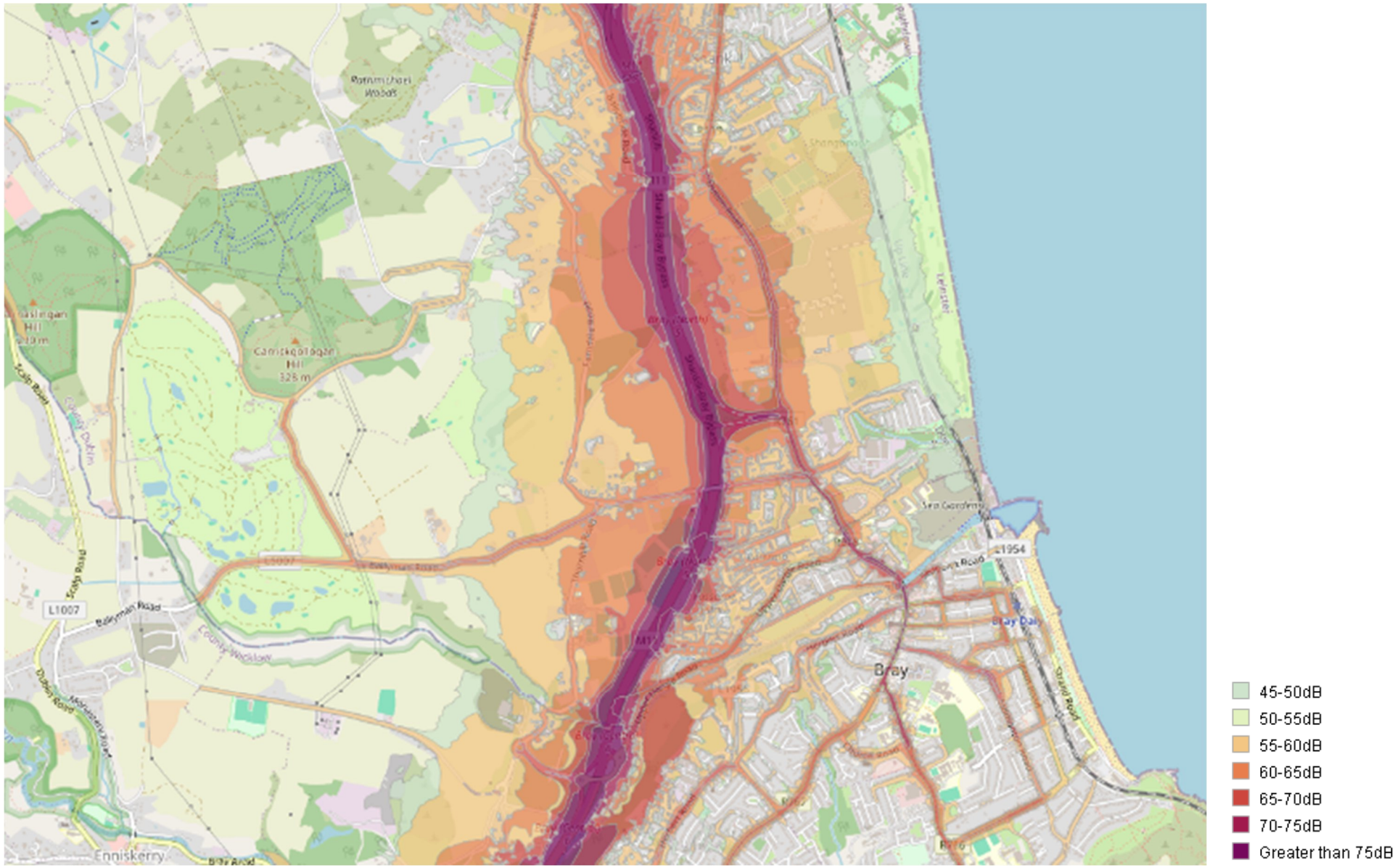


Figure 2-11 Noise Catchment (Day) – Old Connaught area

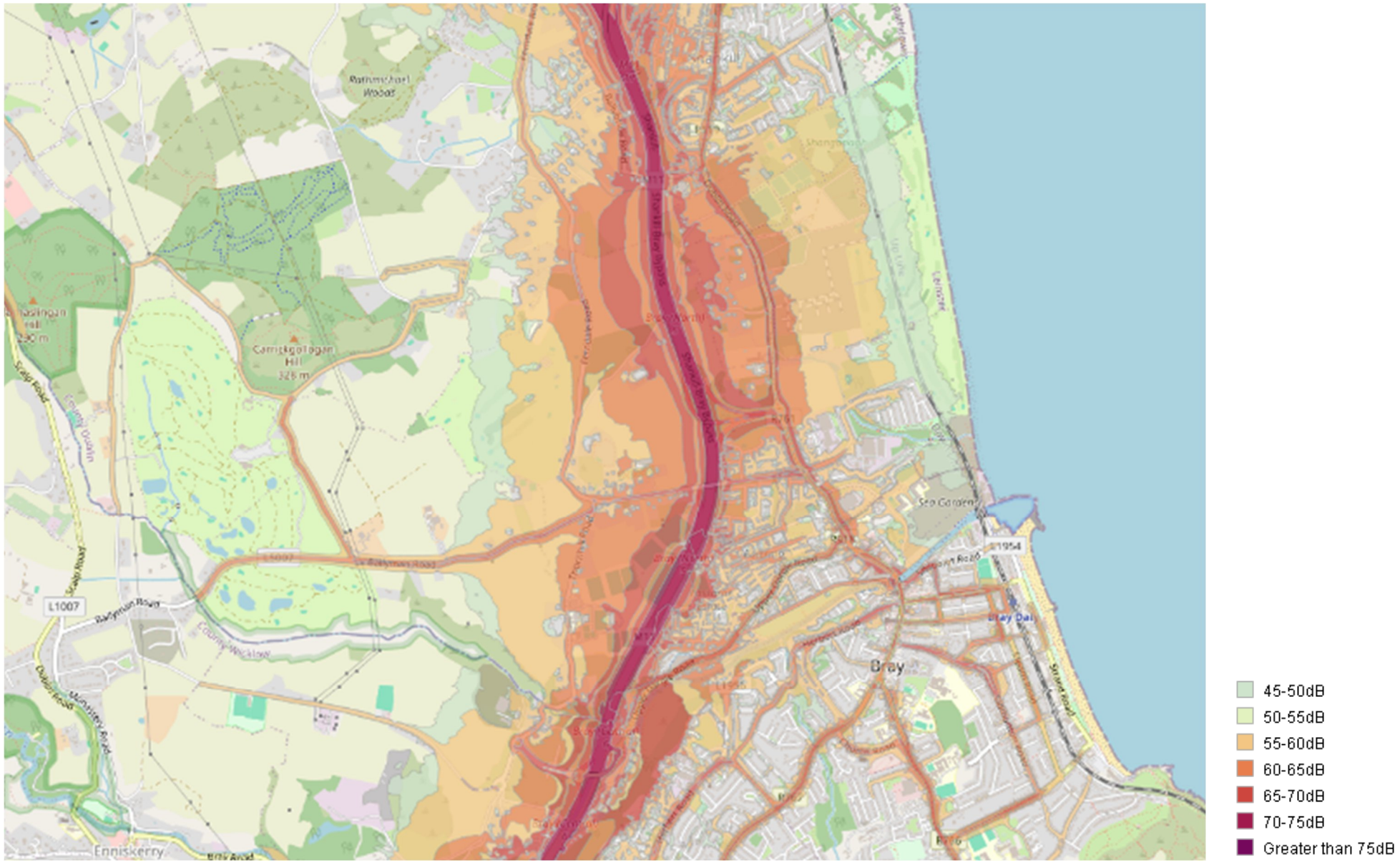


Figure 2-12 Noise Catchment (Night) – Old Connaught area

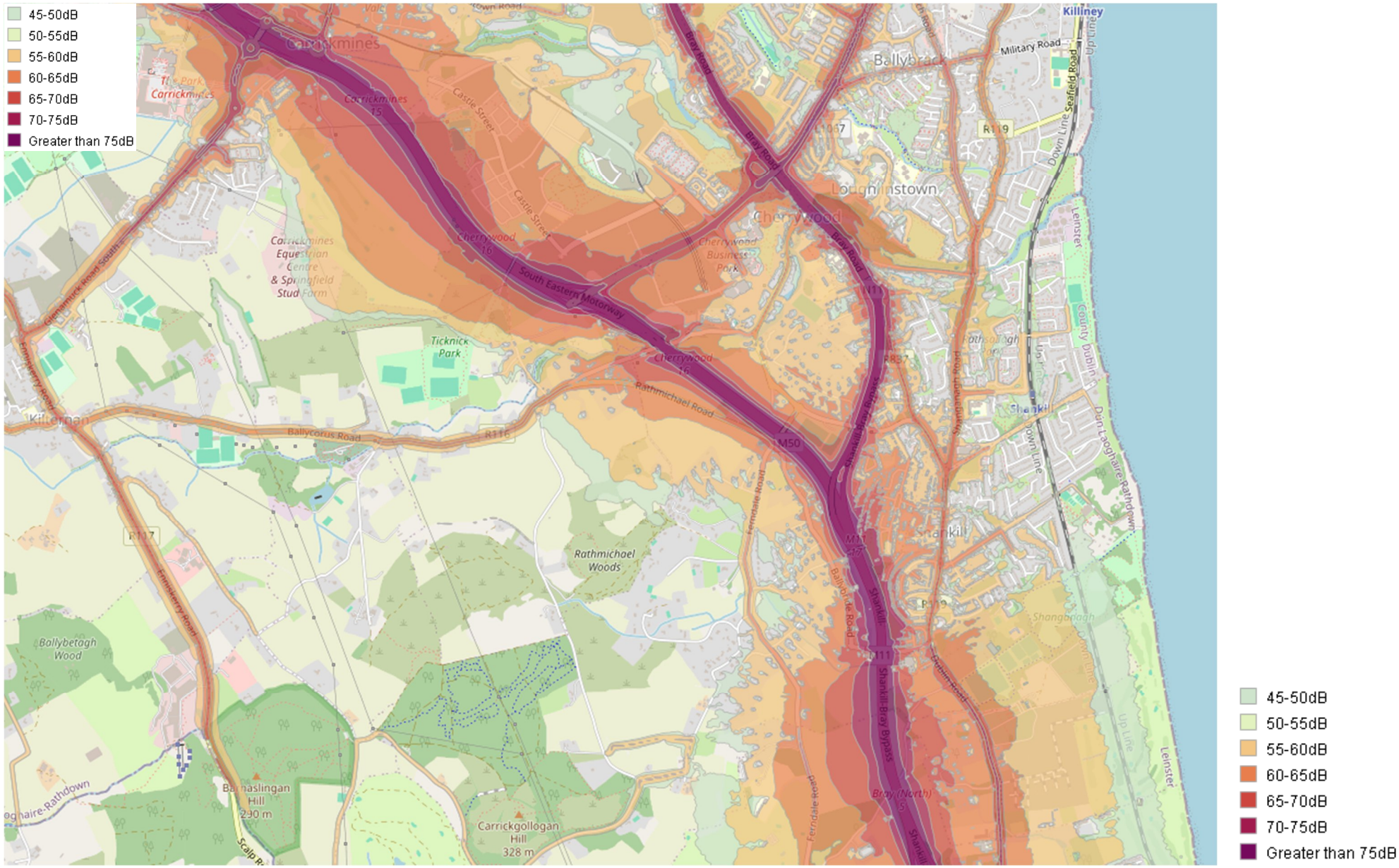


Figure 2-13 Noise Catchment (Day) – Rathmichael area

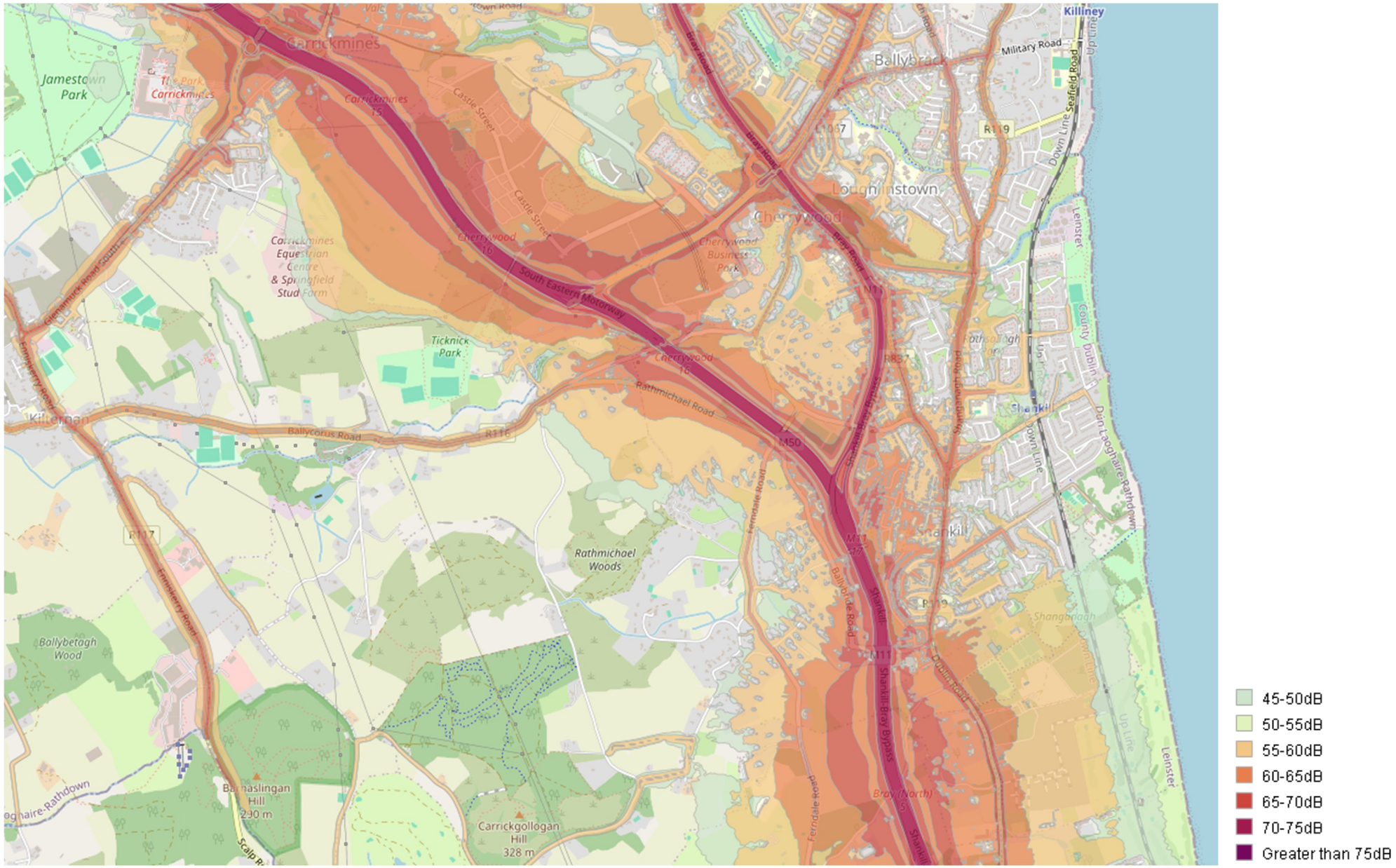


Figure 2-14 Noise Catchment (Night) – Rathmichael area

2.2 Existing and Planned Infrastructure

The settlement strategy framework should also take cognisance of existing and future planned infrastructure within and surrounding the two LAP areas. In some cases, existing and future planned infrastructure may impose a barrier within the LAP areas or segregate it from surrounding areas. Where future infrastructure is proposed, land should also be reserved to accommodate it in the future.

An illustration of the infrastructure in this section of the report are shown in Figure 2-18 and Figure 2-19.

2.2.1 Existing Urban Structure and Roads

The two LAP areas are located to the southeast of the County, with lands significantly rising in altitude from east to west and south to north. The M50 and M11/N11 generally runs along the eastern border of the two LAP areas area with a portion of the Rathmichael LAP wedged between the M50 and N11 where these roads merge. To the north of the Rathmichael LAP area is the Cherrywood SDZ, Shankill to the east, Old Connaught LAP to the south, while Kilternan/Glenamuck lies to the northwest. To east of Old Connaught LAP area is Woodbrook/Shanganagh, to the southeast is Bray, Fassaroe to the south and Enniskerry to the west.

The existing built-up areas are focussed around Old Connaught Avenue, Ferndale Road and Thornhill Road within the Old Connaught LAP area. These areas include low-density residential, schools and a recreational facility (GAA club).

The Rathmichael LAP area predominantly consists of low-density residential areas on most of the streets off Ferndale Road, which include Hillfield, Castlegate, Quarry Road, Ballybride Road, Ballybride Manor and Ferndale Glen. Major attractors in the Rathmichael LAP area includes Rathmichael Parish Church, St Columcille's Hospital and Rathmichael Wood.

2.2.2 Existing Open Space, Recreational and Social Infrastructure

Figure 2-15 and Figure 2-16 show the social infrastructure, existing open space, recreational and local trip attractors in the two LAP areas and surrounding areas of Bray, Shankill, Cherrywood, Cabinteely, Kilternan and Enniskerry. The purpose of this map is to show the limited social infrastructure within the two LAP areas compared to those in the surrounding areas. This means that current residents tend to travel outside of the boundaries of the LAP areas to adjacent areas or beyond resulting in longer distance trips.

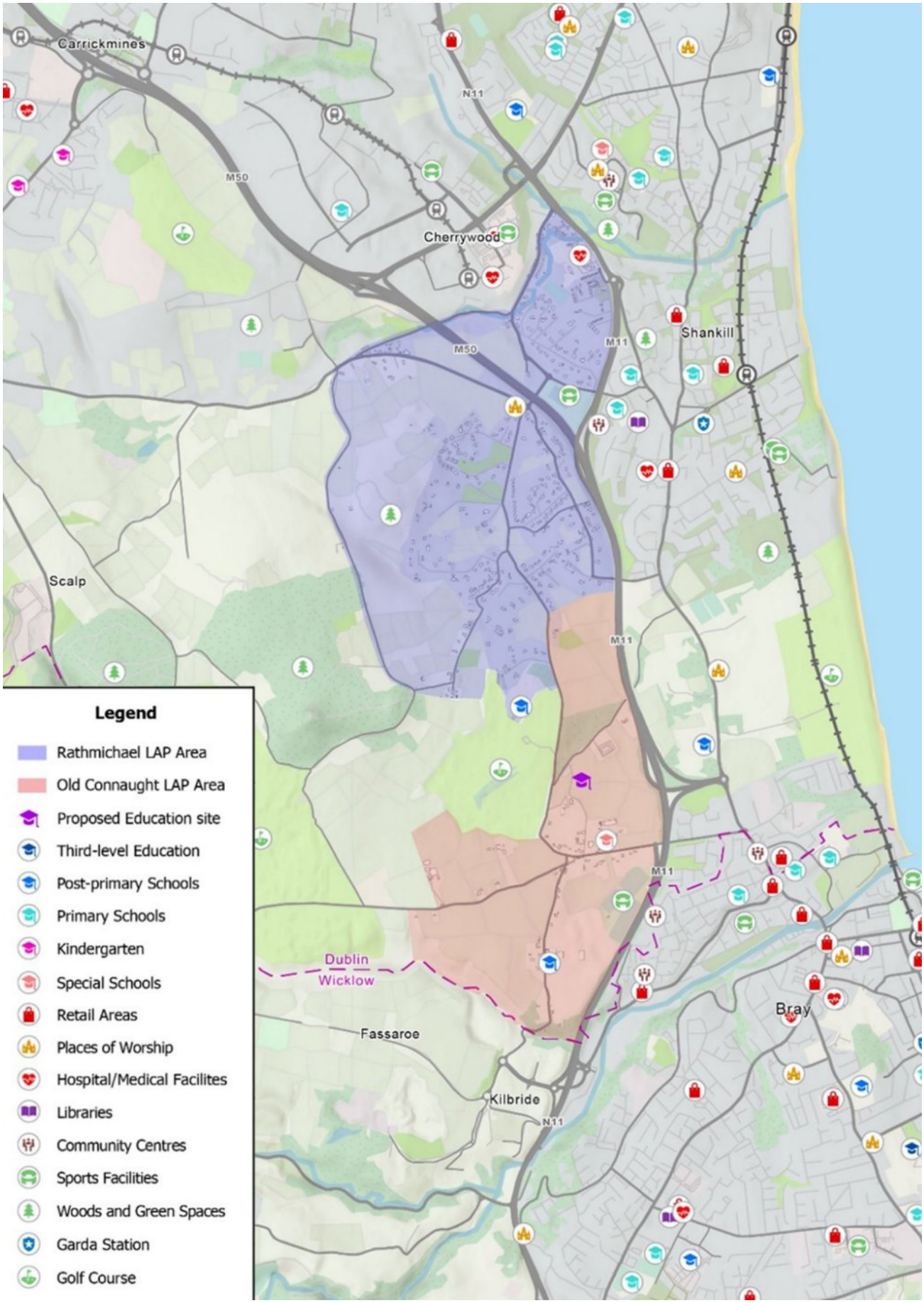


Figure 2-15 Existing Social Infrastructure and Trip Attractors

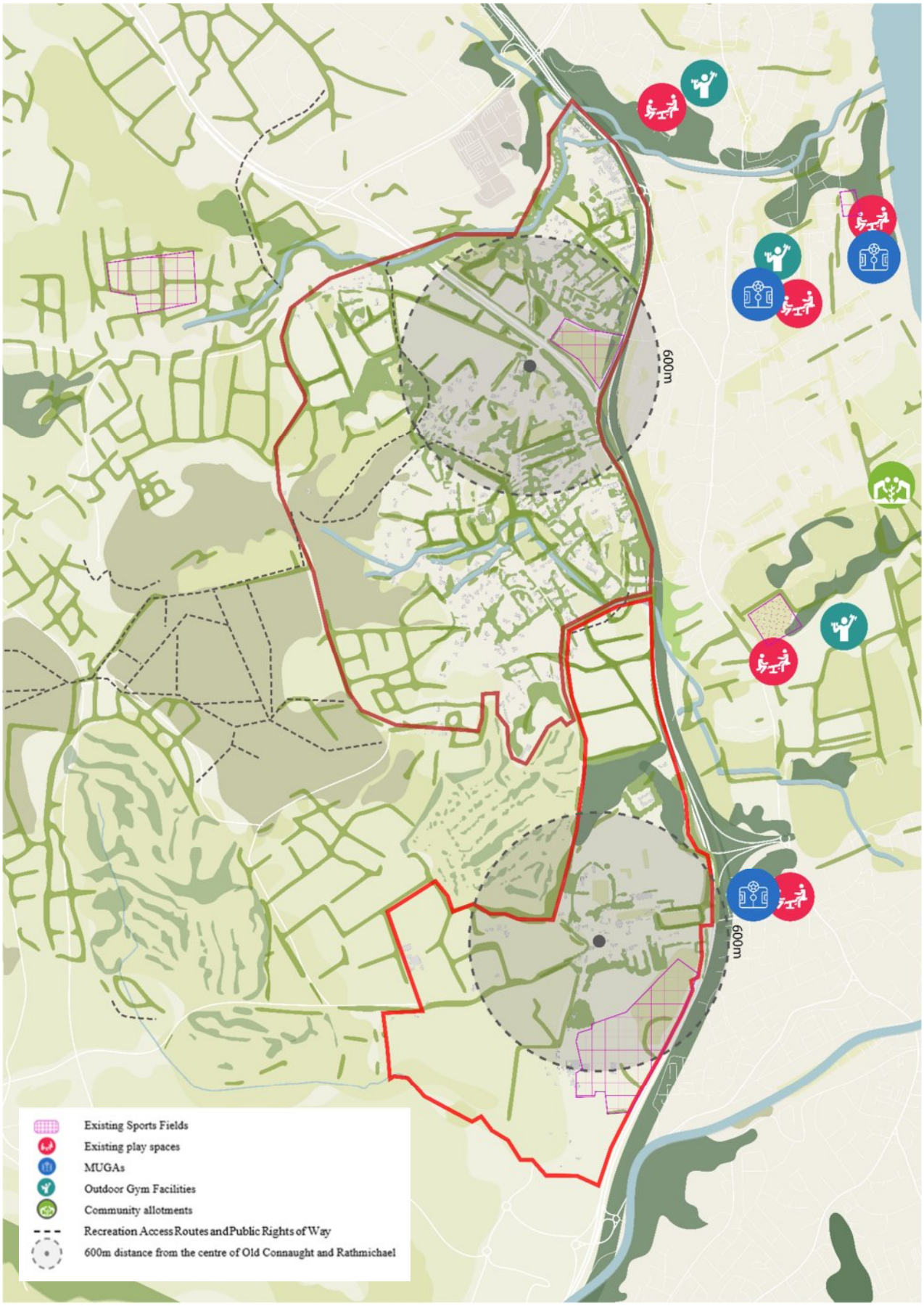


Figure 2-16 Existing Open Space and Recreation

2.2.3 Social and Affordable Housing

There are a number of sites within the two LAP areas in the ownership of DLRCC and have been identified as potential sites for development of social housing including Old Connaught Avenue, Ballyman and three sites in Rathmichael. These sites are shown in Figure 2-17. The Old Connaught site is 2.04 hectares in size and is located on Old Connaught Avenue adjacent to Bray and located in an excellent location to integrate into the existing urban structure. The Ballyman Road site is located further to the west and is 8.72 hectare in area. It is important that this site is integrated into any future community structure within Old Connaught.

The three sites in the Rathmichael LAP area are straddled across the M50 motorway with 11.65 hectare to the north and 7.99 hectares to the south. These are large land parcels with the potential of creating a substantial new urban community.

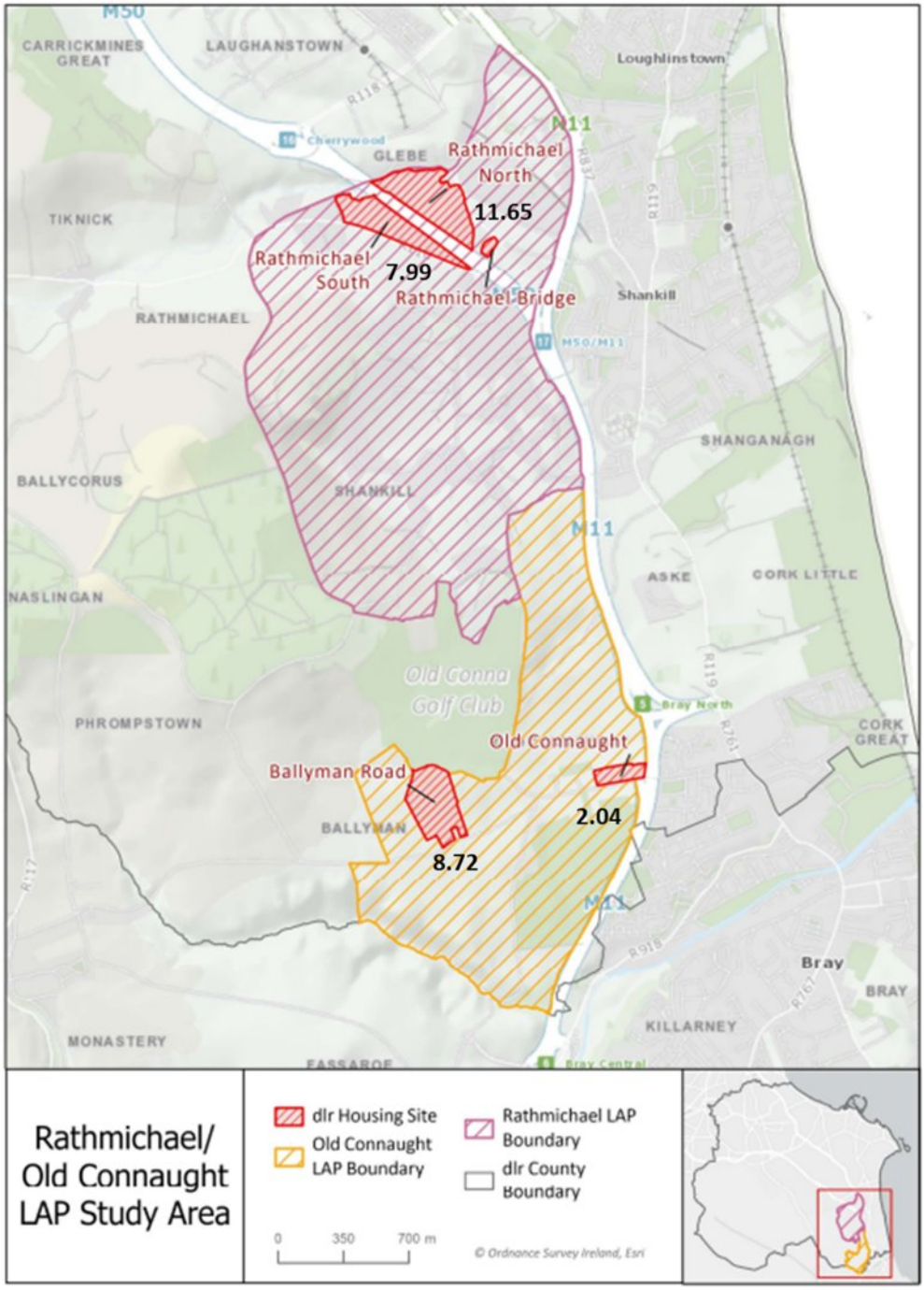


Figure 2-17 DLRCC Housing Sites

2.2.4 Future Transportation Infrastructure Planning

2.2.4.1 N11 / M11

The N11/M11 and M50 are national roads that provide challenges in terms on the future development of the two LAP areas. Therefore, it is important that residents in the two LAP areas can access existing and future services in the settlements to the east of the N11/M11/M50. New linkages across these roads are required to integrate the LAP areas to existing built up areas subject to the requirements of the Spatial Planning and National Roads Guidelines (SPNR) and compliance with TII Publications to protect National Road Network (NRN).

Wicklow County Council, in partnership with Dún Laoghaire-Rathdown County Council, Transport Infrastructure Ireland and the Department of Transport is progressing the development of the N11/M11 Junction 4 to Junction 14 Improvement Scheme and N11/M11 Bus Priority Interim Scheme (N11/M11 BPIS) with the National Transport Authority (NTA). The N11/M11 Junction 4 to Junction 14 Improvement Scheme is a transportation project aimed at alleviating congestion, improving safety and optimising the efficiency and function of the N11/M11 between Junction 4 and Junction 14 as a transport corridor which extends from Dublin to Rosslare Port [1].

As part of the N11/M11 Junction 4 to Junction 14 Improvement Scheme, the preferred route option published at the end of 2021 indicated an upgrade of junction 5 to include a second roundabout on the western side of the junction, which would allow for direct access between Old Connaught and the N11/Dublin Road. At present the scheme is suspended as the funding has not been made available to progress this project in the 2021-2025 period of the National Development Plan, although Wicklow County Council, Dun Laoghaire Rathdown County Council and TII remain committed to the progression of the project once government funding is allocated for that purpose.

The N11/M11 BPIS, developed separately to the N11/M11 Junction 4 to Junction 14 Improvement Scheme offers a practicable interim solution for implementation in advance of the larger and more comprehensive scheme. The overriding objective of the N11/M11 BPIS is to develop a proposal for the provision of bus priority measures on the N11/M11 national road. It is expected that priority facilities can be used by buses/coaches to avoid congested traffic lanes and help to reduce the current unsustainable dependency on the private car.

Section 2.9 of the SPNR indicates that development or local area plans should identify any land required for future national road projects including objectives that:

- Retain required lands free from development; and
- Ensure that measures are put in place so that any adjacent development of sensitive uses, such as housing, schools and nursing homes, are compatible with the construction and long-term operation of the road.

Development objectives, including the zoning of land, must not compromise the route selection process, particularly in circumstances where road scheme planning is underway and potential route corridors or upgrades have been identified and brought to the attention of the planning authority.

2.2.4.2 Luas

The indicative route of the Luas extension to Bray is shown in Figure 2-18 and Figure 2-19, and as outlined above is forming part of the GDA Transport Strategy 2022 – 2042. The ABTA reviewed other possible alignments however, although some of these alignments may be more beneficial to the development of the two LAP areas, it is not within the remit of the ICAS to determine a new alignment.

[1] - Junction 4 to Junction 14 Improvement Scheme (n11m11.ie)

The indicative route of the Luas extension through Rathmichael crosses the Cherrywood Viaduct and continues through to the N11 diagonally across the western tip of LAP area. After crossing the M11 the Luas alignment extension swings southbound and follows a route parallel to the M11 up to Allies River Road where it crosses the M11 again (to the north of Junction 5). From here on the alignment runs southbound up to Old Connaught Avenue where it turns east towards Bray.

This indicative alignment is therefore accounted for in the future planning of the LAP areas. Therefore, space should be reserved to allow for the indicative route of the Luas alignment as it would provide opportunities for future developments to be within easy access to public transport services.

2.2.5 Potable Water

Potable water infrastructure is moderately developed within the Old Connaught LAP area and connections are possible to existing infrastructure within all proposed development areas pending approval from UÉ. The Old Connaught/Woodbrook Water Supply Scheme is due for completion in Q3 2024 and includes 2 new reservoirs at Ballyman. This will improve the security of drinking water supply and support future development within the LAP area.

The major water mains which will be used to service the LAP area include the 800mm water main running to the west of the LAP area and crossing Ballyman Road, the 600mm water main running north-south along Ferndale Rd and Thornhill Rd, the 450mm water main running north-south on Allies River Road, and the 200mm water main running along Old Connaught Avenue.

The potable water infrastructure is well-developed within the Rathmichael LAP area and all proposed development areas can be connected to existing infrastructure pending approval from UÉ. The major water mains which will be used to service connections include the 800m water main running north-south in the western portion of the LAP area, the 600mm water main running along Ferndale Road, the 300mm water main on Falls Road, and the 150mm main on Ballybride Road.

2.2.6 Wastewater

Wastewater infrastructure is not well-developed in either LAP area. A major constraint to all wastewater development in both LAP areas is the provision of new sewer connections across the M11 which will require the reservation of space for new wastewater pump stations. Crossing of the NRN will be subject to consultation with TII at design stage, subject to the requirements of the Spatial Planning and National Roads Guidelines (SPNR) and compliance with TII Publications.

The Old Connaught LAP area is currently not serviced by wastewater infrastructure. Through discussions with UÉ and TII, the most likely M11 crossing is a 300-400mm diameter trenchless rising main in the vicinity of Old Connaught Avenue with a pump station located directly to the north of Old Connaught Avenue, on the western side of the M11. This correlates with the emerging option identified in the UÉ Shanganagh & Bray DAP Stage 4, which proposes a new pumping station at the same location with storage of approximately 1,650m3. UÉ has not yet formalised the rising main and pump station as strategic assets, but developer interest through Pre-Connection Enquiries to UÉ will ensure progression of the asset in line with DLR plans.

Subject to SPNR policy, consultation with TII and compliance with TII Publications, the development of the initial phases of housing in the area could be serviced by provision of an interim pump station and rising main across the Old Connaught Avenue bridge in advance of delivery of the permanent infrastructure to serve the entire LAP area.

The Rathmichael LAP area is partially serviced by wastewater infrastructure through several wastewater crossings in the northern portion of the LAP area and a 225mm wastewater crossing the M11 at Lordello Road. Further development within the LAP area will require the provision of a trenchless crossing consisting of a 350-400mm rising main in the vicinity of Crinken Lane. This rising main and associated pump station are being progressed as strategic assets by UÉ and wastewater infrastructure downstream has been sized to service the residential units planned for the Rathmichael area. UÉ have identified a suitable site for the pumping station to the south of Crinken Lane and the detailed design is ongoing.

2.2.7 Surface water

The existing stormwater infrastructure in the Old Connaught LAP area is moderately developed. The largest stormwater pipes crossing the M11 include the 900mm main crossing south of Allies River Road and a 1350mm main crossing south of the Shankill-Bray Bypass.

The Rathmichael LAP area has a moderately-developed existing stormwater network with several crossings of the M11 including a 1050mm diameter and a 600mm diameter crossing in the vicinity of Stonebridge Road and a 1200mm diameter crossing south of Crinken Lane. Main pipes in the LAP area include a 300mm pipe along Rathmichael Road and a 225mm pipe along Ferndale Road. Additionally, there are several smaller networks connecting developments throughout the LAP area.

As part of the national road network, the N/M11 consists of the mainline, interchanges and associated infrastructure including surface water drainage designed and provided for the national road network requirements only. Therefore, private connections to that storm water drainage regime exclusive to the national road is not generally permitted.

The DLR CDP 2022-2028 includes several policies including Policy Objective E16 which states all development proposals are required to include Sustainable Drainage Systems (SuDS) to control runoff quantity and quality. Integration of SuDS strategies will be taken into account in the identification and detail of regional ponds and stormwater network upgrade and development within the LAP areas.

Nature Based Solutions (NBS) and in particular Sustainable urban Drainage Systems (SuDS) should be prioritised under the following requirements.

1. Runoff Destination. The following methods of utilising or releasing rainfall run-off from development are set out in order of preference:
   - 1. Use surface water run-off as a resource.
   - 2. Provide interception of rainfall through the use of nature-based SuDS approaches.
   - 3. Where appropriate, infiltrate run-off into the ground.
   - 4. Discharge to an open surface water drainage system.
   - 5. Discharge to a piped surface water drainage system.
   - 6. Discharge to a combined sewer.
2. Hydraulic Control. For hydraulic criteria refer to GDSDS and Regional Drainage Code of Practice.
3. Water Quality. SuDS designs will integrate a sufficient number of appropriately sized SuDS components to manage and remove pollution, to provide protection of groundwater, surface waters and sensitive coastal waters. The SuDS design will demonstrate that water is suitably cleansed prior to entry to SuDS components that are intended for amenity use and biodiversity benefit. Preference should be given to SuDS techniques which generate interception losses.
4. Amenity. Designs should seek to generate amenity benefits using SuDS through the creation of multi-functional places and landscapes.
5. Biodiversity. Designs should seek to generate biodiversity benefits using SuDS.

2.2.8 ESB and Telecommunication

There are currently 110kV overhead powerlines that run to the west of the two LAP areas, which connects between the two existing substations in Carrickmines and Fassaroe. However, these powerlines are outside the two LAP areas and therefore would not have a direct physical impact to their future development.

There are also medium (38kV) and low (415V) voltage overhead powerlines that run throughout the two LAP areas. These overhead powerlines could be relocated along adjacent roads if land is needed to provide for future developments. Alternatively, low and medium overhead powerlines have a minimum hazard zone distance of 6m; however, these can be used for other purposes, such as active travel facilities.

The ESB Network' Code of Practice for Avoiding Danger from Overhead Electricity Lines establishes the minimum distances for exclusion zones which needs to be taken into consideration at the future phases of the development. For low voltage, 10kV, 20 kV and 38 kV overhead lines, the minimum horizontal distance is 6m, whereas 110 kV and above is 10m.

The Dublin Array preferred cable route indicates the proposed route for the array cables to the Carrickmines Zone Substation would likely run to the north of the proposed Rathmichael LAP boundary. As such, it should not impact directly on the Rathmichael LAP area.

