

AtkinsRéalis



**Planning Design Report
– Mullingar Courthouse
to Saunders Bridge
Active Travel Scheme**

Westmeath County Council

June 2026

0086409DG0104

MULLINGAR ACTIVE TRAVEL BUNDLE

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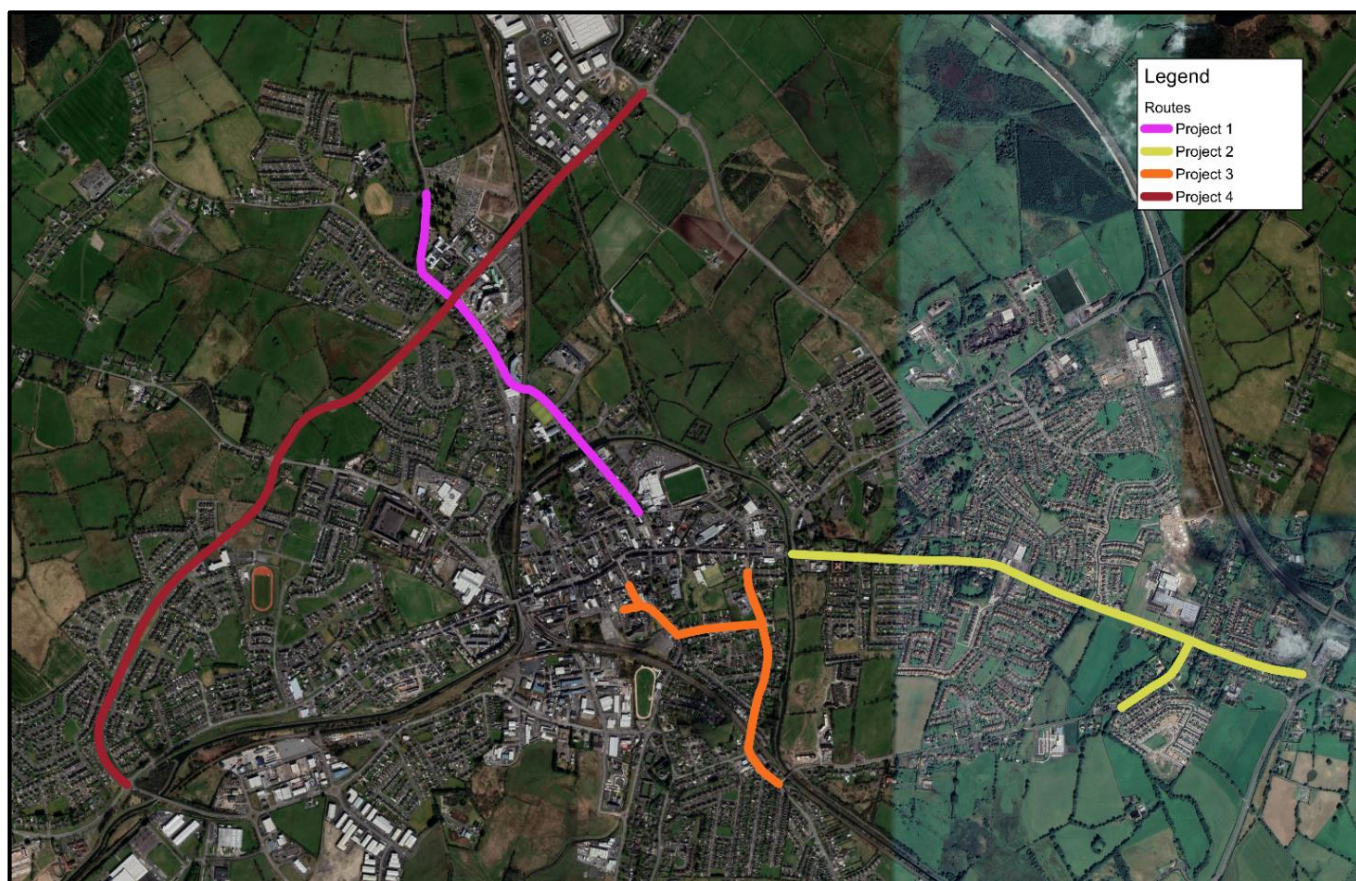
1. Project Description

Westmeath County Council (WCC) have appointed AtkinsRéalis to provide engineering services to develop the Mullingar Active Travel Bundle, which comprises of a number of Active Travel schemes along a series of roads within the town of Mullingar, Co. Westmeath.

The overall commission includes six areas within Mullingar town which will be divided into four different projects, as outlined below and in Figure 1-1:

- Project 1: St. Finian's to Harbour Street Footpath and Cycleway
- Project 2: Dublin Road Footpath and Cycleway and National Science Park Junction Improvements
- Project 3: Sundays Well Road - Lynn Road/Auburn Road - Millmount Junction Improvements and Mount Street Lower Pedestrian Interventions
- Project 4: Grange South to Orbital C-Link Segregated Cycling Scheme.

Figure 1-1 – Mullingar Active Travel Bundle Routes



Each project within the Mullingar Active Travel Bundle will be delivered independently from one another, as a stand-alone scheme complete with a full set of project appraisal and approval documentation. However, the schemes will be delivered with full consideration to provide integrated and consistent pedestrian and cycle facilities within Mullingar town.

This report refers to Project 3, which is approximately 1.8km long and comprises the route from the lower section of Mount Street until Jail Hill, Mount Street Gardens, the upper section of Lynn Road, Sundays Well Road, Auburn Road, Mullingar Town Park, Millmount Road from the junction with Millmount Avenue to the lower end and Ballinderry Road until the roundabout with Ardmore Road at Saunderson's Bridge. The section through Mullingar Park was not originally

included as part of the scheme, but following the Feasibility, Options Selection and Appraisal Report, it has been included as an additional section of the route. Figure 1-2 shows the extent of Project 3, named Mullingar Courthouse to Saunders Bridge Active Travel Scheme.

Figure 1-2 – Scheme Extents



1.1 Scheme Update

The scheme has been developed from Phase 2 Option Selection stage and progressed through Phase 3 Preliminary Design in 2025. In October 2025, it was decided that the section of the scheme along Mount Street north of the access to the Mullingar Courthouse would be removed from the scheme. The decision has been made to retain the existing access arrangements of the courthouse and the two-way traffic flows along this section of Mount Street. Therefore, the original extents, outlined in Figure 1-2 have been modified and the new extents is shown in Figure 1-3.

Figure 1-3 – Updated Scheme Extents



2. Project Aims and Objectives

The overall purpose of the Mullingar Active Travel projects 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 accordance with the Cycle Design Manual, 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 consider 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.
- Provide sustainable travel options.
- Enhance the safety of Vulnerable Road Users.

The objectives for the scheme are based on local, regional and national policies for the introduction of active travel measures as outlined in the following section as well as the criteria set out in the Department of Transport's Transport Appraisal Framework (June 2023)' (TAF). These-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 retails, healthcare and educational facilities, employment areas, etc 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 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.



3. Scheme Policy Context

3.1 Policy Overview

This chapter outlines the review of the relevant transport policies, guidance, and studies for the development of the Mullingar Active Travel Bundle. The breakdown of the policies reviewed and detailed in this section are listed in the following order:

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

3.2 National Policy Level

3.2.1 Project Ireland 2040

The Project Ireland 2040 document, published in 2018, is the government's long-term strategy to build a more resilient and sustainable future, in order to provide an improved country for all. The policy vision is to provide a comprehensive social, economic and cultural infrastructure for all people with the aims to achieve ten strategic outcomes around the main themes of wellbeing, equality and opportunity, outlined in Figure 3-1.

The National Planning Framework and the National Development Plan 2021 – 2030, mentioned in the following sections, combine to form part in the Project Ireland 2040.

Figure 3-1 – Ten Strategic Outcomes of Project Ireland 2040

1.	Compact Growth
2.	Enhanced Regional Accessibility
3.	Strengthened Rural Economies and Communities
4.	Sustainable Mobility
5.	A Strong Economy, supported by Enterprise, Innovation and Skills
6.	High-Quality International Connectivity
7.	Enhanced Amenity and Heritage
8.	Transition to a Low Carbon and Climate Resilient Society
9.	Sustainable Management of Water and other Environmental Resources
10.	Access to Quality Childcare, Education and Health Services

3.2.2 National Planning Framework

Project Ireland 2040 – National Planning Framework (NPF) provides a high-level strategic planning framework to guide development and investment. Mullingar is located in 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, representing an increase of 500,000 people.

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

- **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.

3.2.3 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 prioritisation, 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.

3.2.4 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 3-2 - NIFTI Four Investment Priorities (source: gov.ie/transport)

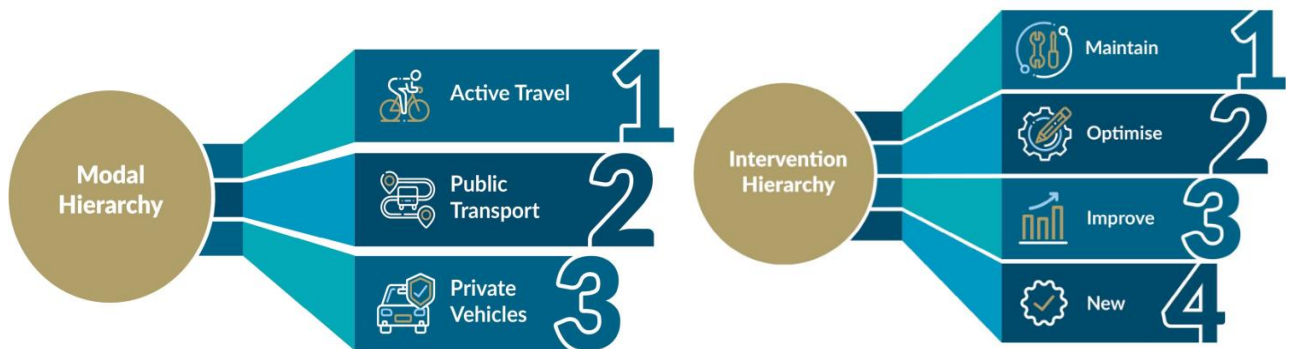


To achieve these goals, NIFTI defines the modal hierarchy and transportation investment priorities. NIFTI gives the highest modal priority to active travel followed by public transport and finally private vehicles. This means that, when possible, active transport options should be considered first when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

1. Maintenance of existing infrastructures and assets
2. Optimisation of the existing network and infrastructure
3. Improvements to the existing infrastructure
4. Construction of new infrastructure.

Figure 3-3 - NIFTI Modal and Intervention Hierarchies (source: gov.ie/transport)



3.2.5 National Sustainable Mobility Policy

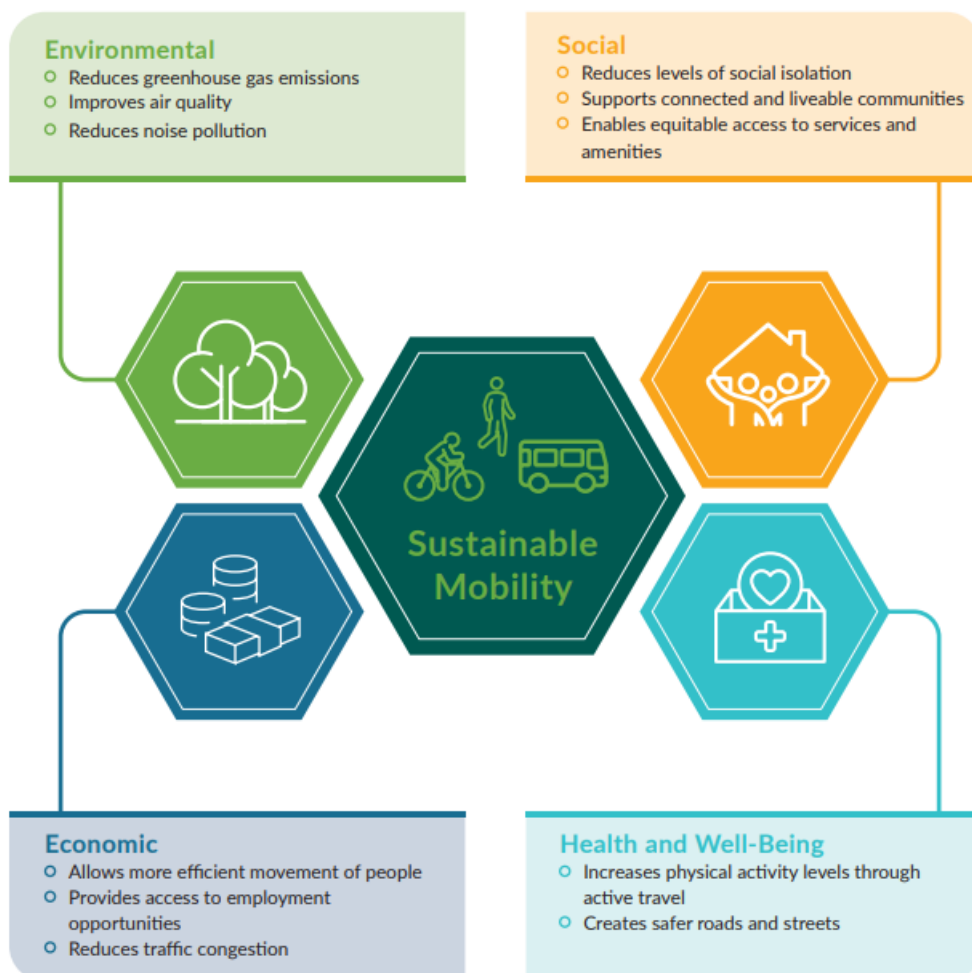
The Department of Transport published the National Sustainable Mobility Policy in April 2022. The Policy sets out the policy framework for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in greenhouse gas emissions by 2030. The new policy primarily focuses 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 outlines 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 Mullingar Active Travel Bundle is in alignment with this plan and would contribute to the implementation of several key actions identified in the plan.

Figure 3-4 below illustrates the benefits of sustainable mobility which will be achieved by delivering the Mullingar Active Travel Bundle.

Figure 3-4 - Benefits of Sustainable Mobility



3.2.6 Climate Action Plan, 2025

The Climate Action Plan 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 CAP25 states an objective of a reduction of 20% in total vehicle kilometres travelled and significant increases to sustainable transport trips and modal share. 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.

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

- **Action TR/25/7:** Advance roll-out of walking/cycling infrastructure in line with National Cycle Network and CycleConnects plans

3.2.7 Healthy Ireland Strategic Action Plan, 2021 – 2025

The vision of the 'Healthy Ireland Strategy 2019-2025' 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. Replacing these private car trips with cycling and walking will also improve local air quality and overall population health. 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.

3.2.8 NTA CycleConnects

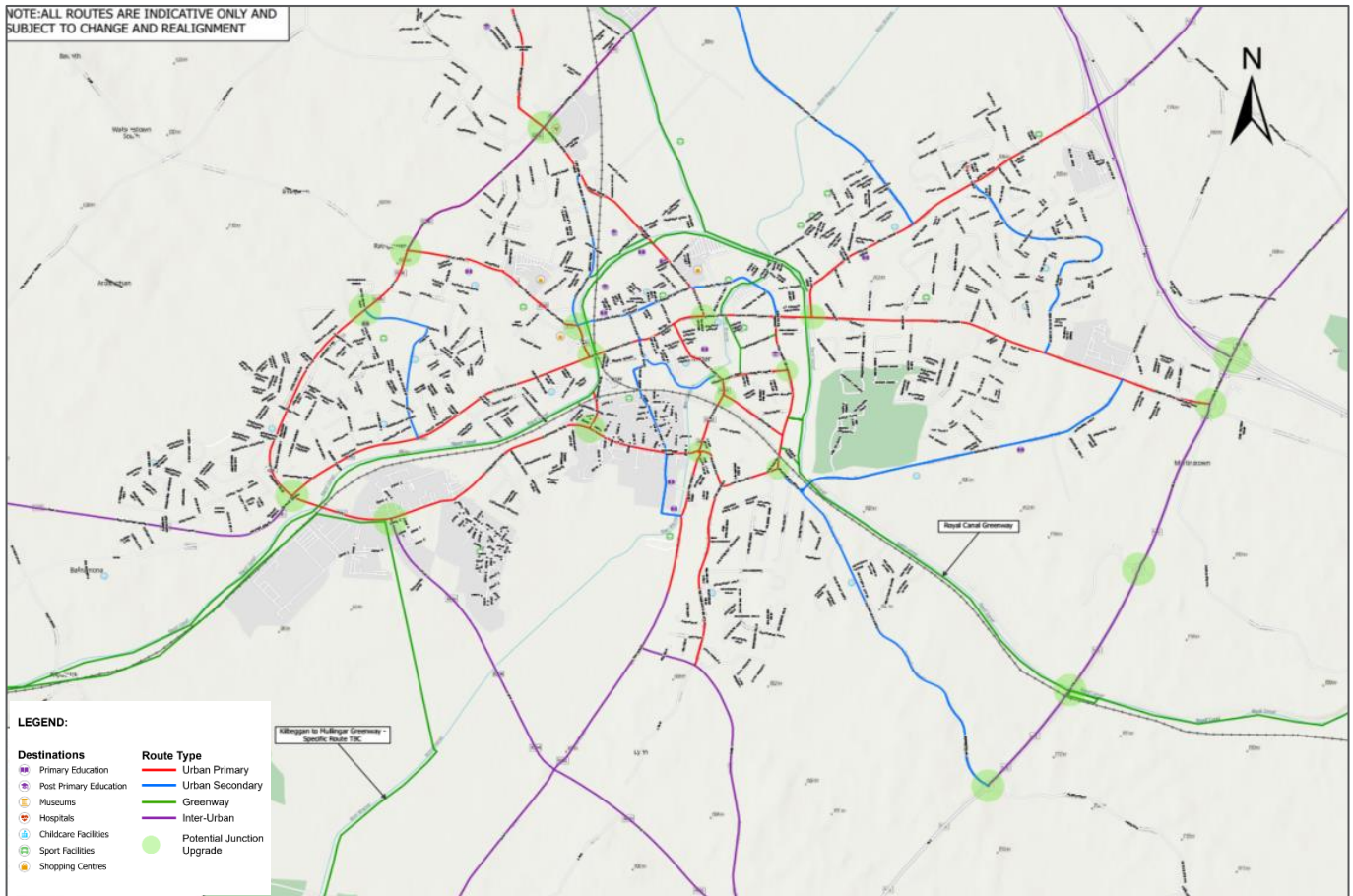
The National Transport Authority (NTA) proposed to develop new cycle networks across 22 counties, forming part of the CycleConnects: Ireland's Cycle Network programme. This includes an urban cycle network in Mullingar and a county network in the rest of Westmeath.

The 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. These 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 Mullingar network includes existing greenways, along with proposed urban primary and secondary routes. Primary urban routes are high-quality cycle routes able to accommodate high volume of cyclists, typically located in urban areas and on major desire lines in town centres and form radial and orbital cycle routes in the major towns and cities.

The Mullingar Active Travel bundle extents form part of the following links as identified within the NTA's "Proposed Mullingar Urban Cycle Network", as shown in Figure 3-5. All routes of the Mullingar Active Travel Bundle are listed in the NTA CycleConnects network, and they are Primary Urban, Secondary Urban and Inter-Urban Routes, that will provide enhance connection to several locations across town. The main junctions listed in CycleConnects are also being proposed to be upgraded as part of the Mullingar Bundle to enhance safety to all road users.

Figure 3-5 – NTA CycleConnects Routes in Mullingar



3.2.9 Connecting Ireland – Rural Mobility Plan

The Connecting Ireland – Rural Mobility Plan, issued in 2021, is a major national public transport initiative developed by the National Transport Authority with the aim to increase connectivity for people living outside of major cities and towns of Ireland. The Rural Mobility Plan proposes several changes to the transport network in Mullingar both in regional and local corridors discussed below and illustrated in Figure 3-6.

