDM desirable width and absolute minimum width.

5.3.1 Standard Cycle Track

These options, detailed below, offer the highest level of service in terms of safety, comfort and quality for pedestrians and cyclists (active modes). These options can only be provided by traditional build construction methods, as they would require the realignment of kerb lines, construction of cycle track pavements, widening of footpaths (if required), changes to drainage system etc.

Two cross sections options are proposed which provide standard cycle track provision: one-way cycle track and two-way cycle track.

5.3.1.1 One-Way Cycle Track

Figure 5-2 shows cross sections for one-way cycle tracks. For one way cycle tracks with less than 300 cyclists per hour and a speed limit of 50km/h, the desirable minimum width is 2.2 m in each direction, which offers a cycle track central width of 2.0 m in each direction (B), no inside clearance (A) as the kerb between the cycle track and the footpath is 60mm high, and outside clearance (C) of 0.2m assuming a full hight kerb between it and the carriageway and no buffer (D) considering no contra-flow cycle movement. A 2.2m wide cycle track will ensure that cyclists can ride comfortably and overtake safely, adequately meeting the criteria required by the CDM. Considering the criteria required by DMURS, this option provides footpaths with a width of 2m per direction for pedestrians and a carriageway of 6m wide inside the town centre to safely accommodate buses and HGVs. These measures ensure pedestrian comfort when walking along and past other pedestrians and provide greater control of vehicle speeds due to the influence of the narrower carriageway on driver behaviour and awareness.

The absolute minimum width for one way cycle tracks according to the CDM requires a central width of 1.5m (B), no inside clearance (A), 0.2m outside clearance (C) assuming the full hight kerb and no buffer (D), which brings the cycle facility to 1.7m in each direction. The footpath width for the absolute minimum options would be 1.8m and the carriageway would be similar to described above, 6m in the town centre and elsewhere. The widths for this option are considered to provide pedestrian comfort and safety.

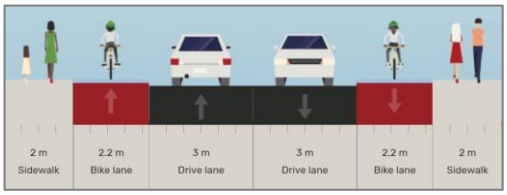
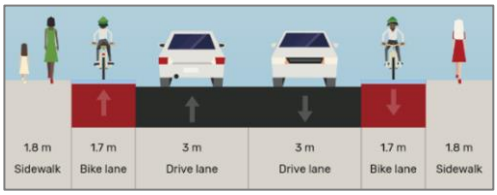
Cross Section	Desirable Minimum Width	Absolute Minimum Width
One-Way Cycle Track		

Figure 5-2 – One-Way Cycle Tracks

5.3.1.2 Two-Way Cycle Track

Figure 5-3 shows cross sections for two-way cycle tracks. Two-way cycle tracks require a buffer as cyclists are travelling adjacent to oncoming traffic. The preferred buffer type, according to the CDM, are raised or planted verges, as they provide separation between cyclists and vehicles and prevents cyclists from swerving into the roadway.

For two-way cycle tracks with less than 300 cyclists per hour and at a road with a speed limit of 50km/h, the desirable minimum width according to the CDM is 0m for inside clearance (A), 3m wide central width (B), no outside clearance

(C) and a buffer (D) of 0.5m, reaching a total of 3.5m. The carriageway width is considered as 6m, depending at the location, and the footpaths are 2m wide, according to DMURS.

For the absolute minimum width, the two-way cycle track central width (B) can be reduced to 2m, no inside clearance (A) and outside clearance (C) will be provided, and a buffer (D) of 0.3m will be located between the cycle track and the carriageway, with the total width of the cycle facility 2.3m. The road carriageway is also 6m wide, depending on if it is inside the town centre or not, and the footpath is 1.8m wide, according to the minimum requirements set in DMURS.

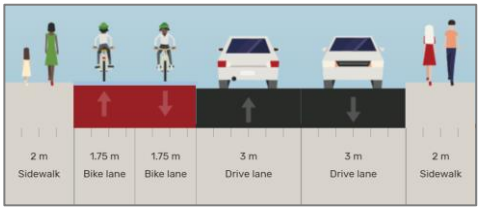
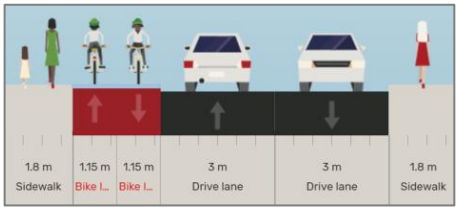
Cross Section	Desirable Minimum Width	Absolute Minimum Width
Two-Way Cycle Track		

Figure 5-3 – Two-Way Cycle Tracks

5.3.2 Stepped Cycle Tracks

Stepped cycle tracks are similar to standard cycle tracks, however, the kerb dividing the cycle facility to the roadway is raised up to 75mm above the carriageway and 60mm below the adjacent footpath. These facilities are ideal for locations with off-street accesses and driveways, as the footpath and cycle track can continue at the same level, which provides a better experience for both pedestrians and cyclists and enforce vehicles to reduce speeds. Stepped cycle tracks also do not provide buffer between the cycle facility and the carriageway. These facilities are not appropriate for two-way cycle as it does not offer sufficient protection to cycle against oncoming traffic.

The desirable minimum width for this type of facility is 2.2m on each side of the road. No inside clearance or buffer are included and only a 0.2m outside clearance (C) assuming more than 60mm kerb height is considered. The absolute minimum width is 1.7m, comprising of 1.5m central width (B) and 0.2m outside clearance (C). Figure 5-4 illustrates both options. The road carriageway and footpaths follow DMURS and are 6-6.5m and 1.8-2m, respectively.

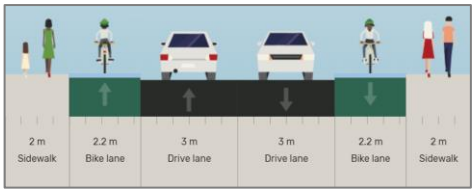
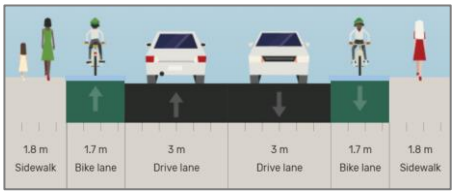
Cross Section	Desirable Minimum Width	Absolute Minimum Width
Stepped Cycle Track		

Figure 5-4 – Stepped Cycle Tracks

5.3.3 Protected Cycle Lanes

Protected Cycle Lanes (PCLs) are cycle lanes provided at carriageway level but, different from mandatory cycle lanes, they are physically segregated from vehicular traffic. There are several forms of segregation that can be implemented, such as continuous separator kerbs, modular islands, discrete modular elements (flexible bollards), planters, parking protected facilities, etc. PCLs are a common rapid build measure that can be implemented to provide segregation for cyclists with a lower cost, as it makes use of the existing kerb-to-kerb width and does not require the relocation of road drainage and other infrastructure.

For one-way facilities, the desirable minimum width is considered to be 2.40m, which comprise of 0.20m inside clearance (A), 2.0m central width (B), 0.2m of outside clearance (C) assuming more than 60mm kerb height and no buffer (D) considering no contra-flow cycle movement. The absolute minimum width is 1.90m on each side, which comprise of 0.20 (A), 1.5m (B), 0.2 (C) and no buffer (D).

For two-way cycle facilities, the desirable minimum width considered is 3.70m (0.20 (A), 3.0 (B), 0 (C) and 0.5 (D)) and 2.50m for the absolute minimum (0.20m (A), 2.0m (B), 0m (C) and 0.3m (D)).

Figure 5-5 illustrates the desirable and absolute minimum PCL cross-section arrangements considered. Similar to the other options described above, the footpaths will follow DMURS guidelines and are 2m for the desirable minimum and 1.8m for the absolute minimum. The road carriageway is the same for both options, however, considered 6.0 within the town centre and elsewhere.

These widths are indicative only and vary from the type of segregation provided, e.g., separator kerbs do not require the installation of a buffer zone, whereas flexible bollards higher than 600mm require a buffer of 0.5m and parking protected cycle lane require a buffer of 750mm.

Table 2.1 of the CDM indicates that protected cycle lanes may not be suitable for all users and Departure from Standard is required if two-way vehicular traffic flows are higher than 400 PCU/h.

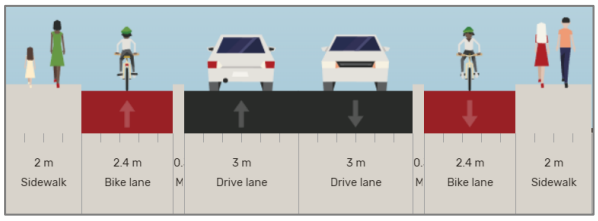
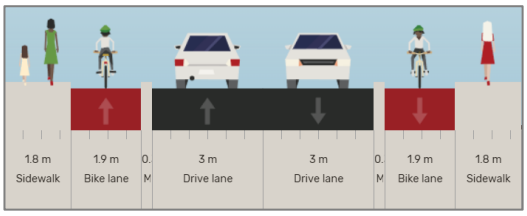
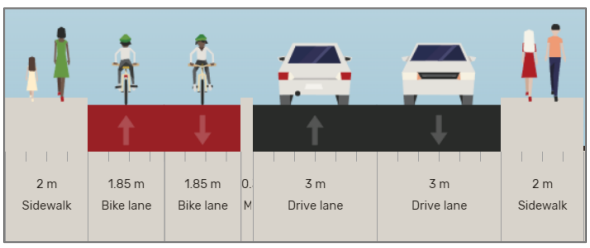
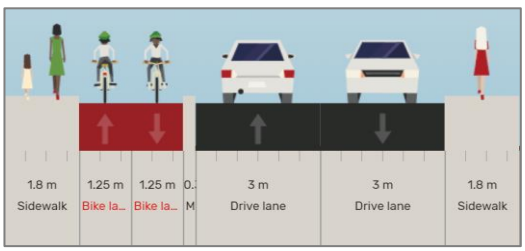
Cross Section	Desirable Minimum	Absolute Minimum
Protected Cycle Lane (PCL)		
		

Figure 5-5 - Types of Protected Cycle Lanes

5.3.4 Shared Active Travel Facilities

While providing segregation for traffic, shared active travel facilities allow for the mixing of pedestrians and cyclists, reducing the overall quality of service for both active travel modes. According to the CDM, shared active travel facilities are considered appropriate if the density of pedestrians is less than 200 pedestrians/hour/m. These facilities are appropriate only at certain contexts, for example along busy inter-urban and National Roads with no high volumes of pedestrians and should be avoided at busy urban areas with high volumes pedestrians and/or cyclists.

Figure 5-6 illustrates the desirable and absolute minimum cross-section arrangements considered according to the Cycle Design Manual for less than 300 pedestrians and 300 cyclists per hour, which is 4.2m for the desirable minimum (4.0 for central width B and 0.2m for outside clearance C) assuming full height kerbs and 3.2m for the absolute minimum width (3.0m B and 0.2m C). The carriageway is considered 6.0m in the town centre areas and the remaining locations.

At some segments, a shared facility has been considered on only one side of the road due to physical constraints and reduced catchment area. As there are no existing footpaths with over 3m in width, this option can only be provided using traditional construction methods.

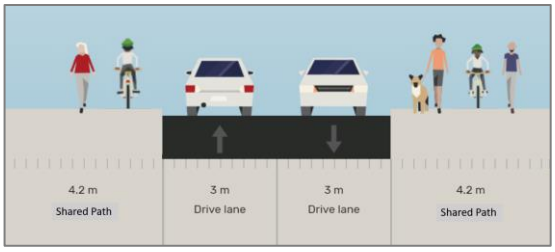
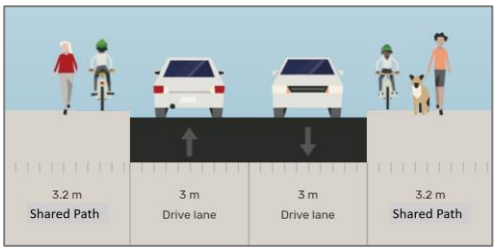
Cross Section	Desirable Minimum	Absolute Minimum
Shared Active Travel Facility		

Figure 5-6 - Types of Shared Active Travel Facilities Provision

5.3.5 Cycling in Mixed Traffic

Mixed traffic provision does not provide any separation or segregation between cyclists and traffic, and it is only suitable for roads with low volumes & low traffic speeds of traffic, such as residential streets, local roads and rural lanes. Rapid build can be provided for this cross-section type as it does not require major construction works and can mainly be accommodated within the existing road layout, where there is sufficient road width.

At proposed mixed traffic streets, measures to reduce traffic speeds, such as reduction of carriageway widths, horizontal and vertical deflections, surface treatments etc, shall be implemented to reduce vehicular speeds and increase safety for all users. This option would look into providing a carriageway with 6.0m in width at the town centre areas, as it will require vehicles to reduce the speed when travelling along the roads. At locations outside the town centre, as they serve several bus routes, the width would be increased to 6.5m, a 3.25m lane on each side. Regarding footpath widths, the desirable minimum is 2.0m according to DMURS and the absolute minimum is 1.8m.

Figure 5-7 illustrates the desirable and absolute minimum mixed traffic cross-section arrangements considered.

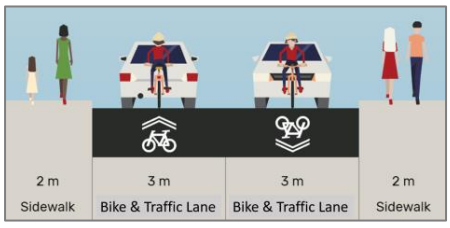
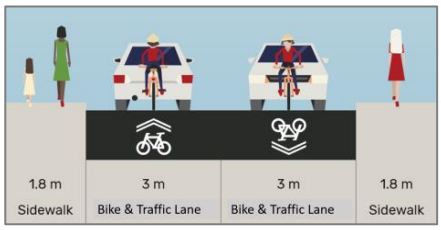
Cross Section	Desirable Minimum	Absolute Minimum
Mixed Traffic		

Figure 5-7 - Types of Mixed Traffic Provision

5.3.6 Mandatory Cycle Lanes

Mandatory Cycle Lane is not considered as a suitable option for Route B because its provision is not recommended for a range of users within 50km/h speed limit (Refer to CDM Table 2.1).

5.4 Other Design Principles Applied

Verges:

- Where space is available, verges of a minimum of 0.5m will be provided between the carriageway and cycle track (Source: CDM).

Vehicle Lanes:

- Vehicle lanes shall be 3.0m wide within the town centre (source: DMURS).

Land Take:

- Due to the constrained nature of some segments, land take options were considered in two instances: 1) footpaths and cycle tracks were widened to the desirable minimum width or 2) footpaths and cycle tracks were kept to the absolute minimum widths in order to reduce the land take area required.

Junctions and Driveways:

- Raised Continuous Cycle Tracks: Footpaths and cycle tracks will be continuous across side streets and driveways, as detailed in Figure 5-8 and Figure 5-9. Additional signage will be provided to warn motorists of the presence of two-way cycle flows and cyclists of the presence of oncoming vehicles. (Source: CDM)

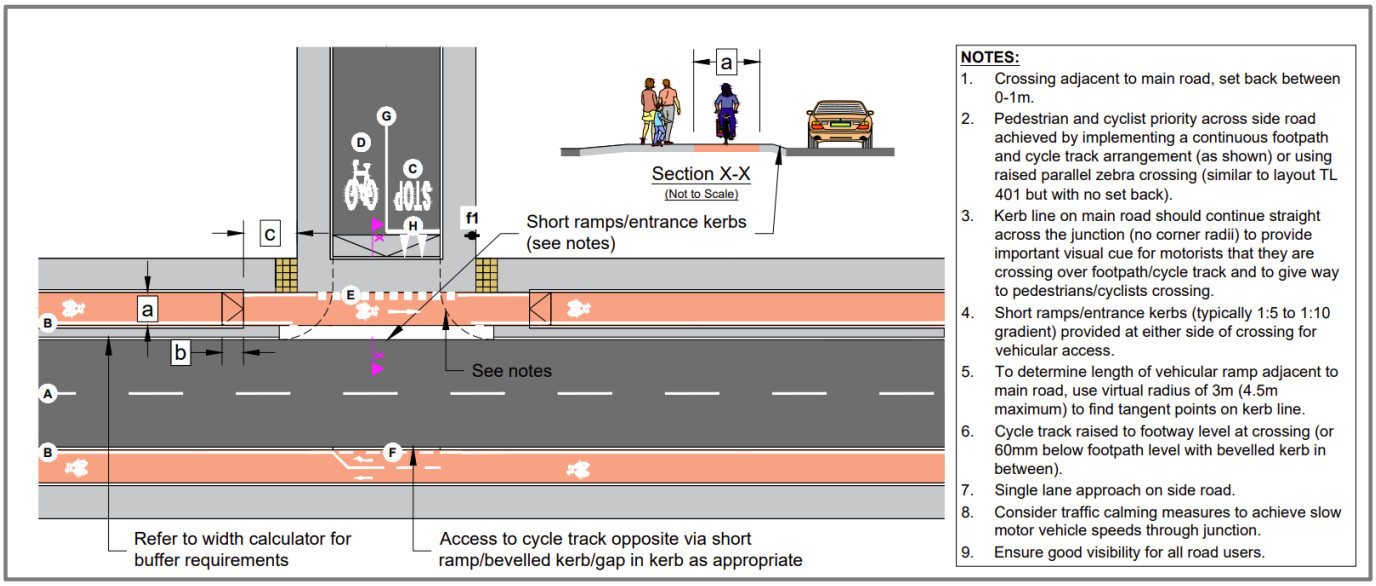


Figure 5-8 - Example of One-Way Cycle Track Priority Junction Treatment

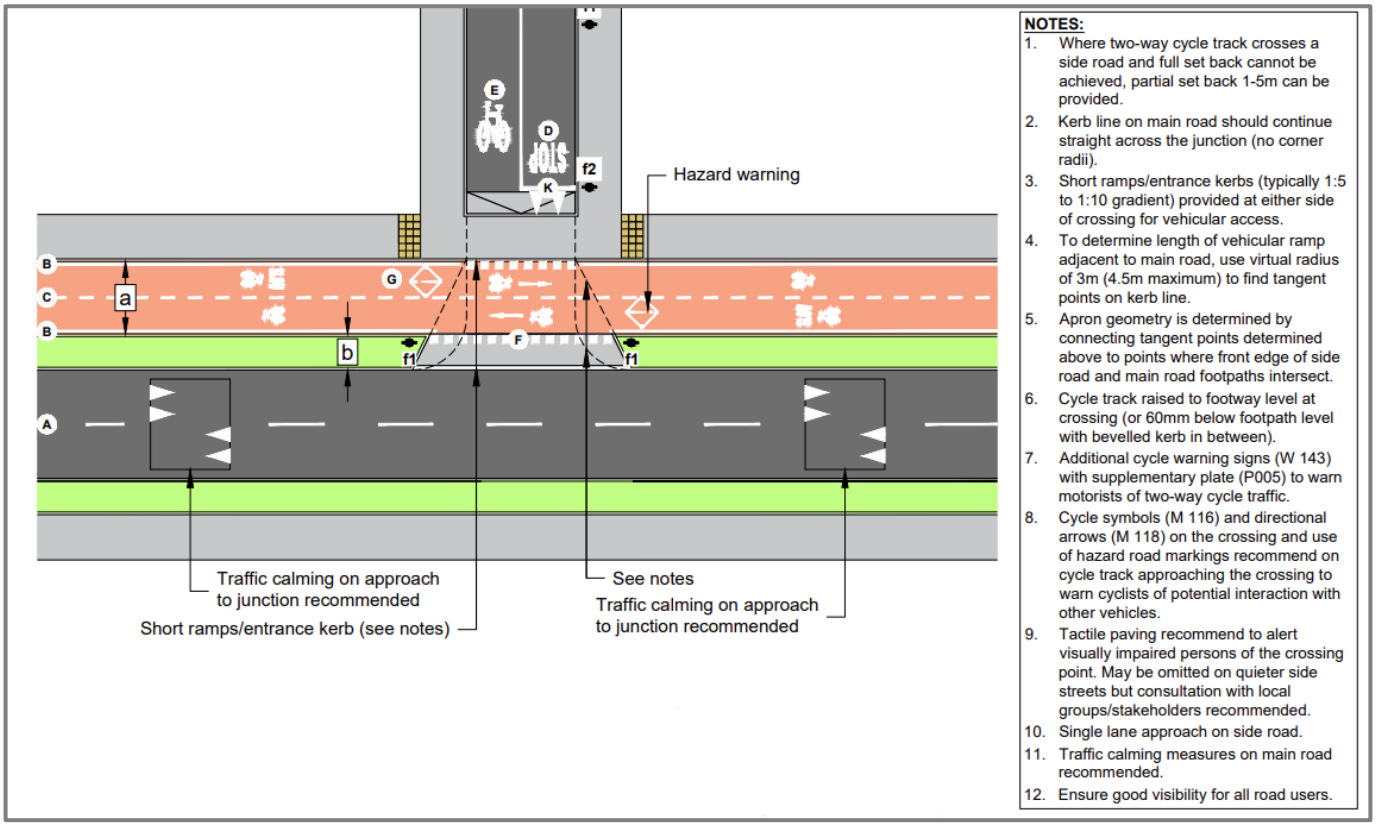


Figure 5-9 - Example of Two-Way Cycle Track Priority Junction Treatment

Crossings

- The positioning of crossings shall be based on the review of the corridors, the locations of key destination points, desirable pedestrian and cyclist lines, intersections and connections to public transport based on the guidelines stated in the Cycle Design Manual.
- Each crossing location will be reviewed to determine the most appropriate crossing type according to Table 4.25 of the CDM. It is assumed that most crossings with either be signal-controlled crossings or uncontrolled crossings as these are usable by both pedestrians and cyclists. In specific instances where context, speeds and volumes are appropriate, zebra crossings may also be considered. Figure 5-10 shows the details for two alternative toucan crossing configurations.

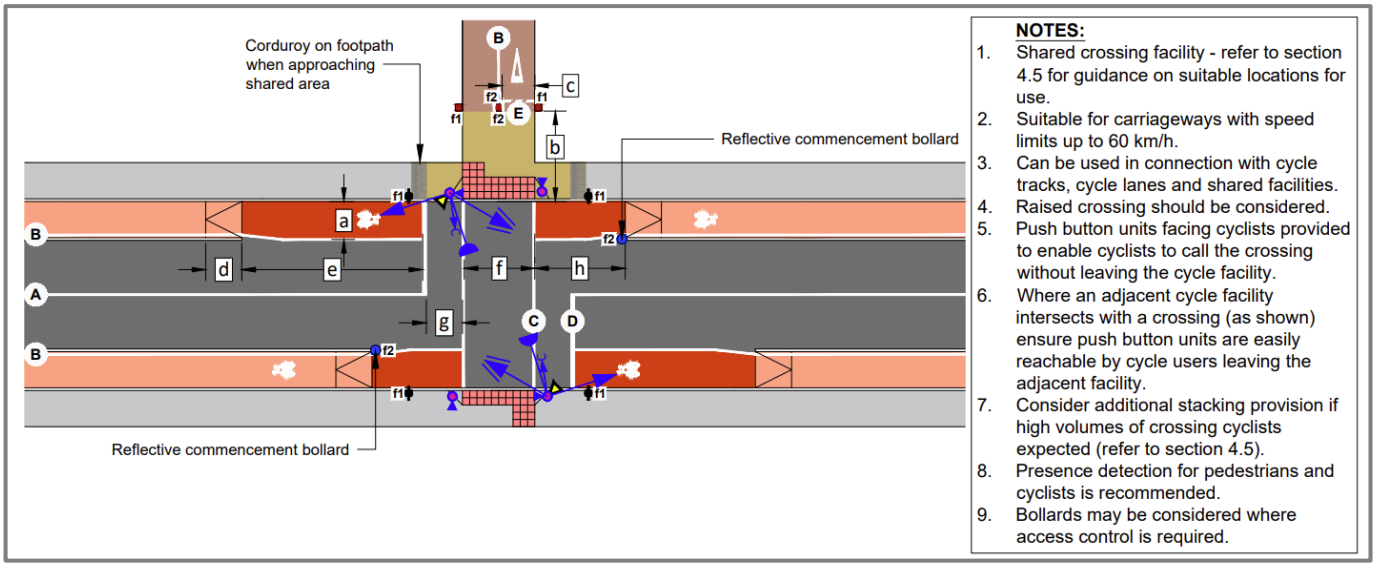


Figure 5-10 - Example of Toucan Crossing Design

Bus Stops

- Existing bus stops are assumed to remain in the same general location as existing and only be moved slightly, if needed, to accommodate the proposed bus stops layouts.
- The preference will be for bus stops to be designed as Islands Bus Stops, as shown in Figure 5-11, where the cycle track is around the rear of the bus stop and adjacent to the footpath, therefore, reducing conflicts between cyclists and busses.
- Where there is insufficient space, a shared bus stop landing zone shall be considered, shown in Figure 5-12. This option also removes the conflicts between cyclists and buses as it brings the cycle facility to the rear of the bus stop, however, increases conflicts between cyclists and pedestrians boarding and alighting the bus. To reduce the risks, the cycle facility shall be narrowed to encourage single file and shall bend from the road to create a boarding/alighting zone for bus passengers.

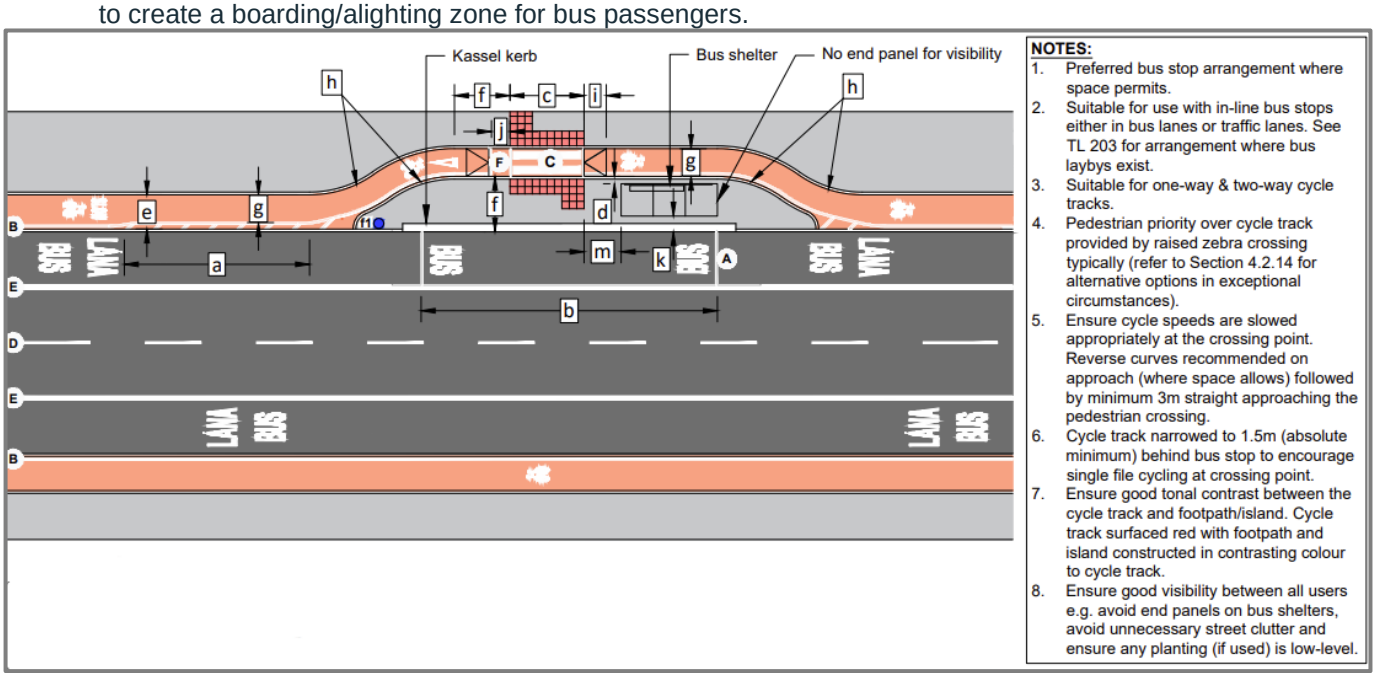


Figure 5-11 - Examples of Island Bus Stop (Source: CDM)

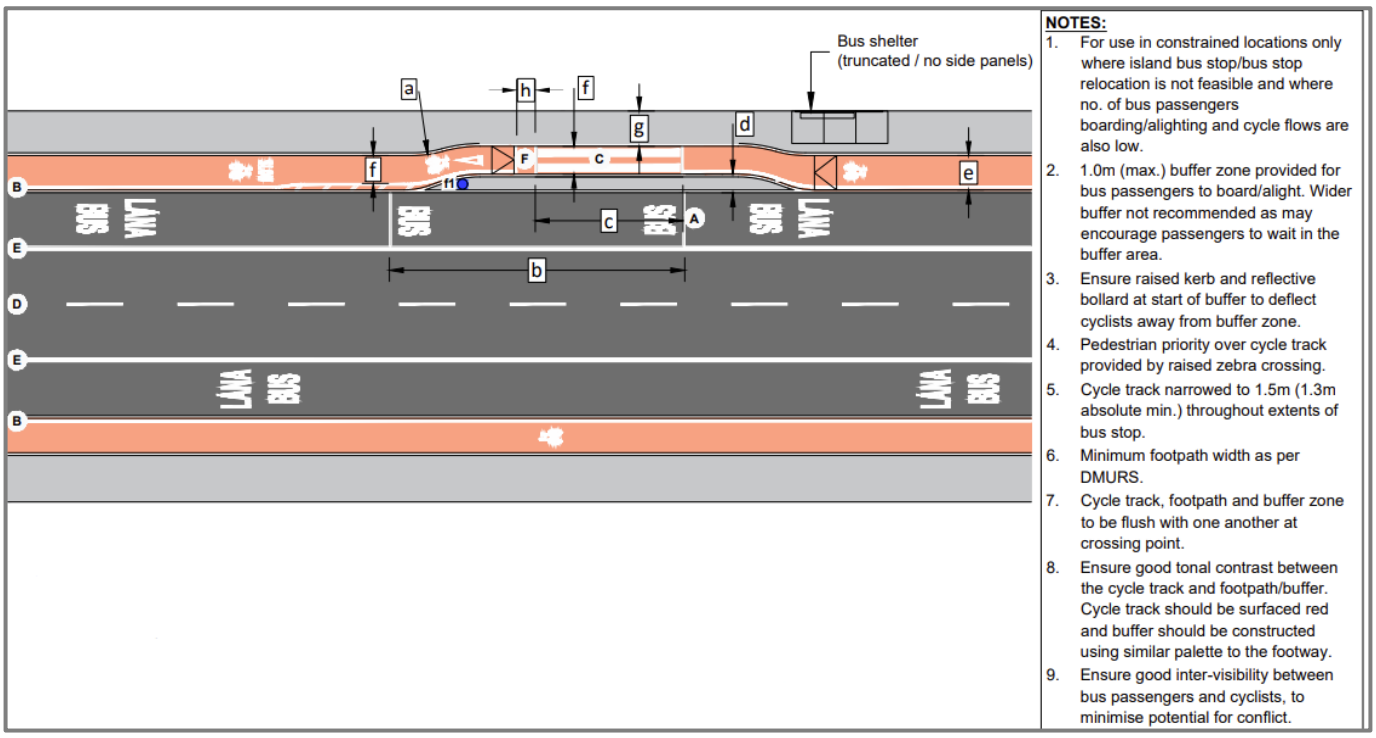


Figure 5-12 – Example of Shared Bus Stop Landing Zone (Source: CDM)

6. Stage 1 Detailed Option Assessment Appraisal

The appraisal process comprises of an initial identification process, Stage 1a, followed by a detailed option assessment, Stage 1b, for different cross section options for each corridor segment, with the goal of determining the general arrangement (one-way cycle track, two-way cycle track, shared active travel facility, mixed traffic, etc.) of each segment.

The following outlines the principles applied to the development of the cross-section options for each corridor segment:

- The key objective is to provide where possible high quality segregated cycle provision with the desirable minimum width, however, where the desirable width cannot be applied, the width will be reduced to the absolute minimum width as outlined within the national cycle manual.
- Due to reduced available width within some segments, the proposal to locate a two-way cycle track on one side of the road will be put forward in order to maximise the available space.
- Following a review of the existing road space rapid build options were considered.
- Land acquisition was considered only at locations where there was no available width to provide a suitable level of active travel facilities.
- Due to reduced available width within some segments, the proposal to locate a two-way cycle track on one side of the road will be put forward in order to maximise the available space.

6.1 Link Types Appraisal

The initial stage for the assessment for the link types is an identification process based a comparison between the cross-section options shown in Section 5.3 and on the Cross Section Width analysis described in Section 3.3.2.

Based on the typical width for each corridor, the Stage 1a Option Identification will look at cross section options that fit within the existing road corridor. In the case where the standard segregated cycle track provision does not fit within the existing road corridor and the existing facilities do not provide the necessary level of safety for pedestrians and cyclists, this stage will also look at options that require land acquisition in order to provide adequate cyclist provisions.

The second stage is a Detailed Option Assessment, Stage 1b, comprising of a Micro Criteria Assessment (MCA) that assess all the options for each segment and compare them against one another in a performance matrix. The performance matrix compares potential options outlining if the option is advantageous, neutral or disadvantageous compared to the remaining options. The goal of the MCA is to make recommendations on the preferred end-to-end cross section option for each segment.

6.1.1 Segment B3: Anker Bower Roundabout to Athlone Furniture World

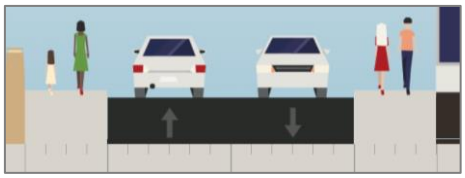
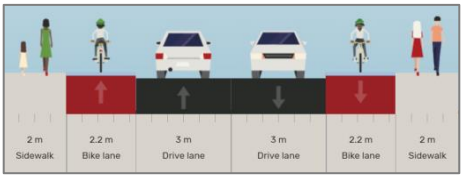
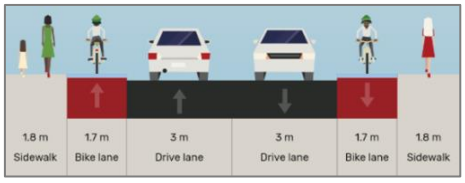
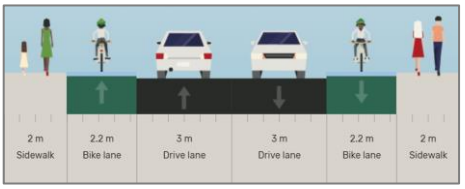
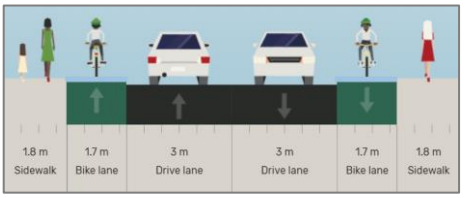
Based on the width analysis, as shown in Figure 3-1, Segment B3 has a typical width of 14.0m, with maximum width of 14.4m and minimum of 13.5m. The footpath on the southern side is over 2.0m wide and the footpath on the north side has sections less than 2.7m wide. Therefore, options for this segment do not consider land acquisition to provide the necessary level of segregation between cyclists and pedestrians, as the existing road width can afford that.

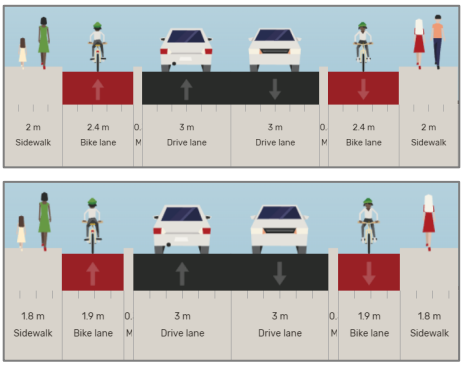
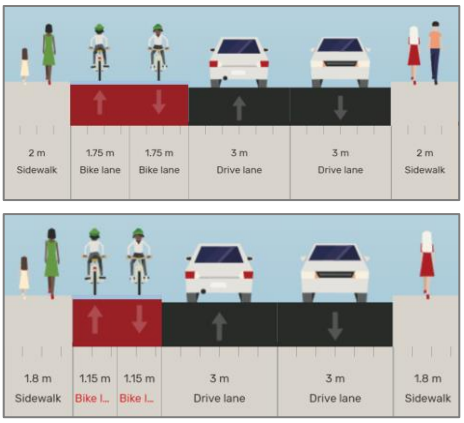
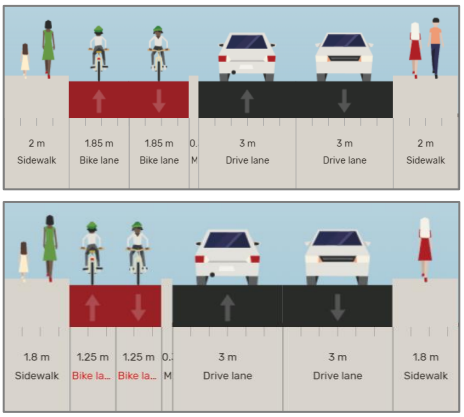
The descriptions for each option for this segment are discussed in detail in Table 6-1. A Multi-Criteria Analysis is undertaken between the options considered, as shown in Table 6-2.

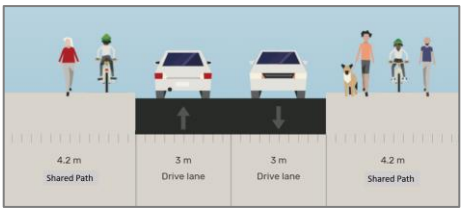
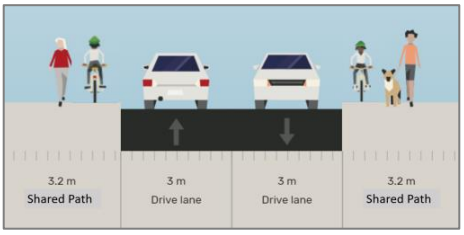
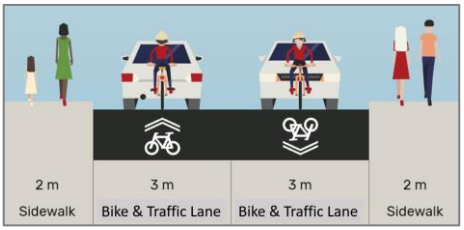
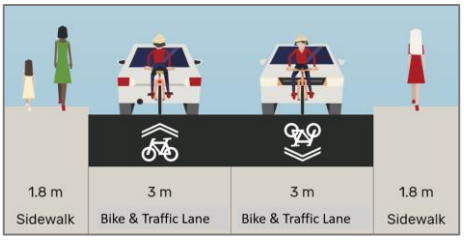
Refer to Section 3.3.1.1 for further details/information on the Segment B3.