Telecoms providers have assets to the north of the Rathmichael LAP boundary. EIR fibre routes run parallel to the north boundary of the Rathmichael LAP connecting to the main telecoms exchange in Shankill. Additional fibre routes are planned to be installed in the Old Connaught area in 2025. For other parts of the LAP areas, such as the SLR new fibre capacity would likely be required, new connection applications would need to be determined for future phases within the LAP.

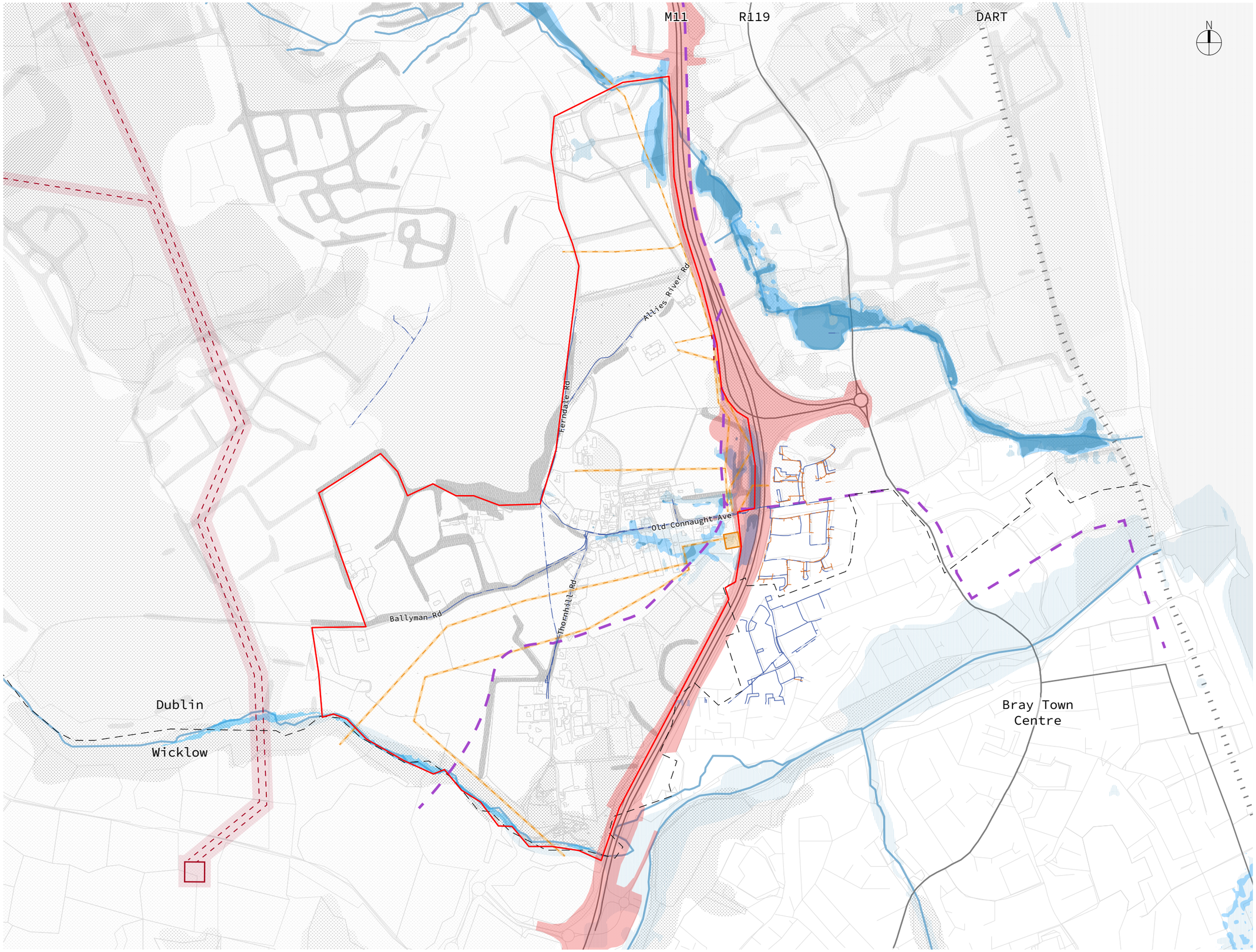


Figure 2-18 Existing and Planned Infrastructure - Old Connaught

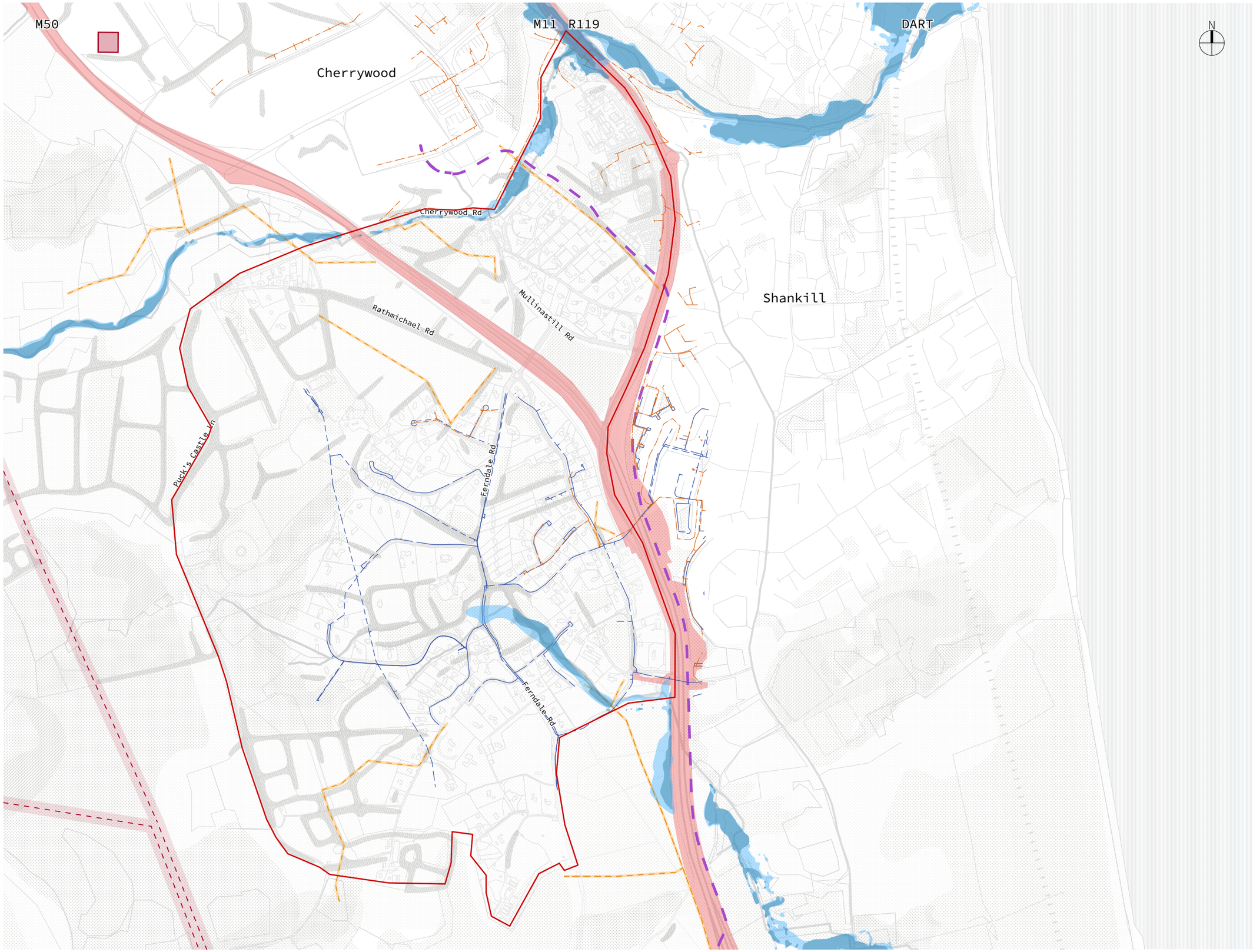


Figure 2-19 Existing and Planned Infrastructure - Rathmichael

3. Infrastructural Requirements

3.1 Transport Infrastructure

3.1.1 ABTA Methodology

3.1.1.1 Overview

This section outlines the methodology followed as part of the Area Based Transport Assessment (ABTA) Options Development and Assessment for the ICAS study.

ABTA is one of a number of complementary assessment processes, used in the preparation of local area plans, planning schemes and masterplans. The intended effect of ABTA is to ensure that the assessment of transport demand and its associated impact plays a central role in informing the development proposals. This should include consideration of the overall scale of the development as well as the mix of land uses, location, density, phasing and design / delivery of supporting transport infrastructure and services (across all modes of transport). Essentially, its function is to place the integration of land use and transport planning at the centre of the plan preparation process.

The ABTA approach provides a clearly defined methodology to support better integration of land use and transport planning at different spatial levels, from strategic to local, enabling greater consistency and effectiveness at local, county, regional and national levels.

The 'ABTA How to Guide - Guidance Document - Pilot Methodology' produced by Transport Infrastructure Ireland (TII) and the National Transport Authority (NTA) provides a description of the different stages of the ABTA process.

Figure 3-1 illustrates the stages of the ABTA process.

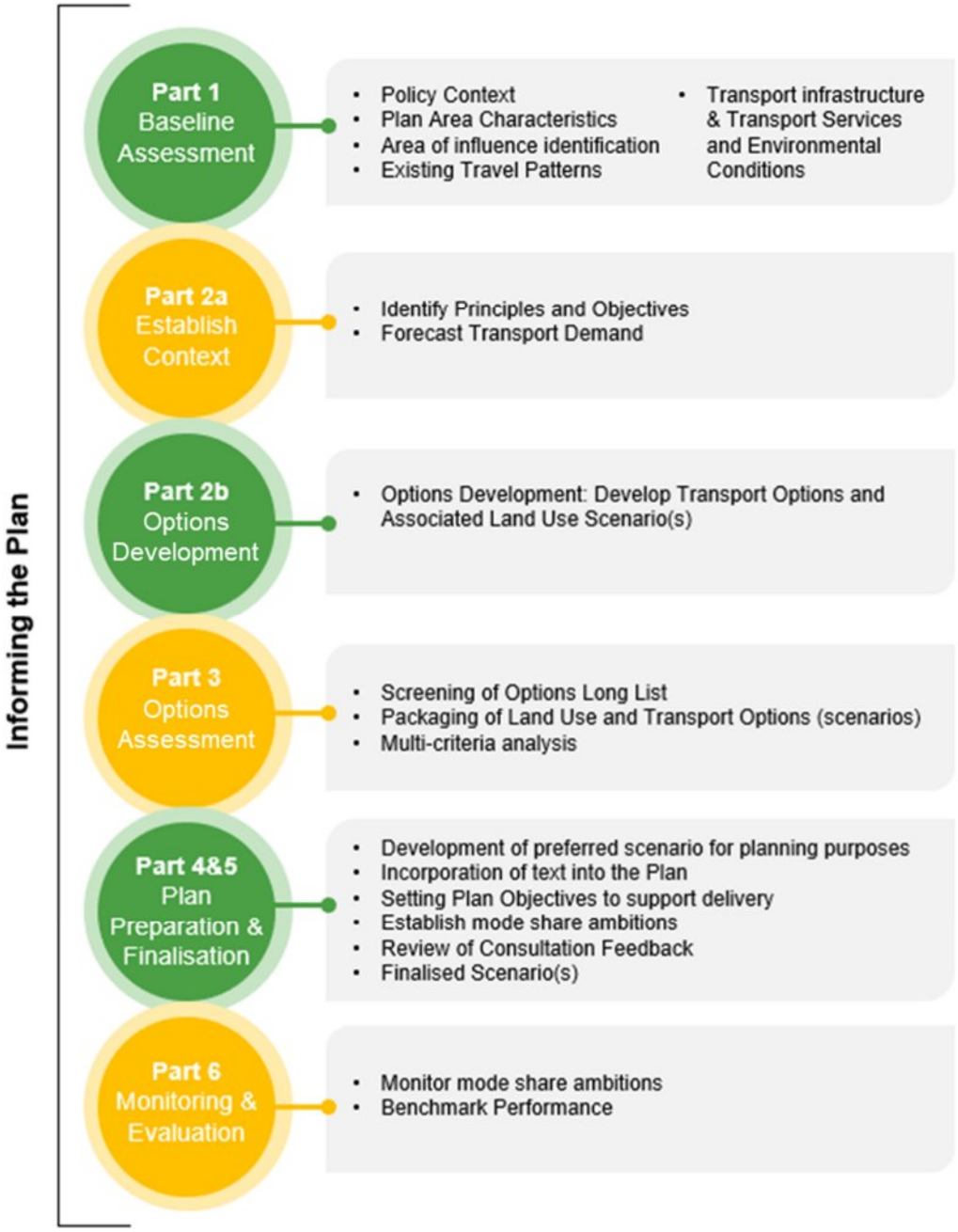


Figure 3-1 ABTA Stages Overview

The Options Development and Assessment Report forms part of Part 2b and 3 of the ICAS. Part 2b includes Options Development and Part 3 the Options Assessment. The deliverable for these two parts is provided as a single report.

3.1.1.2 Part 2b - Options Development

Part 2b of the ABTA process (Figure 3-2) involves an initial options development process to create a 'Long List' of transport measures which have the potential to address the objectives set out in the Part 2A Position Report.

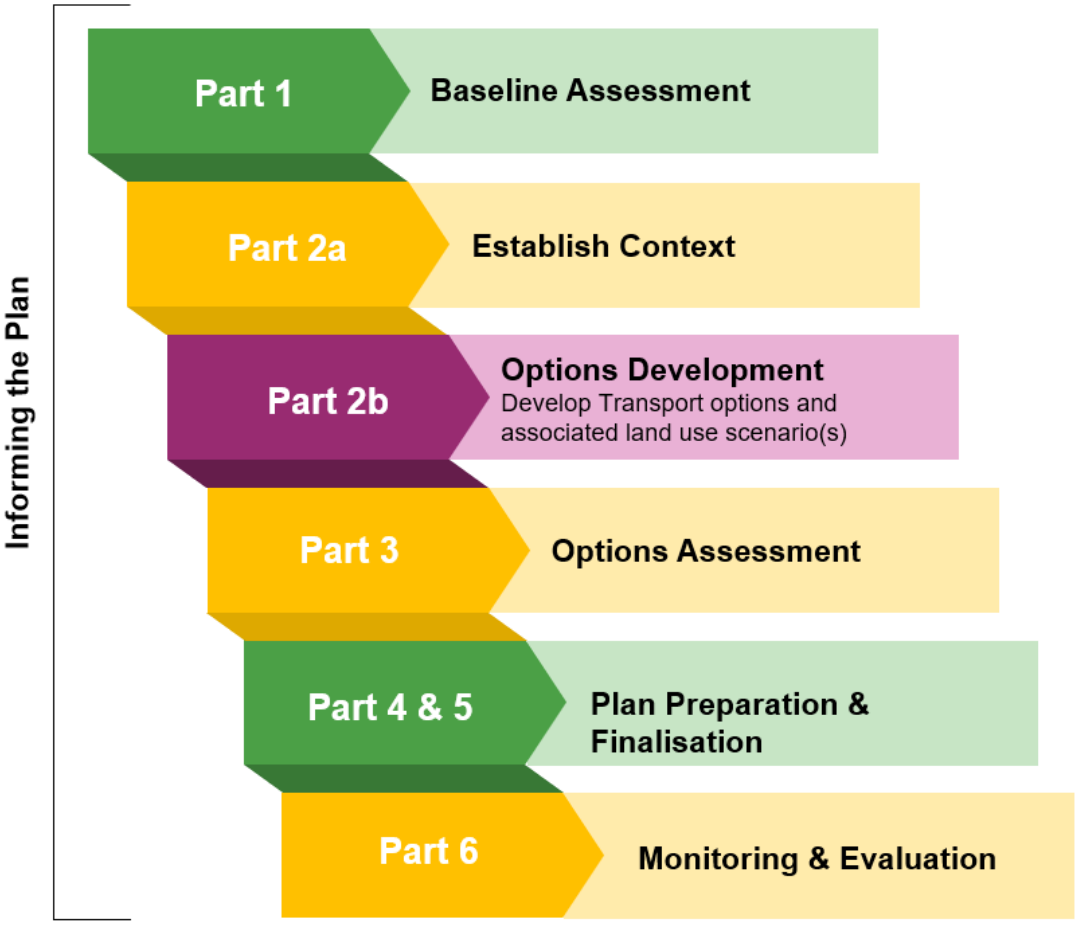


Figure 3-2 ABTA Stage 2b Overview.

The long list transport options are developed, based on the high-level transport strategies, developing a range of reasonable infrastructural options which meet the high-level objectives laid out in the strategies. These long list transport options are organised under the following categories:

- **Active Travel Connections:** The provision of new pedestrian and cycle infrastructure to improve active travel connections between the LAP areas and adjacent areas. These connections may take the form of new links or new infrastructure provided along existing links.
- **Cherrywood to Bray Cycle Route Provision:** End-to-end routing options for a potential cycle route between Cherrywood and Bray.
- **Bus Provision:** Bus provision in the form of route corridor options through Old Connaught and/or Rathmichael.
- **Luas Routes:** Initial screening assessment of potential Luas alignment options. These will not however be brought forward to the packaging and MCA processes.
- **Road Upgrades:** Upgrades to existing roads, which may include safety upgrades, realignment, footpath provision/upgrades, segregated cycle tracks.
- **New Internal Development Road Links:** The provision of new links acting as internal development roads, improving accessibility and directness, and facilitating active travel upgrades. New External Strategic Road Links: The provision of new road links to serve the LAP areas, which may provide additional vehicular capacity, and/or allow for the provision of new bus routes.

3.1.1.3 Part 3 – Options Assessment

Following the options development, the long list options for both land use and transport are assessed in order to determine the most appropriate combined land use and transport scenario (Figure 3-3).

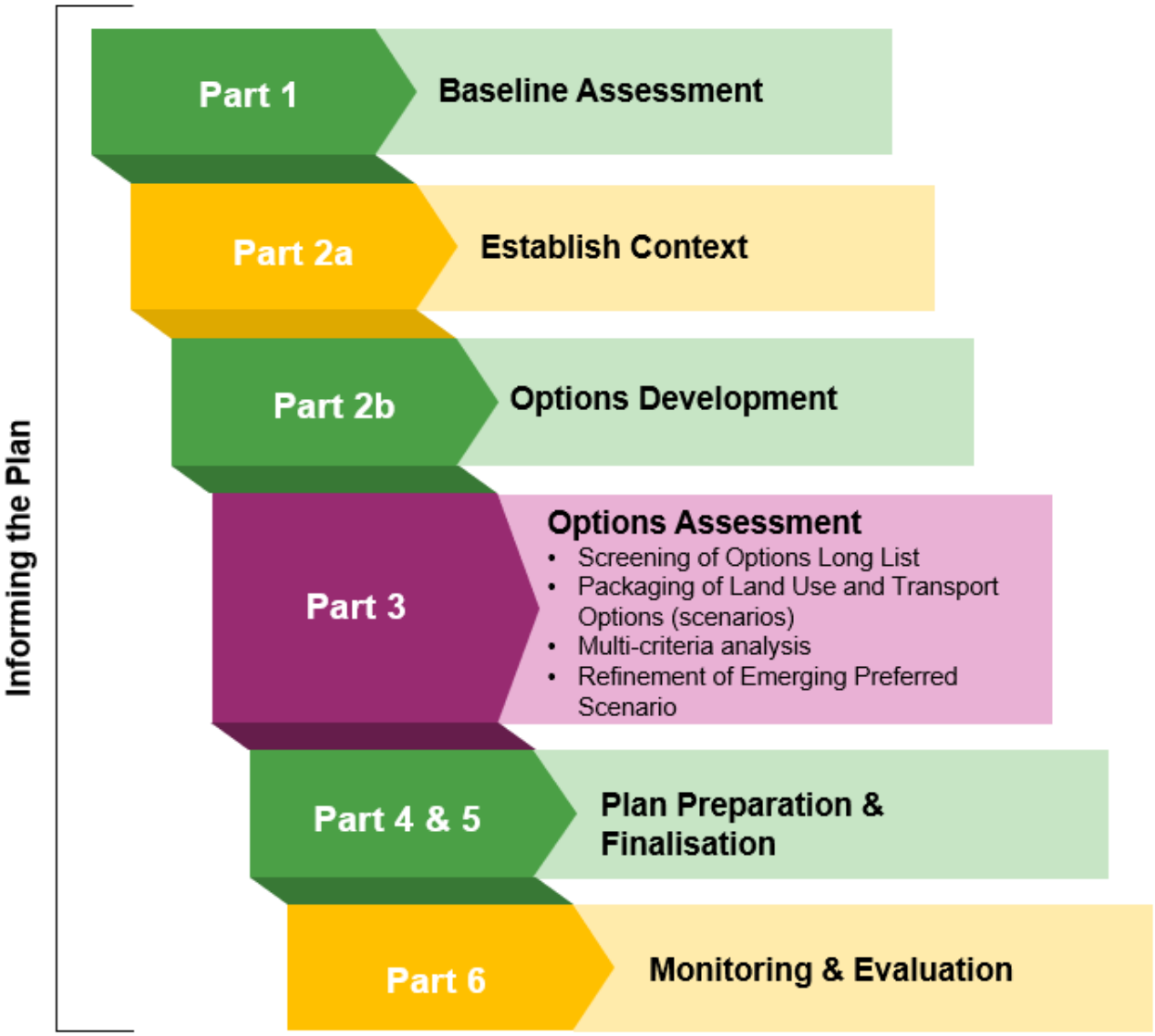


Figure 3-3 ABTA Stage 3 Overview

Figure 3-4 below shows the process, as outlined in the ABTA guidance, to move from Transport Options to a preferred scenario.

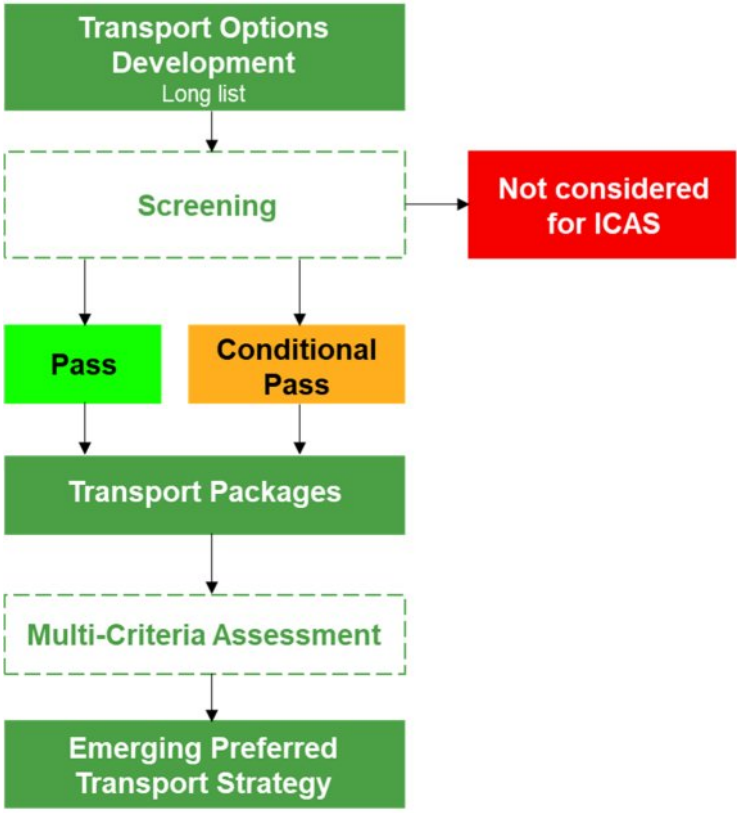


Figure 3-4 Assessment Methodology for ICAS / ABTA

Screening

To narrow down the 'Long List' options, the transport options first went through an initial screening process to remove options that do not address weaknesses identified in the SWOT analysis, and options which are not deemed to be necessary in order to deliver the required number of units in the LAP areas. This screening process is based on an initial assessment, along with consultation with relevant stakeholders such as the NTA and TII.

The screening criteria applied for each of the transport option categories are shown below:

1. Improves sustainable access to key facilities and/or transport.
2. Likely Environmental Impact.
3. Alignment with National Policy/Plans.
4. Alignment with Regional Policy/Plans.
5. Alignment with Local Policy/Plans.
6. Alignment with other potential infrastructure.
7. Potential cost.
8. Ease of implementation.
9. Safety Impact.

Each option is scored on a 5-point colour scale for each of the nine criteria above.

Table 3.1 below provides the rationale for each colour scoring for each of the criteria.

Table 3.1 Screening Criteria

	Scoring Colours				
Criteria					
Sustainable Accessibility to Key Facilities	Accessibility to key facilities is decreased	Accessibility to key facilities is unchanged	Option increases accessibility to key facilities slightly	Moderate increase to accessibility to key facilities	Significant increase in accessibility to key facilities
Likely Environmental Impact	Significant negative impact on environment expected	Slight- moderate negative impact on environment expected	No impact on environment expected	Slight- Moderate positive impact on environment expected	Significant positive impact on environment expected
Alignment with National Policy or Plans	Directly contravenes with policies or plans	Is not in alignment with policies or plans	No relevance to policies or plans	Is in alignment with policies or plans	Directly fulfils policy objectives or plans
Alignment with Regional Policy or Plans	Directly contravenes with policies or plans	Is not in alignment with policies or plans	No relevance to policies or plans	Is in alignment with policies or plans	Directly fulfils policy objectives or plans
Alignment with Local Policy or Plans	Directly contravenes with policies or plans	Is not in alignment with policies or plans	No relevance to policies or plans	Is in alignment with policies or plans	Directly fulfils policy objectives or plans
Alignment with other potential infrastructure	Prohibits other infrastructure	Makes the provision of other infrastructure more difficult	Neither prohibits nor enables other infrastructure	Makes the provision of other infrastructure easier	Directly enables infrastructure provision
Potential cost	Very high potential cost	High potential cost	Moderate potential cost	Low potential cost	Very low potential cost
Ease of implementation	Would be very difficult to implement	Would be difficult to implement	Standard ease of implementation	Would be easy to implement	Would be very easy to implement
Safety Impact	Significant negative impact on Safety expected	Slight- moderate negative impact on Safety expected	No impact on Safety expected	Slight- Moderate positive impact on Safety expected	Significant positive impact on Safety expected

The options are assessed on these criteria, and a qualitative determination is made as to whether an option is discounted or is progressed to further consideration (the option is given a 'Pass' or a 'Conditional Pass' designation). It is important to note that this is not a purely numerical exercise, in which a 'score' is assigned to each colour and any option above a certain score is given a pass. Instead, a judgement will be made by the wider project team (Arup in consultation with DLRCC) and explained for each designation, based on the importance of the criterion and the significance of its impact.

Any 'passing' options become constants, and feature in all transport packages, whereas any 'conditional passing' options feature in some, but not all transport packages.

Packaging

Following screening of the transport options, the remaining options/measures are packaged into combined scenarios. Some of the considerations when forming the packages are:

- All packages are considered feasible and in agreement with policy principles
- Measures are complementary to each other and surrounding networks
- Active Travel connections to key local areas
- PT Network Connection through LAP areas and to wider network
- Make use of existing infrastructure before providing new
- Limited additional road capacity
- Informed by Strategic Modelling.

These packaged scenarios will go through a Multi-Criteria Assessment (MCA) to establish the merits and drawbacks of each scenario. After this, an emerging preferred scenario will be refined that meets the desired future outcome and vision for the two LAP areas.

Multi Criteria Assessment

The Multi Criteria Assessment (MCA) used to assess the packaged scenarios will align with the KPIs developed in the Part 2a Position Report.

For each of the KPI criteria, the scenarios will be ranked on a five-point coloured scale. Table 3.2 below describes the KPI criteria used, along with the rationale for each scoring colour for each criterion.

Table 3.2 Key Performance Indicators

		Scoring Colour				
	Criteria					
Transport	**Availability of an attractive and safe pedestrian network linked to internal and external opportunities**	No services within 10-minute walking distance	Few services within 10-minute walking distance	Some services within 10-minute walking distance	Many services within 10-minute walking distance	All necessary services within 10-minute walking distance
	Availability of a safe cycle route network linked to internal and external opportunities	No services within 10-minute cycling distance	Few services within 10-minute cycling distance	Some services within 10-minute cycling distance	Many services within 10-minute cycling distance	All necessary services within 10-minute cycling distance
	High level of permeability and reduction of walking and cycling distance and time	Cycling and walking catchments very restricted	Cycling and walking catchments restricted	Cycling and walking catchments somewhat restricted	Cycling and walking catchments less restricted	Cycling and walking catchments unrestricted
	LAP areas linked to adjacent centres and key transport interchanges through Public Transport	LAP areas not connected to any adjacent centres/key public transport interchanges	LAP areas each connected to only one adjacent centres/key public transport interchanges	LAP areas each connected to 2 adjacent centres/key public transport interchanges	LAP areas each connected to 3 adjacent centres/key public transport interchanges	LAP areas directly connected to all adjacent centres/key public transport interchanges
	Public transport stops within 10-minute walking distance	<50% of residential area within 10-minute walking distance of a public transport stop	50-60% of residential area within 10-minute walking distance of a public transport stop	60-70% of residential area within 10-minute walking distance of a public transport stop	70-80% of residential area within 10-minute walking distance of a public transport stop	>80% of residential area within 10-minute walking distance of a public transport stop
	Mode split which favours sustainable modes over car usage when compared to the existing situation	Expected increase in car mode share	No expected change in car mode share	Minor expected decrease in car mode shift (<10%)	Moderate expected decrease in car mode shift (10-30%)	Major expected decrease in car mode shift (>30%)
	Proposed road network accommodates expected demand for sustainable transport modes	Demand greatly outweighs capacity	Demand somewhat outweighs capacity	Demand and Capacity are equal	Capacity somewhat outweighs demand	Capacity greatly outweighs demand

		Scoring Colour				
	Criteria					
Environmental	**Protection and enhancement of biodiversity**	Significant negative impact on biodiversity expected	Slight-moderate negative impact on biodiversity expected	No impact on biodiversity expected	Slight-Moderate positive impact on biodiversity expected	Significant positive impact on biodiversity expected
	Protection of water quality and water resources (e.g. aquifers, groundwater, streams and rivers)	Significant negative impact on water quality/water resources expected	Slight-moderate negative impact on water quality/water resources expected	No impact on water quality/water resources expected	Slight-Moderate positive impact on water quality/water resources expected	Significant positive impact on water quality/water resources expected
	Improvement of air quality and reduction in noise pollution	Significant negative air/noise impact expected	Slight-moderate air/noise impact expected	No significant air/noise impact expected	Slight-Moderate positive impact on air/noise environment	Significant positive impact on air/noise environment
	Reduction in Emissions	Significant increase in emissions expected	Slight-moderate increase in emissions expected	No significant emissions impact expected	Slight-Moderate decrease in emissions expected	Significant decrease in emissions expected
	Protection and enhancement of archaeology and cultural heritage	Significant negative impact on archaeology, architectural or cultural heritage expected	Slight-moderate negative impact on archaeology, architectural heritage or cultural heritage expected	No impact on archaeology, architectural or cultural heritage expected	Slight-Moderate positive impact on archaeology, architectural or cultural heritage expected	Significant positive impact on archaeology, architectural or cultural heritage expected

3.1.1.4 Refinement of Emerging Preferred Scenario

Following the MCA process, a refinement of the emerging preferred scenario will be conducted, in which more fine grain elements of the proposed land use and transport elements will be addressed. This involves the more specific identification of site elements and connections in order to present a single overarching plan for the development of the LAP areas. This overall site plan is then brought forward to Stage 4 of the ICAS.

3.1.2 Key Transport Policies and Plans

This section identifies some of the key policy considerations made as part of the ABTA assessment. The full policy considerations list is included as part of the Baseline Report

3.1.2.1 National Policy and Plans

Project Ireland 2040: National Planning Framework (NPF) highlights the need to develop local planning, transport/accessibility and leisure policies that address diverse population needs. It advocates for integrated land use, spatial and transport planning. It also promotes self-sustaining economic and employment-based development to match rapid housing delivery. Proportional employment-based developments must occur concurrently with the construction of housing units.

The **National Development Plan 2021-2030** (NDP), following on from the NPF specifies that up to 50% of future housing in the five cities and major urban centres and 30% elsewhere is to be provided within existing urban area footprints, serviced by existing facilities and high-capacity public transport corridors.

The **Climate Action Plan 2023** (CAP) states that to achieve a 50% reduction in national transport emissions by 2030, public transport journeys must increase by 130% and active travel journeys must increase by 50%. It also states that climate solutions must be integrated into the country's social and economic development.

The **National Investment Framework for Transport in Ireland** (NIFTI) provides further guidance to support the goals outlined in the CAP. It includes a road user hierarchy that prioritises walking and cycling followed by public transport and finally, private vehicles. It also includes an intervention hierarchy that prioritises the utilisation and optimisation of existing infrastructure over investment in infrastructure improvements or new infrastructure (Figure 3-5). Development at the two LAP areas must make the best use of existing infrastructure before proposing new or improved infrastructure.

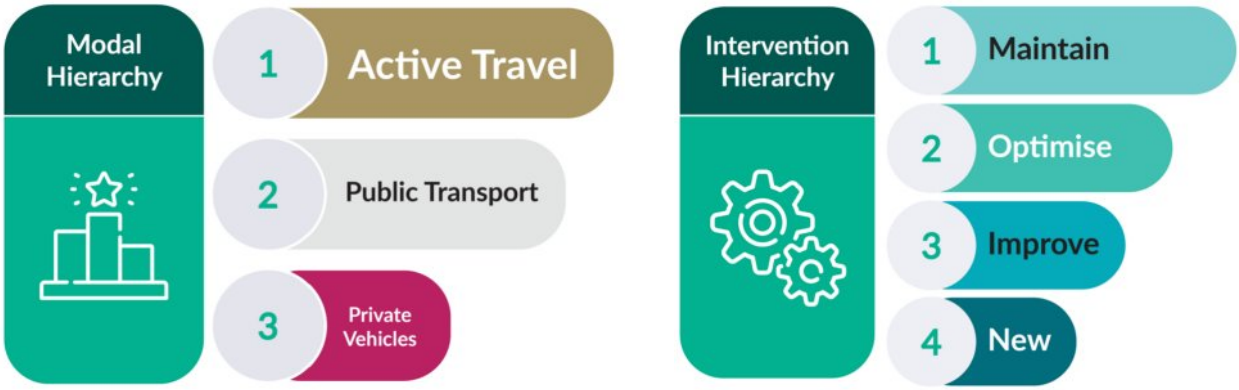


Figure 3-5 NIFTI Modal and Intervention Hierarchy

The **National Sustainable Mobility Policy** encourages integration of land use and transport planning, further cementing the need for integrated planning in the development of the two LAPs.

The **Transport Appraisal Framework** was created to develop a common framework for the appraisal of transport investments that is consistent with the Public Spending Code (PSC) and also elaborates on the Public Spending Code in respect of the appraisal of transport projects and programmes to assist scheme promoters in constructing robust and comparable business cases for submission to Government. The document lays out principles for developing and assessing transport proposals which are followed as part of the ABTA process.

The **Spatial Planning and National Roads Guidelines for Planning Authorities** provide ministerial guidelines under Section 28 of the Planning and Development Act 2000 (as amended) to which all planning authorities and An Bord Pleanála must have regard in the performance of their functions, and that sets out national road policy to protect and safely maintain the strategic traffic function of the national road network is essential.

3.1.2.2 Regional Policy and Plans

The **Regional Spatial and Economic Strategy for the Eastern and Midland Region 2019-2031** classifies Bray as a Key Metropolitan Town, meaning it is important in a regional and county context and has capacity for above-average housing and employment growth in the region. The Old Connaught LAP area is included in Bray's growth targets, as it is contiguous with the Bray Municipal District along with Fassaroe to the south of the LAP area. The RSES indicates that delivery of the GDA Cycle Network, DART+ Programme, Luas expansion (Luas Bray), Core Bus Corridor (CBC) expansion (Bray-City Centre), and upgrades to the M11/N11 will enable sustainable growth within the Bray area.

Old Connaught and Fassaroe are targeted for new housing, employment and community facilities in the RSES as part of growth in Bray. Additionally, RSES policy objectives pin Bray town centre as a strategic employment location suited for regeneration of key sites in preparation of enhanced DART services and the completed Luas extension. The development of Old Connaught is an integral component in the growth of the Key Town of Bray and supporting the objectives of the RSES.

The RSES also includes a Metropolitan Area Strategic Plan (MASP), identifying Bray – Fassaroe (which includes Old Connaught) in a North-South (DART) Strategic Development Corridor.

The RSES also promotes the integration of land use and transport planning, including travel demand management. It also states that the maintenance and protection of the strategic function of national roads and associated junctions is critical. In relation to the future growth of the two LAP areas, they should be designed to maximise the efficiency of both existing and planned projects and aim towards reliance on sustainable transport mode to reduce the need for private vehicles to use the metropolitan area transport network.

The **Greater Dublin Area (GDA) Transport Strategy 2022-2042** encourages transit-oriented development and dense, mixed-use neighbourhoods in the GDA. Residential development should be located within 1km of existing or planned public transport and within walking/cycling distance of current/future primary schools (2km) and secondary schools (3km). The strategy targets the following 24-hour travel mode share for the region in 2042, which new development must contribute to reaching (Figure 3-6):

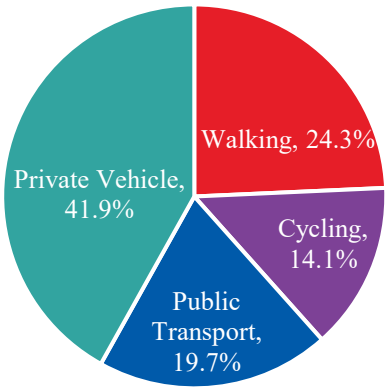


Figure 3-6 GDA Transport Strategy Mode Split Target

The GDA Transport Strategy advocates for the "Decide and Provide" method of transport investment, where a desired future should dictate the infrastructure that we provide, rather than the traditional "Predict and Provide" which uses historical trends to predict what the future will look like before providing infrastructure to meet that future. Transport infrastructure provided in the two LAP areas must contribute to the desired future state rather than historical transport trends in the area and support the mode share target above.

The following measures are particularly applicable to development at Rathmichael and Old Connaught:

- Measure PLAN2 – The Road User hierarchy: The NTA, in the decision-making process around the design, planning and funding of transport schemes in the GDA, will be guided by the priority afforded to each mode in the Road User Hierarchy as set out in the Transport Strategy.
- Measure PLAN3 – Housing and Transport: SDZ Planning Schemes, Local Area plans and large planning applications should be accompanied by appropriate Transport Plans or Transport Assessments setting out how the plan or development minimises the need to travel and how PT, walking and cycling together can cater for the majority of travel demand. They should also be accompanied by a statement setting out the infrastructure and services required to achieve this, and an agreed phasing programme for its provision.
- Measure PLAN4 – Consolidated Development: In accordance with the NPF and RSES, the NTA will support and prioritise development patterns in the GDA which seek to consolidate development as a means of preventing urban sprawl, reducing the demand for long-distance travel and maximising the use of existing transport infrastructure and services. Peripheral development will be supported in exceptional circumstances – on an evidence-based planned approach – where located on high capacity public transport routes and for specific land uses that cannot be accommodated in town and city centres.
- Measure PLAN7 – Transit-Oriented Development: The NTA will continue to support and facilitate the delivery of Transit-Oriented Development at locations identified as appropriate for such, and will work with EMRA and the local authorities in identifying further locations served by existing and proposed public transport which are appropriate for high density development supporting a mix of uses. Transit-Oriented Development is considered within 800m of an existing or proposed DART, Luas or Metro stop, and within 400m of a proposed BusConnects Spine route.
- Measure PLAN8 – Mixed Uses: The NTA will continue to support and facilitate land use policies which seek to provide for an appropriate mix of uses at the district and neighbourhood level.
- Measure PLAN9 – Filtered Permeability: Development Plans, SDZ Planning Schemes and Local Area Plans in the GDA should ensure that the road and street networks in new development areas are designed on the basis of providing for filtered permeability, and should incorporate measures which deliver filtered permeability in existing neighbourhoods.