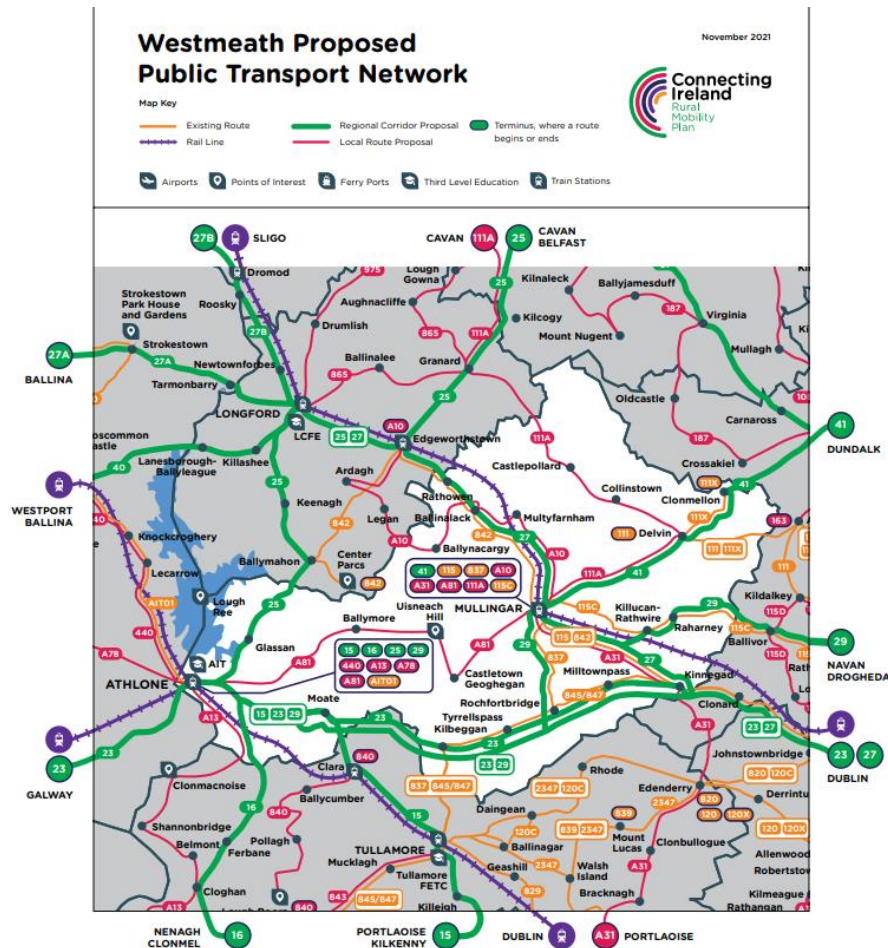
Regional Corridor Proposals:

- Routes 27A and 27B, upgrades of the existing 22 and 23 routes, are proposed to connect Ballina and Sligo to Dublin, also connecting to Mullingar. The upgraded services are to provide more frequent services and better integration along the corridor. A minimum service frequency of 2 hours is proposed between Ballina and Sligo to Dublin and a minimum frequency of once an hour is expected from Longford and Dublin for both routes.
- The 29 is proposed to connect Athlone to Drogheda, which would serve Mullingar. This would be a new corridor as only parts of the corridor are currently served by the 70 and 190 routes. Better integration of these routes is proposed, and a minimum service frequency proposed at an hour interval.
- Route 41 is proposed to link Mullingar and Dundalk. This would be a new corridor making use of the existing corridor used by the 167 route. This service would also provide better integration and connectivity between the two towns with a service proposed every 2 hours.

Local Route Proposals:

- The 111A is proposed to connect Mullingar and Cavan. This is proposed to extend the existing 111A which connects Mullingar to Delvin. The minimum service frequency of 4 daily return trips on weekdays and 3 daily return trips on weekends is proposed.
- The A31 is proposed to connect Mullingar and Portlaoise, which is a new route that would also serve Portarlington, Edenderry and Kinnegad with a minimum service frequency of 3 return trips daily.

Figure 3-6 – Westmeath Proposed Public Transport Network



3.3 Regional Policy Level

3.3.1 Eastern and Midland Regional Spatial and Economic Strategy (RSES), 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 RSES includes methods for delivering 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 Regional Spatial and Economic Strategy also states that 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 Mullingar Active Travel 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).

3.4 Local Level Policy

3.4.1 Westmeath County Council Development Plan, 2021 – 2027

The Westmeath County Development Plan, 2021-2027 states 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.

According with the 2022 census, approximately 70% of residents of Westmeath drive or are driven to work and only around 3% make use of public transport. Regarding active travel, around 7% walk and 1% cycle to work regularly. In order to promote a modal shift into more sustainable transport modes, WCC 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 Mullingar Active Travel bundle scheme:

- **CPO 10.1:** Promote and deliver a sustainable, integrated and low carbon transport system by enhancing the existing transport infrastructure such as cycling and pedestrian facilities.
- **CPO 10.2:** Continuation of the promotion of a modal shift away from private cars towards more sustainable forms of transport.
- **CPO 10.11:** Promote walking and cycling as efficient, healthy and environmentally friendly modes of transport by securing a direct, comfortable, convenient and safe network of cycle routes and footpaths.
- **CPO 10.15:** Improve the streetscape environment for pedestrians, cyclists and users with mobility needs by providing facilities that enhance safety and convenience and provide separation from vehicular traffic.

3.4.2 Westmeath Climate Action Plan 2024 – 2029

The Westmeath Climate Action Plan 2024 – 2029 has been developed as part of Ireland’s Climate Action and Low Carbon Development (Amendment) Act 2021 to create a low carbon and climate resilient county. The action plan aims to reduce emissions by 51% and increase energy efficiency from 33% to 50% by 2030. The plan aims to reach its goals by increasing climate literacy, implementing green public procurement and retrofitting public sector buildings.

The plan focusses on five themes:

- Theme 1: Governance and leadership
- Theme 2: Build environment and transport
- Theme 3: Natural environment and green infrastructure



- Theme 4: Communities: resilience and transition
- Theme 5: Sustainability and resource management.

Regarding transportation, the plan states that the primary source of the transport sector emissions come from burning fuel in combustion engines. One of the actions within Theme 2 is to continue the plans to guide the county in a sustainable modal shift and to integrate climate considerations into the design, planning and construction of new roads, bridges and active travel infrastructure.

The plan states that Mullingar has been designated as a Decarbonization Zone, and it is envisioned that the town will undergo several climate change mitigation measures to contribute to national climate action targets. Mullingar will act as a test bed to showcase that is feasible for decarbonization and climate action in a local and community level. The transport related carbon emissions in the town correspond to 27% of the total emissions. In order to reduce the emissions related to transport, the council will focus on sustainable mobility options and active travel, as well as installation of additional EV charging provisions. The proposed Mullingar Active Travel project is in line with the Westmeath Climate Action Plan actions.

3.4.3 Westmeath Climate Change Adaptation Strategy, 2019 – 2024

The strategy forms part of the National Adaptation Framework (NAF) published in 2018 in response to the provisions of the Climate Action and Low Carbon Development Act, 2015. The document aims to make adjustments to minimise or avoid the existing and anticipated impacts from climate change and to build climate resilient communities and to protect people, ecosystems, infrastructure, buildings and business from the negative impacts of climate change.

The document sets out goals, objectives and actions which are divided in six different themes:

- Theme 1: Local Adaptation Governance and Business Operations
- Theme 2: Infrastructure and Build Environment
- Theme 3: Land use and development
- Theme 4: Drainage and Flood Management
- Theme 5: Natural Resources and Cultural Infrastructure
- Theme 6: Community Health and Wellbeing.

Several actions within the document are aligned with the proposed Mullingar Active Travel Bundle.

- Under Theme 2, Action number 6, the document states the intention to develop public realm infrastructure in the county to develop enhanced sustainable transport solutions.
- Under Theme 3 action number 8, the documents refer to sustainable transport solutions to encourage less use of cars and;
- Under Theme 6 action 7, the council outlines their intentions to further promote the use of active travel facilities such as cycling routes and walking trails.

3.4.4 Mullingar Settlement Area Plan, 2025 – 2031

Variation No. 1 of the Westmeath County Development Plan 2021 – 2027 includes the preparation of a Settlement Area Plan for Mullingar. The Mullingar Settlement Area Plan (MSAP) 2025 - 2031 sets out a strategy for proper planning and sustainable development of Mullingar. It builds upon the previous Mullingar Local Area Plan, 2014 – 2020. The plan outlines policies and objectives for the future development of the town and its environs.

Some objectives and policies from the MSAP that are relevant to the Mullingar Active Travel Bundle can be seen below:



- **Policy CA2:** Encourage new development proposals, including alternations or extensions to the built environment to address relevant climatic factors, such as flood risk management, urban drainage capacity, energy efficient and nature based solutions, to support Mullingar's long-term sustainability and climate resilience.
- **Policy CA9:** Facilitate the reduction of carbon-intensive travel patterns in Mullingar by promoting viable mobility alternatives to private car use, supporting the town's public transportation system, investing in sustainable mobility infrastructure and encouraging the accelerated take-up of low carbon alternatives.
- **Policy CC9:** Promote and support the transformation of Mullingar to a '10-Minute Town', guided by the Mullingar Local Transport Plan, by prioritising compact growth, enhancing permeability in the built environment and supporting smart travel infrastructure and sustainable mobility options.
- **Policy SC12:** Support the Safe Routes to School Programme, and other similar initiatives, to promote sustainable mobility options for students travelling to and from educational establishments.
- **Policy-TM1:** Support and facilitate the implementation of the Mullingar Local Transport Plan 2024 and any subsequent updates.
- **Policy-TM2:** Require significant development proposals to demonstrate how they align with and contribute to the implementation of the Mullingar Local Transport Plan 2024, and any subsequent updates.
- **Policy-TM5:** Encourage and support the delivery of 'permeability schemes/links' including those identified under the Mullingar Local Transport Plan 2024, to improve cycle and walking facilities between estates and to the town centre.
- **Policy-TM6:** Support the implementation of sustainable active travel interventions and actions as outlined in Table 8.3 of the Plan.
- **Policy-TM7:** The design of new sustainable active travel infrastructure will be subject to environmental and/or ecological assessment, where applicable.
- **Policy-TM10:** Support traffic calming measures to facilitate active travel i.e. footpath widening, dished crossing points, tactile paving urban landscaping and tree planting including measures to improve pedestrian safety and accessibility throughout the town.
- **Policy-TM11:** Support and encourage the improvement of existing and the development of new signage and wayfinding to encourage the use of active travel modes.
- **Policy-TM12:** Promote safe pedestrian and cycle access to schools, improving school visibility through signposting and placemaking, reducing vehicle congestion and speeds and preventing illegal parking in the area, in accordance with the 'Safe Routes to School' Programme.
- **Policy-TM15:** Continue to deliver high quality streetscape and public realm improvements in tandem with the development of new active travel interventions in Mullingar.
- **Policy-TM25:** Continue to co-operate and liaise with the Department of Transport, the National Transport Authority (NTA) and Transport Infrastructure Ireland (TII) and other relevant stakeholders, in relation to enhancements to the transport network within Mullingar.

3.5 Design Guidance

3.5.1 Design Manual for Urban Roads and Streets

The Design Manual for Urban Road and Streets (DMURS) was updated in 2019 by the 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.

3.5.2 Cycle Design Manual

The Cycle Design Manual (CDM) was published by the National Transport Authority (NTA) in 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.

3.5.3 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 their options selection process.

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;
3. 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.

3.5.4 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
- Roundabout Retrofit – Including Rapid Build Options by NTA
- Traffic Signs Advice Note: Zebra Pedestrian Crossings by Department of Transport
- 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.

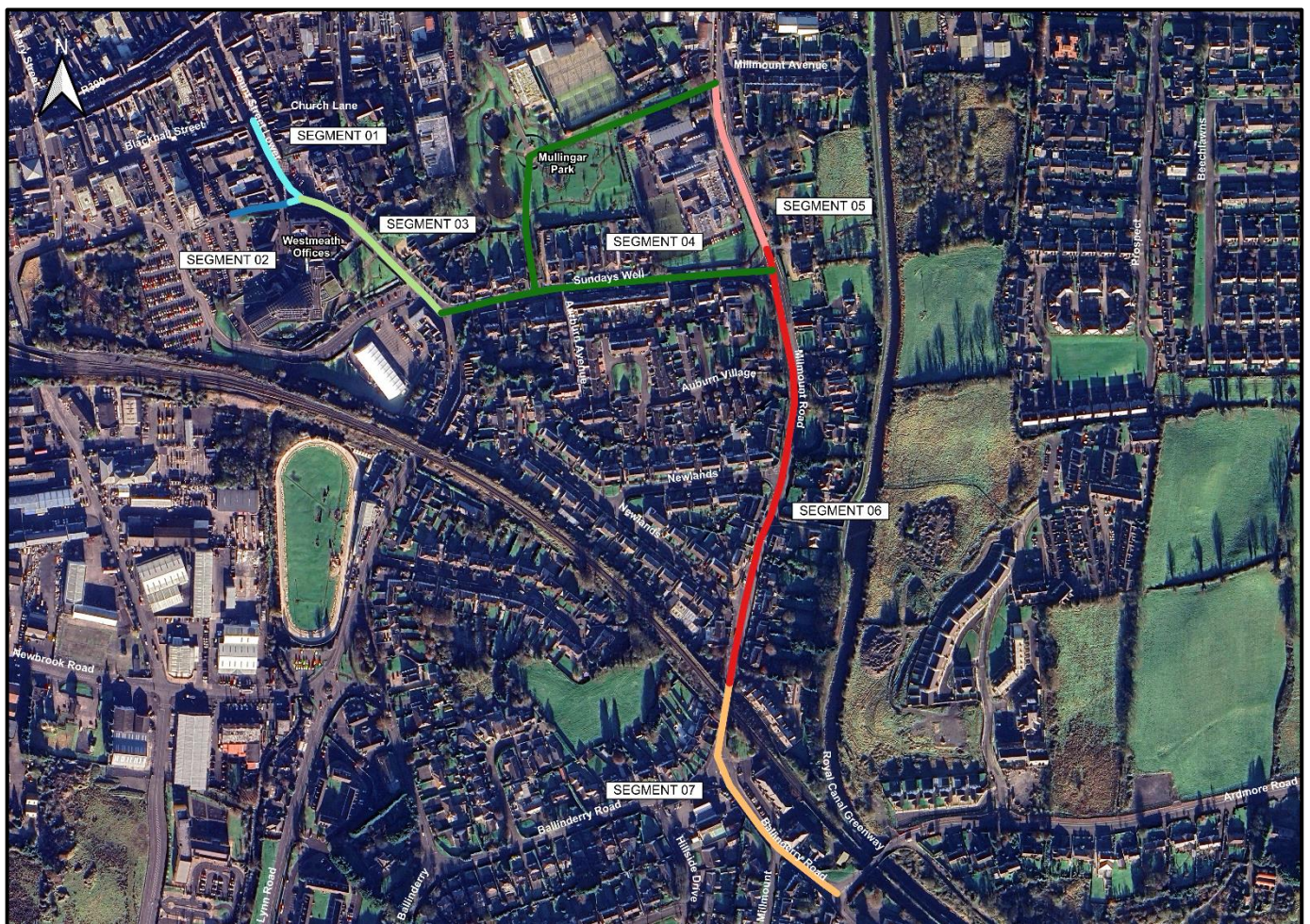


4. Existing Transport Network

4.1 Existing Road Network

Project 3 extends from the southern end of Mount Street, Mount Street Gardens, the northern section of Lynn Road – Jail Hill –, Sunday's Well Road, Auburn Road, Mullingar Town Park, Millmount Road and Ballinderry Road, as indicated in Figure 4-1. The total length of the corridor is 1,718.6m. Due to changes in the characteristics of the corridor, such as road widths, presence of parking bays and the presence of existing active travel facilities, the corridor has been divided into seven segments also outlined in Figure 4-1. The following sections discuss the artificial constraints along each segment within the corridor.

Figure 4-1 – Mullingar Courthouse to Saunders Bridge Active Travel Scheme Route Corridor



4.1.1 Segment 01: Mount Street

Segment 01 is located at Mount Street, from the junction with Church Lane to the north to the roundabout with Jail Hill and Mount Street Gardens and is approximately 102m in length. The northern end of Mount Street has been re-purposed to provide a one-way street south to north with wider footpaths to improve public realm while the southern end of the street still provides a two-way system to accommodate vehicles travelling from Church Lane and the Court Office to the south. However, it was noted from the traffic survey carried out in December 2023 that no vehicles have been recorded travelling south and the road is effectively already used as a one-way street. Footpaths are provided on both sides of the road and measure from 1.7-2.0m. There are no cycle facilities along the segment.

On the western side of the road, there are nine paid parking bays and a loading bay, which extends for the entire length of the segment. In front of The Chambers Bar, the parking area was converted into an external seating area which is fenced and protected from vehicular traffic. On the eastern side, despite the double yellow line, vehicles tend to park informally within the carriageway as the lane going south is not used. The bus route 837 travels along the segment but there are no bus stops provided.

The segment has two junctions, as indicated in Figure 4-2. The first junction is a priority crossroads that connects Mount Street to Church Lane and Blackhall Street. The other junction is a 3-arm roundabout which connects to Jail Hill and Mount Street Gardens. The roundabout only provides one dedicated crossing point, a zebra crossing on the northern arm of the junction and the remaining arms do not provide any form of crossing. There are seven protected structures along the segment, mainly residential and commercial units, as well as the Mullingar Court Office, according to the National Inventory of Architectural Heritage (NIAH) website.

A traffic survey was collected in December 2023 for a period of seven days from Monday the 4th to Sunday the 10th. The survey indicates that the average AADT during weekdays at the segment is below 3,500 vehicles and the average HGVs is 2.5%, approximately 85. The survey also collected speeds and indicates that the average speed is 23.7km/h and the 85thile speed is 31.1km/h. The speed limit is 50km/h and vehicles with over five axles cannot travel along the segment. The typical width between boundaries is 11.4m.

A pavement condition survey was undertaken via visual inspection of available imagery including photos and videos taken on-site on the 21st of November 2023 and supplemented where necessary with Google Street View. Segment 01 of the scheme has been classified as PSCI 6 according to the Pavement Condition Survey Index from the Urban Flexible Roads Manual (Department of Transport, Tourism and Sport, 2013) due to the presence of ravelling, longitudinal cracking, depressions/sags and alligator cracking. Figure 4-2 provides an overview of the segment and Figure 4-3 shows the typical existing cross section.