6.1.1.1 Stage 1a Option Identification

Table 6-1 - Segment B3 Options

Option Description	Reference
Option 1: Do Nothing This option would retain the existing footpath on both sides and would not provide cycle facilities.	
Option 2: Standard One-way cycle track (Desirable Min. - 14.4m, Absolute Min. - 13.0m) This typical cross-section option would require a one-way cycle track with a desirable minimum width of 2.2m wide along with 2.0m footpaths. The cycle lane can be reduced to an absolute minimum width of 1.7m wide and 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). To implement this option, land acquisition is not required however the removal of existing parking bays on both sides will be required, as the minimum cross section needed is not sufficiently available within the road corridor without this removal.	 
Option 3: Stepped One-way cycle track (Desirable Min. - 14.4m, Absolute Min. - 13.0m) This typical cross-section option would require a one-way cycle track with a desirable minimum width of 2.2m wide along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 1.7m wide and 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). To implement this option, land acquisition is not required however the removal of existing parking bays on both sides will be required, as the	 

Option Description	Reference
minimum cross section needed is not sufficiently available within the road corridor without this removal.	
Option 4: Protected One-way cycle lane (Desirable Min. - 14.8m, Absolute Min. - 13.4m) This typical cross-section option would require a one-way cycle lane with either a desirable minimum width of 2.4m wide along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 1.9m wide along with 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). To implement this option, land acquisition is not required however the removal of existing parking bays on both sides will be required, as the minimum cross section needed is not sufficiently available within the road corridor without this removal.	
Option 5: Standard Two-way cycle track (Desirable Min. – 13.5m, Absolute Min. – 11.9m) This typical cross-section option would require a two-way cycle track with a desirable minimum width of 3.5m wide (both lanes, 1.75m per lane) along with 2.0m wide footpath. The cycle lanes can be reduced to an absolute minimum width of 2.3m (both lanes, 1.15m wide per lane) along with 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m (3m per lane). To implement this option, land acquisition is not required however the removal of only one side of existing parking bays will be required, as the minimum cross section needed is not sufficiently available within the road corridor without this removal.	
Option 6: Protected Two-way cycle lane (Desirable Min. – 13.7m, Absolute Min. – 12.1m) This typical cross-section option would require a two-way cycle lane with a desirable minimum width of 3.7m (both lanes, 1.85m per lane) along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 2.5m (both lanes 1.25m per lane) along with 1.8m of footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m (3m per lane). As the existing cross-sectional width is sufficient for this option, land acquisition would not be required in this segment. To implement this option, land acquisition is not required however the removal of only one side of existing parking bays will be required, as the minimum cross section needed is not sufficiently available within the road corridor without this removal.	

Option Description	Reference
Option 7: Shared Active Travel Facility (Desirable Min. – 14.4m, Absolute Min. – 12.4m) This option would widen the existing footpath by a total desired min. width of 4.2m wide or absolute min. width of 3.2m wide on each side to implement a shared path facility. The new carriageway would be reduced to 6.0m. This option does not require land acquisition. To implement this option, land acquisition is not required however the removal of existing parking bays will be required, as the minimum cross section needed is not sufficiently available within the road corridor without this removal.	 
Option 8: Cycling in Mixed Traffic (Desirable Min. – 10.0m, Absolute Min. – 9.8m) This option would retain the cyclists on the road and would widen the footpath on each side to a minimum of 2.0m (1.8m absolute min.). Appropriate road markings and signage would be provided to indicate the presence of cyclists on the road and the speed limit would have to be reduced to 20km/h. No land acquisition is required, and construction can be completed using rapid build methods.	 

6.1.1.2 Stage 1b Detailed Option Assessment

Following the MCA assessment, the preferred options for Route B Segment B3 is Option 5 as a Standard Two-Way Cycle Track on the northern side with traditional build construction methods, this option provides a blend of benefits in comparison to the other options, primarily it makes good use of the wide width available along the segment.

This option scores well on safety impacts by segregating cyclists from pedestrians and vehicles. This option also performs well in terms of directness, coherence, comfort, attractiveness and on social impacts. As one-way cycle tracks/lanes option will require both sides to the existing parking bays to be removed, but the preferred option as standard two-way cycle track will only require removal of the existing parking bays on the southern side while retaining the existing parking bays on northern side which is necessary for the shops on the northern side. Also, a two-way cycle track located on the northern side of the carriageway will improve tie-in connection options with any potential Route B cycle scheme while also minimising impacts on vehicular movements as well as would have minimal impacts on traffic.

Table 6-2 - Segment B3 MCA

Criteria	Sub-Criteria	Indicator to be Measured	Op. 1 Do-Nothing	Op. 2 Standard One-way	Op. 3 Stepped One-way	Op. 4 Protected One-way	Op. 5 Standard Two-way	Op. 6 Protected Two-way	Op. 7 Shared A.T. Facility	Op. 8 Cycling in Mixed Traffic
Transport User benefits and Other Economic Impacts	Cost and Programme Impacts	Land Acquisition Area								
		Construction and Maintenance								
		Programme Impacts								
	Construction Impacts	Rapid Build Achievability & Construction Impacts								
	Connectivity with Public Transport Facilities	Connections to Existing & Proposed Public Transport								
Accessibility Impacts	Access to Key Services	Access to Key Services								
		Impacts on Loading and Parking Bays								
	Coherence	Route Consistency and Continuity								
	Directness	Directness along route and through junctions and maintenance of cyclists' progression								
	Comfort	Provision of Comfort for Pedestrians and Cyclists through Assessment of Width								
	Attractiveness	Attractiveness of the Route								
Social Impacts	Social Inclusion for Groups with Deprived Needs	Opportunities for Social, Community and Recreational Activity Participation								
	Health Impacts	Impact on Modal Shift/Activity Levels (i.e., Cars to Cyclists)								
	Accessibility for Users with Different Mobility Needs	Accessibility to Serve Users of all Ages & Abilities								
	Gender Impacts	How the Proposal may have Gender Specific Impacts								
Land Use Impact	Integration with town environs	Integrates with the Land Use Objectives & NIFTI								
		Impact on Green Areas								
Safety Impact	Safety Impact	Segregation between Cyclists and Vehicles								
		Segregation between Cyclists and Pedestrians								
		Safety for All Users regarding Traffic Volumes and Speeds along Route								
		Conflicts at Junctions and Side Roads between Vehicles and Cyclists								
	Traffic	Impact on Traffic Capacity due to the Proposals								
Local Environmental Impact	Air Quality	Air Quality Impact								
	Noise and Vibration	Potential Sensitive Receptors Properties								
	Soils and geology	Bedrock and Overburden								
	Biodiversity	Impact on Biodiversity along Scheme Extents								
	Water Resources	Groundwater Quality / Resources / Levels, Surface Water Quality and Flows								
	Landscape and Visual Quality	Landscape and Visual Assessment								
	Cultural and Heritage	Impact at National Monuments, NIAH Features and ACA								

6.1.2 Segment B4: Athlone Furniture World to Elite Spa Gardens

Based on the width analysis, as shown in Figure 3-1, Segment B4 has a typical width of 12.0m, with maximum width of 12.1m and minimum of 9.8m. The footpath on the southern side is over 1.9m wide and the footpath on the north side has sections less than 2.0m wide. Therefore, options for this segment consider land acquisition to provide the necessary level of segregation between cyclists and pedestrians, as the existing road width cannot afford that, and rapid build options consider local widening of the path and reduction of the carriageway to provide for additional space. Also, the max width over the railway is approx. 9m; and that widening of this is not considered feasible considering the nature of the AT scheme, and the costs and programme impacts of this considering this is a Pathfinder route and taking into account NIFTI's intervention hierarchy.

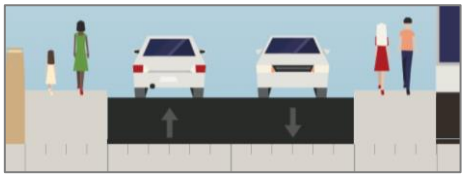
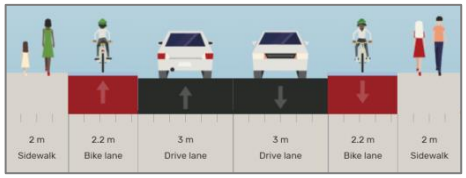
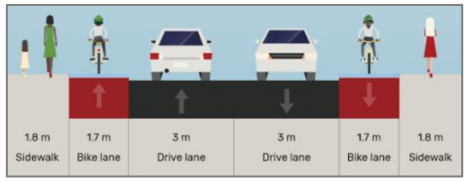
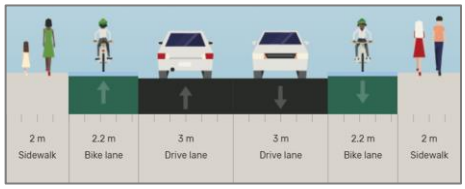
The descriptions for each option for this segment are discussed in detail in Table 6-3. A Multi-Criteria Analysis is undertaken between the options considered, as shown in Table 6-4.

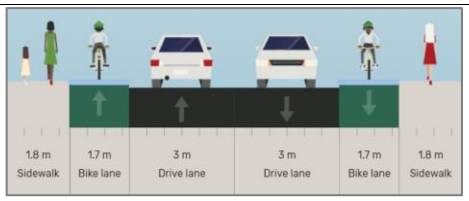
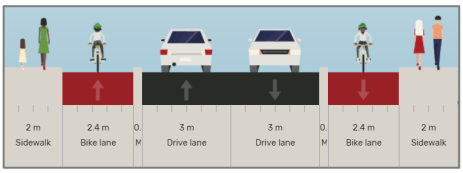
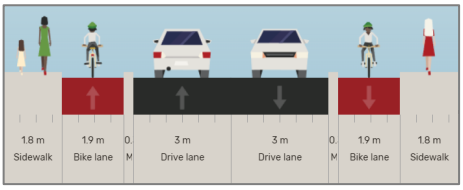
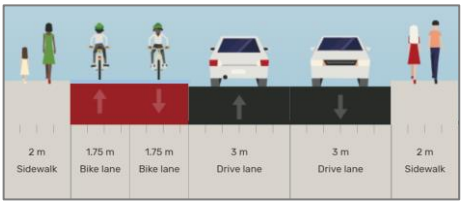
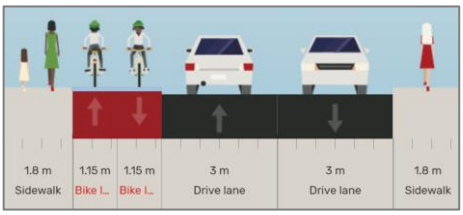
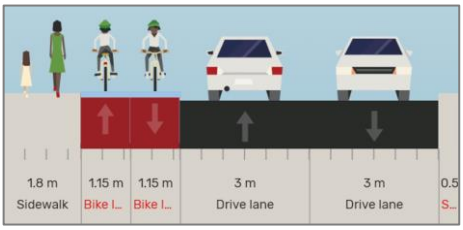
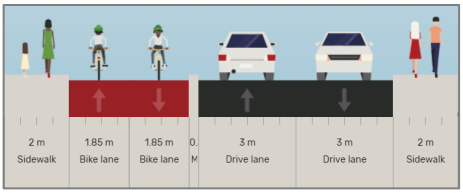
This segment crosses over the Athlone - Dublin railway line with the road corridor narrowing across the railway bridge.

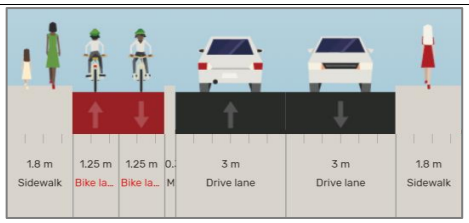
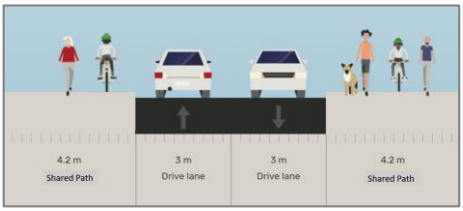
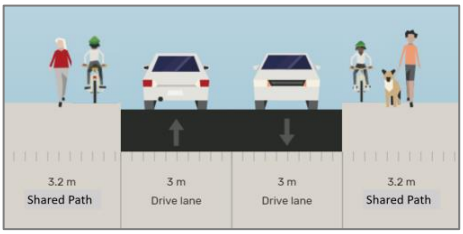
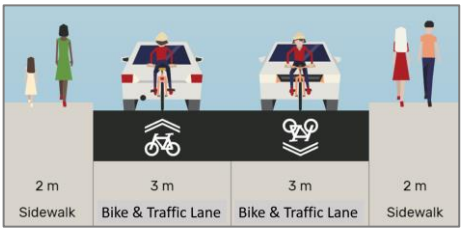
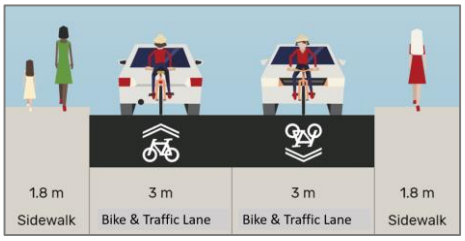
Refer to Section 3.3.1.2 for further details/information on the Segment B4.

6.1.2.1 Stage 1a Option Identification

Table 6-3 - Segment B4 Options

Option Description	Reference
Option 1: Do Nothing This option would retain the existing footpath on both sides and would not provide cycle facilities.	
Option 2: Standard One-way cycle track (Desirable Min. - 14.4m, Absolute Min. - 13.0m) This typical cross-section option would require a one-way cycle track with a desirable minimum width of 2.2m wide along with 2.0m footpaths. The cycle lane can be reduced to an absolute minimum width of 1.7m wide and 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As segment B4 varies in width, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	 
Option 3: Stepped One-way cycle track (Desirable Min. - 14.4m, Absolute Min. - 13.0m) This typical cross-section option would require a one-way cycle track with a desirable minimum width of 2.2m wide along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 1.7m wide and 1.8m wide footpaths on both sides of the new	

Option Description	Reference
carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As segment B4 varies in width, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	
Option 4: Protected One-way cycle lane (Desirable Min. - 14.8m, Absolute Min. - 13.4m) This typical cross-section option would require a one-way cycle lane with either a desirable minimum width of 2.4m wide along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 1.9m wide along with 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As segment B4 varies in width, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	 
Option 5: Standard Two-way cycle track (Desirable Min. – 13.5m, Absolute Min. – 11.9m) This typical cross-section option would require a two-way cycle track with a desirable minimum width of 3.5m wide (both lanes, 1.75m per lane) along with 2.0m wide footpath. The cycle lanes can be reduced to an absolute minimum width of 2.3m (both lanes, 1.15m wide per lane) along with 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m (3m per lane). As segment B4 varies in width, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor. As segment B4 is reduced in cross-sectional width crossing the existing Irish Rail Bridge, the proposed cycle and pedestrian link must reduce in width to 10.6m wide in order traverse the bridge while also providing adequate cycle facilities.	  
Option 6: Protected Two-way cycle lane (Desirable Min. – 13.7m, Absolute Min. – 12.1m) This typical cross-section option would require a two-way cycle lane with a desirable minimum width of 3.7m (both lanes, 1.85m per lane) along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 2.5m (both lanes 1.25m per lane) along with 1.8m of footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m (3m per lane). As the cross	

Option Description	Reference
section needed is sufficiently available on all the extent of the segment, land acquisition would not be required. As segment B4 varies in width, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	
<u>Option 7: Shared Active Travel Facility (Desirable Min. – 14.4m, Absolute Min. – 12.4m)</u> This option would widen the existing footpath by a total desired min. width of 4.2m wide or absolute min. width of 3.2m wide on each side to implement a shared path facility. The new carriageway would be reduced to 6.0m. To implement this option, land acquisition is required, as the minimum cross section needed is not sufficiently available within the road corridor.	 
<u>Option 8: Cycling in Mixed Traffic (Desirable Min. – 10.0m, Absolute Min. – 9.8m)</u> This option would retain the cyclists on the road and would widen the footpath on each side to a minimum of 2.0m (1.8m absolute min.). Appropriate road markings and signage would be provided to indicate the presence of cyclists on the road and the speed limit would have to be reduced to 30km/h. No land acquisition is required, and construction can be completed using rapid build methods. This Option may be required to cross the over the main Athlone-Dublin railway line, as the existing overbridge cross-sectional width is reduced.	 

6.1.2.2 Stage 1b Detailed Option Assessment

Following the MCA assessment, the preferred options for Route B Segment B4 is Option 5 as a Standard Two-Way Cycle Track (11.9m) on northern side with traditional build construction methods as this option provides a blend of benefits in comparison to the other options. This option can be further reduced to 10.6m in width in constrained location to minimise landtake such as at railway bridge location.

This option scores well on safety impacts by segregating cyclists from pedestrians and vehicles. This option also performs well in terms of directness, coherence, comfort, attractiveness and on social impacts as well as northern two-way cycle track proposal will make better connectivity for cyclists with TUS. In addition, Option 5 would have minimal negative impacts on traffic flow maintaining vehicular flow throughout. This option provides a blend of benefits in comparison to the other options, primarily it makes good use of the narrow width available along the segment, on safety impacts as segregating cyclists to pedestrians and vehicles.

During the MCA assessment it was evident Options 2, 3 and 4 would require considerable land acquisition in order to be viable options. Due to the considerable cost and programme impacts associated with the acquisition of adjacent land it is therefore recommended that Options 2, 3, 4 are not considered as the preferred option.

Table 6-4 - Segment B4 MCA

Criteria	Sub-Criteria	Indicator to be Measured	Op. 1 Do-Nothing	Op. 2 Standard One-way	Op. 3 Stepped One-way	Op. 4 Protected One-way	Op. 5 Standard Two-way	Op. 6 Protected Two-way	Op. 7 Shared A.T. Facility	Op. 8 Cycling in Mixed Traffic
Transport User benefits and Other Economic Impacts	Cost and Programme Impacts	Land Acquisition Area								
		Construction and Maintenance								
		Programme Impacts								
	Construction Impacts	Rapid Build Achievability & Construction Impacts								
	Connectivity with Public Transport Facilities	Connections to Existing & Proposed Public Transport								
Accessibility Impacts	Access to Key Services	Access to Key Services								
		Impacts on Loading and Parking Bays								
	Coherence	Route Consistency and Continuity								
	Directness	Directness along route and through junctions and maintenance of cyclists' progression								
	Comfort	Provision of Comfort for Pedestrians and Cyclists through Assessment of Width								
	Attractiveness	Attractiveness of the Route								
Social Impacts	Social Inclusion for Groups with Deprived Needs	Opportunities for Social, Community and Recreational Activity Participation								
	Health Impacts	Impact on Modal Shift/Activity Levels (i.e., Cars to Cyclists)								
	Accessibility for Users with Different Mobility Needs	Accessibility to Serve Users of all Ages & Abilities								
	Gender Impacts	How the Proposal may have Gender Specific Impacts								
Land Use Impact	Integration with town environs	Integrates with the Land Use Objectives & NIFTI								
		Impact on Green Areas								
Safety Impact	Safety Impact	Segregation between Cyclists and Vehicles								
		Segregation between Cyclists and Pedestrians								
		Safety for All Users regarding Traffic Volumes and Speeds along Route								
		Conflicts at Junctions and Side Roads between Vehicles and Cyclists								
	Traffic	Impact on Traffic Capacity due to the Proposals								
Local Environmental Impact	Air Quality	Air Quality Impact								
	Noise and Vibration	Potential Sensitive Receptors Properties								
	Soils and geology	Bedrock and Overburden								
	Biodiversity	Impact on Biodiversity along Scheme Extents								
	Water Resources	Groundwater Quality / Resources / Levels, Surface Water Quality and Flows								
	Landscape and Visual Quality	Landscape and Visual Assessment								
	Cultural and Heritage	Impact at National Monuments, NIAH Features and ACA								

6.1.3 Segment B5: Elite Spa Gardens to TUS Roundabout

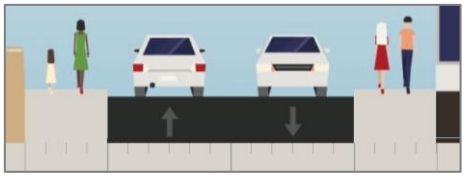
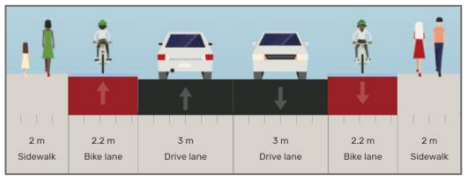
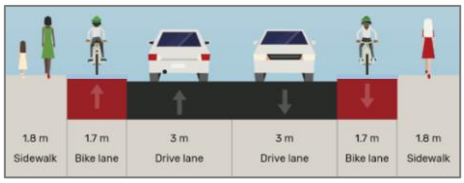
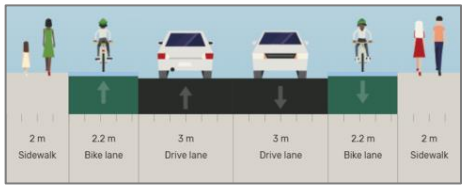
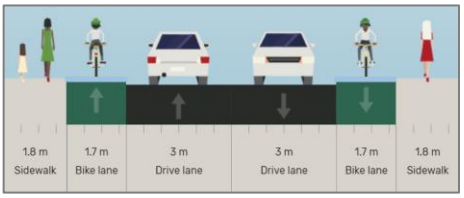
Based on the width analysis, as shown in Figure 3-1, Segment B5 has a typical width of 12.0m, with maximum width of 12.1m and minimum of 9.8m. The footpath on the southern side is over 2.3m wide and the footpath on the north side has sections less than 1.8m wide. Given the reduced widths in parts of this segment, viable options for this segment consider land acquisition to provide the necessary level of segregation between cyclists, pedestrians and vehicles.

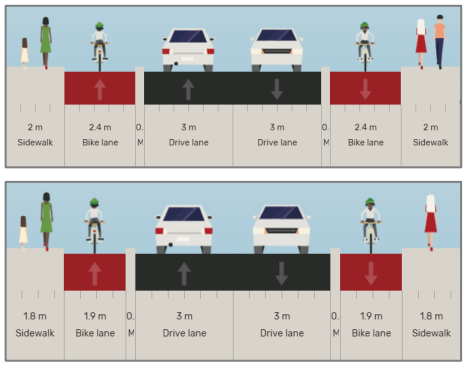
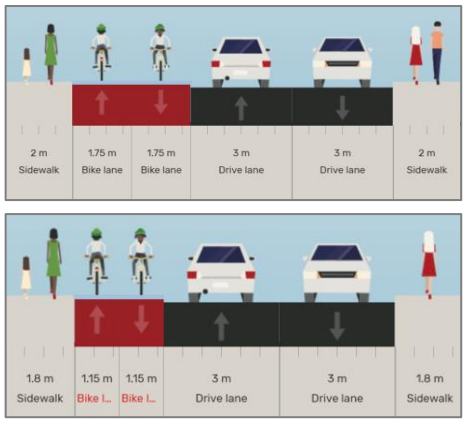
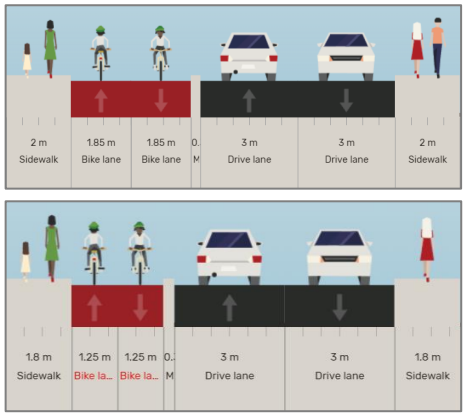
The descriptions for each option for this segment are discussed in detail in Table 6-5. A Multi-Criteria Analysis is undertaken between the options considered, as shown in Table 6-6.

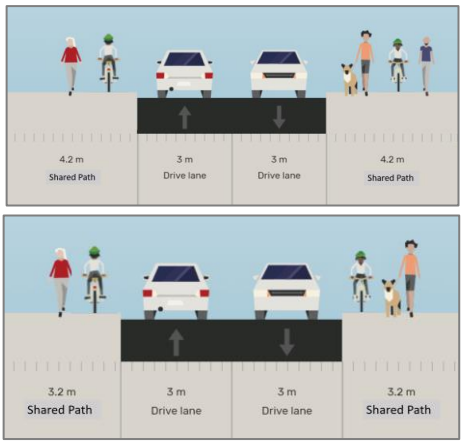
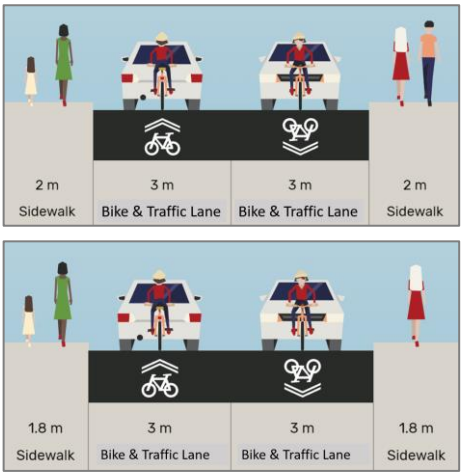
Refer to Section 3.3.1.3 for further details/information on the Segment B5.

6.1.3.1 Stage 1a Option Identification

Table 6-5 - Segment B5 Options

Option Description	Reference
Option 1: Do Nothing This option would retain the existing footpath on both sides and would not provide cycle facilities.	
Option 2: Standard One-way cycle track (Desirable Min. - 14.4m, Absolute Min. - 13.0m) This typical cross-section option would require a one-way cycle track with a desirable minimum width of 2.2m wide along with 2.0m footpaths. The cycle lane can be reduced to an absolute minimum width of 1.7m wide and 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As segment B5 varies and reduces in width as the segment progresses, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	 
Option 3: Stepped One-way cycle track (Desirable Min. - 14.4m, Absolute Min. - 13.0m) This typical cross-section option would require a one-way cycle track with a desirable minimum width of 2.2m wide along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 1.7m wide and 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As segment B5 varies and reduces in width as the segment progresses, in order to implement this option, land acquisition is	 

Option Description	Reference
required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	
Option 4: Protected One-way cycle lane (Desirable Min. - 14.8m, Absolute Min. - 13.4m) This typical cross-section option would require a one-way cycle lane with either a desirable minimum width of 2.4m wide along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 1.9m wide along with 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As segment B5 varies and reduces in width as the segment progresses, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	
Option 5: Standard Two-way cycle track (Desirable Min. – 13.5m, Absolute Min. – 11.9m) This typical cross-section option would require a two-way cycle track with a desirable minimum width of 3.5m wide (both lanes, 1.75m per lane) along with 2.0m wide footpath. The cycle lanes can be reduced to an absolute minimum width of 2.3m (both lanes, 1.15m wide per lane) along with 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m (3m per lane). As segment B5 varies and reduces in width as the segment progresses, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	
Option 6: Protected Two-way cycle lane (Desirable Min. – 13.7m, Absolute Min. – 12.1m) This typical cross-section option would require a two-way cycle lane with a desirable minimum width of 3.7m (both lanes, 1.85m per lane) along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 2.5m (both lanes 1.25m per lane) along with 1.8m of footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m (3m per lane). As segment B5 varies and reduces in width as the segment progresses, in order to implement this option, land acquisition is required in parts, as the minimum cross section needed is not sufficiently available within the road corridor.	

Option Description	Reference
Option 7: Shared Active Travel Facility (Desirable Min. – 14.4m, Absolute Min. – 12.4m) This option would widen the existing footpath by a total desired min. width of 4.2m wide or absolute min. width of 3.2m wide on each side to implement a shared path facility. The new carriageway would be reduced to 6.0m. To implement this option, land acquisition is required, as the cross section needed is not sufficiently available on all the extent of the segment, therefore, the construction method would be traditional build as it would require full road reconstruction.	
Option 8: Cycling in Mixed Traffic (Desirable Min. – 10.0m, Absolute Min. – 9.8m) This option would retain the cyclists on the road and would widen the footpath on each side to a minimum of 2.0m (1.8m absolute min.). Appropriate road markings and signage would be provided to indicate the presence of cyclists on the road and the speed limit would have to be reduced to 20km/h. No land acquisition is required, and construction can be completed using rapid build methods.	

6.1.3.2 Stage 1b Detailed Option Assessment

Following the MCA assessment, the preferred options for Route B Segment B5 is Option 5 as a Standard Two-Way Cycle Track (11.9m) on the northern side with traditional build construction methods as this option provides a blend of benefits in comparison to the other options.

This option scores well on safety impacts by segregating cyclists from pedestrians and vehicles. This option also performs well in terms of directness, coherence, comfort, attractiveness and on social impacts as well as northern two-way cycle track proposal will make better connectivity for cyclists with TUS. In addition, Option 5 will require landtake in some parts of this segment as well as minimal negative impacts on traffic flow maintaining vehicular flow throughout.

During the MCA assessment it was evident Options 2, 3 and 4 would require considerable land acquisition in order to be viable options. Due to the considerable cost associated with the acquisition of adjacent land it is therefore recommended that Options 2, 3 and 4 are not considered as the preferred option.

Table 6-6 - Segment B5 MCA

Criteria	Sub-Criteria	Indicator to be Measured	Op. 1 Do-Nothing	Op. 2 Standard One-way	Op. 3 Stepped One-way	Op. 4 Protected One-way	Op. 5 Standard Two-way	Op. 6 Protected Two-way	Op. 7 Shared A.T. Facility	Op. 8 Cycling in Mixed Traffic
Transport User benefits and Other Economic Impacts	Cost and Programme Impacts	Land Acquisition Area								
		Construction and Maintenance								
		Programme Impacts								
	Construction Impacts	Rapid Build Achievability & Construction Impacts								
	Connectivity with Public Transport Facilities	Connections to Existing & Proposed Public Transport								
Accessibility Impacts	Access to Key Services	Access to Key Services								
		Impacts on Loading and Parking Bays								
	Coherence	Route Consistency and Continuity								
	Directness	Directness along route and through junctions and maintenance of cyclists' progression								
	Comfort	Provision of Comfort for Pedestrians and Cyclists through Assessment of Width								
	Attractiveness	Attractiveness of the Route								
Social Impacts	Social Inclusion for Groups with Deprived Needs	Opportunities for Social, Community and Recreational Activity Participation								
	Health Impacts	Impact on Modal Shift/Activity Levels (i.e., Cars to Cyclists)								
	Accessibility for Users with Different Mobility Needs	Accessibility to Serve Users of all Ages & Abilities								
	Gender Impacts	How the Proposal may have Gender Specific Impacts								
Land Use Impact	Integration with town environs	Integrates with the Land Use Objectives & NIFTI								
		Impact on Green Areas								
Safety Impact	Safety Impact	Segregation between Cyclists and Vehicles								
		Segregation between Cyclists and Pedestrians								
		Safety for All Users regarding Traffic Volumes and Speeds along Route								
		Conflicts at Junctions and Side Roads between Vehicles and Cyclists								
	Traffic	Impact on Traffic Capacity due to the Proposals								
Local Environmental Impact	Air Quality	Air Quality Impact								
	Noise and Vibration	Potential Sensitive Receptors Properties								
	Soils and geology	Bedrock and Overburden								
	Biodiversity	Impact on Biodiversity along Scheme Extents								
	Water Resources	Groundwater Quality / Resources / Levels, Surface Water Quality and Flows								
	Landscape and Visual Quality	Landscape and Visual Assessment								
	Cultural and Heritage	Impact at National Monuments, NIAH Features and ACA								

6.1.4 Segment B6: TUS Roundabout to Creggan Roundabout

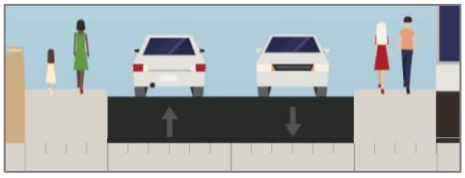
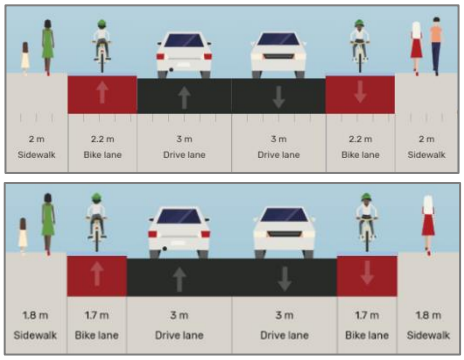
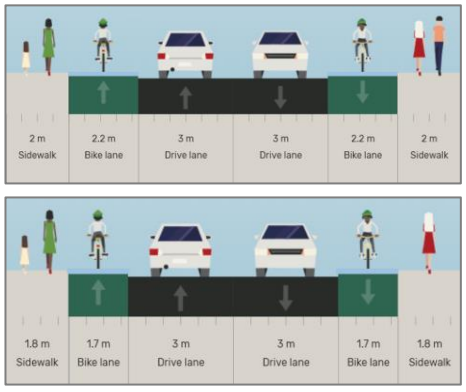
Based on the width analysis, as shown in Figure 3-1, Segment B6 has a typical width of 15.0m, with maximum width of 16.0m and minimum of 13.5m. The footpath on the southern side is over 3.0m wide and the footpath on the north side has sections less than 2.5m wide. Therefore, options for this segment do not consider land acquisition to provide the necessary level of segregation between cyclists and pedestrians, as the existing road width can afford that.

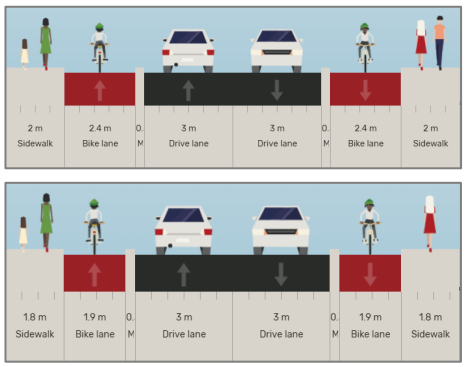
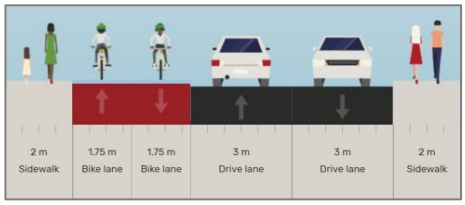
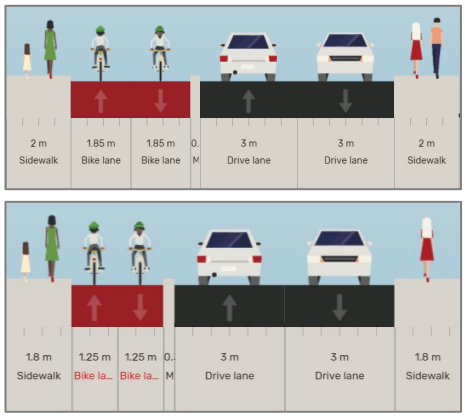
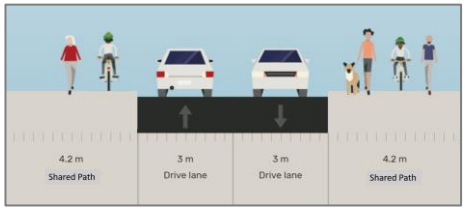
The descriptions for each option for this segment are discussed in detail in Table 6-7. A Multi-Criteria Analysis is undertaken between the options considered, as shown in Table 6-8.

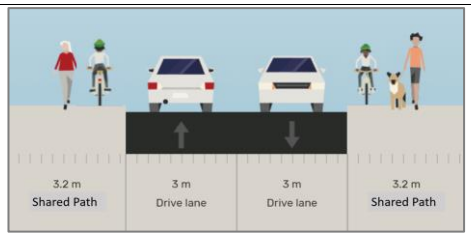
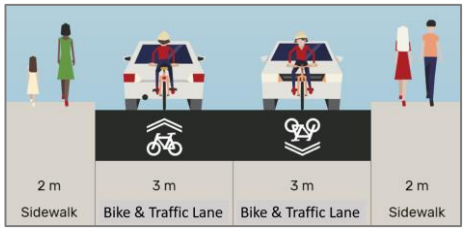
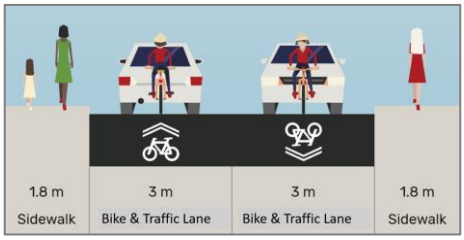
Refer to Section 3.3.1.4 for further details/information on the Segment B6.

6.1.4.1 Stage 1a Option Identification

Table 6-7 - Segment B6 Options

Option Description	Reference
Option 1: Do Nothing This option would retain the existing footpath on both sides and would not provide cycle facilities.	
Option 2: Standard One-way cycle track (Desirable Min. - 14.4m, Absolute Min. - 13.0m) This typical cross-section option would require a one-way cycle track with a desirable minimum width of 2.2m wide along with 2.0m footpaths. The cycle lane can be reduced to an absolute minimum width of 1.7m wide and 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As the existing cross-sectional width is sufficient for this option, land acquisition would not be required in this segment.	
Option 3: Stepped One-way cycle track (Desirable Min. - 14.4m, Absolute Min. - 13.0m) This typical cross-section option would require a one-way cycle track with a desirable minimum width of 2.2m wide along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 1.7m wide and 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As the existing cross-sectional width is sufficient for this option, land acquisition would not be required in this segment.	

Option Description	Reference
Option 4: Protected One-way cycle lane (Desirable Min. - 14.8m, Absolute Min. - 13.4m) This typical cross-section option would require a one-way cycle lane with either a desirable minimum width of 2.4m wide along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 1.9m wide along with 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m in width (3m per lane). As the existing cross-sectional width is sufficient for this option, land acquisition would not be required in this segment. The proposed cycle lane will be segregated from the live traffic by either bolt down kerbs or bollards.	
Option 5: Standard Two-way cycle track (Desirable Min. – 13.5m, Absolute Min. – 11.9m) This typical cross-section option would require a two-way cycle track with a desirable minimum width of 3.5m wide (both lanes, 1.75m per lane) along with 2.0m wide footpath. The cycle lanes can be reduced to an absolute minimum width of 2.3m (both lanes, 1.15m wide per lane) along with 1.8m wide footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m (3m per lane). As the existing cross-sectional width is sufficient for this option, land acquisition would not be required in this segment.	
Option 6: Protected Two-way cycle lane (Desirable Min. – 13.7m, Absolute Min. – 12.1m) This typical cross-section option would require a two-way cycle lane with a desirable minimum width of 3.7m (both lanes, 1.85m per lane) along with 2.0m footpath. The cycle lane can be reduced to an absolute minimum width of 2.5m (both lanes 1.25m per lane) along with 1.8m of footpaths on both sides of the new carriageway. The new carriageway would be reduced to 6.0m (3m per lane). As the cross section needed is sufficiently available on all the extent of the segment, land acquisition would not be required.	
Option 7: Shared Active Travel Facility (Desirable Min. – 14.4m, Absolute Min. – 12.4m) This option would widen the existing footpath by a total desired min. width of 4.2m wide or absolute min. width of 3.2m wide on each side to implement a shared path facility. The new carriageway would be reduced to 6.0m. This option does not require land acquisition.	