- Measure PLAN14 – Urban Design in Major Infrastructure Projects: The NTA will incorporate a high standard of urban design and placemaking, taking into account architectural heritage, into the planning and design of all major public transport infrastructure schemes, and will consider how greater biodiversity can be fostered.
- MEASURE PLAN17 – Local Transport Plans: The NTA will promote and assist Local Authorities to develop Local Transport Plans based on the ABTA methodology as part of the statutory plan-making process.
- Measure INT3 – Integration of all Modes in Transport Schemes: It is the intention of the NTA, in the design and planning of transport schemes, to ensure that the needs of all transport modes are considered, as appropriate, based on the objectives of the scheme and on the road user hierarchy.
- Measure CYC2 – Cycle Infrastructure Design: It is the intention of the NTA to ensure that cycle infrastructure in the GDA provides an appropriate quality of service to all users, through the implementation of the design guidance contained in the latest version of the National Cycle Manual.
- Measure CYC6 – Cycle Parking Strategies: Local authorities will prepare public cycle parking strategies in order to ensure that there is sufficient short stay safe and secure cycle parking available on-street and/ or off-street, including spaces for cargo bikes and other non-standard bike designs, in city, town and village centres.
- Measure LRT5 – Luas Bray: It is intended to extend the Luas Green Line southwards in order to serve the Bray and Environs area.
- Measure LRT9 – Luas Green Line: It is intended to deliver significant additional capacity on the Luas Green Line through the provision of additional fleet and necessary infrastructure to meet forecast passenger demand.
- Measure ROAD1 – Principles of Road Development.
- Measure ROAD2 – National Roads Requirements.
- Measure ROAD9 - Regional and Local Roads Policy.
- Measure ROAD10 – Urban Roads and Streets The implementation of the Transport Strategy will support and facilitate a place based approach to urban roads and streets, based on the measures in Chapter 14.
- Measure TM12 – Residential Parking Standards: It is recommended that local authorities incorporate maximum residential parking standards into their Development Plans guided by the provisions set out in Table 14.1.
- Measure TM13 – Car Free Residential Developments: The NTA will support local authorities in assessing the potential for, and delivery of car-free residential developments in locations close to Dublin City Centre and at major rail-based interchanges / Mobility Hubs.

3.1.2.3 Local Policy and Plans

The **Dún Laoghaire-Rathdown County Development Plan 2022-2028 (DLR CDP)** zones much of the two LAP area lands as A1 – "to provide for new residential communities and Sustainable Neighbourhood Infrastructure in accordance with approved local area plans".

One objective of the DLR CDP is to deliver enabling infrastructure for development in the two LAP areas. This objective was informed by the **2019 Bray and Environs Transport Study**, which was followed by the **2021 Bray and Environs Transport Study**. The 2021 study identified the following enabling infrastructure for development at the two LAP areas:

- BusConnects/Core Bus Corridor.
- Public Transport and Active Travel bridge from Fassaroe to Old Connaught.

- Bus services west of N11/M11.
- Woodbrook DART Station P+R.
- N11/M11 Junction 4 to 14 Improvement Scheme.
- Cycle infrastructure upgrades based on the Greater Dublin Area Cycle Network Plan.

Additionally, the DLR CDP identifies new active travel links over the M11/N11 to be provided at the following locations:

- In the vicinity of Allies River Road.
- Love Lane Bridge.

Specific DLR CDP policy objectives applicable to the two LAP areas are included in Appendix A of the baseline report, with some of the most relevant objectives listed below:

- **SLO 86:** To prepare a Local Area Plan for Rathmichael.
- **SLO 105:** To prepare a Local Area Plan for Old Connaught.
- **SLO 150:** To allow for the provision of a new pedestrian and cycle link via a new combined foot and cycleway bridge from Rathmichael Road towards the Luas station at Cherrywood Business Park passing under the existing M50 motorway bridge and crossing the R116 Brides Glen Road and valley.
- **T1-**Integration of Transport and Land Use Policies: Actively support sustainable modes of transport and ensure that land use and zoning are aligned with the provision and development of high-quality public transport systems.
- **T3-**Delivery of Enabling Transport Infrastructure: Support the delivery of enabling transport infrastructure so as to allow development take place in accordance with the Core Strategy of this Plan and the settlement strategy of the RSES. (Consistent with RPO 4.40, 10.2, 10.3, 10.11, 10.16 of the RSES).
- **T9-**Luas Extension and Metrolink: Promote, facilitate and cooperate with other agencies in securing the extension of the Luas network in the County as set out in the NTA's 'Greater Dublin Area Transport Strategy 2016-2035' and including any future upgrade to Metro. (Consistent with RPO 4.40 and 8.8 of the RSES).
- **T24**- Motorway and National Routes: Provide, protect and maintain for the safe and efficient movement of people and goods both within and through Dún Laoghaire-Rathdown. Therefore, it is important to promote, facilitate and cooperate with relevant transport bodies, authorities and agencies to secure improvements to the County's Motorway and National Road network.

The Council will protect and safeguard the provisional alignment and surrounding lands, of Luas Line B2 as detailed on Land Use Zoning Maps Nos. 10 and 14 of the DLR County Development Plan 2022-2028. The Council will maintain this proposed route free from development and any encroachment by inappropriate uses which could compromise the future development of this rail corridor for public transport facilities.

The route of a proposed indicative Luas Spur from Old Connaught Avenue to Fassaroe, Bray as shown on Land Use Zoning Map No. 14 shall be further considered and informed by and in the context of the next Transport Strategy for the Greater Dublin Area.

Specific roads objectives are also identified in the development plan. Six-year roads objectives in the area include:

- Ferndale Road *
- Cherrywood Road
- M50 Cherrywood Interchange to Rathmichael – new link road*
- Link from Ferndale Road to Dublin Road*

- M11 Upgrade (M50 to Fassaroe).
  - * The inclusion of these proposals is dependent on further assessment as set out in; the 'Spatial Planning and National Roads Guidelines for Planning Authorities' in particular Section 2.7 and Section 5.8.3 Principles of Road Development, feasibility and environmental assessment of the NTA Transport Strategy for the Greater Dublin Area 2016-2040 and the forthcoming Transport Strategy for the Greater Dublin Area; and demonstration of their compatibility with the strategic function of the national road network as set out in Sections 2.2 of the Bray and Environs Transport Study (2019).

    The note above is from the existing dlr County Development Plan 2022-2028. Furthermore, the inclusion of these proposals is subject to further assessments as set out in TII Publications. Since the adoption of the dlr County Development Plan, a new NTA Transport Strategy for the GDA 2022-2042 has been published, which has superseded the previous strategy. In addition, regard should be given to Section 2.2 and Sections 2.3.4, 2.3.5 of the Bray and Environs Transport Study (2019).

The **Wicklow County Development Plan 2022-2028 (Wicklow CDP)** classifies Fassaroe as a strategic site, and links it with Old Connaught as sites for development within the Bray Municipal District. The Wicklow CDP identifies the following enabling infrastructure for development at Fassaroe:

- N11 Cycle and Pedestrian Bridge.
- N11/M11 Junction 4 to 14 Improvement Scheme.
- Delivery of Wicklow County Council Part 8 N11 capacity and safety upgrades.
- Public Transport and Active Travel bridge from Fassaroe to Old Connaught over County Brook at Ballyman Glen.
- Traffic Management Measures at Fassaroe Interchange to protect strategic function of the N/M11.
- Commitment to the phased introduction of bus and enhanced rail services in line with increased demand.

The infrastructure above is largely in line with Dún Laoghaire-Rathdown's identified enabling infrastructure. Coordination between the two counties will be necessary for development of the Old Connaught LAP area and Fassaroe.

3.1.3 Transport Strategy Considerations

3.1.3.1 Overview

This section outlines the high-level transport strategy considerations for the LAP areas, which are based on the opportunities and constraints identified in the Part 1 Baseline Report, and the objectives and principles set out in the Part 2 Position Report.

3.1.3.2 Active Travel

Active travel should be prioritised in the transport hierarchy to support the development of sustainable communities in the two LAP areas. Walking and cycling should be common, safe and attractive in both Old Connaught and Rathmichael, particularly for short trips to work, schools, shopping and to access public transport.

A key element of the transport strategy for the two LAP areas is the improvement of active travel (i.e., walking and cycling) infrastructure both within and to adjacent areas (Figure 3-7). As shown in the Baseline Report, the majority of trips to/from the areas are local trips, and so it is important that these are encouraged to be taken by active travel as opposed to by private car.

Shankill and Bray are the two primary existing adjacent settlements in the area; therefore, connection between the LAP areas and these settlements are important. Newly developing adjacent areas include Cherrywood, Woodbrook, and Fassaroe, to which new connections are also important. Access to public transport such as the Luas, DART and BusConnects Bray to City Centre Core Bus Corridor (CBC) can also be facilitated through improved active travel connections, in advance of any potential extensions or new routes provided.

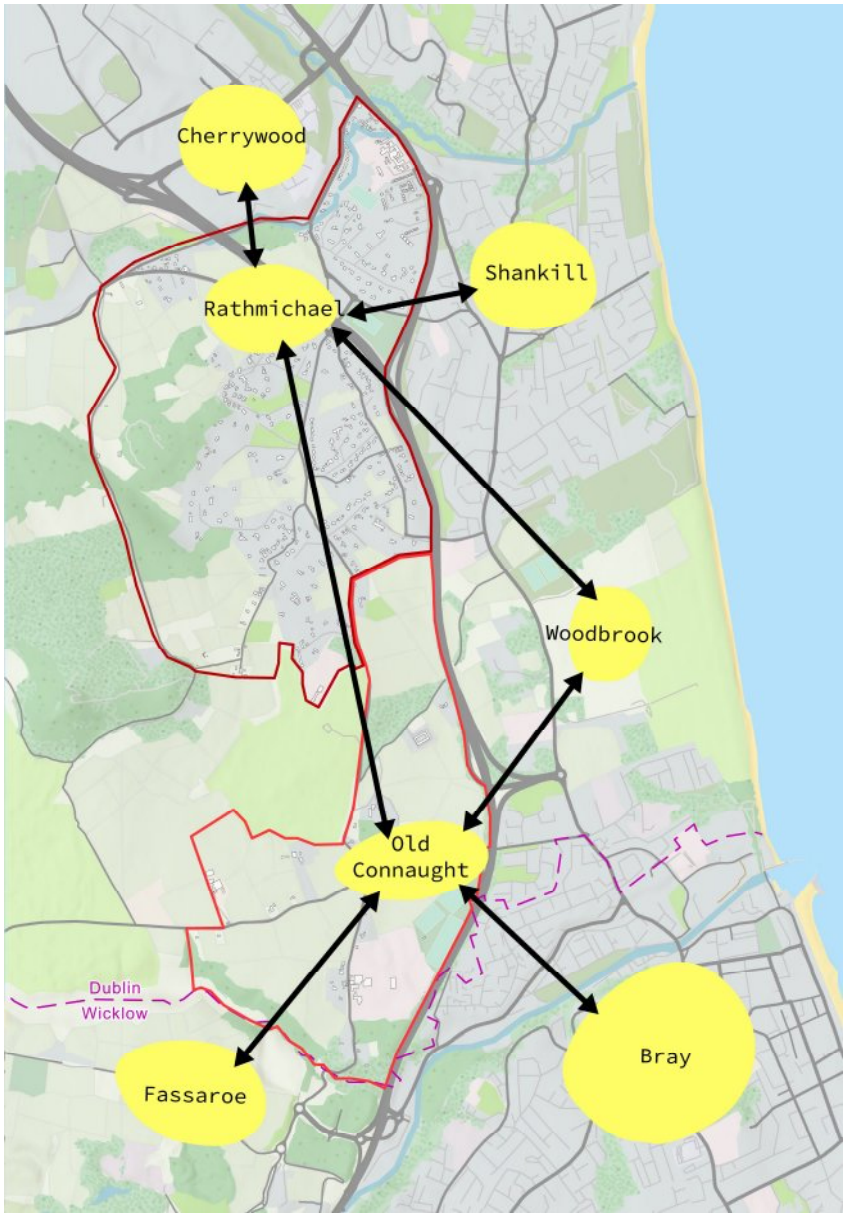


Figure 3-7 Connections to Local Adjacent Settlements

It is an objective to ensure permeability between the LAP areas and adjacent settlements are addressed. However, this should also take cognisance of the requirements of the Spatial Planning and National Roads (SPNR) guidelines to protect the National Road Network (NRN). Therefore, providing active travel across the M11 and M50 is a key element of the active travel strategy as it would help strengthen connections to adjacent settlements and provide more direct access to facilities to reduce the need for residents to rely on private cars and impact the NRN. Figure 3-8 below shows the existing links across which active travel infrastructure could be provided, along with potential new links which would improve connections to adjacent settlements.

Existing roads over/under the M11 and M50, across which active travel infrastructure could be provided include:

- Old Connaught Avenue bridge across the M11
- Crinken Lane bridge across the M11
- Lordello Road pedestrian bridge across the M11
- Stonebridge Road, which crosses both the M50 and the N11
- Brides Glen Road, which runs beneath the M50.

Locations for potential new active travel connections, include:

- Old Connaught to Fassaroe
- Old Connaught to Bray
- Old Connaught to Woodbrook in the vicinity of Allies River Road
- Rathmichael to Cherrywood; and
- Rathmichael to Shankill.

There are also existing/proposed active travel connections into Cherrywood at Lehaunstown Lane,

In addition to these connections, the active travel connection between the two LAP areas is also considered to be a key infrastructural consideration.

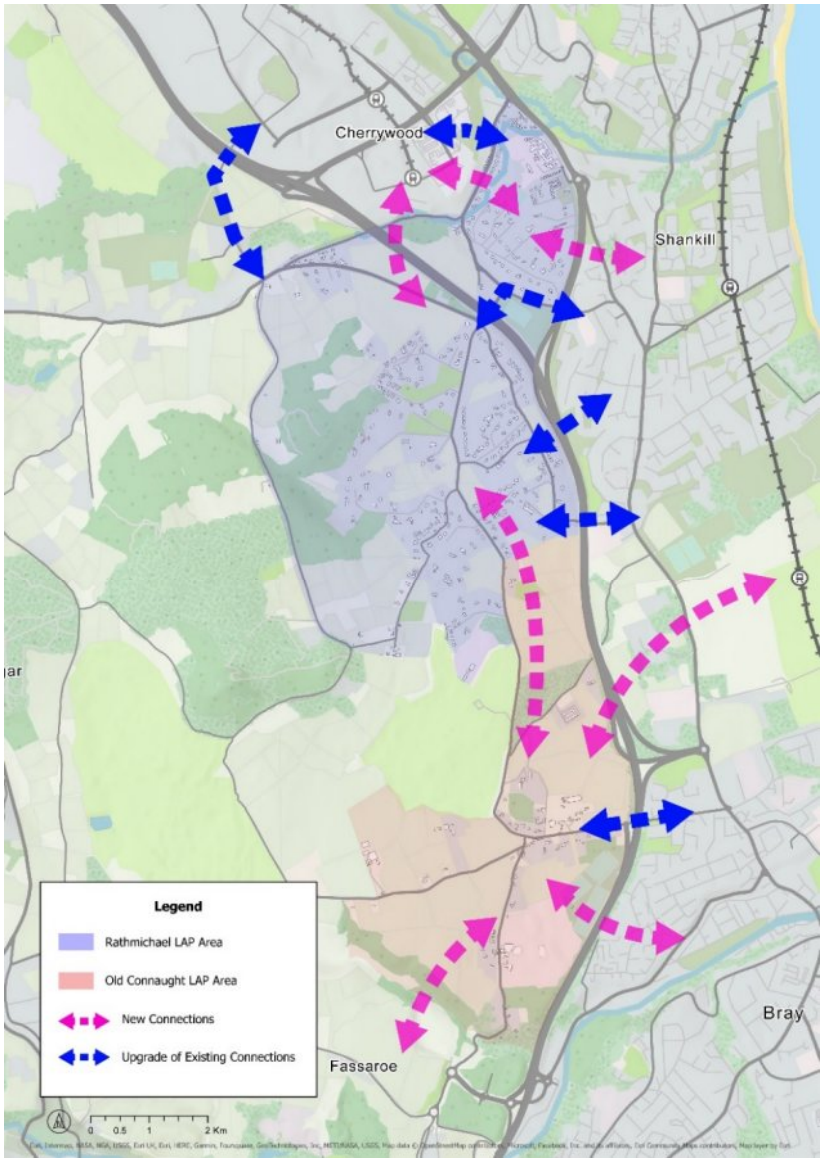


Figure 3-8 Active Travel Connections Overview

In addition to new external connections, a network of internal active travel infrastructure will be proposed as part of the refinement of the strategy, in response to the infrastructural, community and housing elements of each of the areas.

3.1.3.3 Public Transport

While the active travel proposals above improve connections between the LAP areas and existing/planned public transport infrastructure, there is also an opportunity to provide new public transport infrastructure and services within the LAP areas themselves. An overview of the potential public transport routes through the LAP areas is illustrated in Figure 3-9.

Bus

Potential options for bus improvements include:

- Provision of accessible and reliable bus services in Old Connaught and Rathmichael.
- Connect future bus routes in Old Connaught and Rathmichael to key destinations with future growth, including Bray, Cherrywood SDZ, Woodbrook-Shanganagh and Fassaroe.
- Integration of future bus routes to major bus schemes, including BusConnects on Dublin Road and N11/M11 Bus Priority Interim Scheme.

Rail

Potential options for rail improvements include:

- Integration of future bus routes to Brides Glen and the Luas extension.
- Integration of future bus routes to nearby DART stations in Shankill, Bray and the future station in Woodbrook.
- Provision of a Luas extension from Brides Glen to Fassaroe or Bray.

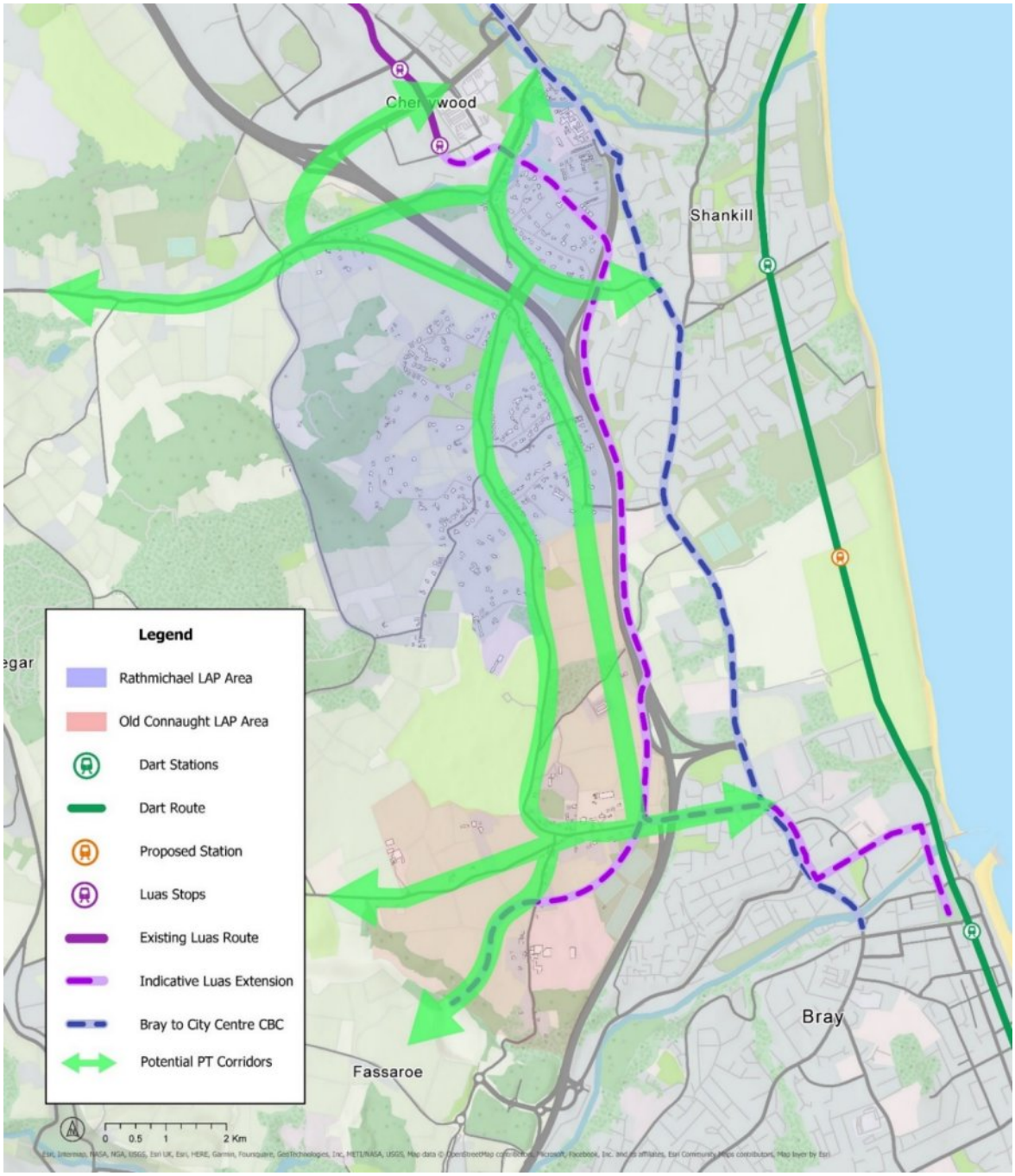


Figure 3-9 Potential Public Transport Corridors through the LAP Areas

3.1.3.4 Vehicular Routes

Overview

In terms of vehicular routes, the strategy takes into consideration the requirements of the SPNR and GDA Strategy to protect National Road Network (NRN), as well as NIFTI hierarchy of modes and interventions. Therefore, the priority for the two LAP areas is to ensure that sustainable transport modes (i.e., walking, cycling and public transport) are considered first to minimise the impacts on the existing and planned road network.

Wider Vehicular Routes

Figure 3-10 provides an overview of the expected wider vehicular circulation patterns. The expected key routes from the LAP areas to the nearest motorway and national road access points are shown in blue.

For Old Connaught, the vast majority of vehicles are likely to access the M11 via Junction 5 and the Dublin Road/Old Connaught Avenue/Corke Abbey Avenue junction, which was shown to have a high volume of vehicles passing through it in the existing scenario. Junction modelling has been undertaken to determine the expected impact on this junction, which is shown in C.

For Rathmichael, the primary accesses to the N11/M11 is as per existing situation, which is via Cherrywood Road, or via Stonebridge Road and Dublin Road; however this may cause traffic impacts on these roads. The M50 is accessed through Cherrywood along Wyattville Link Road via the M11.

Each of the two potential motorway connections would reduce the potential traffic impacts on local roads, however the provision of such direct access to motorways for each of the developments would likely have a negative impact on the sustainable transport characteristics of the LAP areas by encouraging private car trips over active travel or public transport. Furthermore, the connections would necessitate alterations to the design and capacity of existing motorway interchanges subject to national roads development policy in the SPNR and the maintenance of the safe and efficient operation of the the strategic traffic function of the NCN. Local Councils are aware that the implementation of all national road schemes is subject to budgetary constraints and to prioritisation and adequacy of the funding resources available to the national roads Authority. Alterations to Junction 16 of the M50 or Junction 5 of the N/M11 are not amongst the current NDP national roads schemes.

Alternative vehicular routes to the west provide access to Enniskerry, Kiltiernan, Stepaside and Carrickmines, which also provide for additional access to the motorway network. If junction capacity issues are severe enough along the key routes, it is possible that these alternatives are used by some residents within the LAP areas, particularly those along the western areas.

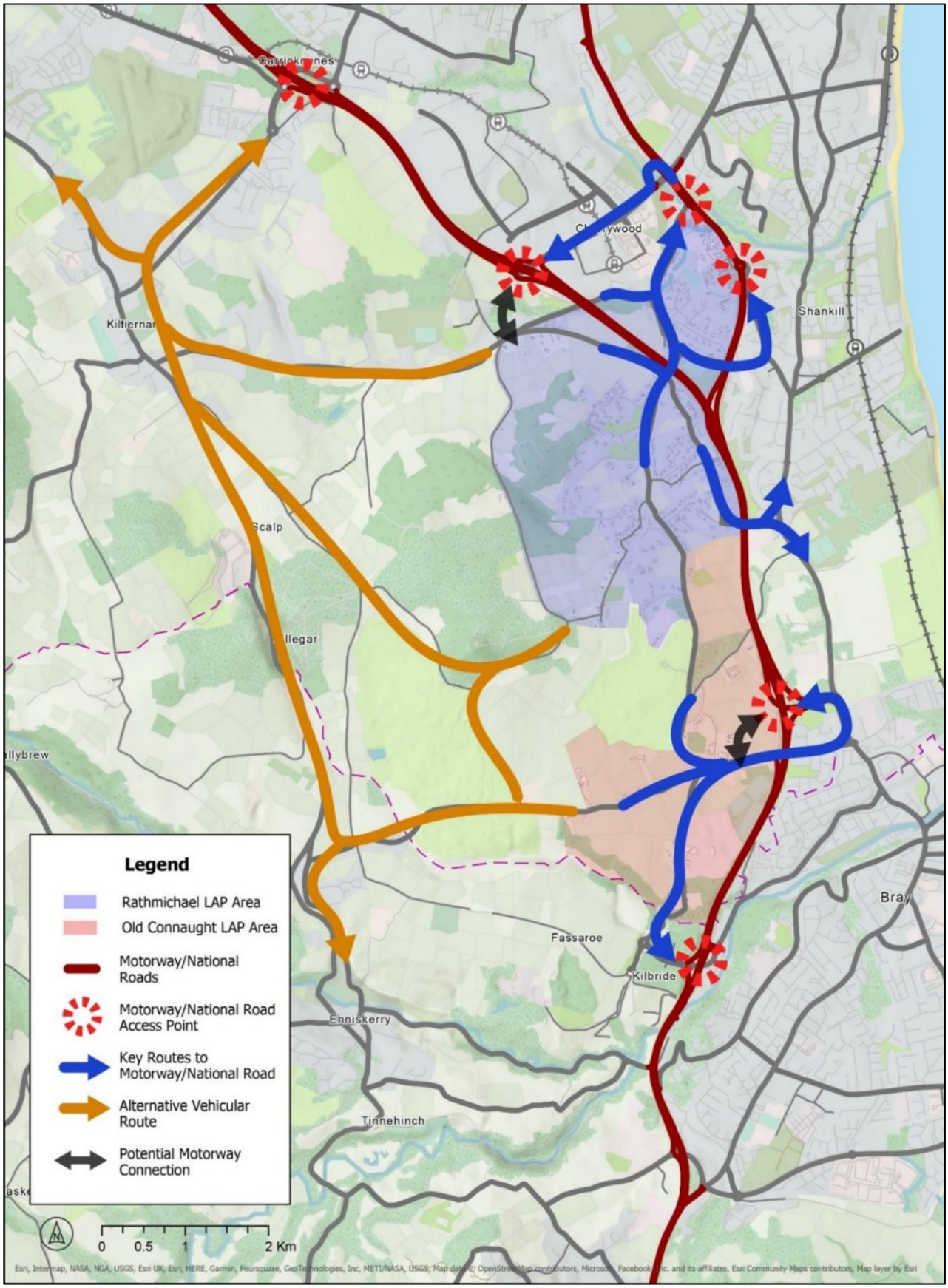


Figure 3-10 Wider Vehicular Routes Considerations

Local Routes

Potential local vehicular circulation measures have also been identified to ensure that adequate capacity is provided between and within the settlements but ensuring that the priority is still sustainable transport modes. Figure 3-11 provides an overview of potential local vehicular circulation measures. Two potential motorway connections are shown, one onto M11 Junction 5, and one onto M50 Junction 16. The M50 Junction 16 link to Rathmichael is noted in the DLRCC 2022-2028 CDP in reference to the 2019 Bray and Environs Transport Study subject to further feasibility and assessment having regard to NDP priorities, SPNR and compliance with TII Publications.

M11 Junction 5 may be upgraded as part of the N11/M11 Junction 4 to Junction 14 Improvement Scheme facilitating access to Old Connaught. The progression of this scheme is subject to Exchequer funding and NDP scheduling priorities.

Potential new road links have been identified and are as follows:

- A new north/south link parallel to the M11 from Crinken Lane in the north to Old Connaught Avenue in the south
- A potential road connection at Allies River Road as outlined in the 2019 Bray and Environs Transport Study
- A connection between Crinken Lane and Ferndale Road
- A potential connection between Puck Castle Lane and Ballyman Road; and
- A connection to Fassaroe to the south.

Due to the local constraints such as property boundaries, hedgerows and trees within the LAP areas, widening for active travel infrastructure may prove to be difficult, and so the potential for one-way systems for vehicles should be considered. Converting roads to one-way creates space for active travel infrastructure while maintaining the same overall carriageway width.

Principles for vehicular circulation include:

- Re-allocation of road space to prioritise sustainable transport modes (i.e., walking, cycling and bus)
- Potential introduction of new links, where deemed appropriate
- Potential creation of one-way systems, where possible, which would allow for road space reallocation for active travel infrastructure, removing the need for road widening
- Improve the north-south connection between LAP Areas; and
- Improve the safety of the road network.

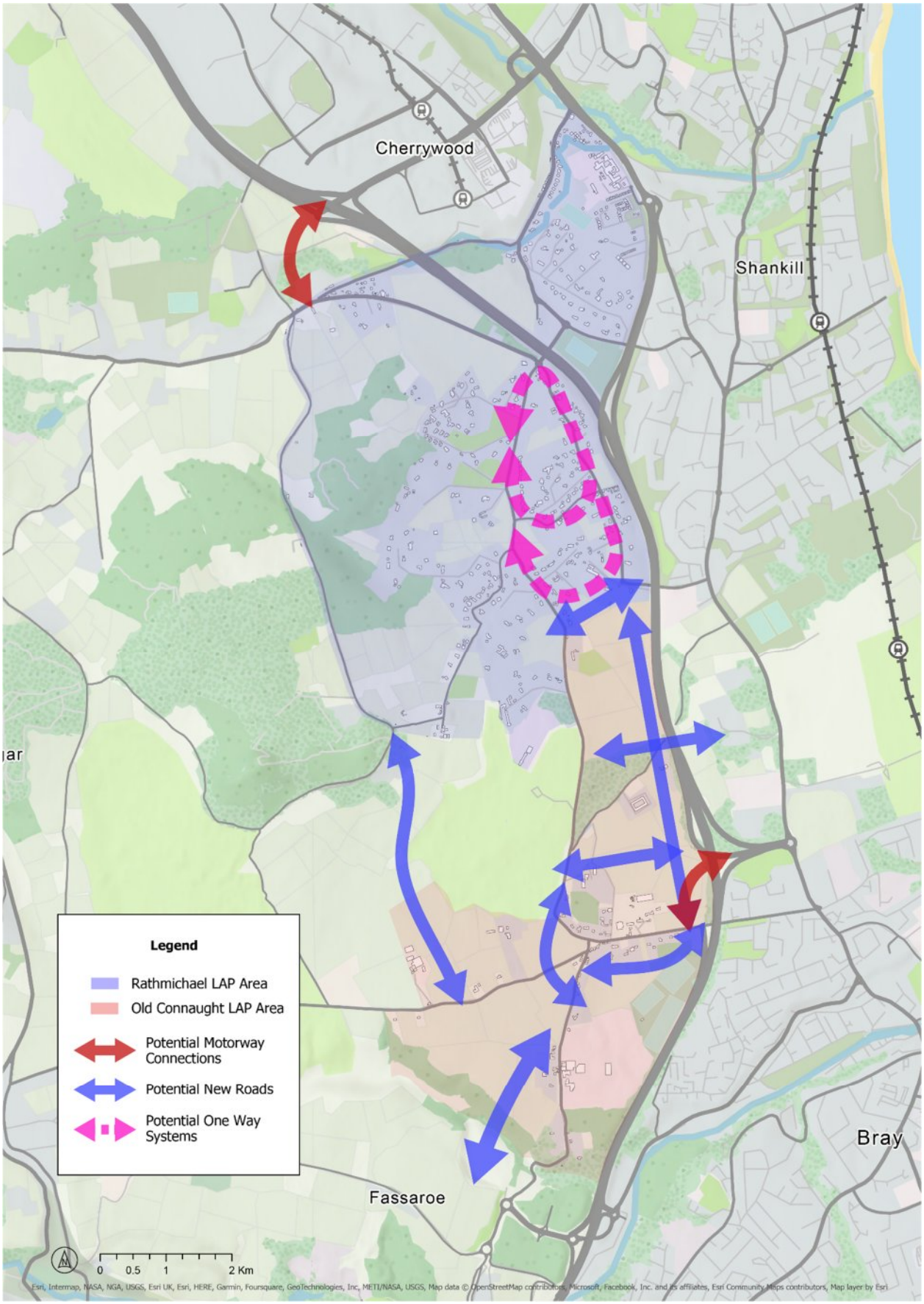


Figure 3-11 Local Vehicular Route Measures Overview

Along with potential new connections/circulation options, consideration has been given to the following road objectives/traffic management/active travel upgrades (Figure 3-12), as outlined in Section 5.8 of the DLRCC 2022-2028 CDP:

1. Ballycorus Road
2. M50 Cherrywood Interchange to Rathmichael – new link road*
3. M50 Third Lane (Sandyford Interchange to M11)
4. Cherrywood Road
5. Loughlinstown Roundabout (grade separation)
6. Rathmichael Road
7. Ferndale Road*
8. M50 Western Parallel Road from Old Conna to Cherrywood Environs
9. Link from Ferndale Road to Dublin Road*
10. M11 Upgrade (M50 to Fassaroe)

*The inclusion of these proposals is dependent on further assessment as set out in; the 'Spatial Planning and National Roads Guidelines for Planning Authorities' in particular Section 2.7 and Section 5.8.3 Principles of Road Development, feasibility and environmental assessment of the NTA Transport Strategy for the Greater Dublin Area 2016-2040 and the forthcoming Transport Strategy for the Greater Dublin Area; and demonstration of their compatibility with the strategic function of the national road network as set out in Sections 2.2 of the Bray and Environs Transport Study (2019).

The note above is from the existing dlr County Development Plan 2022-2028. Furthermore, the inclusion of these proposals and any national road crossing, or existing national road crossing alteration is subject to further assessments as set out in TII Publications. Since the adoption of the dlr County Development Plan, a new NTA Transport Strategy for the GDA 2022-2042 has been published, which has superseded the previous strategy. In addition, regard should be given to Section 2.2 and Sections 2.3.4, 2.3.5 of the Bray and Environs Transport Study (2019).

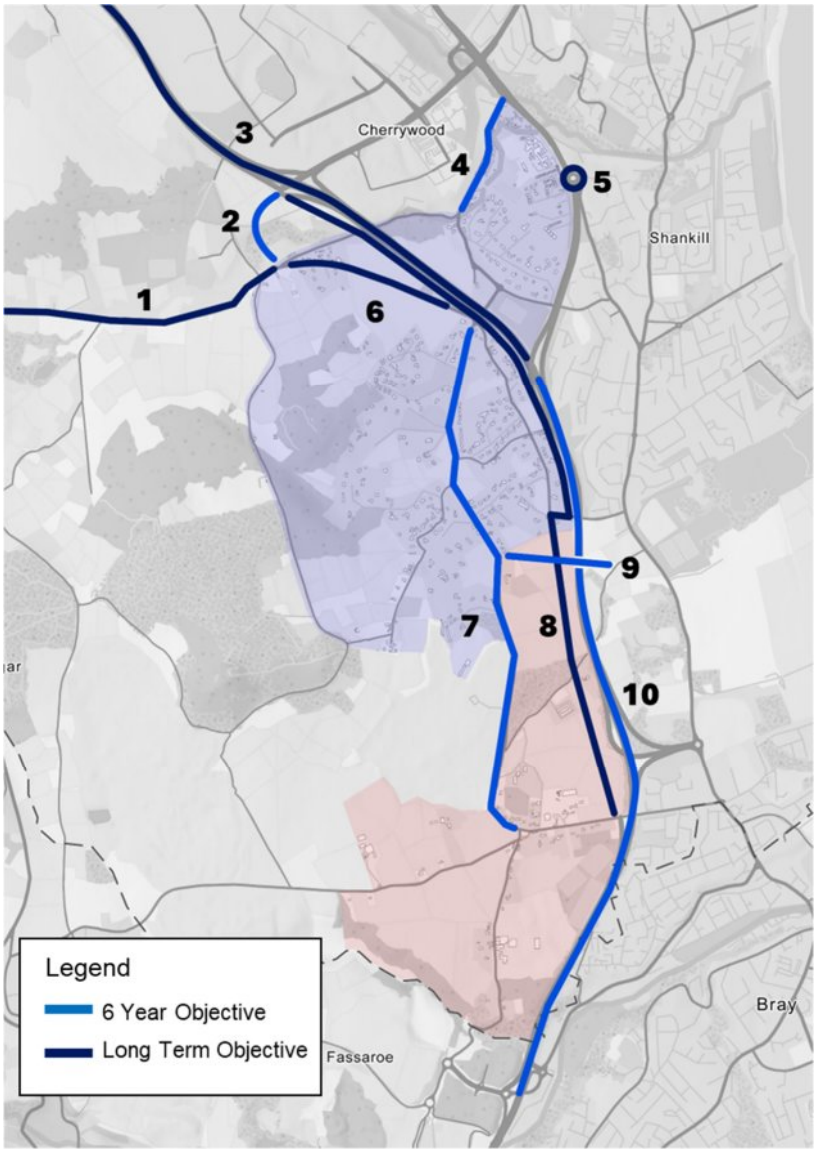


Figure 3-12 DLRCC Development Plan Road Objectives/Traffic Management/Active Travel Upgrades

3.1.4 Long List Development

3.1.4.1 Overview

An initial long list of potential transport infrastructure options has been developed. These options are structured under the following categories, which align with the overall objectives of the project, and the specific needs of the LAP areas. A summary is shown in Table 3.3.

Table 3.3 Initial Long List of Potential Transport Infrastructure Options

Transport Category	Description
Active Travel Connections	The provision of new pedestrian and cycle infrastructure to improve active travel connections between the LAP areas and adjacent areas. These connections may take the form of new links or new infrastructure provided along existing links.
Cherrywood to Bray Cycle Route	End-to-end routing options for a potential cycle route between Cherrywood and Bray, which has been identified.
Bus Provision	Bus provision in the form of route corridor options through Old Connaught and/or Rathmichael.
Road Upgrades	Upgrades to existing roads, which may include safety upgrades, realignment, footpath provision/upgrades, segregated cycle tracks.