Figure 4-2 – Segment 01 Overview

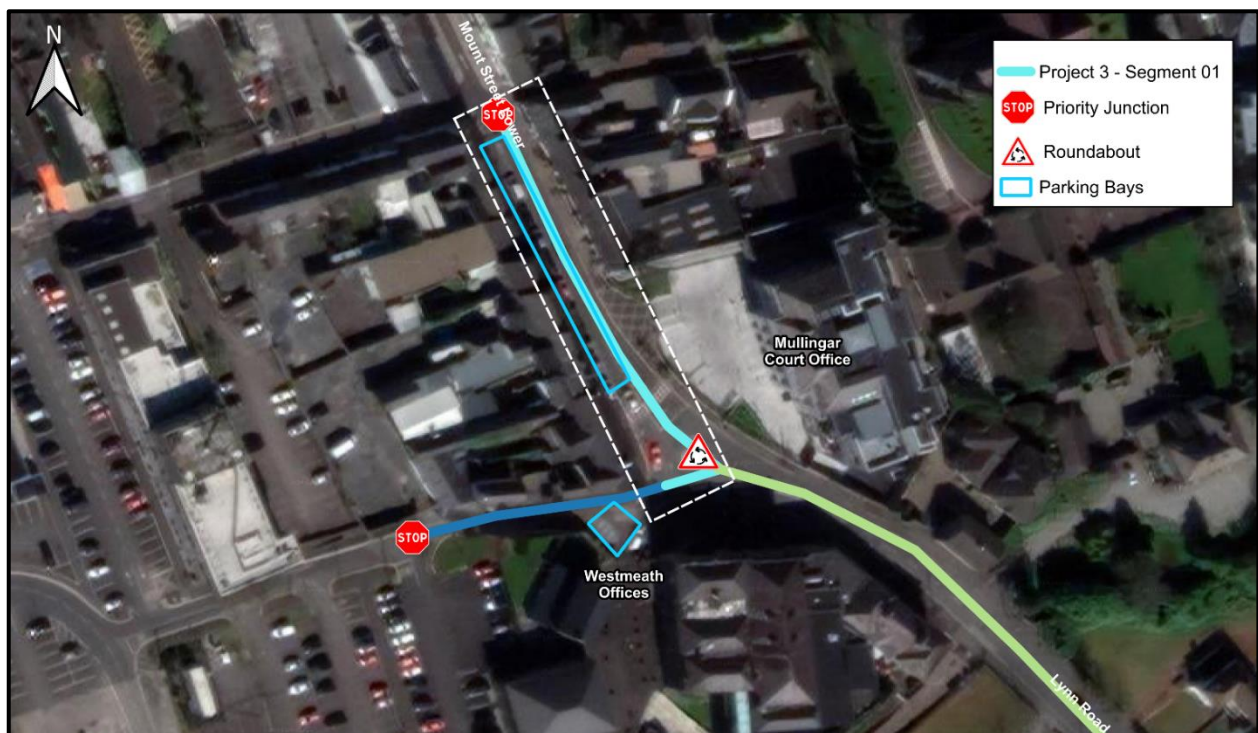


Figure 4-3 – Segment 01 Typical Cross Section



4.1.2 Segment 02: Mount Street Gardens

Segment 02 is a small stretch of the road, named Mount Street Gardens, that connects Mount Street to the car park adjacent to the County Buildings, approximately 57m in length. The segment is a one-way street west to east and there are footpaths provided continuously on the northern side, measuring around 2m in width, while on the southern side there is a small section of footpath that gets incrementally narrower towards the western end of the segment.

There are two accessible parking bays located to the eastern end of the segment, which link to the pedestrian access to the county buildings. There are no cycle facilities on this segment. There is also no bus service or stop at the segment. There is one priority junction, as indicated in Figure 4-4, which is one of the accesses to the car park.

The traffic survey indicates that the average AADT during weekdays at the segment is around 2,000 vehicles and the average HGVs is 2.8%, approximately 57. The average speed along the segment is 20.5km/h and the 85%ile speed is 25.9km/h. The speed limit is 50km/h and the typical width between boundaries is 6.5m.

According to the pavement condition survey, Segment 02 has been classified as PSCI 6 according to the Pavement Condition Survey Index from the Urban Flexible Roads Manual (Department of Transport, Tourism and Sport, 2013) due to the presence of ravelling, longitudinal cracking, bumps and alligator cracking. Figure 4-4 provides an overview of the segment and Figure 4-5 shows the typical cross section.

Figure 4-4 – Segment 02 Overview

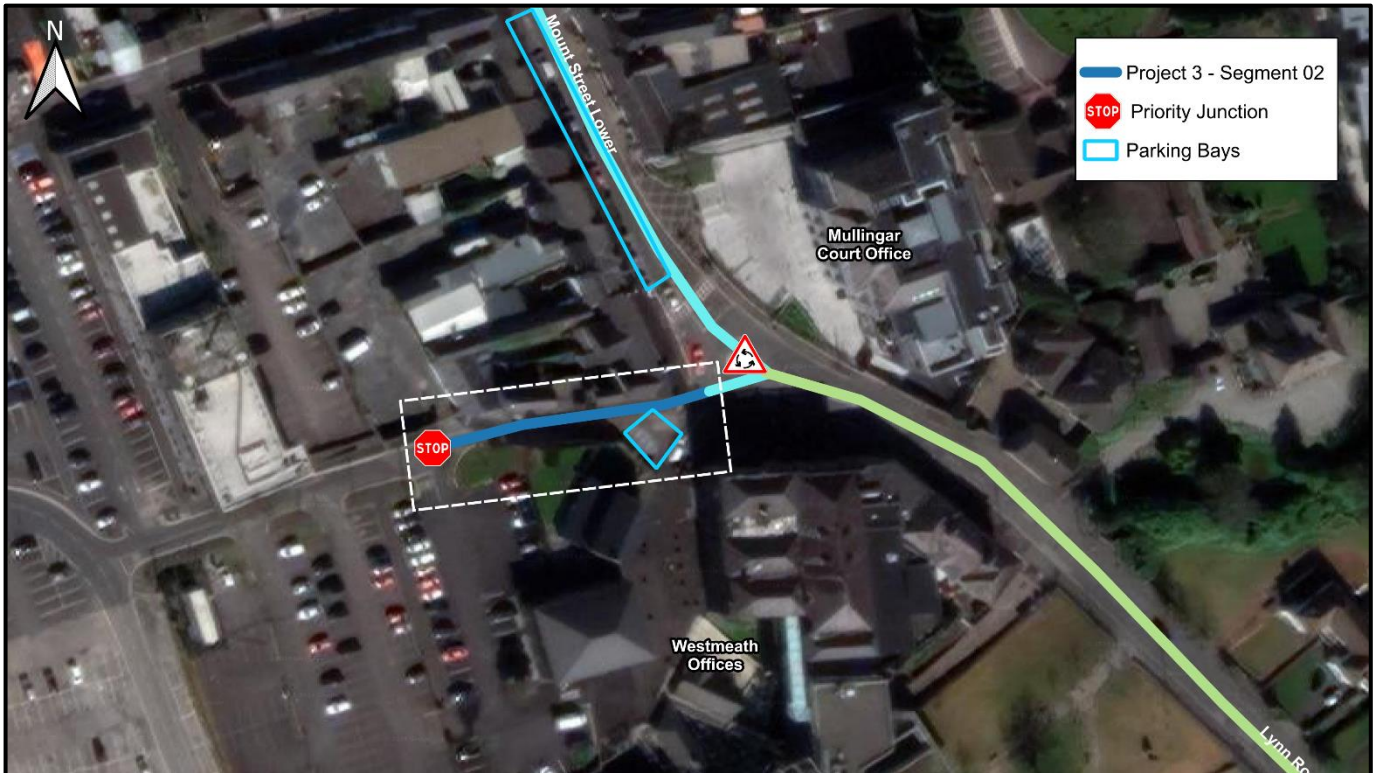


Figure 4-5 – Segment 02 Typical Cross Section



4.1.3 Segment 03: Jail Hill and Lynn Road

Segment 03 extends along Jail Hill and the northern end of Lynn Road from the roundabout with Mount Street to the junction with Sunday's Well Road, around 178m in length. The segment has one vehicular lane in each direction as well as footpaths provided continuously on both sides of the road that measure for the most part over 2.0m wide. There is a mandatory on road cycle lane provided on the south bound lane, which measures approximately 1.45m in width. The cycle lane does not connect to any other cycle network in the town as it is only provided along the segment.

There are two priority junctions at the segment, the first one connects the northern end of Lynn Road to Joe Dolan Road and the second connects Lynn Road to Sunday's Well Road. There are no parking bays along the segment. There are also no bus stops, however, bus service 837 runs along the segment. There is one protected structured in

the segment, a post box listed in the Westmeath County Development Plan 2021-2027, there is also one area listed on the National Monuments Record, a ford, located along this segment. The typical width is 12.6m.

The average AADT during weekdays at the segment is below 7,500 vehicles, from the survey in December 2023, and the average HGVs is 2.4%, approximately 180. The speed limit is 50km/h and the recorded average speed is 26km/h, with the 85thile speed recorded as 34.1km/h.

Segment 03 has been classified as PSCI 6 according to the Pavement Condition Survey Index from the Urban Flexible Roads Manual (Department of Transport, Tourism and Sport, 2013) due to the presence of ravelling, longitudinal cracking, bumps, edge breakup and alligator cracking.

Figure 4-6 provides an overview of the segment and Figure 4-7 shows the typical cross section.

Figure 4-6 – Segment 03 Overview

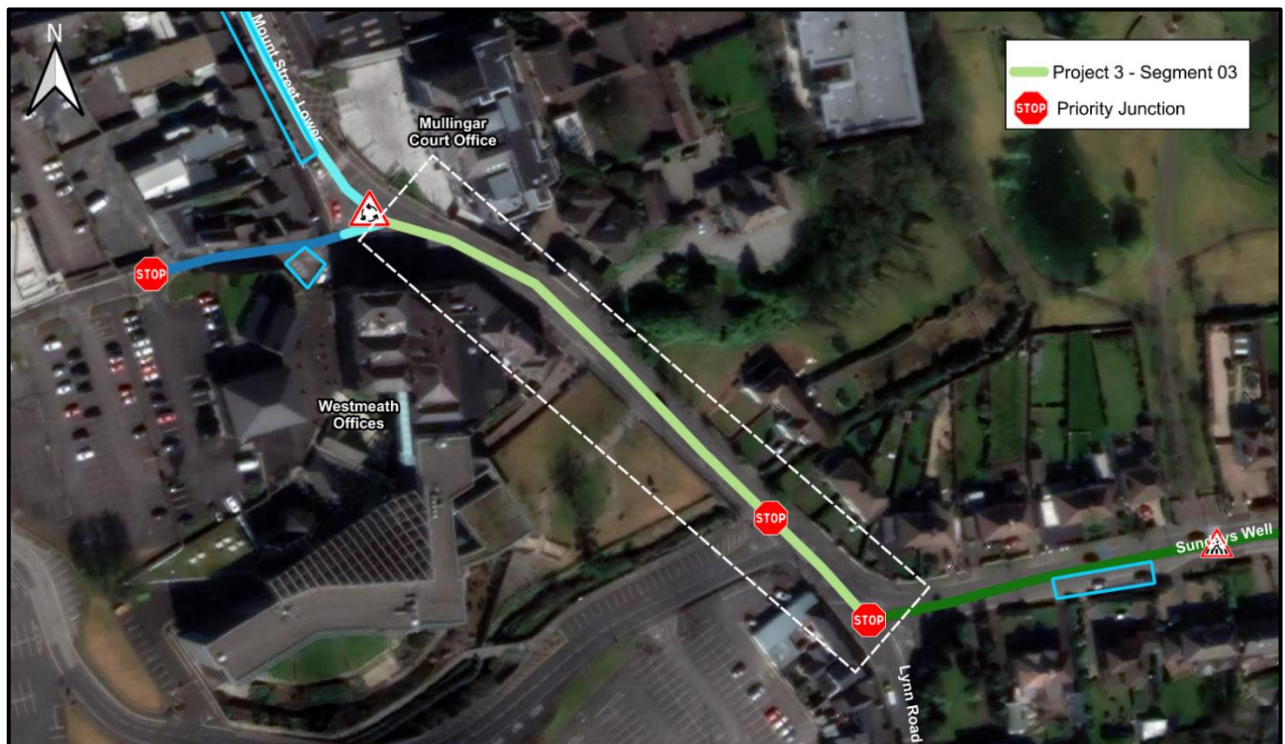


Figure 4-7 – Segment 03 Typical Cross Section



4.1.4 Segment 04: Sunday's Well Road and Auburn Road

Segment 04 is located at Sunday's Well Road, Auburn Road and the Mullingar Park, which extends for approximately 650m. The segment has one vehicular lane in each direction and there are four parking areas located on the western bound of the road, which cater for approximately 28 cars. The on-street parking areas have been recently changed to pay-and-display and one bay have been turned into a accessible space. On the approach to the junction with Lynn Road, the road widens to provide an additional lane to segregate vehicles proceeding in each direction. On the Millmount Road junction approach, Auburn Road still only has one vehicular lane in each direction, however, the junction radius is excessively wide, and drivers tend to form two separate lanes to proceed into Millmount Road.

There are footpaths on both sides of the road. On the northern side of the road, the footpath is segregated from the carriageway by a grass verge and measures approximately 1.3m wide. On the southern side, the footpaths vary in width, from 1.3m to 2.6m. There is one zebra crossing at the segment, which is located at the Town Park access point. The segment also has a protected structure, a well, located to the southwest of the zebra crossing.

There is one priority junction at the segment, which links to a cul-de-sac named Auburn Avenue. No bus route makes use of the segment, thus, there are no bus stops. As well as that, there are no cycle facilities at the segment. The typical width between boundaries is 13.8m.

In addition, there is an existing pathway of Mullingar Town Park proposed to be used as part of the scheme from the access to the park on Sunday Well's Road through to the access along Millmount Road. The path is approximately 3m and used a shared path between pedestrians and cyclists.

There are approximately 6,500 vehicles travelling daily along the segment, with an average HGVs of 3.4%, approximately 221. The speeds along the segment are in average 40.6km/h, with is within the posted speed limit of 50km/h. The 85thile speed is 49km/h.

The pavement condition carried out classified the segment as PSCI 6 according to the Pavement Condition Survey Index from the Urban Flexible Roads Manual (Department of Transport, Tourism and Sport, 2013) due to the presence of ravelling, longitudinal cracking and transverse cracking.

Figure 4-8 provides an overview of the segment and Figure 4-9 shows the typical existing cross section.

Figure 4-8 – Segment 04 Overview



Figure 4-9 – Segment 04 Typical Cross Section



4.1.5 Segment 05: Millmount Road, from the access to the Town Park to Auburn Road

Segment 05 comprises of Millmount Road from the access to the Town Park to the north to the junction with Auburn Road, approximately 165m in length. The segment has one vehicular lane in each direction and five pay-and-display parking bay areas along the segment that can cater for approximately 27 vehicles. The footpaths are continuous on both sides of the road. On the western side, the footpath is segregated from the carriageway by a grass verge and measures approximately 1.5m whereas on the eastern side the footpath measures around 2m wide and is adjacent to the road. The segment also connects to the Town Park, however, there is no appropriate crossing point at the segment to connect to the park.

There are no junctions along the segment and no cycle facilities. The bus route 190 travels along the segment, however, there are no bus stops. The width between boundaries is an average of 12.8m due to the presence of the on-street parking bays.

The average speed recorded along the segment is 35.3km/h and the 85%ile speed is 45.7km/h, which are within the posted speed limit of 50km/h. According to the traffic survey, around 8,300 vehicles travel along the segment daily, with an average HGVs of 3.5%, approximately 287.

A pavement condition survey noted the presence of ravelling, longitudinal cracking, bumps, edge breakup, rutting and alligator cracking, and the segment has been classified as PSCI 5.

Figure 4-10 provides an overview of the segment and Figure 4-11 shows the typical cross section.

Figure 4-10 – Segment 05 Overview

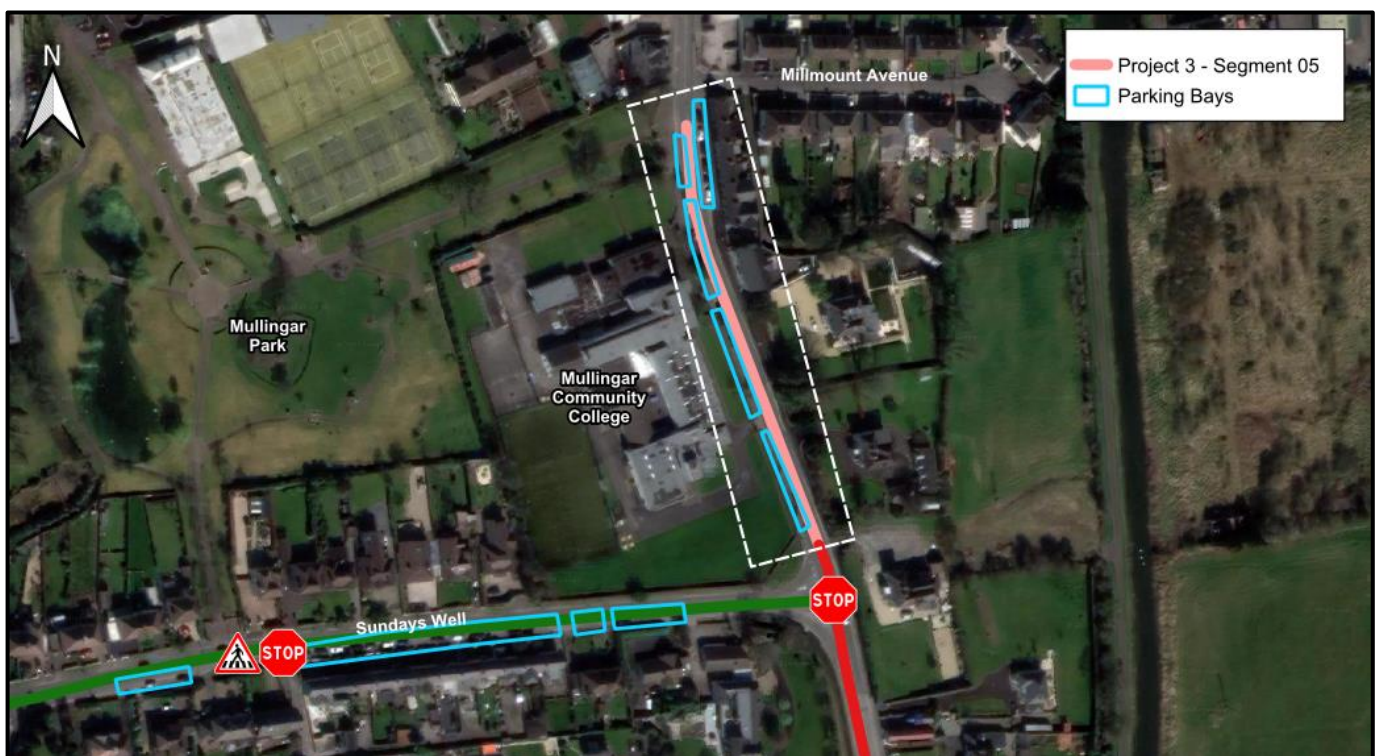


Figure 4-11 – Segment 05 Typical Cross Section



4.1.6 Segment 06: Millmount Road, from Auburn Road to the Railway Bridge

Segment 06 runs along Millmount Road from the junction with Auburn Road to the north until the approach to the Railway Bridge, approximately 430m. The segment also has one vehicular lane in each direction and two free car park areas with space for approximately 10 vehicles. The footpaths are continuous on both sides of the road and are similar to Segment 05. The eastern side of the road is for the most part segregated from the footpath by a grassed verge. On the western side of the road, the footpaths vary in width from as low as 0.9m to 2.3m. There are one-way mandatory cycle lanes on both sides of the road from the junction with Auburn Road to the southern Newlands junction that measure approximately 1.2m width.

There are four junctions along the segment, as indicated in Figure 4-12, which are all priority junctions. The junction between Auburn Road and Millmount Road is a major junction in the town and provides a large radius without appropriate crossing facilities for pedestrians crossing the road at the junction, allowing vehicles to enter and exit the junction at speed. The other three junctions serve the Newlands and the Auburn Village estate and also provide large radii and excessive width with no appropriate crossing points according to standards.

There are no bus stops along the segment but bus route 190 runs along the segment.

The average vehicles travelling along the segment is around 5,200. The HGV average is 2.1%, approximately 110. The survey also collected speeds and indicates that the average speed on both directions is 34.6km/h and the 85thile speed is 40.6km/h. The speed limit is 50km/h and the typical width between boundaries is 14.2m.

