ARUP

South Dublin County Council

Knocklyon to Ballyboden Active and Sustainable Travel Scheme

Part 8 Planning Report

Reference: 284940-00

Issue 6 | 19 January 2026

Job number

Ove Arup & Partners Ireland Limited
50 Ringsend Road
Dublin 4
D04 T6X0
Ireland
arup.com

Contents

Figures

1. Introduction

The Knocklyon to Ballyboden Active and Sustainable Travel Scheme (hereafter referred to as the Active Travel Scheme) is a project to be delivered by South Dublin County Council (SDCC), funded by the National Transport Authority (NTA). Arup was appointed as a multi-disciplinary technical consultant to progress the design of the Active Travel Scheme. This report was prepared by Arup on behalf of SDCC, and forms part of the Part 8 planning process. Additional information on the Active Travel Scheme is available on the SDCC consultation portal: **website**. This report should be read in conjunction with the General Arrangement Drawings along with the other material available on the consultation portal.

The purpose of this report is to provide an overview of the Active Travel Scheme and outline the objectives and core design features. The Active Travel Scheme consists of improvements to the public realm, walking and cycling infrastructure along Firhouse Road, Knocklyon Road, Templeroan Road, Ballyboden Way, Ballyboden Road and Scholarstown Road and several secondary links connecting the main corridor with residential streets and local trip attractors.

1.1 Project Background

The Knocklyon to Ballyboden Active and Sustainable Travel Scheme is part of a larger initiative aimed at providing a comprehensive walking and cycling route between Tallaght and Ballyboden. This network is made up of three interconnecting projects, collectively known as the Old Bawn to Ballyboden Active Travel Scheme. These three schemes will link directly, creating a unified active travel network, as illustrated in Figure 1. Each project will be delivered separately. The overall network will consist of the following projects:

- Firhouse Road Active Travel Improvement Scheme
- Knocklyon to Ballyboden Active and Sustainable Travel Scheme
- Old Bawn Road Active Travel Scheme.

This report focuses exclusively on The Knocklyon to Ballyboden Active and Sustainable Travel Scheme.

Figure 1: Proposed Active Travel Network between Tallaght and Ballyboden

1.2 Site Location

The scheme is in the Knocklyon and Ballyboden area in south Dublin, scheme extents are highlighted in red as shown on Figure 2. The dashed lines represent secondary links.

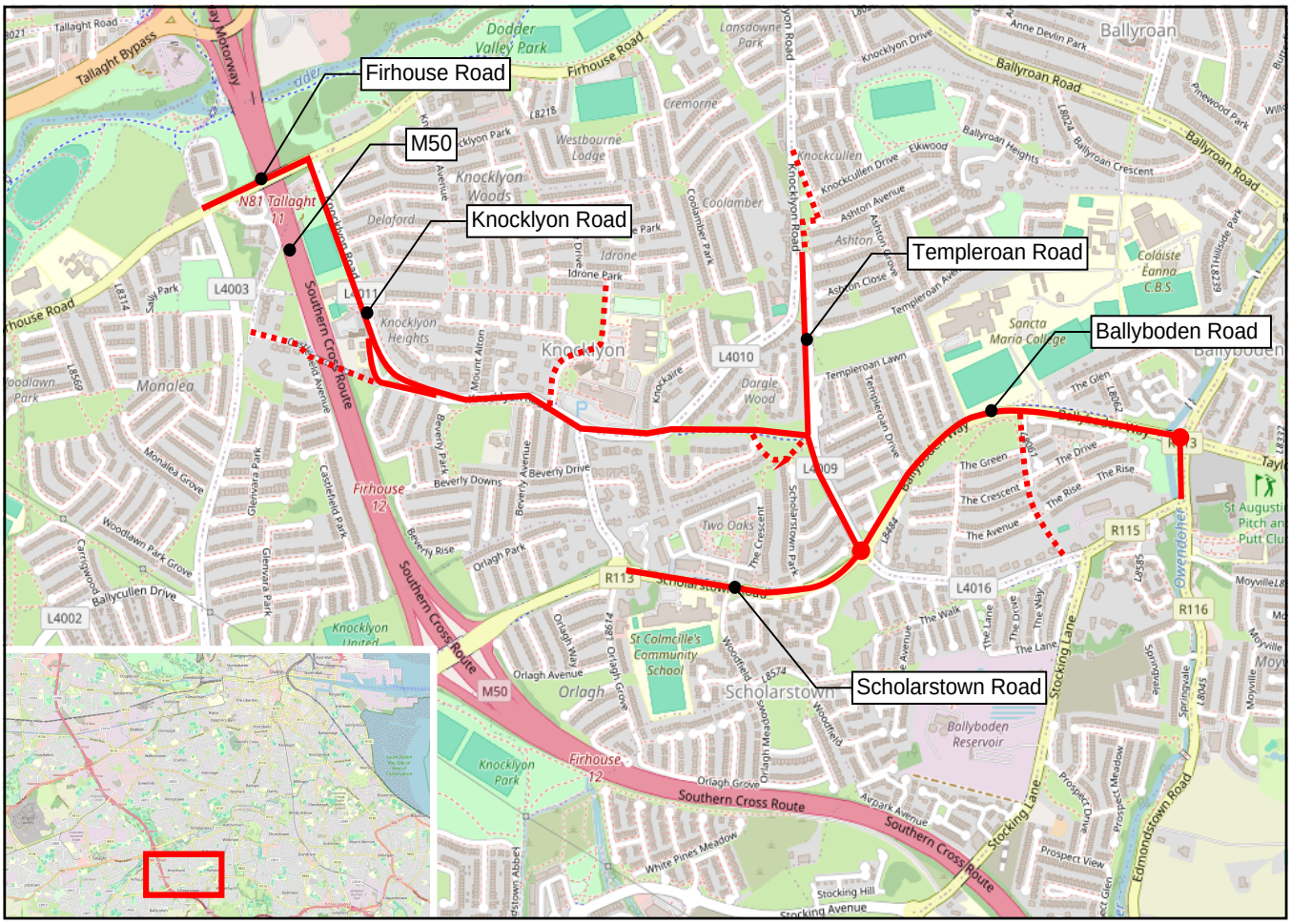

Figure 2: Location of The Knocklyon to Ballyboden Active and Sustainable Travel Scheme

1.3 Need for the Scheme

The Active Travel Scheme focuses on improving the public realm and fostering a safer, more attractive environment for residents through traffic calming measures and neighbourhood enhancement. The scheme will achieve these objectives by reducing road widths, introducing new planting and trees, and implementing public realm interventions that enhance the character of the area. In line with DMURS principles, the design prioritises pedestrians and cyclists over vehicles, creating a more balanced streetscape that encourages active travel and slower vehicle speeds. The development of a new cycle route is part of a comprehensive strategy to make the area more accessible and liveable, with an emphasis on placemaking and improving pedestrian and cyclist accessibility.

The study area is currently served by generally low-quality walking and cycling infrastructure with signalised junctions having no segregation for cyclists from motor vehicles. Existing road along the route are excessively wide and not in alignment with current design standards, resulting in fast vehicular speeds. The side roads comprise of large corner radii and have no speed mitigation measures or pedestrian or cyclist priority. There are currently no cycling facilities along Knocklyon Road, Templeroan Road and Scholarstown Road with limited facilities on Ballyboden Road. The finished scheme will provide a safe, coherent and attractive route with a high Quality of Service that will form part of the wider strategic cycle network in the South Dublin area.

There are six educational facilities along, or within proximity of the Active Travel Scheme, along with several leisure centres and retail areas. The proposed Active Travel Scheme will provide continuous segregated walking and cycling infrastructure suitable for all ages and abilities along the full extent of the scheme. At uncontrolled junctions, pedestrian and cyclist priority will be provided; at signalised junctions kerb protected

cycle segregation will be added along with improved pedestrian and cyclist crossings on each arm. The Active Travel Scheme will also connect with other existing and planned walking and cycle routes, creating a "network effect", with the intention of promoting modal shift to healthier and more sustainable methods of transport in the area.

1.4 Objectives of the Scheme

The purpose of the Active Travel Scheme, as set out by SDCC, is to improve the public realm and create a safer and more attractive environment for residents by implementing traffic calming measures and neighbourhood enhancement. Additionally, the scheme aims to make the area more accessible and liveable by improving pedestrian and cyclist accessibility by linking residential communities in Tallaght, Firhouse, Knocklyon and Ballyboden to trip generators such as schools and educational centres, recreation zones, employment and business hubs, and "third spaces". There will also be links to the wider active travel network in the county by enhancing walking and cycling facilities. Upgrades will be made to existing junctions along the main route and secondary links, providing segregated cycling facilities through the junctions in addition to enhanced pedestrian crossings. When the project is delivered, it will enhance the streetscape of the area, provide continuous walking and cycling infrastructure, and improve safety for all road users. The provision of safe, continuous, legible, active travel infrastructure will be a catalyst for an increased number of journeys being made by walking, cycling, and public transport by:

- Encouraging modal shift by improving the public realm and fostering a safer, and more attractive environment for residents through traffic calming measures and neighbourhood enhancement.
- Encouraging modal shift to walking and cycling as a safe and convenient means of making local trips (work, school, college, recreation trips etc.) and to create a network of high-quality walking and cycling facilities
- Developing secondary links in the vicinity of the main scheme that will look to increase the usability of the main route through increasing access and destination options
- Improving the landscape along the route to improve biodiversity and create a more pleasant environment to walk and cycle
- Installing safe school treatments outside schools which will create safe and welcoming environments that will encourage walking and cycling to school and promote positive social interaction at the school gate
- Ensuring the delivery of high-quality linkages between residential areas and key trip attractors (e.g. schools, colleges, sports clubs, shopping centres) as well as other planned and existing cycle and walking routes
- Reprioritising crossings of sides roads, by tightening corner radii and providing raised entry treatments that allow for pedestrian and cycle priority though the junctions and encourage slower vehicle speeds
- Developing signalised junctions that cater for all pedestrian and cyclist movements, providing segregated and kerb protected cycle facilities along with single-movement pedestrian crossings on each junction arm
- Upgrading bus stops to remove conflict between pedestrian and cyclists and between cyclists and stopping buses by deflecting cyclists around the bus stop and by providing permeability between bus stops and destinations.
- Improving safety for pedestrians and cyclists in accordance with the Cycle Design Manual (CDM) and the Design Manual for Urban Roads and Streets (DMURS).

1.5 Proposed Scheme Description

The primary route of the scheme begins to the west at Firhouse Road and continues through Knocklyon Road, Dargle Wood, Templeroan Road, Scholarstown Road, Ballyboden Way and terminates to the east at the junction between Scholarstown and Edmondstown Road. The Active Travel Scheme consists of 4km of mainline improvements and over 1.5km of secondary link improvements through residential roads.

The design of the scheme adopts the design principles of the Design Manual for Urban Roads and Streets (DMURS) and Cycle Design Manual (CDM), following a hierarchy outlined in DMURS that prioritises pedestrians, followed by cyclists, public transport, and lastly, private motor vehicles. While the scheme adopts the hierarchy, it also recognises that private car trips remain an essential part of daily life, and therefore, the impacts on private car journeys will be minimised as far as practical while still achieving the project objectives.

Segregated cycle lanes with kerb protection will be provided along the majority of the scheme, existing shared surfaces will be utilised on Knocklyon Road (Outside Supervalue) and through Dargle Wood park. The secondary links will comprise of small interventions such as the removal of kissing gates, raised entry treatment with continuous footpaths at side roads, new trees and grass planting and Safe Routes to School (SRTS) treatment. It is intended to use shared streets on secondary links, to facilitate this in a safe manner the streets will be designed to ensure the 85th percentile speed limit is below 30km/h as per the requirements of the Design Manual for Urban Roads and Streets (DMURS).