Transport Category	Description
Luas Routes:	Initial screening assessment of potential Luas alignment options. These will not however be brought forward to the packaging and MCA processes.
New Internal Development Road Links	The provision of new links acting as internal development roads, improving accessibility and directness, and facilitating active travel upgrades.
New External Strategic Road Links	The provision of new road links to serve the LAP areas, which may provide additional vehicular capacity, and/or allow for the provision of new bus routes.

It is important to note that the options proposed at this stage are conceptual and do not represent any determination of exact alignments, which would be subject to further assessment.

3.1.4.2 Active Travel Connections

Overview

The proposed active travel connections are based on the desire lines shown in Figure 3-7 between key existing and proposed settlement areas.

The options chosen in the following section represent locations in which both the physical characteristics of the area allow for an active travel connection, and the onward connections at either end of the link are feasible without excessive impacts such as building demolition or significant environmental impacts.

The locations of the options presented in this section are illustrative of the proposed concept. The exact alignment of the links would be determined based on further analysis.

Potential active travel connection options are illustrated in Figure 3-13 to Figure 3-18. Links shown in orange represent the provision of a new link which does not currently exist, whereas links shown in purple represent existing links such as roads or pedestrian/cycle routes, which may require additional active travel infrastructure.

The exact detail of the design of the proposed options will be developed in the future as part of the individual schemes design, therefore this will be assessed based on the intended function and purpose of each measure. For the purposes of assessment, it is assumed that high-quality segregated cycle infrastructure with 2m wide pedestrian infrastructure will be provided. Therefore, the potential impacts associated with the provision of this infrastructure, including environmental (e.g., due to tree removal) and traffic, are considered.

Rathmichael to Cherrywood

Figure 3-13 shows the locations of the proposed active travel connections between Rathmichael and Cherrywood. At present, the Brides Glen Valley serves as a barrier between Rathmichael and Cherrywood due to the topography and the Brides Glen River.

A new / upgraded active travel connection between Rathmichael and Cherrywood is a key objective which would link residents in Rathmichael to the range of employment, community and retail uses proposed and vice versa. Table 3.4 provides a detailed description of all options considered.

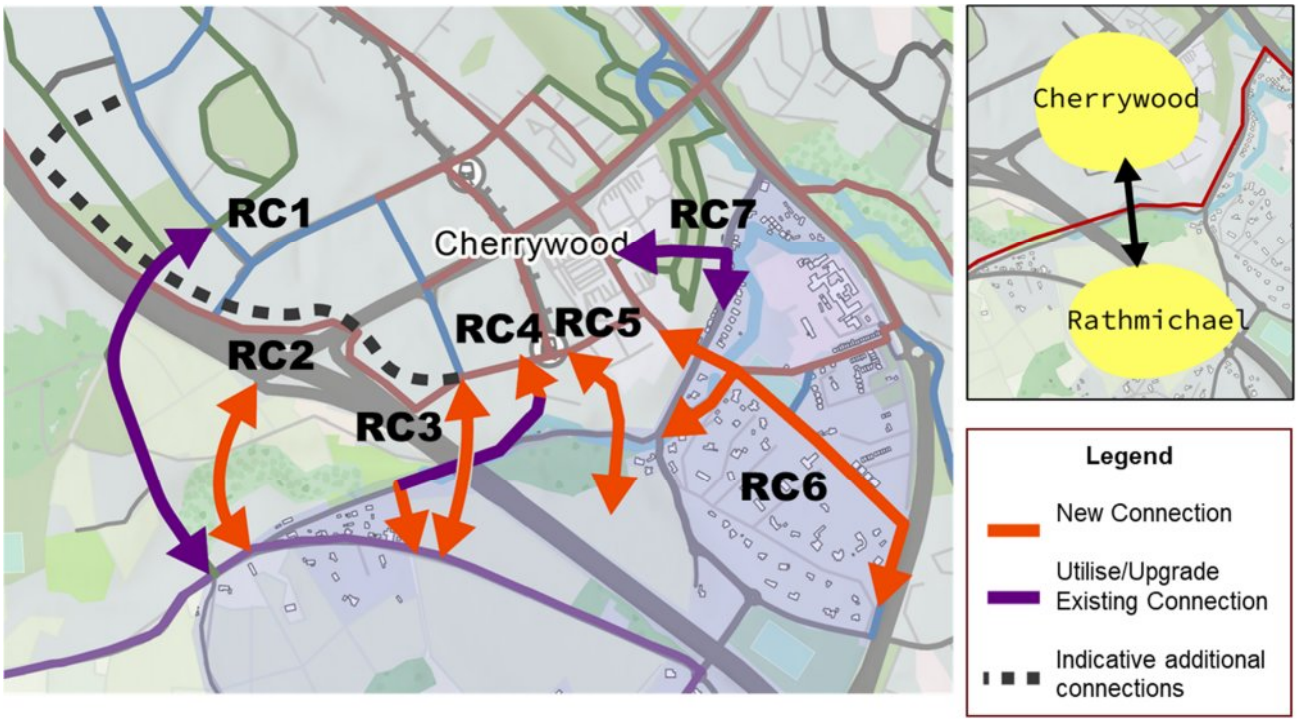


Figure 3-13 Active Travel Connections – Rathmichael to Cherrywood

Table 3.4 List of options for active travel connections between Rathmichael and Cherrywood

Option	Description
RC1	This option proposes minor local interventions along the existing right of way route connecting Ballycorus Road and Castle Street in Cherrywood through Ticknick Park to enable cycling access. This route would tie in with the proposed two-way cycle track along Beckett Road. This option aligns with an existing right of way route and fulfils a greenway route proposal in the 2022 GDA Cycle Network Plan and will be subject to the requirements of TII Publications.
RC2	This option would depend upon the development of a new western arm off M50 Junction 16, linking the junction to Rathmichael Road. This is proposed on the DLRCC 2022-2028 CDP as a road objective, subject to requirements of maintaining and protecting the NRN, as per RSES, SPNR, GDA Strategy, and TII Publications.
RC3	This option proposes the construction of a new active travel bridge connecting Rathmichael Road and Cherrywood, passing beneath the M50 and over Brides Glen Road. This is noted as a specific local objective (SLO 150) in the DLRCC 2022-2028 CDP and subject to requirements of maintaining and protecting the NRN, as per RSES, SPNR, GDA Strategy, and TII Publications.
RC4	This option proposes a new link from Rathmichael Road to Brides Glen Road, with upgrades to Brides Glen Road and the Glencarraig estate road, with a new link between Glencarraig and Cherrywood and will be subject to the requirements of TII Publications.
RC5	This option proposes a new link between Cherrywood and Brides Glen Road as outlined in the Cherrywood SDZ Planning scheme, along with the continuation of this route south of Brides Glen Road into the Rathmichael lands.
RC6	This option proposes the provision of active travel infrastructure along the Cherrywood Viaduct along with links continuing on to Falls Road and Mulinastill Road. This option fulfils a primary orbital/secondary route proposal outlined in the 2022 GDA Cycle Network Plan. This route is also identified as the indicative route for the Luas extension to Bray.
RC7	This option proposes upgrades to the existing active travel route connecting from Cherrywood Road to Cherrywood via a short laneway. Proposed upgrades include an improved entry treatment and connection to potential active travel infrastructure along Cherrywood Road.

Rathmichael to Shankill / Woodbrook

Figure 3-14 presents the locations of the proposed active travel connections between Rathmichael and Shankill/Woodbrook, and Table 3.5 provides a detailed description of each option.

There are several existing connections between Rathmichael and Shankill, however these are primarily vehicular links with a limited cycle facilities and varying quality of pedestrian infrastructure.

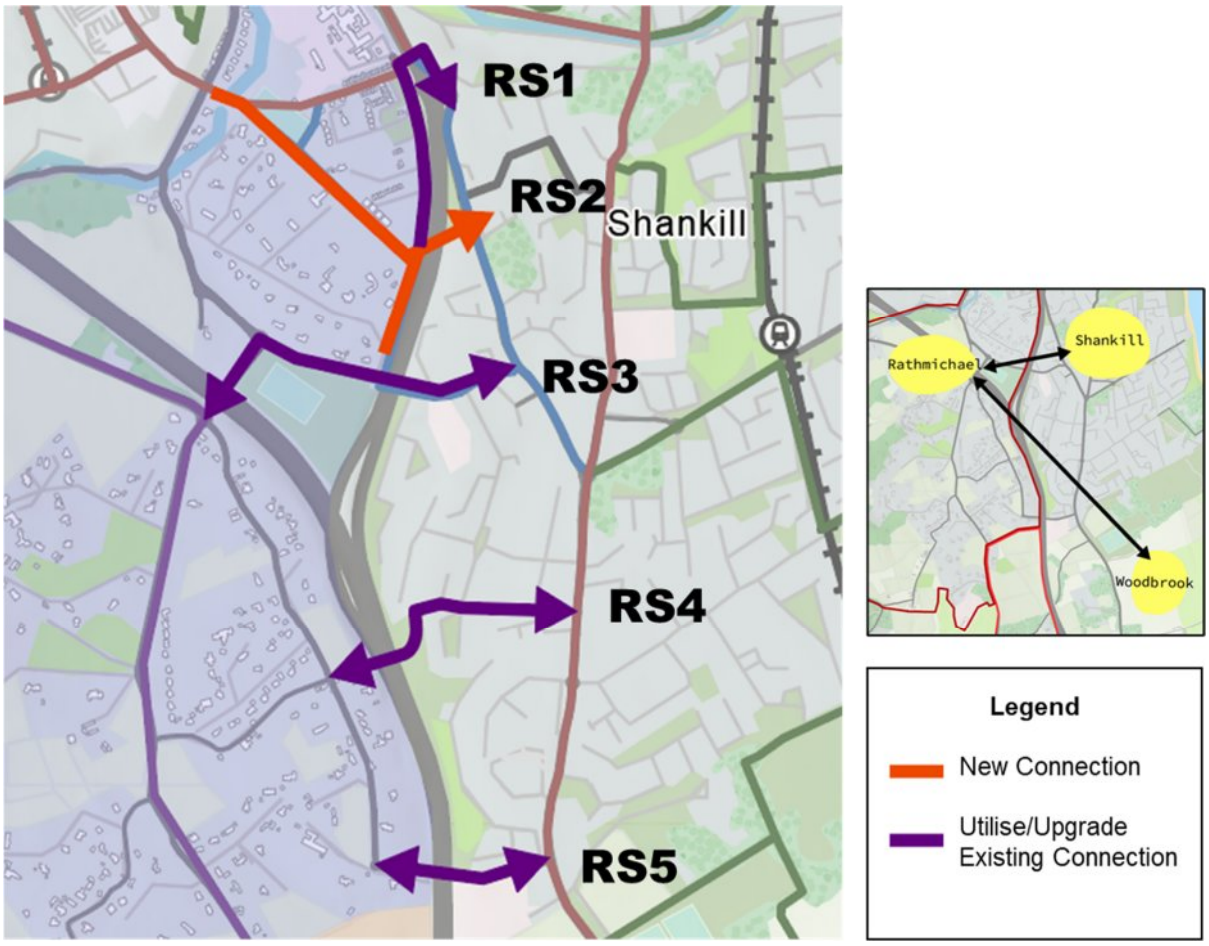


Figure 3-14 Active Travel Connections – Rathmichael to Shankill / Woodbrook

Table 3.5 List of options for active travel connections between Rathmichael and Shankill / Woodbrook

Option	Description
RS1	This option proposes the construction of a new link between Stonebridge Road and Parc Na Silla Rise, utilising the existing pedestrian/cycle bridge across the N11 immediately north of the Loughlinstown Roundabout subject to compliance with requirements of TII Publications..
RS2	This option proposes the construction of the same new link as described in RS1, but instead involves the construction of a new active travel bridge across the N11 south of the Loughlinstown Roundabout connecting to the Dublin Road/Seaview Park to the east subject to the requirements of SPNR and TII Publications. This option fulfils a primary orbital/secondary route proposal outlined in the 2022 GDA Cycle Network Plan.
RS3	This option proposes the provision of active travel upgrades along the existing Stonebridge Road between the Rathmichael Road/ Ferndale Road/Ballybride Road roundabout and Dublin Road, subject to the requirements of TII Publications. The section of this route east of the M11 is included as part of the Bray to City Centre CBC proposal as part of BusConnects. This option fulfils a secondary/inter urban route proposal outlined in the 2022 GDA Cycle Network Plan.
RS4	This option proposes the provision of active travel upgrades along the existing pedestrian route, subject to the requirements of TII Publications, which connects Lordello Road to Dublin Road via a pedestrian bridge across the M11 and through residential areas east of the M11.
RS5	This option proposes the provision of active travel upgrades, subject to the requirements of TII Publications, along the existing Crinken Lane Road and bridge connecting Ballybride Road to Dublin Road.

Rathmichael to Old Connaught

Figure 3-15 presents the locations of the options for active travel connections between Rathmichael and Old Connaught, Table 3.6 summarises the details of each option considered.

These connections are proposed internally within the Old Connaught LAP area but would serve to connect the centres of Rathmichael and Old Connaught through the proposed Strategic Land Reserve area.

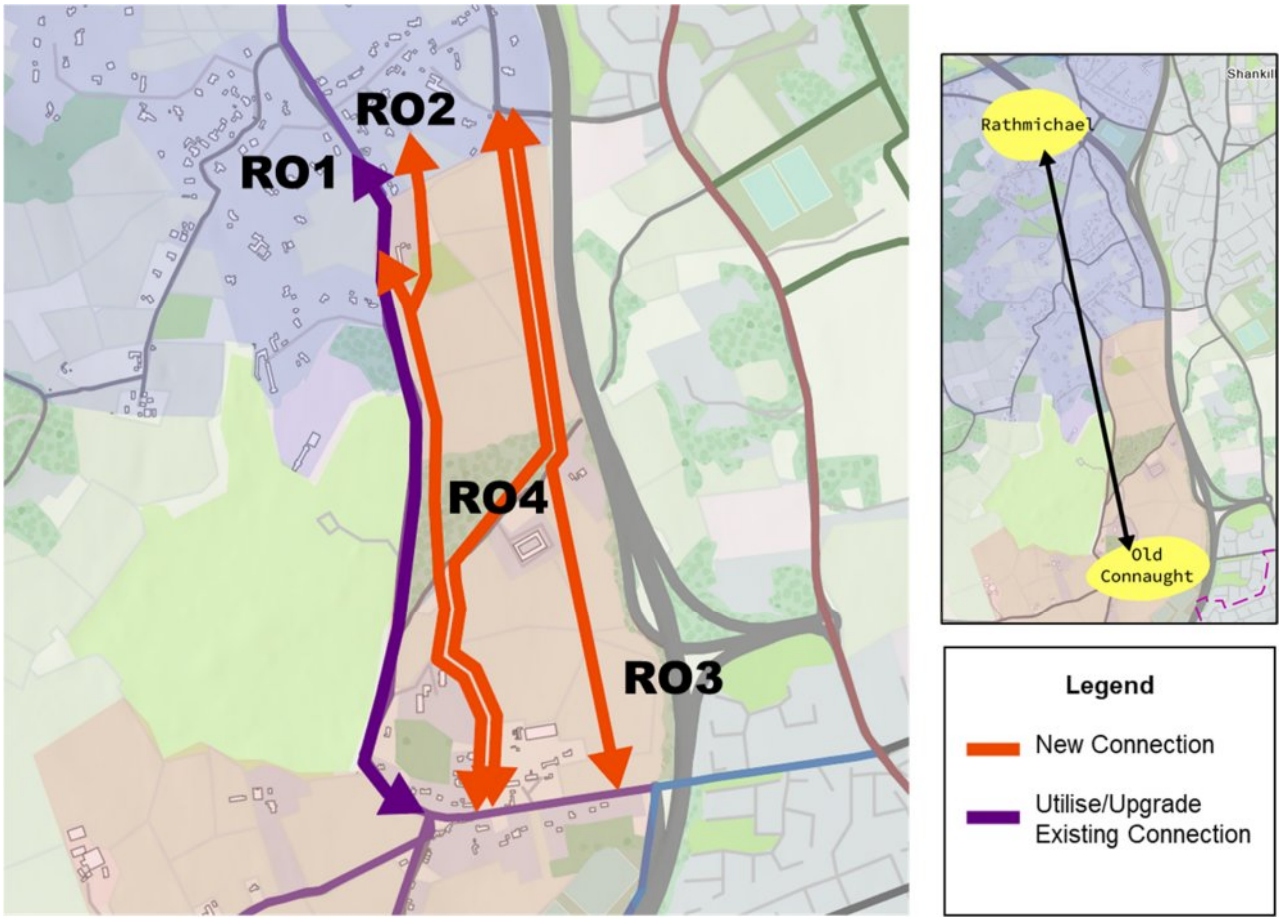


Figure 3-15 Active Travel Connections – Rathmichael to Old Connaught

Table 3.6 List of options for active travel connection options between Rathmichael and Old Connaught

Option	Description
RO1	This option proposes the provision of pedestrian/cycle infrastructure along Ferndale Road through widening of the existing carriageway. This option fulfils an inter urban route proposal outlined in the 2022 GDA Cycle Network Plan.
RO2	This option proposes a parallel route within the Strategic Land Reserve lands adjacent to Ferndale Road, but to the east of the existing trees/hedgerows along the road.
RO3	This option proposes a new north-south link along the eastern edge of the Old Connaught LAP area, roughly parallel to the M11, connecting Ballybride Road/Crinken Lane to Old Connaught Avenue.
RO4	This option is an alternative to RO3, where Allies River Road and the existing laneway between Festina Lente and Old Connaught House is utilised for the southern portion of the route.

Old Connaught to Woodbrook

Figure 3-16 presents the locations of active travel connection options between Old Connaught and Woodbrook, and Table 3.7 provides a description of each option. These links would provide an important connection from Old Connaught to the Woodbrook DART Station, which would be a shorter and more attractive option than Bray or Shankill stations. Construction of Woodbrook station has commenced and it is set to open in 2025. At present, the current Old Connaught Avenue bridge is the only connection across the

M11 in this area, and so the provision of one of more new connections would significantly enhance the permeability of the area.

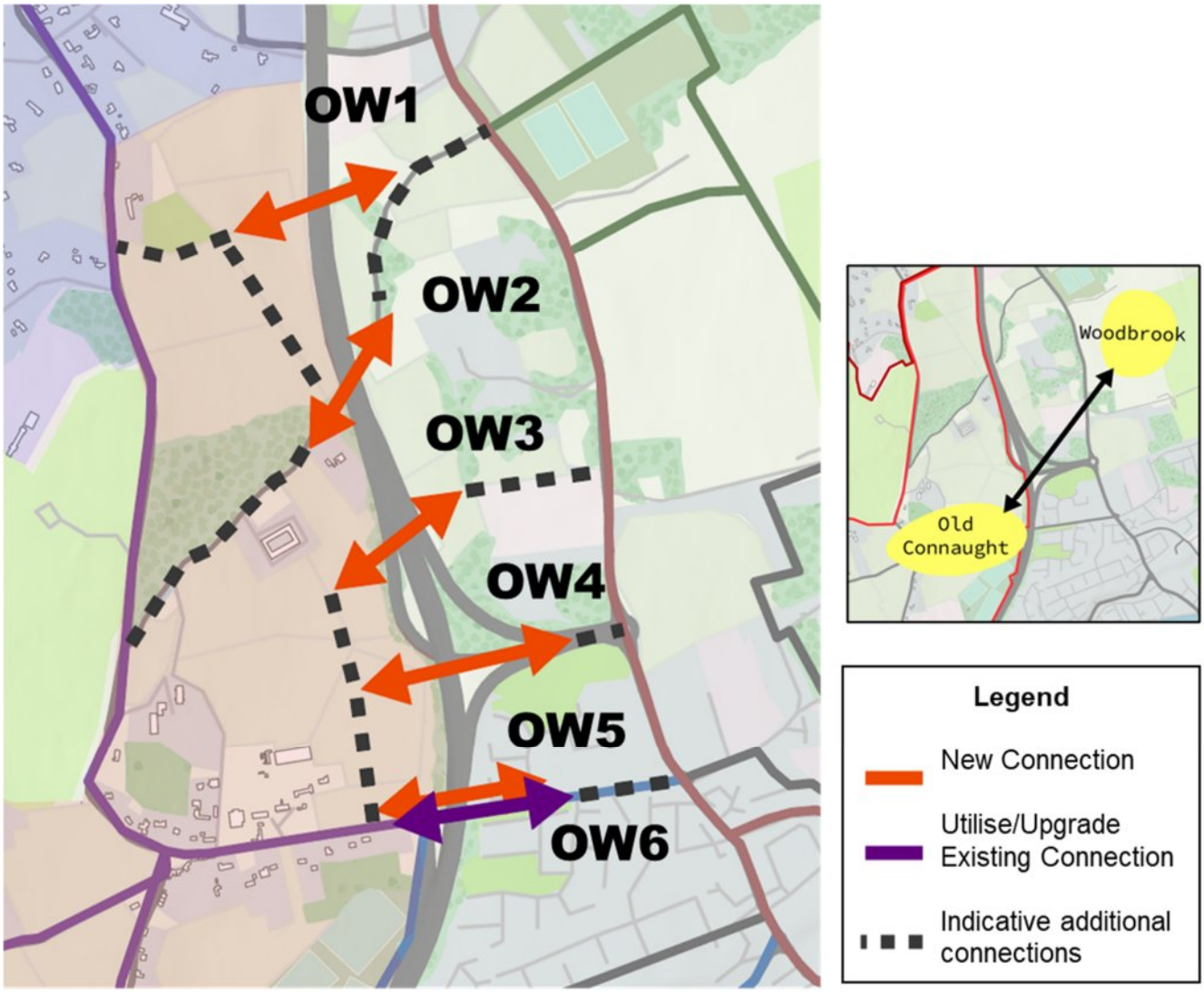


Figure 3-16 Active Travel Connections – Old Connaught to Woodbrook

Table 3.7 List of options for active travel connection options between Old Connaught and Woodbrook

Option	Description
OW1	This option proposes the provision of a new active travel bridge across the M11 connecting to the northern end of Allies River Road subject to the requirements of SPNR and TII Publications. This option aligns with the specific local objective in the DLRCC 2022-2028 CDP to create an active travel connection across the M11 in the vicinity of Allies River Road.
OW2	This option proposes the provision of a new active travel bridge across the M11 directly reconnecting either side of the Allies River Road subject to the requirements of SPNR and TII Publications. This option aligns with the specific local objective in the DLRCC 2022-2028 CDP to create an active travel connection across the M11 in the vicinity of Allies River Road, and for a proposed pedestrian/cycle footbridge location, as set out in Table 5.2 of the DLR CDP 2022-2028.
OW3	This option proposes the provision of a new active travel bridge across the M11 in the vicinity of Allies River Road, but further south of the current road alignment, to the north of the M11 Junction 5 subject to the requirements of SPNR and TII Publications. This option aligns with a policy objective and a specific local objective in the DLRCC 2022-2028 CDP to create an active travel connection across the M11 in the vicinity of Allies River Road.
OW4	This option depends upon the provision of an upgrade of Junction 5 associated with the N11/M11 Junction 4 to Junction 14 Improvement Scheme and proposes the inclusion of active travel infrastructure across the junction. The potential upgrade of this interchange is included as a specific local objective in the DLRCC 2022-2028 CDP

Option	Description
	subject to the requirement to maintain and protect the NRN, as per RSES, SPNR, TII Publications and GDA Strategy.
OW5	This option proposes the construction of a new active travel bridge directly parallel to the current Old Connaught Avenue bridge across the M11 subject to the requirements of SPNR and TII Publications. This option fulfils a secondary route proposal outlined in the 2022 GDA Cycle Network Plan.
OW6	This option proposes the provision of active travel upgrades to the current Old Connaught Avenue bridge across the M11, subject to compliance with the requirements of TII Publications, which may require traffic management measures due to the limited space available. This option fulfils a secondary route proposal outlined in the 2022 GDA Cycle Network Plan.

Old Connaught to Bray

Figure 3-17 shows the locations of the proposed options for active travel connections between Old Connaught and Bray. Table 3.8 summarises the details of each option considered.

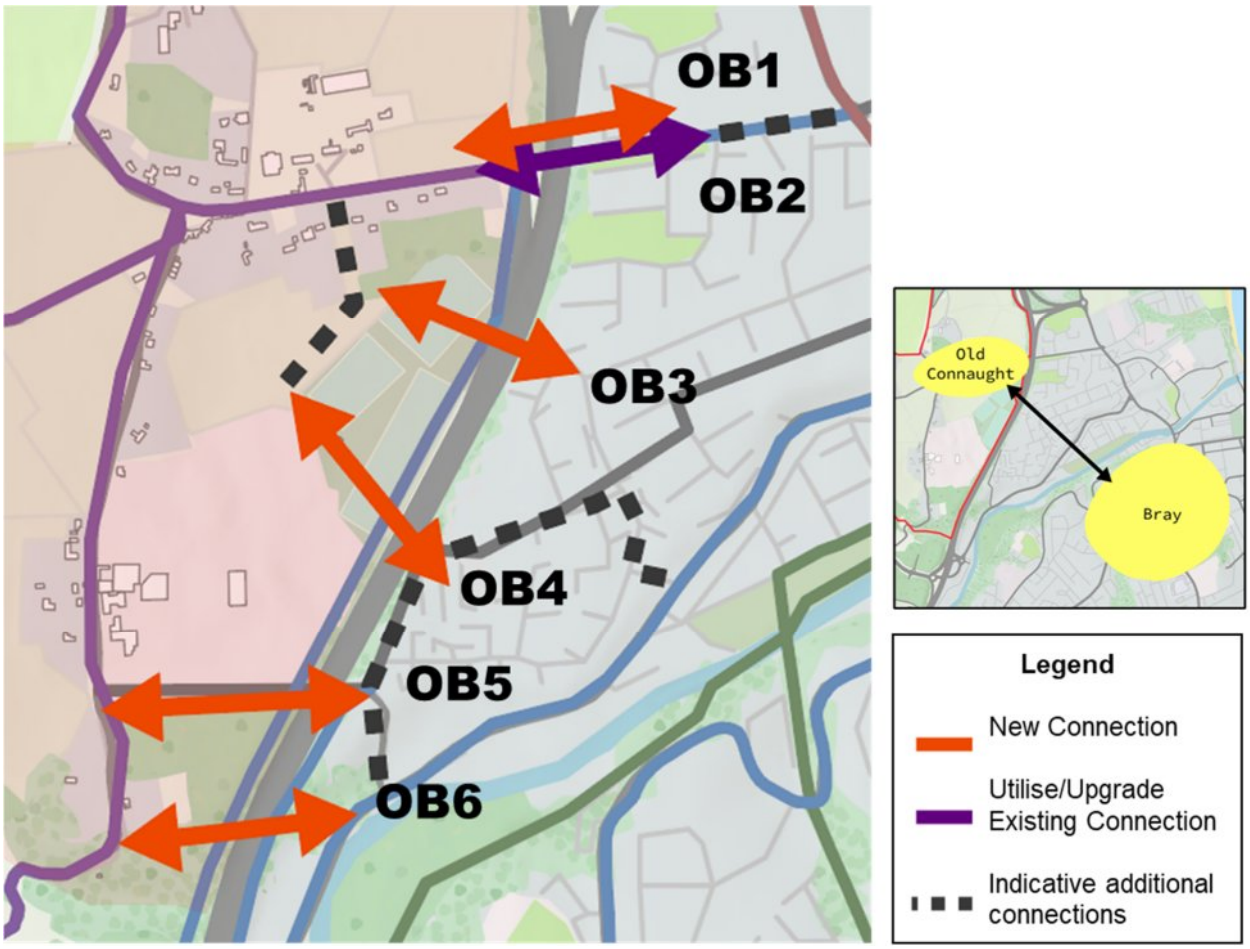


Figure 3-17 Active Travel Connections – Old Connaught to Bray

Table 3.8 List of options for active travel connection options between Old Connaught and Bray

Option	Description
OB1	This option proposes the construction of a new active travel bridge directly parallel to the current Old Connaught Avenue bridge across the M11 subject to the requirements of SPNR and TII Publications. This option fulfils a secondary route proposal outlined in the 2022 GDA Cycle Network Plan.
OB2	This option proposes the provision of active travel upgrades to the current Old Connaught Avenue bridge across the M11, which may require traffic management measures due to the limited space available, subject to compliance with the requirements of TII Publications. This option fulfils a secondary route proposal outlined in the 2022 GDA Cycle Network Plan.

Option	Description
OB3	This option proposes the construction of a new active travel bridge across the M11 between the current Bray Emmets GAA ground and Old Connaught View on the eastern side of the M11 subject to the requirements of SPNR and TII Publications.
OB4	This option proposes the construction of a new active travel bridge across the M11 in the vicinity of the border between Bray Emmets GAA club and St Gerard's School grounds, connecting to Hazelwood Crescent on the eastern side of the M11, subject to the requirements of SPNR and TII Publications.
OB5	This option proposes the construction of a new active travel bridge across the M11 from the southern boundary of St Gerards School to Love Lane/Blind Lane on the eastern side of the M11 subject to the requirements of SPNR and TII Publications. This option aligns with a policy objective in the DLRCC 2022-2028 CDP for a proposed pedestrian/cycle footbridge, as set out in Table 5.2 of the DLR CDP 2022-2028. This option also fulfils a feeder route proposal outlined in the 2022 GDA Cycle Network Plan.
OB6	This option proposes the construction of a new active travel bridge across the M11from the southern end of Thornhill Road, connecting directly to the Upper Dargle Road south of the junction with Hazelwood, on the eastern side of the M11, subject to the requirements of SPNR and TII Publications.

Old Connaught to Fassaroe

Figure 3-18 shows the locations of the options for active travel connections between Old Connaught and Fassaroe, and Table 3.9 provides a description of each option. The existing road link is a narrow winding road skirting existing building structures which provides no segregated active travel and is challenging to upgrade.

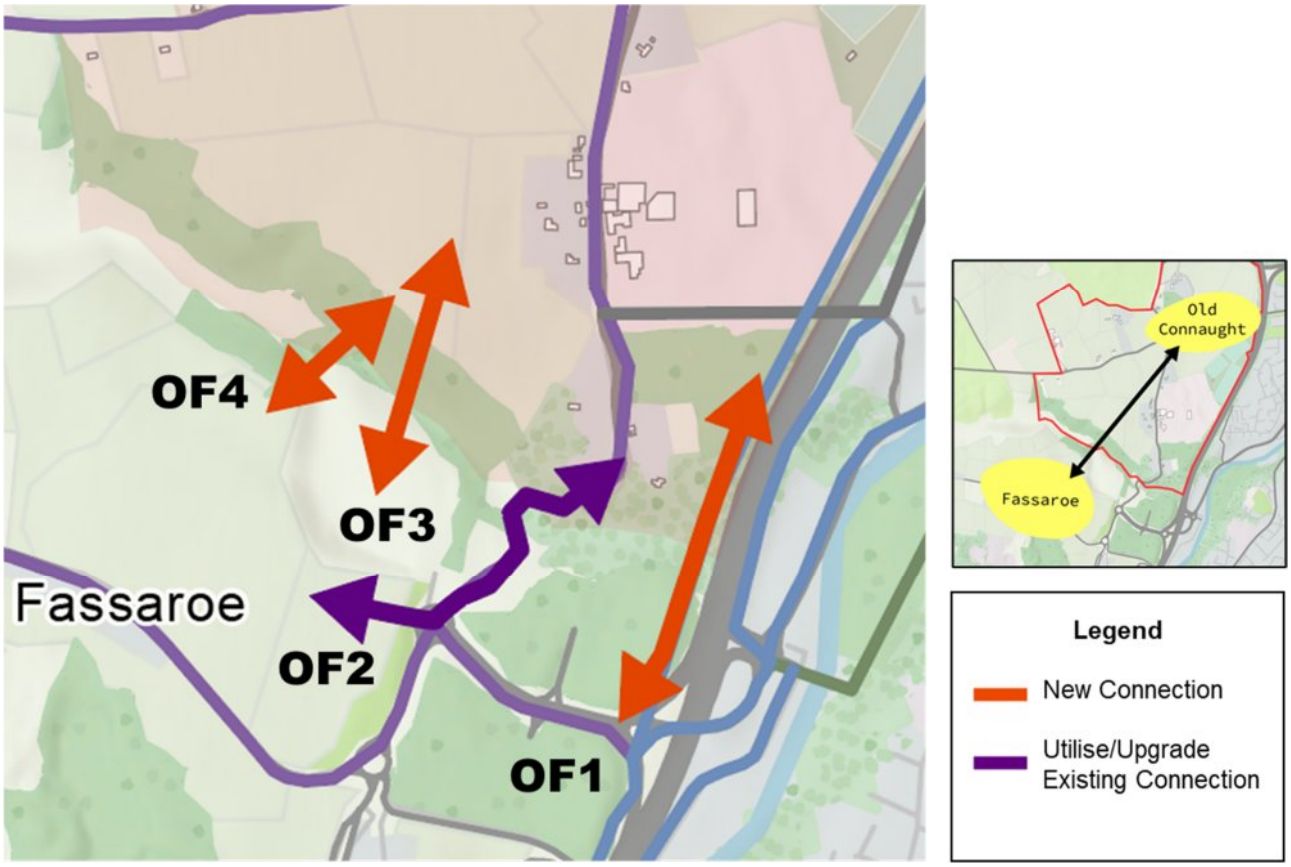


Figure 3-18 Active Travel Connections – Old Connaught to Fassaroe

Table 3.9 List of options for active travel connection options between Old Connaught and Fassaroe

Option	Description
OF1	This option proposes a new link parallel to the M11 from the Old Connaught lands to the north, connecting to Fassaroe Lane as proposed as a secondary route in the 2022 GDA Cycle Network Plan, along with utilisation of existing cycle infrastructure along Fassaroe Lane, subject to the requirements of SPNR and TII Publications,
OF2	This option proposes the provision of active travel facilities along the Thornhill Road between Old Connaught and Fassaroe.
OF3	This option proposes the provision of active travel facilities alongside the proposed Old Connaught-Fassaroe public transport connection proposed as part of the Bray and Environs Transport Study. This option aligns with objectives in the DLRCC 2022-2028 CDP.
OF4	This option proposes the construction of a new active travel bridge linking Old Connaught and Fassaroe. This option aligns with objectives in the DLRCC 2022-2028 CDP. This option fulfils an inter urban route proposal outlined in the 2022 GDA Cycle Network Plan.

These links, OF3 and OF4 in particular, would help to achieve objective R04 in the Bray Municipal District LAP 2018-2024 which states that "Provision shall be made (unless necessity for same has been definitely ruled out by the transport agencies) for a north – south link route from the new distributor road to cross Ballyman Glen and continue into County Dublin and link up with old Conna Avenue." Along with objective R09 which aims to provide greenways in the area including "Fassaroe - Ballyman Glen to Cookstown River".

3.1.4.3 Cherrywood to Bray Cycle Route

Overview

The need for a continuous Cycle Route from Cherrywood to Bray has been identified as a key priority. This section presents potential routing options for this route, some of which require additional infrastructure. The route is required to link the Cherrywood SDZ lands with Bray, connecting to the Bray seafront cycle route.

Options

When examining the potential end-to-end route options which run through the LAP areas from Cherrywood to Bray, two nodal points emerge through which all potential route options must follow.

The first is located at the roundabout junction of Rathmichael Road and Ferndale Road. To the north of this junction there are three possible options to link to Cherrywood, labelled as A, B and C.

The second node is located along Dublin Road near the entrance to Lidl, where a common indicative route to Bray seafront is proposed. This proposed indicative route makes use of the existing two-way cycle track along the southern border of the Lidl lands and continuing through the Old Bray Golf Club development lands, making use of the existing underpass under the Dart line, before running southeast along Harbour Road and Strand Road along the two-way seafront cycle route. As this route shown is indicative, the exact route between the node and Bray seafront is subject to further analysis and an alternative route may be utilised.

There are four potential routes identified between these two nodes as shown in Figure 3-19 below.

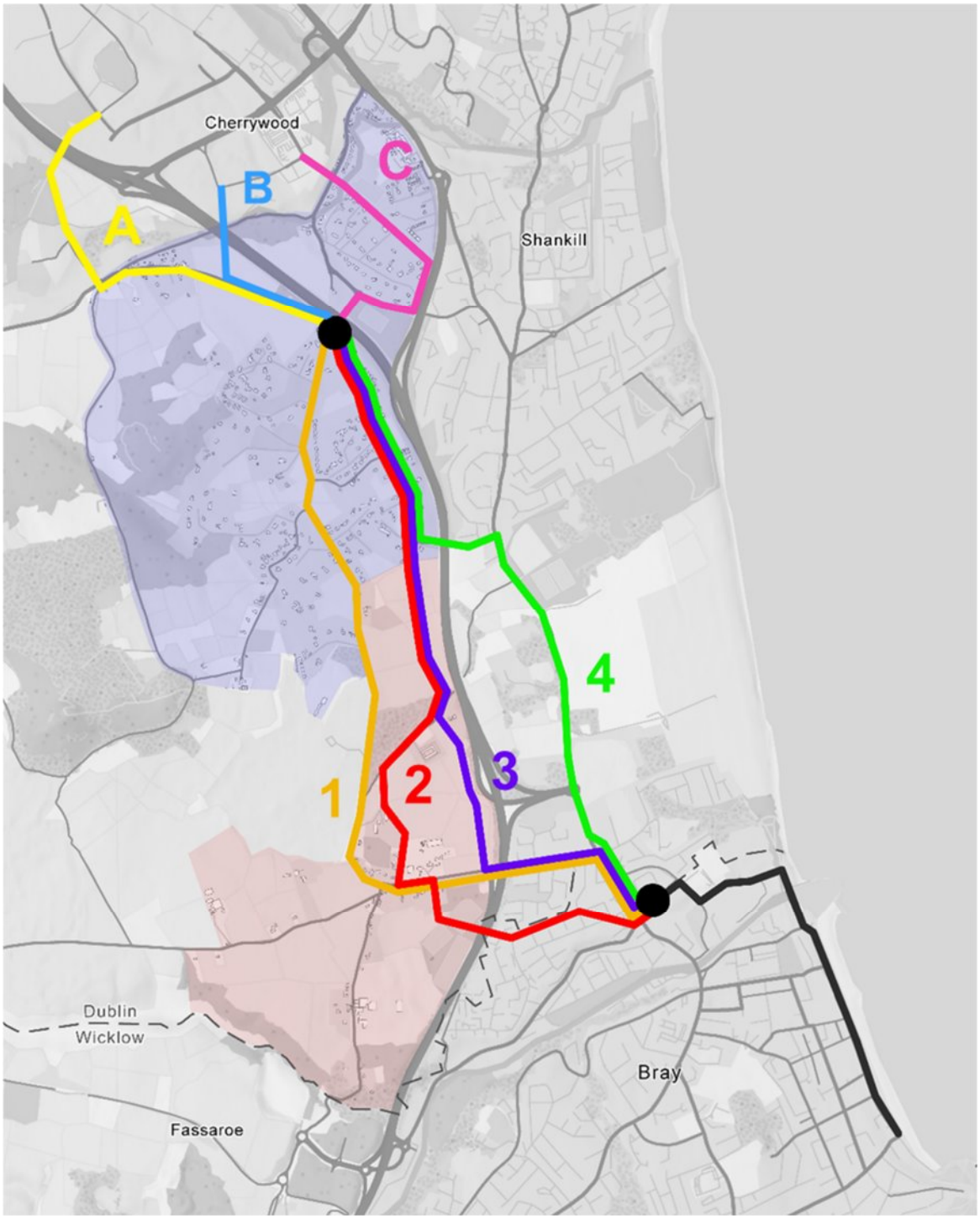


Figure 3-19 Cherrywood to Bray Cycle Route Options

Table 3.10 provides a description of the cycle route options.