The segment had, similar to other segments, the presence of ravelling, bumps, longitudinal cracking and alligator cracking, which classified the segment as PSCI 6.

Figure 4-12 provides an overview of the segment and Figure 4-13 shows the typical cross section.

Figure 4-12 – Segment 06 Overview



Figure 4-13 – Segment 06 Typical Cross Section



4.1.7 Segment 07: Millmount Road and Ballinderry Road, from Railway Bridge to the junction with Ardmore Road

The final segment of Project 3, Segment 07, extends from the approach to the Railway Bridge to the Ballinderry Road/Ardmore Road roundabout, approximately 250m in length. Under the railway bridge, the width is constrained,

and a give and take yield system is in place to allow for only one direction of traffic at a time, with traffic travelling north nominally having priority over southbound traffic. The section under the railway bridge is a critical location due to width constraints and due to the bridge being a protected structure. The remainder of the carriageway has one vehicular lane in each direction.

Footpaths are provided continuously on both sides of the road and are generally over 2.0m wide. There are no cycle facilities along the segment. The bus route 190 and the Mullingar Town bus service MU1 travel along the segment. There are two bus stops, located opposite one another, placed between Ballinderry Road roundabout and Millmount Road junction. None of the stops have kassel kerbs or shelters. There are no parking bays along the segment. Typical width between boundaries is 11.8m.

There are three junctions along the segment, as indicated in Figure 4-14. The first is a 4-arm roundabout that links Ballinderry Road, Millmount Road and the residential estate Saunders Court. There are no dedicated crossing points at this junction, however, there is a raised zebra crossing approximately 30m west of the junction along the western Ballinderry Road that has been recently upgraded to be according to safety standards and can cater for movement of pedestrians travelling north-west along the segment. The second is a priority junction that connects to Millmount residential cul-de-sac, and the final junction is a 3-arm roundabout that links Ballinderry Road to Ardmore Road. None of these junctions provide dedicated crossing facilities for vulnerable road users. However, there is a recently constructed raised crossing located to the north of the roundabout between Ballinderry Road and Ardmore Road to connect with the recently constructed pedestrian bridge adjacent to Saunders Bridge.

Around 9,500 vehicles were recorded to travel along the segment, of which 3.3% were HGVs. The speeds are within the posted speed limit, 50km/h, with an average of 37.8km/h and a 85th percentile speed of 44.4km/h.

According to the pavement condition survey carried out in November 2023, the segment had minimal defects, as it had been recently resurfaced, and therefore, have been classified as PSCI 9.

Figure 4-14 provides an overview of the segment and Figure 4-15 shows the typical cross section.

Figure 4-14 – Segment 07 Overview

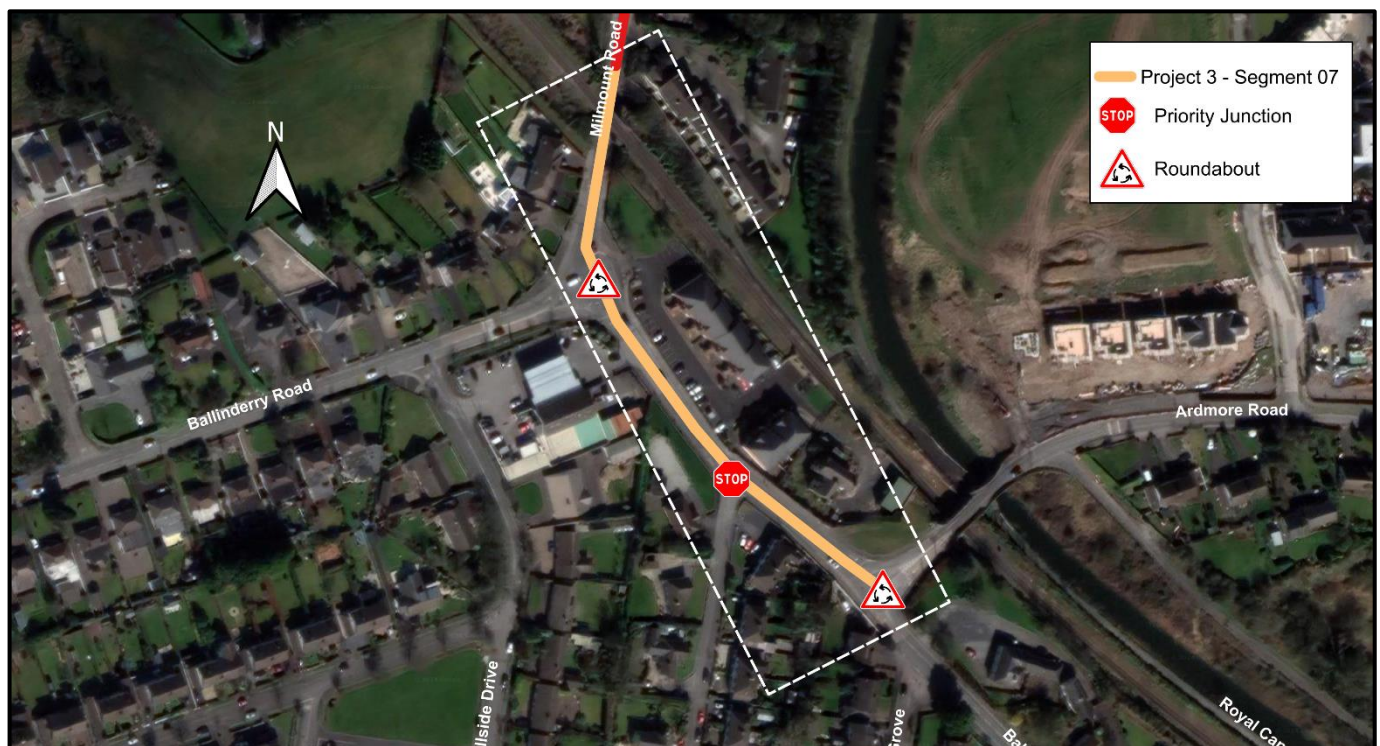


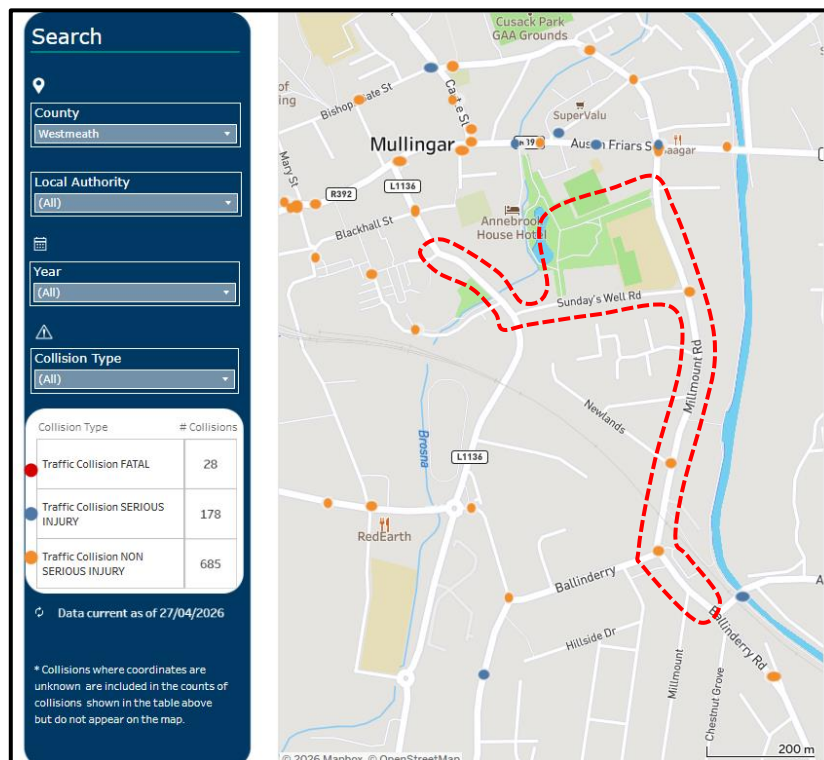
Figure 4-15 – Segment 07 Typical Cross Section



4.2 Road Collision Data

Data available from the Road Safety Authority (RSA) summarising collision data is shown in the figure below for the period of 2016 – 2024. The proposed scheme extents are shown within the red dashed line.

Figure 4-16 - Road Collision Data



This data shows that no fatal or serious injuries have occurred within the scheme extents during the relevant time period. Three non-serious incidents have occurred, each of which at a junction and two of which involved injury to cyclists.



5. Options Assessment Process

5.1 Option Selection

A Feasibility Study, Option Selection and Appraisal Report (FSOA) was compiled by AtkinsRéalis with the following aims and objectives:

- To consider the context of the scheme in terms of Local and Regional Planning Policy.
- To identify significant engineering and environmental constraints.
- To set out the route options considered and to summarise their feasibility and relative ranking in terms of various relevant criteria.
- To appraise the route options and make a recommendation in relation to a preferred concept route option.

5.1.1 Methodology for Options Selection

As mentioned previously, the corridor has been divided into seven segments. Each segment has been assessed separately through a Detailed Option Assessment. The first stage of the assessment is called Option Identification which is the preliminary analysis to identify feasible options that can be implemented at each segment according to the available width. The second stage is the Detailed Option Assessment, which is a complete Multi Criteria Assessment (MCA) of the different cross sections brought forward from Option Identification for each segment with the goal of determining the general link type arrangement.

The major junctions and the pinch point have also gone through a Detailed Option Assessment with bespoke options for each. The corridor has four major junctions, two roundabouts and two priority T-junctions, and one pinch points, the bridge under the railway line. Based on this, appropriate options have been considered for each junction and the pinch point 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).

Each option was assessed in a comparative manner to each other, and the highest ranked option carried forward to become the Emerging Preferred Option (EPO). The full detail of this options assessment process is included in the Feasibility Study and Options Selection & Appraisal Report (AtkinsRéalis document ref. 0086409DG0022).

5.1.2 Link Type Options

The options assessed for each segment of the corridor were as follows:

- Do-Nothing
- Standard Cycle Track (one-way on both sides or two-way on one side, traditional build) and upgrades of the existing footpaths on both sides of the road, with the retention of parking where possible.
- Standard Cycle Track (one-way on both sides or two-way on one side, rapid build) and retention of the existing footpaths on both sides of the road
- Standard One-Way Cycle Track on the eastern side and mixed traffic on the northbound lane.
- One-way Stepped Cycle Track (traditional build) and upgrades of the existing footpaths on both sides of the road
- Shared Active Travel Facilities on one side of the road (both traditional and rapid build) and footpath on the other side of the road, with the retention of parking where possible.
- Shared Active Travel Facilities on one side of the road and no footpath on the other side of the road.
- Cycling in Mixed Traffic (both traditional and rapid build), footpaths on both sides of the road and retention of on-street parking where applicable



- Additional Active Travel Route through Town Park.

5.1.3 Junction Options

The options assessed for the major junctions of the corridor were:

- Do-nothing (all junctions)
- Upgrade Roundabout to Compact Roundabout with Mixed Traffic (Mount Street/ Jail Hill Roundabout)
- Upgrade Roundabout with a Priority Junction with Side Road Crossing (Mount Street/ Jail Hill Roundabout)
- Upgrade Priority Junction with Protected Priority Junction (all priority junctions)
- Upgrade Priority Junction with Protected Signalised Junction (all priority junctions)
- Rapid Build Roundabout Upgrade (Ballinderry Road Roundabout)
- Segregated Roundabout with Shared Active Travel Facilities (Ballinderry Road Roundabout)
- Replace Roundabout with Full Signal Control Junction (Ballinderry Road Roundabout).

5.1.4 Pinch Point Options

The bridge pinch point was assessed as follows:

- Do-nothing
- Improvements on Approach and Dedicated Mixed Street
- Traffic Signal Shuttle System with active travel facilities.

5.2 Emerging Preferred Options

The Emerging Preferred Options (EPOs) for the link types and the junctions are summarised in Table 5-1. Please refer to Appendix A for the Preliminary Design Drawings for details of the proposals at each segment and junction.

The scheme will also improve existing bus stops in accordance with the Cycle Design Manual and provide additional bus stops facilities for the Mullingar Town Bus Service, provide additional green areas with opportunities for landscaping and public realm, improvements to drainage and public lighting, provision of additional crossing points to safely accommodate pedestrians wishing to cross the road, provision of connectivity with the Royal Canal Greenway and provision of bicycle parking at appropriate locations.

Table 5-1 – Scheme Preferred Option

Location	Proposal
Segment 01 and Segment 02	Continuation of the pedestrian interventions in place on the north end of Mount Street and a mixed traffic for cyclists and vehicles. Footpaths to be widened on both sides of the road in both segment and roads to be reduced to 3.5m wide.
Segment 03	2.4m two-way cycle track on the Eastern side 2m footpaths on the western side and 2.5m on the eastern side 5.5m carriageway Traffic calming raised toucan crossing.
Segment 04	2.5m Two-way cycle track on the north side from junction with Lynn Road until access to park



Location	Proposal
	Off-road facilities through the park Mixed street along Auburn Road. Retention of the existing parking bays on the southern side The existing zebra crossing upgraded in accordance with TL 605 of the CDM Traffic calming ramp.
Segment 05	2.5m two-way Cycle Track on the Western Side 2.4m footpaths on the western side and 1.8m on the eastern side 6.0m carriageway Traffic calming with a raised table priority junction and ramp.
Segment 06	2.3m two-way cycle track on the Eastern side 2.0m footpaths on both sides of the road 6.0m carriageway Retention of the parking bays and grass verges on the West Side Traffic calming raised tables at 3 No. priority junctions.
Segment 07	3.7m shared Active Travel Path on the Eastern Side A 2m footpath on the West Side 6.0m carriageway.
Pinch Point under Railway Bridge	Implementation of a Traffic Shuttle System
Junction 1: Mount Street / Jail Hill Roundabout	Upgrade to a Standard Side Road Crossing according to the Cycle Design Manual.
Junction 2: Jail Hill /Lynn Road / Sunday's Well Priority Junction	Upgrade to TL407 Two-way Cycle Track Crossing Side Road with Priority - Full Set Back According to the Cycle Design Manual.
Junction 3: Auburn Road / Millmount Road Priority Junction	Upgrade to TL407 Two-way Cycle Track Crossing Side Road with Priority - Full Set Back According to the Cycle Design Manual.
Junction 4: Ballinderry Road Roundabout	Upgrade into a TL703 Segregated Roundabout with Shared Active Travel Facilities as per the Cycle Design Manual

6. Preliminary Design

Key design features, common to all options are discussed in sections 6.2 to 6.11, denoting various links that emerged from the Options Selection Process, the treatment of junctions, entrances and pedestrians and cyclists crossings.

The Preliminary Design Drawings are contained within Appendix A.

A Stage 1 Road Safety Audit and a Quality Audit have been prepared for the scheme by a qualified audit team. The design has been updated to reflect the findings of the audit.

6.1 Changes from Options Selection Stage

During the development of the Preliminary Design, it became apparent that changes to the Emerging Preferred Option in a number of segments would result in less impacts on local residents and the environment. This was as a result of more detailed alignment designs being carried out which identified areas where there was opportunities to provide the proposed cycle facilities while reducing disruption. In particular these changes were as follows:

- The proposed two-ways cycle track on Millmount Road was updated to be located on the eastern side of the road rather than the western side. This was possible due to further detailed alignment design and allows for existing parking and grass verges with trees to be retained on the western side while still providing a cycle facility in line with the minimum requirements of the Cycle Design Manual.
- In order to provide continuity with the changes to the Millmount Road, the shared space along Ballinderry Road was changed to be located on the eastern side of the road also rather than the western side. This means that cyclists will not be required to cross the road twice to continue their journey and also will tie directly into the proposed active travel bridge scheme at Ardmore Road.
- Previously, a signalised shuttle system was proposed under the railway bridge where vehicles would have to stop when cyclists were going to proceed under the bridge. However, further considerations have been taken, and the existing give way system will remain in place and a shared path will be provided on the eastern side where both pedestrians and cyclists will be able to continue their journey uninterrupted regardless of vehicular traffic. The footpath on the western side will, however, have to be removed to allow the space to be relocated for the shared path.

6.2 Link Design

As noted in Chapter 5, the Emerging Preferred Options for the link types align with the link options in Cycle Design Manual Section 4.2. The proposed scheme will provide, for the most part, a segregated two-way cycle track, which is in line with Section 4.2.6 of the CDM. At sections constrained in width, the scheme will provide shared active travel paths, adjacent to the carriageway and off-road, which are in accordance with Section 4.2.7 of the CDM. The existing speed limit throughout the scheme is 50km/h, which is proposed to be maintained, and is also in accordance with Table 2.1 of the CDM.

On the side roads approaches to the scheme, appropriate road markings and signage will be provided to indicate the presence of cyclists on the road in a cycling in mixed traffic regime, according to Section 4.2.9 of the CDM. The speed limit at these locations will be 50km/h.

The desirable widths of each element of the links shall be as per Table 6-1. Widths which still comply with the minimum required in the design standards (CDM and DMURS) are denoted in brackets. The desirable widths are achieved at a minimum, unless noted otherwise within the Preliminary Design Drawings.

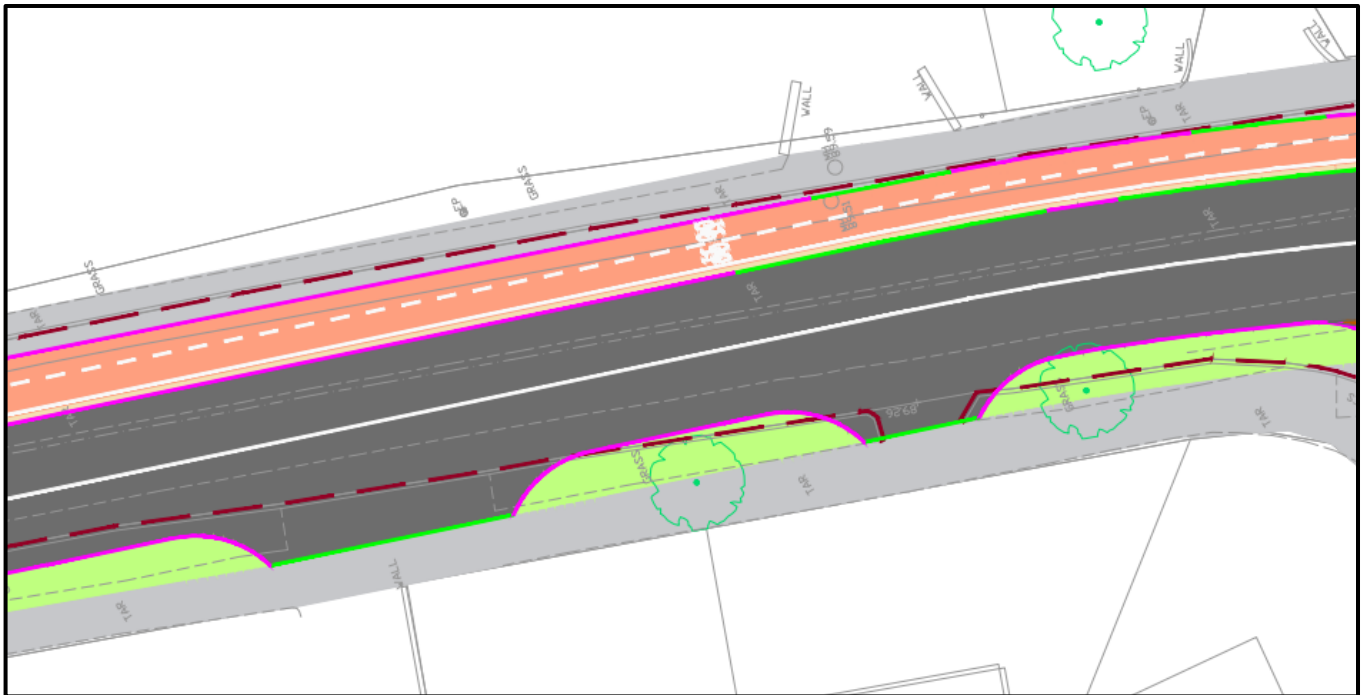


Footpaths will also be upgraded throughout the scheme to provide a desirable minimum width of 2m and with a minimum of at least 1.8m provided.