Option Description	Reference
	
Option 8: Cycling in Mixed Traffic (Desirable Min. – 10.0m, Absolute Min. – 9.8m) This option would retain the cyclists on the road and would widen the footpath on each side to a minimum of 2.0m (1.8m absolute min.). Appropriate road markings and signage would be provided to indicate the presence of cyclists on the road and the speed limit would have to be reduced to 30km/h. No land acquisition is required, and construction can be completed using rapid build methods.	 

6.1.4.2 Stage 1b Detailed Option Assessment

Following the MCA assessment, the preferred option for Route B Segment B6 is Option 2 as a Standard One-Way Cycle Track with traditional build construction methods. This option provides a blend of benefits in comparison to the other options, primarily it makes good use of the wide width available along the segment.

This option scores well on safety impacts by segregating cyclists from pedestrians and vehicles. This option also performs well in terms of directness, coherence, comfort, attractiveness and on social impacts. This option would have minimal impacts on traffic as well.

Table 6-8 - Segment B6 MCA

Criteria	Sub-Criteria	Indicator to be Measured	Op. 1 Do-Nothing	Op. 2 Standard One-way	Op. 3 Stepped One-way	Op. 4 Protected One-way	Op. 5 Standard Two-way	Op. 6 Protected Two-way	Op. 7 Shared A.T. Facility	Op. 8 Cycling in Mixed Traffic
Transport User benefits and Other Economic Impacts	Cost and Programme Impacts	Land Acquisition Area								
		Construction and Maintenance								
		Programme Impacts								
	Construction Impacts	Rapid Build Achievability & Construction Impacts								
	Connectivity with Public Transport Facilities	Connections to Existing & Proposed Public Transport								
Accessibility Impacts	Access to Key Services	Access to Key Services								
		Impacts on Loading and Parking Bays								
	Coherence	Route Consistency and Continuity								
	Directness	Directness along route and through junctions and maintenance of cyclists' progression								
	Comfort	Provision of Comfort for Pedestrians and Cyclists through Assessment of Width								
	Attractiveness	Attractiveness of the Route								
Social Impacts	Social Inclusion for Groups with Deprived Needs	Opportunities for Social, Community and Recreational Activity Participation								
	Health Impacts	Impact on Modal Shift/Activity Levels (i.e., Cars to Cyclists)								
	Accessibility for Users with Different Mobility Needs	Accessibility to Serve Users of all Ages & Abilities								
	Gender Impacts	How the Proposal may have Gender Specific Impacts								
Land Use Impact	Integration with town environs	Integrates with the Land Use Objectives & NIFTI								
		Impact on Green Areas								
Safety Impact	Safety Impact	Segregation between Cyclists and Vehicles								
		Segregation between Cyclists and Pedestrians								
		Safety for All Users regarding Traffic Volumes and Speeds along Route								
		Conflicts at Junctions and Side Roads between Vehicles and Cyclists								
	Traffic	Impact on Traffic Capacity due to the Proposals								
Local Environmental Impact	Air Quality	Air Quality Impact								
	Noise and Vibration	Potential Sensitive Receptors Properties								
	Soils and geology	Bedrock and Overburden								
	Biodiversity	Impact on Biodiversity along Scheme Extents								
	Water Resources	Groundwater Quality / Resources / Levels, Surface Water Quality and Flows								
	Landscape and Visual Quality	Landscape and Visual Assessment								
	Cultural and Heritage	Impact at National Monuments, NIAH Features and ACA								

6.2 Pinch Points and Junctions Appraisal

As mentioned previously, the junctions will be assessed separately from the link type assessment as they require individual bespoke options.

As shown in Table 3-1 and Figure 3-11, one location have been identified along the corridor where the width is constrained and requires bespoke options to be considered.

- B5 – Near Auburn Junction: - This pinch point is located along the Segment B5 where the segment reduces in width as it passes near to the Auburn Junction where the typical cross-section reduces to less than 9.8m in width in which the narrowest width measured was 9.72m. Note, the pinch point outlined will not be assessed as part of a standalone Multi-Criteria Analysis and will in turn be assessed as part of Segment B1 Multi-Criteria Analysis.

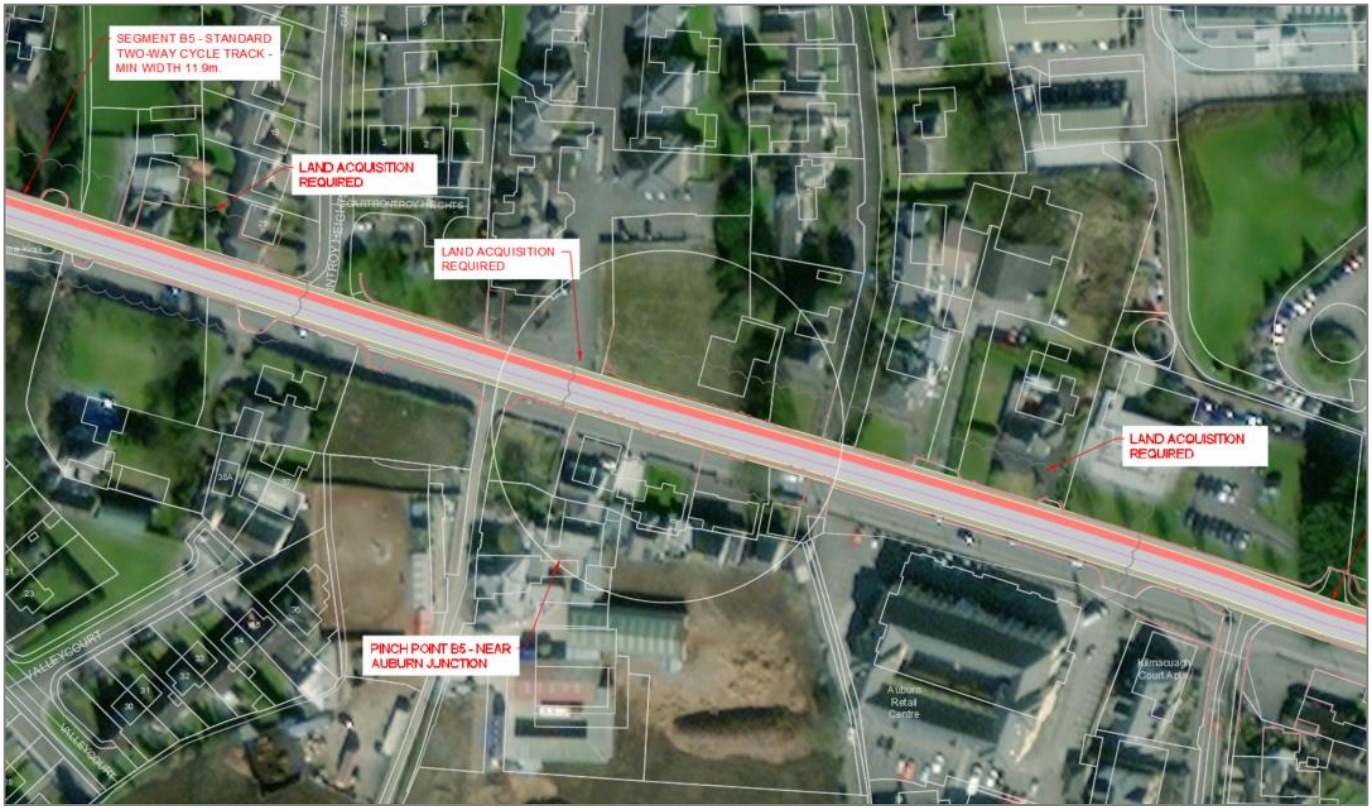


Figure 6-1 – Pinch Point B2 (Near Auburn Junction)

Route B has a total of 3 junctions that are considered major junctions in the town due to high traffic volumes and key connectors to major locations within the town and surrounding environs. Based on this, appropriate options have been considered for each junction based on traffic volumes, speeds, existing junction type and existing land available in and around the junctions according to the guidelines stipulated in the Cycle Design Manual (CDM) and the Design Manual for Urban Roads and Streets (DMURS).

In July 2023, the NTA published a document titled “Roundabout Retrofit: Including Rapid Build Options”. This document is part of the NTA publications under the Rapid Build Guidance to speed-up the rollout of active travel schemes in the county. Based on this document, rapid build options have also been considered for junctions. The rapid build options align with the NIFTI hierarchy of investments, as it would provide “improved” and “optimised” facilities instead of “new”.

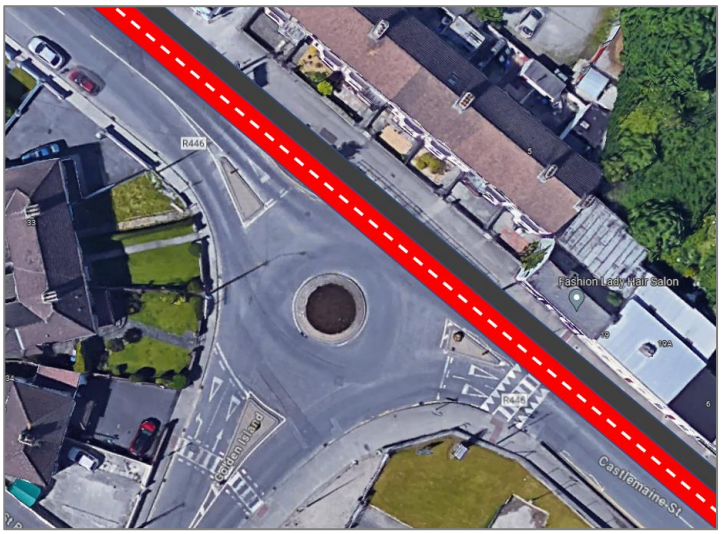
6.2.1 Junction B4: Anker Bower Roundabout

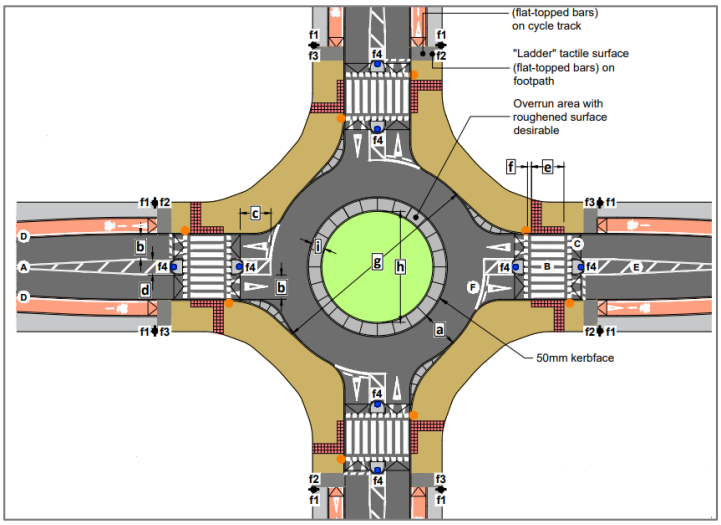
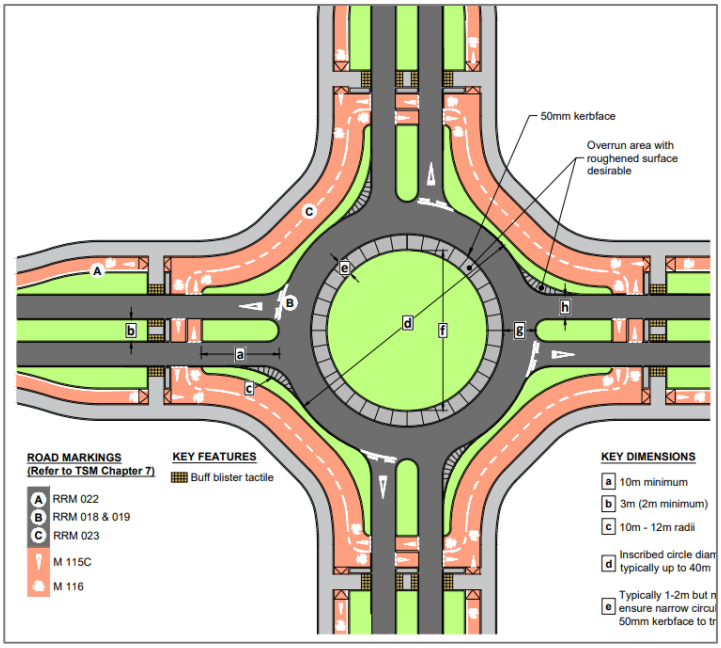
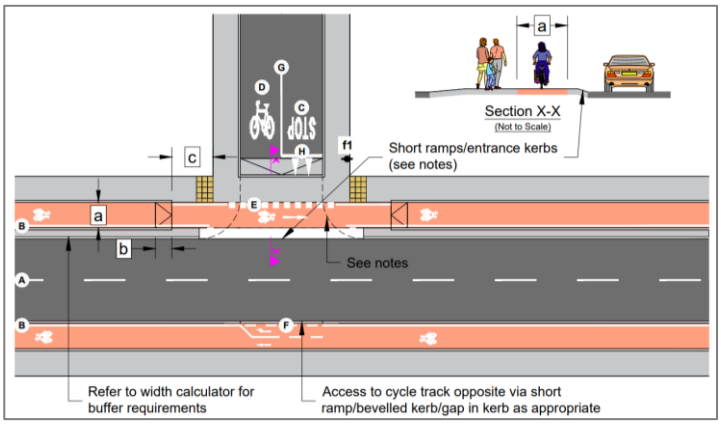
Based on the location and existing layout, as shown in Figure 3-1, the Anker Bower Roundabout is located at the R446 Link-MacDiarmada Road intersection, with only pedestrian facilities and no access to cycle infrastructure. The roundabout has Zebra crossings on the south arm and east arm. Some options for this segment consider land acquisition to some extent to provide the necessary level of segregation between cyclists and pedestrians. Rapid build options are also considered through the local widening of the path and reduction of the carriageway to provide for additional space.

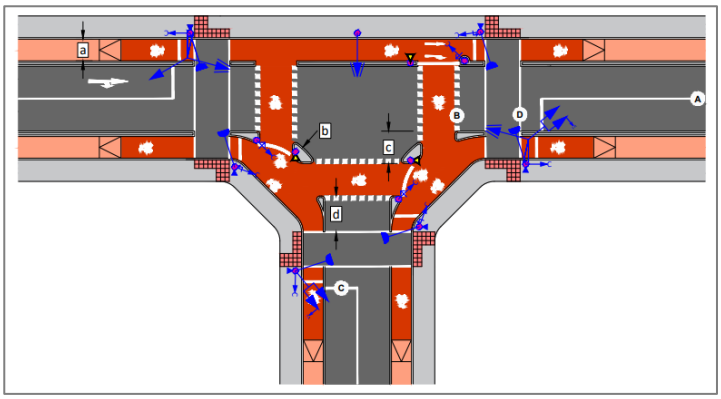
The descriptions for each option for this junction are discussed in detail in Table 6-11. A Multi-Criteria Analysis is undertaken between the options considered, as shown in Table 6-12.

6.2.1.1 Stage 1a Option Identification

Table 6-9 - Junction B4 Options

Option	Reference
Option 1: Do Nothing This option would retain the existing 3-arm roundabout with no dedicated spaces for cyclists and no cycle crossing points on each arm. Cyclists would be forced to merge into the road space with motorised vehicles, which is not in line with the CDM Table 2.1 – Cycle Facilities Selection Guide.	
Option 2: Existing Roundabout with Two-Way Cycle Track on Northern Side (Rapid Build) This option proposes to upgrade the existing roundabout with two-way cycle track facility on the northern side as a do-minimum option, with improvements to the existing raised toucan crossings to improve pedestrian and cyclist safety while crossing. This option requires less space compared to other options and may avoid further landtake. This layout is desirable due to the segregation between pedestrians and cyclists as well as minimising costs and programme impacts.	

Option	Reference
Option 3: Segregated Roundabout with Shared Active Travel Facilities (Traditional Build) This option proposes to upgrade the existing roundabout into a segregated roundabout with shared active travel facilities based on the CDM standards. This option would reduce the entry lanes and the circulatory lane widths to a minimum in order to implement the appropriate active travel facilities, including raised toucan crossings on all arms and shared areas between pedestrians and cyclists through the roundabout. This option requires less space compared to other options and may avoid further landtake requirements. However, this layout is less desirable due to the lack of segregation between pedestrians and cyclists.	
Option 4: Protected Roundabout without Cycle Priority (Traditional Build) This option proposes to upgrade the existing roundabout into a protected roundabout with no cycle priority based on the CDM standards. This option would reduce the entry lanes and the circulatory lane widths to a minimum in order to implement the appropriate active travel facilities, including designated crossing points for both cyclists and pedestrians on all arms, and segregated cycle lanes through the roundabout. This option would require landtake to facilitate the additional provisions.	
Option 5: Standard Side Road Crossing This option would change the existing roundabout layout into a standard side road crossing, effectively providing a priority junction with the appropriate setback distance. An appropriate ramped pedestrian and cycle crossing will be provided across the southern arm of the junction to allow for unimpeded and continuous active travel facilities.	

Option	Reference
Option 6: Protected Signal Controlled Junction This option provides a protected junction layout where all movements take place under signalised control. Pedestrians and cyclists are provided with different crossing points, with more controlled priority given to pedestrians over the cycle track. Cycle crossings are typically set back <5m from junction.	

6.2.1.2 Stage 1b Detailed Option Assessment

The preferred option for Route B Junction B4 is Option 2; an Existing Roundabout with Two-Way Cycle Track on Northern Side through rapid build construction methods, this option provides a blend of benefits in comparison to the other options, primarily on safety impacts as segregating cyclists to pedestrians and vehicles as well as performing well in terms of directness, coherence, comfort, attractiveness and on social impacts. This option would also avoid any additional land take requirements as well as will be beneficial in terms of cost & programme impacts.

The exact layout of the junction will be determined in Phase 3 Preliminary Design; taking cognisance of the preferred links that join this junction.

Table 6-10 – Junction B4: Anker Bower Roundabout MCA

Criteria	Sub-Criteria	Indicator to be Measured	Option 1 Do Nothing	Option 2 Segregated Rbt w/ Shared AT Facilities (Rapid Build)	Option 3 Segregated Rbt w/ Shared AT Facilities (Traditional Build)	Option 4 Protected Rbt without Cycle Prio. (Traditional Build)	Option 5 Standard Side Road Crossing	Option 6 Protected Signalised Junction
Transport User benefits & Other Economic Impacts	Cost and Programme Impacts	Land Acquisition Area						
		Construction and Maintenance						
	Construction Impacts	Rapid Build Achievability & Construction Impacts						
Accessibility Impacts	Coherence & Directness	Consistency, Continuity & Directness through junctions & maintenance of cyclists' progression						
	Comfort & Attractiveness	Provision of Comfort for Pedestrians and Cyclists through Assessment of Width & its Attractiveness						
Social Impacts	Accessibility for Users with Different Mobility Needs	Accessibility to Serve Users of all Ages & Abilities						
	Gender Impacts	How the Proposal may have Gender Specific Impacts						
Land Use Impact	Integration with town environs	Integrates with the Land Use Objectives & NIFTI						
		Impact on Green Areas						
Safety Impact	Safety Impact	Segregation between Cyclists and Vehicles						
		Segregation between Cyclists and Pedestrians						
		Safety for All Users regarding Traffic Volumes and Speeds along Route						
	Traffic	Impact on Traffic Capacity due to the Proposals						
Local Environmental Impact	Air Quality	Air Quality Impact						
	Noise and Vibration	Potential Sensitive Receptors Properties						
	Soils and geology	Bedrock and Overburden						
	Biodiversity	Impact on Biodiversity along Scheme Extents						
	Water Resources	Groundwater Quality / Resources / Levels, Surface Water Quality and Flows						
	Landscape and Visual Quality	Landscape and Visual Assessment						
	Cultural and Heritage	Impact at National Monuments, NIAH Features and ACA						

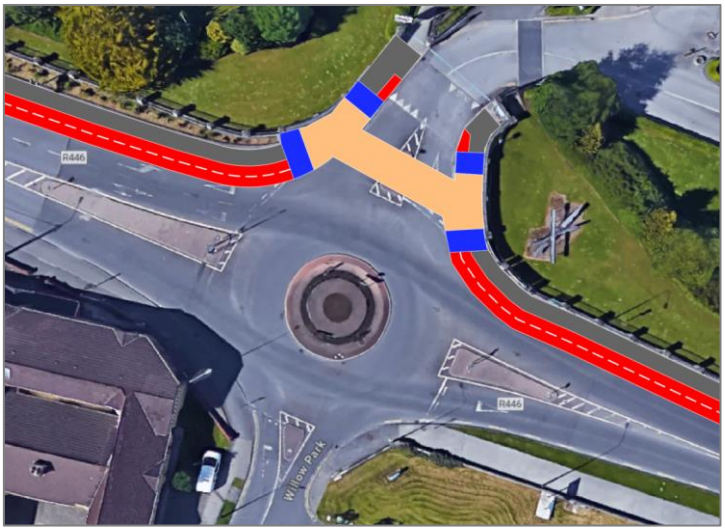
6.2.2 Junction B5: TUS Roundabout

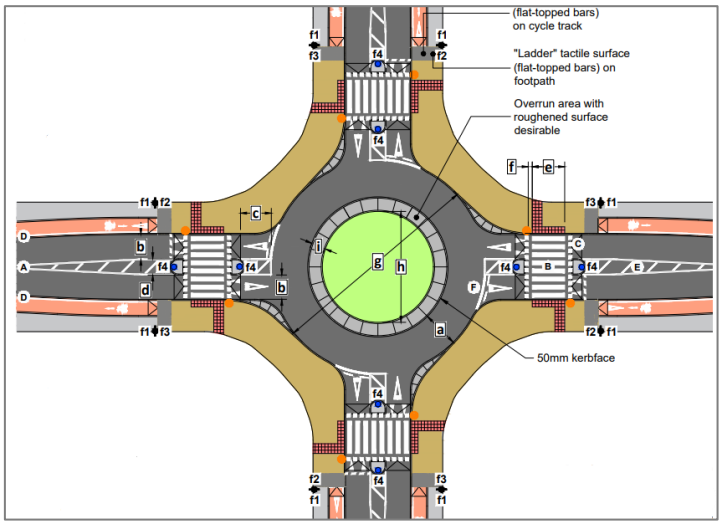
Based on the location and existing layout, as shown in Figure 3-1, the TUS Roundabout is located at the main entrance of the Technological University of the Shannon that intersects with the R446 link and Willow Park. The roundabout currently has minimal pedestrian facilities throughout, and substandard cycle infrastructure only along the northern arm. Some options for this segment consider land acquisition to some extent to provide the necessary level of segregation between cyclists and pedestrians. Rapid build options are also considered through the local widening of the path and reduction of the carriageway to provide for additional space.

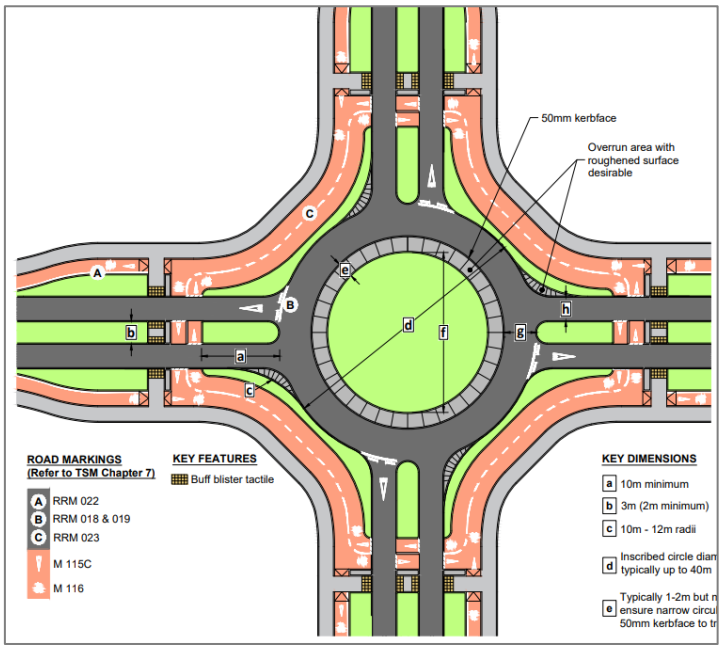
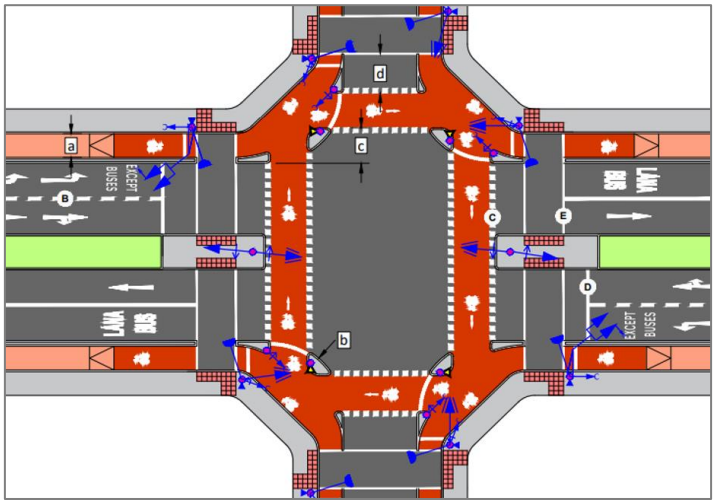
The descriptions for each option for this junction are discussed in detail in Table 6-11. A Multi-Criteria Analysis is undertaken between the options considered, as shown in Table 6-12.

6.2.2.1 Stage 1a Option Identification

Table 6-11 - Junction B5 Options

Option	Reference
Option 1: Do Nothing This option would retain the existing 4-arm roundabout layout with no dedicated spaces for cyclists and no crossing points at each arm. Cyclists would be forced to merge into the carriageway with motorised vehicles, which is not in line with the CDM Table 2.1 – Cycle Facilities Selection Guide.	
Option 2: Existing Roundabout with Two-Way Cycle Track on Northern Side (Rapid Build) This option proposes to upgrade the existing roundabout with two-way cycle track facility on the northern side as a do-minimum option, with improvements to the existing raised toucan crossings to improve pedestrian and cyclist safety while crossing. This option requires less space compared to other options and may avoid further landtake. This layout is desirable due to the segregation between pedestrians and cyclists as well as minimising costs and programme impacts.	

Option	Reference
Option 3: Segregated Roundabout with Shared Active Travel Facilities (Rapid Build) This option proposes to upgrade the existing roundabout into a segregated roundabout with shared active travel facilities based on the NTA Advice Note on Roundabout Retrofits. This option would reduce the entry lanes and the circulatory lane widths to a minimum in order to implement the appropriate active travel facilities, including raised toucan crossings on all arms and shared areas between pedestrians and cyclists through the roundabout. This option requires less space compared to other options and may avoid further landtake requirements. However, this layout is less desirable due to the lack of segregation between pedestrians and cyclists.	
Option 4: Segregated Roundabout with Shared Active Travel Facilities (Traditional Build) This option proposes to upgrade the existing roundabout into a segregated roundabout with shared active travel facilities based on the CDM standards. This option would reduce the entry lanes and the circulatory lane widths to a minimum in order to implement the appropriate active travel facilities, including raised toucan crossings on all arms and shared areas between pedestrians and cyclists through the roundabout. This option requires less space compared to other options and may avoid further landtake requirements. However, this layout is less desirable due to the lack of segregation between pedestrians and cyclists.	

Option	Reference
Option 5: Protected Roundabout without Cycle Priority (Traditional Build) This option proposes to upgrade the existing roundabout into a protected roundabout with no cycle priority based on the CDM standards. This option would reduce the entry lanes and the circulatory lane widths to a minimum in order to implement the appropriate active travel facilities, including designated crossing points for both cyclists and pedestrians on all arms, and segregated cycle lanes through the roundabout. This option would require landtake to facilitate the additional provisions.	
Option 6: Protected Signal Controlled Junction This option provides a protected junction layout where all movements take place under signalised control. Pedestrians and cyclists are provided with different crossing points, with more controlled priority given to pedestrians over the cycle track. Cycle crossings are typically set back <5m from junction. However, longer pedestrian signal phases may reduce junction capacity.	

6.2.2.2 Stage 1b Detailed Option Assessment

The preferred option for Route B Junction B5 is Option 2; an Existing Roundabout with Two-Way Cycle Track on Northern Side through rapid build construction methods, this option provides a blend of benefits in comparison to the other options, primarily on safety impacts as segregating cyclists to pedestrians and vehicles as well as performing well in terms of directness, coherence, comfort, attractiveness and on social impacts. This option would also avoid any additional land take requirements as well as will be beneficial in terms of cost & programme impacts.

The exact layout of the junction will be determined in Phase 3 Preliminary Design; taking cognisance of the preferred links that join this junction.

Table 6-12 – Junction B5: TUS Roundabout MCA

Criteria	Sub-Criteria	Indicator to be Measured	Option 1 Do Nothing	Option 2 Segregated Rbt w/ Shared AT Facilities (Rapid Build)	Option 3 Segregated Rbt w/ Shared AT Facilities (Traditional Build)	Option 4 Protected Rbt without Cycle Prio. (Traditional Build)	Option 5 Standard Side Road Crossing	Option 6 Protected Signalised Junction
Transport User benefits & Other Economic Impacts	Cost and Programme Impacts	Land Acquisition Area						
		Construction and Maintenance						
	Construction Impacts	Rapid Build Achievability & Construction Impacts						
Accessibility Impacts	Coherence & Directness	Consistency, Continuity & Directness through junctions & maintenance of cyclists' progression						
	Comfort & Attractiveness	Provision of Comfort for Pedestrians and Cyclists through Assessment of Width & its Attractiveness						
Social Impacts	Accessibility for Users with Different Mobility Needs	Accessibility to Serve Users of all Ages & Abilities						
	Gender Impacts	How the Proposal may have Gender Specific Impacts						
Land Use Impact	Integration with town environs	Integrates with the Land Use Objectives & NIFTI						
		Impact on Green Areas						
Safety Impact	Safety Impact	Segregation between Cyclists and Vehicles						
		Segregation between Cyclists and Pedestrians						
		Safety for All Users regarding Traffic Volumes and Speeds along Route						
	Traffic	Impact on Traffic Capacity due to the Proposals						
Local Environmental Impact	Air Quality	Air Quality Impact						
	Noise and Vibration	Potential Sensitive Receptors Properties						
	Soils and geology	Bedrock and Overburden						
	Biodiversity	Impact on Biodiversity along Scheme Extents						
	Water Resources	Groundwater Quality / Resources / Levels, Surface Water Quality and Flows						
	Landscape and Visual Quality	Landscape and Visual Assessment						
	Cultural and Heritage	Impact at National Monuments, NIAH Features and ACA						

6.2.3 Junction B6: R446 - R916 Roundabout

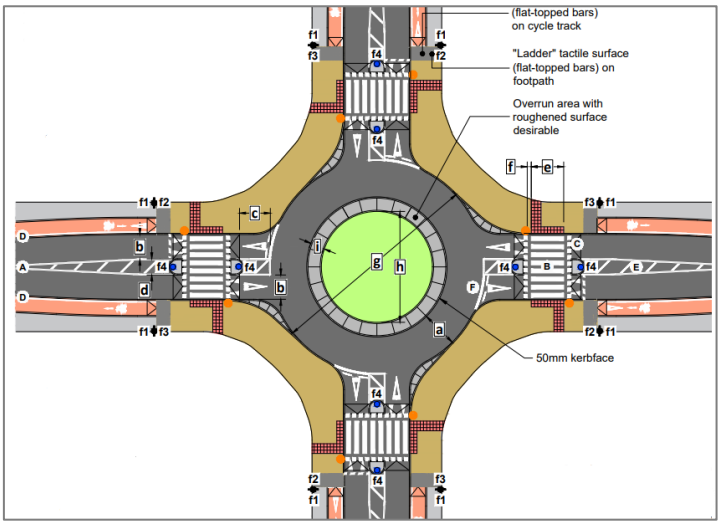
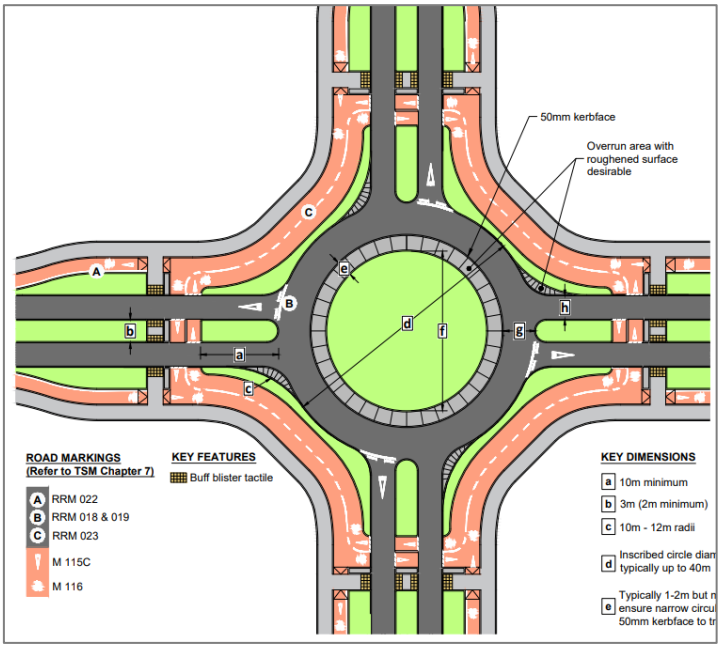
Based on the location and existing layout, as shown in Figure 3-1, the R446 - R916 Roundabout is located at the R916 link intersecting with the R446 link near TUS. The roundabout currently has pedestrian facilities throughout, however, only has substandard cycle infrastructure at the northwest section of the roundabout. The roundabout has designated uncontrolled crossing points at each arm. Some options for this segment consider land acquisition to some extent to provide the necessary level of segregation between cyclists and pedestrians. Rapid build options are also considered through the local widening of the path and reduction of the carriageway to provide for additional space.

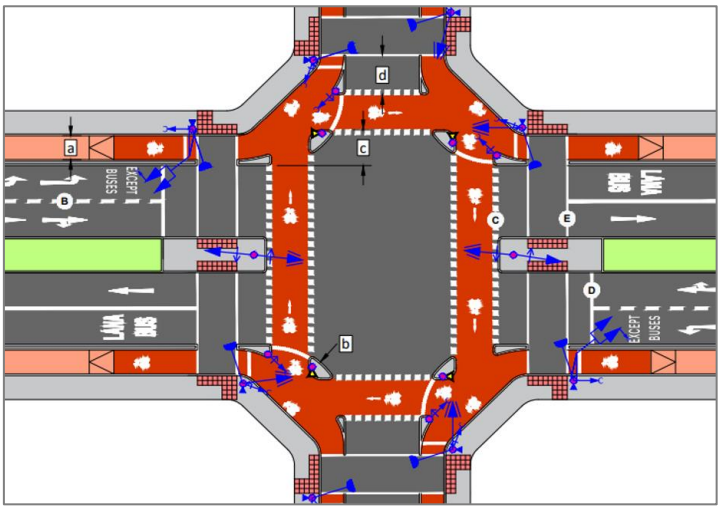
The descriptions for each option for this junction are discussed in detail in Table 6-13. A Multi-Criteria Analysis is undertaken between the options considered, as shown in Table 6-14.

6.2.3.1 Stage 1a Option Identification

Table 6-13 - Junction B6 Options

Option	Reference
Option 1: Do Nothing This option would retain the existing 4-arm roundabout with no dedicated spaces for cyclists and no dedicated crossing points at each arm. Cyclists would be forced to merge into the road space with motorised vehicles, which is not in line with the CDM Table 2.1 – Cycle Facilities Selection Guide.	
Option 2: Segregated Roundabout with Shared Active Travel Facilities (Rapid Build) This option proposes to upgrade the existing roundabout into a segregated roundabout with shared active travel facilities based on the NTA Advice Note on Roundabout Retrofits. This option would reduce the entry lanes and the circulatory lane widths to a minimum in order to implement the appropriate active travel facilities, including raised toucan crossings on all arms and shared areas between pedestrians and cyclists through the roundabout. This option requires less space compared to other options and may avoid further landtake requirements. However, this layout is less desirable due to the lack of segregation between pedestrians and cyclists.	

Option	Reference
Option 3: Segregated Roundabout with Shared Active Travel Facilities (Traditional Build) This option proposes to upgrade the existing roundabout into a segregated roundabout with shared active travel facilities based on the CDM standards. This option would reduce the entry lanes and the circulatory lane widths to a minimum in order to implement the appropriate active travel facilities, including raised toucan crossings on all arms and shared areas between pedestrians and cyclists through the roundabout. This option requires less space compared to other options and may avoid further landtake requirements. However, this layout is less desirable due to the lack of segregation between pedestrians and cyclists.	
Option 4: Protected Roundabout without Cycle Priority (Traditional Build) This option proposes to upgrade the existing roundabout into a protected roundabout with no cycle priority based on the CDM standards. This option would reduce the entry lanes and the circulatory lane widths to a minimum in order to implement the appropriate active travel facilities, including designated crossing points for both cyclists and pedestrians on all arms, and segregated cycle lanes through the roundabout. This option would require landtake to facilitate the additional provisions.	

Option	Reference
Option 5: Protected Signal Controlled Junction This option provides a protected junction layout where all movements take place under signalised control. Pedestrians and cyclists are provided with different crossing points, with more controlled priority given to pedestrians over the cycle track. Cycle crossings are typically set back <5m from junction. However, longer pedestrian signal phases may reduce junction capacity.	

6.2.3.2 Stage 1b Detailed Option Assessment

The preferred option for Route B Junction B6 is Option 4; a Protected Roundabout without Cycle Priority through traditional build construction methods. This option provides a blend of benefits in comparison to the other options, primarily on safety impacts as segregating cyclists to pedestrians and vehicles as well as performing well in terms of directness, coherence, comfort, attractiveness and on social impacts. This option would also avoid any additional land take requirements. The exact layout of the junction will be determined in Phase 3 Preliminary Design; taking cognisance of the preferred links that join this junction.