Table 3.10 Cherrywood to Bray Cycle Route Options Description

Option	Description
GRA	This option proposes a route which utilises the existing Lehaunstown Lane and Heronford Lane right of way, before running along Ballycorus Road and Rathmichael Road. Alternatively, this option could make use of internal development routes as opposed to running directly along Rathmichael Road. Any associated alteration of the Tully Lane Overbridge will require compliance with TII Publications.
GRB	This option proposes a route which utilises a potential bridge running between Cherrywood and Rathmichael Road, which would then run along Rathmichael Road itself. A potential bridge design, delivery and maintenance arrangements will have regard to the presence of the M50, the requirements of SPNR and demonstrate compliance with TII Publications.

Option	Description
GRC	This option proposes a route which utilises the Cherrywood Viaduct, continuing along the approximate route of the old railway line, before turning south to link to Falls Road. A potential alternative route for this option, which would avoid land take would be to run through St Collumciles Hospital lands, and run south along Parc na Silla Rise. Any associated alteration of Stonebridge Road Overbridge will require compliance with TII Publications.
GR1	This option proposes a route which runs directly down Ferndale Road, and along Old Connaught Avenue before reaching Bray. Crossing of the M11 will be subject to the requirements of SPNR and TII Publications. This option would require the provision of cycling infrastructure along Ferndale Road in the form of road widening, or removal of a traffic lane making the road one way for vehicles.
GR2	This option proposes a route which runs along Ballybride Road, and continues south in the form of a new link between Crinken Lane and Allies River Road. The route then runs along Allies River Road before making use of the existing laneway which runs between Old Connaught House and Festina Lente. The route then runs east for a short section along Old Connaught Avenue, before turning south into the proposed development lands, and through the Bray Emmetts grounds before making use of a potential active travel bridge across the M11, subject to the requirements of SPNR and TII Publications, to reach the residential area to the east. The route would run as a quietway along either Beech Road or Hawthorn Road before connecting to Dublin road via the small laneway adjacent to Roseville Court.
GR3	This option proposes a route which runs along Ballybride Road, and continues south in the form of a new link between Crinken Lane and Allies River Road, subject to the requirements of SPNR and TII Publications. This option differs from Option 2 in that it continues south in the form of a new link between Allies River Road and Old Connaught Avenue, where it runs east along Old Connaught Avenue before turning south along Dublin Road.
GR4	This option proposes a route which runs along Ballybride Road, before tuning east along Crinken lane, and south along Dublin Road, making use of the proposed BusConnects Bray to City Centre CBC cycle infrastructure.

3.1.4.4 Bus Provision

Overview

As noted in the Position Report, along with Section 3.1.3.3, there is a need for the provision of a bus route through the LAP areas in order to adequately serve the proposed residential units as the 10-15 minute walking catchment from the existing public transport stops/stations does not cover the entirety of the LAP areas.

In order to determine the infrastructural requirements for buses, the optimal routes through each of the LAP areas must be determined. As part of the long list development, routes travelling along each of the feasible corridors are proposed for each LAP area.

Old Connaught Routes

Figure 3-20 to Figure 3-22 present the options considered for bus provision in the Old Connaught LAP area.

Figure 3-20 and Figure 3-21 show option 1 (BO1), which proposes no additional bus routes serving Old Connaught, instead relying on existing and planned public transport such as the existing and proposed bus routes, DART stations including the station at Woodbrook, which is currently under construction. This proposal would make use of any additional active travel upgrades to improve connectivity to public transport. The green arrows in the figure show the existing walking routes to the Bus Corridor and Dart Stations, any additional active travel routes which are proposed as part of the emerging preferred scenario may also improve the directness of these walking routes.

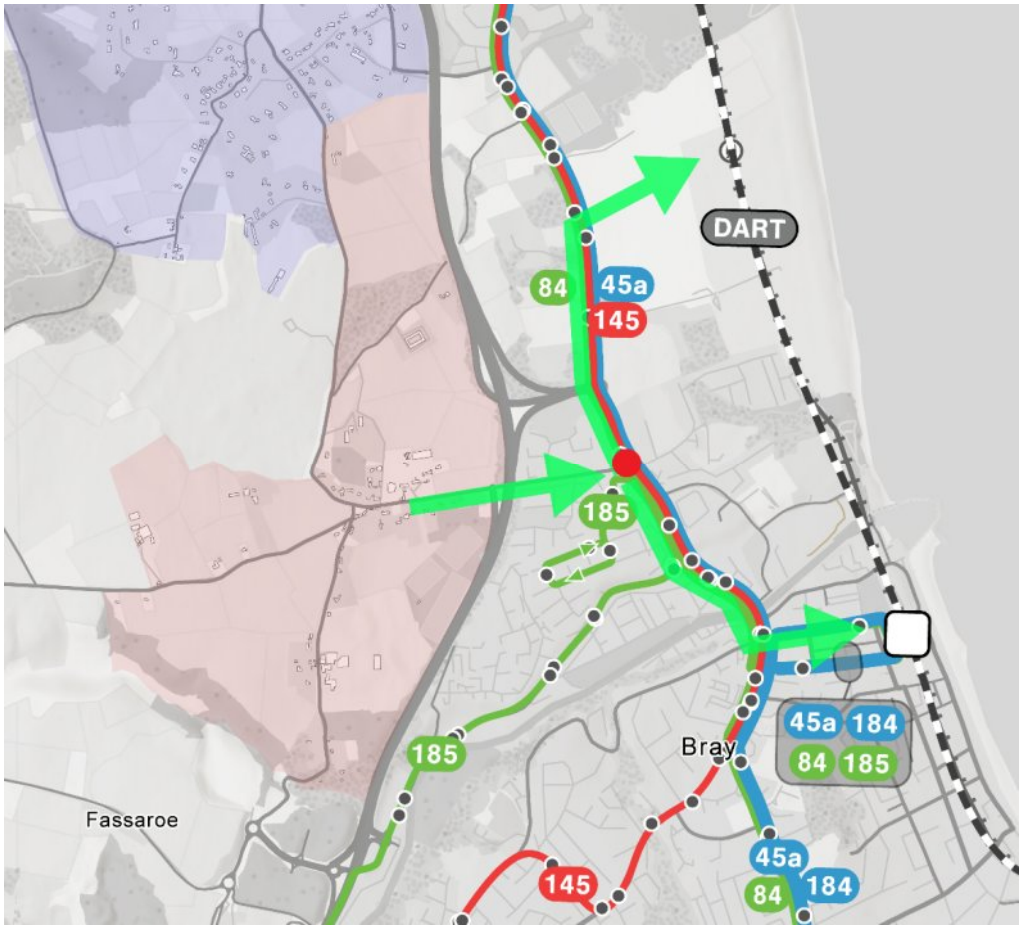


Figure 3-20 Old Connaught Bus Provision Option BO1 (Rely on existing facilities)

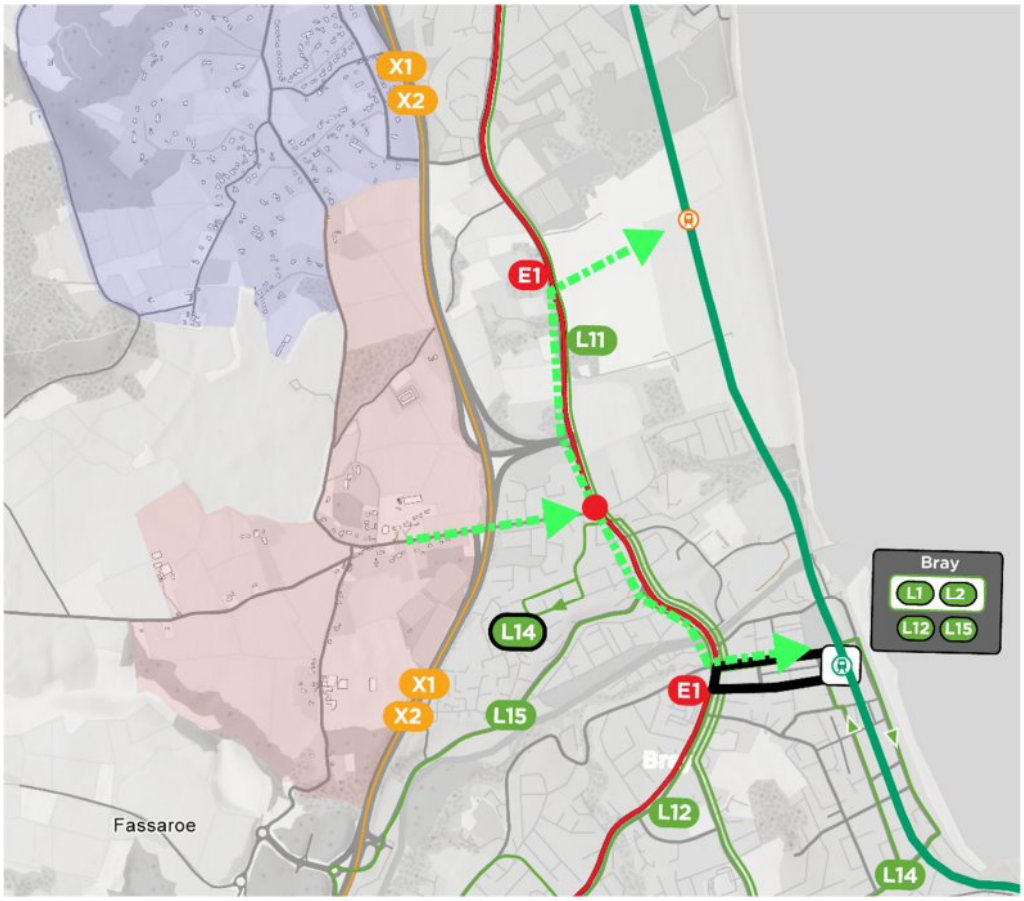


Figure 3-21 Old Connaught Bus Provision Option BO1 (with proposed BusConnects Network)

Figure 3-22 illustrates the alternative route options considered for bus provision in the Old Connaught LAP area. The route options are presented in different colours and marked with labels from BO2 to BO7. A detailed description of each route option is provided in Table 3.11.

It should be noted that for options running to Fassaroe, the proposed Busway, as included in the DLRCC Development Plan (SLO 107) is the assumed route. If this busway is at any point no longer considered viable, an alternative route along Thornhill road should be considered.

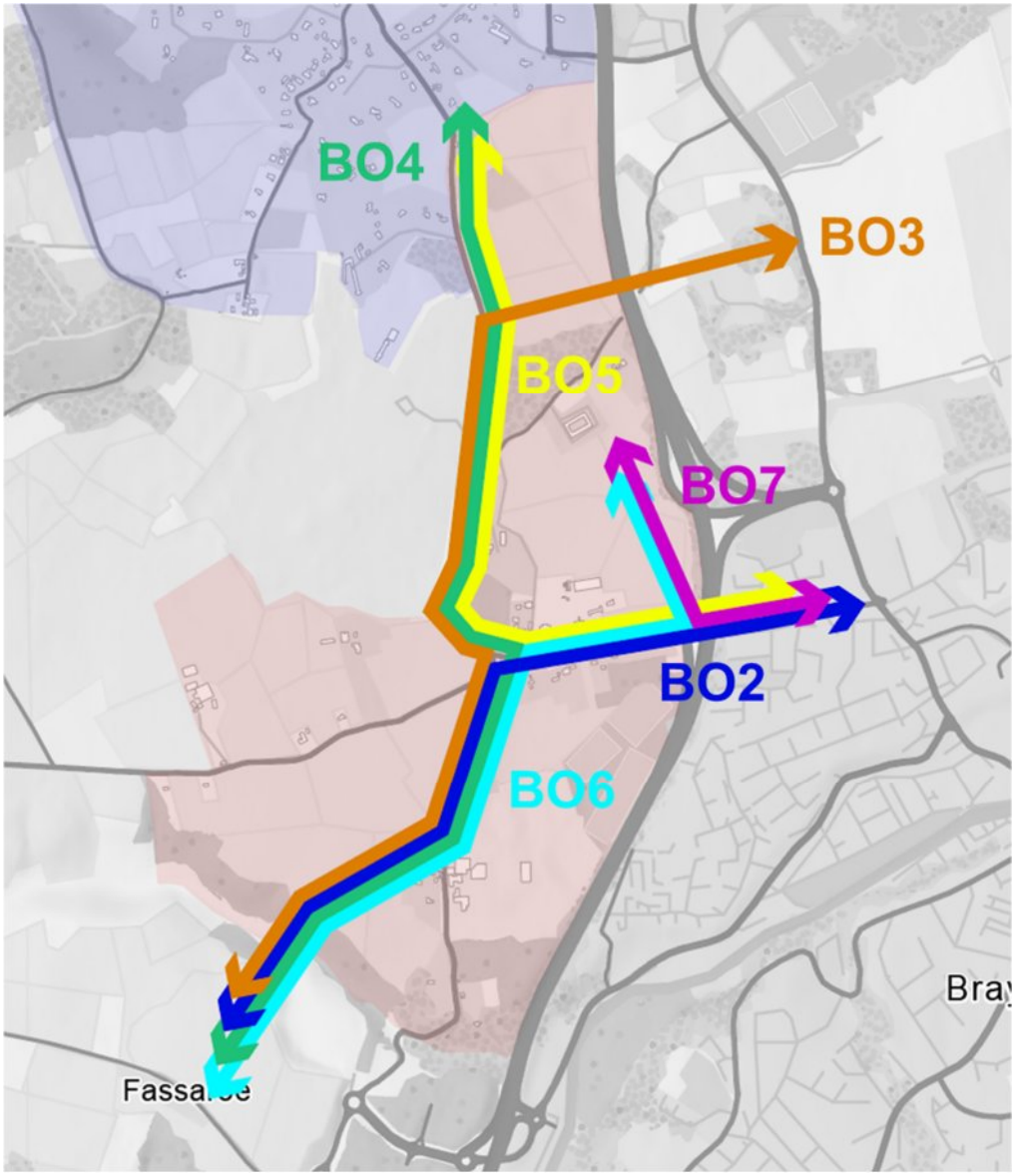


Figure 3-22 Old Connaught Bus Route Options

Table 3.11 Old Connaught Bus Route Options Description

Option	Description
BO1	This option proposes no additional bus routes serving Old Connaught, instead relying on existing and planned public transport such as the existing and proposed bus routes, DART stations including the proposed station at Woodbrook. This proposal would make use of any additional active travel upgrades to improve connectivity to public transport.
BO2	This option proposes a route which utilises a proposed busway between Old Connaught and Fassaroe, running along Thornhill Road and Old Connaught Avenue.
BO3	This option proposes a route which would utilise a potential crossing over the M11, subject to the requirements of SPNR and TII Publications, running between Dublin Road and Ferndale Road, before turning south down Ferndale Road, onto Thornhill Road and utilising a potential busway between Fassaroe and Old Connaught.

Option	Description
BO4	This option proposes a route which runs from Rathmichael along Ferndale Road, turning onto Thornhill Road and utilising a potential busway between Fassaroe and Old Connaught.
BO5	This option proposes a route which runs from Rathmichael along Ferndale Road, turning onto Old Connaught Avenue and continuing into Bray.
BO6	This option proposes a route which runs from Fassaroe to Old Connaught across a potential busway, continuing along Thornhill Road before running eastwards along Old Connaught Avenue. From there it would utilise a new internal development road which would run north-south through the northern end of the Old Connaught LAP area.
BO7	This option proposes a route which runs from Bray along Old Connaught Avenue. From there it would utilise a new internal development road which would run north-south through the northern end of the Old Connaught LAP area.

Rathmichael Routes

Figure 3-23 to Figure 3-25 present the options considered for bus provision in the Rathmichael LAP area.

Figure 3-23 and Figure 3-24 show option 1 (BR1), which proposes no additional bus routes serving Rathmichael, instead relying on existing and planned public transport such as the existing and proposed bus routes, DART stations, and the Woodbrook DART station, which is currently under construction. This proposal would make use of any additional active travel upgrades to improve connectivity to public transport.

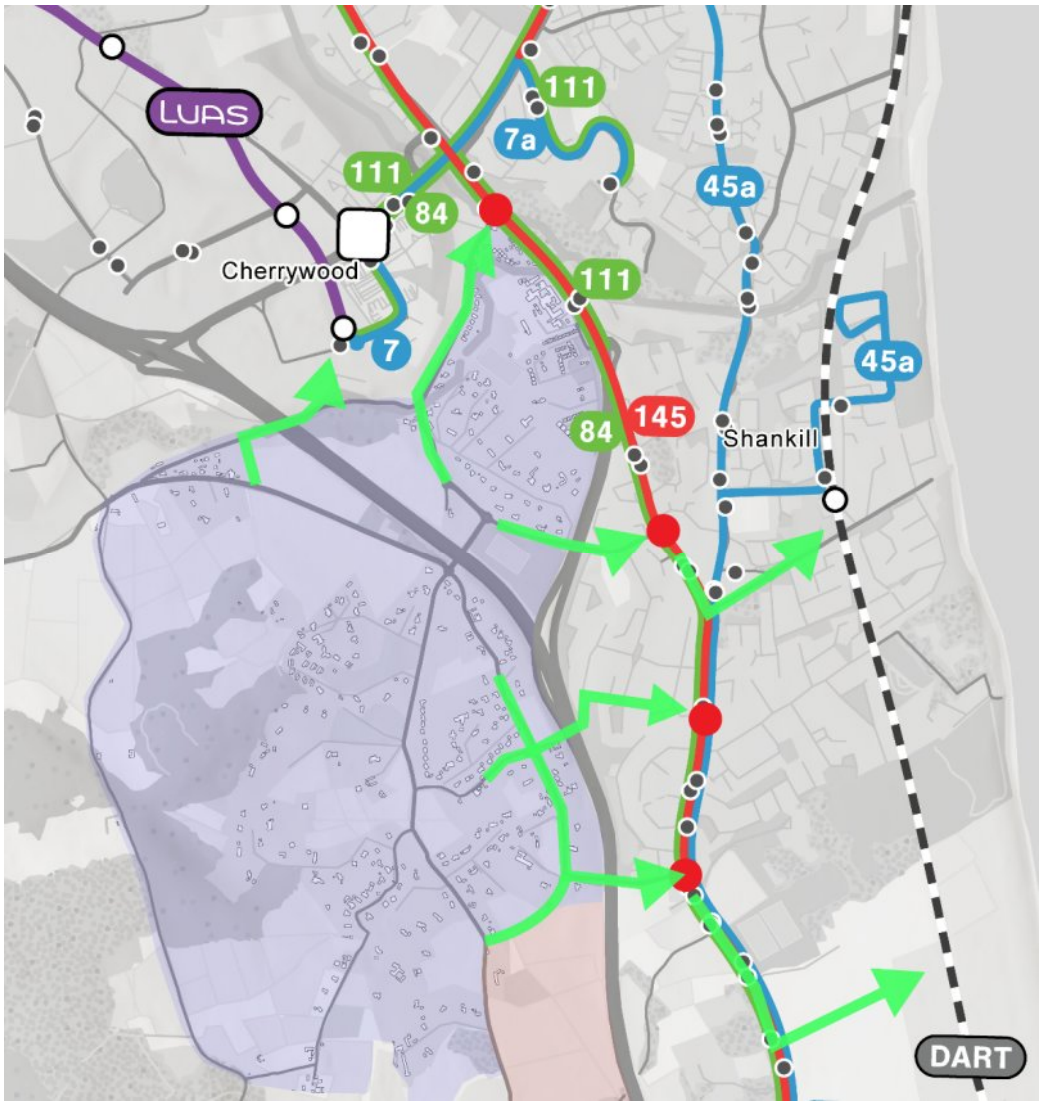


Figure 3-23 Rathmichael Bus Provision Option BR1 (Rely on existing facilities)

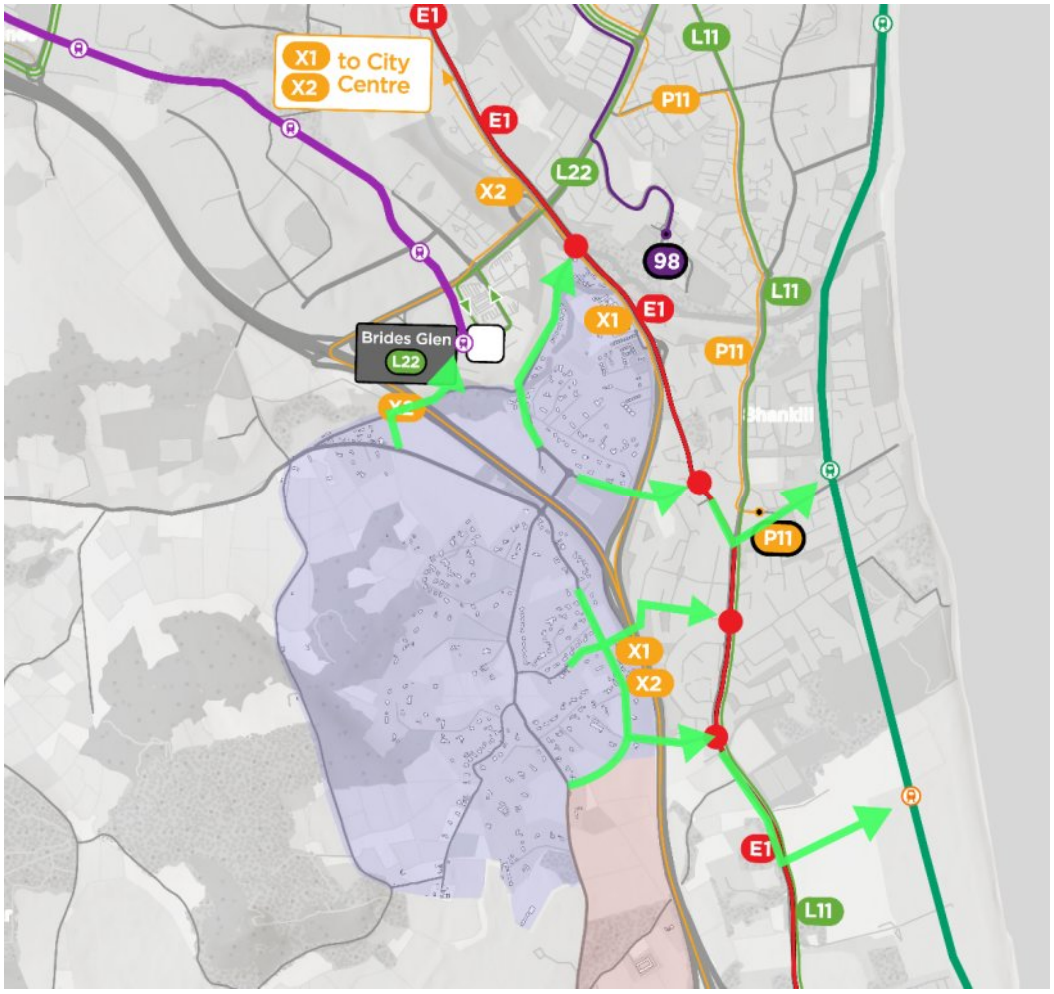


Figure 3-24 Rathmichael Bus Provision Option BR1 (with proposed BusConnects Network)

Figure 3-25 shows alternative route options considered for bus provision within the Rathmichael LAP area.

As shown in the figure below, the roundabout of Ferndale Road, Ballybride Road, Stonebridge Road and Rathmichael Road is a nodal point through which all potential routes have to follow. This is indicated by a black dot. To the south of this point there are potentially two routes to follow labelled as A and B. To the north of this node four potential routes are shown numbered as routes 2 to 5.

A detailed description of each route is provided in Table 3.12.

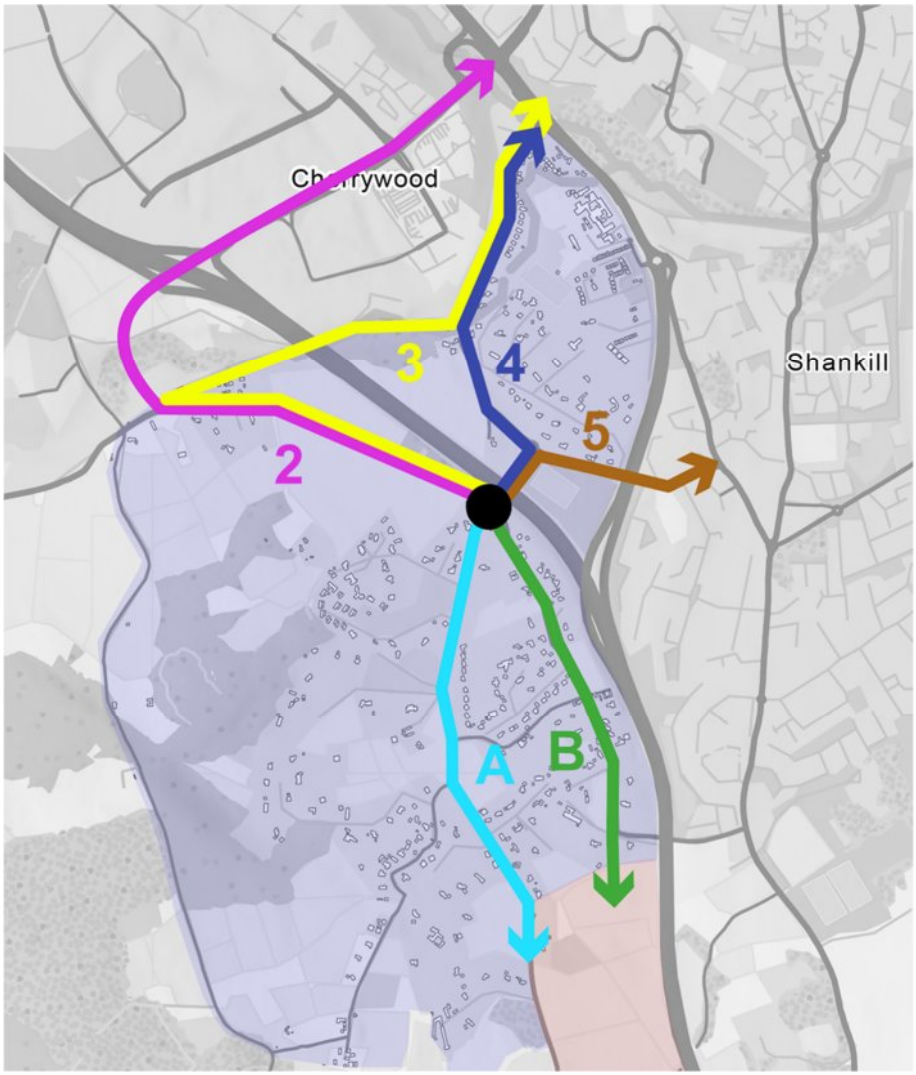


Figure 3-25 Rathmichael Bus Route Options

Table 3.12 Rathmichael Bus Route Options Description

Option	Description
BR1	This option proposes no additional bus routes serving Rathmichael, instead relying on existing and planned public transport such as the existing and proposed bus routes, DART stations, and the proposed Woodbrook DART station. This proposal would make use of any additional active travel upgrades to improve connectivity to public transport.
BR2	This option proposes a route along Wyattville Link Road through Cherrywood, utilising a new southwestern arm off M50 junction, subject to the requirements of SPNR and TII Publications, which would connect to Rathmichael Road along which the route would run before turning south to either Ferndale Road (A) or Ballybride Road (B). The northbound service would follow the same route but in reverse.
BR3	This option proposes a route along Cherrywood Road, continuing west along Brides Glen Road, before turning east along Rathmichael Road and turning south to either Ferndale Road (A) or Ballybride Road (B). The northbound service would follow the same route but in reverse.
BR4	This option proposes a route along Cherrywood Road, continuing south along Mulinastill Road and Stonebridge Road before turning onto Ballybride Road either Ferndale Road (A) or Ballybride Road (B). The northbound service would follow the same route but in reverse.
BR5	This option proposes a route along Stonebridge Road, continuing west along Stonebridge Road, turning south to either Ferndale Road (A) or Ballybride Road (B). The northbound service would follow the same route but in reverse.
BRA	Under this option the proposed bus routes run along Ferndale Road until reaching the Old Connaught Area.
BRB	Under this option the proposed bus routes run along Ballybride Road until reaching the Old Connaught Area.

3.1.4.5 Luas Routes

Overview

This section considers light rail infrastructure serving the LAP areas. As set out in the Greater Dublin Area Transport Strategy 2022-2042, the NTA is satisfied that sufficient demand for the extension of the Luas Green Line from Bride's Glen to Bray exists and that a project should be pursued to meet this demand. The Strategy includes Measure LRT5 - Luas Bray, which states that it is intended to extend the Luas Green Line southwards in order to serve the Bray and Environs area.

The following section presents potential route options for the extension of the Luas through the LAP areas. These routes represent a combination of different route options, some of which were considered previously, and some are variations which have been developed as part of the present options development process.

The GDA Transport Strategy 2022-2042 states that the alignment and the locations to be served between Bride's Glen and Bray have yet to be determined and will be subject to detailed design and planning work. The options in this section are, therefore, presented as possible routes which may be further considered in its future evaluation of the LUAS extension alignment.

It should be noted that the Luas spur towards Fassaroe is indicated in the DLRCC 2022-2028 County Development Plan, but it is not indicated as part of the GDA Transport Strategy 2022-2042.

Route Options

Figure 3-26 to Figure 3-29 present the alternative route options considered for the Luas extension to Fassaroe and Bray. A detailed description of the alternative options is provided in Table 3.13.

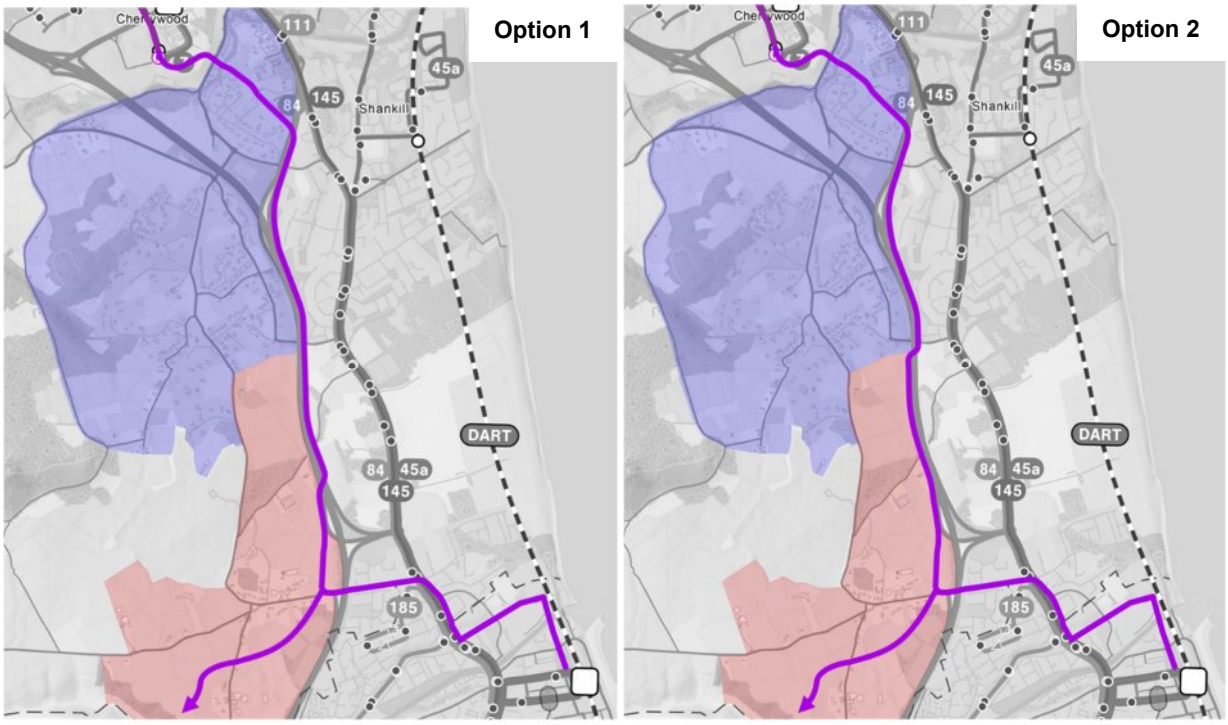


Figure 3-26 Luas Route Options 1 and 2

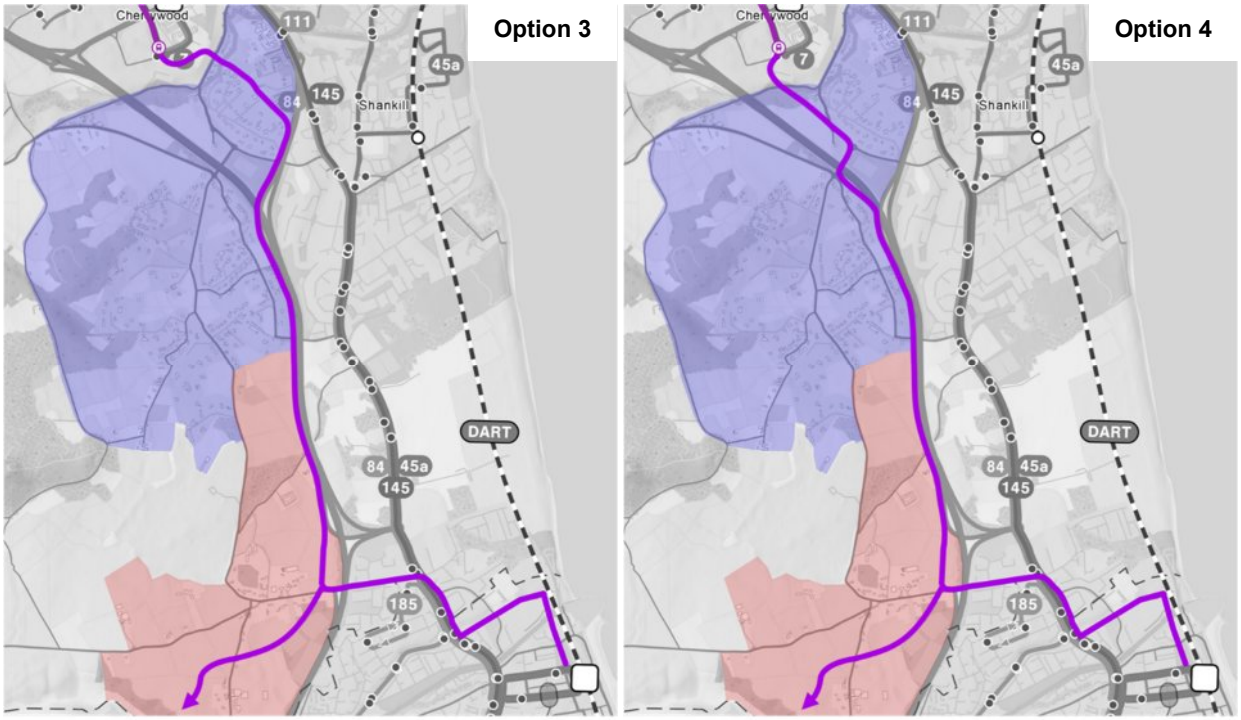


Figure 3-27 Luas Route Options 3 and 4

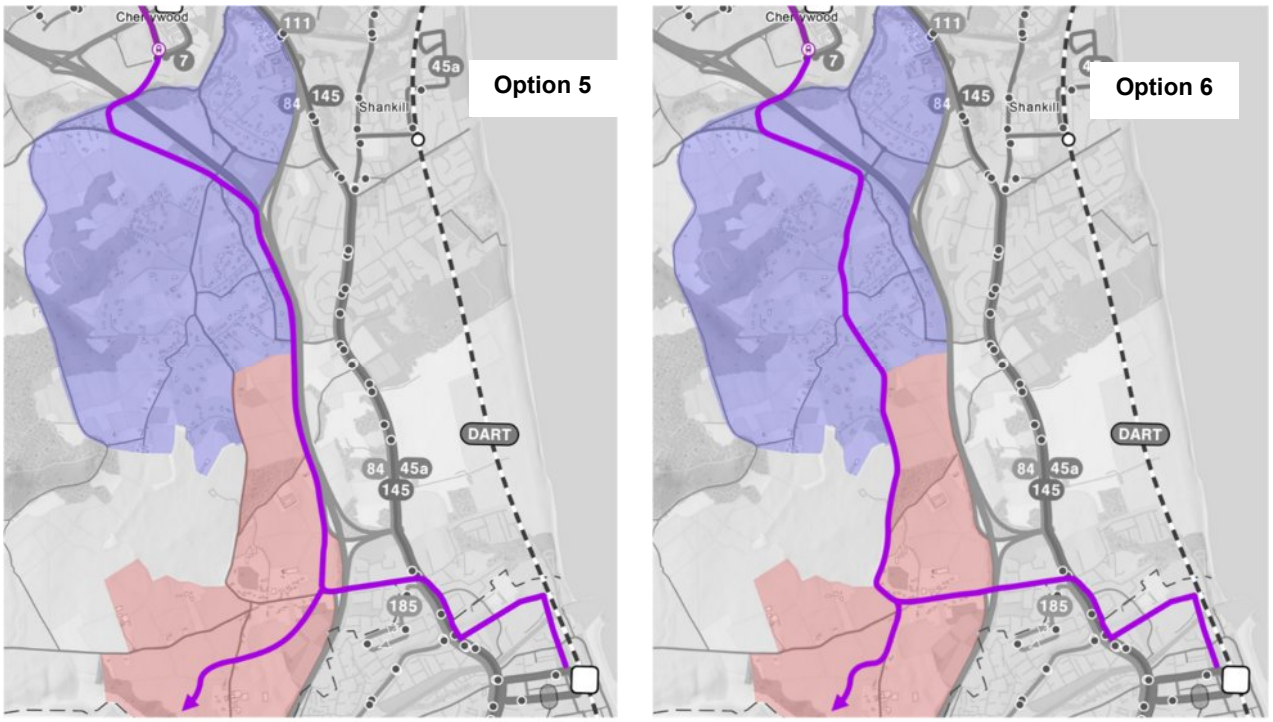


Figure 3-28 Luas Route Options 5 and 6

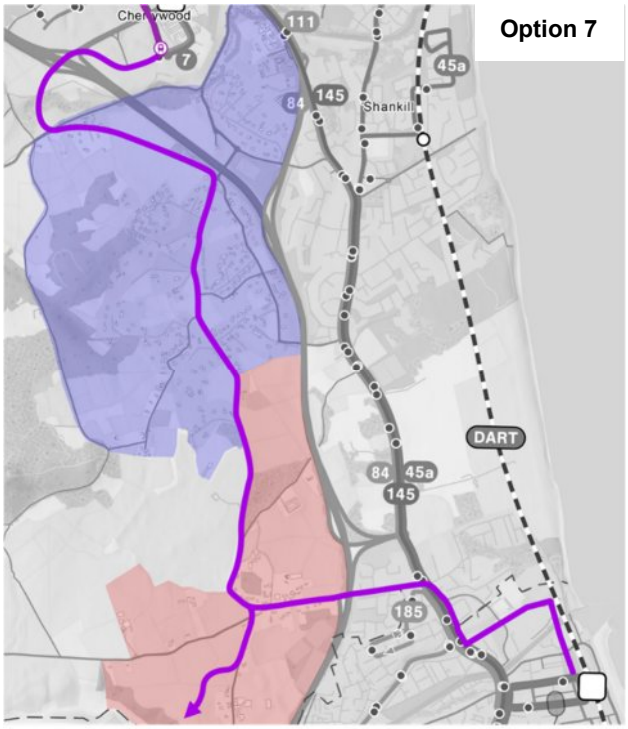


Figure 3-29 Luas Route Option 7

Table 3.13 Luas Route Options Description

Option	Description
LR1	This option shows the current indicative route as shown in the current DLRCC 2022-2028 CDP. From North to South, this route proposes the utilisation of the Cherrywood Viaduct, following the route of the old railway line until it crosses to the eastern side of the M11, running southbound directly parallel along its eastern edge before crossing to the western side of the road immediately north of the M11 junction 5. After this it would run through the Old Connaught lands, connecting to Old Connaught Avenue, before splitting with one spur heading east into Bray, continuing onwards to terminate near Bray Dart Station, and one spur heading west, connecting to Fassaroe via a new bridge. It should be noted that the Fassaroe spur is proposed within the DLRCC 2022/2028 Development Plan but is not proposed as part of the NTA's GDA Transport Strategy 2022-2042
LR2	This option proposes a minor alteration to the indicative route, with the M11 crossing point shifted further north, located instead in the vicinity of the Crinken Lane bridge. This would utilise available land within the strategic land reserve, and possibly minimise ecological impacts.
LR3	This option proposes to a route which never crosses to the eastern side of the M11, instead running directly parallel to it along the western edge.
LR4	This option proposes the construction of a new bridge immediately south of Cherrywood over Brides Glen Road and River, joining the potential development lands before connecting to Mulinastill Road and running south over Stonebridge Road at which point it would run along the western edge of the M50 and M11.
LR5	This option proposes a new link from Cherrywood to Brides Glen Road, either along or beside the Glencarraig Estate Road. The route would then run along Brides Glen Road, under the M50, before connecting south to Rathmichael Road, running along Rathmichael Road until the roundabout at Rathmichael Church, at which point it follows the same route as option 4.
LR6	This option proposes the same connection south of Cherrywood as in Option 5, but after Rathmichael Church, would run south along the entirety of Ferndale Road, continuing on to Old Connaught Avenue, running before connecting to Bray along the same route as other options above.
LR7	This option proposes for the route to immediately turn west after the Brides Glen Stop, connecting to the M50 junction 16, and following a potential new southwestern spur off the junction connecting to Rathmichael Road, at which point it follows the same route as Option 6.