Table 6-1 - Table of Desired Widths

Link Type	Footway Width	Cycle Track Width	Trafficked Width	Total Width
Standard Two-way Cycle Track	2m (min. 1.8m)	3.5m (min. 2.3m)	2 x 3.25 lanes (2 x 3m lanes)	14m (min. 11.9m)
Cycling in One-Way Mixed Traffic and Contra Flow Cycle Path	2m (min. 1.8m)	2m (min 1.5m)	1 x 3.25 lanes (1 x 3m lanes)	7.25m (min. 6.3m)
Shared Active Travel Path		4.5m (min. 3.3m)	2 x 3.25 lanes (2 x 3m lanes)	13m (min. 11.3m)

Figure 6-1 – Example of Links



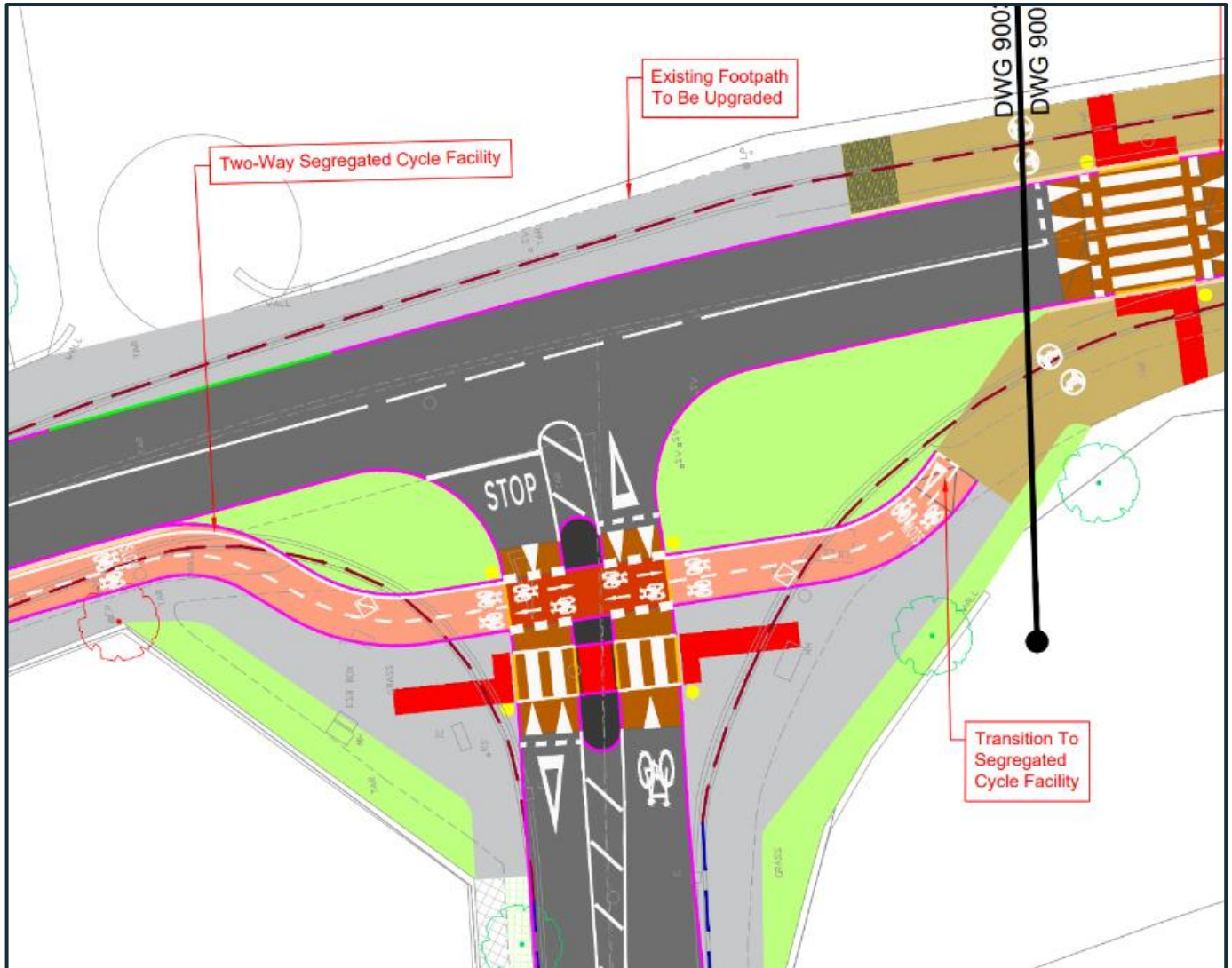
6.3 Junctions and Entrances

There are two major priority junctions along the scheme, both junctions are proposed to be upgraded to a TL407 Two-way cycle track crossing side road with priority - full set back from the CDM, indicated in Figure 6-2. Details of the design of the junctions are provided below:

- The junctions will have reduced corner radii, the cyclists passing through the junction will do so on their own cycle tracks with priority over vehicles with belisha beacon lights. On the Millmount Road/Auburn Road Priority Junction a 2m traffic island is provided to protect cyclists and pedestrians as they cross, however, this could not be provided on the Mount Street/Sunday Well's Road Priority Junction due to a lack of width available.

- Pedestrians will have dedicated uncontrolled pedestrian crossings on the arm with a zebra crossing. Tactile paving will be provided at the crossings to advise visually impaired pedestrians.
- Along the links, a vertical separation will be provided between cyclists and traffic, with further vertical segregation provided between pedestrians and cyclists. At junctions, cyclists and pedestrians will have priority over vehicles and will be raised above the carriageway level.

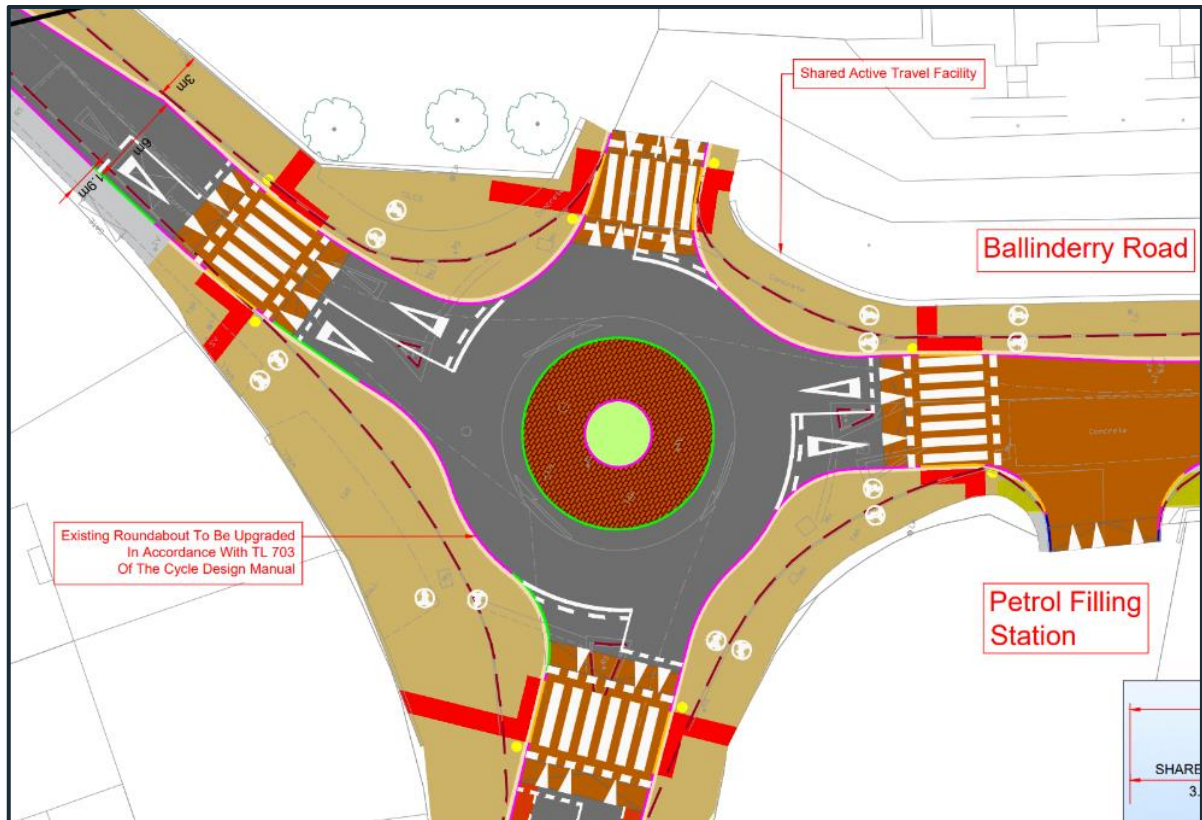
Figure 6-2 – Example of Priority Junction with Full Setback



There is one roundabout in the scheme which will be upgraded as a TL703 Segregated Roundabouts with Shared Active Travel Facilities. Details of the design of the junction are provided below:

- The junctions will have a single lane entry approach perpendicular to the central island as much as possible and narrow a circulatory lane.
- Raised zebra crossings are provided on all arms to slow down vehicular speeds and improve safety for all users.
- Cyclists and pedestrians will share the shared active travel path along the junctions and the crossing. Tactile paving will be provided at the transition between segregated and shared path to advise visually impaired users.
- An overrun area in the centre of the roundabout has been provided to allow turning of HGVs.
- Due to residential accesses nearby, the western arm zebra crossings was not designed with a 5m setback. Similarly, the eastern arm has a private access for Saunder's Court close to the junction, as a result the 5m setback could not be provided on this arm.

Figure 6-3 – Ballinderry Road Roundabout



6.4 Crossings

Zebra crossings and uncontrolled crossings are proposed to encourage slower speeds and make easier movement of pedestrians and cyclist along the scheme.

Given the location of the scheme in an urban area it is anticipated to have high pedestrian and cyclists' activity. The widths of crossings are as per the minimum required within DMURS (Section 4.3.2), the Traffic Sign Manual (Section 7.16) and Cycle Design Manual (Section 4.5).

The major junctions will provide crossing facilities on all arms for both pedestrians and cyclists. The existing zebra crossings at the entrance to the park on Sunday's Well and outside the Arts Centre on Mount Street are proposed to be amended to comply with CDM standards and raised to improve safety and the zebra crossing near Saunder's Bridge will be updated to align with the proposed scheme. A new toucan crossing is proposed along Mount Street nearby Joe Dolan Road and Sunday Well's Road to improve safety and connectivity along Mount Street. Two new zebra crossings are proposed along the scheme, one on the northern approach to the railway underbridge along Millmount and one along Millmount Road nearby the priority junction, to improve pedestrian connectivity to the facilities along the scheme. An example is shown in Figure 6-4.

Figure 6-4 – Proposed Zebra Crossing



6.5 Drainage

Typically, drainage will be provided using the existing surface water drainage system with existing gullies relocated into the realigned carriageway channel. The new footpaths and cycle tracks will generally slope towards the road in order to remove the need for additional drainage collection measures. Where kerb types are used for the cycle track which do not allow water to drain onto the carriageway, additional gullies may be used within the cycle track or localised gaps in kerb heights may be required.

Alternatively, and where the proposed scheme results in a marked increase in catchment area (due to an increased hard-standing area), sections of footway and/or cycle track will be constructed using either porous surfacing; or where appropriate, the cross-fall will fall towards an adjacent grass verge (thus not discharging into the surface water network).

The details of this will be developed as part of the detailed design.

6.6 Lighting

All footpaths, cycle tracks and roads will be lit, in line with current best practice and design guidance in relation to public lighting.

All existing lighting within the scheme will be upgraded to new energy-efficient LED lighting; the details of which will be developed as part of the detailed design.

6.7 Pavements

In order to give the highest quality of service for cyclists, it is envisaged that a smooth asphalt surface course will be used as recommended by the Cycle Design Manual, with sufficient base and foundation layers to prevent failure.

Shared spaces and footpaths are intended to be a concrete surface, to provide colour-contrast when compared to road and cycle surfaces, to aid people with visual impairments. The exact construction depth for the footpath and cycle track pavements is subject to detailed design.

The existing road surfaces have been assessed visually for deficiencies, as noted in Section 0. This report recommends that:

- Routine maintenance and if necessary, restoration of skid resistance, is carried out
- Sections of surface renewal are recommended to restore smooth surface characteristics.
- In certain areas where alligator cracking or other structural distresses are evident, it is recommended that a structural treatment is considered.

As such it is envisaged that at a minimum a new surface course will be provided as part of the proposed scheme. The exact construction depth for the road construction in areas that need targeted interventions is subject to detailed design.

6.8 Services

At the outset of the project, utility companies were contacted seeking information relating to their plant and ducting within the route corridor. The following information was received:

Table 6-2 - Existing Utilities in Mullingar 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
Virgin Media	Telecoms
BT Telecoms	Telecoms
Westmeath County Council	Stormwater
Siro	Telecoms

A Ground Penetrating Radar (GPR) has not been undertaken and the information have been obtained from the service providers only. Given the nature of the scheme, which is contained within the existing boundary extents for the majority of the length of the routes, service diversions are expected to be minimal.

6.9 Land Take

No land acquisition is proposed as part of the Mullingar Courthouse to Saunders Bridge Active Travel Scheme.

6.10 Tree Removal and Proposed Landscaping

1 tree is envisaged to be removed as part of the proposed scheme.



A targeted tree survey has been undertaken during Phase 2 and the expert advice of an arboriculturist has been used to determine the value, age and condition of all trees along the scheme and any mitigation required where affected. A tree impact statement has produced by the arboriculturist, the values from which are summarised in Appendix B.

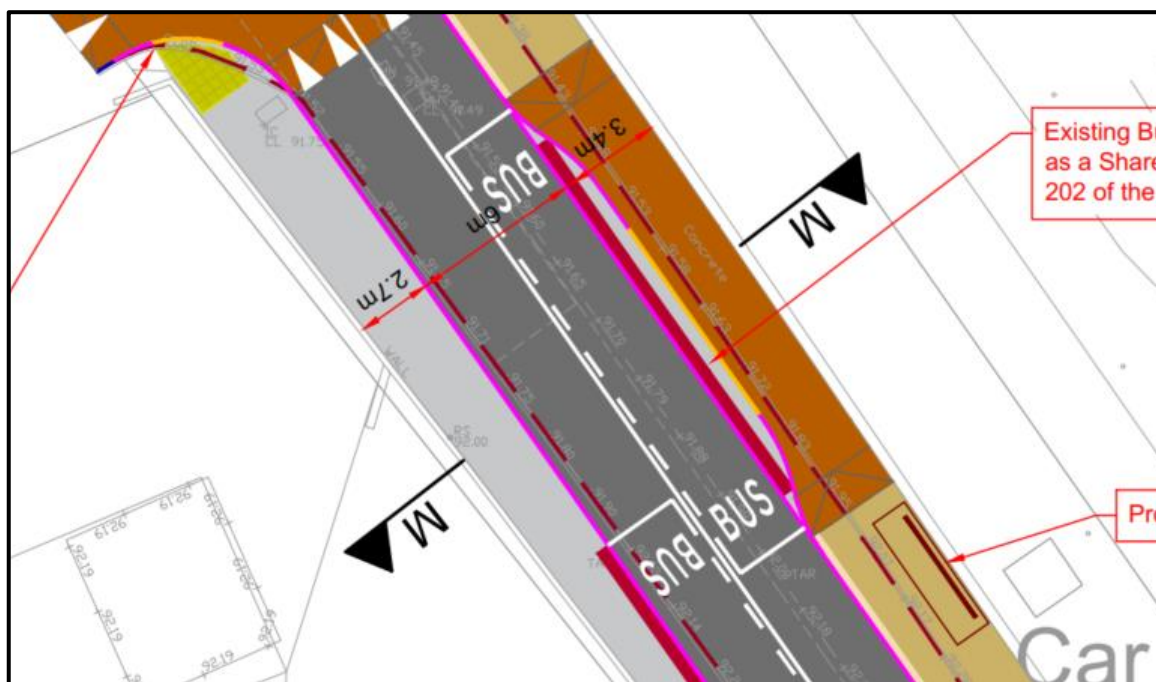
Some sections of grassed area are intended to be removed to allow the space to be converted into footpaths and cycle tracks, and landscaping, in the form of proposed grassed and planted areas, are proposed as part of the scheme, where noted on the Preliminary Design Drawings, included in Appendix A, such as at the northern section of the Millmount Road on the western side of the road.

6.11 Bus Stops

There are two existing bus stops located on Ballinderry Road. The stops serve the recently implemented Mullingar Town Bus Services.

The bus stop adjacent to the shared path has been designed similar to a TL202 Shared Bus Stop Landing Zone, as it is a location constrained in width. On the other side of the road, the bus stop will be designed as standard in-line bus stop with a bus cage and kassel kerb, however, there is not enough width for a bus shelter for this bus stop.

Figure 6-5 – Example of a Proposed Bus Stop



6.12 Key Features

Further to the scheme-wide design features noted in Sections 6.2 to 6.11, the following is noted below and should be read in conjunction with the Preliminary Design Drawings.

Table 6-3 – Key Features

Location	Details
Mount Street and Mount Street Gardens	The existing Mount Street Roundabout will be replaced with a raised priority junction, with the existing zebra crossing to be retained. Both the western and northern arm of the junction will be one-way traffic lanes, the northern arm will be a mixed traffic northbound traffic lane and an on-road contra flow cycle path southbound until the junction. On Mount

Location	Details
	Street, all parking and loading bays will be retained and the junction radii at the side road will be tightened for safety purposes. The accessible parking spaces on Mount Street Gardens will also be retained. The paved footpath on the Eastern side will be widened to tie-in with the recently upgraded footpath on Mount Street.
Mount Street Roundabout to Mount Street / Sunday Well's Road Priority Junction	Two-way cycle tracks will be provided on the eastern side of the road, segregated by the carriageway by a buffer. The footpaths on the eastern side are retained for the most part as they are wider than 1.8m and on the western side they will be slightly reduced. The junction with Joe Dolan Road will be slightly tightened with a raised table and appropriate crossing, there are proposals for a two-way cycle track on the Joe Dolan Road outside the scheme extents that are tied-in with the Mullingar Courthouse to Saunders Bridge Active Travel Scheme. A toucan crossing in accordance with TL 607 of the CDM is proposed adjacent to Joe Dolan Road and Sunday Well's Road. The road along this section will be reduced to 5.5m in order to provide the segregated active travel facilities and retain the existing mature trees on the eastern side. The Mount Street/ Sunday Well's Road Priority Junction will be upgraded to a Priority Junction with full setback for cyclists and pedestrians in accordance with TL407 of the CDM, cyclists and pedestrians will get priority over vehicles with belisha beacon lights provided for the zebra and cyclists crossing. Tactile paving throughout the junction for pedestrians is provided as well as flush kerbs for pedestrians and cyclists to cross the junction.
Sunday Well's Road / Auburn Road	The link will have a two-way cycle track on the northern side of the carriageway until the entrance of Mullingar Town Park where the cyclists will enter a shared path through Mullingar Town Park until the park access at Millmount Road. All parking bays will be retained. The existing zebra crossing adjacent to Mullingar Town Park will be raised and upgraded to CDM standards. To the east of the existing zebra crossing existing kerbs and footpaths are to be retained until the priority junction with Millmount Road. On approach to the Auburn Road/Millmount Road Priority Junction a proposed ramp is provided as a traffic calming measure. The Auburn Road/ Millmount Road Priority Junction will be upgraded to a Priority Junction with full setback for cyclists and pedestrians in accordance with TL407 of the CDM, cyclists and pedestrians will get priority over vehicles with belisha beacon lights provided for the zebra and cyclists crossing, a pedestrian island is also provided for the pedestrians to improve safety, tactile paving throughout the junction for pedestrians is provided as well as flush kerbs for pedestrians and cyclists to cross the junction.