Table 6-14 – Junction B6: R446 - R916 Roundabout MCA

Criteria	Sub-Criteria	Indicator to be Measured	Option 1 Do Nothing	Option 2 Segregated Rbt w/ Shared AT Facilities (Rapid Build)	Option 3 Segregated Rbt w/ Shared AT Facilities (Traditional Build)	Option 4 Protected Rbt without Cycle Prio. (Traditional Build)	Option 5 Protected Signalised Junction
Transport User benefits & Other Economic Impacts	Cost and Programme Impacts	Land Acquisition Area					
		Construction and Maintenance					
	Construction Impacts	Rapid Build Achievability & Construction Impacts					
Accessibility Impacts	Coherence & Directness	Consistency, Continuity & Directness through junctions & maintenance of cyclists' progression					
	Comfort & Attractiveness	Provision of Comfort for Pedestrians and Cyclists through Assessment of Width & its Attractiveness					
Social Impacts	Accessibility for Users with Different Mobility Needs	Accessibility to Serve Users of all Ages & Abilities					
	Gender Impacts	How the Proposal may have Gender Specific Impacts					
Land Use Impact	Integration with town environs	Integrates with the Land Use Objectives & NIFTI					
		Impact on Green Areas					
Safety Impact	Safety Impact	Segregation between Cyclists and Vehicles					
		Segregation between Cyclists and Pedestrians					
		Safety for All Users regarding Traffic Volumes and Speeds along Route					
	Traffic	Impact on Traffic Capacity due to the Proposals					
Local Environmental Impact	Air Quality	Air Quality Impact					
	Noise and Vibration	Potential Sensitive Receptors Properties					
	Soils and geology	Bedrock and Overburden					
	Biodiversity	Impact on Biodiversity along Scheme Extents					
	Water Resources	Groundwater Quality / Resources / Levels, Surface Water Quality and Flows					
	Landscape and Visual Quality	Landscape and Visual Assessment					
	Cultural and Heritage	Impact at National Monuments, NIAH Features and ACA					

7. Summary of Emerging Preferred Options and Appraisal

7.1 Summary of Emerging Preferred Options

Table 7-1 – Route B Corridor Preferred Option

Location	Proposal
Segment B3	Standard Two-way Cycle Track (traditional build, 11.9m cross section) 2.3m standard two-way cycle track on northern side of the road 1.8m footpaths on both sides of the road 6.0m carriageway
Segment B4	Standard Two-way Cycle Track (traditional build, 11.9m cross section) 2.3m standard two-way cycle track on northern side of the road 1.8m footpaths on both sides of the road 6.0m carriageway Standard Two-way Cycle Track (traditional build, 10.6m cross section near the constrained railway bridge location) 2.3m standard two-way cycle track on northern side of the road 1.8m footpaths on northern side with 0.5m rubbing strip on southern side 6.0m carriageway
Segment B5	Standard Two-way Cycle Track (traditional build, 11.9m cross section) 2.3m standard two-way cycle track on northern side of the road 1.8m footpaths on both sides of the road 6.0m carriageway
Segment B6	Standard One-way Cycle Track (traditional build, 13.0m cross section) 1.7m standard one-way cycle track on both sides of the road 1.8m footpaths on both sides of the road 6.0m carriageway
Junction B4	Existing Roundabout with Two-Way Cycle Track on Northern Side
Junction B5	Existing Roundabout with Two-Way Cycle Track on Northern Side
Junction B6	Protected Roundabout without Cycle Priority

7.2 Statutory Process

The Athlone Active Travel Schemes Bundle is divided into Six Routes. Each Route will go through an individual Part 8 planning process which will be in accordance with the Planning and Development Regulations.

7.3 Indicative Procurement Strategy

The procurement strategy for this Project is subject to change at this Phase, however it is envisaged that a Contractor shall be appointed from either a pre-existing Framework or appointed via a two-stage process in line with the Capital Works Management Framework. The form of Contract is envisaged at this Phase to be either *PW-CF3 Civil Engineering Works design by the Employer* or *PW-CF5 – Minor Building & Civil Engineering Works designed by the Employer* (dependant on the estimated construction value at the time of Tender).

Details on the Procurement Strategy shall be reviewed and updated as the project progresses.

7.4 Conclusions and Recommendations

Considering all of the criteria set out in the Transport Appraisal Framework, including Transport User and Economic Benefits, Safety, Accessibility, Social Impacts, Land Use and Local Environmental Impacts, the Athlone Active Travel Schemes Bundle Route B, from Creggan Roundabout to Ankers Bower Roundabout (R446), is an important project for Athlone Town and County Westmeath, and this scheme fully aligns with national, regional and local policies, as outlined in Chapter 2 of this report.

It is recommended that the Emerging Preferred Options as outlined in Section 6.1 for the link types and Section 1.1 for the junctions are progressed to Phase 3 Preliminary Design. These options are considered to best align with the objectives as set out in Section 1.3, when assessed as part of the multi-criteria analysis. The options proposed will improve safety for all road users by providing facilities which will be designed in accordance with current design standards and best practice. They will provide quality infrastructure for all active travel users including those with mobility or visual impairments.

The project will provide increased opportunity for residents, school goers and leisure cyclists/walkers of Athlone town. The project intends to encourage modal shift from the private vehicle to healthier and more sustainable modes of travel, such as walking and cycling; and will also improve permeability to the existing public transport facilitates.

APPENDICES

Appendix A. Environmental Constraints Study

AtkinsRéalis

Environmental Constraints Report

Westmeath County Council

April 2025
0086381DG0125

ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

AtkinsRéalis - Baseline / Référence

Notice

This document and its contents have been prepared and are intended solely as information for Westmeath County Council and use in relation to the Athlone Active Travel Schemes Bundle.

WS Atkins Ireland Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 25 pages including the cover.

Document history

Document title : Environmental Constraints Report

Document reference : 0086381DG0125

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0	Draft for Client	AT	AMc	DP	AB	April 2025

Client signoff

Client	Westmeath County Council
Project	ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE
Job number	0086381DG0125
Client signature/date	

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1. Introduction

1.1 Background

Westmeath County Council (The Client/WCC) as the Contracting Authority and National Transport Authority (NTA), appointed AtkinsRéalis (the Consultant) to provide Engineering-led Multi-disciplinary Consultancy and Design services for the concept development & option selection, preliminary design and statutory processes of active travel provisions and associated works on the Athlone Active Travel Scheme Bundle.

The Project is located in Athlone town, County Westmeath. The scheme extents and routes are highlighted on the map below as shown in Figure 1-1. Figure 1-1, outlines 6 separate routes, Route B has been identified as the priority or (pathfinder) route, and is therefore the subject of this technical note.

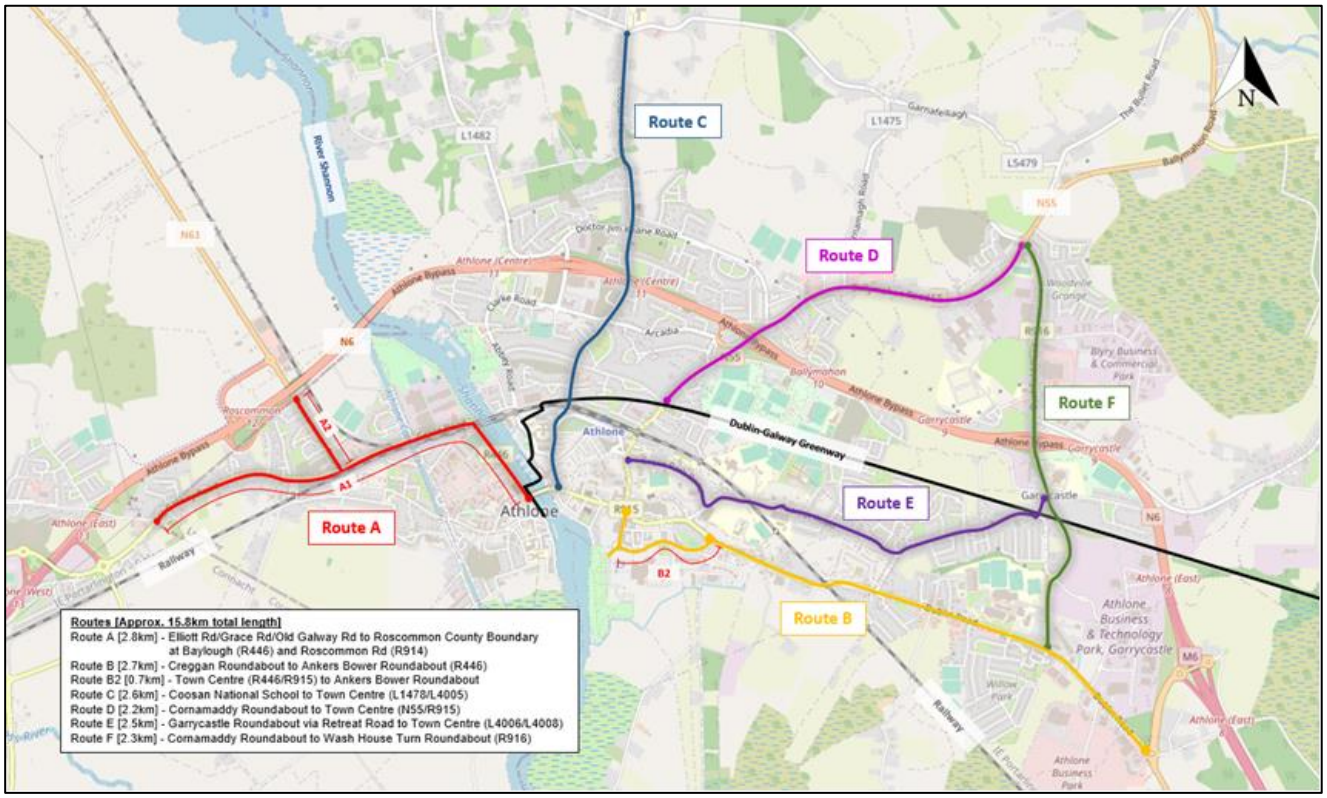


Figure 1-1 - Site Location and Pathfinder

The project is located in Athlone, a town on the border of counties Roscommon and Westmeath. It is situated on the southern coast of Lough Ree. In total there is approximately 15.8 km of active travel planned for Athlone.
The 15.8 km identified has been divided into 6 separate sub routes, these routes are as follows:

- Route A [2.8 km] - Elliott Rd/Grace Rd/Old Galway Rd to Roscommon County Boundary at Baylough (R446) and Roscommon Rd (T914).
  - Route A1 [2.3 km] - Tesco Express in Boylagh to Luan Gallery and St. Peter and Paul church (R446).
  - Route A2 [0.5 km] - Junction of the Old Galway Road (R446) and Roscommon Road (R914) to the Roscommon County boundary (R914).
- **Route B [2.7 km] - Creggan Roundabout to Ankers Bower Roundabout (R446).**
- Route B2 [0.7km] - Town Centre (R446/R915) to Ankers Bower Roundabout
- Route C [2.6km] - Coosan National School to Town Centre (L1478/L4005).
- Route D [2.2km] - Cornamaddy Roundabout to Town Centre (N55/R915).
- Route E [2.5km] - Garrycastle Roundabout via Retreat Road to Town Centre (L4006/L4008).

- Route F [2.3km] - Cornamaddy Roundabout to Wash House Turn Roundabout (R916).

As previously mentioned, this environmental constraints report is being prepared for Route B only.

1.2 Purpose of this Report

This report is being prepared to accompany the Feasibility and Options Selection Report for the proposed Athlone Active Scheme Travel Bundle (Route B). The purpose of this report is to determine the identified environmental constraints within the site boundary and vicinity of Route B and to set out any further studies / investigations which may be required as the project progresses.

1.3 Report Format

This constraints report identifies the key environmental constraints within the study area and its vicinity, as follows:

- Topography;
- Land, Soils and Geology;
- Hydrology and Hydrogeology (including Flood Risk);
- Biodiversity;
- Archaeology, Architecture and Cultural Heritage;
- Air and Climate;
- Noise and Vibration;
- Licenced Facilities;
- Radon; and,
- Landscape & Visual

2. Existing Environment

2.1 Topography

The general topography of the study area consists of urban streets bounded with properties on either side.

The lands made available for the works have been identified within the existing street reserve boundaries and adjacent road verges

Based on a review of OSI mapping, the constraints study areas for the route appears to be generally flat in nature. Levels of ca. 40-50mAOD are reported along Route B with a high point reported in the east of the route where the levels are reported as being ca. 60mAOD.

2.2 Land, Soils and Geology

2.2.1 Land Use

The study area is along the existing road network and / or associated footpaths / grassed verges within an urban setting.

As identified within the Athlone Town Development Plan 2014 – 2020[1], land use zonings within the vicinity of route B are as follows:

- Existing residential
- Community use – Education, community and institutional
- Commercial
- Mixed Use
- Proposed Residential

Refer to Figure 2-1 below for details.

[1] It should be noted that the Athlone Joint Urban Area Plan (Westmeath County Council and Roscommon County Council) is currently undergoing Pre-Draft Public Consultation. The land-use zonings of the lands within the vicinity of Route B will need to be reviewed once this Urban Area Plan is implemented.

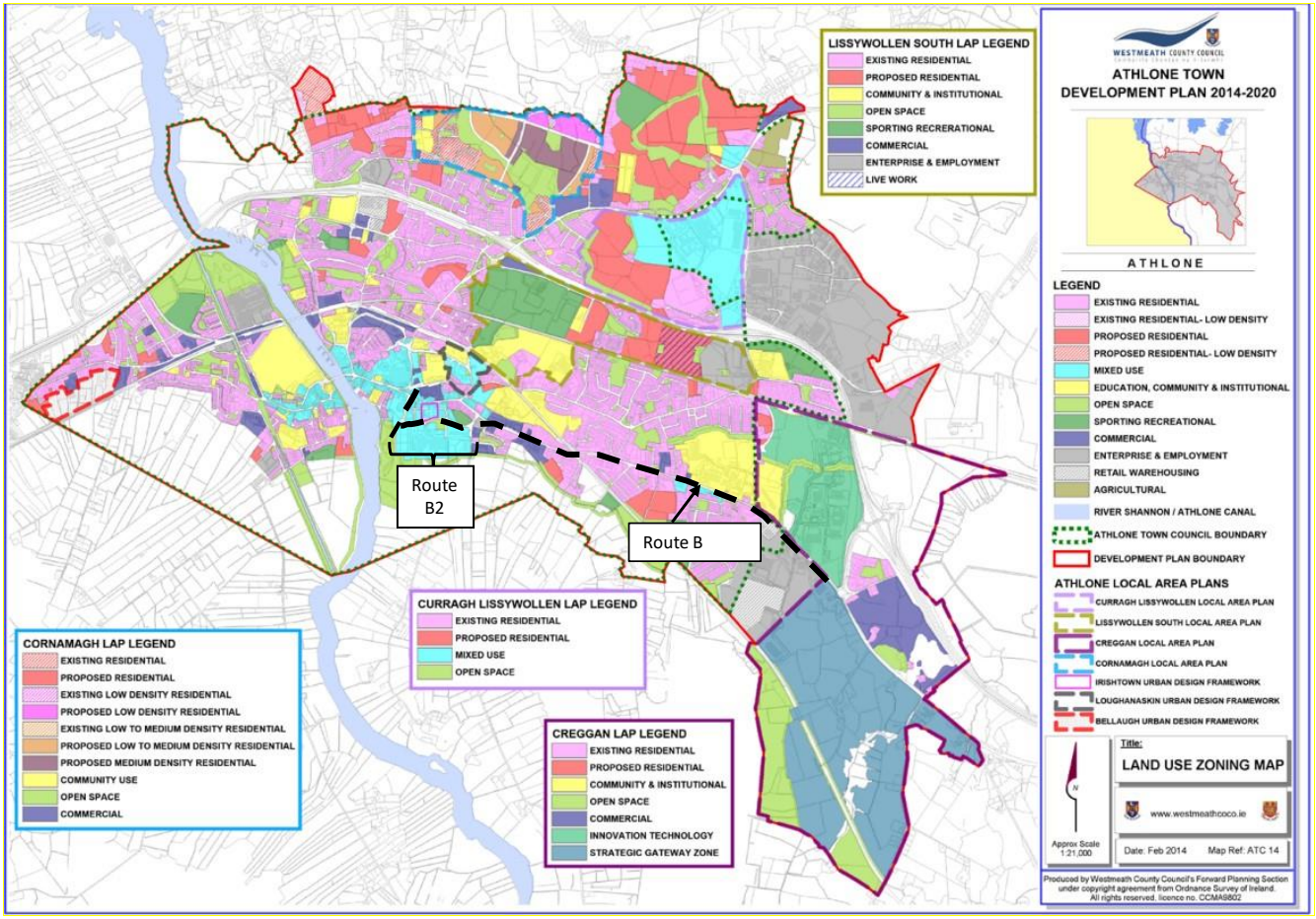


Figure 2-1 - Land Use Zonings within the vicinity (WCC, 2014)

2.2.2 Teagasc Soils

According to GSI (2025) the soil type beneath Route B is predominantly classified as ‘made ground’ with minor portions of ‘cutover/cutaway peat’, ‘shallow well drained mineral (mainly basic)’, and ‘shallow poorly drained mineral (mainly basic)’, as shown in Figure 2-2.

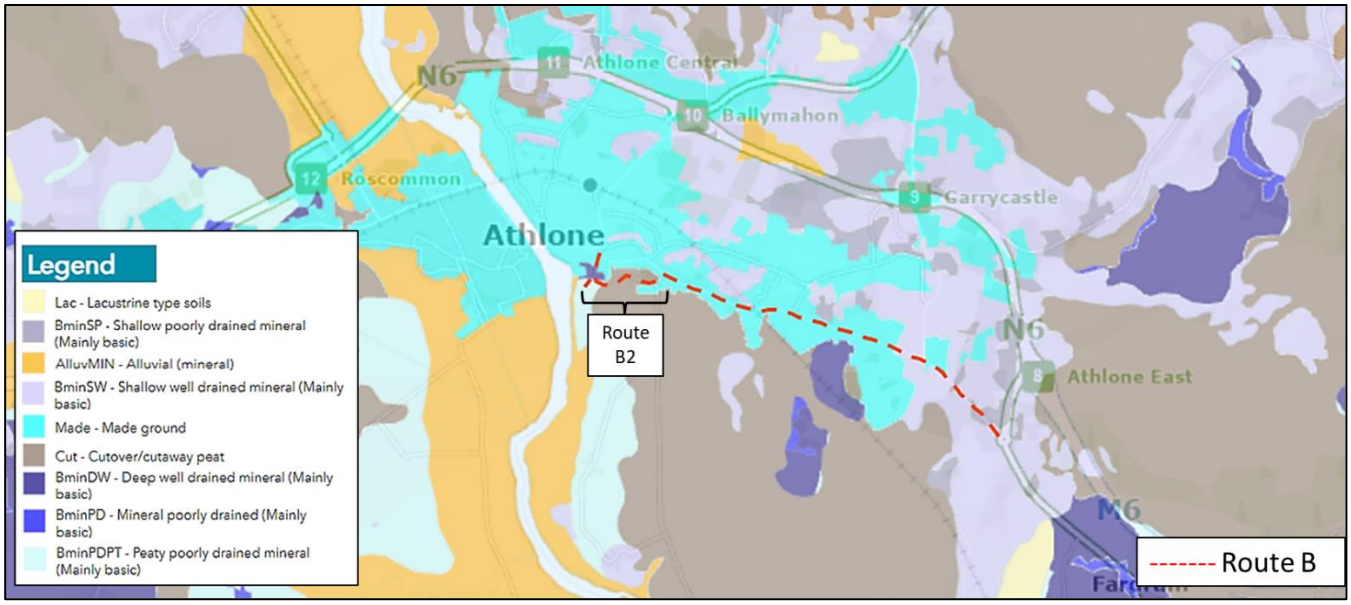


Figure 2-2– Teagasc Soils within the vicinity of both route options (GSI, 2025)

2.2.3 Quaternary Sediments

A review of GSI (2025) indicates that the quaternary sediments underlaying the route is predominantly classified as ‘gravels derived from limestones’, ‘Till derived from limestones’ and ‘Cut over raised peat’ (refer to Figure 2-3).

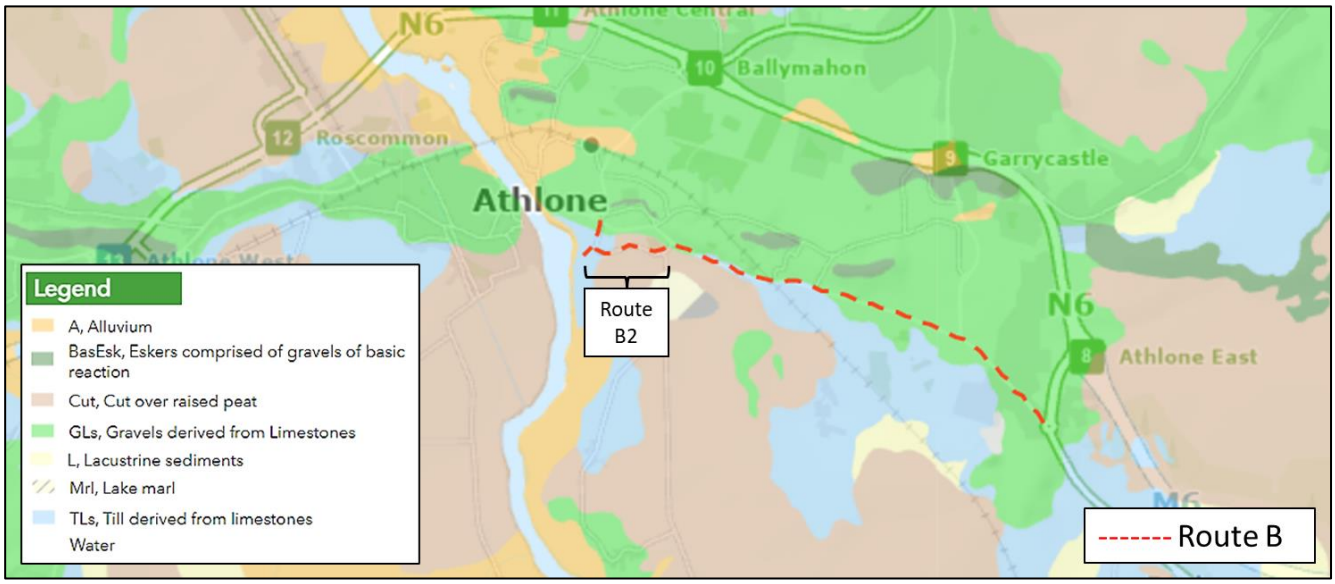


Figure 2-3– Quaternary Sediments within the vicinity of both route options (GSI, 2025)

2.2.4 Bedrock Geology

GSI (2025) indicates that the Bedrock Geology within the vicinity of the route comprises of Waulsortian mudbank; Pale-grey massive limestone as shown in Figure 2-4.

Figure 2-4 – Bedrock Geology within the vicinity (GSI, 2025)

2.2.5 Geological Heritage Areas

A review of GSI (2025) indicates that while there are no Geological Heritage Areas (GHA) within the project site, there are 2no. GHAs within the vicinity of Route B, as follows (as shown on Figure 2-5):

- River Shannon Callows GHA is located ca. 1.3km south of Route B and is described in GSI as '*The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river.'*
- Loughandonning Mushroom Rock GHA is located ca. 0.23km south of Route B and is described in GSI as '*An isolated, highly sculpted, limestone mushroom rock, situated within a pasture field.'*

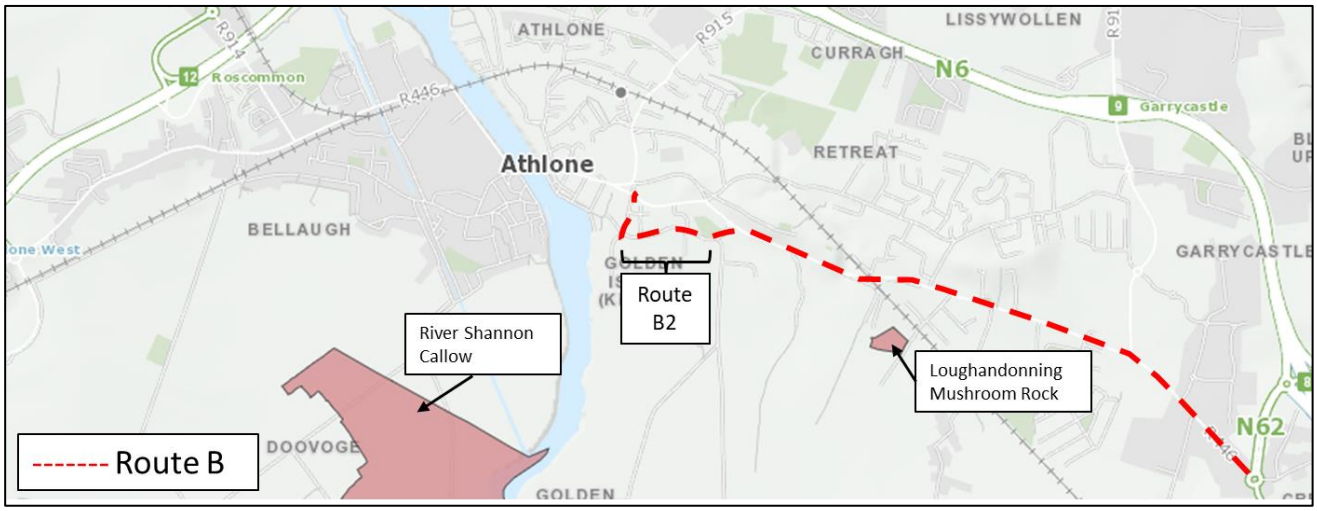


Figure 2-5 – Geological Heritage Areas within the vicinity of the route (GSI, 2025)

2.2.6 Landslide Susceptibility

A review of GSI (2025) indicates that landslide susceptibility within the vicinity of the route is 'Low', 'Low inferred' and 'Made' land. There have been no landslide events reported by GSI (2025) within the town of Athlone, with the closest event being reported ca. 4km from Route B in 2003. Therefore, no issues are identified with regards to landslide potential.

2.3 Water

2.3.1 Hydrology

2.3.1.1 Surface Water Features

EPA (2025) has identified 1no. river within the vicinity of Route B, as follows:

- Route B crosses River AI which appears to be culverted beneath made ground to the south of Route B, and the R446 along which Route B is aligned.

The Water Framework Directive (WFD) status of the AI stream is 'Poor' for the 2016-2021 monitoring period, with the watercourse 'At risk' of failing to achieve relevant WFD objectives by 2027. Note - this stream is part of the same Shannon (Upper)_120 waterbody as the main channel of the river, as such its poor status is likely as an extension of the river, and it may not have been monitored in its own right.

The study area is located within the Shannon Lower sub catchment.

Figure 2-6 – River Crossing/Quality within the vicinity of Route B (EPA, 2025)

2.3.1.2 Flooding

2.3.1.2.1 CFRAM Predictive Flood Maps

Figure 2-7 below displays the fluvial CFRAM predictive flood map of the study area for Route B. Areas predicted to be inundated during various theoretical or 'design' flood events with an estimated probability of occurrence (i.e. low, medium, high) for present day scenario are shown. A small section of Route B is located in inundated areas for Mid-Range Future & High-End Future Scenarios.

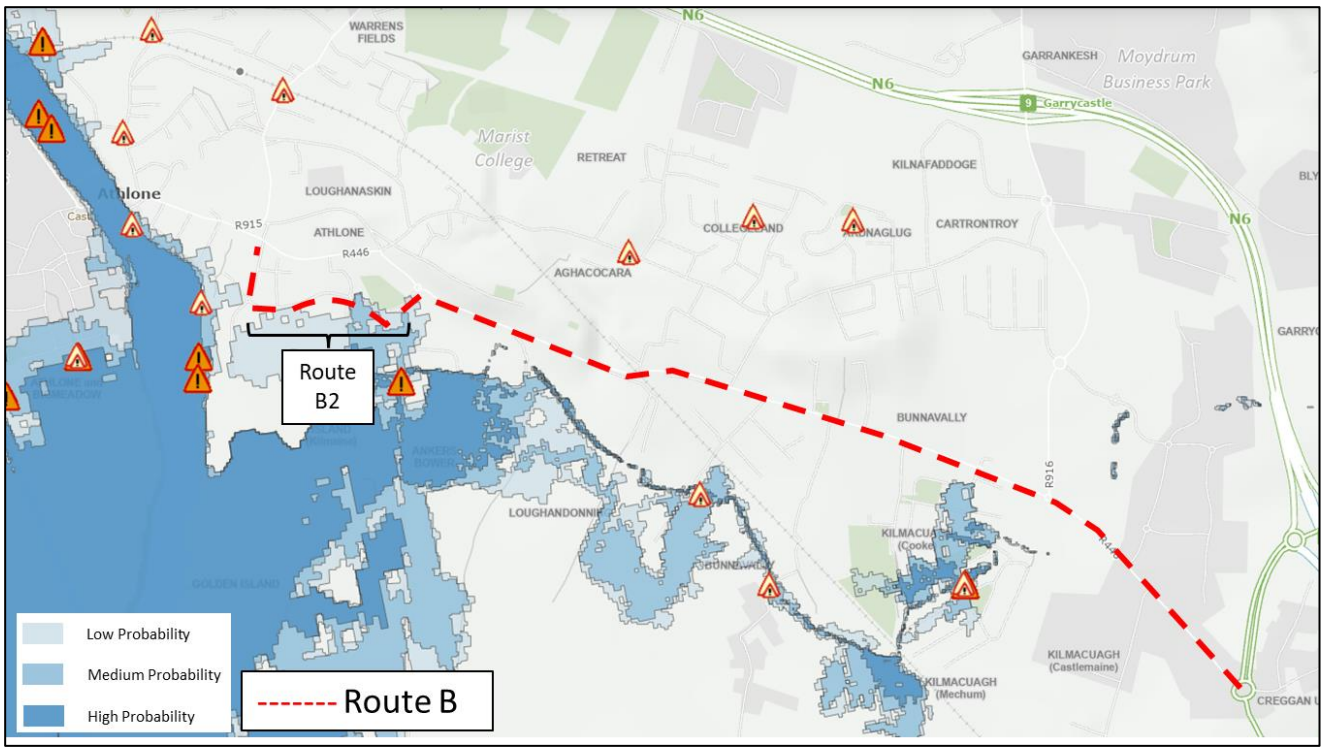


Figure 2-7 – CFRAM Predictive Flood Map (Present Day) within the vicinity of the route (OPW, 2025)

2.3.1.2.2 Historic Flooding

OPW have reported no recurrent flooding events within the vicinity of Route B.

2.3.2 Hydrogeology

2.3.2.1 Karst Features

There are no reported karst features within the town of Athlone (GSI, 2025) with the closest karst feature; a Spring (GSI ID: 2023NWK003) which is reported to within a 20m locational accuracy, located ca. 3.8km northeast of Route B.

2.3.2.2 Wells and Springs

There are no GSI reported wells or springs within the town of Athlone. The closest well is a borehole (GSI ID: 2023NWW102) reported to 1km locational accuracy, located ca. 2.8km northeast of the route.

2.3.2.3 Drinking Water Protection Areas

There are no Ground Water Drinking Water Source Protection Areas within 5km of the route. Killeglan Public Water Supply - Tobermore Spring is the closest drinking water protection area and is located ca. 8.5km west of Route B. There are no Group Water Schemes located within 10km of the route.

2.3.2.4 Aquifers

GSI (2025) indicates that the town of Athlone, including the study area for Route B is underlain by a locally important aquifer – bedrock which is moderately productive only in local zones.

2.3.2.5 Groundwater Vulnerability

GSI (2025) have classified the groundwater vulnerability beneath Route B predominantly as 'High' with portions of 'Moderate' groundwater vulnerability reported also. High groundwater vulnerability indicates that groundwater is potentially shallow and vulnerable to contamination. Refer to Figure 2-8.

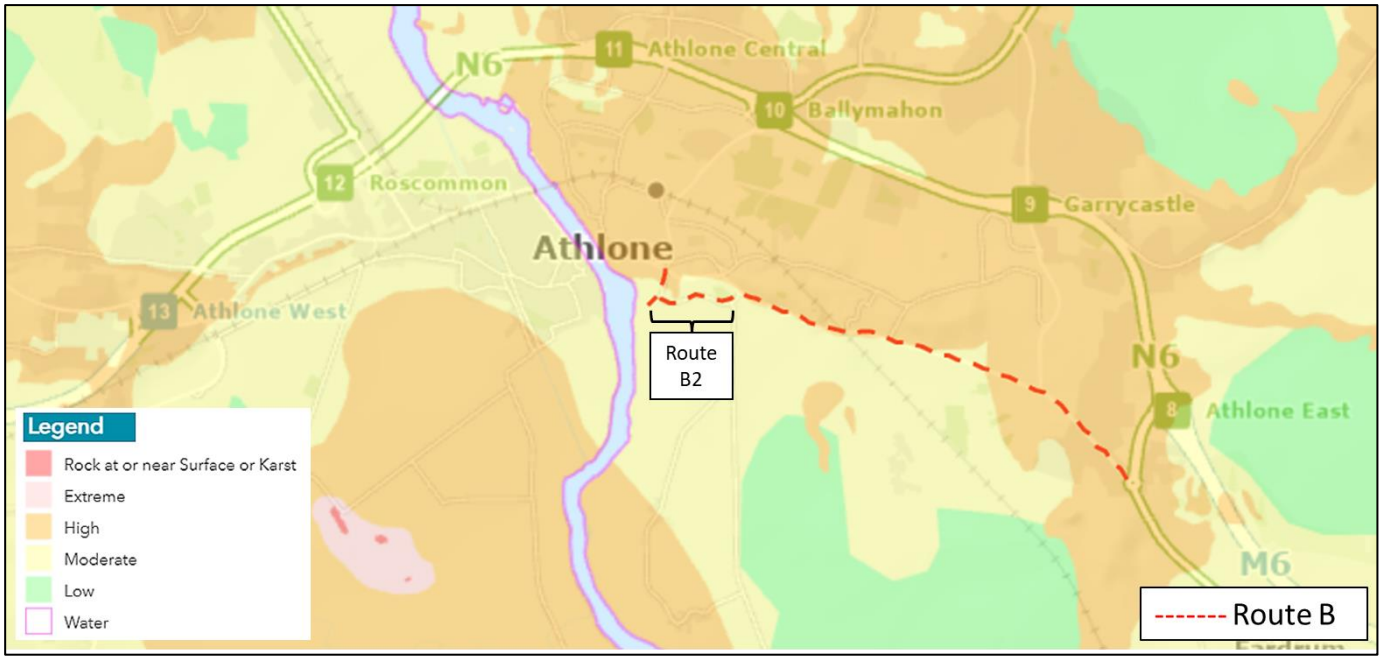


Figure 2-8 – Groundwater Vulnerability within the vicinity of the route (GSI, 2025)

2.3.2.6 Ground Water Quality

As indicated on EPA (2025), there are 2no. ground waterbodies (GWB) within the study area of Route B; Inny GWB and Athlone Gravels GWB which are reported by EPA (2025) as having ‘Good’ WFD status for the 2021-2027 monitoring period and are ‘Not at Risk’ of failing to achieve relevant WFD objectives by 2027.

2.4 Biodiversity

2.4.1 General Overview

2.4.1.1 Cycle Way Route

The cycle way route is entirely located within hardstanding areas and adjacent areas. Route B starts at the eastern outskirts of the town and travels inwards towards the town centre.

The location of the cycle way route is through Athlone town traveling primarily along urbanised areas on hardstanding surfaces (roads, pathways) and includes roadside and grass verges within Athlone. The surface water drainage network from the site is via roadway drainage infrastructure and for the purposes of this assessment it is assumed to outfall to the River Shannon.

2.4.2 European Sites

There are 5 no. European sites within the vicinity of the proposed scheme; River Shannon Callows SAC, Lough Ree SAC, Lough Ree SPA, Middle Shannon Callows SPA and Crosswood Bog SAC as detailed in Table 2-1 below. Figures 2-9 and 2-10 below illustrate the locations of European sites within the ZoI of the proposed project.

The proposed project does not lie within nor is it adjacent to any SAC/SPA site extents and there is no direct connectivity to any European sites.

There is potential indirect connectivity to River Shannon Callows SAC and Middle Shannon Callows SPA via the River Al under Garrycastle Bridge (EPA reference; IE_SH_26S021800) which is crossed by Route B on the R446. There is also potential indirect connectivity to the SAC/SPA via the River Shannon as the river receives surface water drainage from the project site via the road drainage network. The lower stretches of the River Shannon are within the SAC/SPA site extents.

Lough Ree SAC and Lough Ree SPA, which also extend into Athlone town along the River Shannon, are upstream of the project site and therefore there is no indirect hydrological connectivity to these European sites from the project site.

Crosswood Bog SAC is located on the eastern fringes of Athlone town and is upstream from the project site. There is no direct or indirect connectivity to this European site.

Table 2-1 - European site within the ZoI of the proposed project

European Site (Site Code)	Distance from OHL	Qualifying Interests (from NPWS Conservation Objectives documentation)
River Shannon Callows SAC[2] (000216)	C. 0.7km Southwest	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) [6510] Alkaline fens [7230] Limestone pavements [8240] * Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0] *

[2] NPWS (2022) Conservation Objectives: River Shannon Callows SAC 000216. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

		Lutra lutra (Otter) [1355]
Middle Shannon Callows SPA[3] (004096)	C. 0.7km Southwest	Whooper Swan (*Cygnus cygnus*) [A038] Wigeon (*Anas penelope*) [A050] Corncrake (*Crex crex*) [A122] Golden Plover (*Pluvialis apricaria*) [A140] Lapwing (*Vanellus vanellus*) [A142] Black-tailed Godwit (*Limosa limosa*) [A156] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Wetland and Waterbirds [A999]
Lough Ree SAC (000440)	C. 2.2km Northwest	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation [3150] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*FestucoBrometalia*) (* important orchid sites) [6210] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Alkaline fens [7230] Limestone pavements* [8240] Bog woodland* [91D0] Alluvial forests* with *Alnus glutinosa* and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae)* [91E0] Lutra lutra (Otter) [1355]
Lough Ree SPA (004064)	C. 2.2km Northwest	Little Grebe (*Tachybaptus ruficollis*) [A004] Whooper Swan (*Cygnus cygnus*) [A038] Wigeon (*Anas penelope*) [A050] Teal (*Anas crecca*) [A052] Mallard (*Anas platyrhynchos*) [A053] Shoveler (*Anas clypeata*) [A056] Tufted Duck (*Aythya fuligula*) [A061] Common Scoter (*Melanitta nigra*) [A065] Goldeneye (*Bucephala clangula*) [A067] Coot (*Fulica atra*) [A125] Golden Plover (*Pluvialis apricaria*) [A140] Lapwing (*Vanellus vanellus*) [A142] Common Tern (*Sterna hirundo*) [A193]
Crosswood Bog SAC (002337)	C. 0.5km East	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120]

[3] NPWS (2022) Conservation Objectives: Middle Shannon Callows SPA 004096. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

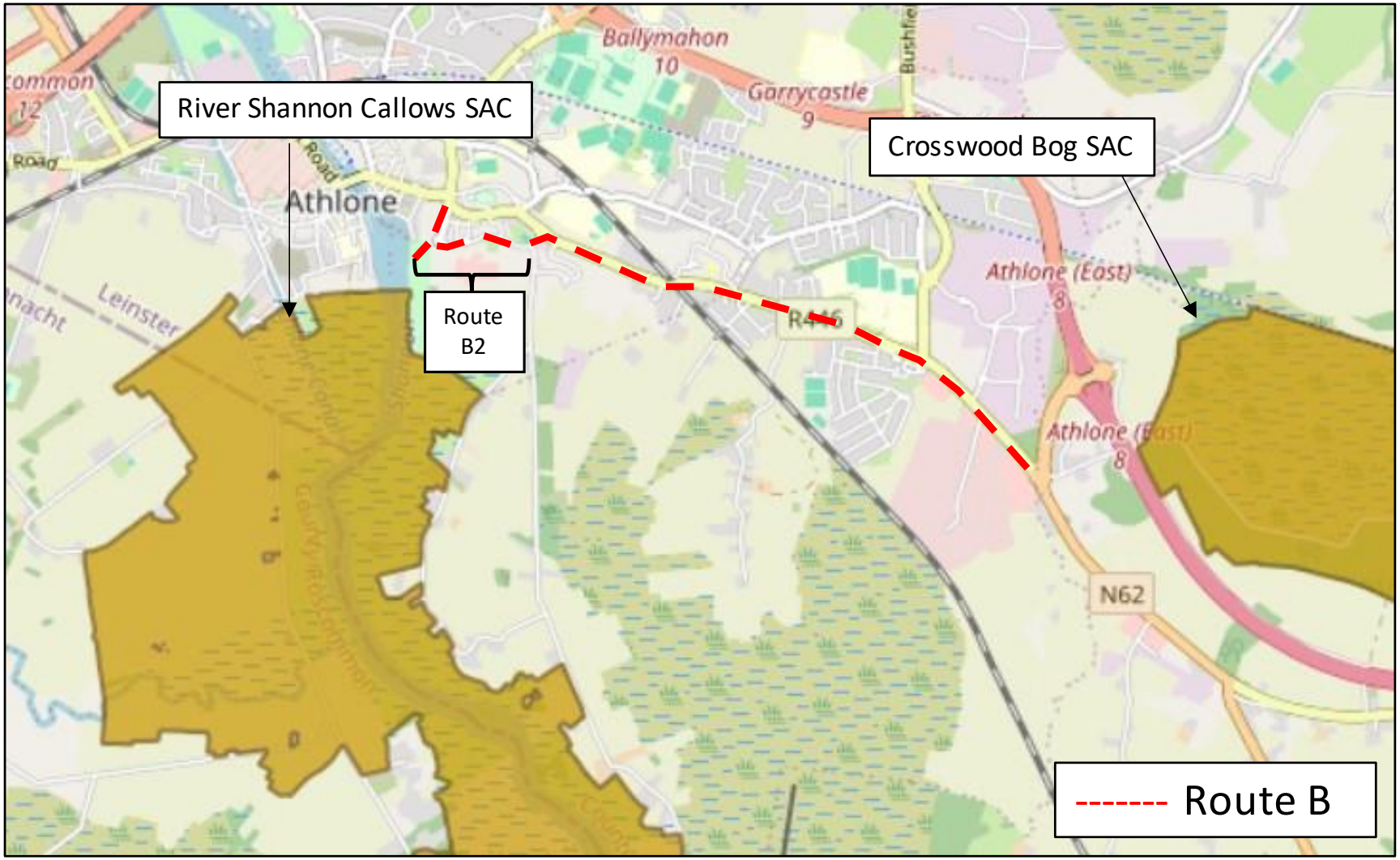


Figure 2-9 - SACs within the Zone of influence of the proposed project

Figure 2-10- SPAs within the zone of influence of the proposed project

2.4.3 National Designated Conservation Sites

The proposed project site is not within, nor does it cross any Natural Heritage Areas (NHAs) or proposed Natural Heritage Areas (pNHAs).