3.1.4.6 Road Objectives/Traffic Management/Active Travel Upgrades Overview

The DLRCC 2022-2028 CDP has set a number of road objectives/traffic management/active travel upgrades in or adjacent to the LAP areas, as shown in Figure 3-30. These objectives include the following:

1. Ballycorus Road
2. M50 Cherrywood Interchange to Rathmichael – new link road*
3. M50 Third Lane (Sandyford Interchange to M11)
4. Cherrywood Road
5. Loughlinstown Roundabout (grade separation)
6. Rathmichael Road
7. Ferndale Road*
8. M50 Western Parallel Road from Old Conna to Cherrywood Environs
9. Link from Ferndale Road to Dublin Road*
10. M11 Upgrade (M50 to Fassaroe).

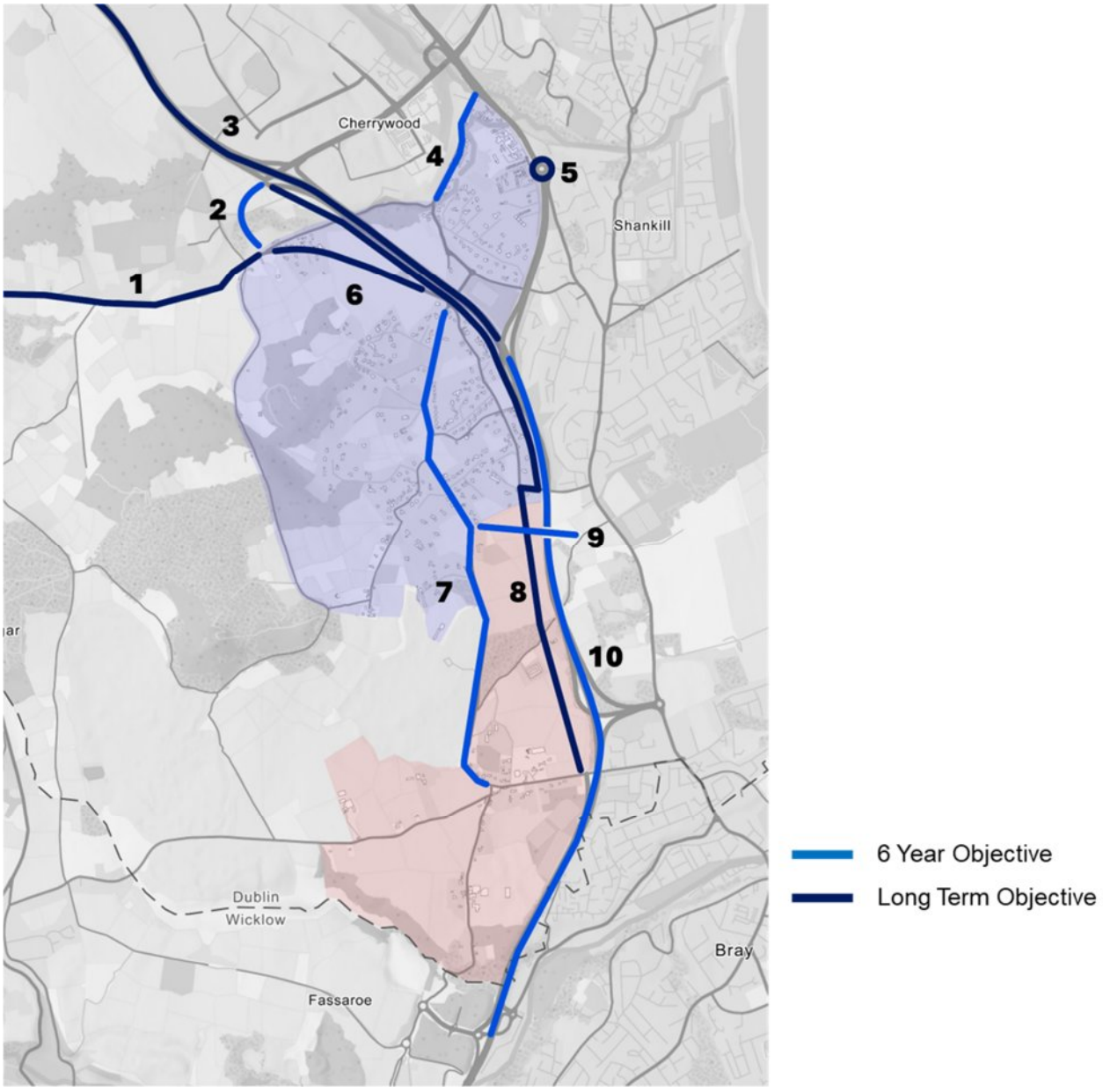


Figure 3-30 DLRCC Development Plan 2022-2028 Roads Objectives in or adjacent to LAP Areas

* The inclusion of these proposals is dependent on further assessment as set out in; the 'Spatial Planning and National Roads Guidelines for Planning Authorities' in particular Section 2.7 and Section 5.8.3 Principles of Road Development, feasibility and environmental assessment of the NTA Transport Strategy for the Greater Dublin Area 2016-2040 and the forthcoming Transport Strategy for the Greater Dublin Area; and demonstration of their compatibility with the strategic function of the national road network as set out in Sections 2.2 of the Bray and Environs Transport Study (2019).

The note above is from the existing dlr County Development Plan 2022-2028. Furthermore, the inclusion of these proposals and any national road crossing, or existing national road crossing alteration is subject to further assessments as set out in TII Publications. Since the adoption of the dlr County Development Plan, a new NTA Transport Strategy for the GDA 2022-2042 has been published, which has superseded the previous strategy. In addition, regard should be given to Section 2.2 and also Sections 2.3.4, 2.3.5 of the Bray and Environs Transport Study (2019).

3.1.4.7 Road Upgrades

Figure 3-31 presents proposed road upgrade options from the DLRCC 2022-2028 CDP described above alongside other roads upgrade options illustrated as "other roads" at Figure 3-31, and as outlined in Table 3.14 below:

Table 3.14 Road Upgrades

Option	Description
RU1	Ballycorus Road
RU2	M50
RU3	Cherrywood Avenue
RU4	Brides Glen Road
RU5	Mullinastill/Stonebridge Road
RU6	Rathmichael Road
RU7	Pucks Castle Lane
RU8	Ballybride Road
RU9	Lordello Road
RU10	Quarry Road
RU11	Ferndale Road
RU12	M11
RU13	Allies River Road
RU14	Ballyman Road
RU15	Thornhill Road
RU16	Old Connaught Road

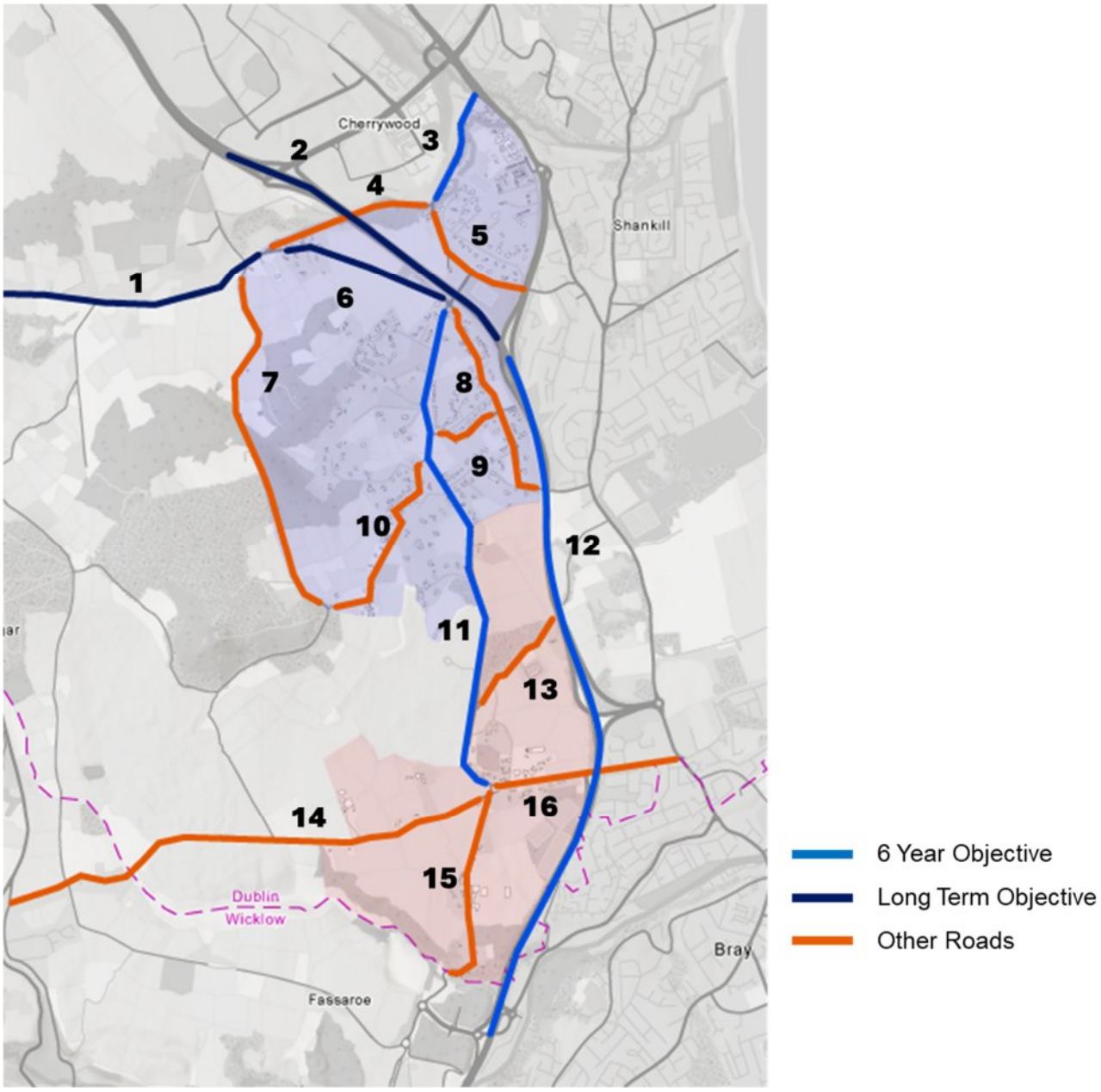


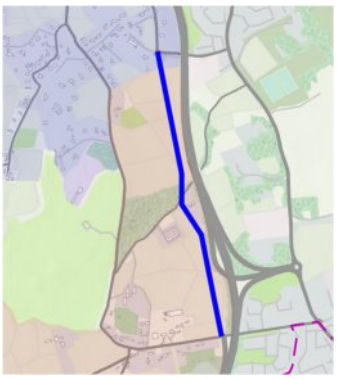
Figure 3-31 Road Upgrade Options

3.1.4.8 Internal Development Road Links

Table 3.15 presents the list of options considered for internal road connections. These options include new links to provide more direct connections, improve circulation, and facilitate development in the study area.

Table 3.15 Internal Development Road Options

Option	Description	Location
Option IL1 Mulinastill Road/Falls Road to Rathmichael Road over M50	This option proposes a new road link across the M50 between Rathmichael Road and Mullinastill Road, providing a more direct connection between potential development lands and the N11. It also provides a connection between Rathmichael and areas to the east of the M50. A new overbridge at this general location over the M50 will have regard to SPNR and comply with TII Publications.	

Option	Description	Location
Option IL2 Rathmichael Road to Pucks Castle Lane	This option proposes a new link road between Puck Castle Lane and Rathmichael Road, which would align with option 1 above. It would allow a more direct east-west connection between the eastern and western side of Rathmichael, and create a more direct connection to the N11 from Pucks Castle Lane.	
Option IL3 Ferndale Road to (Option 4)	This option proposes a new link road between Ferndale Road and the proposed North South Road indicated as Option 4 below. This option would allow for a bus route to run along the northern end of Ferndale Road but divert to the newly proposed road to avoid the more restricted southern end. This would also facilitate potential internal circulation between Ballybride Road and Ferndale Road.	
Option IL4 Ballybride Road / Crinken Lane to Old Connaught Avenue	This option proposes a new road parallel to the M11, connecting Crinken Lane to Old Connaught Avenue along the eastern side of the Old Connaught LAP area. This option would provide an additional north-south link as an alternative to the use of Ferndale Road, which is rural in character and can facilitate minimal widening.	
Option IL5 Ferndale Road to Ballyman Road	This option proposes a connecting road between Ferndale Road and Ballyman Road, this would allow for vehicles to bypass the core Old Connaught village junction.	
Option IL6 Ballyman Road to Thornhill Road	This option proposes a connecting road between Ballyman Road and Thornhill Road, this would allow for vehicles to bypass the core Old Connaught village junction.	
Option IL7 Old Connaught Southern Outer Road	This option proposes a connecting road between Thornhill Road and Old Connaught Avenue replicating the alignment shown for the Luas spur to Fassaroe as shown in the DLRCC 2022-2028 CDP. This would allow for vehicles to bypass the core Old Connaught village area which would facilitate potential active travel improvements, along with acting as an internal development road. Any interaction with areas managed and operated as part of the M11 will require regard to SPNR and co-ordination with TII, including demonstration of compliance with TII Publications as appropriate.	

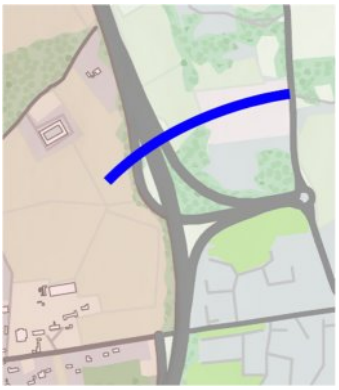
Option	Description	Location
Option IL8 Old Connaught North Outer Road	This option proposes a connecting road between Old Connaught Avenue and Ferndale Road. This would allow for vehicles to bypass the core Old Connaught village area which would facilitate potential active travel improvements, along with acting as an internal development road. Any interaction with areas managed and operated as part of the M11 will require regard to SPNR and co-ordination with TII, including demonstration of compliance with TII Publications as appropriate.	

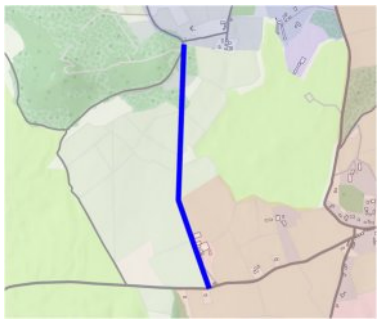
3.1.4.9 Strategic External Road Links

Table 3.16 presents the list of options considered for external road connections. These include the proposal of new road links to improve connections with the surrounding area, providing more direct connection with Cherrywood, Shankill/Woodbrook, as well as improved access to the strategic road network.

Table 3.16 Strategic External Road Options

Option	Description	Location
Option EL1 Lehaunstown Lane	This option proposes a connection between Rathmichael Road and Cherrywood utilising the existing Lehaunstown Lane greenway route. This link would allow for direct access to the Cherrywood from the Rathmichael LAP area. The central and southern part of this option is a public right of way listed in the DLR CDP 2022-2028. Any associated alteration of the Tully Lane Overbridge will have regard to the presence of the M50, the requirements of SPNR and demonstrate compliance with TII Publications.	
Option EL2* M50 Junction 16 - Rathmichael Road Link	This option proposes a connection between Rathmichael Road and M50 Junction 16. This link would allow for direct access to the strategic road network from the Rathmichael LAP area. This link would fulfil a long-term road objective in the DLRCC 2022-2028 CDP.	
Option EL3 Cherrywood Viaduct Link	This option proposes a new road link across the Cherrywood viaduct connecting to Stonebridge Road. This option would better connect the Rathmichael LAP area, Cherrywood and the M50, but would likely inhibit an active travel/public transport link in this location.	

Option	Description	Location
Option EL4 M50 Western Parallel Road	This option proposes a new link road running directly parallel to the M11/M50 along its western edge from Crinken Lane to the M50 Junction 16. This would alleviate potential pressure on Ferndale Road and create a more direct connection between the LAP areas and the M50. Any interaction with areas managed and operated as part of the M11 will require regard to SPNR and co-ordination with TII, including demonstration of compliance with TII Publications as appropriate.	
Option EL5* Ferndale Road to Allies River Road (Option A)	This option proposes a new link road between Ferndale Road and the northern end of Allies River Road. This option would allow for a more direct connection between parts of the Old Connaught LAP area and Shankill/Woodbrook.	
Option EL6* Ferndale Road to Allies River Road (Options B)	This option proposes a new link road between Ferndale Road and the northern end of Allies River Road. This option would allow for a more direct connection between parts of the Old Connaught LAP area and Shankill/Woodbrook.	
Option EL7* Ferndale Road to Dublin Road (Allies River Road Crossing)	This option proposes a new link road between Ferndale Road and Dublin Road, crossing the M11 at the point where Allies River Road is truncated by the M11. This option would allow for a more direct connection between the LAP areas and Shankill/Woodbrook.	
Option EL8 Old Connaught to Dublin Road Link	This option proposes a connection between Old Connaught and Dublin Road to the north of the M11 junction 5. This link would allow for Old Connaught Avenue to be converted to an active travel and Public Transport only, with the proposed link acting as the only vehicular route across the M11 from Old Connaught. This link would not be necessary should the local road extension of M11 Junction 5 be undertaken as part of the M11/N11 Junction 4 to Junction 14 Improvement Scheme.	

Option	Description	Location
Option EL9 M11 Junction 5 Western Arm	This option proposes a new western link onto the M11 at junction 5. This is indicated as part of the M11/N11 Junction 4 to Junction 14 Improvement Scheme, preferred route option published at the end of 2021 and would allow for direct access from the Old Connaught LAP area onto the national road network. The progression of the M11/N11 Junction 4 to Junction 14 Improvement Scheme improvement scheme is subject to funding and priorities as set out in the NDP.	
Option EL10 Ferndale Alternative	This option proposes a connecting road between Thornhill Road and Fassaroe, replicating the proposed public transport connection as outlined in the Bray and Environs Transport Study.	
Option EL11 Quarry Road to Ferndale Road	This option proposes a new road connecting Quarry Road with Ferndale Road. This option provides improved connection between Pucks Castle Lane and Old Connaught.	
Option EL12 Pucks Castle Lane to Ferndale Road	This option proposes a new road connecting Pucks Castle Lane with Ferndale Road. This option provides improved connection between Pucks Castle Lane and Old Connaught.	
Option EL13 Pucks Castle Lane to Ballyman Road	This option proposes a new road connecting Pucks Castle Lane with Ballyman Road. This option provides improved connection between Pucks Castle Lane and Old Connaught.	

* The inclusion of these proposals is dependent on further assessment as set out in; the 'Spatial Planning and National Roads Guidelines for Planning Authorities' in particular Section 2.7 and Section 5.8.3 Principles of Road Development, feasibility and environmental assessment of the NTA Transport Strategy for the Greater Dublin Area 2016-2040 and the forthcoming Transport Strategy for the Greater Dublin Area; and demonstration of their compatibility with the strategic function of the national road network as set out in Sections 2.2 of the Bray and Environs Transport Study (2019).

The note above is from the existing dlr County Development Plan 2022-2028. Furthermore, the inclusion of these proposals and any national road crossing, or existing national road crossing alteration is subject to further assessments as set out in TII Publications. Since the adoption of the dlr County Development Plan, a new NTA Transport Strategy for the GDA 2022-2042 has been published, which has superseded the previous strategy. In addition, regard should be given to Section 2.2 and Sections 2.3.4, 2.3.5 of the Bray and Environs Transport Study (2019).

3.1.5 Long List Screening Results

To narrow down the 'Long List' options, the transport options have been passed through an initial screening process to remove options which are not deemed to be necessary in order to deliver the required number of units in the LAP areas. This screening process is based on an initial assessment, along with consultation with relevant stakeholders such as the NTA and TII.

The options have been assessed on the proposed criteria, and a qualitative determination will be made as to whether an option is not considered necessary or is progressed to further consideration (the option is given a 'Pass' or a 'Conditional Pass' designation). It is important to note that this is not a purely numerical exercise, in which a 'score' is assigned to each colour and any option above a certain score is given a pass. Instead, a judgement is made and explained for each designation, based on the importance of the criterion and the significance of its impact.

Any 'passing' options will become constants, and will feature in all transport packages, whereas any 'conditional passing' options will feature in some, but not all transport packages. The initial screening generally considers the merits of the options individually, while the packaging of options facilitates the assessment of the combined benefits or disbenefits of a group of measures, allowing for certain options, which depend upon the implementation of other options, to be considered.

3.1.5.1 Active Travel Provision

The screening of the long list of active travel options was carried out on the basis of nine criteria which are described in Table 3.17. A catchment analysis for the proposed options is included in Table 3.18.

Table 3.17 Active Travel Options Assessment Considerations

Criteria	Assessment Considerations
Sustainable Accessibility to Key Facilities	For active travel provision, this criterion considers walking and cycling catchment analysis, determining whether the option increases the catchments, and the amount of key facilities within the increased catchment when compared to the existing catchment.
Likely Environmental Impact	This criterion considers the direct environmental impact of the proposed infrastructure. Impact on rivers, trees, and designated areas such as SAC's are considered. Broader environmental considerations such as emissions reductions will be considered as part of the MCA of transport packages, rather than in this initial screening of options.
Alignment with National Policy/Plans	For a comparative assessment of active travel options, this criterion is largely considered equal across all options, with the exception of options which impact on the national road network.
Alignment with Regional Policy/Plans	This criterion primarily considers the implementation of the GDA Transport Strategy, in particular the GDA cycle network plan and the Bray and Environs Transport Study (2021).
Alignment with Local Policy/Plans	For active travel provision, this criterion primarily focuses on the proposals delivery of active travel plans, or alignment with active travel policy. However, impact on other areas, such as national roads or spatial planning policy will be considered where appropriate.
Alignment with other potential infrastructure	For active travel provision, this criterion considers the potential alignment with other potential infrastructure where the active travel provision could be provided alongside road proposals for example, or whether the construction of an active travel link may allow for the inclusion of an important utilities link along with it.

Criteria	Assessment Considerations
Potential cost	This criterion involves an estimation of the potential cost of delivery of the proposal which includes motorway orders and compulsory purchase orders (CPOs). Where larger scale infrastructure would be required such as new bridges, the proposal may score poorly, whereas a new link along flat open land may score highly for this criterion.
Ease of implementation	This criterion considers elements beyond cost, which may make the proposal difficult to deliver, such as topography, existing buildings, or procedural difficulties.
Safety Impact	This criterion considers the safety implications of the proposed measure, whether it may decrease safety due to a lack of connection to existing safe infrastructure, or potentially increase safety through the upgrading of existing unsafe infrastructure.

Rathmichael to Cherrywood

The results of the assessment of the options for active travel connections between Rathmichael and Cherrywood are presented in Table 3.18, where green indicates high score and red indicates low score for a criterion as outlined in the proposed methodology and Table 3.1 which outlines the screening criteria. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.18 Rathmichael to Cherrywood Active Travel Options Assessment

Criteria	RC1	RC2	RC3	RC4	RC5	RC6	RC7
Sustainable Accessibility to Key Facilities							
Likely Environmental Impact							
Alignment with National Policy/Plans							
Alignment with Regional Policy/Plans							
Alignment with Local Policy/Plans							
Alignment with other potential infrastructure							
Potential cost							
Ease of implementation							
Safety Impact							

Figure 3-32 provides a graphical representation of the overall score attributed to each option, illustrating in red the options that will not go through further consideration. Based on the results of the long list screening, options RC2 and RC5 were not considered primarily due to poor scores on environmental impact and ease of implementation, while not scoring positively on many other criteria.

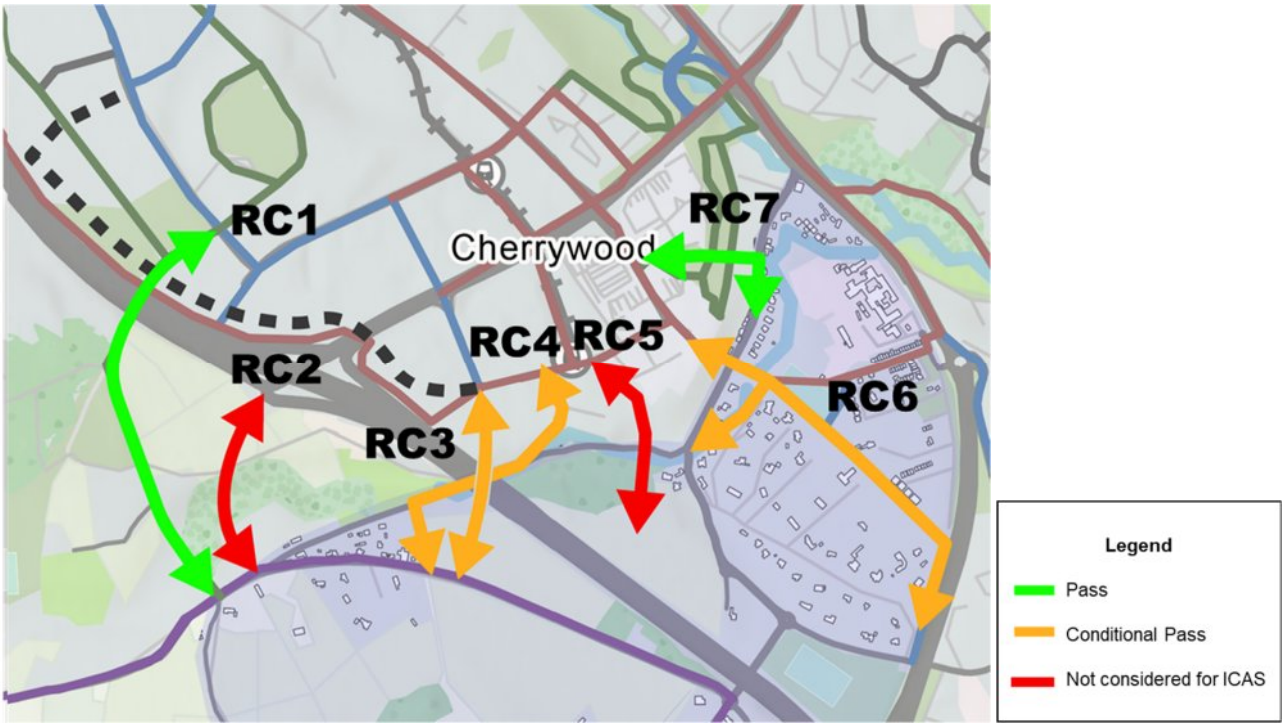


Figure 3-32 Rathmichael to Cherrywood Active Travel Options Assessment

Rathmichael to Shankill / Woodbrook

The results of the assessment of the options for active travel connections between Rathmichael and Shankill / Woodbrook are presented in Table 3.19. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.19 Rathmichael to Shankill / Woodbrook Active Travel Options Assessment

Criteria	RS1	RS2	RS3	RS4	RS5
Sustainable Accessibility to Key Facilities					
Likely Environmental Impact					
Alignment with National Policy/Plans					
Alignment with Regional Policy/Plans					
Alignment with Local Policy/Plans					
Alignment with other potential infrastructure					
Potential cost					
Ease of implementation					
Safety Impact					

Figure 3-33 provides a graphical representation of the overall score attributed to each option. Option RS2 is removed from the list of options considered from potential cost, implementation and safety impacts.

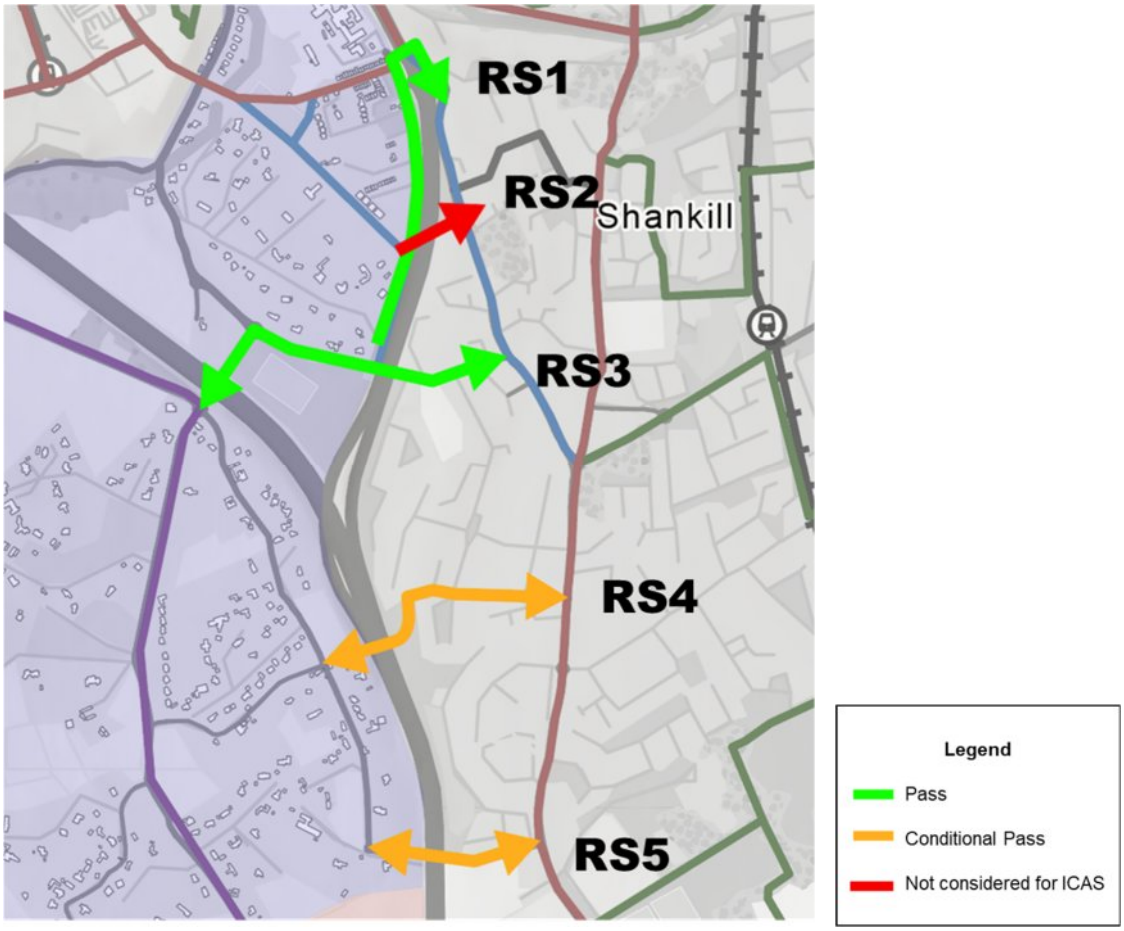


Figure 3-33 Rathmichael to Shankill/Woodbrook Active Travel Options Assessment

Old Connaught to Woodbrook

Table 3.20 summarises the assessment results for the active travel options considered between Old Connaught and Woodbrook. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.20 Old Connaught to Woodbrook Active Travel Options Assessment

Criteria	OW1	OW2	OW3	OW4	OW5	OW6
Sustainable Accessibility to Key Facilities						
Likely Environmental Impact						
Alignment with National Policy/Plans						
Alignment with Regional Policy/Plans						
Alignment with Local Policy/Plans						
Alignment with other potential infrastructure						
Potential cost						
Ease of implementation						
Safety Impact						

Figure 3-34 provides a graphical representation of the overall score attributed to each option. The results of the screening showed that Option OW4 is not considered, primarily due to the difficulty of providing active travel infrastructure through the motorway interchange.

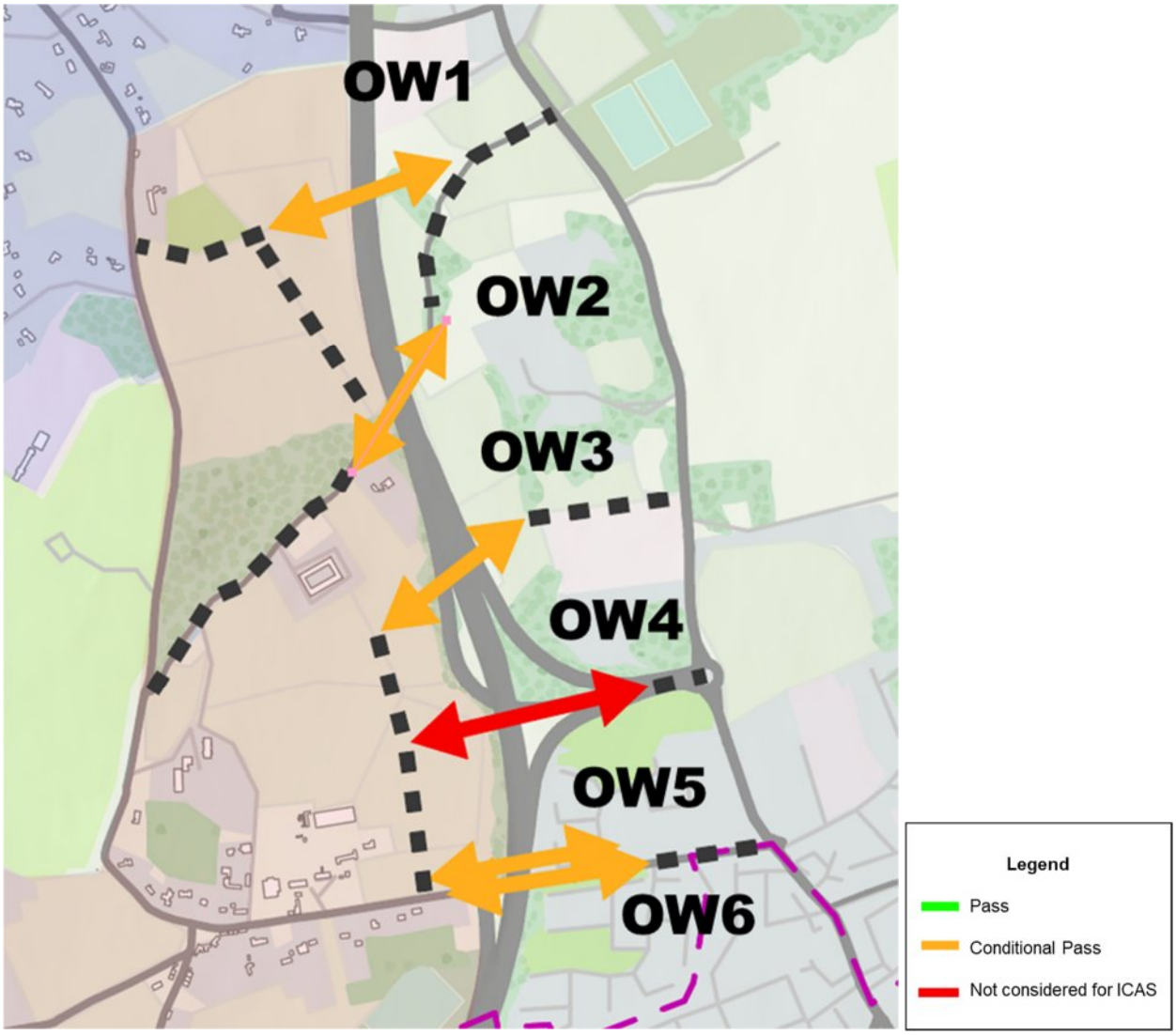


Figure 3-34 Old Connaught to Woodbrook Active Travel Options Assessment

Old Connaught to Bray

Table 3.21 summarises the assessment results for the active travel options considered between Old Connaught and Bray. Green indicates high score while red indicates low score for a criterion. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.21 Old Connaught to Bray Active Travel Options Assessment

Criteria	OB1	OB2	OB3	OB4	OB5	OB6
Sustainable Accessibility to Key Facilities						
Likely Environmental Impact						
Alignment with National Policy/Plans						
Alignment with Regional Policy/Plans						
Alignment with Local Policy/Plans						
Alignment with other potential infrastructure						
Potential cost						
Ease of implementation						
Safety Impact						

Figure 3-35 provides a graphical representation of the overall score attributed to each option. OB4 and OB6 are not considered further in this assessment, due to their likely environmental impacts, potential cost and does not align well with policies/plans.