Location	Details
Millmount Road	On the northern section of Millmount Road the existing parking on the western side of the carriageway will be replaced with a two-way cycle track and upgraded footpath. An existing tree and the grass verge along this section are proposed to be removed, the condition of the tree was considered fair with no defects in the tree survey. On the eastern side the existing facilities will be retained where possible, with the parking bays and footpath being retained. An additional accessible parking bay will be provided outside Millmount Terrace. The Millmount Road/Millmount Avenue priority junction is proposed to be a raised table priority junction as a traffic calming measure, additionally a ramp to the south is proposed as a further traffic calming measure. To the south of the Auburn Road/Millmount Road Priority Junction the cyclists and pedestrians enter into a short section of shared space and a raised zebra crossing will allow cyclists to transverse to the eastern side of the road, where the two-way cycle track will be positioned. Proposed traffic calming measures at the Auburn Village and both Newlands accesses through raised table priority junctions. Parking bays, grass verges and trees are retained to the south of the Auburn Road/Millmount Road Priority Junction. A small section of shared path is proposed near the Piper's Boreen access to the Royal Canal Greenway. The priority junctions will be tightened and designed according to the CDM.
Railway Bridge Pinch Point	The existing give way shuttle system will be retained for vehicular traffic while pedestrians and cyclists will be accommodated on the eastern side on a shared active travel path. This will allow for continuity of active travel journey without interfering on vehicular flows. To allow for space on the eastern side for the shared path, the road will have to be shifted west and the footpath on the western side will have to be removed. A 0.5m wide rubbing strip will be placed between the road carriageway and the bridge wall on the western side. A zebra crossing will be provided on the northern approach to the bridge to safely accommodate users traversing the road to access the shared path and the Royal Canal Greenway.
Railway Bridge Pinch Point to Ballinderry Road / Ardmore Road Roundabout	The remainder of the scheme will have a shared path on the eastern side and a footpath on the western side of the road. The road carriageway will be reduced to 6.0m. The Ballinderry Road roundabout will be upgraded to a TL703 roundabout with tightened entry arms and circulatory lane. Full setback is provided on the northern and southern arm, the remaining arms have no setback for the crossings due to design constraints at the roundabout. The existing zebra crossing on the western arm will be removed and replaced with the crossing at the roundabout. The recently constructed raised zebra crossing adjacent to the Millmount estate will be redesigned to align with the scheme proposals. The existing bus stop will be upgraded. The one on the north side of the road will be a TL202 with a shelter and on the southern side it will be an in-line bus stop. The priority junctions will be tightened and designed according to the CDM.

7. Preliminary Design Process Traffic Management Plan

7.1 Introduction

The following outlines the Preliminary Design Process Traffic Management Plan. This plan shall be updated as the Detailed Design Phase as required, to be included within the Tender Documentation, whereby the Contractor shall develop it in a Construction Stage Traffic Management Plan.

7.2 General Requirements

The Contractor shall develop the Design Stage Traffic Management Plan into a Construction Stage Traffic Management Plan prior to undertaking the works.

The Construction Stage Traffic Management Plan must be submitted to the Employer's Representative and Westmeath County Council for review and agreed prior to work commencing and shall include drawings detailing all proposed temporary traffic management arrangements including those listed below:

- The location and details of all proposed temporary traffic management measures including any lane closures and construction vehicle accesses
- Separate detailed plans in AutoCAD format showing all significant construction stages and phases
- The location and details of all temporary signage in full compliance with Chapter 8 including the potential for mobile VMS's (if deemed appropriate by the contractor) and road markings
- Bespoke designs for each phase or stage must be included, standard traffic management layouts from Traffic Signs Manual Chapter 8 are not acceptable
- The location and details of all temporary safety barriers should be shown
- Details of any temporary traffic diversions including location and details of all diversion signage
- Details of any temporary pavement surfaces required to facilitate the works should be described.

The Construction Stage Traffic Management Plans including details of all proposed temporary traffic management measures to facilitate traffic movements during the works must be lodged with the Employer's Representative and Westmeath County Council for consideration, a minimum of 14 days prior to the date on which it is proposed to commence the works.

The Project Supervisor for the Construction Stage (PSCS) / Contractor shall supply, erect, and maintain, for the duration of the Works, adequate warning and diversion signs and any other signs or traffic signals which may be considered necessary.

The PSCS/Contractor shall keep clean and legible at all times all traffic signs, lamps, barriers, and traffic control signals and shall re-position, cover or remove them as necessary during the progress of the works.

7.3 Road Surfaces

The Contractor shall be responsible for the restoration of existing carriageways, in the event that they are damaged as a result of the Works, temporary reinstatement will be put in place until permanent restoration is carried out. Any restoration in roads shall be carried out to the satisfaction of the Employer's Representative and the Local Authority.



It is the duty of the Contractor to ensure temporary signage is erected prior to permanent reinstatement of surfaces to ensure road users are aware of temporary surfaces.

7.4 Footpath / Cycle Track Surfaces

The Contractor shall be responsible for ensuring that temporary footpaths must be sealed using either a bituminous bound material or concrete surfacing. Temporary footpaths consisting of compacted aggregates will not be permitted. Temporary reinstatement can be put in place until the permanent restoration is carried out, to the satisfaction of the Employer's Representative and the Local Authority.

7.5 Special Events

The Contractor must ensure that the Programme and Construction Stage Traffic Management Plan is cognisant of and flexible to accommodate spikes in traffic flows on the project routes associated with planned major events in Mullingar.

Notwithstanding any consents or approvals granted for the Construction Stage Traffic Management Plan by Westmeath County Council, An Garda Síochána and the emergency services; Westmeath County Council and An Garda Síochána reserve the right to modify, remove or postpone the implementation of a particular Construction Stage Traffic Management system if deemed necessary by traffic conditions at any time during the works.

Regular meetings between the Employer's Representative, the Contractor, Westmeath County Council, the Gardaí and other emergency services shall be arranged by the Contractor and shall take place throughout the Construction Period; as well as at initiation or changes of Traffic Management layouts and at any other time deemed necessary by any of these parties. Such meetings shall take account of any special events that may require particular Traffic Management Operations.

7.6 Public Notices to be Managed by the Contractor

Information on proposed Temporary Traffic Management measures, including potential delay times, locations and duration of lane closures etc. should be announced in advance using various media e.g. press releases, local/national radio stations and AA Roadwatch.

The provision of Variable Message Signs (VMS) shall be considered by the contractor on all vehicular approaches to the site for a minimum of two weeks in advance of the proposed temporary traffic management works

Appropriate signage, in accordance with Chapter 8 of the Traffic Signs Manual, shall be provided on all pedestrian approaches to the site to warn pedestrian of the construction works and inform them of any Temporary Traffic Management in place.

Letters should also be issued to residents and business premises impacted directly by the works to inform them of upcoming changes to traffic arrangements on the project roads or affected side roads.

7.7 Liaison Officer

The Contractor will be required to appoint a Liaison Officer who will be responsible for advising local residents, businesses and property owners of proposed traffic management plans. The Liaison Officer is required to carry out a leaflet drop to all residences and businesses affected by any proposed traffic restrictions, 2 weeks prior to implementing any traffic management plan, and prior to any and all subsequent changes to traffic management.



The PSCS shall also provide information including qualifications of the Traffic Operations Supervisor, who shall be responsible for the implementation of the developed TMP onsite.

Where access to residences or property directly impacted upon by the works, then a suitable access/egress procedure should be agreed with the relevant parties and coordinated through the Temporary Traffic Operations Supervisor.

7.8 Routing of Construction Vehicles

Construction traffic shall only be permitted along the proposed scheme route, as outlined in Figure 7-1. Any road which outside the proposed scheme boundary is to be off limits for routing of construction vehicles, thus reducing the impacts to the local road network.

Figure 7-1 - Routing of Construction Vehicles



7.9 Phasing of Works

During the phasing of works it is essential that there is a maximum of one lane closure and where possible allow two-way traffic flow as work is being carried out. This will minimise delays and disruption caused by the works. This requirement will be included as part of the specification for the works at detailed design stage.

The ultimate phasing of the works will be determined during the detailed design stage in consultation with WCC with sectional completion possibly being utilised to ensure the appointed contractor can only work in one area at a time if

so desired. The sequence of construction will depend on the contractor's proposed method statements, plant, materials and will be the responsibility of the PSCS.



8. Summary and Conclusions

8.1 Pedestrians

The new routes will provide safe, accessible and attractive routes for pedestrians with minimum 1.8m wide footpaths for all areas where new paths are to be provided, with the exception of a narrow section, as noted on the Preliminary Design Drawings. New and improved crossings will allow pedestrians to cross all of the roads within the scheme extents in a safe manner. The location of many of these crossings will improve access and permeability for pedestrians to the residential, commercial and educational areas within the scheme extents, as well as the Royal Canal Greenway and the town centre.

Facilities for those users with visual or mobility impairments will be much improved, with tactile paving, flush kerbs and raised crossings provided throughout.

8.2 Cyclists

There are on-road cycle paths on the southern section of Millmount Road and on the eastern side of Mount Street, besides these facilities, there are no cycling facilities along the Mullingar Courthouse to Saunders Bridge Active Travel Scheme, therefore, the provision of the two-way cycle tracks and shared active travel paths will be very beneficial to cyclists travelling along the route which connects to the town centre, along the Dublin to Galway Greenway along the Royal Canal, several residential areas, a community school, commercial areas and the existing segregated cycle tracks on Ardmore Road, among others. The provision of this high-quality cycle infrastructure will provide attractive routes for cyclists linking many residential, educational and commercial areas.

8.3 Vehicular Traffic

In general, there will be limited impacts to the existing vehicular traffic on the surrounding road network, however given the nature of the proposals (e.g., reduction in carriageway width, reduction in junction radii, traffic calming ramps and an increase in pedestrian crossings) there will be a slowing of traffic speeds compared to that existing, and therefore some increase in journey time. The replacement of the roundabout between Mount Street/Jail Hill Street could also potentially increase the journey time. This however is a necessity in order to provide a scheme which is safe and in line with best practice and guidelines and will help to reduce the likelihood of conflicts between all road users. The improvements to pedestrian and cycling infrastructure will encourage a modal shift away from the private vehicle, which should have a corresponding effect on reducing traffic volumes locally.

8.4 Environmental Impacts

8.4.1 Environmental Impact Assessment Screening

As part of the Preliminary Design Phase an Environmental Impact Assessment Screening Report was prepared (AtkinsRéalis ref. 0086409DG0086). The purpose of this report is to determine whether the project requires the preparation of an Environmental Impact Assessment Report (EIAR), the key findings of which were as follows:

- Due to the limited nature of the works it is considered that there will be no significant cumulative impacts with other developments in the general area;
- Limited noise, vibration and dust emissions may be generated during construction; however, this is anticipated to be minimal in effect and will cause no significant impacts;
- There will be no significant impact on biodiversity, groundwater, surface water or traffic; and,



- There will be no significant impacts on recorded monuments or historic features.

In summary, no significant adverse impacts to the receiving environment will arise as a result of the proposed scheme.

Accordingly, we consider that the preparation of an EIAR is not required for the Mullingar Active Travel Bundle – Mullingar Courthouse to Saunders Bridge Active Travel Scheme. However, the competent authority will ultimately determine whether an EIA is required or not.

8.4.2 Screening for Appropriate Assessment

As part of the Preliminary Design Phase a Screening for Appropriate Assessment Report was undertaken (AtkinsRéalis ref. 0086409DG085). The purpose of the Screening for Appropriate Assessment Report is to determine the likelihood of significant effects, if any, that the proposed project could have on Natura 2000 sites either alone or in combination with other plans or projects.

This Screening for Appropriate Assessment report is based on the best available scientific information. It is concluded by the authors of this report that with the absence of any mitigation measures the proposed scheme, either alone or in-combination with other plans or projects, will not result in likely significant effects on any of Lough Ennell SAC, Lough Owel SAC, Lough Ennell SPA or any other European site.

Thus, it is recommended that it is not necessary for the proposed project to proceed to Appropriate Assessment

8.4.3 Trees

1 tree is envisaged to be removed as part of the scheme. A tree survey has been undertaken for the scheme by a qualified arboriculturist and the tree impact statement is included in Appendix B. The tree that is proposed to be removed is named “T66” in the tree survey, the condition of the tree was found to be fair with no defects, compensatory trees will be planted in relation to this tree’s removal.

There are some sections of grassed area along the scheme that are proposed to be retained or slightly reduce to reallocate space to the active travel facilities.

8.5 Statutory Process

The proposed Statutory Process at this Phase is subject to change; however, it is envisaged that the scheme will progress through a Part 8 Process, in accordance with the Planning and Development Regulations. Details of the process shall be reviewed and agreed in Phase 4 (Statutory Process).

8.6 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 *PW-CF3 – Contract for Building & Civil Engineering Works designed by the Employer*.

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



8.7 Conclusion

The Preliminary Design for the scheme has been undertaken in line with the Cycle Design Manual and the Design Manual for Urban Roads and Streets, developing the preferred options as outlined in the *Feasibility Study, Options Selection and Appraisal Report*.

The proposed improvements as part of the scheme align with the aims and objectives, as follows:

- **Safety Impacts:**
 - The potential for conflicts shall be reduced through the provision of formalised crossing facilities throughout.
 - The potential for conflicts shall be reduced by the segregation of cyclists from vehicular traffic.
 - The potential for conflicts between cyclists and pedestrians shall be reduced through the implementation of segregated facilities for most of the scheme.
 - Cyclists' priority shall be improved at all junctions.
 - Vulnerable road users shall be catered for through formalised crossing facilities, footways and the provision of kerbing and tactile paving in line with best practice.
- **Transport User Benefit and Other Economic Impacts:**
 - The scheme will provide improved connections to existing public transport located adjacent the route. The scheme will reduce the travel time as it will provide dedicated cycle facilities segregated from vehicular traffic and with priority over vehicles at junctions.
- **Accessibility Impacts:**
 - The provision of the proposed facilities shall bring enhancements for pedestrians and cyclists, particularly for those travelling to the adjacent residential, recreational, commercial and educational areas
- **Social Impacts:**
 - To improve accessibility for all road users and bring social inclusion benefits to those for whom non-motorized means are the predominate form of transit.
- **Land Use Impacts and Economic Impacts:**
 - From these benefits the proposals will offer good value for money, both at a strategic level, and also to those individual users for whom the scheme shall enable a modal switch from the private car to walking / cycling; and aligns with national, regional and local policies, as outlined in Section 3.
- **Local Environmental Impacts and Climate Change Impacts:**
 - The impact on the environment will be minimal, and the scheme is recommended to be screened-out for EIAR and AA.
- **Localised objectives:**
 - Pedestrian and cyclist permeability will be improved to several residential and commercial areas along the scheme and the town centre.
 - The scheme will improve the existing bus stops, with the inclusion of kassel kerbs and a bus shelter on one of the stops.
 - Improvements along Mount Street will improve connection with to the Town Centre.
 - The raised zebra crossings near Mullingar Community College will improve connection and safety to the educational facilities.
 - The continuous shared path on the railway pinch point will offer an uninterrupted and safe path for active travel users without interfering on vehicular flows.
 - Alongside the remaining routes of the Mullingar Active Travel Bundle and the Royal Canal Greenway, the scheme will provide a sustainable mode of active travel for all users and has the potential to reduce car usage in the town.
 - The scheme will provide additional recreational links by linking the local communities to future active travel routes in Mullingar (as identified in the GDA Cycle Network Plan).



APPENDICES

Appendix A. Preliminary Design Drawings



Appendix B. Tree Impact Survey



TREE SURVEY AND REPORT

FOR

MULLINGAR ACTIVE TRAVEL ROUTES

JULY 2024

COMMISSIONED BY

ATKINS REALIS

Dr Philip Blackstock



PB

TREE SURVEY AND REPORT

On trees growing in the grounds of

Mullingar Active Travel Routes

For

Atkins Realis

Terms of reference

This report was commissioned to record information on trees growing on or immediately adjacent to the above site (as defined in BS5837:2012). Obvious defects in these trees were noted, as were features that may create an impediment to a statutory provision or cause a nuisance. Recommendations for tree works that will eliminate, as far as is possible, the risk from dead or dangerous trees, abate nuisance and address the legal requirements of statutory providers have been included.

Methodology

Trees growing on the above site were subject to a visual inspection carried out from the ground. The base of each trunk was 'sounded' to identify significant basal decay and evidence of recent alterations to site conditions was noted. Measurements, distinguishing features and evidence of defects were collated electronically on site. No other methods for establishing the condition of these trees were used.