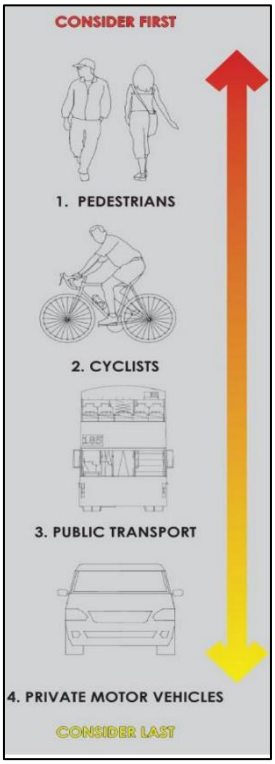

Figure 3 User Hierarchy (DMURS, section 2.2.2)

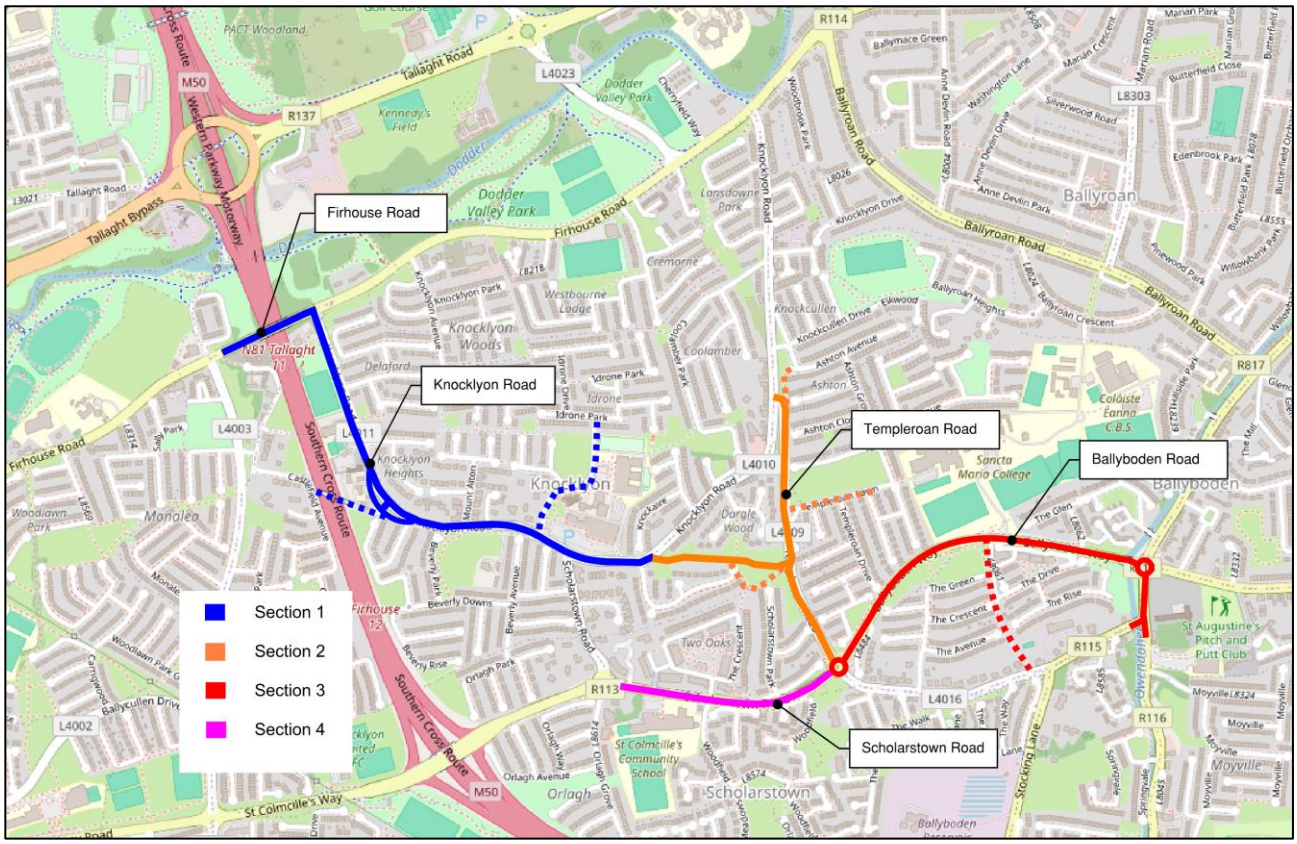

Figure 4: Knocklyon to Ballyboden Active and Sustainable Travel Scheme Sections

For the purpose of this report the route has been divided into several sections as shown in Figure 4. The works proposed for each subsection are described in the summary below.

- Section 1 - Firhouse Road & Knocklyon Road (Between Firhouse Road and Dargle Wood Park)
- Section 2 - Dargle Wood Park & Templeroan Road
- Section 3 - Ballyboden Way & Ballyboden Road (Between Scholarstown Roundabout and Scholarstown Road)
- Section 4 - Scholarstown Road (Between Orlagh roundabout and Scholarstown Roundabout).

1.5.1 Section 1 - Firhouse Road & Knocklyon Road

This section of the proposed route, between Firhouse Road and Dargle Wood Park, as shown in Figure 5, will be upgraded with raised and kerb protected cycle tracks in both directions, new and improved pedestrian and cyclists crossings and shared streets in low traffic environments. At the eastern end of this section, the Active Travel Scheme will connect with the Firhouse Road Active Travel Improvement Scheme which will be delivered in advance of the Active Travel Scheme. Several secondary links have been identified, creating linkages between the mainline and residential streets and local trip attractors.

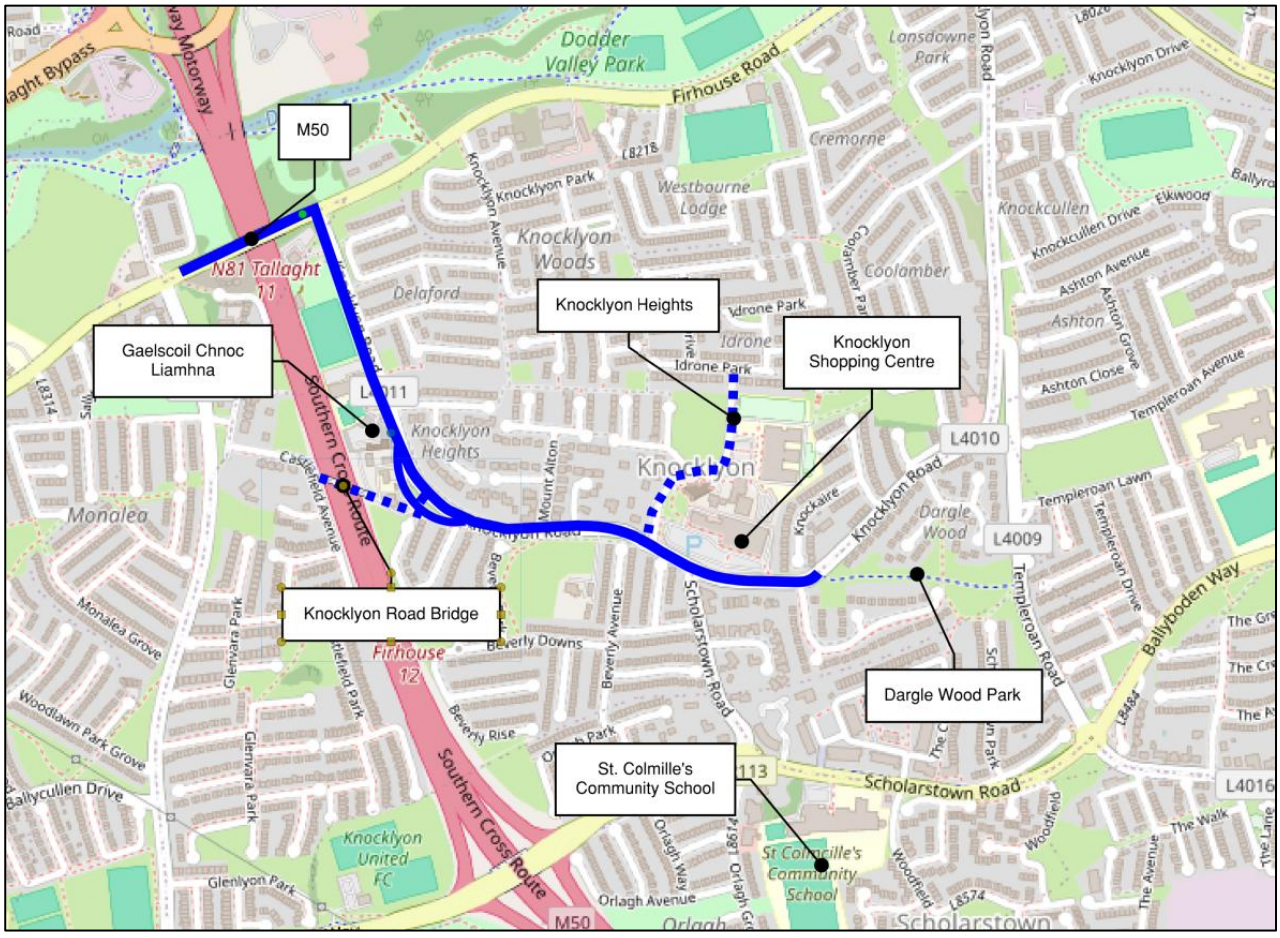

Figure 5: Section 1 - Firhouse Road & Knocklyon Road

The M50 bridge has footpaths on both sides, and the existing cycling infrastructure includes an eastbound cycle track adjacent to and level with the footpath along the entire section. The current westbound cycling provisions consist of on-road mandatory cycle lanes, which terminate at the approach to the bridge, where cyclists are expected to share space with buses.

To provide continuous cycle tracks along the M50 bridge in both directions, the carriageway lane width will be reduced to a maximum value of 3.0m. The reclaimed space from road narrowing will be used to provide 1.5m wide cycle tracks and 1.8m wide footpaths along the section if the site doesn't allow larger dimensions.

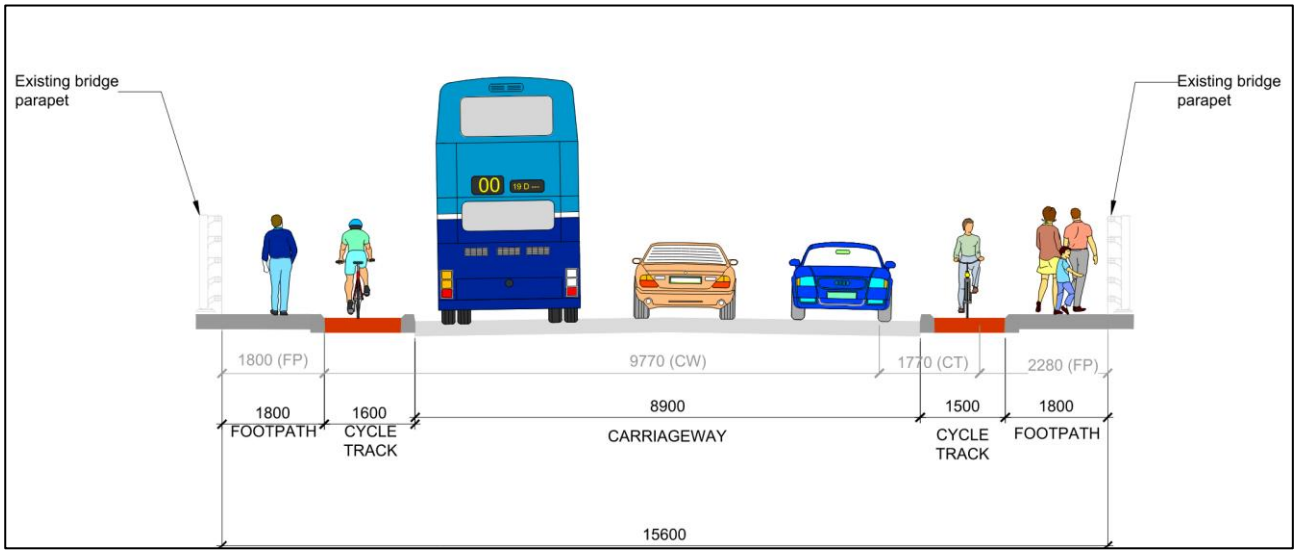

Figure 6: Section 1 – M50 Bridge, typical cross section

The T-junction connecting Firhouse Road with Knocklyon Road has limited cycling infrastructure that is not protected from motor vehicles. As part of the works the junction will be upgraded to a protected T-junction with segregated and protected crossings for cyclists and pedestrians, refer to section 5.5 of this report for additional details on protected T-junctions.

The proposed Active Travel Scheme will retain the existing footpaths on Knocklyon Road and provide kerb protected and raised cycle track in both directions between the Firhouse Road and the existing shared space outside Knocklyon Shopping Centre. The minimum width of the cycle track through this section is 1.5m at constraint locations, such as the M50 bridge, however where feasible a 2.0m wide cycle track, inclusive of the kerb will be provided. Particular attention was given to providing sufficient cycle track widths, however, at locations where physical features such as residential boundaries and mature trees are found, the cycle track width was reduced to accommodate the desirable cross-section.

The carriageway lanes have been reduced to 3.0m per lane along the full length of Knocklyon Road where cycle tracks are being added. This reduction allows for improvement to walking and cycling infrastructure, as well as creating a sense of enclosure and reducing vehicular speeds through this section. Safe Routes to School (SRTS) design principles are provided outside Gaelscoil Chnoc Liamhna Primary School. A key objective of the guidance is to minimise the risk to vulnerable road users near schools, this can only be achieved by reducing the concentration of vehicles from outside schools. This vastly improves safety outside schools, motivates pupils and parents to choose more active and sustainable modes of travel to get to school and reduce air pollution. To align with these principles, the existing school set-down outside the school will be relocated approximately 100m north of its current location. In addition to the relocation of the set-down, pencil bollards will be provided along the full length of the school zone and buff coloured high friction surfacing will be provided at approach to the crossings. The existing uncontrolled crossing will be upgraded to a raised zebra crossing with belisha beacons.