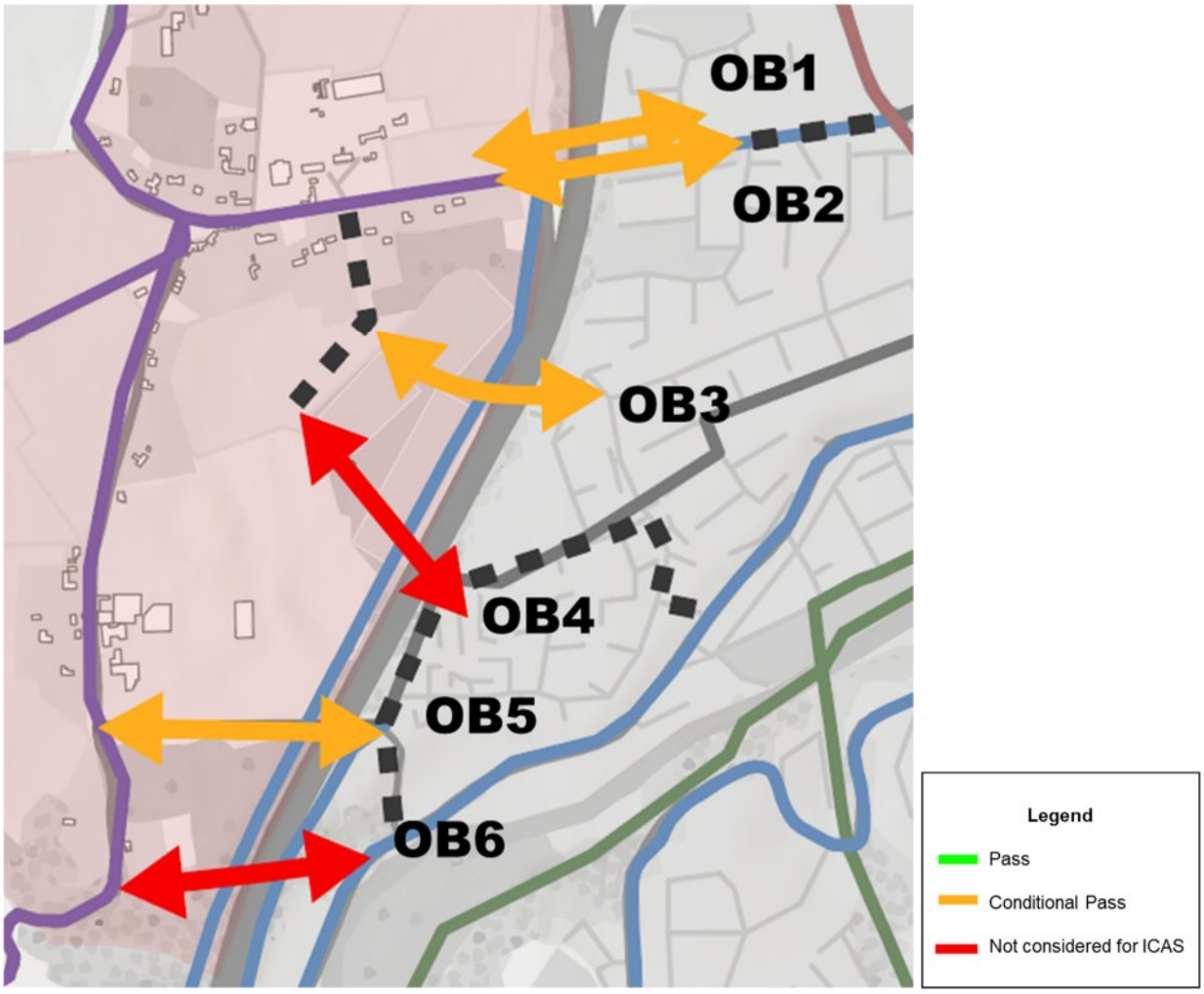


Figure 3-35 Old Connaught to Bray Active Travel Options Assessment

Old Connaught to Fassaroe

The results of the assessment of the options considered for active travel connections between Old Connaught and Fassaroe are presented in Table 3.22. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.22 Old Connaught to Fassaroe Active Travel Options Assessment

Criteria	OF1	OF2	OF3	OF4
Sustainable Accessibility to Key Facilities				
Likely Environmental Impact				
Alignment with National Policy/Plans				
Alignment with Regional Policy/Plans				
Alignment with Local Policy/Plans				
Alignment with other potential infrastructure				
Potential cost				
Ease of implementation				
Safety Impact				

Figure 3-36 provides a graphical representation of the overall score attributed to each option. Options OF2 and OF4 are not considered further in this assessment of the list of options, particularly the latter having likely environmental impacts and cost implications.

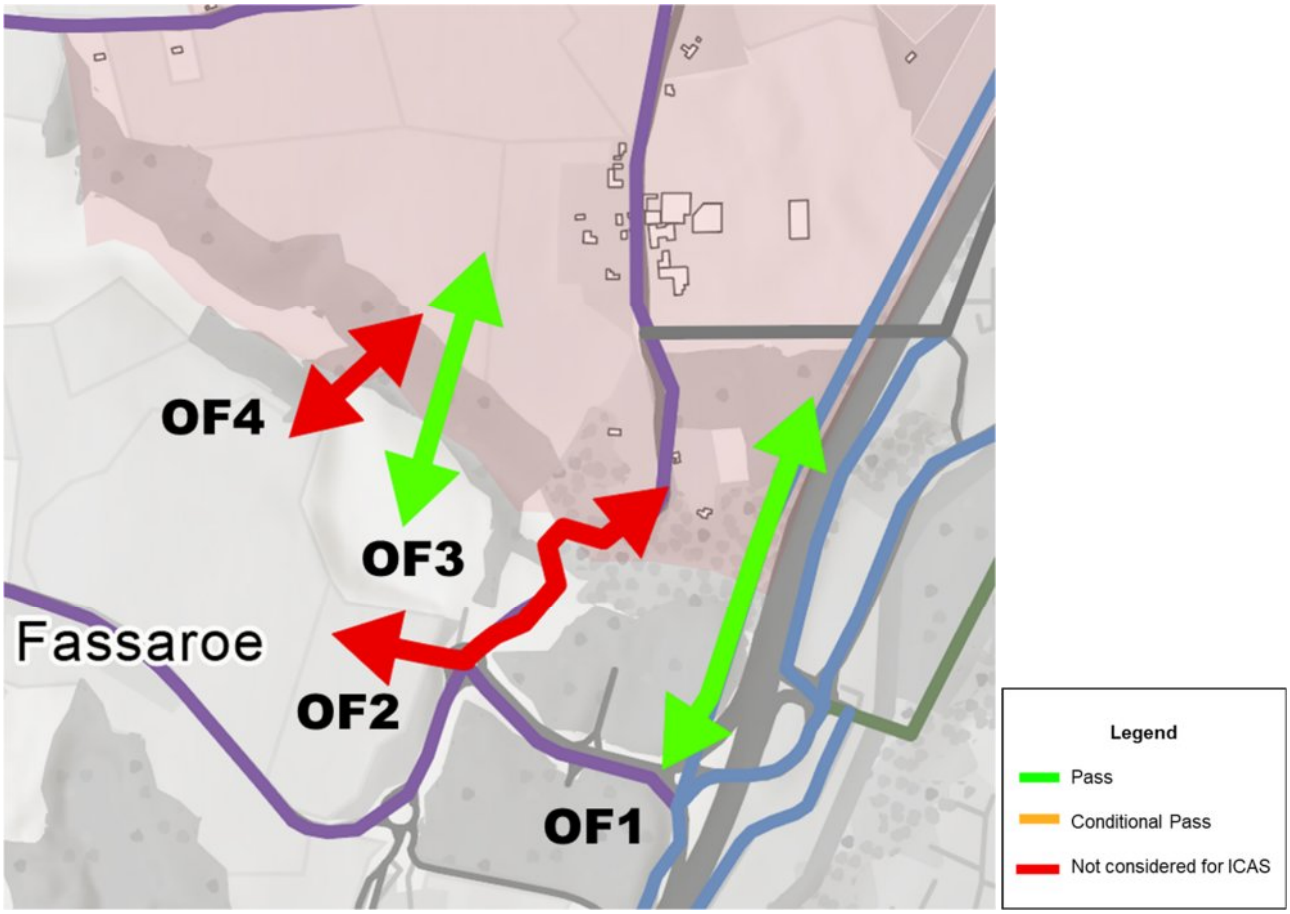


Figure 3-36 Old Connaught to Fassaroe Active Travel Options Assessment

Rathmichael to Old Connaught

Table 3.23 summarises the results of the assessment for active travel link options between Rathmichael and Old Connaught. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.23 Rathmichael to Old Connaught Active Travel Options Assessment

Criteria	RO1	RO2	RO3	RO4
Sustainable Accessibility to Key Facilities				
Likely Environmental Impact				
Alignment with National Policy/Plans				
Alignment with Regional Policy/Plans				
Alignment with Local Policy/Plans				
Alignment with other potential infrastructure				
Potential cost				
Ease of implementation				
Safety Impact				

As shown in Figure 3-37, option RO1 is not considered necessary from the list of options based on the assessment results. This is due to being on the same location on Ferndale Road, which would require more works for road reallocation.

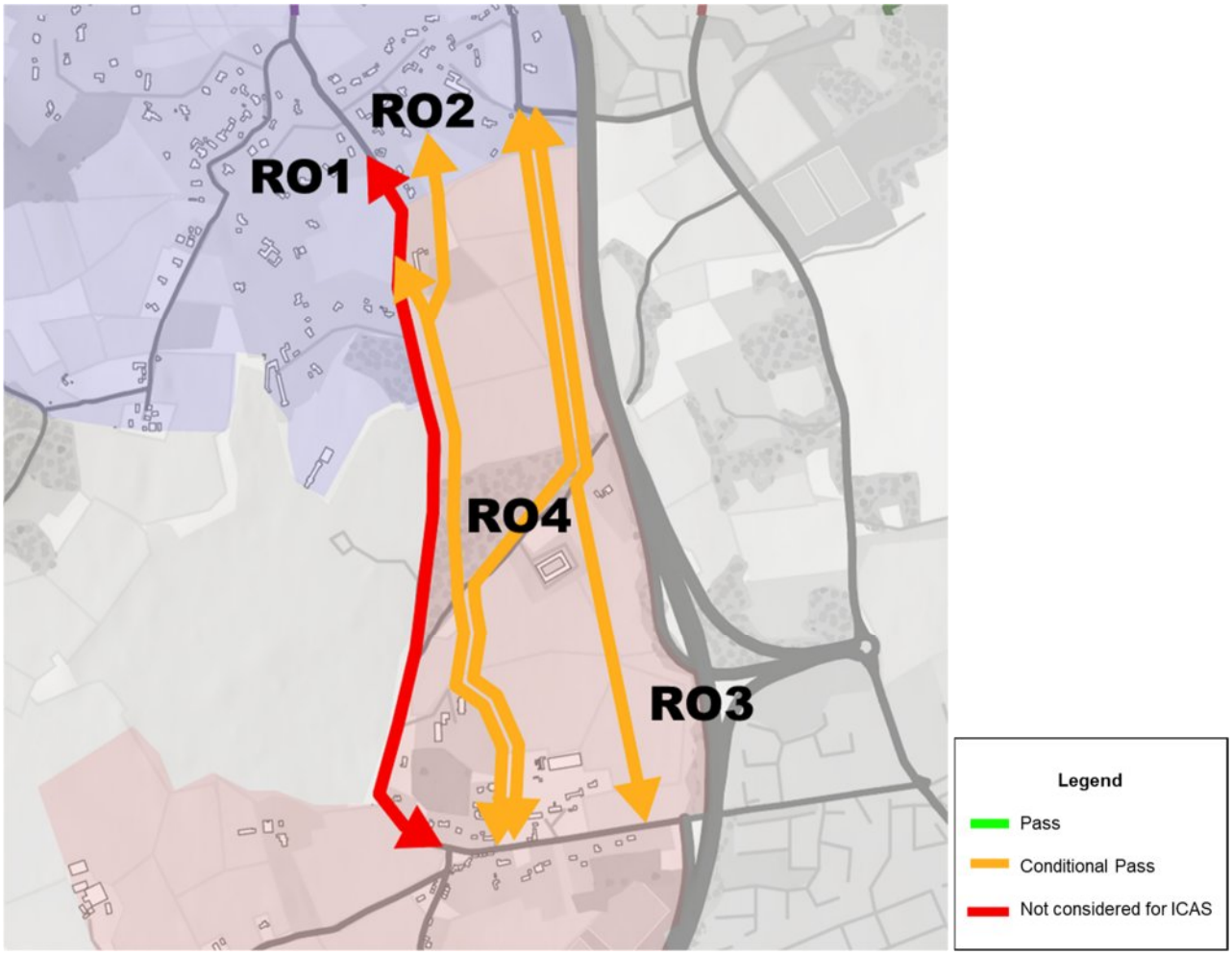


Figure 3-37 Rathmichael to Old Connaught Active Travel Options Assessment

3.1.5.2 Cherrywood to Bray Cycle Route

The screening of the long list of options considered for the Cherrywood to Bray cycle route was carried out on the basis of the considerations described in Table 3.24.

Table 3.24 Cherrywood to Bray Cycle Route Options Assessment Considerations

Criteria	Assessment Considerations
Sustainable Accessibility to Key Facilities	For the Cherrywood to Bray Cycle Route, this criterion considers walking and cycling catchment analysis, determining whether the option increases the catchments, and the number of key facilities within the increased catchment when compared to the existing catchment.
Likely Environmental Impact	This criterion considers the direct environmental impact of the proposed infrastructure. Impact on rivers, trees, and designated areas such as SACs are considered. Broader environmental considerations such as emissions reductions will be considered as part of the MCA of transport packages, rather than in this initial screening of options.
Alignment with National Policy/Plans	For a comparative assessment of active travel options, this criterion is largely considered equal across all options, with the exception of options which impact on the national road network.
Alignment with Regional Policy/Plans	This criterion primarily considers the implementation of the GDA Transport Strategy, in particular the GDA cycle network plan and the Bray and Environs Transport Study (2021).
Alignment with Local Policy/Plans	For active travel provision, this criterion primarily focuses on the proposals delivery of active travel plans, or alignment with active travel policy. However, impact on other areas, such as national roads or spatial planning policy will be considered where appropriate.
Alignment with other potential infrastructure	For active travel provision, this criterion considers the potential alignment with other potential infrastructure where the active travel provision could be provided alongside road proposals for example, or whether the construction of an active travel link may allow for the inclusion of an important utilities link along with it.
Potential cost	This criterion involves an estimation of the potential cost of delivery of the proposal.

Criteria	Assessment Considerations
	Where larger scale infrastructure would be required such as new bridges, the proposal may score poorly, whereas a new link along flat open land may score highly for this criterion.
Ease of implementation	This criterion considers elements beyond cost, which may make the proposal difficult to deliver, such as topography, existing buildings, or procedural difficulties.
Safety Impact	This criterion considers the safety implications of the proposed measure, whether it may decrease safety due to a lack of connection to existing safe infrastructure, or potentially increase safety through the upgrading of existing unsafe infrastructure.

Table 3.25 summarises the results of the assessment of options under each criterion. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.25 Cherrywood to Bray Cycle Route Options Assessment

Criteria	GR1A	GR2A	GR3A	GR4A	GR1B	GR2B	GR3B	GR4B	GR1C	GR2C	GR3C	GR4C
Improves Accessibility to Key Facilities												
Likely Environmental Impact												
Alignment with National Policy/Plans												
Alignment with Regional Policy/Plans												
Alignment with Local Policy/Plans												
Alignment with other potential infrastructure												
Potential cost and ease of implementation												
Ease of implementation												
Safety Impact												

Figure 3-38 shows the overall assessment results, based on which Option 1 is not considered necessary and will not go through further consideration. This is due to the proposed route which would run directly down Ferndale Road, and along Old Connaught Avenue before reaching Bray. Therefore, it would require the provision of cycling infrastructure along Ferndale Road in the form of road widening, or removal of a traffic lane making the road one way for vehicles. Option A is also discounted due to a lack of improvement of accessibility to key facilities, and lack of alignment with other potential infrastructure.

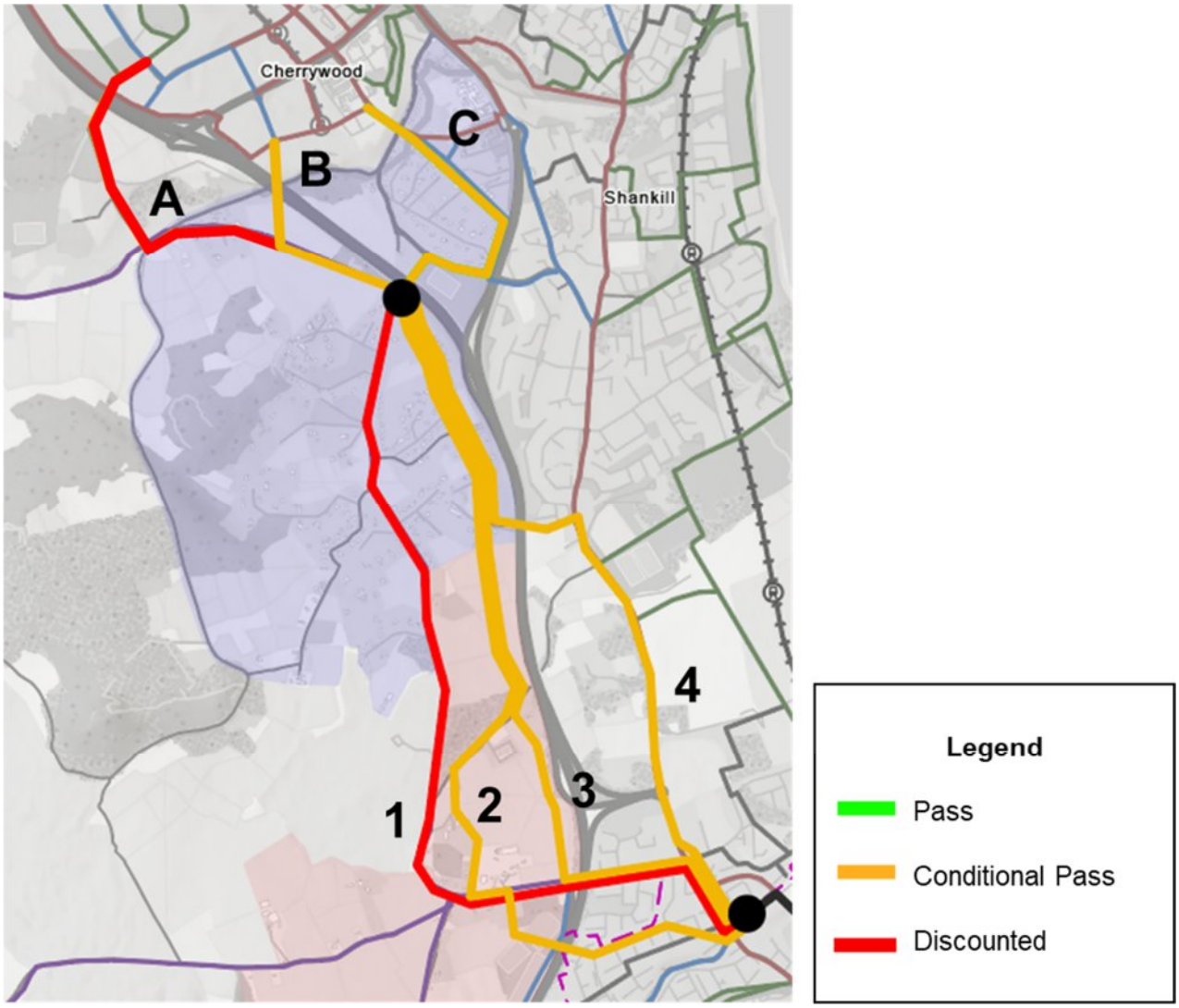


Figure 3-38 Cherrywood to Bray Cycle Route Options Assessment

3.1.5.3 Bus Provision

The screening of the long list of options considered for bus provision in the LAP area was carried out on the basis of the considerations described in Table 3.26. A catchment analysis for the proposed options is included in Table 3.27.

Table 3.26 Bus Provision Options Assessment Considerations

Criteria	Assessment Considerations
Sustainable Accessibility to Key Facilities	For public transport provision, this criterion considers walking catchment analysis from the proposed route, along with the expected future population within these catchments.
Likely Environmental Impact	This criterion considers the direct environmental impact of the proposed infrastructure. Impact on rivers, trees, and designated areas such as SAC's are considered. Broader environmental considerations such as emissions reductions will be considered as part of the MCA of transport packages, rather than in this initial screening of options.
Alignment with National Policy/Plans	For a comparative assessment of Bus Routes, this criterion is largely considered equal across all options, with the exception of options which impact on the national road network.
Alignment with Regional Policy/Plans	This criterion primarily considers the implementation of the GDA Transport Strategy, in particular the GDA cycle network plan and the Bray and Environs Transport Study (2021).
Alignment with Local Policy/Plans	For a comparative assessment of Bus Routes, this criterion is largely considered equal across all options.

Criteria	Assessment Considerations
Alignment with other potential infrastructure	For public transport provision, this criterion considers the potential alignment with other potential infrastructure where the public transport route could make use of road proposals for example, or whether the construction of the public transport link would enable proposed active travel infrastructure to be delivered alongside it.
Potential cost	This criterion involves an estimation of the potential cost of delivery of the proposal. Where larger scale infrastructure would be required such as new bridges, the proposal may score poorly, whereas a new link along flat open land may score highly for this criterion.
Ease of implementation	This criterion considers elements beyond cost, which may make the proposal difficult to deliver, such as programme implications for implementation with respect to the life of the LAP, topography, existing buildings, or procedural difficulties.
Safety Impact	This criterion considers the safety implications of the proposed measure, whether it may decrease safety due to a lack of connection to existing safe infrastructure, or potentially increase safety through the upgrading of existing unsafe infrastructure.

Old Connaught Route Corridors

As shown in section 3.1.4.4, the long list of options considered for bus provision in the Old Connaught LAP area included seven alternatives, with the first one proposing no additional routes passing through the LAP lands, and the other six proposing alternatives for the routing of a potential bus route serving the Old Connaught LAP area.

Table 3.27 summarises the results of the assessment of options under each criterion. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.27 Old Connaught Bus Routes Options Assessment

Criteria	BO1	BO2	BO3	BO4	BO5	BO6	BO7
Sustainable Accessibility to Key Facilities							
Likely Environmental Impact							
Alignment with National Policy/Plans							
Alignment with Regional Policy/Plans							
Alignment with Local Policy/Plans							
Alignment with other potential infrastructure							
Potential cost							
Ease of implementation							
Safety Impact							

Figure 3-39 shows the overall assessment results, based on which certain options were not considered necessary and will not go through further consideration. As a result, BO3 is not considered necessary as the proposed route would require a potential additional crossing over the M11 at Allies River Road that would have potential cost and implementation impacts.

While BO2, BO4, and BO6 score relatively badly, the provision of a busway to Fassaroe is included as an objective included in both the 2019 and 2021 Bray and Environs Transport Studies, and so these options are not discounted, and are brought forward as a ‘Conditional Pass’.

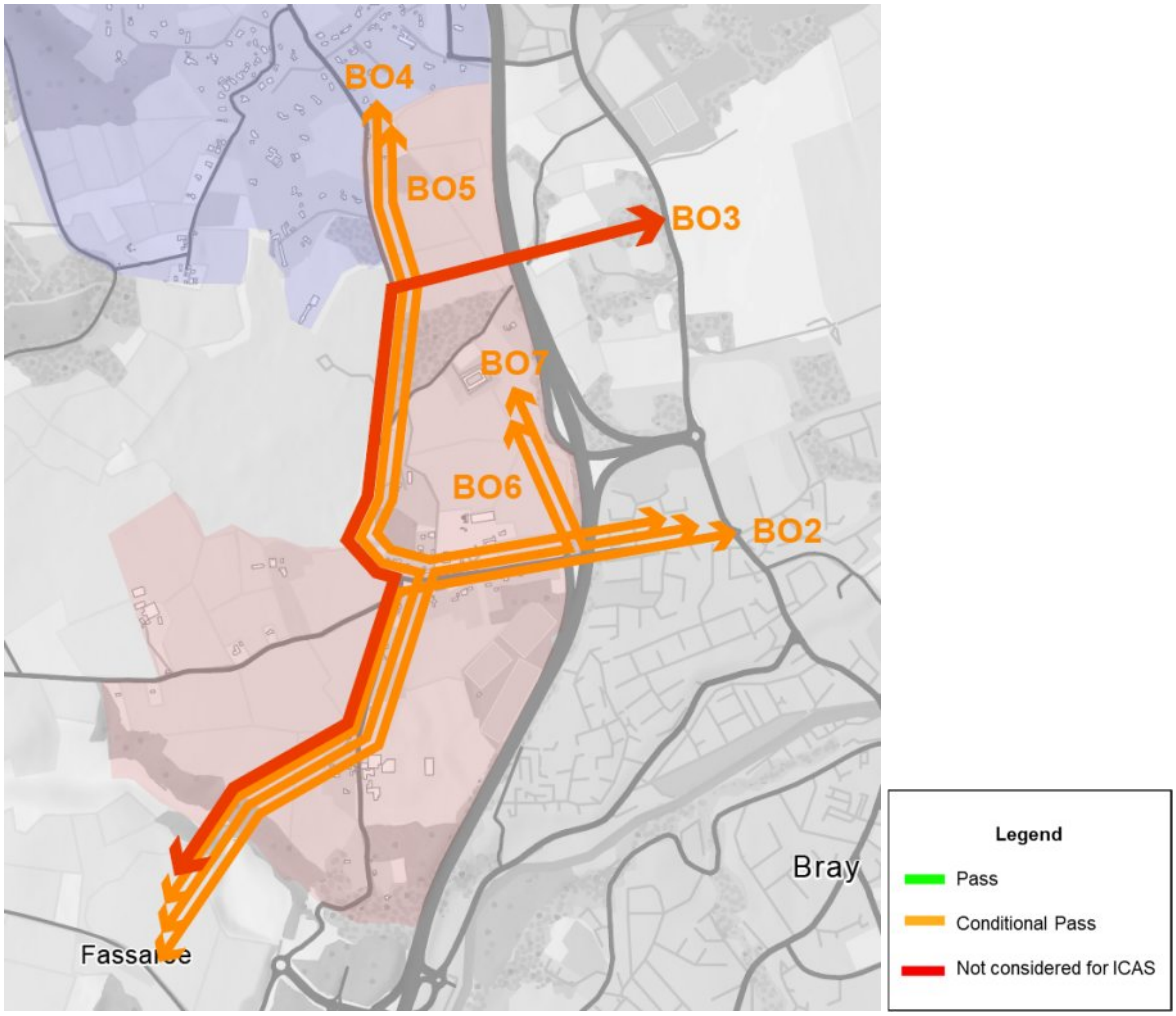


Figure 3-39 Old Connaught Bus Route Options Assessment

Rathmichael Route Corridors

The long list of options considered for bus provision in the Rathmichael LAP area included nine alternatives, with the first one proposing no additional routes passing through the LAP lands, and the other eight proposing alternatives for the routing of a potential bus route serving the LAP area.

As described earlier, all the proposed routes pass from a nodal point, south of which they are divided in two alternatives, labelled as A and B. For the purpose of the screening of the options considered for bus provision at Rathmichael, routes have been labelled using the prefix "BR" followed by the combination of the number and letter representing the two sections of the route. For example, option BR2A represents the route consisting of sections 2 and A, as per Figure 3-25 (refer to section 3.1.4.4).Table 3.28 summarises the results of the assessment of options under each criterion. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.28 Rathmichael Bus Routes Options Assessment

Criteria	BR1	BR2A	BR2B	BR3A	BR3B	BR4A	BR4B	BR5A	BR5B
Sustainable Accessibility to Key Facilities									
Likely Environmental Impact									
Alignment with National Policy/Plans									
Alignment with Regional Policy/Plans									
Alignment with Local Policy/Plans									

Criteria	BR1	BR2A	BR2B	BR3A	BR3B	BR4A	BR4B	BR5A	BR5B
Alignment with other potential infrastructure									
Potential cost									
Ease of implementation									
Safety Impact									

Figure 3-40 shows the overall assessment results, based on which certain options were not considered necessary and will not go through further consideration. As a result, BR2A, BR2B, BR5A and BR5B options were not considered as part of the ICAS process. Although BR2A and BR2B scored highly due to their accessibility to the Luas station in Brides Glen, it would have potential high cost and implementation impacts as it would require a connection to the M50 junction. Should this connection be deemed to be feasible in the future, this route option should be reconsidered. BR5A and BR5B are not considered necessary as the route to Stonebridge Road would not provide direct access to other key facilities.

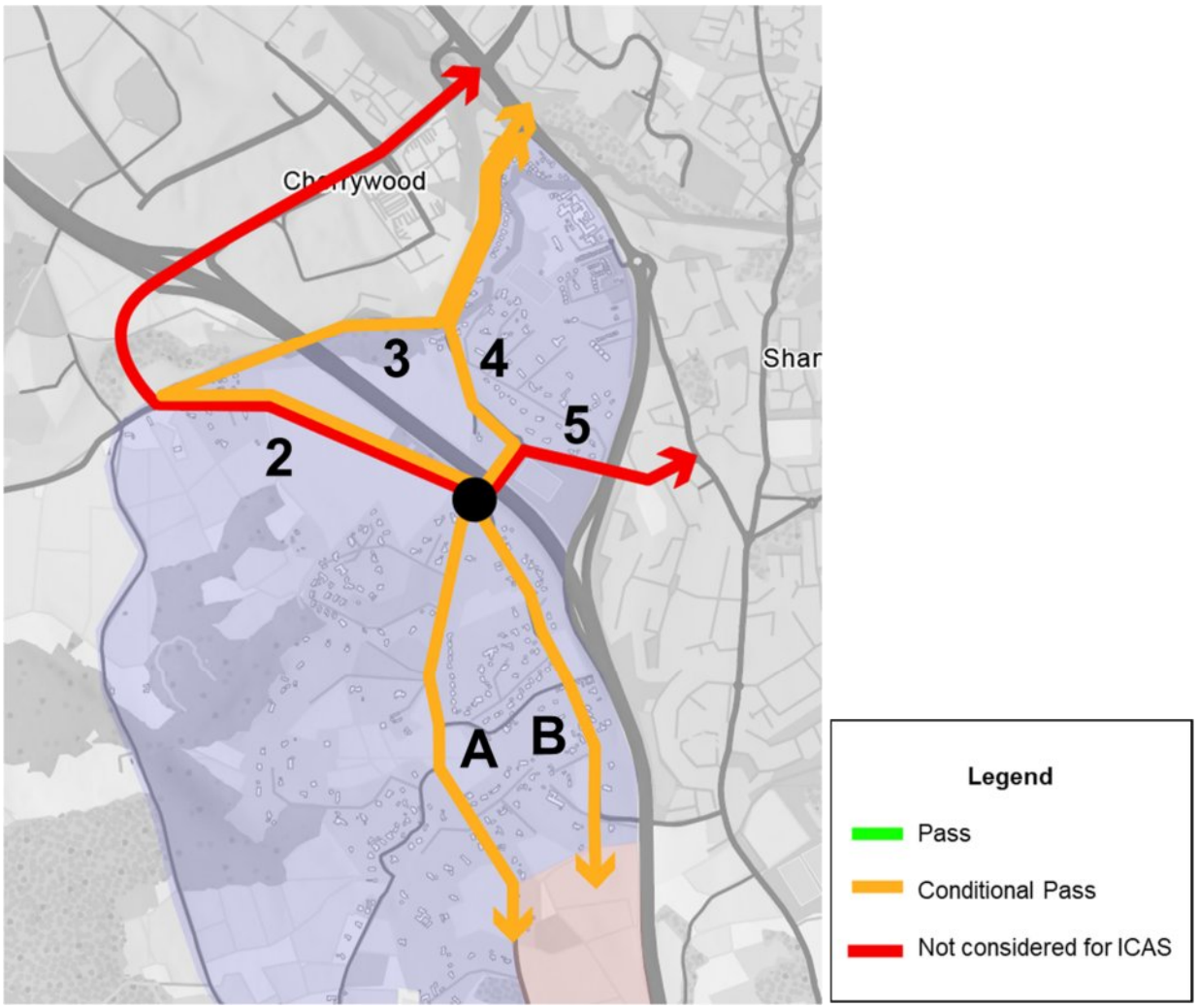


Figure 3-40 Rathmichael Bus Route Options Assessment

3.1.5.4 Luas Provision

The screening of the long list of options considered for Luas provision in the LAP area was carried out on the basis of the considerations described in Table 3.29.

Table 3.29 Luas Provision Options Assessment Considerations

Criteria	Assessment Considerations
Sustainable Accessibility to Key Facilities	For public transport provision, this criterion considers walking catchment analysis from the proposed route, along with the expected future population within these catchments.
Likely Environmental Impact	This criterion considers the direct environmental impact of the proposed infrastructure. Impact on rivers, trees, and designated areas such as SAC's are considered. Broader environmental considerations such as emissions reductions will be considered as part of the MCA of transport packages, rather than in this initial screening of options.
Alignment with National Policy/Plans	For a comparative assessment of Luas route options, this criterion is largely considered equal across all options, with the exception of options which impact on the national road network.
Alignment with Regional Policy/Plans	This criterion primarily considers the implementation of the GDA Transport Strategy, in particular the GDA cycle network plan and the Bray and Environs Transport Study (2021).
Alignment with Local Policy/Plans	For a comparative assessment of Luas route options, this criterion is largely considered equal across all options.
Alignment with other potential infrastructure	For public transport provision, this criterion considers the potential alignment with other potential infrastructure where the public transport route could make use of road proposals for example, or whether the construction of the public transport link would enable proposed active travel infrastructure to be delivered alongside it.
Potential cost	This criterion involves an estimation of the potential cost of delivery of the proposal. Where larger scale infrastructure would be required such as new bridges, the proposal may score poorly, whereas a new link along flat open land may score highly for this criterion.
Ease of implementation	This criterion considers elements beyond cost, which may make the proposal difficult to deliver, such as programme implications for implementation with respect to the life of the LAP, topography, existing buildings, or procedural difficulties.
Safety Impact	This criterion considers the safety implications of the proposed measure, whether it may decrease safety due to a lack of connection to existing safe infrastructure, or potentially increase safety through the upgrading of existing unsafe infrastructure.

Table 3.30 summarises the results of the assessment of options under each criterion. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.30 Luas Routes Options Assessment

Criteria	LR1	LR2	LR3	LR4	LR5	LR6	LR7
Sustainable Accessibility to Key Facilities							
Likely Environmental Impact							
Alignment with National Policy/Plans							
Alignment with Regional Policy/Plans							
Alignment with Local Policy/Plans							
Alignment with other potential infrastructure							
Potential cost							
Ease of implementation							
Safety Impact							

Figure 3-41 shows the overall assessment results of the Luas routes options established. As a result of the assessment above, LR6 and LR7 are not considered necessary, particularly due to the issues both alignments would encounter during implementation, as well as higher costs.

It should be noted that this section only provides screening for route options for the extension of the Luas through the LAP areas. These routes represent a combination of different route options, some of which were considered previously by the NTA, and some are variations which have been developed as part of the options development process as seen above in Section 3.1.4.5.

The GDA Transport Strategy 2022-2042 states that the alignment and the locations to be served between Bride's Glen and Bray have yet to be determined and will be subject to detailed design and planning work.

It should be noted that the Luas spur towards Fassaroe is indicated in the DLRCC 2022-2028 County Development Plan, but it is not indicated as part of the GDA Transport Strategy 2022-2042.

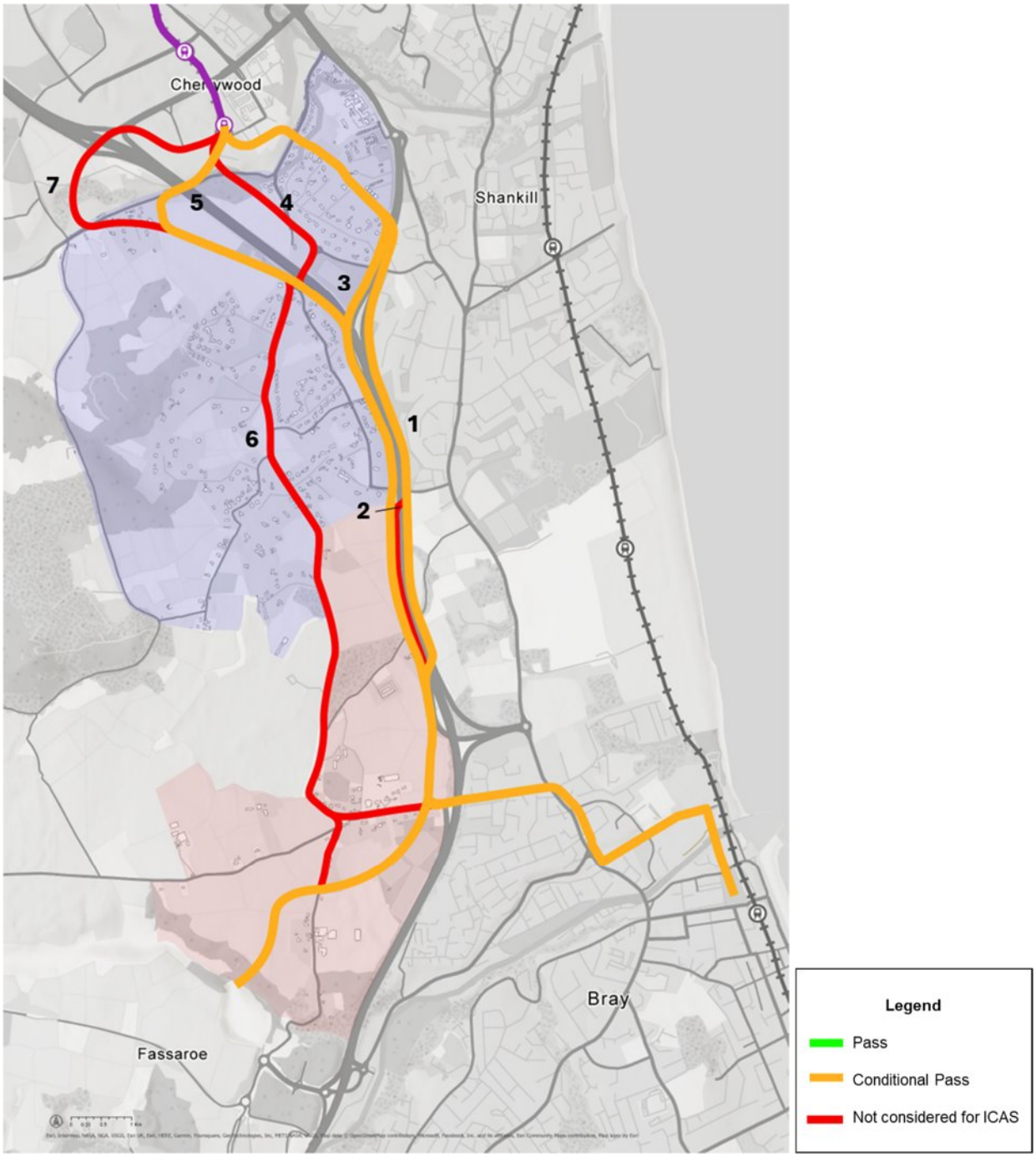


Figure 3-41 Luas Route Options Assessment

3.1.5.5 Road Upgrades

The screening of the long list of options considered for road upgrades in the study area was undertaken on the basis of the considerations described in Table 3.31.