There is 1 no. NHA and 3 no. pNHAs within the vicinity of the project site; Carrickynaghtan Bog NHA (001623), River Shannon Callows pNHA (000216), Crosswood Bog pNHA (000678) and Lough Ree pNHA (000440)

River Shannon Callows pNHA is designated for the same conservation interest as the SAC and SPA. There is potential indirect connectivity to the pNHA via the unnamed surface water feature which flows through proposed route B and via the project site's road drainage network which outfalls into the River Shannon.

Carrickynaghtan Bog NHA is situated approximately 4km south of Athlone on the west of the River Shannon, mainly in the townlands of Cloonown and Carrickynaghtan in Co. Roscommon. The site comprises a raised bog that includes both areas of high bog and cutover bog. The site is mostly bounded by reclaimed grassland and tracks4.

There is no direct or indirect connectivity to Carrickynaghtan Bog NHA from the project site.

Crosswood Bog is a pNHA designated for the same conservation interest as the SAC. There is no direct or indirect connectivity to the pNHA.

Figure 2-11 below illustrates NHAs and pNHAs around the project site.

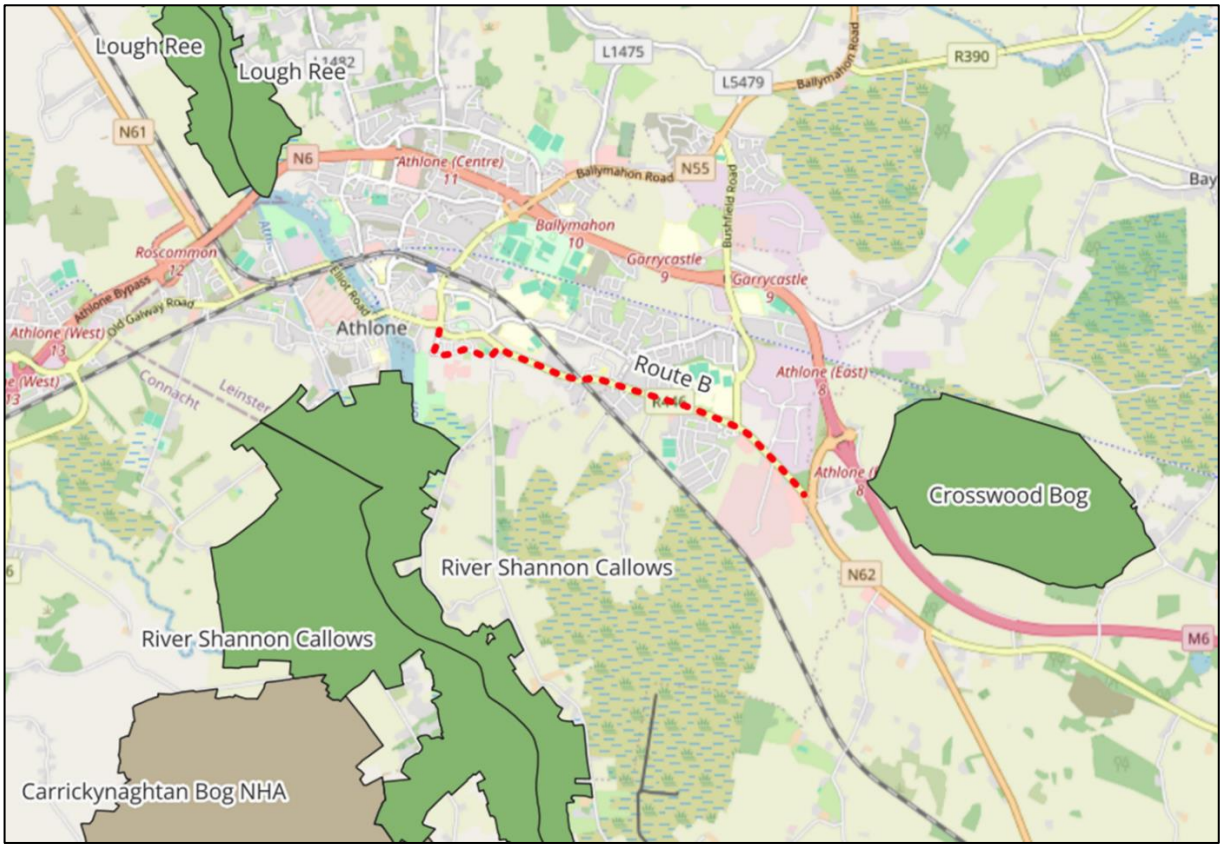


Figure 2-11 - NHAs and pNHAs within the vicinity of the project site

[4] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY001623.pdf

2.4.4 Nature Reserves / Ramsar Sites

There are no Nature Reserves or Ramsar Sites within or near the proposed project site. The nearest Nature Reserve and Ramsar Site is Mongan Bog Nature Reserve / Mongan Bog Ramsar Site located ca. 10km south of Athlone town.

2.4.5 Watercourses

The entire project site lies within the Shannon Upper (SC_100) sub catchment. There is 1 no. EPA identified watercourse within the project site. Route B crosses the Al stream which is culverted beneath made ground of the R446 along which Route B is aligned. The proposed project will have no likely interaction with this watercourse. There is potential indirect connectivity to the river via the road drainage network within the project site.

The location of watercourses in relation to the proposed project are illustrated in Figure 2-6 above.

2.4.6 Woodlands

A review of the *National Survey of Native Woodlands* (NSNW)[5], *Ancient and Long-Established Woodland Inventory* (ALEWI, 2010), National Parks and Wildlife Service (NPWS) datasets and National Biodiversity Data Centre (NBDC) datasets identify no areas of NSNW or ALEWI woodlands within the project site. A review of aerial imagery did not identify any woodlands within the proposed project site.

2.4.7 Wetlands

A review of Wetland Survey Ireland (WSI) datasets[6] identified no wetland sites within the proposed project site. The closest wetland site to Route B is Golden Island located approximately 0.6km Southwest of the route.

2.4.8 Bird Sites

There are no Irish Wetland Bird Survey (I-WeBS) count sites within the red line boundary of the proposed scheme. The nearest I-WeBS sites are the Shannon Callows Count Site (Site Code: 0R303) which is located along the River Shannon ca. 735m East of the route and Lough Ree Count Site (Site Code: 0F002) located ca. 3.4km Northwest of the route.

2.4.9 Treelines and Hedgerows

Route B is along roadways which are predominantly free of hedgerows and roadside landscape trees, however, there are occasional hedgerows and trees in some areas typically found in private residences. There is the potential for the project in certain areas to result in the loss of roadside landscape features such as grass verges, landscape feature trees and boundary hedges.

2.4.10 Species - Documented and Site Survey Evidence

NBDC datasets of rare and protected species records within 200m of the proposed scheme, were examined for the period 2000-2023. A review of species records was undertaken in May 2024. NBDC records identify the following

[6] http://www.wetlandsurveysireland.com/wetlands/map-of-irish-wetlands--/map-of-irish-wetlands---map/index.html

species, which are protected under the Wildlife Act 1976 (as amended), as having ben been recorded within the reviewed area;

Table 2-2 - Birds of Conservation Concern Recorded in the NBDC Search.

Green Listed	Amber Listed	Red Listed
Rock Pigeon (*Columba livia*)	Black-headed Gull (*Larus ridibundus*)	Swift (*Apus apus*)
Wood Pigeon (*Columba palumbus*)	Mallard (*Anas platyrhynchos*)	Oystercatcher (*Haematopus ostralegus*)
Treecreeper (*Certhia familiaris*)	Mute Swan (*Cygnus olor*)	Northern Lapwing (*Vanellus vanellus*)
Grey Heron (*Ardea cinerea*)	Sand Martin (*Riparia riparia*)	Kestrel (*Falco tinnunculus*)
	Pied Wagtail (*Motacilla alba yarrellii*)	

Invasive fauna species recorded within the reviewed area include Red Squirrel (*Sciurus vulgaris*).

Invasive plant species recorded within the site include; Japanese Knotweed (*Fallopia japonica*) and historic records of Indian Balsam (*Impatiens glandulifera*). Historic evidence of Japanese knotweed (records from 2012) has been recorded on Route B; on the R446 and Dublin Road junction (in the area of Lidl supermarket) and along the boundary of Athlone Institute of Technology (since renamed Technological University of the Shannon: Midlands Midwest) on the R446. The proposed project will have no interaction with these areas of knotweed.

2.5 Archaeology and Cultural Heritage

A search of the National Monuments Service (NMS, 2025) identified Athlone as a sensitive area in terms of archaeology and cultural heritage. The route borders a number of Sites and Monuments Record (SMR) features and National Inventory of Architectural Heritage (NIAH) features as shown in Figure 4-6 below. It is recommended that an experienced archaeologist be appointed by the contractor prior to the commencement of the construction stage. The Project archaeologist will ensure that all proposed works are carried out appropriately and that any potential risk to archaeological / architectural features are minimised.

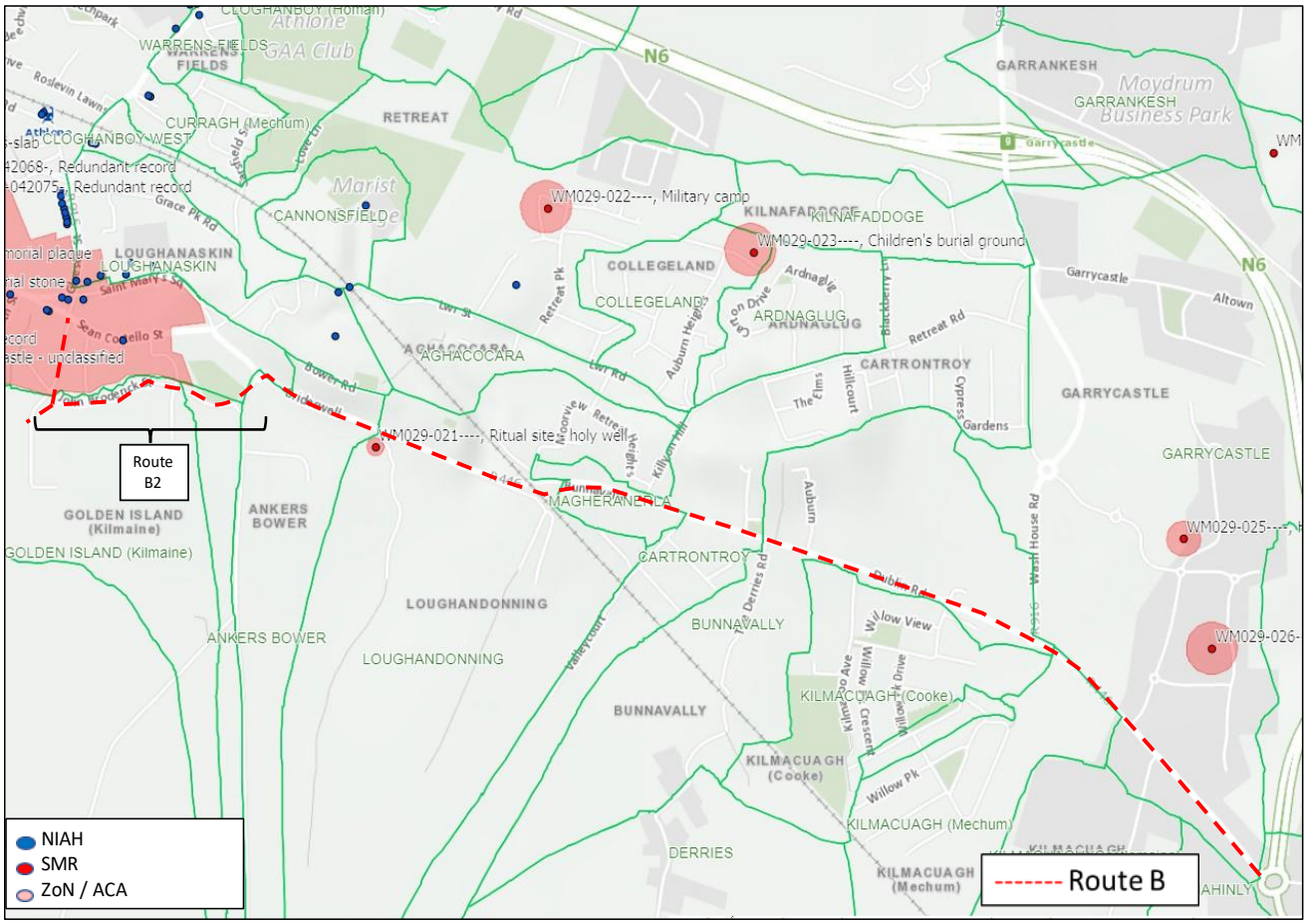


Figure 2-12 – SMRs, ZoNs and NIAHs within the vicinity of the route (National Monuments Service, 2025)

2.6 Licenced Facilities

A review of EPA (2025) indicates that there are no EPA licenced facilities within the vicinity of Route B, with the closest reported EPA licenced facility being Novo Nordisk Production Ireland Limited (P0100) located ca. 4.0km west, as shown on Figure 2-15. Athlone Urban Wastewater Treatment Plant (D0007-01) is also ca. 650m south of Route B at its closest point.

There are no Seveso Sites located within 15km of Route B.

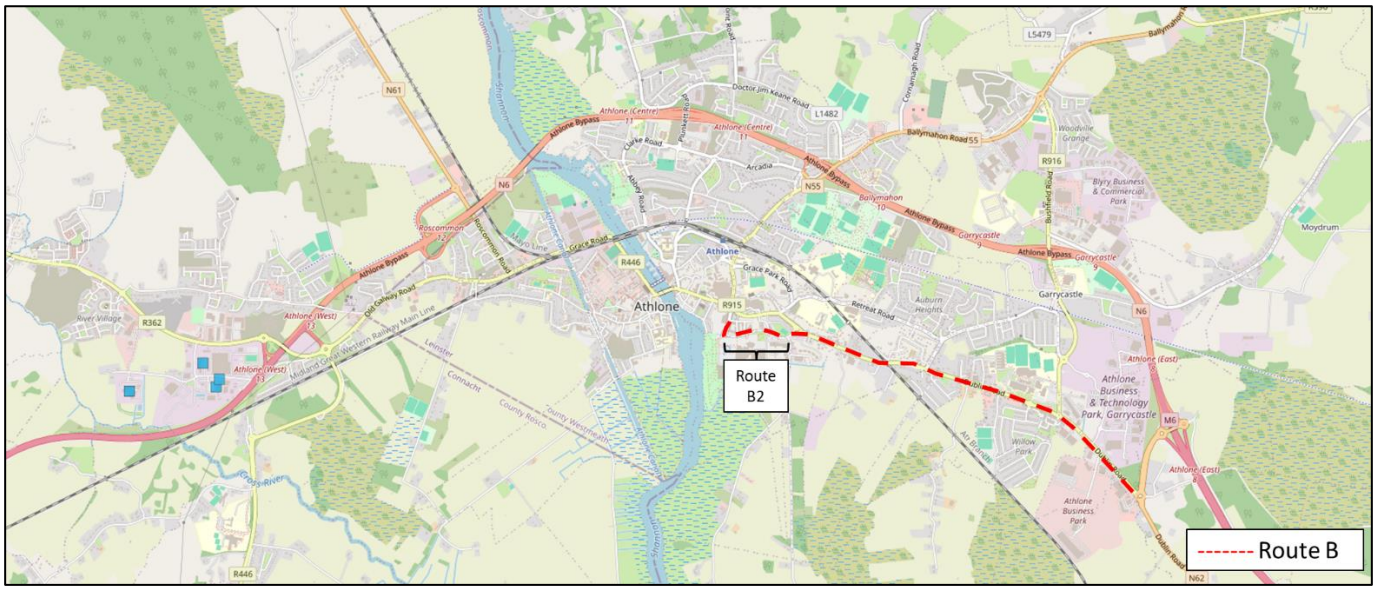


Figure 2-13 – Licenced Facilities within the vicinity of the route (EPA, 2025)

2.7 Radon Levels

According to EPA (2025), radon levels within the vicinity of the route are reported as 'about 1 in 10 homes in this area is likely to have high radon levels'.

2.8 Landscape and Visual

2.8.1 Views and Prospects

Route B is located entirely along existing roads within Athlone Town. The site is located within the Lough Ree/Shannon Corridor Landscape Character Area according to the Westmeath County Development Plan (2021-2027) with the area noted as having '*significant conservation status, as SPA, SAC and NHA are all present therein. The Shannon and Lough Ree are important in terms of their recreational and amenity value, as well as their natural heritage importance, thus the quality of these assets must be protected*.'

There are no scenic views or scenic routes within the vicinity of the route.

2.8.2 Tree Preservation Orders

A review of the Westmeath County Development Plan 2021-2027 indicates that there are 2no. locations subjected to Tree Preservation Orders (TPO) within the town of Athlone, neither of which are within the vicinity of Route B. From a review of aerial imagery (Google Maps, 2025), there are a number of trees located along the route.

2.9 Noise and Vibration

Based on available baseline noise mapping from TII (2025) Route B is reported as having Lden levels ranging from 70-74dB and >75 dB along the R446 and with Lnight levels ranging from 60-64 dB and 65-69 dB.

No other regional potential noise sources (i.e. airports and rail routes) are identified within the vicinity of the route.[7]

Based on the results of this review no significant vibration generating sources within vicinity of the constraints study area have been identified at this preliminary stage (GSI, 2025).

Sensitive receptors within the vicinity of Route B include Technological University of the Shannon (TUS), TUS Athlone CISD Labs, Valley Medical, The Church of Ireland Rectory and Kilmartin Retail Park as well as residential dwellings and businesses along the entirety of the route.

2.10 Air Quality

According to the EPA (2025), the current baseline air quality index in the area is *'1-Good'* for Athlone -Large Town. It is noted that the information from monitoring instruments at representative locations in the location may not reflect local incidents of air pollution.

Sensitive receptors within the vicinity of Route B include Technological University of the Shannon (TUS), TUS Athlone CISD Labs, Valley Medical, The Church of Ireland Rectory and Kilmartin Retail Park as well as residential dwellings and businesses along the entirety of the route.

[7] It's noted that a railway line is crossed by Route B, however noise levels have not been reported by TII along the railway in these areas.

3. Summary / Recommendations

In summary, the study area is located entirely along existing roads within Athlone town with the following constraints identified.

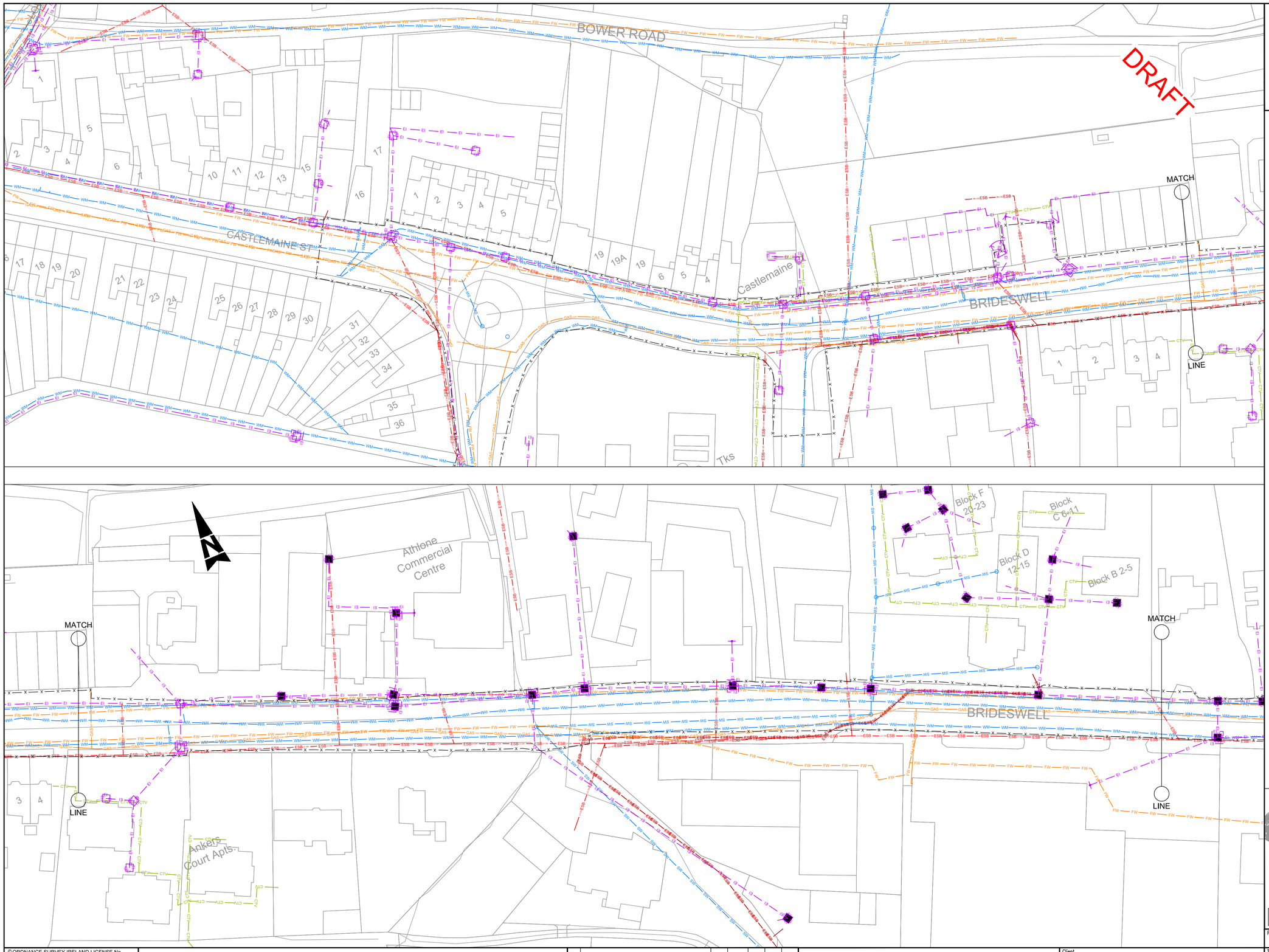
- Given the location, the proposed project will not result in any direct impacts to any European sites. There are 2 no. European sites with indirect hydrological connectivity from the proposed project; River Shannon Callows SAC and Middle Shannon Callows SPA. The River Al at Garrycastle Bridge and the existing surface water drainage infrastructure within the project site roadways provides potential connectivity to these sites. It should be noted that the proposed project will not likely interact with River Al at Garrycastle Bridge within the project site given that it is culverted under the roadway.
- The River Shannon Callows pNHA covers the same geographical area as the aforementioned SAC/SPA and the pNHA has the same indirect hydrological connectivity.
- Once preliminary design has been completed, the proposed project should be subject to the Appropriate Assessment process to determine if the project will result in likely significant effects to any European sites.
- As detailed above, there will not be any likely interaction with River Al at Garrycastle Bridge and as such significant water quality impacts are not anticipated.
- There will likely be some loss of landscape feature roadside trees and/or hedgerows as a result of the proposed project. There will likely be a loss of roadside grass verges as a result of the proposed project.
- As detailed above, the proposed project is almost entirely located within hardstanding areas including roadways and pathways. The proposed project will not result in the loss of any significant areas of semi natural habitats which could provide refuge or foraging sites for protected species. Trees and hedgerows will be required to be surveyed to assess the capability of supporting bat roosts and nesting birds. No impacts will likely occur as a result of the proposed project on the River Al and as such significant impacts to protected aquatic species or otter are not anticipated.
- Invasive species Japanese knotweed has historically been recorded with the proposed project site. An invasive species survey will be required.
- The site of the proposed development is a sensitive area with respect to archaeology and cultural heritage as Route B within the vicinity of several SMRs, ZoNs, and NIAHs and borders the Athlone Architectural Conservation Area (ACA) and Zone of Architectural Potential. An appropriately qualified archaeologist / cultural heritage specialist will be appointed as the project progresses.
- There are 2no. Geological Heritage Area (GHAs) within the vicinity of the route. The River Shannon Callows GHA is located ca. 1.3km south of the route and Loughandonning Mushroom Rock GHA is located ca. 0.23km south of the route. As there are hydrological and hydrogeological connections to both of these areas, mitigation measures will be implemented during construction to minimise / avoid impacts on these areas.
- During a review of aerial imagery (Google Maps, 2025), a number of trees were identified along Route B. It is recommended that an Arboricultural Survey is undertaken along the route as the project progresses.
- Given the urban nature of Route B, there are numerous sensitive receptors of Air Quality and Noise and Vibration nuisance during the construction works. Mitigation / protection measures will be implemented during construction to minimise / avoid impacts on sensitive receptors.

AtkinsRéalis

AtkinsRéalis Ireland Limited
150-155 Airside Business Park
Swords
Co. Dublin
K67 K5W4

Tel: +353 1 810 8000

Appendix B. Utility Maps



A1

DO NOT SCALE

0 10 100

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- EXISTING AURORA TELELCOM
- EXISTING VIRGIN MEDIA
- EXISTING ENET
- EXISTING WATER MAIN
- EXISTING FOUL SEWER
- EXISTING SURFACE WATER SEWER
- EXISTING ESB LV UNDERGROUND
- EXISTING ESB LV OVERHEAD
- EXISTING ESB MV UNDERGROUND

KEY PLAN
NOT TO SCALE

Purpose: FOR INFORMATION

ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Risk Level		
	X	Atkins Base Line - Low Risk
		Atkins Sensitive - Medium Risk
		Atkins Private - High Risk
		Client Critical - Already Marked

NTA Údarás Náisiúnta Iompair National Transport Authority

WESTMEATH COUNTY COUNCIL Comhairle Chontae na hIarmhí

Rialtas na hÉireann Government of Ireland

Tionscadal Éireann Project Ireland 2040

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P01	ISSUED FOR INFORMATION	KH	10.04.24	DP	AB	ST

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1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
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Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Title: ROUTE B EXISTING UTILITIES SHEET 1 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:500 @ A1 1:1000 @ A3	KH Date 10.04.24	DP Date 10.04.24	AB Date 10.04.24	ST Date 10.04.24

Status	Drawing Number	Rev
S2	0086381-ATK-B1-01-DR-CE-900503	P02

File: 0086381-ATK-B1-01-DR-CE-900503.dwg
Date: Apr 08, 2025 - 11:51am Plotted by: GREE5093

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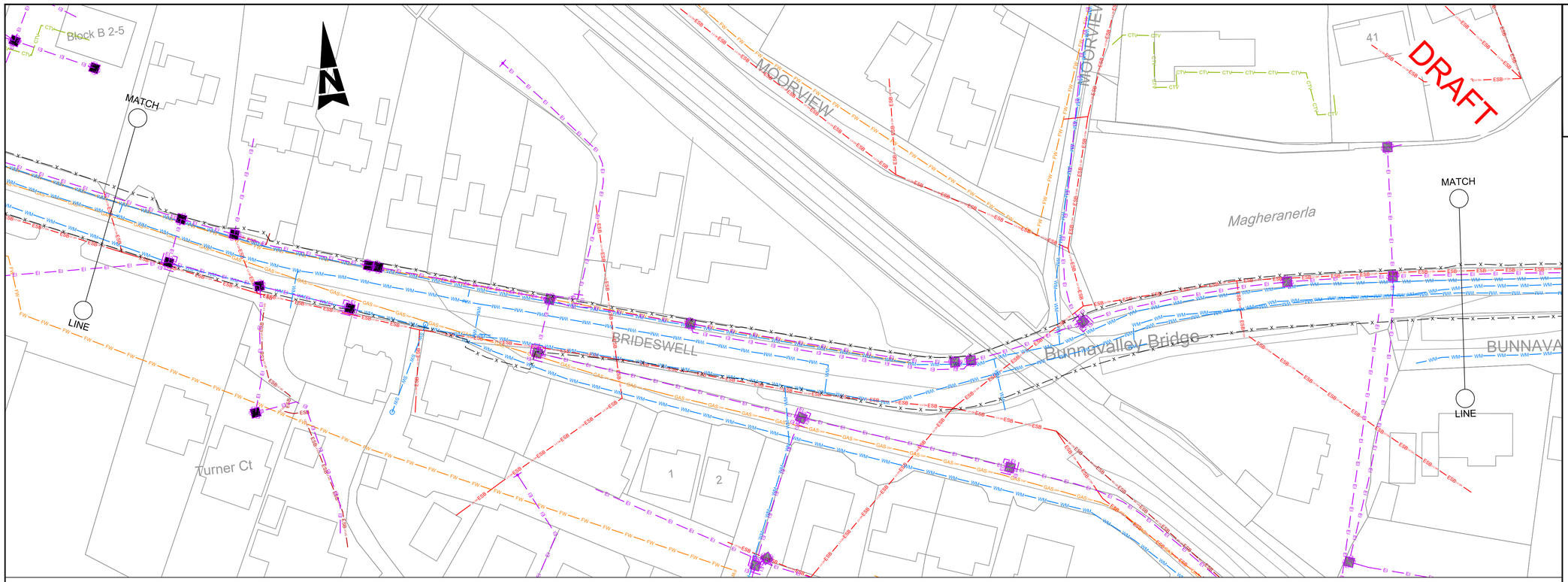

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KEY PLAN
NOT TO SCALE

ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

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Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Purpose: FOR INFORMATION

Title: ROUTE B EXISTING UTILITIES SHEET 2 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:500 @ A1 1:1000 @ A3	KH Date 10.04.24	DP Date 10.04.24	AB Date 10.04.24	ST Date 10.04.24

Status	Drawing Number	Rev
S2	0086381-ATK-B1-01-DR-CE-900504	P02

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DRAFT

DO NOT SCALE

A1

100 0 10

MATCH

LINE

DUBLIN RD

DUBLIN ROAD

CLAREMONTROY HEIGHTS

CLAREMONTROY HEIGHTS

Kilmacuagh Court Apts

Auburn Retail Centre

Daly's

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LEGEND:

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- BT — EXISTING BT DUCTING
- EI — EXISTING EIR UNDERGROUND
- GAS — EXISTING DISTRIBUTION MEDIUM PRESSURE PIPELINES
- TU — EXISTING AURORA TELELCOM
- CTV — EXISTING VIRGIN MEDIA
- E-NET — EXISTING ENET
- WM — EXISTING WATER MAIN
- FW — EXISTING FOUL SEWER
- SW — EXISTING SURFACE WATER SEWER
- ESB — EXISTING ESB LV UNDERGROUND
- ESB — EXISTING ESB LV OVERHEAD
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KEY PLAN
NOT TO SCALE

Purpose: FOR INFORMATION

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Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Title: ROUTE B EXISTING UTILITIES SHEET 3 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:500 @ A1 1:1000 @ A3	KH Date 10.04.24	DP Date 10.04.24	AB Date 10.04.24	ST Date 10.04.24

Status	Drawing Number	Rev
S2	0086381-ATK-B1-01-DR-CE-900505	P02

File: 0086381-ATK-B1-01-DR-CE-900505.dwg
Date: Apr 08, 2025 - 11:48am Plotted by: GREE5093

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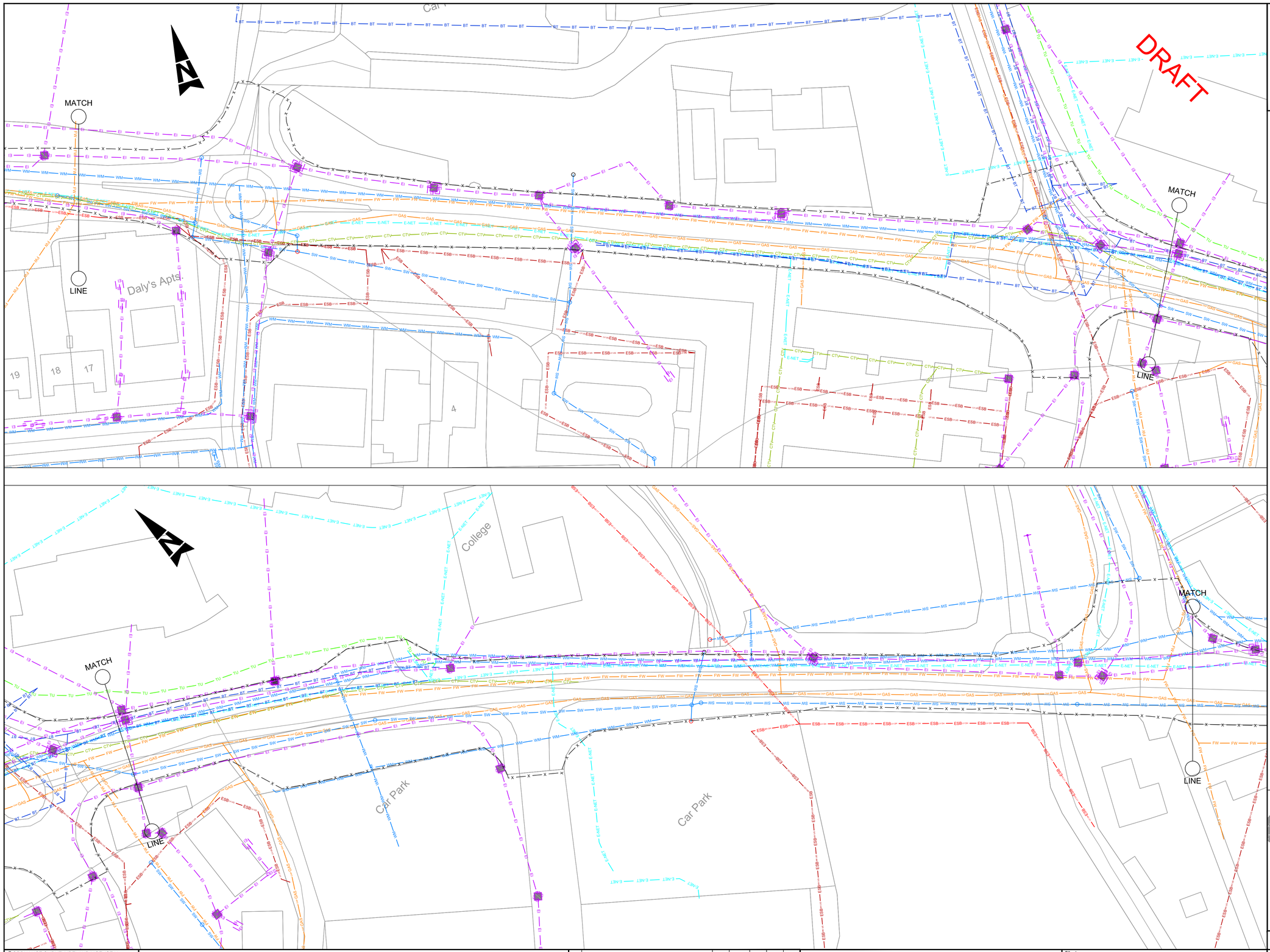

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KEY PLAN
NOT TO SCALE

ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

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Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Purpose: FOR INFORMATION