Similarly to Gaelscoil Chnoc Liamhna, Idrone Avenue outside St. Colmcille's Senior and Junior National School will be modified to include SRTS treatment, including narrowing of the carriageway to 6.0m and utilising the reclaimed space to widen the existing footpath along the eastern side of Idrone Avenue. Existing crossing facilities will also be improved, the warden crossing south of Knocklyon Grove will be upgraded to a raised zebra crossing and the existing crossing between the school and green opposite the school will be upgraded to a zebra crossing to provide a link between the school and the new 3.0m wide shared surface linking the school and the laneway at the top of Knocklyon Grove.

For additional detail for this section please refer to the General Arrangement Drawings, O2B-ARU-XX-XX-DR-C-0100, that are included as part of the consultation documents.

1.5.2 Section 2 - Dargle Wood Park & Templeroan Road

The existing route through Dargle Wood Park consists of a paved footpath. To provide a safe and accessible link between Knocklyon Road and Ballyboden, it is proposed that this route is updated to a 3.0m wide shared space for pedestrians and cyclists. The kissing gates at both ends of the route will be removed to ensure accessibility for cyclists, for additional detail on access treatment refer to section 6.1 of this report. A new 3.0m wide shared surface will be provided between the main route through the park and Scholarstown Park and the new Two Oaks development. This new link has been identified as an existing walking desire line.

Figure 7: Section 2 - Dargle Wood Park & Templeroan Road

Currently, there are no formal cycling provisions on Templeroan Road and limited crossing facilities for pedestrians. Cyclists are expected to either share road space with motor traffic or use the footpath. Side road junctions have large corner radii and access width, resulting in higher approaching speeds and longer crossing distances. As part of the Active Travel Scheme, it is proposed to modify Templeroan Road to 6.0m in width (3.0m for each lane) and use the reclaimed space to build a protected two-way cycle track on the eastern side of the road. The existing width of Templeroan Road is 9.0m, therefore a 3.0m wide two-way cycle track, inclusive of the protection kerb, can be provided while retaining existing kerb lines. By retaining existing kerb lines, the existing drainage network will be retained through regular gaps in the protected kerb, and tree felling will not be required. Significantly reducing the cost, construction duration and environmental implications of the scheme through this section.

The junction between Templeroan Road and Templeroan Lawn will be upgraded to a signalised junction with a new signalised parallel crossing across Templeroan Lawn and a 3.0m wide crossing across Templeroan Road. The new crossing across Templeroan Road provides a new crossing link to Sancta Maria College and surrounding estates. It is also proposed to tighten the corner radii and provide raised crossings at the side roads along the southern section of Templeroan between the new signalised crossing and Sancta Maria College.

North of Tempelroan Road the two-way cycle track and footpath will merge into a new 3.0m wide shared surface, connecting the active travel network on Templeroan Road and residential streets such as Ashton Avenue and Knockcullen Rise. Segregated pedestrian and cycle crossing facilities will be provided between the two-way cycle track and Dargle Wood Park. To the south, the cycle track will connect into the proposed protected roundabout.

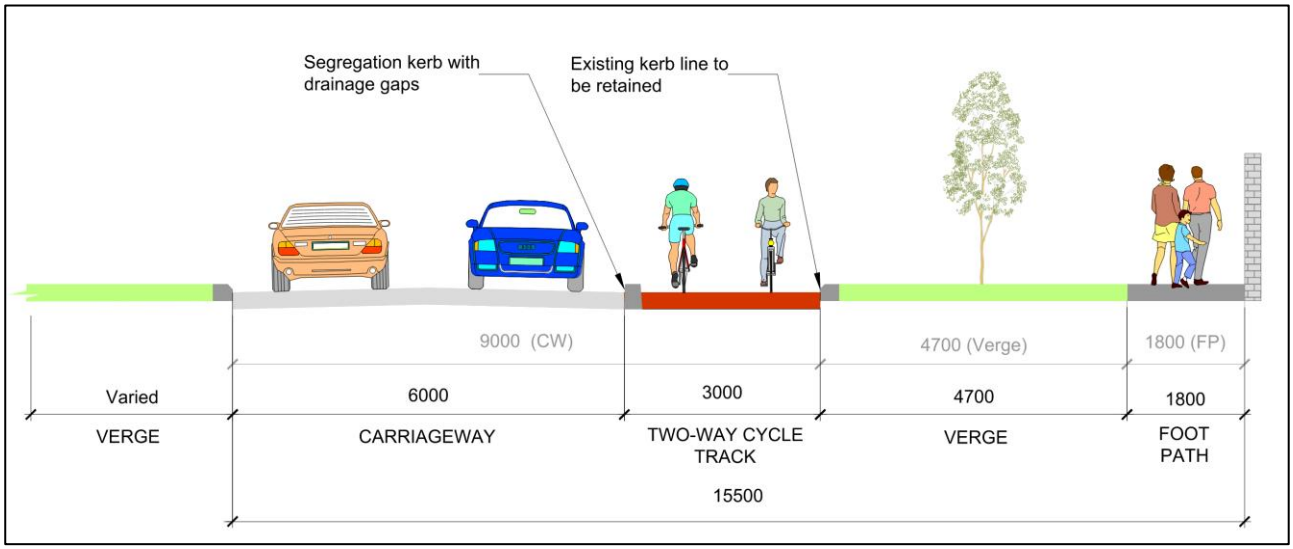

Figure 8: Section 2 - Templeroan Road, typical cross section

All existing crossing facilities will either be retained or upgraded, and side roads will be modified to include speed reduction measures, such as raised and continuous crossing for both pedestrians and cyclists. For additional detail on raised side road crossings, refer to section 5.6 of this report.

For additional detail for this section please refer to the General Arrangement Drawings, O2B-ARU-XX-XX-DR-C-0100, that are included as part of the consultation documents.

1.5.3 Section 3 - Ballyboden Way & Ballyboden Road

The section of Ballyboden Way, described in Figure 9, consists of a 9.0m wide carriageway in addition to a parallel cycle track and footpath segregated from the carriageway by a landscaped verge. The footpath and cycle track are on the same level and separated by a painted line, with a combined approximate width between 2 and 3m. The width is compromised in some locations by the excessive overgrowth of the adjacent hedge. Currently, at the roundabouts there are limited active travel facilities. The Scholarstown Road roundabout to the east has limited cycling infrastructure, with on road unprotected cycle lanes. The Taylor's Lane roundabout to the west has no formal cycle crossing facilities. The geometry of the roundabouts prioritised motor vehicle movements and enables fast vehicular movements through the roundabouts.

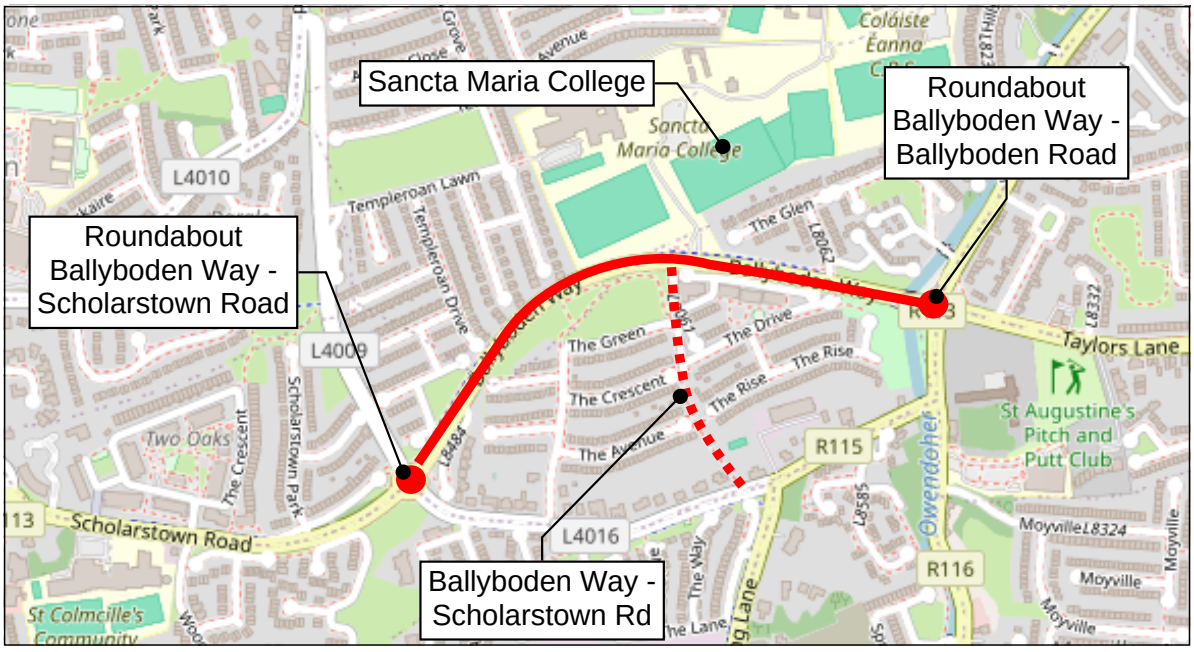

Figure 9: Section 3 - Ballyboden Way & Ballyboden Road

As part of the Active Travel Scheme, the two existing roundabouts will be upgraded to protected roundabouts with pedestrian and cyclist priority, in accordance with Section 4.6 of the Cycle Design Manual (CDM).The available space at each roundabout location has provided an opportunity to adapt the standard CDM detail (TL701) to a more cost-effective layout, while still achieving the core objectives of the scheme. The revised design delivers safe and continuous pedestrian and cyclist facilities, with priority crossings on raised ramps, consistent with CDM principles.

The proposed roundabout design retains the existing central median and builds out the adjacent road edges to form compact roundabouts with narrower carriageways and tighter entry and exit radii. These features are intended to reduce vehicle speeds and improve safety for all users. By preserving the majority of the existing road surface at the roundabout, the design also reduces construction costs and minimises disruption.

For additional detail on protected roundabouts refer to section 5.4 of this report.

As part of the Active Travel Scheme, it is proposed to reduce the carriageway width on Ballyboden Way to 6.0m wide (3.0m per lane), with the reclaimed space used to provide a 3.0m wide westbound bus lane for approximately 150m between the Scholarstown Road roundabout and bus stop No. 7446, and an eastbound bus lane for approximately 650m between bus stop No. 7446 and the Taylor's Lane roundabout. The location and direction of the proposed bus lanes have been informed by observed delays to bus operations on Ballyboden Way.

The existing parallel and level footpath and cycle track will be retained along the full length of Ballyboden Way and tied into the cycle tracks and footpaths built as part of the upgraded roundabouts. Localised vegetation clearance is proposed to restore the full width of the cycle track where hedges have overgrown onto the cycle track and footpath. To provide separation between the cycle track and footpath and aid visually impaired users to identify the footpath a surface mounted raised delineator kerb will be provided between the existing footpath and cycle track at approach to conflict points, such as priority junctions and crossings.

The existing bus stops along the full length of Ballyboden Way will be upgraded to clearly delineate between the cycle track and shared space for access to the bus stop by terminating the tarmac cycle track pavement at approach to the shared area and incorporating appropriate road markings and tram and ladder tactile paving. Two bus stops No. 7443 and 7446 are proposed to be relocated by approximately 15m to facilitate the bus lane transition and the proposed signalised crossing. The proposals also include the removal of bus stop No. 7442, as part of this change, bus 15B will stop at nearby bus stops No. 7974 and 7909.

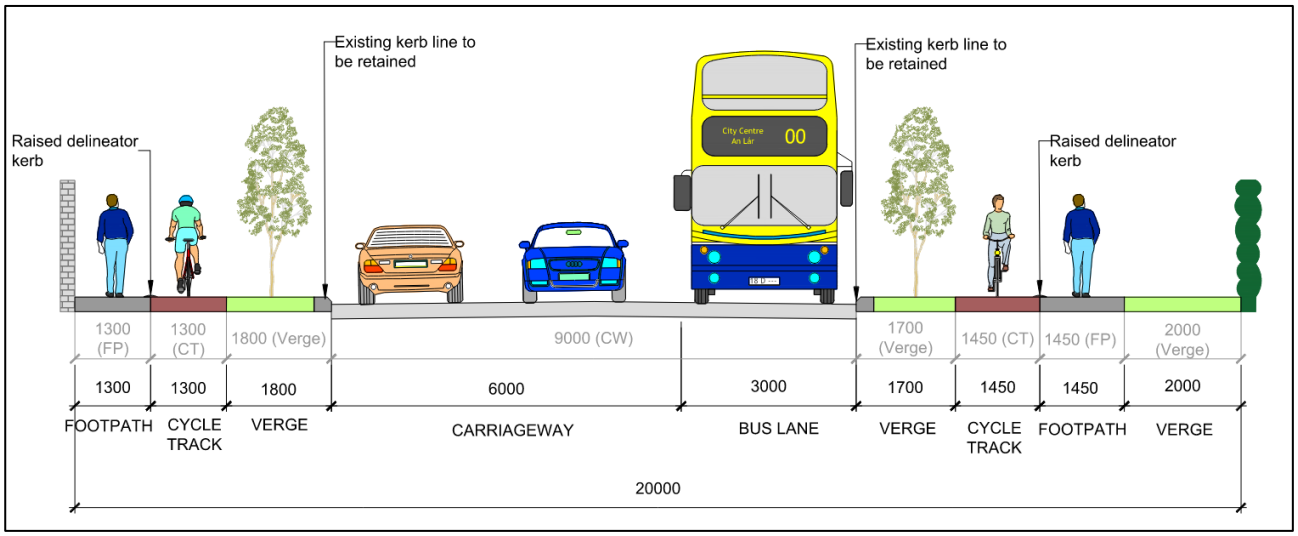

Figure 10: Section 3 – Ballyboden Way, typical cross section

Two permeability links are proposed as part of the works, creating a walking connection between Ballyboden Way and The Lawn, Boden Park and Templeroan Green. These permeability links will serve for local access and will significantly improve accessibility to the bus routes and walking and cycling network on Ballyboden Way for residents of The Lawn, Boden Park and Templeroan Green and surrounding streets. A new pedestrian crossing has also been proposed between bus stop No. 7443 and 7446 to ensure safe crossing of the road to access facilities on the other side of Ballyboden Way.