Site surveyed on

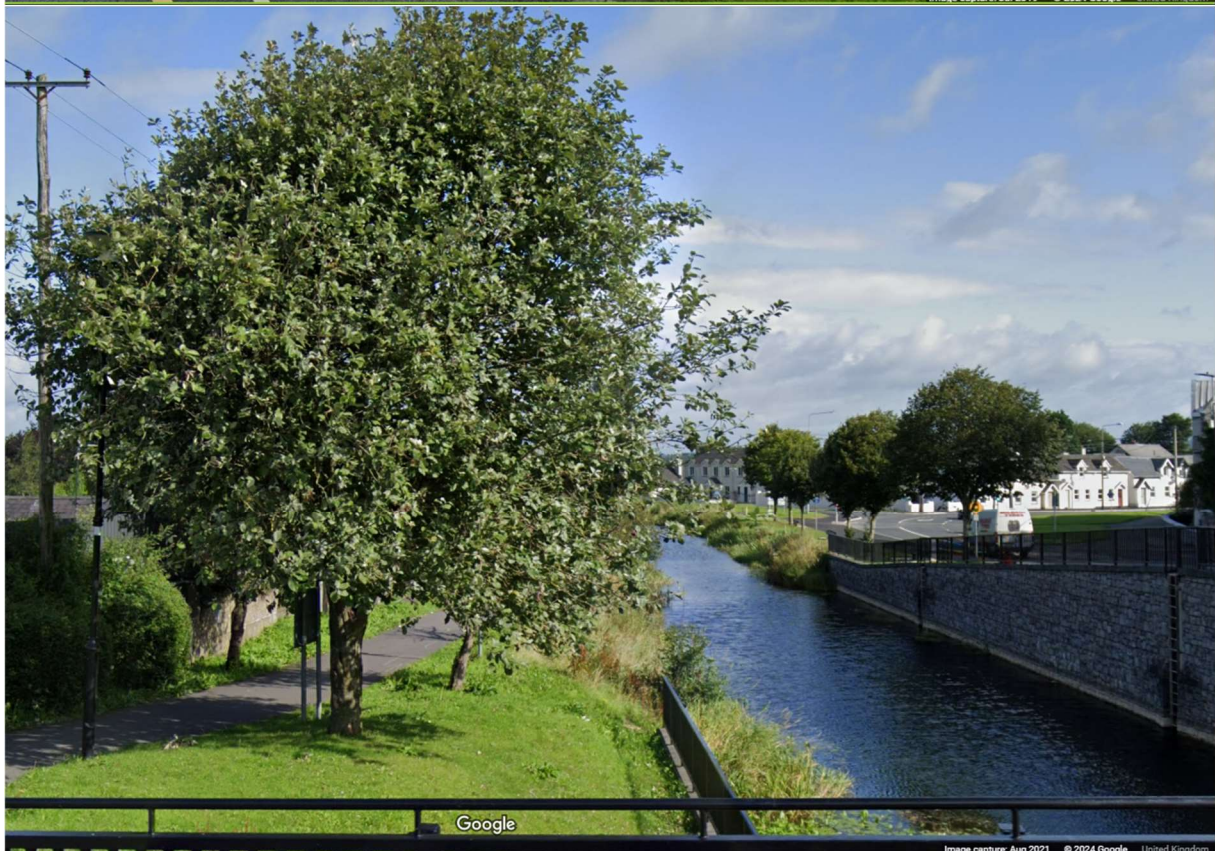
24th & 25th June 2024

(It is recommended that the trees reported on here are re-surveyed within three years of this report, or where significant deterioration has become evident, whichever is sooner)

Survey carried out and report compiled by

**Dr Philip Blackstock, 26 Tullynahinnion Road, Portglenone BT44 8EL
Telephone 02825 821202, Fax 02825 821295, Mobile 07767 393075,
Email: trees@philipblackstock.com**

TREES AT MULLINGAR ACTIVE TRAVEL ROUTES



Google Streetviews of trees growing on the above site, taken from the Dublin Road

TREES AT MULLINGAR ACTIVE TRAVEL ROUTES



Google Streetviews of trees growing on the above site, taken from Millmount Road (top) and Harbour Street (Bottom)

REPORT ON TREES GROWING AT MULLINGAR ACTIVE TRAVEL ROUTES JULY 2024

- 1. Location & visual impact of the trees.** Mullingar is an attractive regional town in the centre of Ireland. It is understood that, as part of ongoing improvements to the infrastructure, a number of cycle routes are being considered. These routes connect the town centre to industrial, educational and healthcare centres. They all pass through a mix of commercial and residential development. Most of the trees reported on here are managed as street trees and are growing within roadside verges or pavements. They add to the general treescape of the town and should be considered significant in the local landscape.
- 2. Historical development of the site.** There are a number of mature trees reported on here that were planted or have grown from naturally dispersed seeds about one hundred years ago. Most of these trees, however, have been planted within the last forty years or so. All these younger trees seem to have been planted as street or park trees as part of civic improvements.
- 3. Tree condition & recommendations.** Most of the trees reported on here have been subject to ongoing management and are in a fairly good condition. As street trees, there is a need to clear branches and foliage back from lamps, footpaths and the carriageways. There are a few smaller trees that have reached the end of their safe useful life expectancy, and these trees should be felled to ensure site safety. It is understood that plans are being considered for the development of the above site. To ensure that trees to be retained are not damaged during construction, the Arboricultural method statements (that are included in this report) relevant to this project should be adopted.

All other recommendations are as per attached tree survey report sheets.

Dr Philip Blackstock

ARBORICULTURAL METHOD STATEMENTS

Protection of trees. A protective barrier, 2.3m high and comprising a vertical and horizontal framework of scaffolding, well braced to resist impacts and securely supporting weldmesh panels, (as illustrated in Figs 2 & 3 of BS5837:2012) shall be erected around the base of all trees to be retained on site. This barrier shall be clearly identified on site by the attachment of all-weather signs of suitable dimension stating: 'CONSTRUCTION EXCLUSION ZONE – NO ACCESS'. The line of this fence shall be at least the distance defined in the attached plan, or as otherwise directed by Dr Philip Blackstock. No construction traffic, materials or debris will be permitted within this zone of protection.

Access facilitation pruning. If it is deemed appropriate to trim back retained trees to provide adequate access to approved construction works, all such tree works should be undertaken by a competent and suitably qualified tree surgeon (with associated support, as defined in the Health and Safety section of this report). Such works shall remedy any tree related conflict with proposed structures or access in a way that ensure that not less than 70% of live buds are retained within the tree canopy. The aim of the tree works shall be to retain the general form of the tree by a combination of crown thinning, reduction of end weight (tipping back of outermost branches) and the re-forming of the trees crown to create a pleasing and balanced crown. No branch, limb or trunk greater than 100mm diameter shall be cut in the process of reducing end weight.

Temporary surfaces within zone of protection. Where temporary access is to be established within the 'zone of protection' surrounding retained trees, (for example, during demolition of existing buildings), ground surfaces will be protected by a layer of sharp sand, approx. 50 mm thick, overlaid with a geotextile membrane on which a temporary surface of no fines granular material, at least 150 mm thick, (as detailed by a competent Civil or Structural Engineer) is laid. Where traffic is turning on these surface, stout planks will be laid over the geotextile membrane and below the granular material. The trunks of adjacent trees shall be suitably protected as indicated on site by Dr Philip Blackstock.

Demolition within the zone of protection. If it is deemed necessary to carry out demolition works within a construction exclusion zone surrounding retained trees, (for example, to remove existing paths), or kerbs, only pedestrian operated plant, or low ground pressure plant that is less than 2 tonnes gross weight fully loaded, shall be permitted. Such plant shall only be operated on existing hard surfaces, or where temporary surfaces have been established. In any case, no excavations within the root protection zone of these retained trees shall be permitted, except only, under close supervision, with the use of an 'Air Spade' or by the careful use of hand tools in a way that retains, without damage, all exposed roots with a diameter greater than 25mm.

Scaffolding within zone of protection. Where scaffolding is to be established within the 'zone of protection' surrounding retained trees, the existing undisturbed ground surfaces shall be protected by a layer of sharp sand, approx. 50 mm thick, overlaid with a geotextile membrane. Stout planks, such as closely side-buttressed scaffold boards, will be laid over the geotextile membrane and scaffolding will be constructed on these planks with additional stays, as directed by a competent person. Adequate protective fencing, as Illustrated in Figs 2 & 3 of BS5837:2012, will be maintained between scaffolding and adjacent trees.

Construction of hard surfaces close to retained trees. Where permanent surfaces are to be constructed close to retained trees, within the zone of protection as defined by BS5837: 2012, (and plotted on the attached Tree Constraints Plan) carefully remove accumulated organic material and loose soil, leaving existing topsoil in situ. Protect root zone with a layer of sharp sand and, on this, establish a firm sub-base of no-fines granular material supported on a geotextile membrane and a three-dimensional cell product (as defined by a competent Civil or Structural Engineer). Construct the paved area on this sub-base using established design guidelines (and no-fines granular material) with a porous surface finish such as pavers or porous bitmac.

Alterations of levels on lands adjoining construction exclusion zones. Where it is deemed appropriate to lower ground levels on land adjoining a root protection zone established around a retained tree, all excavations and the subsequent construction of supporting structures shall be managed in a way that excludes access by construction traffic to the construction exclusion zone. Where such alterations result in the lowering of existing surfaces, the existing ground water environment within the root protection zone shall be maintained by the insertion of a root barrier behind proposed supporting structures. This shall consist of a non-porous barrier carefully inserted in a way that maintains the existing soil moisture regime surrounding the retained tree. Where alterations result in the raising of levels, these shall be designed and detailed by a competent Civil or Structural Engineer to ensure no alterations to ground conditions within the root protection zones.

Landscaping within the root protection zone. If it is deemed necessary to carry out landscaping, planting or re-instatement works within a construction exclusion zone surrounding retained trees, only pedestrian operated plant, or low ground pressure plant that is less than 2 tonnes gross weight fully loaded, shall be permitted. Such works should be supervised by competent Horticulturalists and be timed and designed to ensure that no soil compaction occurs. In any case, no excavations within the root protection zone of these retained trees shall be permitted, except only, under close supervision, with the use of an 'Air Spade' or by the careful use of hand tools in a way that retains, without damage, all exposed roots with a diameter greater than 25mm.

Construction of garden walls or fences within the root protection zones of retained trees. No trench foundations are to be permitted within the root protection area of a retained tree. If walls, railings or other light structures are to be constructed within the root protection area of retained trees, these structures should be supported on point foundations excavated using a 300mm diameter drill or augur. (If in situ concrete foundations are to be constructed, the sides of the foundation pit, to 1.0m deep, should be lined with a non-porous lining.) In any case, no excavations for point foundations are to be permitted within 1.5m of a retained mature or semi mature tree. Excavations for these point foundations should be more than 2.0 apart and the wall or railings should be supported on a beam, or similar, constructed so that its underside is at least 50mm above exiting topsoil level. As the roots of large, retained trees may cause some movement within the top 1.0 m of the soil profile, all foundations should be designed by a competent Structural or Civil Engineer and be constructed to account for this.

HEALTH AND SAFETY

Working with trees is a hazardous occupation. It is important that competent tree surgery contractors are employed to carry out the tree works recommended in the attached tree survey report sheets. These contractors should carry all relevant insurance cover and should comply with the recommendations outlined below.

Notwithstanding the following recommendations, all tree surgeons and accompanying staff should comply with all the requirements contained in the Safety, Health and Welfare at Work Act 1989 (SHWW Act, 1989) and the Safety, Health and Welfare at Work (General Applications) Regulations, (GAR Regs, 1993) for forestry operations, Part 4 – work at height of the Safety, Health and Welfare at Work Regulations (2007), the Code of Practice for Managing Safety and Health in Forestry Operations and all subsequent legislation made thereunder.

Staff qualifications, experience and training

Only skilled operatives should be employed for all the work specified in the attached tree survey report sheets. These skilled operatives should have a proven expertise and experience in the areas of work specified and should hold all relevant certificates of competence.

Operatives using chain saws to fell trees must have National Proficiency Test Council (NPTC) certificate of competence Units CS 30, 31*, 32*, 33* (* whichever is appropriate for the size of tree being felled) if they are working from the ground and, in addition, Units CS 38, 39, 40 & 41 if they are climbing.

All operatives undertaking work near underground or overhead electric cables must have attended an Electricity Safety Awareness course, (such as UA1 Utility Arborist 1 Ireland). They must comply with the guidelines laid down in the Guidelines for Safe Working near Overhead Electricity lines in Agriculture (2010, published by the Health and Safety Authority), Code of Practice for Avoiding Danger from Overhead Electricity Lines (2019, published by ESB). Where there is a risk of a climber, equipment or parts of a tree touching or coming close to overhead cables, the advice of ESB must be sought, and adhered to, before work commences.

Work wear

All operatives should wear the appropriate safety clothing for the task being performed as specified in the relevant safety codes. Where operatives are employed on tree work near public roads, or when the available lighting is poor, they should wear high visibility 'florescent' jackets or waistcoats

Tools and Equipment

Tree surgeons should use such tools and equipment deemed suitable to complete the specified task. All bladed tools should be sharp and in a serviceable condition. All plant and machinery operated by the tree surgeon should be tested and certified to comply with all current legislation. All vehicles should be taxed and roadworthy. Machinery and vehicles should carry operational fire extinguishing equipment to the standards required by insurers.

All machinery should be used in accordance with the manufacturers' instructions. These machines should carry warning notices as specified by the relevant Health and safety guide.

Climbing and lifting equipment for tree work is subject to the provisions outlined in Chapter 2, Part 2 (updated 2010) of the Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007. Operatives using climbing or lifting equipment should be familiar with, and comply with, these and all other relevant regulations.

First aid

All chain saw operatives should have a current First Aid Certificate. No chain saw operative should be left working on site without an additional first aider present. These operatives should be familiar with FISA Safety Guide 802: Emergency Planning and First Aid or similar.

All operatives should have immediate access to a first aid kit conforming to the recommendations contained in BS8599 – 1 (2019) and, in addition, carry a personal first aid kit which includes a large sterile wound dressing.

Site Organization

Tree surgeons should ensure that a team of at least three people carry out all tree climbing, pruning and tree felling operations. When undertaking tree climbing work, one of the grounds staff must be competent to perform aerial rescue and be conversant with AFAG Safety Guide 402: Aerial Tree Rescue. In addition, one of the ground staff must be made responsible for ensuring that there is no trespass into the working zone when tree pruning or felling operations are taking place. Adequate staff should be available during tree work operations to ensure that no unauthorized persons or livestock enter the working area.

Tree surgeons should provide and constantly maintain all necessary warning and direction notices, cones and barriers when carrying out tree works that are adjacent to a road or footpath used by the public. These should conform to the recommendations and directions given in;

- Chapter 8 of the Traffic Signs Manual 1993,
- Temporary Traffic Management Design Guidance 2019
- Temporary Traffic Management Operations Guidance 2019 (all published by Department of Transport, Tourism and Sport)
- Guidelines for Working On Roads – issued by the Health and Safety Authority
- Any other relevant legislation and guidance

Where tree works are to be carried out over, or adjacent to, public roads, the contractor should arrange the work to avoid traffic congestion and public inconvenience. They should make arrangements with the Garda Síochána and the local county council as may be found necessary.

KEY TO SURVEY SHEETS

TITLE	DESCRIPTION
Tag No	The identification number of the tree, as indicated on site by a metal identification tag attached to the tree and defined with the prefixes; 'T' (tree), 'G' (group of trees) 'S' (shrubs), 'H' (hedge) and 'W' (area of wood)
Species	The common English name of the tree, as used by Alan Mitchell in 'A field Guide to the trees of Britain and Northern Europe' (Collins, London, 1974)
Height	The height of the tree, given in metres
Stem Diameter	The diameter of the tree trunk, measured at approximately 1.3 metres above ground level and given in centimetres
Crown spread	The radial crown spread of the tree for each of the four cardinal points, given in metres
Crown clearance	The height above ground to the first significance foliage, given in metres
Age	The life-cycle age of the tree, described as Y = young (vigorous growth, non-flowering), YM = young-mature (vigorous growth, some flowering, maturing crown), AM = almost mature (vigorous growth; mature crown), M = mature (slowing growth, full crown, flowering) and OM = over-mature (Little growth, heavy flowering, thinning crown or dieback)
Crown form	A general description of the tree as seen on site, including distinguishing features
Condition	The condition of the tree, as assessed by a visual inspection on site and described as Good (near perfect form and condition), Fair (normal form, sometimes requiring remedial works), Poor (significant weakness or rot, requiring substantial remedial works or felling) Dying (a tree within a year or two of death) and Dead (dead standing tree or stump)
Defect	The presence of weakness, rot or infection within the tree. This supports the recommendations given for appropriate tree works
Obstacle	The presence of a manmade structure that is, in some way, being affected or obstructed by the tree
Action	An outline tree management plan identifying the level and type of tree works that would be appropriate to ensure that the site remains safe and that the tree develops in a safe and satisfactory manner
ULE	The remaining useful life expectancy on the tree, based on age, condition and the likely presence of significant diseases
Priority	An assessment of the priority of recommended tree works, based on the likelihood of tree failure and described as urgent (immediate action is required, often entailing control of access until work is completed), High (work to be completed within the existing budget year; and before expected autumn or winter storms), Medium (work to be included in the next budget year) and routine (non-urgent tree work)
Target	The use made of the land on which the tree would fall, if it suffered a root plate failure, given as High (Road or Building) Medium (path or lawn) and Low unmanaged or farm land)

ARBORICULTURAL TERMS

The following interpretation of the terms used in the attached tree survey report sheets should be adopted when fulfilling their recommendations.

Crown clean

The removal of broken, diseased, dying or dead branches or snags that are either over 50 mm in diameter or are more than 200 mm in length.

Remove ivy

The cutting of ivy stems at their point of entry into the soil, taking care not to damage the tree. All branches, stalks and creepers of both alive and dead ivy should be removed from the crown of the tree.

Trim or remove branch stumps

The cutting of all branch stumps or snags back to just outside the branch collar and branch bark ridge.

Remove swing / tree hut / sign etc.

The removal of structures within the crown or attached to the tree, including nails or other fastenings.

Trim / tidy / remove epicormics

The removal of all soft growth or epicormics growing from the trunk of the tree, up to a height of 2.4 m.

Crown lift to above eye level / over footpath.

The removal of all soft growth, including epicormics and all lateral branches, up to a height of 2.4 m above ground level. When lifting the crown, upright laterals may be retained.

Crown lift over carriage / driveway etc

The removal of all lateral branches and soft growth that are overhanging, or within 1.0 m of, a road or lane, up to a height of 5.5 m.

Trim back from building

The removal of all lateral branches and soft growth growing within 2.0 m from the wall and from within at least 3.0 m from a window and above the roof of a building.

Clear overhead cables

The removal of all branch growth from within, or likely to come within, 1.0 m from overhead telephone cables.

All operatives undertaking work near underground or overhead electric cables must have attended an Electricity Safety Awareness course, (such as UA1 Utility Arborist 1 Ireland). They must comply with the guidelines laid down in the Guidelines for Safe Working near Overhead Electricity lines in Agriculture (2010, published by the Health and Safety Authority), Code of Practice for Avoiding Danger from Overhead Electricity Lines (2019, published by ESB). Where there is a risk of a climber, equipment or parts of a tree touching or coming close to overhead cables, the advice of ESB must be sought, and adhered to, before work commences.

Reduce / remove competing leaders

The trimming back or removal of all but one dominant, upright stem in a way that creates an apical crown angle of less than 90°. Competing stems should be trimmed well back to a side branch showing strong horizontal growth patterns or should be removed to just above the branch collar and branch bark ridge.

Reduce end weight

The reduction of the crown of a tree by trimming back the branch tips by the described amount. Branch tips should be trimmed back to a suitable lateral twig or branch (in strict accordance with the recommendations contained in BS3998:2010: Tree Work, in a way that maintains the general crown characteristics of the tree and its species. **In all cases, no branch, limb or trunk greater than 100mm diameter shall be cut in the process of reducing end weight.**

Re-form Crown

The carrying out of such trimming and branch removal as is necessary to create (or recreate) a tree crown architecture capable of supporting additional tree growth and that complies with the normal crown form for that species. **In all cases, no branch, limb or trunk greater than 100mm diameter shall be cut in the process of reducing end weight.**

Topping, Re-Pollarding, Re-Coppicing

The removal of all growth back to the required height. In most circumstances, it will not be possible to trim back to a suitable lateral branch and, because of this; cuts should be cleanly executed and should produce a sloping surface that will not collect water.

Prune as per Belfast Street Tree

The complete pruning of a tree, which is a combination of crown reduction, crown lifting and crown thinning in a way that preserves the characteristics of the tree and its species. All growth removed during pruning must be taken back to an appropriately sized lateral branch, twin or bud to leave an acceptable crown form. **In all cases, no branch, limb or trunk greater than 100mm diameter shall be cut in the process of reducing end weight.**

Retrenchment Pruning

The phased reduction of the crown of veteran and old pollarded trees, removing or reducing end weight in the upper crown and spreading branches to emulate the natural decline of tree crowns with age. In most circumstances, it will not be possible to trim back to a suitable lateral branch and, because of this; cuts should be cleanly executed and should produce a sloping surface that will not collect water.

Fell

The complete felling of a tree in a safe manner, leaving a smoothly surfaced stump that is cut as close to ground level as is possible

Any other terms used

If they are in any doubt, the tree surgeon should contact Dr Philip Blackstock on 00447767 393075 for clarification of these or any other terms used in the attached tree survey report sheets.

Statement of truth

I Dr Philip Blackstock confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

Signed:



Date:

8th August 2024

QUALIFICATIONS

National Diploma of Horticulture (R.H.S) Inter.