Title: ROUTE B EXISTING UTILITIES SHEET 4 OF 5

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Status	Drawing Number	Rev
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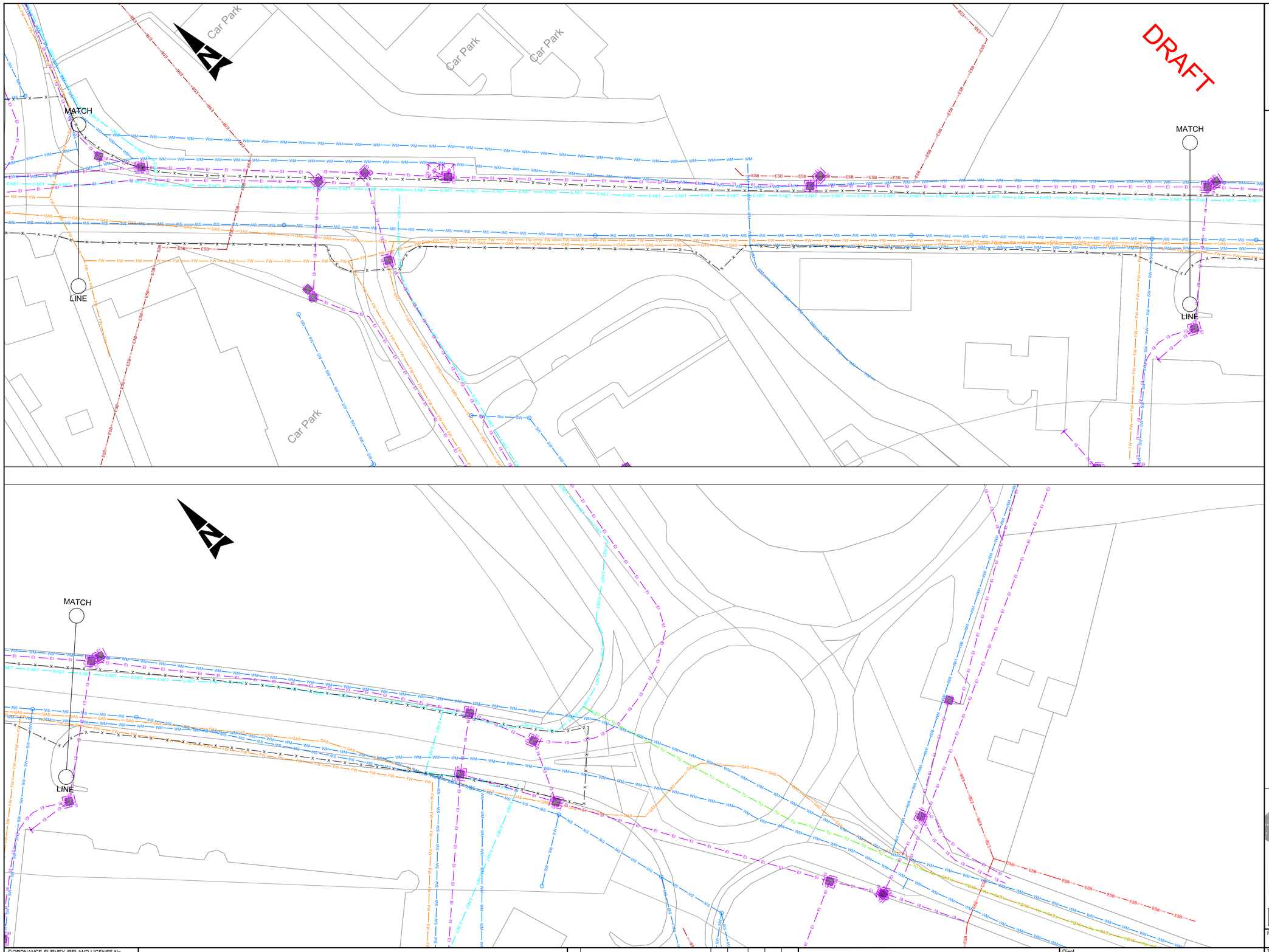

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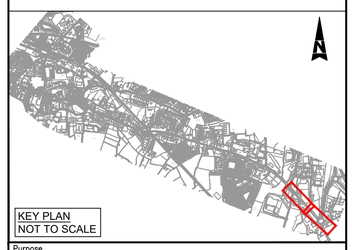

KEY PLAN
NOT TO SCALE

Purpose: FOR INFORMATION

A1
DO NOT SCALE
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File: 0086381-ATK-B1-01-DR-CE-900507.dwg
Date: Apr 08, 2025 - 11:47am
Plotted by: GREE3093

Risk Level		
	X	Atkins Base Line - Low Risk
		Atkins Sensitive - Medium Risk
		Atkins Private - High Risk
		Client Critical - Already Marked

NTA Údarás Náisiúnta Iompair National Transport Authority

WESTMEATH COUNTY COUNCIL Comhairle Chontae na hIarmhí

Rialtas na hÉireann Government of Ireland

Tionscadal Éireann Project Ireland 2040

Rev	Description	By	Date	Chk'd	Rev'd	Auth
P02	ISSUED FOR INFORMATION	DG	08.04.25	DP	AB	ST
P01	ISSUED FOR INFORMATION	KH	10.04.24	DP	AB	ST

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Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Title: ROUTE B EXISTING UTILITIES SHEET 5 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:500 @ A1 1:1000 @ A3	KH Date 10.04.24	DP Date 10.04.24	AB Date 10.04.24	ST Date 10.04.24

Status	Drawing Number	Rev
S2	0086381-ATK-B1-01-DR-CE-900507	P02

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Appendix C. Multi-Criteria Analysis

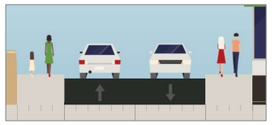
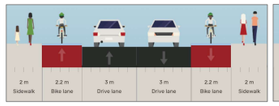
C.1 Route B Links

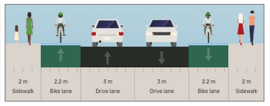
Segment B3: Irishtown Road – Anker Bower Roundabout to Athlone Furniture World

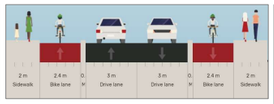
Criteria	Sub-Criteria	Indicator to be measured	Option 1 Do Nothing Footpath on both sides, no cycle facilities (Width Range from 13.5m to 14.4m)	Option 2 Standard One-way cycle track Desirable Minimum - 14.4m Absolute Minimum - 13.0m	Option 3 Stepped One-way cycle track Desirable Minimum - 14.4m Absolute Minimum - 13.0m	Option 4 Protected One-way Cycle Lane Desirable Minimum - 14.8m Absolute Minimum - 13.4m	Option 5 Standard Two-way cycle track Desirable Minimum - 13.5m Absolute Minimum - 11.9m	Option 6 Protected Two-way Cycle Lane Desirable Minimum - 13.7m Absolute Minimum - 12.1m	Option 7 Shared Active Travel Facility Desirable Minimum - 14.4m Absolute Minimum - 12.4m	Option 8 Cycling in Mixed Traffic Desirable Minimum - 10.0m Absolute Minimum - 9.6m
Transport User benefits and Other Economic Impacts	Cost and Programme Impacts	Land acquisition area	No land acquisition required.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.
		Construction and maintenance	No construction costs associated with the option, however, there are some maintenance costs to retain option.	The costs associate with this option is higher than other options (€792.0/m).	The costs associate with this option is higher than other options (€842.0/m).	The costs associate with this option is higher than other options (€864.50/m).	The costs associate with this option is lower than other options (€742.50/m), but higher than do nothing option.	The costs associate with this option is lower than other options (€778.50/m), but higher than do nothing option.	The costs associate with this option is lower (€779.60/m) than other options including do nothing option.	The costs associate with this option is lower (€550.00/m) than other options including do nothing option.
		Programme Impacts	No impact on the programme as no construction is associated with this option.	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be slightly higher than other options,	The impact on the programme timeframe will be slightly higher than other options,	The impact on the programme timeframe will be slightly lower than other options, however will still hold a slight disadvantage over the do-nothing option	The impact on the programme timeframe will be slightly lower than other options, however will still hold a slight disadvantage over the do-nothing option
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact	No changes proposed to the existing road arrangements.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but no additional kerb will be required for cycle track also drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but no additional kerb will be required for cycle track also drainage along the route needs to be readjusted as per the new kerb line.
	Connectivity with public transport facilities	Connections to existing and proposed public transport	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.
Accessibility Impacts	Access to Key Services	Access to key services (retail, groceries, banks, educational, healthcare, recreational facilities and employment areas)	The existing cross section does not provide appropriate active travel infrastructure for users accessing these locations.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate community and recreational participation on along the segment, but two way cycle facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but two way cycle facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but shared path facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but mixed traffic facilities might not be as preferred as one way cycle facilities.
		Impacts on loading and parking bays	No loss occurred to the existing parking bays.	This option will have significant impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	This option will have significant impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	This option will have significant impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays may need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays may need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays may need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays may need to be removed to compensate the active travel path along the route.
	Coherence	Route consistency and continuity	Footpaths are provided along the both sides but there are no cycle facilities.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facilities for the both sides of the existing carriageway cycle movements along the route.	This option would continue to provide active travel facilities for the both sides of the existing carriageway cycle movements along the route.	This option would continue to only provide active travel facilty on the both sides of the road, however the cyclists will have to travel along with pedestrians.	This option would continue to provide improved active travel facilities within the segment, however due to the limited available space cyclists will share the carriageway with vehicles.
	Directness	Directness along route and through junctions and maintenance of cyclists progression	Cyclists must share the road with vehicles, therefore, continuity is impeded by stationary and turning vehicles. Currently there are no appropriate crossing facilities and pedestrian progression is unsafe, random & unmaintained.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the two-way cycle facility which will be segregated and direct but two way cycle facilities might have more deterrence compared to one way facilities along the route.	Cyclists would be accommodated at the two-way cycle facility which will be segregated and direct but two way cycle facilities might have more deterrence compared to one way facilities along the route.	The presence of shared path facilities results in cyclists needing to share the path with pedestrians. This results in cyclists progression being interrupted by pedestrians.	The lack of segregated cycle facilities results in cyclists needing to share the road with vehicles. This results in cyclists progression being interrupted by turning and stationary vehicles.
	Comfort	Provision of comfort for pedestrians and cyclists through assessment of width	Existing footpaths are wide enough to provide safety but the lack of cycle facilities and substandard pedestrian crossings might have an impact for some users.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines. The cycle track will be at the same finished level as the footpath.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	Footpaths would be provided according to DMURS guidelines and cyclists would be accommodate on shared path.	Footpaths would be provided according to DMURS guidelines and cyclists would be accommodate on road.
	Attractiveness	Attractiveness of the route	Regarding pedestrian usage, the route is attractive, however, as there are no cycle facilities and substandard junction crossings for pedestrians, this might hinder the uptake in this active travel option.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved shared path facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.
Social Impacts	Social inclusion for groups with deprived needs	Opportunities for social, community and recreational activity participation	The segment links to social, community and recreational activity, however, it does not provide suitable opportunities for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for some users.
	Health impacts	Impact on modal Shift/activity levels (i.e., Cars to Cyclists)	The existing arrangements does not provide sufficient levels of active travel provision to impact on modal shift.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	Improving cycle infrastructure within this segment has the potential to positively impact on the modal shift and enable more residents to cycle within the town.
	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities	Footpath is only provided on the both sides of the road but no cycle facilities. At many of the entrances there is no dedicated crossing point. Therefore, existing scenario is not accessible for all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The footpaths would be adequate to accommodate the levels of pedestrians along the segment, however, the shared path might not be suitable for less experienced/disabled users.	The footpaths would be adequate to accommodate the levels of pedestrians along the segment, however, the shared street might not be suitable for less experienced/disabled users.
	Gender Impacts	How the proposal may have gender specific impacts	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.
Land Use Impact	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI	The existing cross section doesn't align with NTA Cycle Connects which identifies the route as a "Urban Primary/Secondary" route, and also identified in the Pathfinder Programme, therefore, scores lower.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher, however cyclists will have to travel along with live traffic.
		Impact on green areas	There is a small section of green area present along the route. No changes proposed.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	This option would not require the removal of the green area.
Safety Impact	Safety Impact	Segregation between cyclists and vehicles	There is currently no segregation between cyclists and vehicles.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	In accordance with CDM and due to 13965 AADT this option would require a 20 or 30kph speed limit (CDM Table 2.1) and that the score applied is based on that.
		Segregation between cyclists and pedestrians	Cyclists travel on road and pedestrian travel on the footpath.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	No segregation between pedestrians and cyclists on the shared path.	Pedestrians and cyclists would be segregated in this option.
		Safety for all users regarding traffic volumes and speeds along route	Due to the existing volume (13965 AADT) of the traffic, the mixing on cycles and vehicles on road with create conflicts and also is not in compliance with CDM.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	There is a high volume of traffic (13965 PCU) along the segment, therefore, measures would have to be implemented to reduce vehicular speeds (compliant with CDM Table 2.1) to improve safety for all road users.

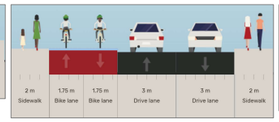
		Conflicts at junctions and side roads between vehicles and cyclists	As there are no segregation and appropriate signage to indicate motorists of the presence of cyclists, there is a potential for conflicts at junctions.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities. Drivers exiting side roads and accesses, on the cycle track side, will have to be mindful of two-way cyclists. Additional markings/signage may be required.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities. Drivers exiting side roads and accesses, on the cycle track side, will have to be mindful of two-way cyclists. Additional markings/signage may be required.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	Cyclists and vehicles sharing the road increase the vulnerability of cyclists. However, appropriate signage would be required to indicate the presence of cyclists on the road to improve safety.
	Traffic	Impact on traffic capacity due to the proposals	No impact on the traffic capacity.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	This option might impact traffic capacity due to traffic calming measures implemented.
Local Environmental Impact	Air Quality	Air Quality Impact	No change to current air quality.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may not encourage use by less confident cyclists resulting in limited modal shift from personal vehicles to cycling and therefore limiting the potential for increasing local air quality. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Noise and Vibratio	Potential Sensitive receptors including residential, commercial, education, healthcare properties	No change to current level of noise pollution.	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may not encourage use by less confident cyclists resulting in limited modal shift from personal vehicles to cycling and therefore limiting the potential for reducing local noise and vibration levels. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas	Unlikely to have an impact on soils and geology.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.
	Biodiversity	Impact on Biodiversity along scheme extents	Unlikely to have an impact on ecology.	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows	Unlikely to have an impact on water.	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options
	Landscape and Visual Quality	Landscape and visual assessment	Unlikely to have an impact on public spaces and visuals.	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA)	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification

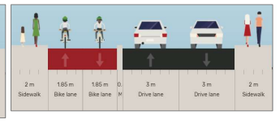
Segment B4: Athlone Furniture World to Elite Spa Gardens

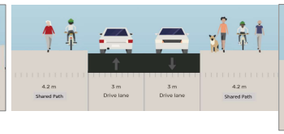



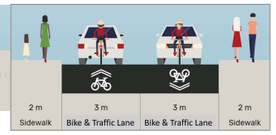








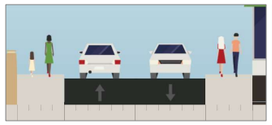
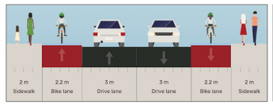
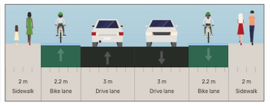
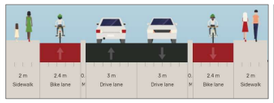
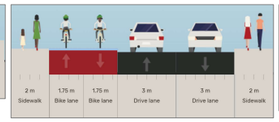
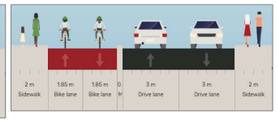
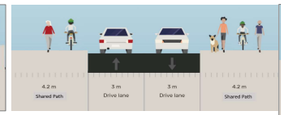
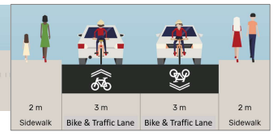




Criteria	Sub-Criteria	Indicator to be measured	Option 1 Do Nothing Footpath on both sides, no cycle facilities (Width Range from 9.8m to 12.1m)	Option 2 Standard One-way cycle track Desirable Minimum - 14.4m Absolute Minimum - 13.0m	Option 3 Stepped One-way cycle track Desirable Minimum - 14.4m Absolute Minimum - 13.0m	Option 4 Protected One-way Cycle Lane Desirable Minimum - 14.8m Absolute Minimum - 13.4m	Option 5 Standard Two-way cycle track Desirable Minimum - 13.5m Absolute Minimum - 11.9m	Option 6 Protected Two-way Cycle Lane Desirable Minimum - 13.7m Absolute Minimum - 12.1m	Option 7 Shared Active Travel Facility Desirable Minimum - 14.4m Absolute Minimum - 12.4m	Option 8 Cycling in Mixed Traffic Desirable Minimum - 10.0m Absolute Minimum - 9.6m
Transport User benefits and Other Economic Impacts	Cost and Programme Impacts	Land acquisition area	No land acquisition required.	This option would require minimum 0.9m2 of area per metre cross section of land acquisition, but at pinch point locations i.e. railway bridge, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option would require minimum 0.9m2 of area per metre cross section of land acquisition, but at pinch point locations i.e. railway bridge, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option would require minimum 1.3m2 of area per metre cross section of land acquisition, but at pinch point locations i.e. railway bridge, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option doesn't fit within the existing road boundary and land acquisition will be required, also at pinch point locations i.e. railway bridge, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option doesn't fit within the existing road boundary and land acquisition will be required, also at pinch point locations i.e. railway bridge, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option would require minimum 0.3m2 of area per metre cross section of land acquisition, but at pinch point locations i.e. railway bridge, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option fits within the existing road boundary and does not require land acquisition.
		Construction and maintenance	No construction costs associated with the option, however, there are some maintenance costs to retain option.	The costs associate with this option is higher than other options (€792.0/m).	The costs associate with this option is higher than other options (€842.0/m).	The costs associate with this option is higher than other options (€864.50/m).	The costs associate with this option is lower than other options (€742.50/m), but higher than do nothing option.	The costs associate with this option is lower than other options (€778.50/m), but higher than do nothing option.	The costs associate with this option is lower (€779.60/m) than other options including do nothing option.	The costs associate with this option is lower (€550.00/m) than other options including do nothing option.
		Programme Impacts	No impact on the programme as no construction is associated with this option.	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be slightly higher than other options,	The impact on the programme timeframe will be slightly higher than other options,	The impact on the programme timeframe will be slightly lower than other options, however will still hold a slight disadvantage over the do-nothing option	The impact on the programme timeframe will be slightly lower than other options, however will still hold a slight disadvantage over the do-nothing option
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact	No changes proposed to the existing road arrangements.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but no additional kerb will be required for cycle track also drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but no additional kerb will be required for cycle track also drainage along the route needs to be readjusted as per the new kerb line.
	Connectivity with public transport facilities	Connections to existing and proposed public transport	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.
Accessibility Impacts	Access to Key Services	Access to key services (retail, groceries, banks, educational, healthcare, recreational facilities and employment areas)	The existing cross section does not provide appropriate active travel infrastructure for users accessing these locations.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate community and recreational participation on along the segment, but two way cycle facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but two way cycle facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but shared path facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but mixed traffic facilities might not be as preferred as one way cycle facilities.
		Impacts on loading and parking bays	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.
	Coherence	Route consistency and continuity	Footpaths are provided along the both sides but there are no cycle facilities.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facilities for the both sides of the existing carriageway cycle movements along the route.	This option would continue to provide active travel facilities for the both sides of the existing carriageway cycle movements along the route.	This option would continue to only provide active travel facility on the both sides of the road, however the cyclists will have to travel along with pedestrians.	This option would continue to provide improved active travel facilities within the segment, however due to the limited available space cyclists will share the carriageway with vehicles.
	Directness	Directness along route and through junctions and maintenance of cyclists progression	Cyclists must share the road with vehicles, therefore, continuity is impeded by stationary and turning vehicles. Currently there are no appropriate crossing facilities and pedestrian progression is unsafe, random & unmaintained.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the two-way cycle facility which will be segregated and direct but two way cycle facilities might have more deterrence compared to one way facilities along the route.	Cyclists would be accommodated at the two-way cycle facility which will be segregated and direct but two way cycle facilities might have more deterrence compared to one way facilities along the route.	The presence of shared path facilities results in cyclists needing to share the path with pedestrians. This results in cyclists progression being interrupted by pedestrians.	The lack of segregated cycle facilities results in cyclists needing to share the road with vehicles. This results in cyclists progression being interrupted by turning and stationary vehicles.
	Comfort	Provision of comfort for pedestrians and cyclists through assessment of width	Existing footpaths are wide enough to provide safety but the lack of cycle facilities and substandard pedestrian crossings might have an impact for some users.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines. The cycle track will be at the same finished level as the footpath.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	Footpaths would be provided according to DMURS guidelines and cyclists would be accommodate on shared path.	Footpaths would be provided according to DMURS guidelines and cyclists would be accommodate on road.
	Attractiveness	Attractiveness of the route	Regarding pedestrian usage, the route is attractive, however, as there are no cycle facilities and substandard junction crossings for pedestrians, this might hinder the uptake in this active travel option.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved shared path facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.
Social Impacts	Social inclusion for groups with deprived needs	Opportunities for social, community and recreational activity participation	The segment links to social, community and recreational activity, however, it does not provide suitable opportunities for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for some users.
	Health impacts	Impact on modal Shift/activity levels (i.e., Cars to Cyclists)	The existing arrangements does not provide sufficient levels of active travel provision to impact on modal shift.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	Improving cycle infrastructure within this segment has the potential to positively impact on the modal shift and enable more residents to cycle within the town.
	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities	Footpath is only provided on the both sides of the road but no cycle facilities. At many of the entrances there is no dedicated crossing point. Therefore, existing scenario is not accessible for all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The footpaths would be adequate to accommodate the levels of pedestrians along the segment, however, the shared path might not be suitable for less experienced/disabled users.	The footpaths would be adequate to accommodate the levels of pedestrians along the segment, however, the shared street might not be suitable for less experienced/disabled users.
	Gender Impacts	How the proposal may have gender specific impacts	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.
Land Use Impact	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI	The existing cross section doesn't align with NTA Cycle Connects which identifies the route as a "Urban Primary/Secondary" route, and also identified in the Pathfinder Programme, therefore, scores lower.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher, however cyclists will have to travel along with live traffic
		Impact on green areas	There is no green area located along the segment.	There is no green area located along the segment.	There is no green area located along the segment.	There is no green area located along the segment.	There is no green area located along the segment.	There is no green area located along the segment.	There is no green area located along the segment.	There is no green area located along the segment.
Safety Impact	Safety Impact	Segregation between cyclists and vehicles	There is currently no segregation between cyclists and vehicles.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	In accordance with CDM and due to 13965 AADT this option would require a 20 or 30kph speed limit (CDM Table 2.1) and that the score applied is based on that.
		Segregation between cyclists and pedestrians	Cyclists travel on road and pedestrian travel on the footpath.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	No segregation between pedestrians and cyclists on the shared path.	Pedestrians and cyclists would be segregated in this option.
		Safety for all users regarding traffic volumes and speeds along route	Due to the existing volume (13965 AADT) of the traffic, the mixing on cycles and vehicles on road with create conflicts and also is not in compliance with CDM.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	There is a high volume of traffic (13965 PCU) along the segment, therefore, measures would have to be implemented to reduce vehicular speeds (compliant with CDM Table 2.1) to improve safety for all road users.

		Conflicts at junctions and side roads between vehicles and cyclists	As there are no segregation and appropriate signage to indicate motorists of the presence of cyclists, there is a potential for conflicts at junctions.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities. Drivers exiting side roads and accesses, on the cycle track side, will have to be mindful of two-way cyclists. Additional markings/signage may be required.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities. Drivers exiting side roads and accesses, on the cycle track side, will have to be mindful of two-way cyclists. Additional markings/signage may be required.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	Cyclists and vehicles sharing the road increase the vulnerability of cyclists. However, appropriate signage would be required to indicate the presence of cyclists on the road to improve safety.
	Traffic	Impact on traffic capacity due to the proposals	No impact on the traffic capacity.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	This option might impact traffic capacity due to traffic calming measures implemented.
Local Environmental Impact	Air Quality	Air Quality Impact	No change to current air quality.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may not encourage use by less confident cyclists resulting in limited modal shift from personal vehicles to cycling and therefore limiting the potential for increasing local air quality. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Noise and Vibratio	Potential Sensitive receptors including residential, commercial, education, healthcare properties	No change to current level of noise pollution.	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may not encourage use by less confident cyclists resulting in limited modal shift from personal vehicles to cycling and therefore limiting the potential for reducing local noise and vibration levels. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas	Unlikely to have an impact on soils and geology.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.
	Biodiversity	Impact on Biodiversity along scheme extents	Unlikely to have an impact on ecology.	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows	Unlikely to have an impact on water.	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options
	Landscape and Visual Quality	Landscape and visual assessment	Unlikely to have an impact on public spaces and visuals.	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA)	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification

Segment B5: Elite Spa Gardens to TUS Roundabout

m	Sub-Criteria	Indicator to be measured	Option 1 Do Nothing Footpath on both sides, no cycle facilities (Width Range from 9.8m to 14.4m)	Option 2 Standard One-way cycle track Desirable Minimum - 14.4m Absolute Minimum - 13.0m	Option 3 Stepped One-way cycle track Desirable Minimum - 14.4m Absolute Minimum - 13.0m	Option 4 Protected One-way Cycle Lane Desirable Minimum - 14.8m Absolute Minimum - 13.4m	Option 5 Standard Two-way cycle track Desirable Minimum - 13.5m Absolute Minimum - 11.9m	Option 6 Protected Two-way Cycle Lane Desirable Minimum - 13.7m Absolute Minimum - 12.1m	Option 7 Shared Active Travel Facility Desirable Minimum - 14.4m Absolute Minimum - 12.4m	Option 8 Cycling in Mixed Traffic Desirable Minimum - 10.0m Absolute Minimum - 9.6m
Transport User benefits and Other Economic Impacts	Cost and Programme Impacts	Land acquisition area	No land acquisition required.	This option would require minimum 0.9m2 of area per metre cross section of land acquisition, but at pinch point location, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option would require minimum 0.9m2 of area per metre cross section of land acquisition, but at pinch point location, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option would require minimum 1.3m2 of area per metre cross section of land acquisition, but at pinch point location, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option doesn't fit within the existing road boundary and will require land acquisition, also at pinch point location, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option doesn't fit within the existing road boundary and will require land acquisition, also at pinch point location, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option would require minimum 0.3m2 of area per metre cross section of land acquisition, but at pinch point location, shared path on either one side for bidirectional traffic can be considered as a preferred option.	This option fits within the existing road boundary and does not require land acquisition.
		Construction and maintenance	No construction costs associated with the option, however, there are some maintenance costs to retain option.	The costs associate with this option is higher than other options (€792.0/m).	The costs associate with this option is higher than other options (€842.0/m).	The costs associate with this option is higher than other options (€864.50/m).	The costs associate with this option is lower than other options (€742.50/m), but higher than do nothing option.	The costs associate with this option is lower than other options (€778.50/m), but higher than do nothing option.	The costs associate with this option is lower (€779.60/m) than other options including do nothing option.	The costs associate with this option is lower (€550.00/m) than other options including do nothing option.
		Programme Impacts	No impact on the programme as no construction is associated with this option.	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be slightly higher than other options,	The impact on the programme timeframe will be slightly higher than other options,	The impact on the programme timeframe will be slightly lower than other options, however will still hold a slight disadvantage over the do-nothing option	The impact on the programme timeframe will be slightly lower than other options, however will still hold a slight disadvantage over the do-nothing option
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact	No changes proposed to the existing road arrangements.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but no additional kerb will be required for cycle track also drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but no additional kerb will be required for cycle track also drainage along the route needs to be readjusted as per the new kerb line.
	Connectivity with public transport facilities	Connections to existing and proposed public transport	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.
Accessibility Impacts	Access to Key Services	Access to key services (retail, groceries, banks, educational, healthcare, recreational facilities and employment areas)	The existing cross section does not provide appropriate active travel infrastructure for users accessing these locations.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate community and recreational participation on along the segment, but two way cycle facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but two way cycle facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but shared path facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but mixed traffic facilities might not be as preferred as one way cycle facilities.
		Impacts on loading and parking bays	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.	There are no on-street car parking present on the location.
	Coherence	Route consistency and continuity	Footpaths are provided along the both sides but there are no cycle facilities.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facilities for the both sides of the existing carriageway cycle movements along the route.	This option would continue to provide active travel facilities for the both sides of the existing carriageway cycle movements along the route.	This option would continue to only provide active travel facility on the both sides of the road, however the cyclists will have to travel along with pedestrians.	This option would continue to provide improved active travel facilities within the segment, however due to the limited available space cyclists will share the carriageway with vehicles.
	Directness	Directness along route and through junctions and maintenance of cyclists progression	Cyclists must share the road with vehicles, therefore, continuity is impeded by stationary and turning vehicles. Currently there are no appropriate crossing facilities and pedestrian progression is unsafe, random & unmaintained.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the two-way cycle facility which will be segregated and direct but two way cycle facilities might have more deterrence compared to one way facilities along the route.	Cyclists would be accommodated at the two-way cycle facility which will be segregated and direct but two way cycle facilities might have more deterrence compared to one way facilities along the route.	The presence of shared path facilities results in cyclists needing to share the path with pedestrians. This results in cyclists progression being interrupted by pedestrians.	The lack of segregated cycle facilities results in cyclists needing to share the road with vehicles. This results in cyclists progression being interrupted by turning and stationary vehicles.
	Comfort	Provision of comfort for pedestrians and cyclists through assessment of width	Existing footpaths are wide enough to provide safety but the lack of cycle facilities and substandard pedestrian crossings might have an impact for some users.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines. The cycle track will be at the same finished level as the footpath.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	Footpaths would be provided according to DMURS guidelines and cyclists would be accommodate on shared path.	Footpaths would be provided according to DMURS guidelines and cyclists would be accommodate on road.
	Attractiveness	Attractiveness of the route	Regarding pedestrian usage, the route is attractive, however, as there are no cycle facilities and substandard junction crossings for pedestrians, this might hinder the uptake in this active travel option.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved shared path facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.
Social Impacts	Social inclusion for groups with deprived needs	Opportunities for social, community and recreational activity participation	The segment links to social, community and recreational activity, however, it does not provide suitable opportunities for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for some users.
	Health impacts	Impact on modal Shift/activity levels (i.e., Cars to Cyclists)	The existing arrangements does not provide sufficient levels of active travel provision to impact on modal shift.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	Improving cycle infrastructure within this segment has the potential to positively impact on the modal shift and enable more residents to cycle within the town.
	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities	Footpath is only provided on the both sides of the road but no cycle facilities. At many of the entrances there is no dedicated crossing point. Therefore, existing scenario is not accessible for all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The footpaths would be adequate to accommodate the levels of pedestrians along the segment, however, the shared path might not be suitable for less experienced/disabled users.	The footpaths would be adequate to accommodate the levels of pedestrians along the segment, however, the shared street might not be suitable for less experienced/disabled users.
	Gender Impacts	How the proposal may have gender specific impacts	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.
Land Use Impact	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI	The existing cross section doesn't align with NTA Cycle Connects which identifies the route as a "Urban Primary/Secondary" route, and also identified in the Pathfinder Programme, therefore, scores lower.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher, however cyclists will have to travel along with live traffic.
		Impact on green areas	There is a small section of green area present along the route. No changes proposed.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	This option would not require the removal of the green area.
Safety Impact	Safety Impact	Segregation between cyclists and vehicles	There is currently no segregation between cyclists and vehicles.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	In accordance with CDM and due to 13965 AADT this option would require a 20 or 30kph speed limit (CDM Table 2.1) and that the score applied is based on that.
		Segregation between cyclists and pedestrians	Cyclists travel on road and pedestrian travel on the footpath.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	No segregation between pedestrians and cyclists on the shared path.	Pedestrians and cyclists would be segregated in this option.
		Safety for all users regarding traffic volumes and speeds along route	Due to the existing volume (13965 AADT) of the traffic, the mixing on cycles and vehicles on road with create conflicts and also is not in compliance with CDM.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	There is a high volume of traffic (13965 PCU) along the segment, therefore, measures would have to be implemented to reduce vehicular speeds (compliant with CDM Table 2.1) to improve safety for all road users.

		Conflicts at junctions and side roads between vehicles and cyclists	As there are no segregation and appropriate signage to indicate motorists of the presence of cyclists, there is a potential for conflicts at junctions.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities. Drivers exiting side roads and accesses, on the cycle track side, will have to be mindful of two-way cyclists. Additional markings/signage may be required.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities. Drivers exiting side roads and accesses, on the cycle track side, will have to be mindful of two-way cyclists. Additional markings/signage may be required.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	Cyclists and vehicles sharing the road increase the vulnerability of cyclists. However, appropriate signage would be required to indicate the presence of cyclists on the road to improve safety.
	Traffic	Impact on traffic capacity due to the proposals	No impact on the traffic capacity.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	This option might impact traffic capacity due to traffic calming measures implemented.
Local Environmental Impact	Air Quality	Air Quality Impact	No change to current air quality.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may not encourage use by less confident cyclists resulting in limited modal shift from personal vehicles to cycling and therefore limiting the potential for increasing local air quality. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Noise and Vibratio	Potential Sensitive receptors including residential, commercial, education, healthcare properties	No change to current level of noise pollution.	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may not encourage use by less confident cyclists resulting in limited modal shift from personal vehicles to cycling and therefore limiting the potential for reducing local noise and vibration levels. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas	Unlikely to have an impact on soils and geology.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.
	Biodiversity	Impact on Biodiversity along scheme extents	Unlikely to have an impact on ecology.	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows	Unlikely to have an impact on water.	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options
	Landscape and Visual Quality	Landscape and visual assessment	Unlikely to have an impact on public spaces and visuals.	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA)	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification

Segment B6: TUS Roundabout to Creggan Roundabout

Criteria	Sub-Criteria	Indicator to be measured	Option 1 Do Nothing Footpath on both sides, no cycle facilities (Width Range from 13.5m to 16.0m)	Option 2 Standard One-way cycle track Desirable Minimum - 14.4m Absolute Minimum - 13.0m	Option 3 Stepped One-way cycle track Desirable Minimum - 14.4m Absolute Minimum - 13.0m	Option 4 Protected One-way Cycle Lane Desirable Minimum - 14.8m Absolute Minimum - 13.4m	Option 5 Standard Two-way cycle track Desirable Minimum - 13.5m Absolute Minimum - 11.9m	Option 6 Protected Two-way Cycle Lane Desirable Minimum - 13.7m Absolute Minimum - 12.1m	Option 7 Shared Active Travel Facility Desirable Minimum - 14.4m Absolute Minimum - 12.4m	Option 8 Cycling in Mixed Traffic Desirable Minimum - 10.0m Absolute Minimum - 9.6m
Transport User benefits and Other Economic Impacts	Cost and Programme Impacts	Land acquisition area	No land acquisition required.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.	This option fits within the existing road boundary and does not require land acquisition.
		Construction and maintenance	No construction costs associated with the option, however, there are some maintenance costs to retain option.	The costs associate with this option is higher than other options (€792.0/m).	The costs associate with this option is higher than other options (€842.0/m).	The costs associate with this option is higher than other options (€864.50/m).	The costs associate with this option is lower than other options (€742.50/m), but higher than do nothing option.	The costs associate with this option is lower than other options (€778.50/m), but higher than do nothing option.	The costs associate with this option is lower (€779.60/m) than other options including do nothing option.	The costs associate with this option is lower (€550.00/m) than other options including do nothing option.
		Programme Impacts	No impact on the programme as no construction is associated with this option.	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be higher than other options,	The impact on the programme timeframe will be slightly higher than other options,	The impact on the programme timeframe will be slightly higher than other options,	The impact on the programme timeframe will be slightly lower than other options, however will still hold a slight disadvantage over the do-nothing option	The impact on the programme timeframe will be slightly lower than other options, however will still hold a slight disadvantage over the do-nothing option
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact	No changes proposed to the existing road arrangements.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but additional land area will be required. Drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods as it fits within the road boundary but drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but no additional kerb will be required for cycle track also drainage along the route needs to be readjusted as per the new kerb line.	This option cannot be constructed using Rapid Build methods but no additional kerb will be required for cycle track also drainage along the route needs to be readjusted as per the new kerb line.
	Connectivity with public transport facilities	Connections to existing and proposed public transport	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.	There are no changes in existing bus routes as well as no known proposals for a bus route along the segment.
Accessibility Impacts	Access to Key Services	Access to key services (retail, groceries, banks, educational, healthcare, recreational facilities and employment areas)	The existing cross section does not provide appropriate active travel infrastructure for users accessing these locations.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate the community, improving cycle infrastructure and may increase recreational cycling along this segment.	Improvements to facilities will facilitate community and recreational participation on along the segment, but two way cycle facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but two way cycle facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but shared path facilities might not be as preferred as one way cycle facilities.	Improvements to facilities will facilitate community and recreational participation on along the segment, but mixed traffic facilities might not be as preferred as one way cycle facilities.
		Impacts on loading and parking bays	No loss occurred to the existing parking bays.	This option will have moderate impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	This option will have moderate impact on the parking bays location as some of the parking bays might need to be removed to compensate the active travel path along the route.	No loss occurred to the existing set down parking bays.
	Coherence	Route consistency and continuity	Footpaths are provided along the both sides but there are no cycle facilities.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facility for the both sides of traffic.	This option would continue to provide active travel facilities for the both sides of the existing carriageway cycle movements along the route.	This option would continue to provide active travel facilities for the both sides of the existing carriageway cycle movements along the route.	This option would continue to only provide active travel facility on the both sides of the road, however the cyclists will have to travel along with pedestrians.	This option would continue to provide improved active travel facilities within the segment, however due to the limited available space cyclists will share the carriageway with vehicles.
	Directness	Directness along route and through junctions and maintenance of cyclists progression	Cyclists must share the road with vehicles, therefore, continuity is impeded by stationary and turning vehicles. Currently there are no appropriate crossing facilities and pedestrian progression is unsafe, random & unmaintained.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the one-way cycle facility which will be segregated, direct and will have less deterrence along the route.	Cyclists would be accommodated at the two-way cycle facility which will be segregated and direct but two way cycle facilities might have more deterrence compared to one way facilities along the route.	Cyclists would be accommodated at the two-way cycle facility which will be segregated and direct but two way cycle facilities might have more deterrence compared to one way facilities along the route.	The presence of shared path facilities results in cyclists needing to share the path with pedestrians. This results in cyclists progression being interrupted by pedestrians.	The lack of segregated cycle facilities results in cyclists needing to share the road with vehicles. This results in cyclists progression being interrupted by turning and stationary vehicles.
	Comfort	Provision of comfort for pedestrians and cyclists through assessment of width	Existing footpaths are wide enough to provide safety but the lack of cycle facilities and substandard pedestrian crossings might have an impact for some users.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines. The cycle track will be at the same finished level as the footpath.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	The footpath would be designed according to DMURS and the cycle track according to CDM following the minimum width guidelines.	Footpaths would be provided according to DMURS guidelines and cyclists would be accommodate on shared path.	Footpaths would be provided according to DMURS guidelines and cyclists would be accommodate on road.
	Attractiveness	Attractiveness of the route	Regarding pedestrian usage, the route is attractive, however, as there are no cycle facilities and substandard junction crossings for pedestrians, this might hinder the uptake in this active travel option.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved shared path facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.	The improved facility would increase attractiveness along the segment, especially as it would enhance connectivity with the social activities.
Social Impacts	Social inclusion for groups with deprived needs	Opportunities for social, community and recreational activity participation	The segment links to social, community and recreational activity, however, it does not provide suitable opportunities for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for all users.	Improvements to facilities will facilitate community and recreational participation along the road for some users.
	Health impacts	Impact on modal Shift/activity levels (i.e., Cars to Cyclists)	The existing arrangements does not provide sufficient levels of active travel provision to impact on modal shift.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	The improved facility has the potential to impact on the modal shift in the area, as it would improve connectivity to a key service.	Improving cycle infrastructure within this segment has the potential to positively impact on the modal shift and enable more residents to cycle within the town.
	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities	Footpath is only provided on the both sides of the road but no cycle facilities. At many of the entrances there is no dedicated crossing point. Therefore, existing scenario is not accessible for all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The cycle track and footpaths would be accessible to all users.	The footpaths would be adequate to accommodate the levels of pedestrians along the segment, however, the shared path might not be suitable for less experienced/disabled users.	The footpaths would be adequate to accommodate the levels of pedestrians along the segment, however, the shared street might not be suitable for less experienced/disabled users.
	Gender Impacts	How the proposal may have gender specific impacts	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.	No gender specific impacts along this segment.
Land Use Impact	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI	The existing cross section doesn't align with NTA Cycle Connects which identifies the route as a "Urban Primary/Secondary" route, and also identified in the Pathfinder Programme, therefore, scores lower.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher.	The proposed cross section is acceptable according to the town development plan. Regarding NIFTI, any improvement to active travel facilities in the Modal Hierarchy will score higher, however cyclists will have to travel along with live traffic.
		Impact on green areas	There is a small section of green area present along the route. No changes proposed.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	There is a small section of green area present that will be impacted/reduced while implementing this option.	This option would not require the removal of the green area.
Safety Impact	Safety Impact	Segregation between cyclists and vehicles	There is currently no segregation between cyclists and vehicles.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	Cyclists would be segregated from vehicular traffic.	In accordance with CDM and due to 13965 AADT this option would require a 20 or 30kph speed limit (CDM Table 2.1) and that the score applied is based on that.
		Segregation between cyclists and pedestrians	Cyclists travel on road and pedestrian travel on the footpath.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	Pedestrians and cyclists would be segregated in this option.	No segregation between pedestrians and cyclists on the shared path.	Pedestrians and cyclists would be segregated in this option.
		Safety for all users regarding traffic volumes and speeds along route	Due to the existing volume (13965 AADT) of the traffic, the mixing on cycles and vehicles on road with create conflicts and also is not in compliance with CDM.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	Based on the traffic volumes of the segment, this option is appropriate.	There is a high volume of traffic (13965 PCU) along the segment, therefore, measures would have to be implemented to reduce vehicular speeds (compliant with CDM Table 2.1) to improve safety for all road users.