Additionally, a desire line was identified which would create an active travel link between Ballyboden Way and Scholarstown Road through Boden Park Green along an existing route. The works associated with establishing this secondary link would include new crossings and widening of existing footpaths to 3.0m to create a shared space.

On Ballyboden Road, the existing active travel provisions include on-road mandatory cycle lanes without kerb protection and adjacent footpaths. The cycle lanes will be converted to 2.0m wide raised and kerb protected cycle tracks, the additional space required to provide 2.0m cycle tracks will come from narrowing the carriageway to 6.0m (3.0m for each lane) and removing the existing grassed verge along that section.

The junction at Ballyboden Road and Scholarstown Road will be upgraded to a fully signal controlled protected junction incorporating the planned access road to the proposed residential development at the Taylors Lane and Edmondstown Road site. For additional detail on signal controlled protected junctions refer to section 5.5 of this report.

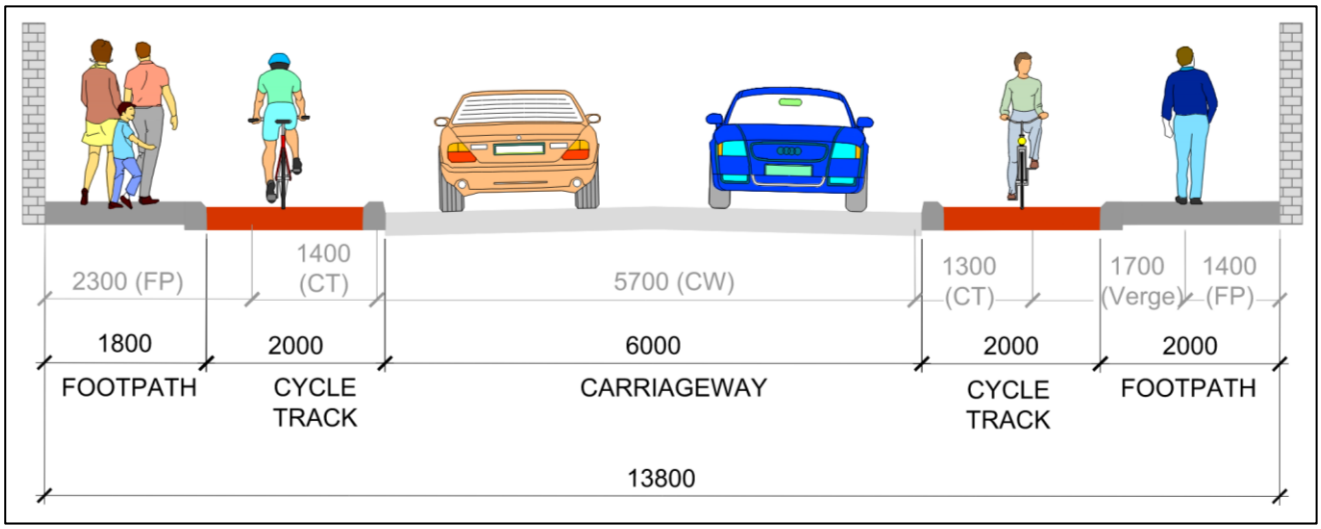

Figure 11: Section 3 - Ballyboden Road, typical cross section

For additional detail for this section please refer to the General Arrangement Drawings, O2B-ARU-XX-XX-DR-C-0100, that are included as part of the consultation documents.

1.5.4 Section 4 - Scholarstown Road

Limited interventions are proposed on Scholarstown Road due to the recently constructed road infrastructure outside the Two Oaks development. The Active Travel Scheme will consist of modifying approximately 200m of Scholarstown Road between the roundabout and recently constructed shared surface. The works will include provision of 2.0m raised and kerb protected cycle tracks through that section. In order to provide 2.0m wide cycle tracks along Scholarstown Road in both directions, the carriageway will be reduced to 6.0m (3.0m for each lane).

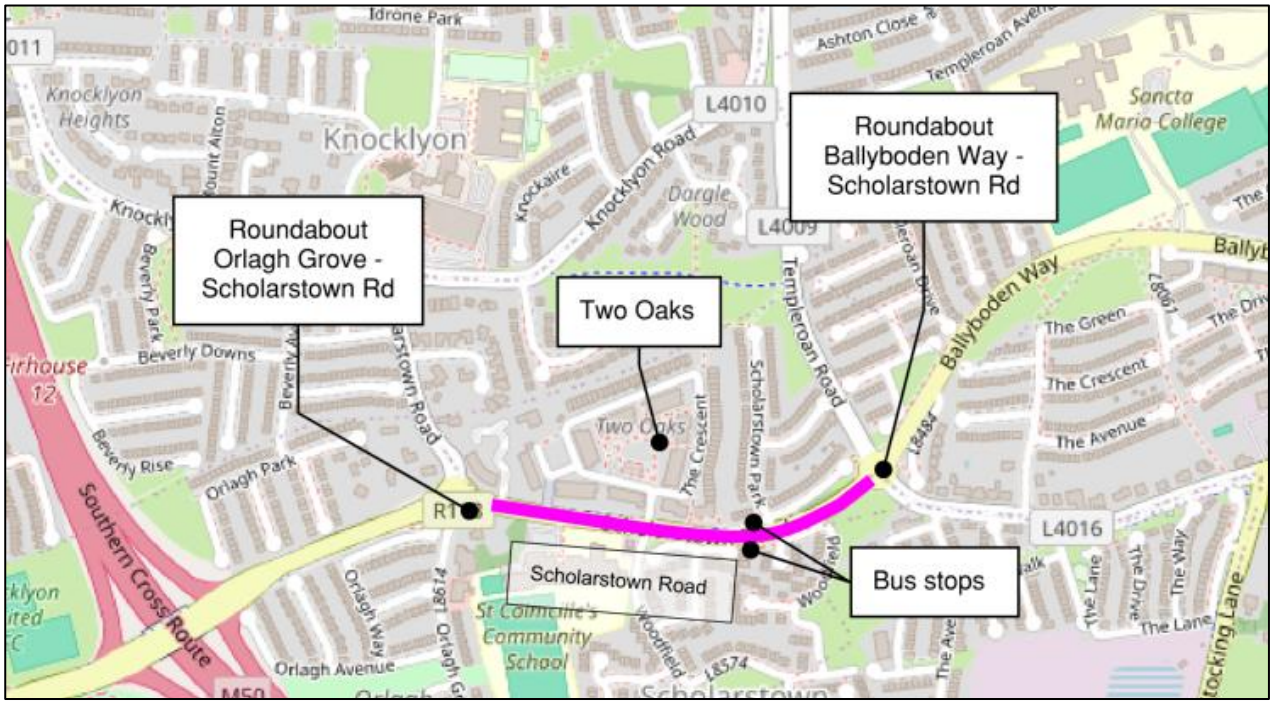

Figure 12: Section 4 - Scholarstown Road

The existing bus stop on that section will be upgraded to include a cycle bypass, refer to section 5.7 of this report for additional detail on bus stops. New shelters will also be provided at each bus stop location. Additionally, a new 2.4m wide signal-controlled crossing will be provided to create a formal crossing link between the two bus stops.

At the western end of Scholarstown Road, adjacent to the Orlagh roundabout, it is intended to provide raised crossings with continuous footpath pavement through access roads to provide a continuous link between the Two Oaks shared surface and Orlagh roundabout.

For additional detail for this section please refer to the General Arrangement Drawings, O2B-ARU-XX-XX-DR-C-0100, that are included as part of the consultation documents.

2. Objectives and Policies

2.1 Project Related Policies

2.1.1 SDCC Development Plan (2022-2028)

The South Dublin County Development Plan 2022 – 2028 aims to increase the modal share for walking and cycling for local trips to work, schools, retail, and leisure. The Plan also aims to enhance safety for all modes of transport in the county and to improve connectivity for pedestrians and cyclists within existing communities to maximise access to local shops, schools, public transport services and other amenities, creating a comprehensive and legible County-wide network of cycling and walking routes that link communities to key destinations, amenities and leisure activities, and; to ensure that all streets and street networks are designed to prioritise walking and cycling movements within a safe and comfortable environment for a wide range of ages, abilities and journey types.

The proposed active travel measures are in accordance with Objective SM1 Objective 1, SM2 Objective 2, SM5 Objective 1 and SM6 Objective 3 of the County Development Plan that aims to achieve a transition to more sustainable travel modes and align with the policies and objectives of (i) Safe cycling routes through the implementation of the Greater Dublin Cycle Network Plan, NTA (2011) and the Cycle South Dublin project; (ii) Walking routes that link communities to key destinations, amenities and leisure activities.

The proposal will contribute to climate action and the area's network of quality walking and cycling facilities. The proposal will link open spaces to one another to increase their amenity value, encourage active travel, and facilitate the green infrastructure network. The provision of parks, open space and social, community and recreational facilities within walking and cycling distances of communities and on public transport routes will encourage active travel and a shift away from car-based transport.

Together, these measures will assist South Dublin County in achieving its climate action targets, will enhance residential amenities in the area, provide improved active travel infrastructure and is in accordance with the County Development Plan and the proper planning and sustainable development of the area.

2.1.2 GDA Cycle Network Plan

In 2013, the NTA published the Greater Dublin Area Cycle Network Plan, consisting of the Urban Network, Inter-Urban Network and Green Route Network for each of the seven Local Authority areas comprising the Greater Dublin Area. The plan sets out to create an integrated, comprehensive high quality cycling network, one that is safe, coherent, direct, attractive and comfortable. Figure 13 displays how the Active Travel Scheme connects to the overall GDA Cycle Network plan.

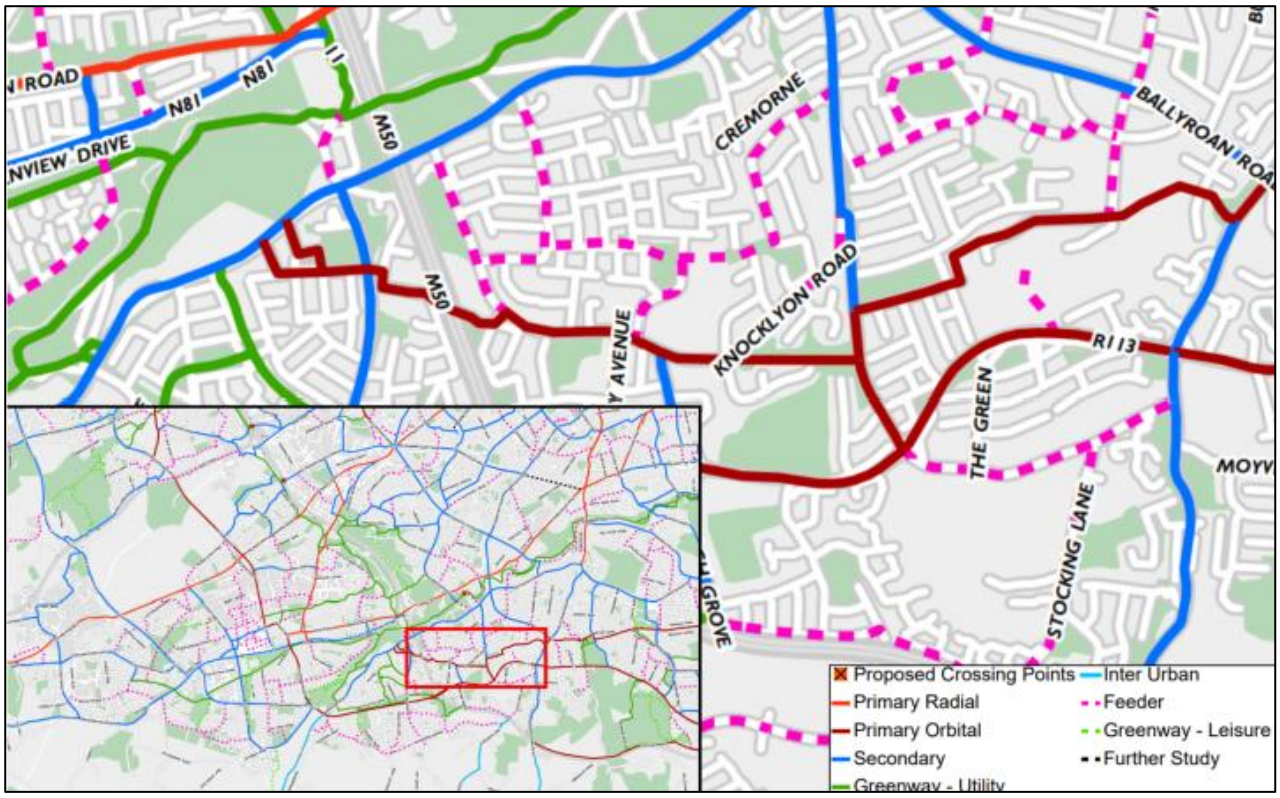

Figure 13: GDA Cycle Network Plan, Dublin South West

2.1.3 Cycle South Dublin Network

South Dublin County Council aims to make the county one of Ireland's most liveable, equitable, and sustainable. A pillar of this new mobility vision is Cycle South Dublin (an ambitious programme to deliver a connected network of high-quality walking and cycling improvements linking the places where people live to where they want to go. There are 45 routes in the programme, and the goal is to deliver over 250 km of safe walking and cycling improvements. The Active Travel Scheme is a key elements of the Cycle South Dublin (See Active Travel – SDCC) and will build on the recently completed works on the Dodder Greenway and will link into the D24 Neighbourhood Cycle Network Scheme.