Diploma in Industrial Management

M.Sc. in Environmental Management (A Field Survey of Unmanaged Roadside Cuttings in South Antrim)

D.Phil. in Forestry (Broad-Leaved Tree and Shrub Invasion of Conifer Plantations in Ireland)

Professional member of the Arboricultural Association

Registered Forestry Consultant with the Irish Forest Service

EMPLOYMENT

1996 to present

Arboricultural and Woodland Consultant

Duties include carrying out tree and vegetation surveys and providing tree and woodland management plans, completing reports and liaising with clients, providing court appearances etc. for public and private clients.

ARBORICULTURAL AND FORESTRY EXPERIENCE AND EXPERTISE

I have carried out surveys and produced reports on the health, condition, amenity value and landscape value of more than 250,000 trees since 1983. Since 1996 I have been fully employed as an Arboricultural and Forestry Consultant. Clients have now included most of the Local Authorities, Health Trusts and Government Departments within Northern Ireland. Private clients have included Solicitors, Architects and Developers. I have also lectured, to foundation degree level, on arboriculture and forestry.

I have provided expert opinion (including Court appearances) for many clients involved in litigation or in planning appeals since 1996. Topics covered by these opinions have included the predictability of failure in trees, amenity and financial evaluation of damage to trees, evidence of subsidence caused by trees, evidence of unsafe tree surgery practices leading to injury, and tree related evidence in boundary and planning disputes.

I have maintained a research interest in the effects of environmental influences on tree and shrub regeneration in Ireland and on the development of woody biodiversity in recently planted woods. I have also a research interest in the distribution of and environmental influences on deciduous tree diseases, tree stability and in the incidence of dangerous roadside trees.

Dr Philip Blackstock

Tree Survey Report Sheet

Site: Mullingar Active Travel Route

Client: Atkins Realis

Tag No.	Species	Height (m)	Stem Diameter (mm)	Crown spread (m)				Crown Clearance (m)	Age	General Observations				Action	ULE	Category	Priority	Target
				N	E	S	W											
T28	Lime	5	80	1	2	2	1	2	Y	Single main stem with heavy side branches	Fair	Basal damage	None	No action is required	20 to 40	B1	Not applicable	Medium, path or lawn
T29	Plane	9	160	2	2	3	3	1	SM	Single stem	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T30	Plane	8	230	4	4	5	3	2	SM	2 stems from 4.0m, Spreading crown	Fair	None	Road	Crown lift to 5.1m over road	More than 40	B1	Routine	High, road or building
T31	Lime	8	260	4	4	4	3	2	SM	Multi stem from 2.0m, Spreading crown, Recently trimmed	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T32	Lime	7	350	5	5	3	4	2	SM	Multi stem from 2.0m, Spreading crown, Recently trimmed	Fair	None	None	No action is required	20 to 40	B1	Not applicable	High, road or building
T33	Lime	6	250	3	3	3	2	2	SM	Multi stem from 2.0m, Spreading crown, Recently trimmed	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T34	Lime	6	290	3	4	4	3	2	SM	Multi stem from 2.0m, Spreading crown, Recently trimmed	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T35	Sycamore	18	640	6	3	2	7	2	M	Multi stem from 5.0m, One sided crown	Poor	Thinning crown, Excessive ivy	None	Crown clean, Remove ivy, Inspect for rot	20 to 40	C1	Medium	High, road or building
T36	Sycamore	20	640	6	2	5	5	0	M	Single stem to 10.0m	Fair	Excessive ivy	None	Crown clean, Remove ivy	20 to 40	B1	Medium	High, road or building
T37	Sycamore	20	680	6	5	2	4	1	M	Single stem, One sided crown, Leaning	Fair	Excessive ivy	None	Crown clean, Remove ivy	20 to 40	B1	Medium	High, road or building
T38	Sycamore	20	550	7	4	5	6	3	M	Single main stem with heavy side branches	Fair	Forming cavities	None	No action is required	20 to 40	B1	Not applicable	High, road or building
T39	Norway maple	13	380	5	4	4	2	1	AM	Multi stem from 3.0m	Fair	None	Path, Road	Crown lift to 2.4m over path, Crown lift to 5.1m over road	20 to 40	B1	Medium	High, road or building

ULE: Estimated and approximate Useful Life Expectancy

Tree Survey Report Sheet

Site: Mullingar Active Travel Route

Client: Atkins Realis

Tag No.	Species	Height (m)	Stem Diameter (mm)	Crown spread (m)				Crown Clearance (m)	Age	General Observations				Action	ULE	Category	Priority	Target
				N	E	S	W			Crown form	Condition	Defect	Obstacle					
T40	Pear	14	240	2	2	4	4	2	M	Multi stem from 2.0m, Upright crown, Leaning	Fair	None	Road	Crown lift to 5.1m over road	20 to 40	B1	Medium	High, road or building
T41	Hawthorn	5	230	3	2	2	1	2	M	Multi stem from 2.0m	Poor	Excessive deadwood, Part failed fork	Road	Monitor for death, Crown clean, Crown lift to 5.1m over road	10 to 20	C1	Medium	High, road or building
T42	Hawthorn	5	270	3	2	2	2	2	M	2 stems from 1.0m, Recently trimmed	Poor	Forming cavities, Part failed fork	Road	Monitor for death, Crown clean, Crown lift to 5.1m over road	10 to 20	C1	Medium	High, road or building
T43	Apple	8	330	2	4	5	3	1	M	2 stems from 2.0m, Spreading crown	Fair	None	Path, Road	Crown lift to 2.4m over path, Crown lift to 5.1m over road	20 to 40	B1	Medium	High, road or building
44	Hawthorn	1	170	1	1	1	1	1	M	Single stem	Poor	Hollow, Recent crown failure	None	Fell	Less than 10	U	Medium	High, road or building
T45	Apple	5	180	2	2	1	2	1	M	Multi stem from 2.0m, Recently trimmed	Fair	Thinning crown	None	No action is required	10 to 20	B1	Not applicable	High, road or building
T46	Flowering cherry	4	200	2	2	2	1	1	M	Multi stem from 2.0m	Dying	Almost dead	None	Fell	Less than 10	U	Medium	High, road or building
T47	Holly	5	250	2	3	2	2	2	M	Single main stem with heavy side branches	Poor	Thinning crown	None	Confirm ownership, Monitor for death, Crown clean, Remove ivy	10 to 20	C1	Routine	High, road or building
T48	Apple	7	380	5	5	4	4	1	M	3 stems from 2.0m, Spreading crown	Fair	None	Path, Road	Crown lift to 2.4m over path, Crown lift to 5.1m over road	20 to 40	B1	Medium	High, road or building
T49	Flowering cherry	4	310	3	4	1	3	2	M	Multi stem from 2.0m, Spreading crown	Poor	Thinning crown	None	Monitor for death, Crown clean	10 to 20	C1	Routine	High, road or building
T50	Rowan	5	80	2	1	1	1	2	AM	Single main stem with heavy side branches	Fair	None	None	No action is required	20 to 40	B1	Not applicable	High, road or building

ULE: Estimated and approximate Useful Life Expectancy

Tree Survey Report Sheet

Site: Mullingar Active Travel Route

Client: Atkins Realis

Tag No.	Species	Height (m)	Stem Diameter (mm)	Crown spread (m)				Crown Clearance (m)	Age	General Observations				Action	ULE	Category	Priority	Target
				N	E	S	W											
T51	Lime	7	170	3	3	2	3	1	Y	2 stems from 2.0m, Spreading crown	Fair	None	Path, Road, Overhead telephone cables	Crown lift to 2.4m over path, Crown lift to 5.1m over road, Clear overhead cables	<i>More than 40</i>	B1	Medium	High, road or building
T52	Lime	7	100	3	3	1	2	2	Y	Multi stem from 2.0m	Fair	None	Path	Crown lift to 2.4m over path	<i>More than 40</i>	B1	Routine	High, road or building
T53	Rowan	6	110	1	1	1	1	3	SM	Multi stem from 3.0m	Fair	Thinning crown	None	No action is required	<i>10 to 20</i>	B1	Not applicable	High, road or building
T54	Rowan	6	110	1	1	2	1	3	SM	Multi stem from 2.0m, Upright crown	Fair	None	None	No action is required	<i>20 to 40</i>	B1	Not applicable	High, road or building
T55	Apple	5	330	4	4	3	4	1	M	Multi stem from 2.0m, Spreading crown	Fair	None	Lamp, Road	Crown lift to 2.4m over path, Crown lift to 5.1m over road	<i>20 to 40</i>	B1	Medium	High, road or building
T56	Flowering cherry	6	330	4	4	4	4	2	M	Multi stem from 3.0m, Spreading crown	Fair	Thinning crown	Path, Road	Crown clean, Crown lift to 2.4m over path, Crown lift to 5.1m over road	<i>10 to 20</i>	B1	Medium	High, road or building
T57	Hawthorn	6	330	3	2	3	2	2	M	Multi stem from 2.0m	Fair	None	Road, Overhead telephone cables	Crown lift to 5.1m over road, Clear overhead cables	<i>20 to 40</i>	B1	Medium	High, road or building
T58	Flowering cherry	5	370	4	2	4	3	2	M	3 stems from 2.0m, Spreading crown	Fair	Thinning crown	Road	Crown clean, Crown lift to 5.1m over road	<i>10 to 20</i>	B1	Medium	High, road or building
T59	Apple	7	390	5	2	4	5	2	M	Multi stem from 2.0m, Spreading crown	Fair	None	Path, Road, Carpark	Crown lift to 2.4m over path, Crown lift to 5.1m over road	<i>20 to 40</i>	B1	Medium	High, road or building
T60	Flowering cherry	5	220	3	2	3	2	2	M	Multi stem from 2.0m, Spreading crown	Fair	Thinning crown	Road	Crown clean, Crown lift to 5.1m over road	<i>10 to 20</i>	B1	Medium	High, road or building
T61	Flowering cherry	4	60	1	1	1	1	2	Y	Single stem	Fair	None	None	No action is required	<i>20 to 40</i>	B1	Not applicable	High, road or building

ULE: Estimated and approximate Useful Life Expectancy

Tree Survey Report Sheet

Site: Mullingar Active Travel Route

Client: Atkins Realis

Tag No.	Species	Height (m)	Stem Diameter (mm)	Crown spread (m)				Crown Clearance (m)	Age	General Observations				Action	ULE	Category	Priority	Target
				N	E	S	W			Crown form	Condition	Defect	Obstacle					
T62	Apple	5	170	2	2	2	2	2	AM	Multi stem from 3.0m	Fair	None	None	No action is required	20 to 40	B1	Not applicable	High, road or building
T63	Flowering cherry	3	150	1	1	2	1	2	AM	2 stems from 2.0m	Poor	Thinning crown	None	Monitor for death, Crown clean	10 to 20	C1	Routine	High, road or building
T64	Lime	7	180	4	4	3	3	2	Y	3 stems from 3.0m	Fair	None	Road	Crown lift to 5.1m over road	More than 40	B1	Medium	High, road or building
T65	Lime	5	100	2	2	2	2	2	Y	Multi stem from 2.0m, Spreading crown	Fair	None	Path, Road	Crown lift to 2.4m over path, Crown lift to 5.1m over road	More than 40	B1	Medium	High, road or building
T66	Rowan	12	210	3	3	2	2	3	M	Multi stem from 5.0m, Upright crown	Fair	None	None	Crown clean	10 to 20	B1	Routine	High, road or building
T67	Flowering cherry	6	420	5	3	5	4	2	M	Multi stem from 2.0m, Spreading crown	Fair	None	Road sign	Confirm ownership, Clear roadsign	20 to 40	B1	Routine	Medium, path or lawn
G68	Lime	8	280	4	0	0	0	2	SM	2 stems from the ground, Spreading crown	Fair	None	None	No action is required, Confirm ownership	More than 40	B1	Not applicable	Medium, path or lawn
T69	Sycamore	18	620	5	4	5	6	4	M	Single main stem with heavy side branches	Fair	None	None	Confirm ownership	More than 40	B1	Not applicable	High, road or building
T70	Sycamore	17	470	5	5	5	5	2	M	Multi stem from 2.0m	Fair	None	Road	Crown lift to 5.1m over road	More than 40	B1	Medium	High, road or building
T71	Sycamore	13	250	4	4	4	3	2	AM	3 stems from 2.0m	Fair	None	Road	Crown lift to 5.1m over road	More than 40	B1	Medium	High, road or building
T72	Norway maple	9	260	4	4	3	2	2	SM	3 stems from 2.0m, One sided crown	Fair	None	Lamp, Road	Crown lift to 5.1m over road, Clear lamp	20 to 40	B1	Medium	High, road or building
T73	Whitebeam	8	280	3	3	4	2	1	M	Multi stem from 2.0m, Spreading crown, One sided crown	Fair	None	Path, Road, Road sign	Crown lift to 2.4m over path, Crown lift to 5.1m over road, Clear roadsign	20 to 40	B1	Medium	High, road or building
T74	Lime	11	270	4	4	4	5	2	SM	Multi stem from 2.0m, One sided crown, Recently trimmed	Fair	None	Path	Crown lift to 2.4m over path	More than 40	B1	Routine	High, road or building

ULE: Estimated and approximate Useful Life Expectancy

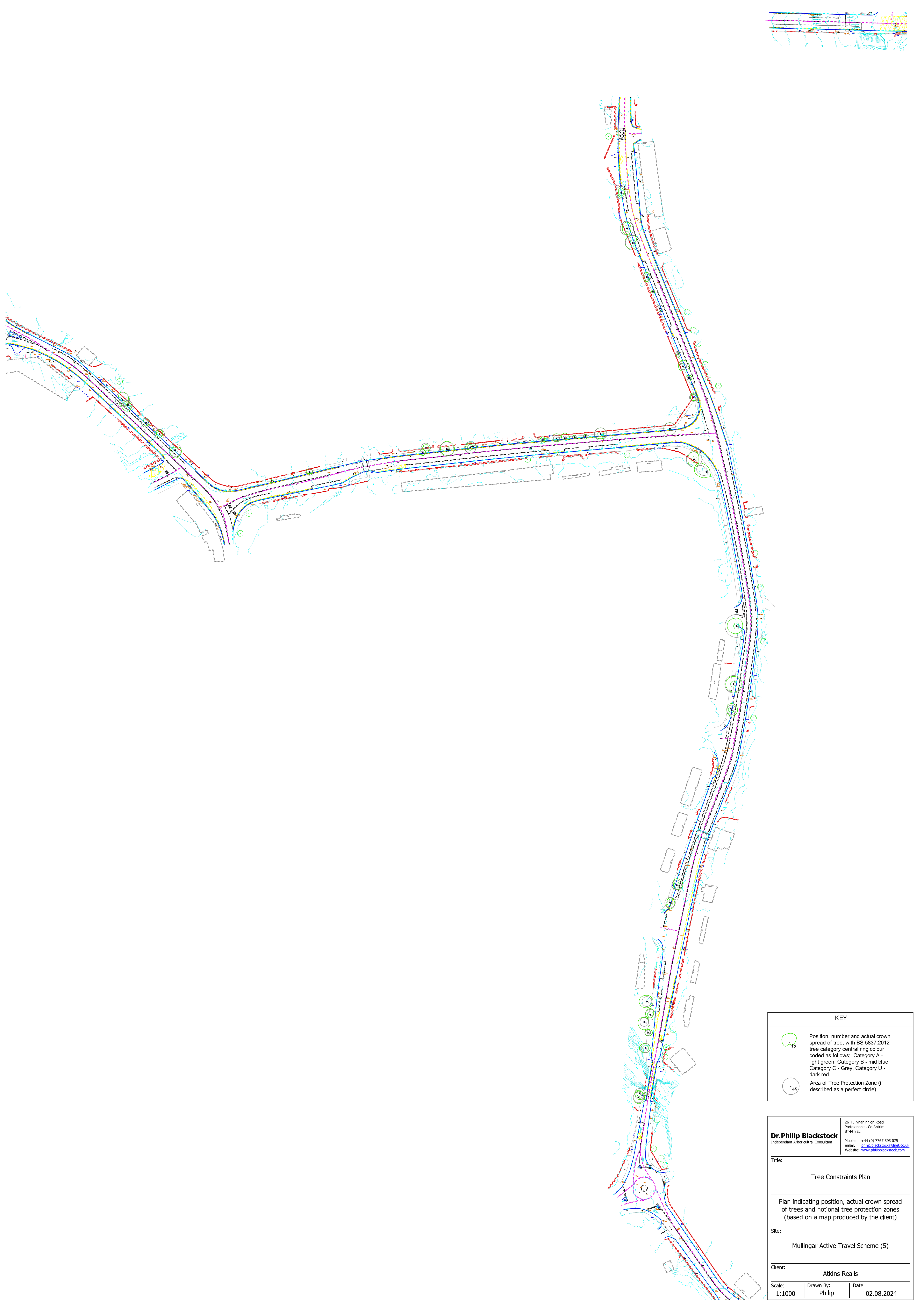
Tree Survey Report Sheet

Site: Mullingar Active Travel Route

Client: Atkins Realis

Tag No.	Species	Height (m)	Stem Diameter (mm)	Crown spread (m)				Crown Clearance (m)	Age	General Observations				Action	ULE	Category	Priority	Target
				N	E	S	W			Crown form	Condition	Defect	Obstacle					
T75	Lime	6	280	4	2	2	3	2	SM	Multi stem from 4.0m, Recently trimmed	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T76	Lime	9	230	3	3	5	4	2	SM	Multi stem from 2.0m, Recently trimmed	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T77	Flowering cherry	7	150	2	3	2	2	2	M	3 stems from 2.0m, Recently trimmed	Poor	Excessive deadwood	None	Monitor for death, Crown clean	Less than 10	C1	Routine	High, road or building
T78	Lime	11	240	3	3	3	4	1	SM	2 stems from 3.0m, Recently trimmed	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T79	Lime	10	260	2	4	4	3	2	SM	2 stems from 2.0m, Recently trimmed	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T80	Lime	7	280	4	4	4	3	2	SM	Multi stem from 3.0m, Recently trimmed	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T81	Plum	8	270	4	4	4	2	2	M	Multi stem from 2.0m	Poor	Basal rot	None	Monitor for death	10 to 20	C1	Routine	Medium, path or lawn
T82	Lime	3	50	1	1	1	1	2	Y	Single stem	Fair	None	None	No action is required	More than 40	B1	Not applicable	Medium, path or lawn
T83	Hawthorn	5	180	2	3	3	2	2	M	Multi stem from 2.0m, One sided crown	Fair	None	None	No action is required	20 to 40	B1	Not applicable	Medium, path or lawn
T84	Whitebeam	9	430	5	4	6	5	1	M	Multi stem from 2.0m, Spreading crown	Fair	None	None	Crown lift to 2.4m over lawn	20 to 40	B1	Routine	Medium, path or lawn
T85	Lime	8	270	4	5	3	4	2	SM	Multi stem from 2.0m, Spreading crown	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T86	Lime	8	270	4	3	4	3	2	SM	Multi stem from 2.0m, Spreading crown	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T87	Lime	8	260	4	4	4	3	2	SM	Multi stem from 2.0m	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building
T88	Lime	8	230	4	3	4	3	2	SM	Multi stem from 3.0m	Fair	None	None	No action is required	More than 40	B1	Not applicable	High, road or building

ULE: Estimated and approximate Useful Life Expectancy



KEY	
	Position, number and actual crown spread of tree, with BS 5837:2012 tree category central ring colour coded as follows: Category A - light green, Category B - mid blue, Category C - Grey, Category U - dark red
	Area of Tree Protection Zone (if described as a perfect circle)

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Title:		
Tree Constraints Plan		
Plan indicating position, actual crown spread of trees and notional tree protection zones (based on a map produced by the client)		
Site:		
Mullingar Active Travel Scheme (5)		
Client:		
Atkins Realis		
Scale:	Drawn By:	Date:
1:1000	Philip	02.08.2024

AtkinsRéalis



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