		Conflicts at junctions and side roads between vehicles and cyclists	As there are no segregation and appropriate signage to indicate motorists of the presence of cyclists, there is a potential for conflicts at junctions.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities. Drivers exiting side roads and accesses, on the cycle track side, will have to be mindful of two-way cyclists. Additional markings/signage may be required.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities. Drivers exiting side roads and accesses, on the cycle track side, will have to be mindful of two-way cyclists. Additional markings/signage may be required.	As cyclists would be segregated from vehicular traffic, it would reduce conflict opportunities.	Cyclists and vehicles sharing the road increase the vulnerability of cyclists. However, appropriate signage would be required to indicate the presence of cyclists on the road to improve safety.
	Traffic	Impact on traffic capacity due to the proposals	No impact on the traffic capacity.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	No impact on traffic capacity will be expected with the implementation of this option other than slower speeds as a result of a narrower carriageway and tighter junctions.	This option might impact traffic capacity due to traffic calming measures implemented.
Local Environmental Impact	Air Quality	Air Quality Impact	No change to current air quality.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may not encourage use by less confident cyclists resulting in limited modal shift from personal vehicles to cycling and therefore limiting the potential for increasing local air quality. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Noise and Vibratio	Potential Sensitive receptors including residential, commercial, education, healthcare properties	No change to current level of noise pollution.	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	All options (except do nothing option) option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may not encourage use by less confident cyclists resulting in limited modal shift from personal vehicles to cycling and therefore limiting the potential for reducing local noise and vibration levels. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas	Unlikely to have an impact on soils and geology.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.
	Biodiversity	Impact on Biodiversity along scheme extents	Unlikely to have an impact on ecology.	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows	Unlikely to have an impact on water.	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options
	Landscape and Visual Quality	Landscape and visual assessment	Unlikely to have an impact on public spaces and visuals.	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA)	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification

NOTE :- Refer to the below table for the indicator score column which includes a score ranging from 2 (Significant Adantages) to -2 (Significant Disadantages).

Colour Coding	Rank Description	Cumulative indicator score (number)
	Significant advantages to other options	**2**
	Some advantages to other options	**1**
	Neutral compared to other options	**0**
	Some disadvantages to other options	**-1**
	Significant disadvantages to other options	**-2**

C.2 Route B Junctions

Junction B4: Anker Bower Roundabout

Criteria	Sub-Criteria	Indicator to be measured	Option 1 Do Nothing 3-Arm Roundabout	Option 2 Existing Roundabout with Two-Way Cycle Track on Northern Side (Rapid Build)	Option 3 TL703 Segregated Roundabout w/ Shared Active Travel Facilities (Traditional Build)	Option 4 TL702 Protected Roundabout without Cycle Priority (Traditional Build)	Option 5 TL401 Standard Side Road Crossing	Option 6 Replace Roundabout w/ TL505 Protected Signalised Junction
Transport User benefits and Other Economic Impacts	Cost impacts	Land acquisition area	No land acquisition required.	No land acquisition required.	No land acquisition required.	No land acquisition required.	No land acquisition required.	No land acquisition required.
		Construction and maintenance	No construction costs associated, however maintenance costs are retained.	This option would have moderate costs compared to other option. Construction would involve raised crossings and two way cycle track on northern side, widening of footpaths and road marking installations based off of CDM standards.	This option would have a higher cost due to the remodelling of the junction based off of CDM standards.	This option would have a higher cost due to the remodelling of the junction to a priority junction based off of CDM standards.	This option would have a higher cost due to the remodelling of the junction to a signalised junction based off of CDM standards.	This option would have a higher cost due to the remodelling of the junction to a signalised junction based off of CDM standards.
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact	No changes proposed.	Rapid build methods would be utilized for this option hence would be implemented quicker that traditional builds. No impact to existing draining is expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.
Accessibility Impacts	Coherence and Directness	Consistency, continuity and directness along the route and through junctions and the maintenance of cyclists' progression	Complete lack of cycle facilities causing indirectness and lack of continuity through the junction for cyclists.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease. However, proposed shared area between pedestrians and cyclists may cause less continuity and directness.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease.
	Comfort and Attractiveness	Provision of comfort for pedestrians and cyclists through assessment of width and its attractiveness	Complete lack of cycle facilities and narrow footpaths causing lack of comfort for both cyclists and pedestrians.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, providing increased comfort for all parties.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, crossing points to be provided on all arms. Shared area may be perceived as slightly less comfortable for pedestrians and cyclists.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, providing increased comfort for all parties. Crossing points to be provided on all arms.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, providing increased comfort for all parties. Crossing points to be provided on all arms.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, providing increased comfort for all parties. Crossing points to be provided on all arms.
Social Impacts	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities	Lack of crossing facilities as well as the lack of general cycling infrastructure makes this a less viable option for inexperienced users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.
	Gender Impacts	How the proposal may have gender specific impacts	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.
Land Use Impact	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI	The existing sub-standard junction layout does not allign with the Pathfinder Programme and the NTA CycleConnects proposals which identifies this route as an Urban Primary/Secondary Route. Although maintaining current layout with no design interventions is favourable to NIFTI, the existing active travel facilities are sub-standard which does not maintain the status quo, hence scoring lower overall.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 due to the requirements for full improvement.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 due to the requirements for full improvement.
		Impact on green areas	No green areas affected.	No green areas affected.	No green areas affected.	No green areas affected.	No green areas affected.	No green areas affected.
Safety Impact	Safety Impact	Segregation between cyclists and vehicles	There is no physical segregation between cyclists and vehicles.	Cyclists and vehicles would be physically segregated.	Cyclists and vehicles would be physically segregated.	Cyclists and vehicles would be physically segregated.	Cyclists and vehicles would be physically segregated.	Cyclists and vehicles would be physically segregated.
		Segregation between cyclists and pedestrians	Cyclists and pedestrians are physically segregated.	Cyclists and pedestrians are physically segregated.	Cyclists and pedestrians would be sharing the area when going through the junction which may cause some conflict.	Cyclists and pedestrians are physically segregated.	Cyclists and pedestrians are physically segregated.	Cyclists and pedestrians are physically segregated.
		Safety for all users regarding traffic volumes and speeds along route	Existing junction layout encourages higher travel speed due to larger radii and wide carriageways, increasing risk of collisions. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.
	Traffic	Impact on traffic capacity due to the proposals	No changes proposed, traffic capacity remains unaffected.	Traffic capacity is reduced due to the reduction of entry width and turning lanes at two roundabout arms.	Traffic capacity is reduced due to the reduction of entry width and turning lanes at two roundabout arms.	East-west traffic are allowed to travel freely through the junction, however, vehicles travelling north-south would have to wait for a gap in traffic to proceed, which may cause queues and delays.	Some traffic queues are expected due to proposed traffic signals.	Some traffic queues are expected due to proposed traffic signals.
Local Environmental Impact	Air Quality	Air Quality Impact	No change to current air quality.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Noise and Vibration	Potential Sensitive receptors including residential, commercial, education, healthcare properties	No change to current level of noise pollution.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas	Unlikely to have an impact on soils and geology.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.
	Biodiversity	Impact on Biodiversity along scheme extents	Unlikely to have an impact on ecology.	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows	Unlikely to have an impact on water.	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options
	Landscape and Visual Quality	Landscape and visual assessment	Unlikely to have an impact on public spaces and visuals.	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA)	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification

Junction B5: TUS Roundabout

Criteria	Sub-Criteria	Indicator to be measured	Option 1 Do Nothing 4-Arm Roundabout	Option 2 Segregated Roundabout w/ Shared Active Travel Facilities (Rapid Build)	Option 3 TL703 Segregated Roundabout w/ Shared Active Travel Facilities (Traditional Build)	Option 4 TL702 Protected Roundabout without Cycle Priority (Traditional Build)	Option 5 Replace Roundabout w/ TL505 Protected Signalised Junction
Transport User benefits and Other Economic Impacts	Cost impacts	Land acquisition area	No land acquisition required.	No land acquisition required.	No land acquisition required.	Land acquisition required.	No land acquisition required.
		Construction and maintenance	No construction costs associated, however maintenance costs are retained.	This option would have moderate costs as it is a rapid build option. Construction would involve raised crossings on all arms, widening of footpaths and road marking installations based off of CDM standards.	This option would have a higher cost due to the remodelling of the junction based off of CDM standards.	This option would have a higher cost due to the remodelling of the junction based off of CDM standards.	This option would have a higher cost due to the remodelling of the junction to a signalised junction based off of CDM standards. Additional costs are expected for traffic signal installations.
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact	No changes proposed.	Rapid build methods would be utilized for this option hence would be implemented quicker that traditional builds. No impact to existing draining is expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.
Accessibility Impacts	Coherence and Directness	Consistency, continuity and directness along the route and through junctions and the maintenance of cyclists' progression	Lack of cycle facilities causing indirectness and lack of continuity through the junction for cyclists.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease. However, proposed shared area between pedestrians and cyclists may cause less continuity and directness.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease. However, proposed shared area between pedestrians and cyclists may cause less continuity and directness.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease.
	Comfort and Attractiveness	Provision of comfort for pedestrians and cyclists through assessment of width and its attractiveness	Lack of cycle facilities and narrow footpaths causing lack of comfort for both cyclists and pedestrians.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, crossing points to be provided on all arms. Shared area may be perceived as slightly less comfortable for pedestrians and cyclists.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, crossing points to be provided on all arms. Shared area may be perceived as slightly less comfortable for pedestrians and cyclists.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, crossing points to be provided on all arms.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, providing increased comfort for all parties. Crossing points to be provided on all arms.
Social Impacts	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities	Lack of crossing facilities as well as the lack of general cycling infrastructure makes this a less viable option for inexperienced users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.
	Gender Impacts	How the proposal may have gender specific impacts	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.
Land Use Impact	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI	The existing sub-standard junction layout does not allign with the Pathfinder Programme and the NTA CycleConnects proposals which identifies this route as an Urban Primary/Secondary Route. Although maintaining current layout with no design interventions is favourable to NIFTI, the existing active travel facilities are sub-standard which does not maintain the status quo, hence scoring lower overall.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. This option is scored higher in relations to NIFTI as rapid build options optimizes existing infrastructure rather than providing full improvements.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.
		Impact on green areas	Green areas unaffected.	Green areas unaffected.	Green areas unaffected.	Green areas unaffected.	Green areas unaffected.
Safety Impact	Safety Impact	Segregation between cyclists and vehicles	There is no physical segregation between cyclists and vehicles.	Cyclists and vehicles would be separated through individual lanes with bolt-down kerbs/bollards, however no physical barrier would be implemented.	Cyclists and vehicles would be physically segregated.	Cyclists and vehicles would be physically segregated.	Cyclists and vehicles would be physically segregated.
		Segregation between cyclists and pedestrians	Cyclists and pedestrians are physically segregated.	Cyclists and pedestrians would be sharing the area when going through the junction which may cause some conflict.	Cyclists and pedestrians would be sharing the area when going through the junction which may cause some conflict.	Cyclists and pedestrians are physically segregated.	Cyclists and pedestrians are physically segregated.
		Safety for all users regarding traffic volumes and speeds along route	Existing junction layout encourages higher travel speed due to larger radii and wide carriageways, increasing risk of collisions. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Safety of users may still be compromised due to lack of physical segregation against high speed traffic. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.
	Traffic	Impact on traffic capacity due to the proposals	No changes proposed, traffic capacity remains unaffected.	Traffic capacity is reduced due to the reduction of entry width at all arms and turning lanes at the west roundabout arm.	Traffic capacity is reduced due to the reduction of entry width and turning lanes at the west roundabout arm.	Traffic capacity is reduced due to the reduction of entry width and turning lanes at the west roundabout arm.	Traffic queues are expected due to proposed traffic signals.
Local Environmental Impact	Air Quality	Air Quality Impact	No change to current air quality.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Noise and Vibration	Potential Sensitive receptors including residential, commercial, education, healthcare properties	No change to current level of noise pollution.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas	Unlikely to have an impact on soils and geology.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.
	Biodiversity	Impact on Biodiversity along scheme extents	Unlikely to have an impact on ecology.	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows	Unlikely to have an impact on water.	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options
	Landscape and Visual Quality	Landscape and visual assessment	Unlikely to have an impact on public spaces and visuals.	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA)	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification

Junction B6: R446-R916 Roundabout

Criteria	Sub-Criteria	Indicator to be measured	Option 1 Do Nothing 4-Arm Roundabout	Option 2 Segregated Roundabout w/ Shared Active Travel Facilities (Rapid Build)	Option 3 TL703 Segregated Roundabout w/ Shared Active Travel Facilities (Traditional Build)	Option 4 TL702 Protected Roundabout without Cycle Priority (Traditional Build)	Option 5 Replace Roundabout w/ TL505 Protected Signalised Junction
Transport User benefits and Other Economic Impacts	Cost impacts	Land acquisition area	No land acquisition required.	No land acquisition required.	No land acquisition required.	Land acquisition required.	No land acquisition required.
		Construction and maintenance	No construction costs associated, however maintenance costs are retained.	This option would have moderate costs as it is a rapid build option. Construction would involve raised crossings on all arms, widening of footpaths and road marking installations based off of CDM standards.	This option would have a higher cost due to the remodelling of the junction based off of CDM standards.	This option would have a higher cost due to the full remodelling of the junction based off of CDM standards.	This option would have a higher cost due to the full remodelling of the junction to a signalised junction based off of CDM standards. Additional costs are expected for traffic signal installations.
	Construction impacts	Rapid build achievability and construction impacts, including construction requirements and drainage impact	No changes proposed.	Rapid build methods would be utilized for this option hence would be implemented quicker that traditional builds. No impact to existing draining is expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.	Rapid build methods not achievable, construction time and drainage impacts are expected.
Accessibility Impacts	Coherence and Directness	Consistency, continuity and directness along the route and through junctions and the maintenance of cyclists' progression	Lack of cycle facilities causing indirectness and lack of continuity through the junction for cyclists.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease. However, proposed shared area between pedestrians and cyclists may cause less continuity and directness.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease. However, proposed shared area between pedestrians and cyclists may cause less continuity and directness.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease.	Provision of standard cycle facilities with proper connection between links allow cyclists to progress through the junction with ease.
	Comfort and Attractiveness	Provision of comfort for pedestrians and cyclists through assessment of width and its attractiveness	Lack of cycle facilities and narrow footpaths causing lack of comfort for both cyclists and pedestrians.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, crossing points to be provided on all arms. Shared area may be perceived as slightly less comfortable for pedestrians and cyclists.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, crossing points to be provided on all arms. Shared area may be perceived as slightly less comfortable for pedestrians and cyclists.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, crossing points to be provided on all arms.	Standard footpath/cycle tracks would be designed as per DMURS/CDM following the minimum width guidelines, providing increased comfort for all parties. Crossing points to be provided on all arms.
Social Impacts	Accessibility for users with different mobility needs	Qualitative assessment of accessibility of the options to serve users of all ages and abilities	Lack of crossing facilities as well as the lack of general cycling infrastructure makes this a less viable option for inexperienced users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.	Provision of standard cycling facilities and improved pedestrian facilities allow improved accessibility for all parties including vulnerable users.
	Gender Impacts	How the proposal may have gender specific impacts	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.	No specific gender impacts expected.
Land Use Impact	Integration with town environs	How the proposal integrates with the Land use, the objectives from development plan and NIFTI	The existing sub-standard junction layout does not allign with the Pathfinder Programme and the NTA CycleConnects proposals which identifies this route as an Urban Primary/Secondary Route. Although maintaining current layout with no design interventions is favourable to NIFTI, the existing active travel facilities are sub-standard which does not maintain the status quo, hence scoring lower overall.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. This option is scored higher in relations to NIFTI as rapid build options optimizes existing infrastructure rather than providing full improvements.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.	The proposed layout provides improved active travel facilities which alligns with the Pathfinder Programme, NTA CyclyConnects proposals, and the Modal Hierarchy of NIFTI. Scored lower compared to Option 2 and 4 due to the requirements for full improvement.
		Impact on green areas	Green areas unaffected.	Green areas unaffected.	Green areas unaffected.	Green areas unaffected.	Green areas unaffected.
Safety Impact	Safety Impact	Segregation between cyclists and vehicles	There is no physical segregation between cyclists and vehicles.	Cyclists and vehicles would be separated through individual lanes with bolt-down kerbs/bollards, however no physical barrier would be implemented.	Cyclists and vehicles would be physically segregated.	Cyclists and vehicles would be physically segregated.	Cyclists and vehicles would be physically segregated.
		Segregation between cyclists and pedestrians	Cyclists and pedestrians are physically segregated.	Cyclists and pedestrians would be sharing the area when going through the junction which may cause some conflict.	Cyclists and pedestrians would be sharing the area when going through the junction which may cause some conflict.	Cyclists and pedestrians are physically segregated.	Cyclists and pedestrians are physically segregated.
		Safety for all users regarding traffic volumes and speeds along route	Existing junction layout encourages higher travel speed due to larger radii and wide carriageways, increasing risk of collisions. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Safety of users may still be compromised due to lack of physical segregation against high speed traffic. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.	Proposed junction includes tightened radii and decreased carriageway widths to discourage high travel speeds. Traffic volumes remain unchanged.
	Traffic	Impact on traffic capacity due to the proposals	No changes proposed, traffic capacity remains unaffected.	Traffic capacity is reduced due to the reduction of entry width at all roundabout arms.	Traffic capacity is reduced due to the reduction of entry width at all roundabout arms.	Traffic capacity is reduced due to the reduction of entry width at all roundabout arms.	Traffic queues are expected due to proposed traffic signals.
Local Environmental Impact	Air Quality	Air Quality Impact	No change to current air quality.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local air quality during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Noise and Vibration	Potential Sensitive receptors including residential, commercial, education, healthcare properties	No change to current level of noise pollution.	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented	This option may encourage more cycling / walking and less use of personal vehicles and therefore result in better local noise and vibration levels during operation. Construction impacts will be short term and not significant as mitigation measures will be implemented
	Soils and geology	Bedrock and overburden. Alluvium Soils, Karst Features, Landslide susceptibility, Contaminated lands, Geological heritage areas	Unlikely to have an impact on soils and geology.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.	There are no karst features, geological heritage areas or identified landslide issues within the vicinity.
	Biodiversity	Impact on Biodiversity along scheme extents	Unlikely to have an impact on ecology.	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance	This option will not have an impact on any ecological features of importance. Land acquisition area has no features of ecological significance
	Water Resources	Groundwater Quality (Public and Private Wells, GWDTEs) Groundwater resources / Levels (vulnerable aquifers) Surface water quality and flows	Unlikely to have an impact on water.	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options	There are no surface water features, wells / springs or drinking water protection areas within the vicinity of this option. Bedrock aquifers beneath all options are identified as locally important which are moderately productive only in local zones. Groundwater within vicinity of all options is identified as shallow which is similar for all options
	Landscape and Visual Quality	Landscape and visual assessment	Unlikely to have an impact on public spaces and visuals.	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design	At this stage of the desktop analysis and according to available relevant resources it is considered unlikely that any option will have an impact. A landscape architect will be required to undertake surveys and input into the design
	Cultural and Heritage	Impact at national monuments, NIAH features and Architecture Conservation Areas (ACA)	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification	At this stage of the desktop analysis and according to available relevant resources there are no major architectural / archaeological features, zones of notification

Appendix D. Emerging Preferred Option Drawings

CYCLING IN MIXED TRAFFIC TYPICAL CROSS SECTION SEGMENT B.1

Scale at A1 1:125
Scale at A3 1:250

PROTECTED 2-WAY CYCLELANE TYPICAL CROSS SECTION SEGMENT B.2

Scale at A1 1:125
Scale at A3 1:250

GENERAL NOTES

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2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS.
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM.
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR.
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.

LEGEND:

- EXTENT OF WORKS
- PROPOSED CARRIAGEWAY
- PROPOSED FOOTPATH
- PROPOSED RAISED CYCLE TRACK
- PROPOSED SHARED AREA
- PROPOSED RAISED TABLE
- PROPOSED TACTILE PAVING (LADDER/ TRAMLINE)
- EXISTING GRASS VERGE
- PROPOSED ROAD CENTRELINE

DRAFT

A1

DO NOT SCALE

File: 0086381-ATK-B1-01-DR-ZZ-900151-155.dwg
Date: Jul 09, 2025 - 4:41pm Plotted by: GREE5093

ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Risk Level		
	X	Atkins Base Line - Low Risk
		Atkins Sensitive - Medium Risk
		Atkins Private - High Risk
		Client Critical - Already Marked

NTA Údarás Náisiúnta Iompair National Transport Authority

WESTMEATH COUNTY COUNCIL Comhairle Chontae na hIarmhí

Rialtas na hÉireann Government of Ireland

Tionscadal Éireann Project Ireland 2040

Rev	Description	By	Date	Chk'd	Rev'd	Auth

0	ISSUED FOR INFORMATION	DG	02.04.24	DP	AB	ST

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Fax (+353) 021 429 0360

1st Floor Technology House Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE

Purpose: FOR INFORMATION

Title: GENERAL ARRANGEMENT ROUTE B PREFERRED OPTION SHEET 1 OF 6

Original Scale	Drawn	Checked	Reviewed	Authorised
1:1000@A1 1:2000@A3	DG Date 02.04.24	DP Date 02.04.24	AB Date 02.04.24	ST Date 02.04.24

Status	Drawing Number	Rev
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A1

DO NOT SCALE

SEGMENT B2 - PROTECTED TWO-WAY CYCLE LANE - WIDTH 2.5m WITH ONE-WAY TRAFFIC LANE - WIDTH 3.00m. (THE SIDE OF THE 2-WAY CYCLE LANE IS STILL TBC)

JUNCTION B2 DESIGN TBC

SEGMENT B2 - PROTECTED TWO-WAY CYCLE LANE - WIDTH 2.5m WITH ONE-WAY TRAFFIC LANE - WIDTH 3.0m. (THE SIDE OF THE 2-WAY CYCLE LANE IS STILL TBC)

JUNCTION B3 DESIGN TBC

PINCH POINT B2 - CONSTRAINED TOWN CENTRE LOCATION

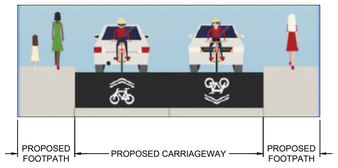
SEGMENT B2 BOUNDARY

SEGMENT B3 - STANDARD TWO-WAY CYCLE TRACK. MIN. WIDTH - 11.9m WITH SOUTHERN ON-STREET PARKING BAYS

JUNCTION B4 DESIGN TBC

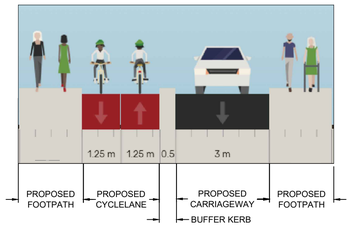
Athlone Town Centre
The Mews
Local Government Building
St Ciaran's House
Saint Mary's Catholic Church
PO
SAINT MARY'S SQUARE
DUBLIN GATE ST
MARDYKE ST
SEAN COSTELLO ST
JOHN BRODERICK STREET
RAWNFS LN
T. P. O'CONNOR ST
Electricity Distribution
Car Park
Golden Island Shopping Centre
Baile Átha Luain Athlone
SCATCH PARADE
ST MARY'S PL
ST MARY'S AVE
HAWES RD
Oil Depot
Tks
Carberry House
ES

CYCLING IN MIXED TRAFFIC
TYPICAL CROSS SECTION SEGMENT B.1



Scale at A1 1:125
Scale at A3 1:250

PROTECTED 2-WAY CYCLELANE
TYPICAL CROSS SECTION SEGMENT B.2



Scale at A1 1:125
Scale at A3 1:250

GENERAL NOTES

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2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS.
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM.
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR.
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.

LEGEND:

- EXTENT OF WORKS
- PROPOSED CARRIAGEWAY
- PROPOSED FOOTPATH
- PROPOSED RAISED CYCLE TRACK
- PROPOSED SHARED AREA
- PROPOSED RAISED TABLE
- PROPOSED TACTILE PAVING (LADDER/ TRAMLINE)
- EXISTING GRASS VERGE
- PROPOSED ROAD CENTRELINE

DRAFT

Risk Level		
	X	Atkins Base Line - Low Risk
		Atkins Sensitive - Medium Risk
		Atkins Private - High Risk
		Client Critical - Already Marked

Údarás Náisiúnta Iompair
National Transport Authority

WESTMEATH COUNTY COUNCIL
Comhairle Chontae na hIarmhí

Rialtas na hÉireann
Government of Ireland

Tionscadal Éireann
Project Ireland 2040

Rev	Description	By	Date	Chk'd	Rev'd	Auth

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Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE CO. WESTMEATH

Purpose: FOR INFORMATION

Title: GENERAL ARRANGEMENT ROUTE B PREFERRED OPTION SHEET 1 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:1000@A1 1:2000@A3	DG Date 02.04.24	DP Date 02.04.24	AB Date 02.04.24	ST Date 02.04.24

Status: I

Drawing Number: 0086381-ATK-B1-01-DR-ZZ-900151

Rev: 0

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Date: Jul 09, 2025 - 4:41pm Plotted by: GREE5093
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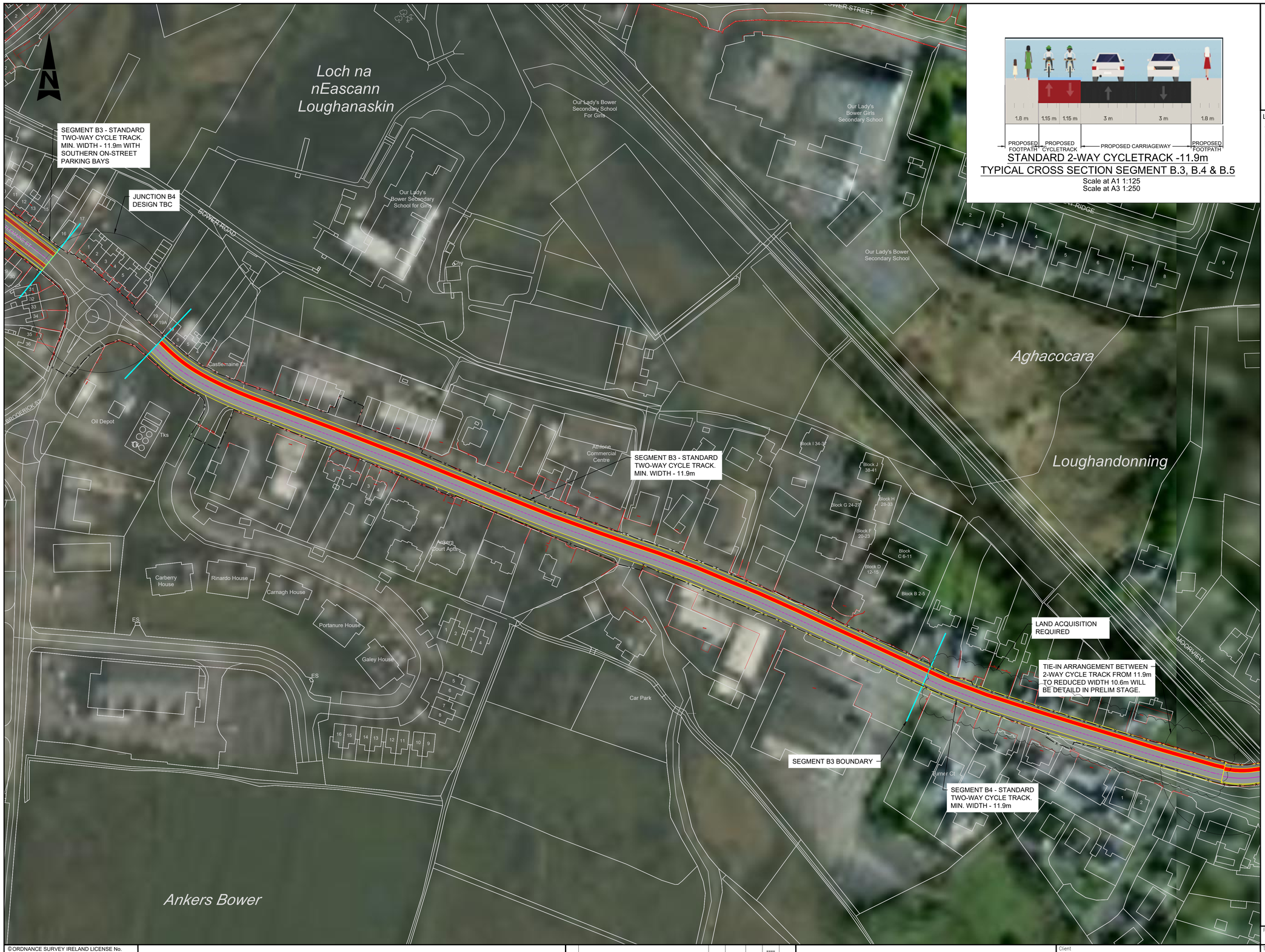

STANDARD 2-WAY CYCLETRACK -11.9m
TYPICAL CROSS SECTION SEGMENT B.3, B.4 & B.5
Scale at A1 1:125
Scale at A3 1:250

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS.
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM.
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR.
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.

LEGEND:

- EXTENT OF WORKS
- PROPOSED CARRIAGEWAY
- PROPOSED FOOTPATH
- PROPOSED RAISED CYCLE TRACK
- PROPOSED SHARED AREA
- PROPOSED RAISED TABLE
- PROPOSED TACTILE PAVING (LADDER/ TRAMLINE)
- EXISTING GRASS VERGE
- PROPOSED ROAD CENTRELINE

DRAFT

A1

DO NOT SCALE

File: 0086381-ATK-B1-01-DR-ZZ-900151-155.dwg
Date: Jul 09, 2025 - 4:42pm Plotted by: GREE5093

Risk Level		
	X	Atkins Base Line - Low Risk
		Atkins Sensitive - Medium Risk
		Atkins Private - High Risk
		Client Critical - Already Marked

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Rialtas na hÉireann Government of Ireland
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Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE CO. WESTMEATH

Purpose: FOR INFORMATION

Title: GENERAL ARRANGEMENT ROUTE B PREFERRED OPTION SHEET 2 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:1000@A1 1:2000@A3	DG Date 02.04.24	DP Date 02.04.24	AB Date 02.04.24	ST Date 02.04.24

Status	Drawing Number	Rev
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STANDARD 2-WAY CYCLETRACK -11.9m
TYPICAL CROSS SECTION SEGMENT B.3, B.4 & B.5

Scale at A1 1:125
Scale at A3 1:250

STANDARD 2-WAY CYCLETRACK - 10.6m
TYPICAL CROSS SECTION SEGMENT B.4

Scale at A1 1:125
Scale at A3 1:250

GENERAL NOTES

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LEGEND:

- EXTENT OF WORKS
- PROPOSED CARRIAGEWAY
- PROPOSED FOOTPATH
- PROPOSED RAISED CYCLE TRACK
- PROPOSED SHARED AREA
- PROPOSED RAISED TABLE
- PROPOSED TACTILE PAVING (LADDER/ TRAMLINE)
- EXISTING GRASS VERGE
- PROPOSED ROAD CENTRELINE

DRAFT

A1

DO NOT SCALE

File: 0086381-ATK-B1-01-DR-ZZ-900151-155.dwg
Date: Jul 09, 2025 - 4:43pm Plotted by: GREE5093

Risk Level		
	X	Atkins Base Line - Low Risk
		Atkins Sensitive - Medium Risk
		Atkins Private - High Risk
		Client Critical - Already Marked

NTA National Transport Authority
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Rialtas na hÉireann Government of Ireland
Tionscadal Éireann Project Ireland 2040

Rev	Description	By	Date	Chk'd	Rev'd	Auth

0	ISSUED FOR INFORMATION	DG	02.04.24	DP	AB	ST

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Fax (+353) 091 779 830

Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE CO. WESTMEATH

Purpose: FOR INFORMATION

Title: GENERAL ARRANGEMENT ROUTE B PREFERRED OPTION SHEET 3 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:1000@A1 1:2000@A3	DG	DP	AB	ST
	Date 02.04.24	Date 02.04.24	Date 02.04.24	Date 02.04.24

Status: I

Drawing Number: 0086381-ATK-B1-01-DR-ZZ-900153

Rev: 0

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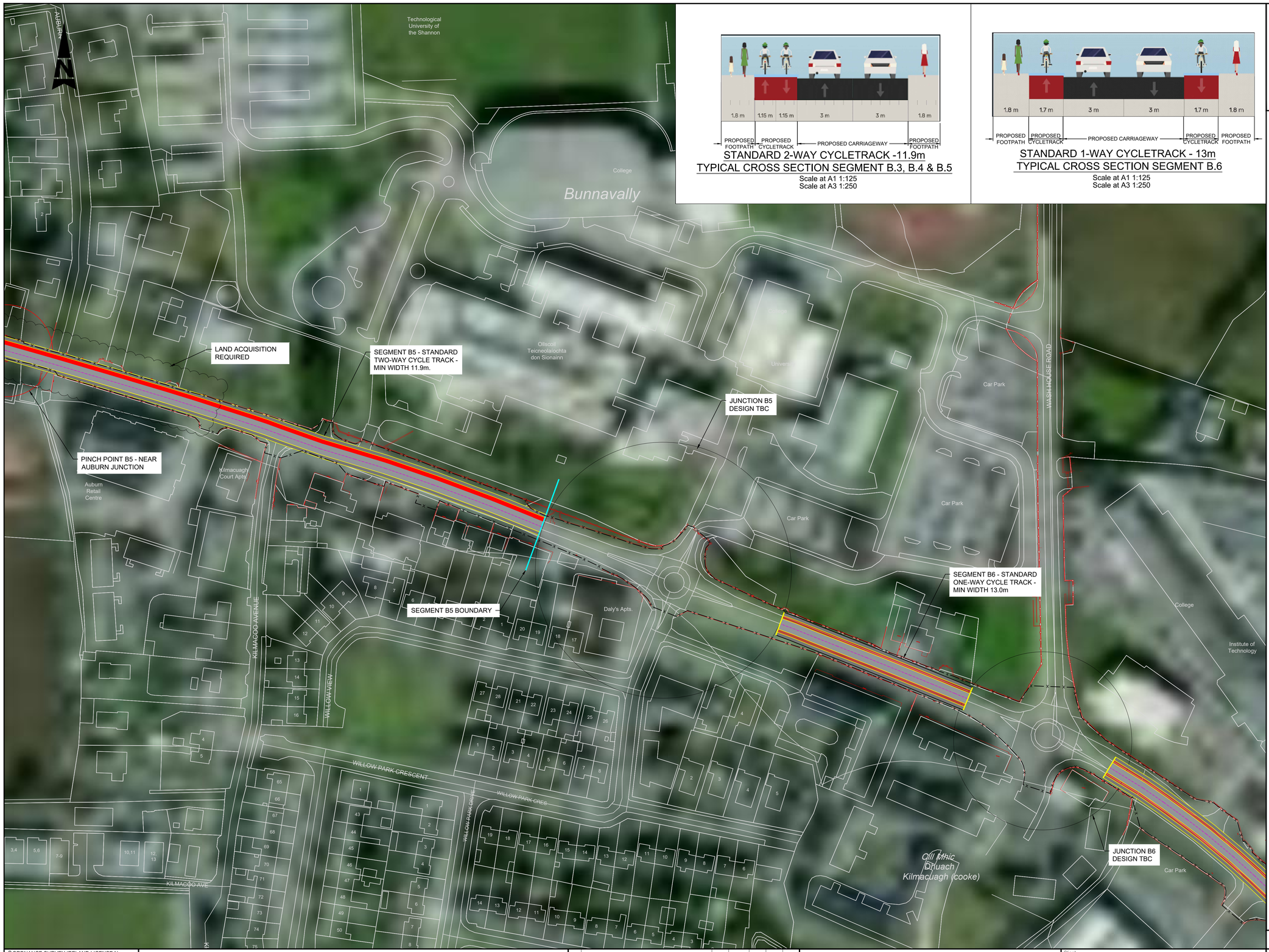

STANDARD 2-WAY CYCLETRACK -11.9m
TYPICAL CROSS SECTION SEGMENT B.3, B.4 & B.5
Scale at A1 1:125
Scale at A3 1:250

STANDARD 1-WAY CYCLETRACK - 13m
TYPICAL CROSS SECTION SEGMENT B.6
Scale at A1 1:125
Scale at A3 1:250

GENERAL NOTES

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LEGEND:

- EXTENT OF WORKS
- PROPOSED CARRIAGEWAY
- PROPOSED FOOTPATH
- PROPOSED RAISED CYCLE TRACK
- PROPOSED SHARED AREA
- PROPOSED RAISED TABLE
- PROPOSED TACTILE PAVING (LADDER/ TRAMLINE)
- EXISTING GRASS VERGE
- PROPOSED ROAD CENTRELINE

DRAFT

A1

DO NOT SCALE

File: 0086381-ATK-B1-01-DR-ZZ-900151-155.dwg
Date: Jul 09, 2025 - 4:44pm Plotted by: GREE5093

ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE CO. WESTMEATH

Risk Level		
	X	Atkins Base Line - Low Risk
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		Atkins Private - High Risk
		Client Critical - Already Marked

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Tionscadal Éireann Project Ireland 2040

Rev	Description	By	Date	Chk'd	Rev'd	Auth

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1st Floor Technology House Parkmore Technology Park, Galway
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Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE CO. WESTMEATH

Purpose: FOR INFORMATION

Title: GENERAL ARRANGEMENT ROUTE B PREFERRED OPTION SHEET 4 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:1000@A1 1:2000@A3	DG Date 02.04.24	DP Date 02.04.24	AB Date 02.04.24	ST Date 02.04.24

Status	Drawing Number	Rev
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STANDARD 1-WAY CYCLETRACK - 13m
TYPICAL CROSS SECTION SEGMENT B.6

Scale at A1 1:125
Scale at A3 1:250

GENERAL NOTES

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- PROPOSED FOOTPATH
- PROPOSED RAISED CYCLE TRACK
- PROPOSED SHARED AREA
- PROPOSED RAISED TABLE
- PROPOSED TACTILE PAVING (LADDER/ TRAMLINE)
- EXISTING GRASS VERGE
- PROPOSED ROAD CENTRELINE

DRAFT

A1

DO NOT SCALE

File: 0086381-ATK-B1-01-DR-ZZ-900151-155.dwg
Date: Jul 09, 2025 - 4:45pm Plotted by: GREE5093

ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE CO. WESTMEATH

Risk Level		
	X	Atkins Base Line - Low Risk
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		Client Critical - Already Marked

NTA Údarás Náisiúnta Iompair National Transport Authority

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Fax (+353) 091 779 830

Client: WESTMEATH COUNTY COUNCIL

Project: ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE CO. WESTMEATH

Purpose: FOR INFORMATION

Title: GENERAL ARRANGEMENT ROUTE B PREFERRED OPTION SHEET 5 OF 5

Original Scale	Drawn	Checked	Reviewed	Authorised
1:1000@A1 1:2000@A3	DG Date 02.04.24	DP Date 02.04.24	AB Date 02.04.24	ST Date 02.04.24

Status	Drawing Number	Rev
I	0086381-ATK-B1-01-DR-ZZ-900155	0

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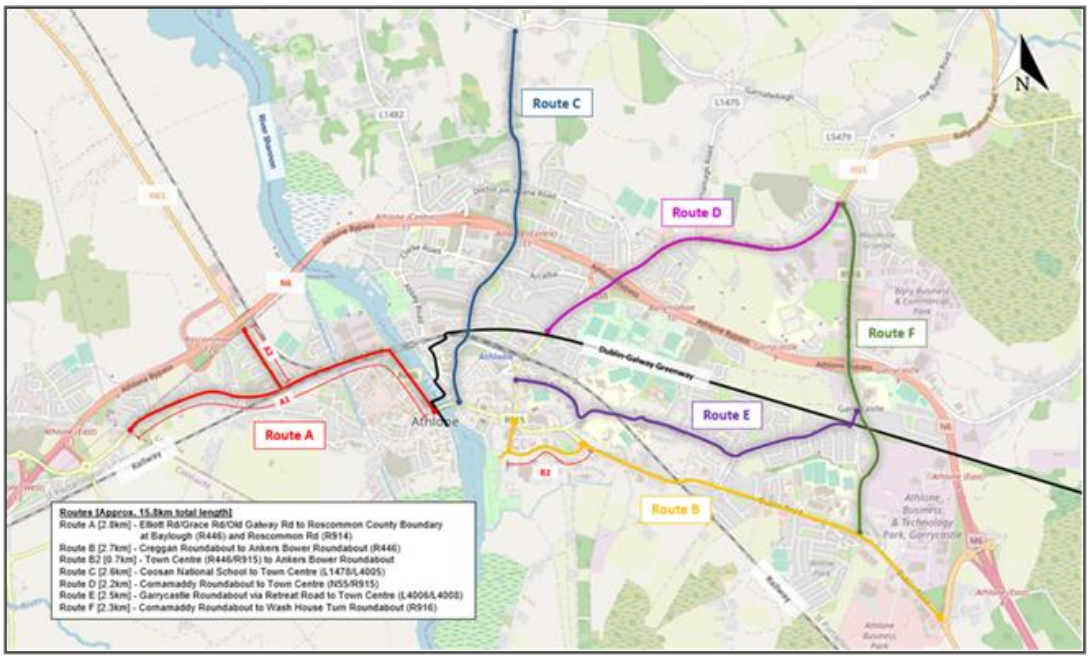
Appendix E. Invasive Species Survey

Technical Note

Project:	ATHLONE ACTIVE TRAVEL SCHEMES BUNDLE
Subject:	Invasive Species Survey
Author:	Daniel Blake
Atkins No.:	0086381DG0072
Date Issued.:	27/09/2024
Representing:	Westmeath County Council
County	Westmeath
Location	The Athlone Active Travel Bundle is located in Athlone town, County Westmeath. The Athlone Active Travel Bundle scheme extents are shown in Figure 1 below which outlines 6 no. separate Routes.
Maps	 **Figure 1 – Proposes Scheme.**
Proposed Works	In total there is approximately 16km of active travel pedestrian and cycle scheme planned for Athlone. The 15.8km of the Active Travel Bundle have been divided into 6 no. separate Routes as follows: • Route A [2.8 km] - Elliott Rd/Grace Rd/Old Galway Rd to Roscommon County Boundary at Baylough (R446) and Roscommon Rd (T914).