2.1.4 Safe Routes to School Design Guide (2022)

The Safe Routes to School (SRTS) Programme was developed in partnership by the NTA and Green-Schools, An Taisce, in 2020, as a response to the need to support schools to increase walking and cycling to school. The aim of the programme is to improve safety at the school gate by providing 'front of school' treatments to alleviate congestion and improve access, improve access routes to school by improving walking and cycling infrastructure and increase the number of students who cycle to school by expanding the amount of cycle parking.

3. Previously held Consultations

South Dublin County Council held two informal consultations that covered the route that makes up The Knocklyon to Ballyboden Active and Sustainable Travel Scheme.

From April 21st, 2023 to May 19th, 2023 South Dublin County Council (SDCC) held an informal public consultation to inform the public about the proposals of Old Bawn to Ballyboden Active Travel Scheme. The consultation covered the western section of The Knocklyon to Ballyboden Active and Sustainable Travel Scheme, including Firhouse Road comprising of the section between the Ballycullen Road and Knocklyon Road junctions and Knocklyon Road until Dargle Wood Park. The consultation material is available at the SDCC consultation portal or at the following link: https://consult.sdublincoco.ie/en/consultation/old-bawn-ballyboden-active-travel-scheme

A total of 59 submissions were received during the consultation period, and each submission was reviewed and taken into consideration. The key issues raised during the consultations included the following topics:

1. Traffic impact & accessibility
2. Pedestrian and cyclist safety
3. N81 junction & alternative routes
4. Tree removal & landscaping
5. Cycling infrastructure
6. Street furniture
7. Junction design
8. Bus stops
9. Public lighting
10. Interventions at schools
11. Interventions at Gaelscoil Chnoc Liamhna.

From July 14th, 2023 to August 11th, 2023 South Dublin County Council (SDCC) held an information public consultation to inform the public about the proposals of Old Bawn to Ballyboden Active Travel Scheme. The consultation covered the eastern section of The Knocklyon to Ballyboden Active and Sustainable Travel Scheme, including the sections through Dargle Wood park, Templeroan Road, Ballyboden Road and Scholarstown Road.

This consultation gave the public an opportunity to voice their preference between two options at Knockcullen and Ballyboden way. The consultation material is available at the SDCC consultation portal or at the following link: https://consult.sdublincoco.ie/ga/consultation/old-bawn-ballyboden-phase-2-active-travel-scheme

All observations and concerns raised in the two consultation have been considered and changes to the design have been incorporated to the current General Arrangement Drawings.

4. Planning and Environmental Consideration

MKO were appointed by South Dublin County Council to complete an Environmental Impact Assessment (EIA) Screening Determination Report, Ecological Impact Assessment and Appropriate Assessment Screening Report to accompany the planning application for the Knocklyon to Ballyboden Active and Sustainable Travel Scheme.

4.1 Ecological Impact Assessment

The Ecological Impact Assessment (EcIA) considered all aspects of the Proposed Development during construction and operations. It then provides a comprehensive description of the baseline ecological environment, which is based on appropriate level of survey work that was carried out in accordance with appropriate guidelines and methodologies, consisting of a desk study and multi-disciplinary ecological walkover surveys. Following the baseline assessment, the report completes a thorough assessment of the impacts of the Proposed Developments on biodiversity in accordance with the methodology set out in the 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes (TII, 2009).

Following the detailed assessment, it is concluded that the Proposed Development will not result in any residual adverse effects on biodiversity or protected sites, their integrity or their conservation objectives when considered on its own. There is therefore no potential for the development to contribute to any cumulative adverse effects when considered in combination with other plans and projects and therefore it will not result in any significant effects on any of the identified Key Ecological Receptors (KERs).

4.2 Appropriate Assessment Screening Report

Screening is the process of determining whether an Appropriate Assessment is required for a plan or project. Screening for Appropriate Assessment is required under Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive). The Habitats Directive and the associated Birds Directive (2009/147/EC) are transposed into Irish legislation by the Planning and Development Act 2000 and the Birds and Natural Habitats Regulations 2011. The Legislative provisions for appropriate assessment screening for planning applications are set out in Section 177U of the 2000 Act (as amended).

Following an examination, analysis and evaluation of the relevant data and information set out within the Appropriate Assessment it was concluded that the Proposed Development, individually or in combination with other plans and projects, will not have any significant effect on any European Designated Sites.

4.3 EIA Screening Determination Report

The EIA Screening Determination Report (EIASDR) was undertaken to determine if an EIAR is required for the Proposed Development as set out in the provisions of the Planning and Development Act 2000 (as amended), The Roads Act 1993 (as amended) and in Schedule 5 of the Planning and Development Regulations 2001 (as amended). The EIASDR has considered the relevant information and conclusions of the Ecological Impact Assessment and Appropriate Assessment Screening Report. The findings of the technical report have been considered within the EIASDR, and, where relevant, appropriate control measures following best practices and key outcomes have been presented.

The Proposed Development does not meet the criteria for a mandatary EIA in regard to the Planning and Development Act 2000 (as amended) or the Roads Act 1993 (as amended). The EIA Screening exercise assessment criteria was carried out to determine the potential for the Proposed Development to have significant environmental effects. The methodology used in the assessment was informed by the available guidance, legislation and directives. The assessment concluded that the Proposed Development, due to the considered design, scale and nature of the project, that there is no real likelihood of significant effects on the environment.

4.4 Planning Process

The Knocklyon to Ballyboden Active and Sustainable Travel Scheme will be delivered under Part 8 of the Planning and Development Regulations 2001 (as amended).

5. Preliminary Design

5.1 Design Standards

The Active Travel Scheme has been designed in accordance with requirements and principles outlined in the following standards and guidelines:

- Design Manual for Urban Roads and Streets (DMURS)
- Cycle Design Manual (CDM)
- Safe Routes to School Design Guide (SRTS)
- Guidance on the Use of Tactile Paving Surfaces
- The Traffic Signs Manual (TSM)
- Transport Infrastructure Ireland Publications.

5.2 Lane Widths

Reduced traffic lane width ensures lower vehicle speeds which create a safer road environment. Reducing road widths also allow the reclaimed space to be used to providing new active travel infrastructure such as cycle lanes and footpaths. Road widths will be reduced, where necessary, in accordance with DMURS section 4.4.1.

5.3 Cycle Track

One of the core objectives of the Active Travel Scheme is to provide segregated cycling facilities along the entire route. Physical segregation ensures that cyclists are protected from motorised traffic as well as independent of vehicular congestion, thus improving cyclist safety and reliability of journey times for cyclists. Physical segregation will be provided in the form of vertical segregation, (e.g., raised kerbs), horizontal segregation, (e.g., parking/verge protected cycle tracks), or both. Additionally, the use of shared space has been minimised as combining pedestrians and cyclists results in a reduced quality of services for both. Particular attention has been paid to providing segregation at junctions and ensuring that interfaces between pedestrians, cyclists, and vehicles have been minimised, are consistent, and are legible.

Cycle tracks widths have been determined in accordance with the CDM width calculator, as outlined in section 2.6. The Active Travel Scheme is routed along an established road with various constraints, including property boundaries, stone walls and mature trees. To reduce the environmental impact of the scheme while still achieving the desirable cross-section it was necessary to reduce the cycle track width below the desirable minimum width in some constraint locations.

5.4 Roundabouts

The two roundabouts located on either end of Ballyboden Way will be upgraded to Protected Roundabouts with Cycle and Pedestrian Priority, as outlined in section 4.6 and illustrated in Detail TL701 of the CDM.

A Protected Roundabout is designed with tight Inscribed Circle Diameter (ICD), these arrangements are also commonly known as Compact roundabouts with an ICD of typically 17 to 30m. A Protected Roundabout with cycle priority features a circular orbital cycle track, which maintains full segregation between all modes, and parallel zebra crossing to enable pedestrians and cyclist to cross the carriageway with priority. The geometry of the roundabout needs to ensure slow motor vehicle speeds through the junction and on approach roads. Narrow approach roads and circulatory carriageways, overrun areas and raised crossings are key elements in this regard. Parallel zebra crossing has the advantage that they give immediate priority to cyclists and pedestrians with minimal delays to motor traffic. Slower vehicle speeds also improve gap acceptable which enables traffic capacity to be maintained at levels comparable to traditional roundabouts designs.

Intervisibility between the carriageway and cycle track and crossing location so that drivers, cyclists and pedestrians are aware of each other's presence is critically important. The cycle tracks in the design are kept parallel to the carriageway to maximise the visibility envelope for drivers and cyclists. Where space is available

a 2.0m wide refuge islands have also been provided at the crossings to physically reduce entry and exist lanes and provide refuges for pedestrians and cyclists crossing. Pedestrians cross the cycle track on a raised zebra crossing with priority.

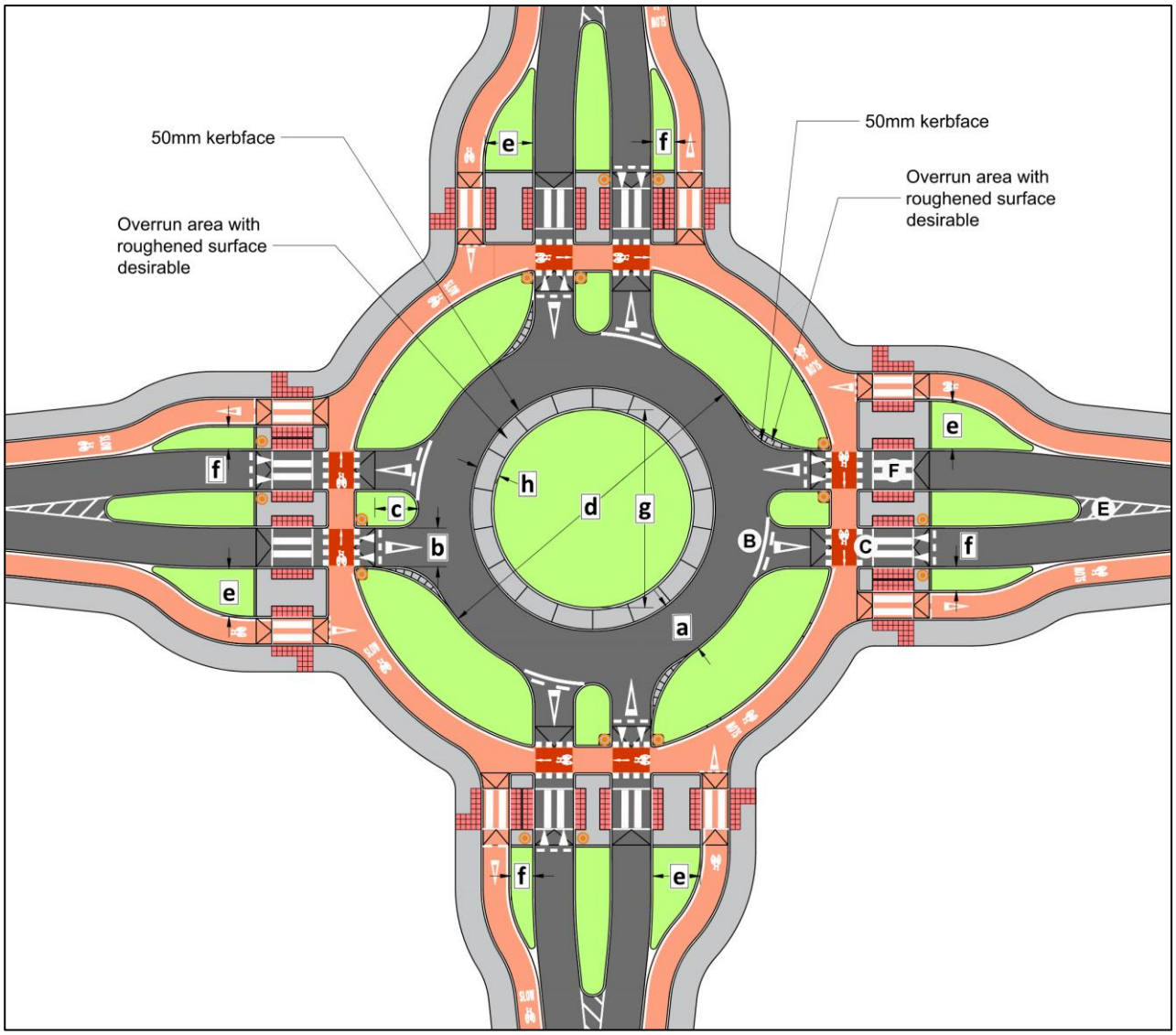

Figure 14: Protected Roundabout with Cycle Priority. Source: CDM (2023), page 267

5.5 Signal-controlled junctions

The signal-controlled junctions used in the Active Travel Scheme have been designed in accordance with the principles outlined in DMURS and CDM. The junctions have been designed as Protected Junctions featuring segregated cycle tracks around the perimeter, typically located between the footway and carriageway. The inclusion of cycle tracks at the junction creates a dedicated space for cycling that is segregated from both pedestrians and motor traffic and that caters for all cycle movements. A protected junction allows cyclists to make right turn movements protected and separate from motor traffic.