	- Route A1 [2.3 km] - Tesco Express in Boylagh to Luan Gallery and St. Peter and Paul church (R446). - Route A2 [0.5 km] - Junction of the Old Galway Road (R446) and Roscommon Road (R914) to the Roscommon County boundary (R914). • Route B [2.7 km] - Creggan Roundabout to Anker Bower Roundabout (R446). • Route B2 [0.7km] - Town Centre (R446/R915) to Ankers Bower Roundabout. (Subject to approval and funding) • Route C [2.6km] - Coosan National School to Town Centre (L1478/L4005). • Route D [2.2km] - Cornamaddy Roundabout to Town Centre (N55/R915). • Route E [2.5km] - Garrycastle Roundabout via Retreat Road to Town Centre (L4006/L4008). • Route F [2.3km] - Cornamaddy Roundabout to Wash House Turn Roundabout (R916).
Purpose of Report	This technical note details the results of an invasive plant species survey within the redline boundary the proposed scheme. The survey was undertaken on 1st of July 2024 by AtkinsRealis Ecologists Daniel Blake and Kevin Coogan.
Methodology	The routes were surveyed for invasive plant species based upon the list of Invasive Alien Species (IAS) included in Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011). This included surveying for plant species which a legally restricted. See Appendix A and B below for the Third Schedule listed species and high and medium impact invasive species. The survey paid particular attention to high impact invasive species which are known to be problematic for construction such as Japanese knotweed (*Reynoutria japonica*) and associated hybrids.
Survey Limitations	No limitations were encountered while conducting this survey. All areas where survey was required were accessible. The survey was undertaken within the appropriate seasonal window.
Existing Environment	The location of the cycle way routes is through Athlone town traveling along urbanised areas predominantly on hardstanding surfaces (roads, pathways) and also includes small areas of roadside grass verges in Athlone. Tree species noted along the perimeters of the scheme from aerial imagery included hornbeam (*Carpinus betulus*), sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*), horse chestnut (*Aesculus hippocastanum*), cypress (*Cupressus* spp.) and fir (*Abies* spp.) This is a non-exhaustive species list. A National Biodiversity Centre species search was conducted for the scheme. Invasive species recorded within the proposed scheme include; Cherry Laurel (*Prunus laurocerasus*) and Japanese Knotweed (*Fallopia japonica*). Cheery laurel does not pose a constraint to the proposed project. Historic evidence of Japanese knotweed (records from 2010-12) has been recorded on Route A near Athlone Castle on the Shannon River bank. Knotweed has been recorded on 2 no. locations on Route B; on the R446 and Dublin Road junction (in the area of Lidl) and along the boundary of Technological University of the Shannon on the R446.
Survey Results	• No third Schedule invasive plant species were identified along any route of the proposed routes.

- Buddleia (*Buddleja davidii*) was identified on route B and C this species is not legally restricted and is considered a medium impact species see Appendix B. Examples of buddleia on the route are seen below on plates 2 and 3.

Conclusion

The project site was surveyed for invasive plant species listed on the third schedule of the EC (Birds and Natural Habitats) Regulations 2011 S.I. No. 477/ 2011.

Site surveys undertaken during July 2024 did not identify any third schedule plant species within the areas surveyed.

It is recommended that the Buddleia is removed but this species will not provide a constraint to the scheme. As no legally restricted plants were found during site survey no site-specific invasive species management plan is required for the project.

Photos

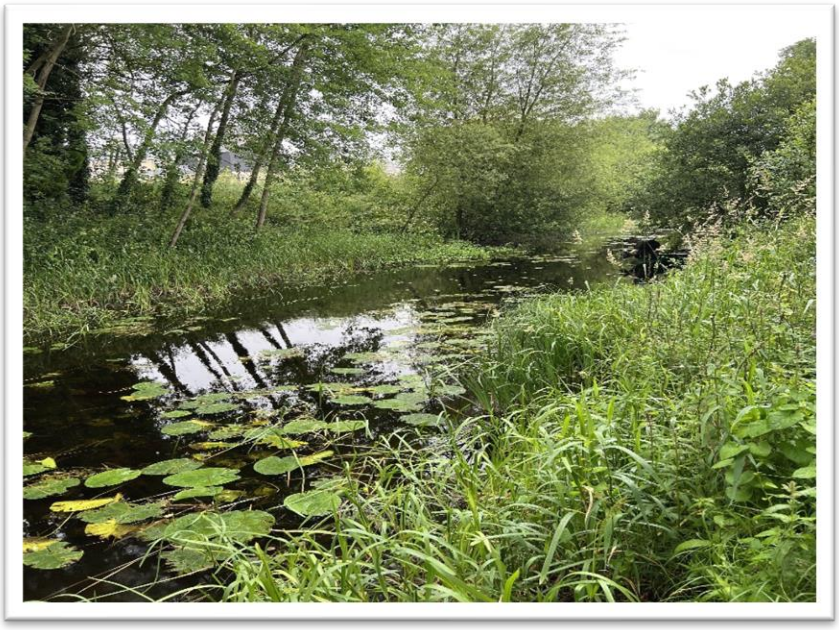


Plate 1. Athlone Canal off of route A

Plate 2. Buddleia present on route B

Plate 3. Buddleia present on route C

Appendix A. Third Schedule

Non-native invasive plant species survey, as defined in Part 1 of the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011).
Non-native species subject to restrictions under Regulations 49 and 50
Part 1: PLANTS

Common name	Scientific name	Geographical application
American skunk-cabbage	*Lysichiton americanus*	Throughout the State
A red alga	*Grateloupia doryphora*	Throughout the State
Brazilian giant-rhubarb	*Gunnera manicata*	Throughout the State
Broad-leaved rush	*Juncus planifolius*	Throughout the State
Cape pondweed	*Aponogeton distachyos*	Throughout the State
Cord-grasses	*Spartina* (all species and hybrids)	Throughout the State
Curly waterweed	*Lagarosiphon major*	Throughout the State
Dwarf eel-grass	*Zostera japonica*	Throughout the State
Fanwort	*Cabomba caroliniana*	Throughout the State
Floating pennywort	*Hydrocotyle ranunculoides*	Throughout the State
Fringed water-lily	*Nymphoides peltata*	Throughout the State
Giant hogweed	*Heracleum mantegazzianum*	Throughout the State
Giant knotweed	*Fallopia sachalinensis*	Throughout the State
Giant-rhubarb	*Gunnera tinctoria*	Throughout the State
Giant salvinia	*Salvinia molesta*	Throughout the State
Himalayan balsam	*Impatiens glandulifera*	Throughout the State
Himalayan knotweed	*Persicaria wallichii*	Throughout the State
Hottentot-fig	*Carpobrotus edulis*	Throughout the State
Japanese knotweed	*Fallopia japonica*	Throughout the State
Large-flowered waterweed	*Egeria densa*	Throughout the State
Mile-a-minute weed	*Persicaria perfoliata*	Throughout the State
New Zealand pigmyweed	*Crassula helmsii*	Throughout the State
Parrots feather	*Myriophyllum aquaticum*	Throughout the State
Rhododendron	*Rhododendron ponticum*	Throughout the State
Salmonberry	*Rubus spectabilis*	Throughout the State
Sea-buckthorn	*Hippophae rhamnoides*	Throughout the State
Spanish bluebell	*Hyacinthoides hispanica*	Throughout the State
Three-cornered leek	*Allium triquetrum*	Throughout the State
Wakame	*Undaria pinnatifida*	Throughout the State
Water chestnut	*Trapa natans*	Throughout the State
Water fern	*Azolla filiculoides*	Throughout the State
Water lettuce	*Pistia stratiotes*	Throughout the State
Water-primrose	*Ludwigia* (all species)	Throughout the State
Waterweeds	*Elodea* (all species)	Throughout the State
Wireweed	*Sargassum muticum*	Throughout the State

Appendix B. High and Medium Impact Invasive Species

High and Medium Impact Invasive Species

Risk of High Impact invasive species in Ireland

Species name	Common name	Environment	Risk score
Anguillicoloides crassus	Swimbladder parasite of eels	Freshwater	23
Aphanomyces astaci	Crayfish plague	Freshwater	22
Arthurdendyus triangulatus	New Zealand flatworm	Terrestrial	18
Branta canadensis	Canada goose	Terrestrial	18
Carpobrotus edulis	Hottentot fig	Terrestrial	19
Cervus nippon	Sika deer	Terrestrial	22
Corbicula fluminea	Asian clam	Freshwater	22
Corvus splendens	Indian house crow	Terrestrial	20
Crassostrea gigas	Pacific oyster	Marine	19
Crassula helmsii	New Zealand pigmyweed	Freshwater	20
Crepidula fornicata	Slipper limpet	Marine	21
Cynomys spp.	Prairie dog	Terrestrial	19
Dama dama	Fallow deer	Terrestrial	21
Didemnum vexillum	Carpet sea squirt	Marine	21
Dreissena polymorpha	Zebra mussel	Freshwater	19
Elodea canadensis	Canadian waterweed	Freshwater	19
Elodea nuttallii	Nuttall's waterweed	Freshwater	19
Eriocheir sinensis	Chinese mitten crab	Freshwater	21
Fallopia japonica ***and hybrids***	Japanese knotweed	Terrestrial	20
Fallopia sachalinensis ***and hybrids***	Giant knotweed	Terrestrial	18
*Fallopia x bohemica**	Bohemian knotweed	Terrestrial	18-20
Gunnera tinctoria	Chilean rhubarb	Terrestrial	19
Harmonia axyridis	Harlequin ladybird	Terrestrial	19
Hemimysis anomala	Bloody red shrimp	Freshwater	21
Heracleum mantegazzianum	Giant hogweed	Terrestrial	19
Hydrocotyle ranunculoides	Floating pennywort	Freshwater	21
Impatiens glandulifera	Himalayan balsam	Terrestrial	18
Lagarosiphon major	Curly waterweed	Freshwater	19
Lepus europaeus	Brown hare	Terrestrial	21
Leuciscus cephalus	Chub	Freshwater	18
Muntiacus reevesi	Chinese muntjac	Terrestrial	22
Mus musculus	House mouse	Terrestrial	20
Mustela furo	Feral ferret	Terrestrial	19
Myriophyllum aquaticum	Parrot's-feather	Freshwater	20
*Myocastor coypus***	Coypu	Terrestrial	20
Neovison vison	American mink	Terrestrial	20
Nymphoides peltata	Fringed waterlily	Freshwater	20
Oxyura jamaicensis	Ruddy duck	Freshwater	18
Phytophthora ramorum	Sudden oak death	Terrestrial	23
*Procyon lotor***	Raccoon	Terrestrial	18
Prunus laurocerasus	Cherry laurel	Terrestrial	18
Rattus norvegicus	Brown rat	Terrestrial	24
Rattus rattus	Black rat	Terrestrial	22
Rhododendron ponticum	Rhododendron	Terrestrial	20
Sargassum muticum	Wire weed	Marine	18
Sciurus carolinensis	Grey squirrel	Terrestrial	20
Spartina anglica	Common cord grass	Marine	18
Styela clava	Leathery sea-squirt	Marine	19
Sus scrofa	Wild boar	Terrestrial	21
Tamias sibiricus	Siberian chipmunk	Terrestrial	19
Varroa destructor	Honey bee varroa mite	Terrestrial	18
*Undaria pinnatifida***	Japanese kelp	Marine	19

Species score 18+ is a species with a risk of High Impact

National Biodiversity Data Centre

Impact status based on the 2013 Invasive Species in Ireland risk assessment. See report:

* *Fallopia bohemica* was risk assessed as a hybrid under *F. japonica* and *F. sachalinensis*
** Species was risk assessed and scored as a potential invader but now recorded in Ireland.

Risk of Medium Impact invasive species in Ireland

Species name	Common name	Environment	Risk score
Acaena ovalifolia	New Zealand bur	Terrestrial	14
Acer pseudoplatanus	Sycamore	Terrestrial	15
Ailanthus altissima	Tree of heaven	Terrestrial	17
Allium triquetrum	Three-cornered garlic	Terrestrial	15
Ambrosia artemisiifolia	Annual bur-sage	Terrestrial	17
Antithamnionella ternifolia	None given	Marine	15
Arcitalitrus dorrieni	Sandhopper	Terrestrial	15
Arion vulgaris	Spanish slug	Terrestrial	15
Australoplana sanguinea	Australian flatworm	Terrestrial	17
Azolla filiculoides	Water fern	Freshwater	14
Balanus improvisus	Bay barnacle	Marine	15
Berberis thunbergii	Japanese barberry	Terrestrial	14
Berberis vulgaris	Barberry	Terrestrial	14
Botrylloides violaceus	Red sheath tunicate	Marine	14
Buddleja davidii	Butterfly bush	Terrestrial	15
Bunias orientalis	Warty cabbage	Terrestrial	15
Campanula rapunculoides	Creeping Bellflower	Terrestrial	16
Candidula intersecta	Wrinkled helicellid	Terrestrial	15
Capra hircus	Domestic goat	Terrestrial	14
Caprella mutica	Japanese skeleton shrimp	Marine	16
Clematis vitalba	Traveler's-joy	Terrestrial	17
Codium fragile ssp. tomentosoides	Dead man's fingers	Marine	16
Conyza canadensis	Canadian-fleabane	Terrestrial	14
Cornu aspersum	Common Garden Snail	Terrestrial	14
Corophium curvispinum	Caspian mud shrimp	Freshwater	15
Cortaderia selloana	Pampas grass	Terrestrial	15
Cotoneaster horizontalis	Rock cotoneaster	Terrestrial	14
Crocidura russula	Greater white-toothed shrew	Terrestrial	16
Cyprinus carpio	Common carp	Freshwater	16
Egeria densa	Brazilian waterweed	Freshwater	17
Elminius modestus	Darwins barnacle	Marine	15
Erucastrum gallicum	Hairy rocket	Terrestrial	17
Euphorbia esula	Leafy spurge	Terrestrial	16
Fallopia baldschuanica	Russian-vine	Terrestrial	14
Ficopomatus enigmaticus	Tube worm	Marine	14
Gammarus pulex	Gammarus shrimp	Freshwater	16
Gammarus tigrinus	Gammarus shrimp	Freshwater	16
Gunnera manicata	Giant rhubarb	Terrestrial	16
Hippophae rhamnoides	Sea-buckthorn	Terrestrial	14
Kontikia andersoni	None given	Terrestrial	14
Kontikia ventrolineata	None given	Terrestrial	14
Lemna minuta	Least duckweed	Freshwater	14

Leuciscus leuciscus	Dace	Freshwater	17
Leycesteria formosa	Himalayan honeysuckle	Terrestrial	14
Lonicera japonica	Japanese honeysuckle	Terrestrial	15
Lupinus polyphyllus	Garden lupin	Terrestrial	17
Lysichiton americanus	American skunk cabbage	Terrestrial	15
Macropus rufogriseus	Red-necked wallaby	Terrestrial	15
Matteuccia struthiopteris	Ostrich fern	Terrestrial	14
Myodes glareolus	Bank vole	Terrestrial	17
Mytilicola orientalis	Oyster redworm	Marine	15
Mytilus galloprovincialis	Mediterranean mussel	Marine	15
Orobanche minor	Clover broomrape	Terrestrial	17
Oryctolagus cuniculus	European rabbit	Terrestrial	16
Oxalis pes-caprae	African woodsorrel	Terrestrial	14
Parthenocissus quinquefolia	Virginia-creeper	Terrestrial	16
Pastinaca sativa	Wild parsnip	Terrestrial	15
Persicaria wallichii	Himalayan knotweed	Terrestrial	16
Physella acuta	Bladder snail	Freshwater	14
Potamopyrgus antipodarum	Jenkins's spire snail	Freshwater	14
Prunus serotina	Rum cherry	Terrestrial	17
Pseudotsuga menziesii	Douglas fir	Terrestrial	15
Quercus cerris	Turkey oak	Terrestrial	14
Quercus ilex	Holm oak	Terrestrial	14
Quercus rubra	Red oak	Terrestrial	14
Ribes nigrum	Black currant	Terrestrial	14
Robinia pseudoacacia	False acacia	Terrestrial	17
Rosa rugosa	Japanese rose	Terrestrial	14
Rubus spectabilis	Salmonberry	Terrestrial	14
Rutilus rutilus	Roach	Freshwater	15
Sarracenia purpurea	Pitcherplant	Terrestrial	14
Senecio inaequidens	Narrow-leaved ragwort	Terrestrial	16
Solidago gigantea	Early goldenrod	Terrestrial	14
Tandonia budapestensis	Budapest slug	Terrestrial	14
Tandonia sowerbyi	Keeled (or Sowerby's) slug	Terrestrial	14
Theba pisana	White Garden snail	Terrestrial	16
Thlaspi arvense	Field penny-cress	Terrestrial	17
Trachemys scripta species	Common slider	Freshwater	17

Species score 14-17 is a species with a risk of **Medium Impact**

National Biodiversity Data Centre

Impact status based on the 2013 Invasive Species in Ireland risk assessment. See report: Kelly, J., O'Flynn, C., and Maguire, C. 2013. Risk analysis and prioritisation for invasive and non-native species in Ireland and Northern Ireland. http://invasivespeciesireland.com/wp-content/uploads/2013/03/Risk-analysis-and-prioritization-29032012-FINAL.pdf

Appendix C. Amber List Species

Invasive Species Ireland
Invasive Species Ireland
http://invasivespeciesireland.com

Amber list: Recorded species

The risk assessment has generated prioritised lists of established and potential invasive species for Ireland and Northern Ireland. These lists been used to inform the selection of species for the development of Invasive Species Action Plans for potential and established invasive species. The risk assessment has also allowed the development of 'amber list' species. These lists identify species that, under the right ecological conditions, may have an impact on the conservation goals of a site or impact on a water body achieving good/high ecological status under the Water Framework Directive.

The species listed in the following table are those that could represent a significant impact on native species or habitats causing significant decline or loss; or species that could impact either/both Natura 2000 sites and the goals of the WFD. These species did not achieve a high risk rating overall.

Species	Common Name(s)	Environment	Score
Acaena ovalifolia	New Zealand Bur	Terrestrial	14
Acer pseudoplatanus	Sycamore,Great Maple, Scottish Maple	Terrestrial	15
Aster (genus)	Daisies	Terrestrial	11
Corophium curvispinum	Caspian Mud Shrimp	Freshwater	15
Crocosmia × crocosmiiflora	Montbretia	Terrestrial	10
Gammarus pulex	Gammaris Shrip, Scud, Side Shrimp Gammarus Shrimp Side Shrimp	Freshwater	16
Mytilicola orientalis	Oyster Redworm	Marine	15
Mytilus galloprovincialis galloprovincialis	Mediterranean Mussel	Marine	15
Oenothera biennis	Common Evening Primrose, Common Evening-Primrose, Common Eveningprimrose, Evening Primrose, Evening Primrose (Common), Evening-Primrose, German Evening Primrose, German-Rampion, Hoary Evening Primrose, Hoary Eveningprimrose, King's-Cureall, Night	Terrestrial	12

Species	Common Name(s)	Environment	Score
	Willow-Herb		
Oryctolagus cuniculus	European Rabbit	Terrestrial	16
Perca fluviatilis	Perch	Freshwater	13
Phalaris arundinacea	Reed Grass,	Terrestrial	6
Sarracenia purpurea	Common Pitcher Plant, Common Pitcherplant, Huntsman´s-Cup, Huntsman's Cap, Pitcher Plant, Pitcherplant, Purple Pitcherplant, Sidesaddle Plant, Sweet Pitcherplant	Terrestrial	14
Selaginella kraussiana	Krauss's Clubmoss	Terrestrial	9
Solidago canadensis	Canada goldenrod	Terrestrial	12
Solidago gigantea	Early Goldenrod Giant goldenrod	Terrestrial	14
Symphoricarpos albus	Snowberry	Terrestrial	9
Trachemys scripta	Common Slider, Cumberla, Cumberland Slider, Huastecan Slider, Pond Slider, Red-Eared Slider, Rotwangenschmuckschildkrte (Elegans), Slider, Yellowbelly Slider	Freshwater	17
Cotoneaster horizontalis	Cotoneaster, Rock Cotoneaster, Rock-Spray, Rockspray Cotoneaster	Terrestrial	14
Egeria densa	large-flowered waterweed, Brazilian elodea, Brazilian waterweed, Brazilian-waterweed, common waterweed, dense waterweed, egeria, leafy elodea, South American waterweed	Freshwater	17
Felis catus	Domestic Cat	Terrestrial	12
Persicaria wallichii	Himalayan knotweed	Terrestrial	16
Quercus ilex	Evergreen Oak, Holm oak	Terrestrial	14

Amber list: Uncertain risk

The species listed below are rated as medium risk due to the score of the overall assessment however, their impact on conservation goals remains uncertain due to lack of data showing impact (or lack of impact).

Species	Common Name(s)	Environment	Score
Abramis brama	Common bream	Freshwater	13
Acaena anserinifolia	Bidibid, Hutiwai, Piripiri	Terrestrial	11
Acaena novae-zelandiae	Bidibid, Hutiwai, Piripiri	Terrestrial	11
Acer platanoides	Norway Maple	Terrestrial	10
Acorus calamus	European Sweetflag	Terrestrial	12
Ailanthus altissima	ailanthus copal tree Tree of heaven, Chinese sumac, stinking sumac, stinking quassia,tree of heaven tree-of-heaven	Terrestrial	17
Aix galericulata	Mandarin Duck	Terrestrial	10
Alectoris rufa	Red-legged Partridge	Terrestrial	9
Allium carinatum	Keeled Garlic	Terrestrial	10
Allium paradoxum	Few Flowered Leek, Few Flowered Garlic	Terrestrial	11
Allium triquetrum	Three-Cornered Garlic	Terrestrial	15
Althaea officinalis	Common Marsh-Mallow	Terrestrial	11
Ambrosia artemisiifolia	Annual Bur-Sage	Terrestrial	17
Amelanchier lamarckii	Lamarck Serviceberry	Terrestrial	9
Aponogeton distachyos	Water-Hawthorne, Cape-pondweed	Freshwater	7
Arcitalitrus dorrieni	Sandhopper; Landhopper	Terrestrial	15
Arion vulgaris	Lusitanian Slug, Spanish Slug, False Lusitanian Slug	Terrestrial	15
Asparagopsis armata	Feamainn Mhuirgha, Harpoon Weed	Marine	10
Australoplana sanguinea	Australian Flatworm	Terrestrial	17
Avena fatua	Oatgrass (Common)	Terrestrial	11
Avena strigosa	Lop-Side Oat, bristle oat	Terrestrial	8
Azolla filiculoides	Water Fern, Large Mosquito Fern, Red Water Fern, Pacific Mosquito Fern	Freshwater	14
Balanus amphitrite	Striped Barnacle, Purple Acorn Barnacle,	Marine	13

Species	Common Name(s)	Environment	Score
	Amphitrite's Rock Barnacle.		
Balanus improvisus	Bay Barnacle, Acorn Barnacle	Marine	15
Berberis buxifolia	Box-Leaved Barberry	Terrestrial	11
Berberis thunbergii	Red Leaf Japanese Barberry	Terrestrial	14
Berberis vulgaris	Epine-Vinette Commune, Beet, Common Barberry, Epine-Vinette, Epine-Vinette Commune, European Barberry, Jaundice-Berry, Piprage, Vinetteier	Terrestrial	14
Bipalium kewense	Shovel-headed Garden Worm	Terrestrial	10
Buddleja davidii	Butterfly Bush	Terrestrial	15
Bunias orientalis	Warted-Fruit Corn Rocket, Warty cabbage	Terrestrial	15
Campanula rapunculoides	Clochettes, Creeping Bellflower, European Bellflower, June Bell, Lygurian Bellflower, Rampion Bellflower, Rapion Bellflower, Rover Bellflower, Roving Bellflower	Terrestrial	16
Candidula intersecta	Wrinkled Helicellid	Terrestrial	15
Capra hircus	Domestic Goat	Terrestrial	14
Caprella mutica	Japanese Skeleton Shrimp	Marine	16
Centranthus ruber	Jupiters Beard, Keys To Heaven	Terrestrial	11
Cernuella virgata	Vineyard Snail, Striped Snail	Terrestrial	10
Cichorium intybus	Chicory	Terrestrial	11
Clematis vitalba	Evergreen Clematis, Old Man's Beard , Traveler's-joy	Terrestrial	17
Clethrionomys glareolus	Bank Vole	Terrestrial	14
Codium fragile ssp. tomentosoides	Green sea fingers, Dead man's fingers, Green fleece	Marine	16

Species	Common Name(s)	Environment	Score
Conyza canadensis	Butterweed, Canada Horseweed, Canadian Horseweed, Canadian-Fleabane, Dwarf Horseweed, Fleabane, Hogweed, Horseweed, Horseweed Fleabane, Mares Tail, Marestail	Terrestrial	14
Cornu aspersum	Common Garden Snail	Terrestrial	14
Cornus sericea	Red Osier Dogwood, Red Twig Dogwood, Redosier Dogwood	Terrestrial	10
Cortaderia selloana	Gray Clubawn Grass, Gray Hairgrass, Pampas Grass, Selloa Pampas Grass, Silver Pampas Grass, Uruguayan Pampas Grass, Uruguayan Pampas Grass, Uruguayan Pampasgrass, Variegated Pampas Grass, White Pampas Grass	Terrestrial	15
Cotoneaster franchetii	Franchet's Cotoneaster	Terrestrial	9
Cotoneaster integrifolius	Small-Leaf Cotoneaster, Small-Leafed Cotoneaster	Terrestrial	11
Cotoneaster microphyllus s.str.	Small-leaved Cotoneaster, Silverleaf Cotoneaster, Rockspray Cotoneaster.	Terrestrial	11
Cotoneaster simonsii	Himalayan Cotoneaster, Simons Cotoneaster, Simons' Cotoneaster	Terrestrial	12
Crangonyx pseudogracilis	Northern River Crangonyctid	Freshwater	13
Crocidura russula	Greater white-toothed shrew	Terrestrial	16
Cyperus eragrostis	Umbrella sedge	Terrestrial	12
Cyprinus carpio	Common Carp, Koi, Wild Common Carp	Freshwater	16

Species	Common Name(s)	Environment	Score
Diplotaxis muralis	Annual Wall-Rocket, Annual Wallrocket, Dog Weed (Aust), Goat Weed (Aust), Nanny Weed (Aust), Sand Rocket, Stink Weed (Aust), Stinking Wallrocket, Teetulpa Weed (Aust), Wall Mustard, Wall Rocket, Yellow-Flowered Annual Wild Rocket, Yellow-Flowered Wall-Rocket	Terrestrial	12
Duchesnea indica	False Strawberry, India Mockstrawberry, Indian Mock-Strawberry, Indian Strawberry, Indian-Strawberry, Mock Strawberry	Terrestrial	13
Elatobium abietinum	Spruce Aphid	Terrestrial	11
Ensis americanus	American Jack Knife Clam (American Razor-shell).	Marine	12
Epilobium brunnescens	New Zealand Willow herb	Terrestrial	11
Erica ciliaris	Dorset Heath	Terrestrial	11
Erica terminalis	Erica, Heath Corsican Heath - English	Terrestrial	12
Eucalyptus (genus)	Eucalyptus	Terrestrial	11
Euophryum confine	New Zealand Weevil	Terrestrial	13
Euphorbia esula	Leafy Spurge, Leafy Spurge Euphorbia Esula, Russian Leafy Spurge, Spurge, Wolf's Milk, Wolf's-Milk	Terrestrial	16
Fagus sylvatica	European Beech, Fern-Leaf Beech	Terrestrial	10
Fallopia baldschuanica	Russian-vine	Terrestrial	14
Festuca heterophylla	Shade Fescue, Variable-Leaved Fescue, Various-Leaved Fescue, Variousleaf Fescue	Terrestrial	8

Species	Common Name(s)	Environment	Score
Ficopomatus enigmaticus	Tube Worm	Marine	14
Gammarus tigrinus	Gammaris Shrip, Scud, Side Shrimp	Freshwater	16
Gaultheria mucronata	Chilean Wintergreen Prickly Heath	Terrestrial	10
Gaultheria shallon	Lemon Leaf, Lemon-Leaf Salal, Oregon Wintergreen, Salal, Sallol, Shallon	Terrestrial	10
Helianthus tuberosus	Jerusalem Artichoke	Terrestrial	10
Hippophae rhamnoides	Draighean Mara	Terrestrial	14
Hordeum jubatum	Foxtail Barley	Terrestrial	13
Hyacinthoides hispanica	Spanish Bluebell	Terrestrial	12
Hydrocotyle moschata	Hairy Pennywort	Terrestrial	9
Hypericum hircinum	Stinking Tutsan	Terrestrial	12
Lagurus ovatus	Harestail Grass, Hare's-tail	Terrestrial	10
Lemna minuta	Least Duckweed	Freshwater	14
Lepidium draba	Whitetop	Terrestrial	10
Leuciscus leuciscus	Common Dace, Dace, Eurachon, Eurasian Dace, Graining, Hasel	Freshwater	17
Lonicera japonica	Japanese honeysuckle	Terrestrial	15
Lupinus polyphyllus	Garden Lupin	Terrestrial	17
Lycium barbarum	Duke of Argyll's Teaplant, wolfberry, Common Matrimony Vine.	Terrestrial	9
Lysichiton americanus	American Skunk Cabbage, American Skunkcabbage, Skunk-Cabbage, Western Skunk-Cabbage, Yellow Skunk Cabbage, Yellow Skunk-Cabbage	Terrestrial	15
Macropus rufogriseus	Red-necked Wallaby	Terrestrial	15
Mahonia aquifolium	Oregon-grape	Terrestrial	12
Malus domestica	Apple	Terrestrial	8
Matricaria discoidea	Pineappleweed	Terrestrial	5
Matteuccia struthiopteris	Ostrich Fern	Terrestrial	14
Melilotus officinalis	Ribbed Melilot, Yellow sweetclover	Terrestrial	12

Species	Common Name(s)	Environment	Score
Mentha × gracilis	Ginger Mint	Terrestrial	9
Mentha × piperita	Pepper-mint	Terrestrial	10
Mentha × villosa	Apple-mint	Terrestrial	9
Mentha spicata	Spear Mint	Terrestrial	7
Mentha suaveolens	Round-leved mint	Terrestrial	8
Mycelis muralis	Wall Lettuce, Wall-Lettuce	Terrestrial	10
Mytilicola intestinalis	Parasitic Copepod	Marine	11
Oenothera glazioviana	Large-Flower Evening-Primrose, Large-Flowered Evening Primrose, Red-Sepaled Evening-Primrose, Redsepal Evening-Primrose	Terrestrial	12
Oenothera stricta	Chilean Evening-Primrose, Evening Primrose, Sweet Sundrop	Terrestrial	12
Orobanche minor	Clover Broomrape, Hellroot, Lesser Broomrape, Small Broomrape	Terrestrial	17
Oxalis pes-caprae	African Woodsorrel, African Woosorrel, Bermuda Buttercup, Bermuda Woodsorrel, Bermuda-Buttercup, Buttercup Oxalis, Cape Cowslip, Cape Sorrel, Englishweed, Sour Grass, Soursob, Yellow Sorrel, Yellow Sour Grass	Terrestrial	14
Paralaoma servilis	Pinhead Spot	Terrestrial	8
Parthenocissus quinquefolia	Virginia-creeper	Terrestrial	16
Pastinaca sativa	Wild Parsnip	Terrestrial	15
Persicaria amplexicaulis	Red Bistort	Terrestrial	10
Persicaria bistorata	Bistort, Common Bistort	Terrestrial	9
Petasites albus	White Butterbur	Terrestrial	13
Petasites fragrans	Winter Heliotrope	Terrestrial	12
Phasianus colchicus	Common Pheasant	Terrestrial	9
Physella gyrina	Bladder snail, Tadpole	Freshwater	10

Species	Common Name(s)	Environment	Score
	Physa		
Picea sitchensis	Sitka Spruce	Terrestrial	12
Pinus contorta	Lodgepole Pine	Terrestrial	12
Pistia stratiotes	tropical duckweed , Water Lettuce	Freshwater	12
Planorbarius corneus	Great ramshorn	Freshwater	13
Poa palustris	Swamp Meadow-grass - English	Terrestrial	11
Prunus serotina	Black cherry, wild black cherry.	Terrestrial	17
Pseudotsuga menziesii	Douglas Fir	Terrestrial	15
Quercus cerris	Turkey Oak	Terrestrial	14
Quercus rubra	Red Oak, common red oak, eastern red oak, mountain red oak, and gray oak	Terrestrial	14
Rhododendron luteum	Yellow Azalea	Terrestrial	11
Ribes nigrum	Black Currant	Terrestrial	14
Ribes rubrum	Red Current	Terrestrial	13
Ribes uva-crispa	Gooseberry	Terrestrial	12
Robinia pseudoacacia	Black locust, black laurel, false acacia, yellow locust, honey locust, white locust, green locust, post locust, shipmast locust, locust, common robinia, robinia, white honey-flower.	Terrestrial	17
Rosa rugosa	Rugosa rose, Japanese rose .	Terrestrial	14
Rubus spectabilis	Salmonberry	Terrestrial	14
Rutilus rutilus	Roach	Freshwater	15
Salix viminalis	Osier	Terrestrial	9
Senecio inaequidens	Narrow-leaved ragwort	Terrestrial	16
Sorghum halepense	Johnson-grass	Terrestrial	12
Syringa vulgaris	Lilac	Terrestrial	8
Tamarix gallica	Tamarisk	Terrestrial	13
Tanacetum vulgare	Tansy	Terrestrial	9
Trifolium hybridum	Alsike Clover	Terrestrial	7
Urtica urens	Annual Nettle, Burning Nettle, Dog Nettle, Dwarf Nettle, Lesser Nettle, Small Nettle, Stinging Nettle	Terrestrial	7

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