The CDM design manual features several arrangements for signal-controlled junctions, the Active Travel Scheme will include two of these arrangements in the design – Protected Junction and Protected Junction with full signal control.

The T-junction between Firhouse and Knocklyon Road will be designed in accordance with the design principles of Protected Junction, as outlined in section 4.4.3.3 of CDM and illustrated in Detail TL504. This junction is the preferred arrangement for a signal-controlled junction, this arrangement requires more space to implement than other layouts therefore it cannot be implemented at all locations. In a protected junction the cycle track is set back on the approach to the junction which creates space to manage the interaction between pedestrians and cyclists outside the signal control.

Some of the main features of a protected junction are:

- Segregated and protected pedestrian and cycle crossings of all arms
- Tight junction geometry with reduced corner radii and approach lane width
- Cycle track is set back from the carriageway creating space to manage the interaction between pedestrians and cyclists. Pedestrians cross the cycle track with priority on a raised zebra crossing
- Pedestrians cross the cycle track with priority and procced to a pedestrian landing area, at which point they press the push button to active the traffic signals
- Separate signal push buttons and low-level cycle signals are provided at each cycle stop line
- Pedestrians and cyclists typically run in same stage, with all red to motor traffic.

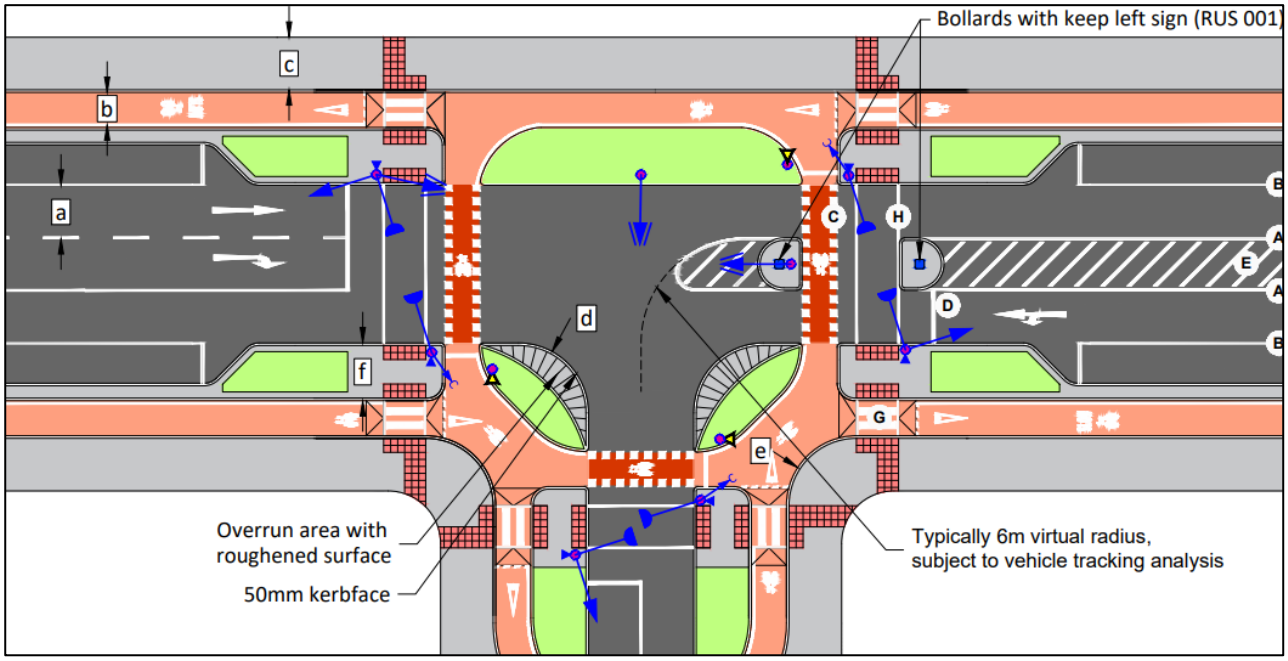

Figure 15: Protected T-Junction. Source: CDM (2023), page 243

Another signal-controlled junction used in the Active Travel Scheme is the Protected Junction with full signal control, described in section 4.4.3.3 and shown in Detail TL505. This layout is preferred for protected junctions in space-constrained areas, as it requires less room than the TL504 design. The key difference between the two layouts is how conflicts between pedestrians and cyclists are managed. In this design, there is no offset cycle track, so cyclists must stop before reaching the pedestrian crossing when the pedestrian signal is active.

Some of the main features of a protected junction are:

- Segregated and protected pedestrian and cycle crossings of all arms
- Tight junction geometry with reduced corner radii and approach lane width
- Cyclists and pedestrians may cross in the same phase, with all red to motor traffic. However, cyclists must give way to pedestrians
- Separate signal push buttons and low-level cycle signals are provided at each cycle stop line.

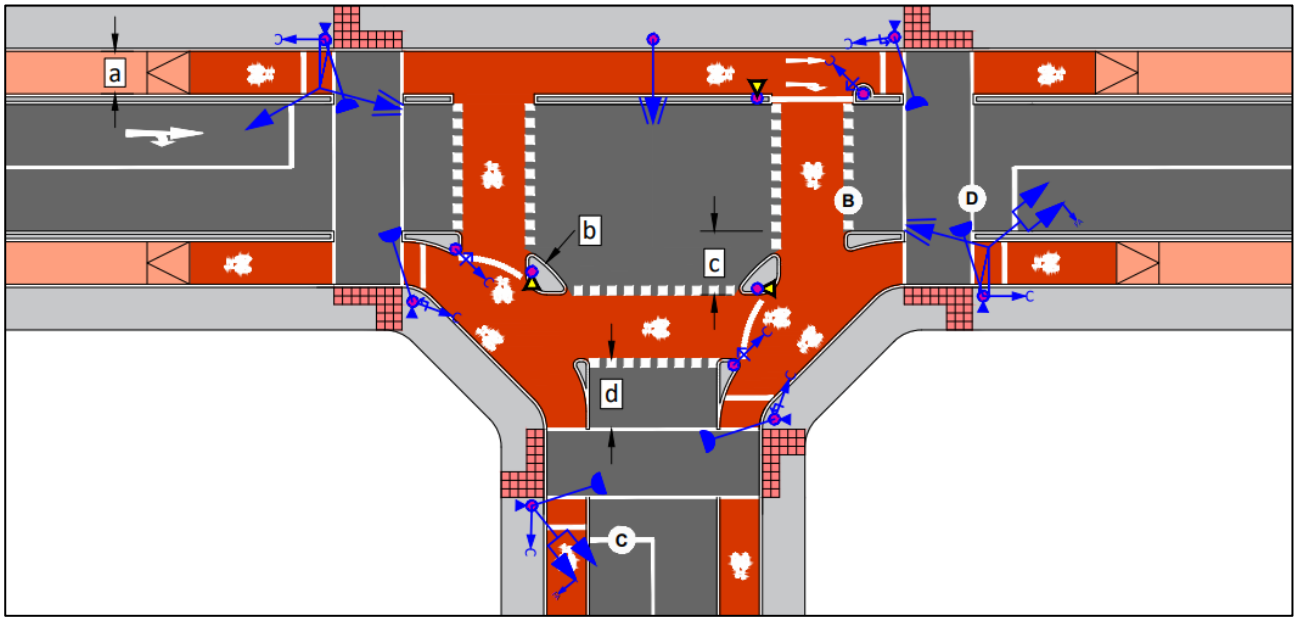

Figure 16: Protected T-Junction – Full Signal Control. Source: CDM (2023), page 246

5.6 Priority Junction

The preferred priority junction design features a continuous footpath, meaning there is no change in level or material at the junction, along with a one-way, with-flow cycle track that continues with priority across the side road on a raised entry. The consistent material and level of both the footpath and cycle track signal priority for pedestrians and cyclists. Section 3.3 of the CDM outlines various designs for priority junctions that give priority to pedestrians and cyclists. These junctions differ based on the space available to offset the cycle track from the main road. A 5m offset is preferred, as it improves the angle of visibility for motorists, reduces blind spots, and gives drivers more time and space to decelerate. It also provides additional waiting space for cars to yield without blocking the cycle track or the main road.

As a measure to reduce traffic speed entering and exiting a side road, junction corner radii will be tightened in accordance with the guidance outlined in section 4.3.3 of DMURS. Minimum corner radii are determined by evaluation the radii required for a vehicle which is expected to use the junction. Tightening of corner radii also reduces the crossing length through the junction for pedestrians and cyclists, further contributing to safety.

The priority junction design for the active travel project aligns with the requirements of DMURS and CDM. Although the design varies depending on side road junction and location constraints the design principles remain the same.

Some of the main features of priority junctions are:

- Pedestrians and cyclists have priority across the carriageway achieved by implementing continuous footpath and cycle track arrangement or parallel zebra crossing. The footpath and cycle track are raised above the carriageway and vehicles are required to use short ramps on either side of the crossing
- Single lane approach on side road
- Where priority is achieved through raised zebra crossings, parallel zebra crossing traffic signs (RUS 066 of TSM) is provided on either side of the crossing
- The cycle track will either be offset 0-1m (TL403), 1-5m (TL402) or 5m (TL401) from the main road with the 5m offset being the preferred arrangement
- Where the cycle track is offset from the road, reverse curves with gentle radii are used to achieve the set back
- The cycle track and footpath through the junction are flush with each other at crossings with the cycle track being raised to footway level in advance of crossing

- Depending on the priority junction layout used, the corner radii or length of access ramp will be determined by the requirements of section 4.3.3 of DMURS.

As part of the Active Travel Scheme, all side road junctions along the route will be upgraded to give priority to pedestrians and cyclists. This design will be used for both one-way and two-way cycle tracks. For roads with fewer vehicles, such as small residential cul-de-sacs, a continuous footpath design (TL402) will be applied. For side roads with higher traffic demand, raised zebra crossings (TL401) will be used.

5.7 Bus Stops

5.7.1 Bus stop islands

The bus stop island is designed in accordance with CDM's TL201 and is the preferred arrangement where space permits. Cyclists will typically divert behind the bus stop via gentle reverse curves, allowing for the bus stop island and helping to slow cyclists as they approach the pedestrian crossing of the cycle track. Pedestrians have priority and cross the cycle track using raised zebra crossings. If bus shelters are provided, they will be located on the island, where pedestrians typically wait before boarding the bus.

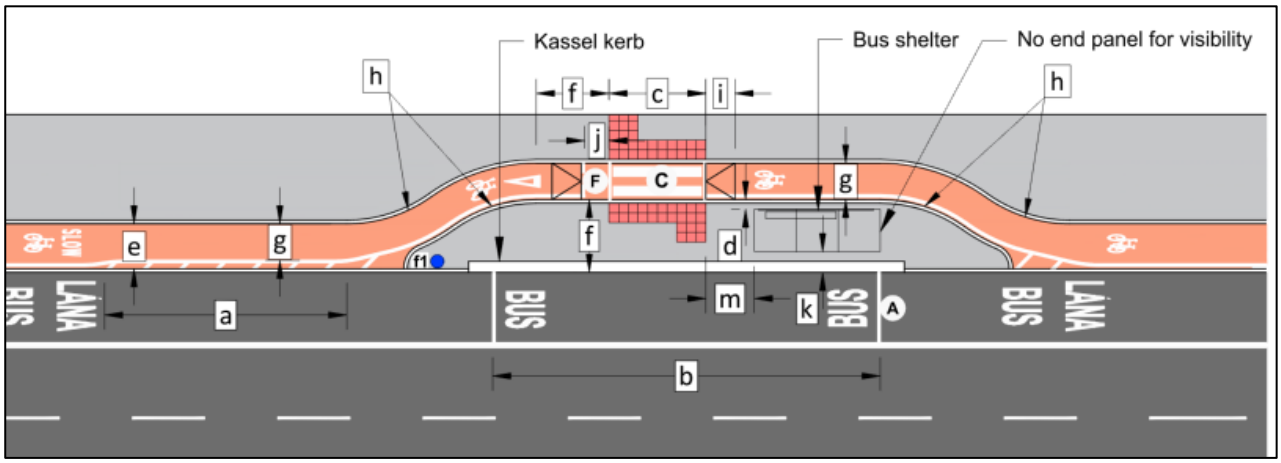

Figure 17: Island Bus Stop. Source: CDM (2023), page 208.

5.7.2 Shared bus stop landing zone

The shared bus zones are based on CDM's TL202 design and is used in constrained locations where bus stop island is not feasible due to space constraints or where the number of passengers and/or cyclists is low. A buffer zone of maximum 1m width is provided for bus passengers boarding/alighting to discourage passengers to wait at the buffer area. A bus shelter is instead located on the sidewalk with a pedestrian priority over the cycle track, provided by a raised zebra crossing, connecting the footpath with the buffer zone.

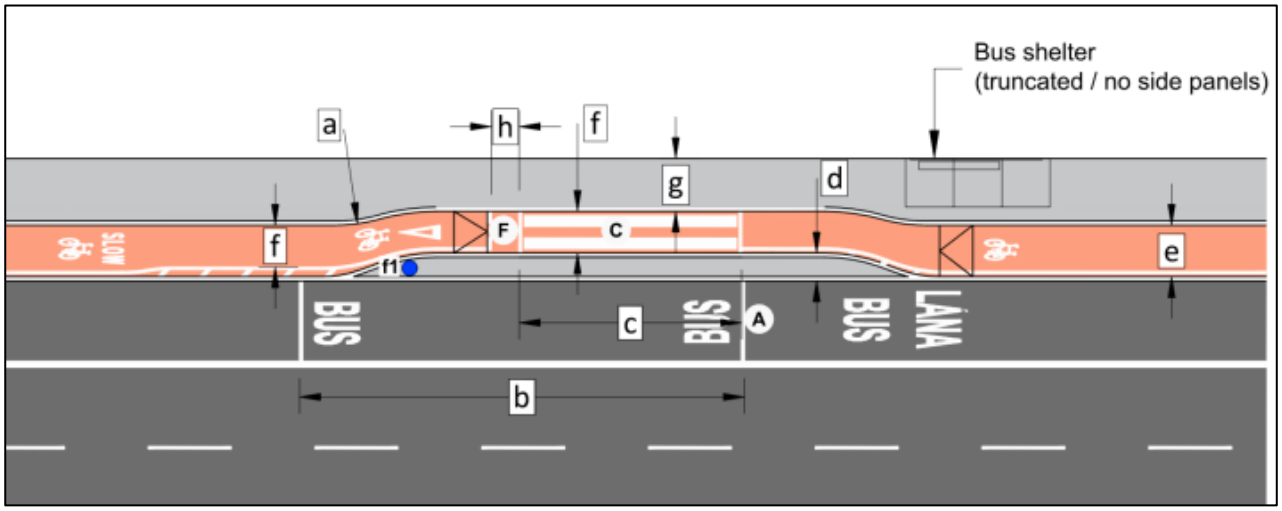

Figure 18: TL202 Shared Bus Stop Landing Zone. Source: CDM (2023), page 211.

5.8 Crossings

5.8.1 Toucan crossing

A toucan crossing is a shared crossing for both pedestrians and cyclists, allowing them to cross the road together. It is wider than a standard crossing and controlled by traffic lights, with push buttons for both users. Toucan crossings are typically used in areas with high pedestrian and cyclist traffic, where separate crossing facilities are not suitable. The crossings have a minimum width of 4.0m

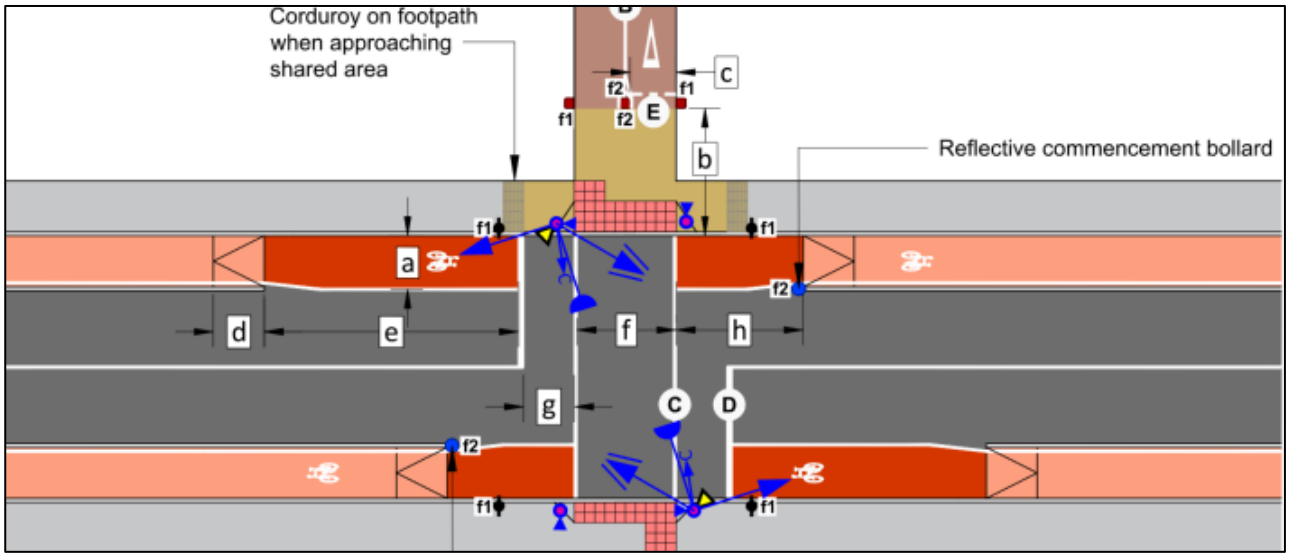

Figure 19: Toucan Crossing. Source: CDM (2023), page 263.

5.8.2 Signalised Parallel Crossing

A signalised parallel crossing features separate facilities for pedestrians and cyclists to cross the road safely. This design includes distinct push buttons and signal heads for each group. It is implemented in areas where there is high demand for pedestrian and cyclist crossings. According to CDM Detail TL606, the minimum width for pedestrian crossings is 2.4 meters, while cycle crossings should be at least 3 meters wide.

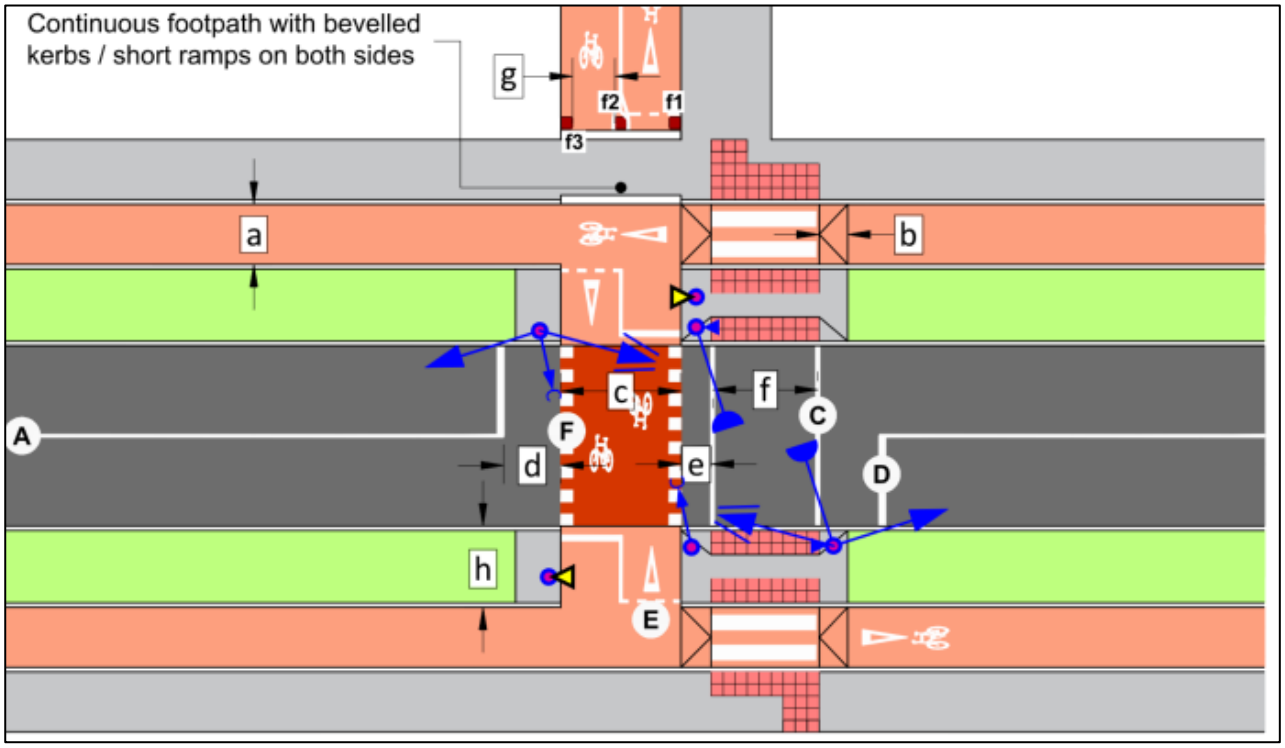

Figure 20: TL606 Signalised Parallel Crossing. Source: CDM (2023), page 260

5.8.3 Parallel Zebra Crossing

The parallel zebra crossing provides raised and segregated controlled crossings of the carriageway for pedestrians and cyclists. This detail is represented in the CDM Detail TL604. This arrangement is suitable for speed limits up to 50km/h and is typically provided with belisha beacons on both sides of the road. The minimum width for pedestrian crossings is 2.4 meters, while cycle crossings should be at least 3 meters wide.

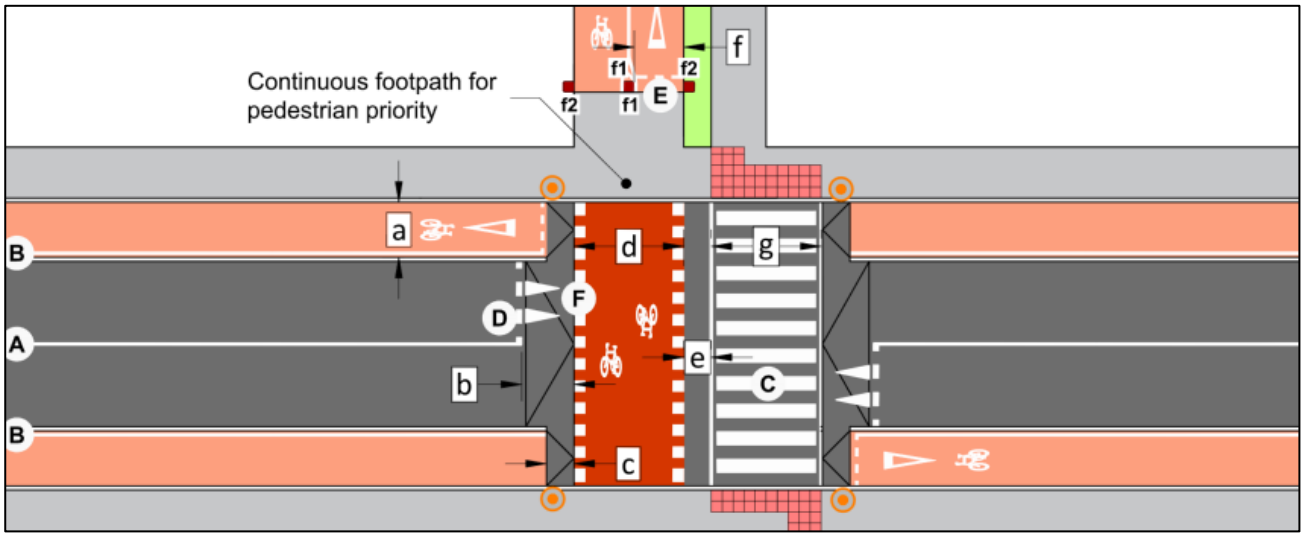

Figure 21: TL604 Parallel Zebra Crossing. Source: CDM (2023), page 258.

5.8.4 Right-turning movements

At all mid-block crossing facilities, provisions for right-turning cyclists must be considered. Right-turning cyclists should be able to safely access the crossing and wait in a designated location that does not obstruct cyclists traveling straight ahead. If it is determined that there is a demand for cyclists to make a right turn at the crossing, appropriate facilities for right-turning cyclists are provided.

This movement can be facilitated either by a dropped kerb approaching the crossing, where cyclists leave the cycle track and cross with pedestrians at a toucan crossing (as described in Section 5.8.1). This approach is only suitable in constrained locations where a right-turning pocket, as described below, cannot be provided, or where there is low crossing demand.

All crossings along the Active Travel Scheme have been assessed individually to determine how best to accommodate right-turning cyclists, taking into account anticipated traffic volumes and site constraints. Crossings expected to experience significant cyclist volumes have been equipped with a widened cycle lane, in accordance with Section 4.5.7 of the CDM and as shown in Figure 22 below. In these cases, a separate signal push button is provided for cyclists, which can be activated from the cycle track. Cyclists wait on the cycle track for the green signal before crossing with pedestrians at the toucan crossing.

In situations where high cycle crossing demand is expected, a Signalised Parallel Crossing, as described in Section 5.8.2, can be provided. This arrangement has been implemented across Templeroan Road, creating a connection between Dargle Wood Park and the two-way cycle track on Templeroan Road.

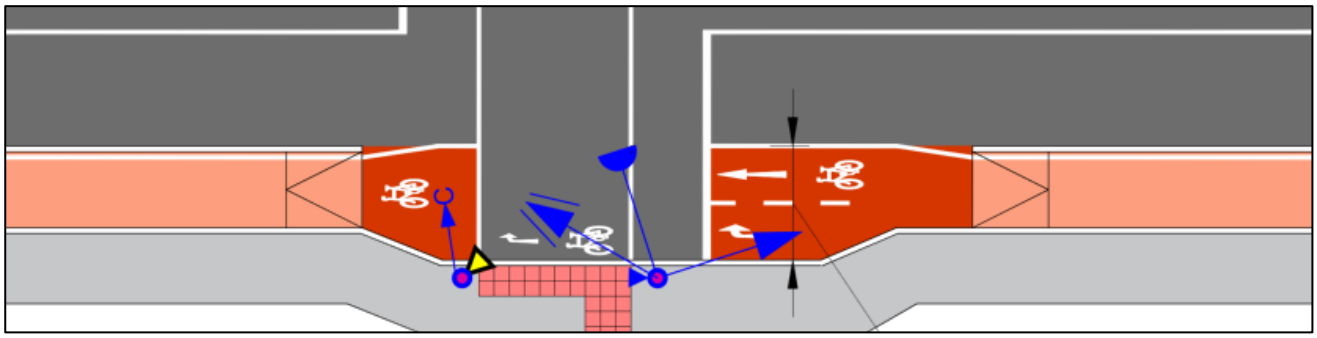

Figure 22: Example of cycle lane widening at toucan crossing. Source: CDM (2023), page 137

5.9 Lighting

Changes to the existing public lighting infrastructure will be assessed and designed during the next stage of the design process.

6. Landscape and Public Realm

6.1 Overview of Landscaping and Urban Realm

One of the key objectives of the Active Travel Scheme is to create an attractive environment for residents and make the area more accessible and liveable. Enhancements to public realm and landscape along the scheme will play a crucial role in achieving these goals, helping to create a balanced streetscape that encourages active modes of transport. As part of the Part VIII planning application, several placemaking locations have been identified and will be further developed in the next stage of the design process. These placemaking interventions will include materials that stand out from the rest of the road infrastructure, as well as new planting, trees, and Sustainable Urban Drainage (SUDs) features to enhance the area's ambience and attractiveness. General landscape improvements will be made throughout the scheme, with specific focus areas identified along the route, such as:

6.1.1 Access to the M50 Pedestrian Bridge Laneway from Knockfield Manor

- The roadway at Knockfield Manor will be narrowed, and the reclaimed space will be used to widen the adjacent footpath
- A section of the laneway will be treated with resin-bound gravel or a similar material, distinguishing it from the main road and signalling to drivers that it is a shared space
- Inclusion of low level lighting along the laneway to foster a sense of safety and improve accessibility through the area.
- Access to the laneway and adjacent properties will be facilitated through a dropped kerb, allowing vehicles to mount the footpath before entering the lane
- Natural boulders will be placed to delineate vehicular access, prevent parking on the footpath, and provide seating opportunities.

Figure 23: Concept landscape design at Knockfield Manor

6.1.2 Access to Dargle Wood park from Knocklyon Road and Templeroan Road

- Access to Darglewood Park from Knocklyon Road and Templeroan Road will be modified to include more cycle friendly arrangement
- Existing kissing gate will be removed and replaced with an opening in the wall
- Existing stonework and steelwork will be modified to accommodate new arrangement
- A new pedestrian guardrail or stone clad baffle wall will be set back from the wall opening, slowing cyclists at approach to the opening while still allowing for seamless and unobstructed access. This concept design will be brought forward and developed further during the next stage of the design.

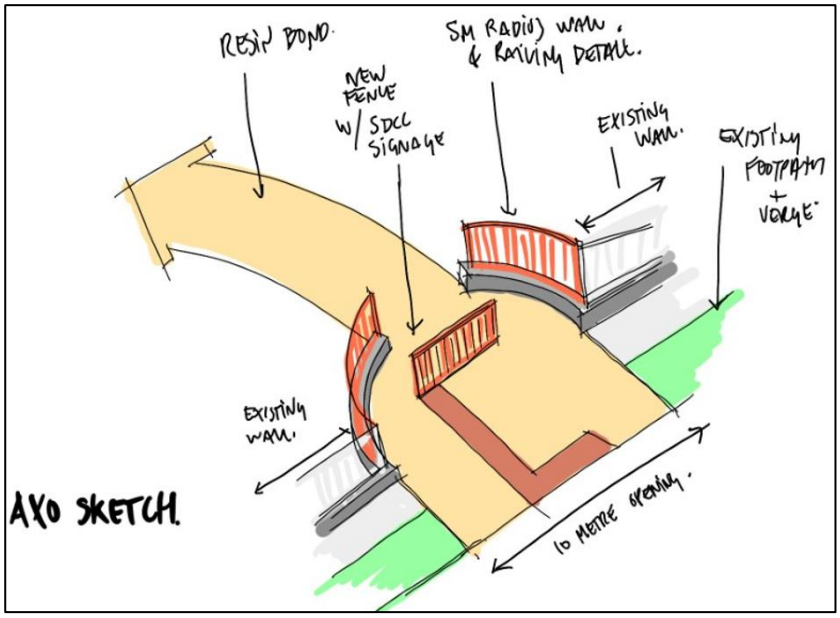

Figure 24: Concept landscape design at Dargle Wood Park

6.1.3 Tree planting in Dargle Wood park and along the scheme

- 64 cherry trees (Prunus accolade) are proposed on either side of the share path through Dargle Wood Park, contributing towards biodiversity in the park and attractiveness of the area.
- 67 street trees are proposed along the roadway to complement the existing environment, improve local biodiversity and fostering a sense of enclosure for drivers, encouraging slower driving speeds.
- Overall, 131 trees will be planted along the scheme. Location and type of trees are shown on the General Arrangement Drawings, O2B-ARU-XX-XX-DR-C-0100, included as part of the Part VIII Consultation Material.

6.1.4 Grassland adjacent to Knockcullen Rise

- A raingarden is proposed on the grassland between Knockcullen Rise and Knocklyon Road.
- The raingarden will function as a Sustainable Urban Drainage (SUD) feature, providing a visually appealing, low-maintenance system for managing rainwater.
- It will slow rainwater runoff, allowing water to infiltrate the ground naturally.
- The raingarden will enhance local biodiversity by creating habitats for wildlife.
- Opportunities for additional new planting and seating will also be explored in this area.

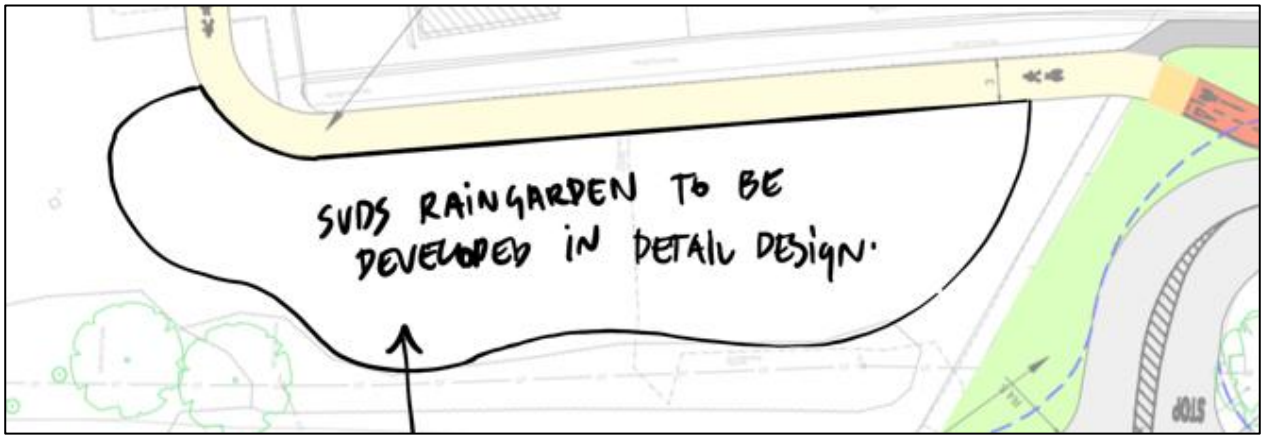

Figure 25: Concept landscape design at Knockcullen Rise

Taylor's Lane Roundabout

- Concept landscape design proposed as part of the Active Travel Scheme will complement and tie into the proposed landscape design of the adjacent planned housing development.
- Native trees with clear steams for visibility will be utilised.
- Opportunity for SuDs with a mix of water tolerant native herbaceous species and trees
- Landscape mounds to provide buffer from the road, planted with origin seed mix or herbaceous perennials
- The public realm enhancement will include opportunities for seating, and it will contribute towards the overall attractiveness of the area.

Figure 26: Proposed public realm improvement adjacent to the Taylor's Lane roundabout

6.2 Arboricultural Assessment & New Tree Planting

An Arboricultural Assessment Report was prepared based on a detailed tree survey along the proposed route and following the requirements of BS5837:2012 *Trees in relation to design demolition and construction – Recommendations.*

The Arboricultural Assessment Report was complete for Old Bawn to Ballyboden Active Travel Scheme, which is a combination of three projects as described in section 1.1 of the report.

The report documents the nature, quality, and condition of existing trees along and adjacent to the route and identifies the likely direct and indirect impact of the proposed development on such trees. It then makes recommendations as to trees that should and/or will need to be removed and identifies trees in relative proximity to the proposed works and construction wayleaves that should be protected during construction, with suitable mitigation measures, as appropriate.

The Arboricultural Assessment Report has concluded that most of the ash trees along the route are showing symptoms of ash dieback disease (Hymenoscyphus fraxineus), while some elm trees have been identified with symptoms of Dutch elm disease. Within The Knocklyon to Ballyboden Active and Sustainable Travel Scheme area, the report has identified 20 trees that will eventually deteriorate due to ash dieback or Dutch elm disease and recommends their removal. Additionally, 31 trees were originally identified for removal due to their proximity to the proposed works.

Since the assessment was completed, the design of the Active Travel Scheme has been revised to incorporate new standards and reduce the number of trees affected. As a result, 24 of the 31 trees previously marked for removal will no longer be impacted.

In total, 10 trees will be removed as a direct result of the proposed works, along with 20 trees due to disease. To compensate for the tree removals and enhance biodiversity in the area, 133 new trees will be planted along the route, resulting in a net increase of 103 trees.

The Arboricultural Assessment Report is included as part of the Part VIII Consultation Material.

7. Conclusion

The Knocklyon to Ballyboden Active and Sustainable Travel Scheme is an initiative aimed at enhancing the streetscape and accessibility in South Dublin. This project, funded by the National Transport Authority (NTA) and led by South Dublin County Council (SDCC), focuses on creating safer, more accessible routes for pedestrians and cyclists along key routes in the area like Firhouse Road, Knocklyon Road, Templeroan Road, Ballyboden Way, and local residential streets. By providing segregated cycle lanes, raised pedestrian crossings, and improved junction designs, the scheme is set to encourage a shift from car usage to more sustainable transport methods.

The primary objectives of the scheme are to enhance the attractiveness of the area, improve public safety, reduce vehicle speeds, and promote active travel as a convenient and safe alternative for local trips, particularly to schools, leisure centers, and other key local destinations. The design is guided by the principles of the Design Manual for Urban Roads and Streets (DMURS) and the Cycle Design Manual (CDM), ensuring that the infrastructure prioritises vulnerable road users. Through enhanced public spaces, improved biodiversity, and strategic landscaping, the scheme will foster a more pleasant and cohesive urban environment.

In conclusion, this Active Travel Scheme is not just about improving transport infrastructure but also about transforming public spaces to create a safer, greener, and more connected community in South Dublin.