Table 3.31 Road Upgrade Options Assessment Considerations

Criteria	Assessment Considerations
Sustainable Accessibility to Key Facilities	For road-based measures, this criterion considers the potential increase in accessibility for sustainable modes that the upgrade or link would deliver, as opposed to any increase in accessibility for cars.
Likely Environmental Impact	This criterion considers the direct environmental impact of the proposed infrastructure. Impact on rivers, trees, and designated areas such as SAC's are considered. Broader environmental considerations such as emissions reductions will be considered as part of the MCA of transport packages, rather than in this initial screening of options.
Alignment with National Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with national roads policy and plans, including the NDP, NIFTI, and the SPNR guidelines.
Alignment with Regional Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with regional roads policy and plans, including RSES and the GDA Transport Strategy.
Alignment with Local Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with the DLRCC Development Plan road objectives.
Alignment with other potential infrastructure	For road-based measures, this criterion considers the potential alignment with other potential infrastructure where road upgrades or new links could allow for the provision of a public transport route or active travel infrastructure for example,
Potential cost	This criterion involves an estimation of the potential cost of delivery of the proposal. Where larger scale infrastructure would be required such as new bridges, the proposal may score poorly, whereas a new link along flat open land may score highly for this criterion.
Ease of implementation	This criterion considers elements beyond cost, which may make the proposal difficult to deliver, such as delivery timeframes with respect to lifetime of the LAP, topography, existing buildings, or procedural difficulties.
Safety Impact	This criterion considers the safety implications of the proposed measure, whether it may decrease safety due to a lack of connection to existing safe infrastructure, or potentially increase safety through the upgrading of existing unsafe infrastructure.

Table 3.32 summarises the results of the assessment of options under each criterion. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.32 Road Upgrade Options Assessment

Criteria	RU1	RU2	RU3	RU4	RU5	RU6	RU7	RU8
Sustainable Accessibility to Key Facilities								
Likely Environmental Impact								
Alignment with National Policy/Plans								
Alignment with Regional Policy/Plans								
Alignment with Local Policy/Plans								
Alignment with other potential infrastructure								
Potential cost								
Ease of implementation								
Safety Impact								

Criteria	RU9	RU10	RU11	RU12	RU13	RU14	RU15	RU16
Sustainable Accessibility to Key Facilities								
Likely Environmental Impact								
Alignment with National Policy/Plans								
Alignment with Regional Policy/Plans								
Alignment with Local Policy/Plans								
Alignment with other potential infrastructure								
Potential cost								
Ease of implementation								
Safety Impact								

Figure 3-42 shows the overall assessment results, based on which certain options were discounted. Options RU2, RU7, RU10, RU12, and RU13 are not considered necessary for ICAS having scored poorly in certain aspects including, environmental, cost and implementation impacts.

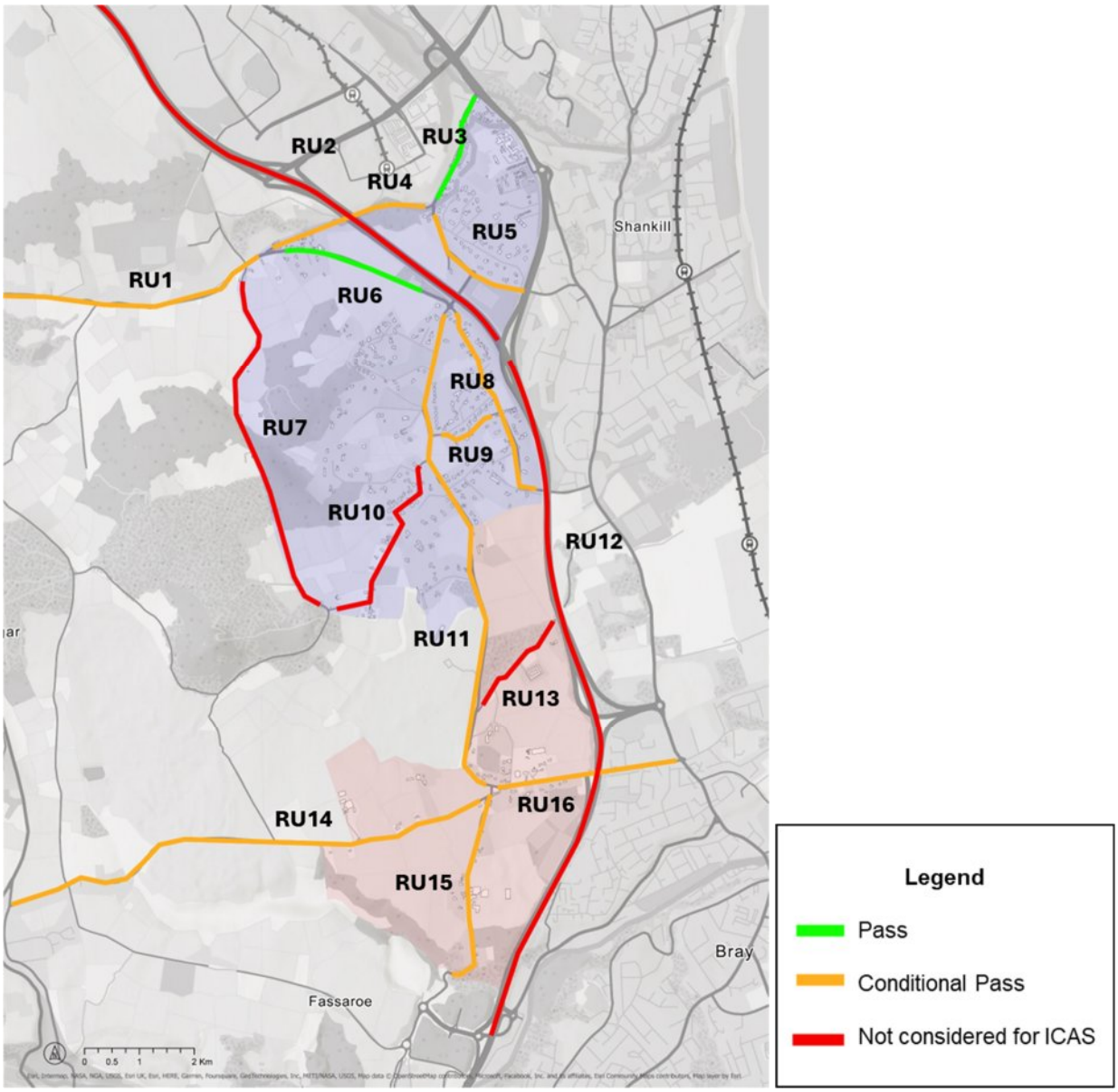


Figure 3-42 Road Upgrade Options Assessment

3.1.5.6 Internal Development Road Links

The screening of the long list of options considered for road upgrades in the study area was undertaken on the basis of the considerations described in Table 3.33.

Table 3.33 Internal Road Link Options Assessment Considerations

Criteria	Assessment Considerations
Sustainable Accessibility to Key Facilities	For Road based measures, this criterion considers the potential increase in accessibility for sustainable modes that the upgrade or link would deliver, as opposed to any increase in accessibility for cars.
Likely Environmental Impact	This criterion considers the direct environmental impact of the proposed infrastructure. Impact on rivers, trees, and designated areas such as SAC's are considered. Broader environmental considerations such as emissions reductions will be considered as part of the MCA of transport packages, rather than in this initial screening of options.
Alignment with National Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with national roads policy and plans, including the NDP, NIFTI, and the SPNR guidelines.
Alignment with Regional Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with regional roads policy and plans, Including RSES and the GDA Transport Strategy.
Alignment with Local Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with national and regional roads policy and plans, although the proposals ability to aid in the delivery of other plans such as the GDA cycle network is also considered.
Alignment with other potential infrastructure	For road based measures, this criterion considers the potential alignment with other potential infrastructure where road upgrades or new links could allow for the provision of a public transport route or active travel infrastructure for example,
Potential cost	This criterion involves an estimation of the potential cost of delivery of the proposal. Where larger scale infrastructure would be required such as new bridges, the proposal may score poorly, whereas a new link along flat open land may score highly for this criterion.
Ease of implementation	This criterion considers elements beyond cost, which may make the proposal difficult to deliver, such as topography, existing buildings, or procedural difficulties.
Safety Impact	This criterion considers the safety implications of the proposed measure, whether it may decrease safety due to a lack of connection to existing safe infrastructure, or potentially increase safety through the upgrading of existing unsafe infrastructure.

Table 3.34 summarises the results of the assessment of options under each criterion. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.34 Internal Development Link Options Assessment

Criteria	IL1	IL2	IL3	IL4	IL5	IL6	IL7	IL8
Sustainable Accessibility to Key Facilities								
Likely Environmental Impact								
Alignment with National Policy/Plans								
Alignment with Regional Policy/Plans								
Alignment with Local Policy/Plans								
Alignment with other potential infrastructure								
Potential cost								
Ease of implementation								
Safety Impact								

Figure 3-43 shows the overall assessment results, based on which certain options were discounted. As a result, IL1 and IL2 are not considered necessary for the ICAS, predominantly due to environmental impacts and sustainable accessibility to key facilities.

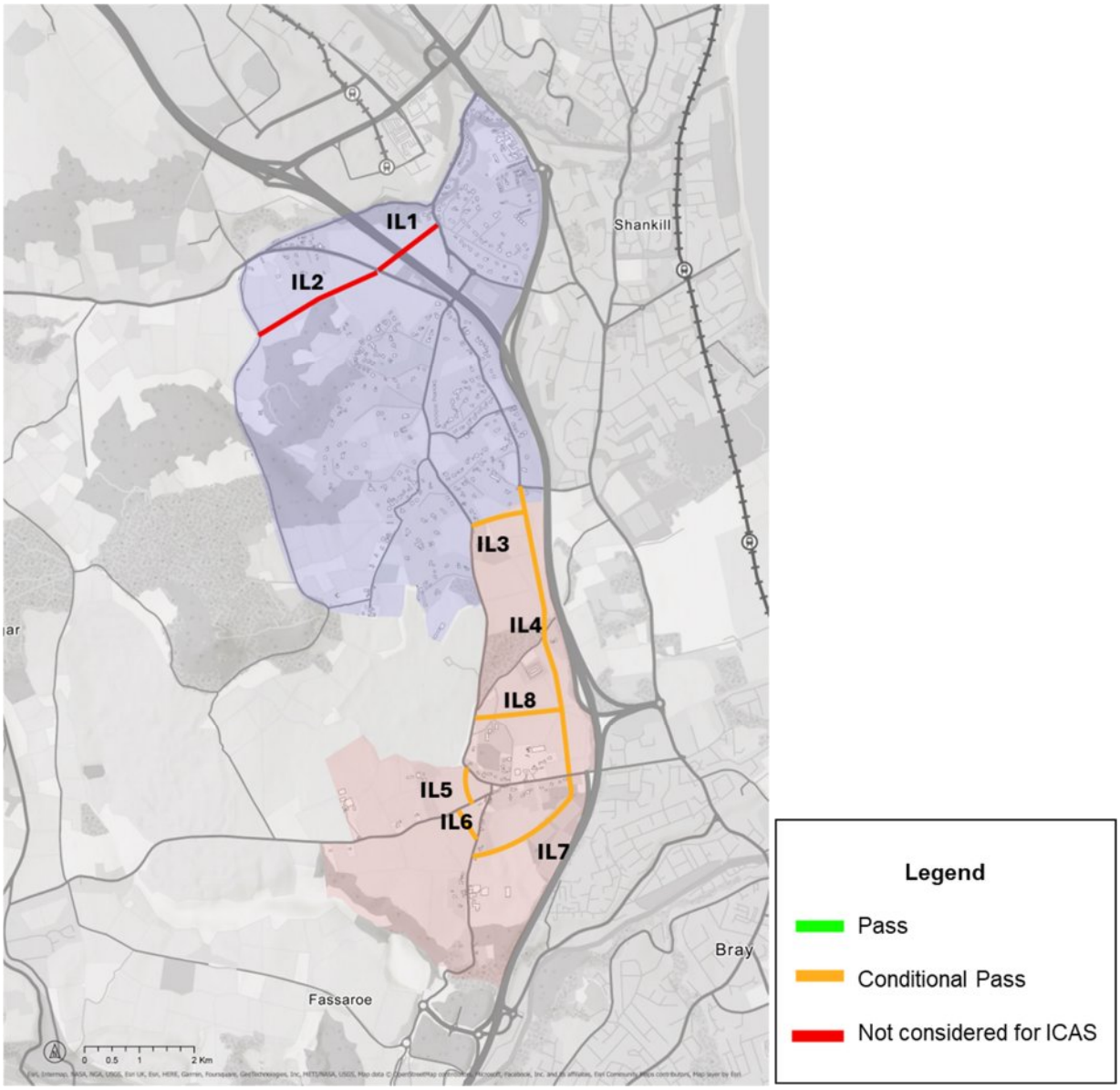


Figure 3-43 Internal Development Road Link Options Assessment

3.1.5.7 Strategic External Road Links

The screening of the long list of options considered for strategic external road links was undertaken on the basis of the considerations described in Table 3.35.

Table 3.35 External Road Link Options Assessment Considerations

Criteria	Assessment Considerations
Sustainable Accessibility to Key Facilities	For Road based measures, this criterion considers the potential increase in accessibility for sustainable modes that the upgrade or link would deliver, as opposed to any increase in accessibility for cars.
Likely Environmental Impact	This criterion considers the direct environmental impact of the proposed infrastructure. Impact on rivers, trees, and designated areas such as SACs are considered. Broader environmental considerations such as emissions reductions will be considered as part of the MCA of transport packages, rather than in this initial screening of options.
Alignment with National Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with national roads policy and plans, including the NDP, NIFTI, and the SPNR guidelines.
Alignment with Regional Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with regional roads policy and plans, Including RSES and the GDA Transport Strategy.
Alignment with Local Policy/Plans	For road-based measures, this criterion primarily focuses on the proposal's alignment with national and regional roads policy and plans, although the proposals ability to aid in the delivery of other plans such as the GDA cycle network is also considered.
Alignment with other potential infrastructure	For road-based measures, this criterion considers the potential alignment with other potential infrastructure where road upgrades or new links could allow for the provision of a public transport route or active travel infrastructure for example,
Potential cost	This criterion involves an estimation of the potential cost of delivery of the proposal. Where larger scale infrastructure would be required such as new bridges, the proposal may score poorly, whereas a new link along flat open land may score highly for this criterion.
Ease of implementation	This criterion considers elements beyond cost, which may make the proposal difficult to deliver, such as topography, existing buildings, or procedural difficulties.
Safety Impact	This criterion considers the safety implications of the proposed measure, whether it may decrease safety due to a lack of connection to existing safe infrastructure, or potentially increase safety through the upgrading of existing unsafe infrastructure.

Table 3.36 summarises the results of the assessment of options under each criterion. It is important to note that the colours indicated for each option under each criterion are a broad estimation of the comparative benefits/disbenefits of each option within the context of the site location and its characteristics, and should not be taken as an absolute determination of the quality of the proposal.

Table 3.36 External Road Link Options Assessment

Criteria	EL1	EL2	EL3	EL4	EL5	EL6	EL7	EL8	EL9	EL10	EL11	EL12	EL13
Sustainable Accessibility to Key Facilities													
Likely Environmental Impact													
Alignment with National Policy/Plans													
Alignment with Regional Policy/Plans													
Alignment with Local Policy/Plans													
Alignment with other potential infrastructure													
Potential cost													
Ease of implementation													
Safety Impact													

Figure 3-44 shows the overall assessment results, based on which certain options were discounted. As a result of the assessment, the majority of the external road link options except EL8, and EL10, were not considered further. It should be noted that while EL9 is not considered necessary for the ICAS, it may still be delivered separately as part of the N11/M11 Junction 4 to Junction 14 Improvement Scheme. It is acknowledged that if the N11/M11 Junction 4 to Junction 14 Improvement Scheme is progressed in this vicinity (EL9), then further consideration should be given to the progression or otherwise of EL8.

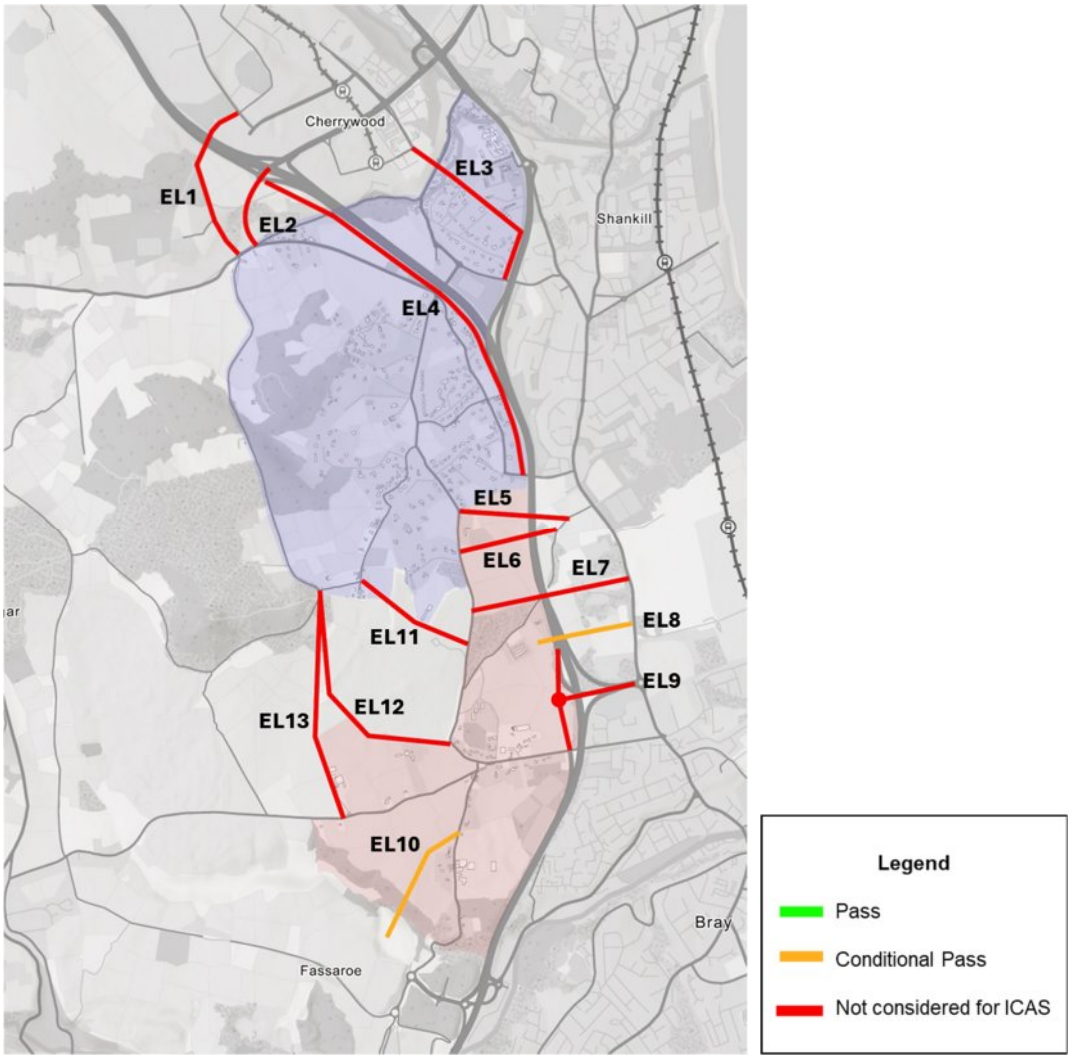


Figure 3-44 External Road Link Options Assessment

3.1.6 Transport Packages

Following the screening process, complimentary options are packaged together in order to determine the optimal transport scenario. As noted in 3.1.1.3, 'passing' options become constants, and feature in all transport packages, whereas 'conditional passing' options feature in some, but not all transport packages. This process allows for certain options which depend upon the implementation of other options to be considered, allowing the group of measures and their combined benefits or disbenefits to be assessed, whereas the initial screening generally considers the merits of the options individually.

It should be noted that only internal roads of a strategic nature are included in the assessment and that additional road infrastructure might be required at a more local level to facilitate access within development plots for example.

As noted in section 3.1.3.2, in addition to the strategic external active travel connections between the LAP areas and key adjacent areas, an internal network of active travel infrastructure is also indicated as part of the packages. These are shown indicatively for the purposes of demonstrating the potential active travel connectivity within the site, but the exact alignment of the internal active travel network is subject to further assessment and design. Any associated impacts to the national road network as a result of these proposals will have regard to the presence of the M11/N11, the M50, the requirements of SPNR and demonstrate compliance with TII Publications as part of any further development stages.

3.1.6.1 Old Connaught Transport Packages

This section presents the transport packages formed for the Old Connaught LAP area combining measures including active travel, public transport and road upgrades, as described in the previous sections for the long list screening. Five packages have been formed for the Old Connaught LAP area.

Package 1

Figure 3-45 presents the measures combined under transport package 1. Table 3.37 summarises the proposed options included in Transport Package 1.

This option focuses on the provision of new connections to surrounding areas for different modes. Three additional active travel only connections are proposed, one north of the M11 junction 6 (OW3) connecting Old Connaught to Woodbrook and the proposed DART station, one to the south of Old Connaught Avenue (OB3) and one to the south-east of the LAP area, connecting to Fassaroe (OF1).

This package proposes the elimination of through traffic along Old Connaught Avenue, likely in the form of a bus gate positioned adjacent to the junction of Ferndale Road and Thornhill Road.

Table 3.37 List of measures included in Transport Package 1

Active travel measures	RS5, RO2, RO3, RO4, OW3, OB3, OF1, OF4
Cherrywood to Bray cycle route	GR2
Road Upgrades	RU15, RU16
Internal Development Road Links	IL3, IL4, IL5, IL6, IL7, IL8
Strategic External Road Links	No new links
Bus Routes	BO2, BO6

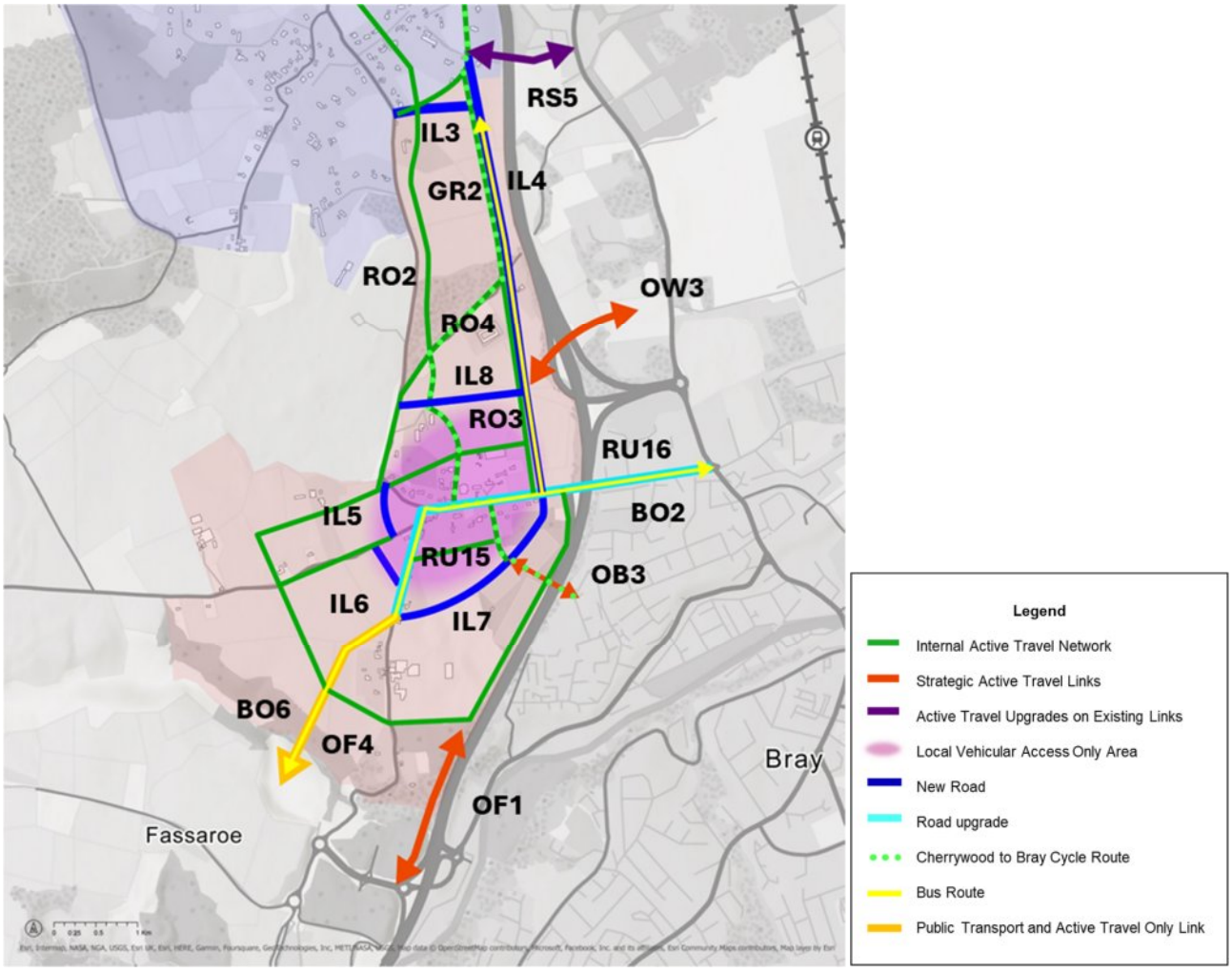


Figure 3-45 Old Connaught Transport Package 1

Package 2

Figure 3-46 illustrates the measures combined under transport package 2. Table 3.38 summarises the proposed options included in Transport Package 2.

This package removes the proposed new north-south road along the eastern edge of the LAP area, instead relying on the upgrading of Ferndale Road and Old Connaught Avenue. This package maintains the proposed PT/AT priority zone in the centre of Old Connaught Village, along with the proposed active travel bridges across the M11 and proposed busway to Fassaroe.

Table 3.38 List of measures included in Transport Package 2.

Active travel measures	RO2, OW3, OB3, OF1, OF4
Cherrywood to Bray cycle route	GR2 (altered to run along western side of SLR due to the absence of the proposed road on the eastern side)
Road Upgrades	RU11, RU16
Internal Development Road Links	IL5, IL6, IL7, IL8
Strategic External Road Links	No new links
Bus Routes	BO2, BO4, BO6

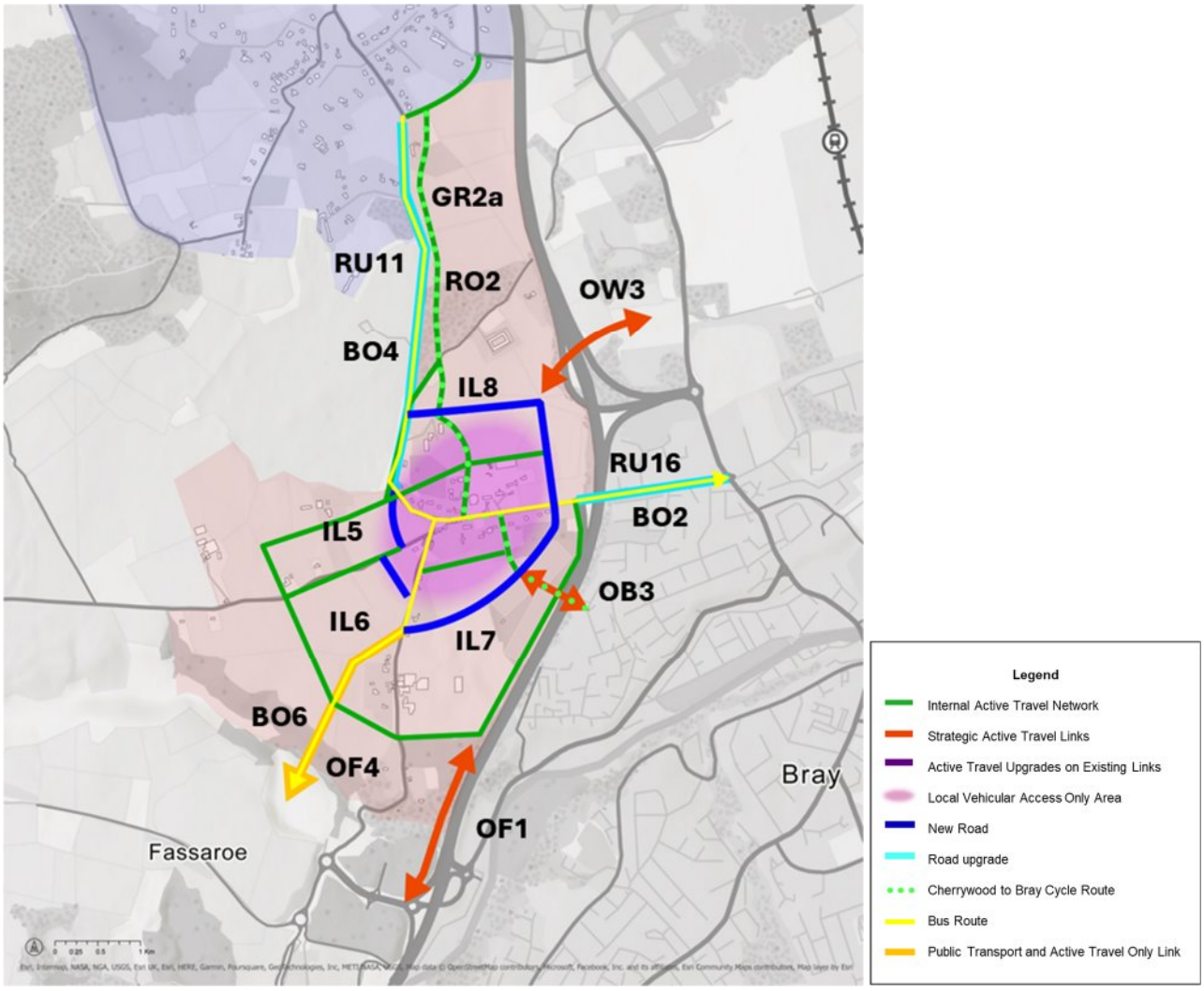


Figure 3-46 Old Connaught Transport Package 2

Package 3

Figure 3-47 presents the measures combined under transport package 3. Table 3.39 summarises the proposed options included in Transport Package 3.

This package proposes the elimination of through traffic along the entirety of Old Connaught Avenue as far east as Dublin Road, likely in the form of two bus gates positioned adjacent to the junction of Ferndale Road and Thornhill Road, as well as along the M11 bridge. Vehicular traffic would instead be shifted to the periphery of Old Connaught, through a new link created to the north of M11 Junction 5.

Table 3.39 List of measures included in Transport Package 3

Active travel measures	RS5, RO2, RO3, RO4, OW6/OB2, OB5, OF1, OF4
Cherrywood to Bray cycle route	GR3
Road Upgrades	RU15
Internal Development Road Links	IL3, IL4, IL5, IL6, IL7, IL8
Strategic External Road Links	EL8*
Bus Routes	BO2, BO6

*If the N11/M11 Junction 4 to Junction 14 Improvement Scheme is progressed in this vicinity, then re-consideration should be given to the progression or otherwise of EL8.

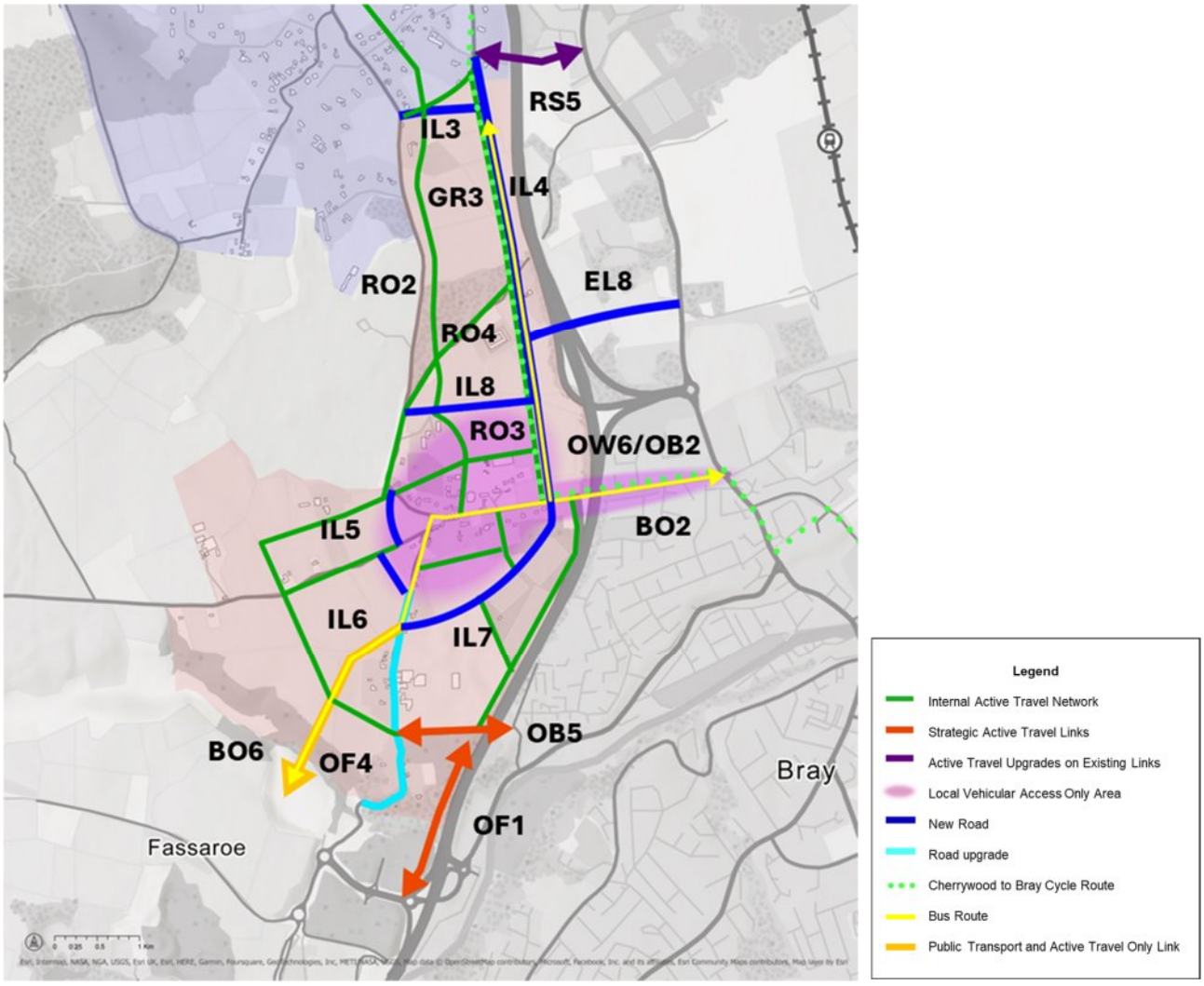


Figure 3-47 Old Connaught Transport Package 3

Package 4

Figure 3-48 presents the measures combined under transport package 4. Table 3.40 summarises the proposed options included in Transport Package 4.

As with Package 3, this package proposes the elimination of through-traffic along Old Connaught Avenue. In this package, no new road connection would be constructed, and vehicular traffic would be diverted either to Crinken Lane in the north, or south to Fassaroe, where the previously proposed busway would instead also take general vehicular traffic.

Table 3.40 List of measures included in Transport Package 4

Active travel measures	RS5, RO2, RO3, RO4, OB5, OF1, OW2
Cherrywood to Bray cycle route	GR3
Road Upgrades	No road upgrades
Internal Development Road Links	IL3, IL4, IL6, IL7, IL8
Strategic External Road Links	EL10
Bus Routes	BO2, BO6

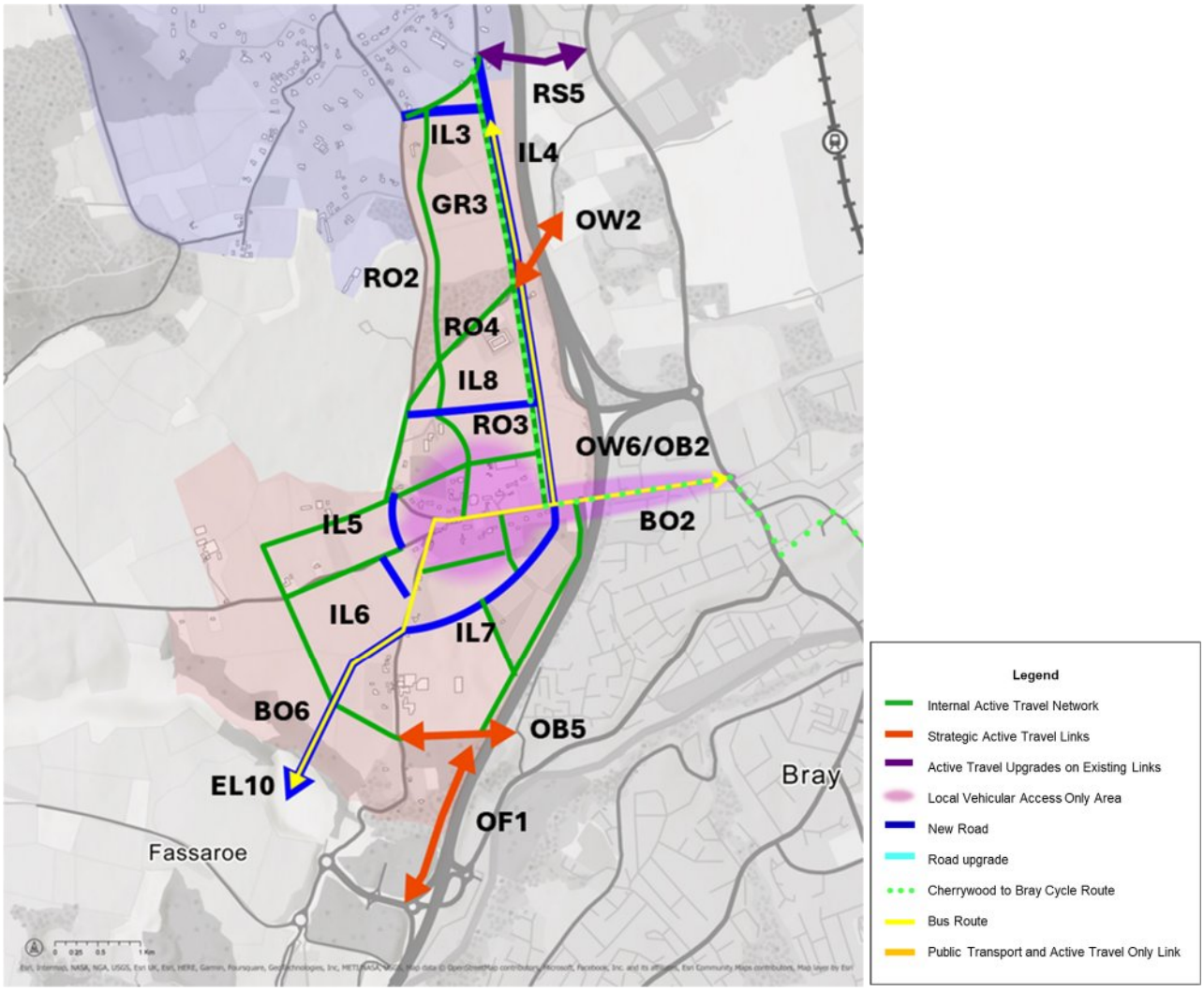


Figure 3-48 Old Connaught Transport Package 4

Package 5

Figure 3-49 shows the measures combined under transport package 5 and are tabulated in Table 3.41

This package proposes to utilise Old Connaught Avenue as the primary circulation route for general traffic, as opposed to the use of circulation routes around the periphery of Old Connaught Village. This would require upgrading of Old Connaught Avenue along its length, along with the provision of a new active travel bridge alongside the existing bridge over the M11.

Table 3.41 List of measures included in Transport Package 5.

Active travel measures	RS5, OB1, OB5, OF1
Cherrywood to Bray cycle route	GR3
Road Upgrades	RU15, RU16
Internal Development Road Links	IL3, IL4
Strategic External Road Links	No new links
Bus Routes	BO2, BO6

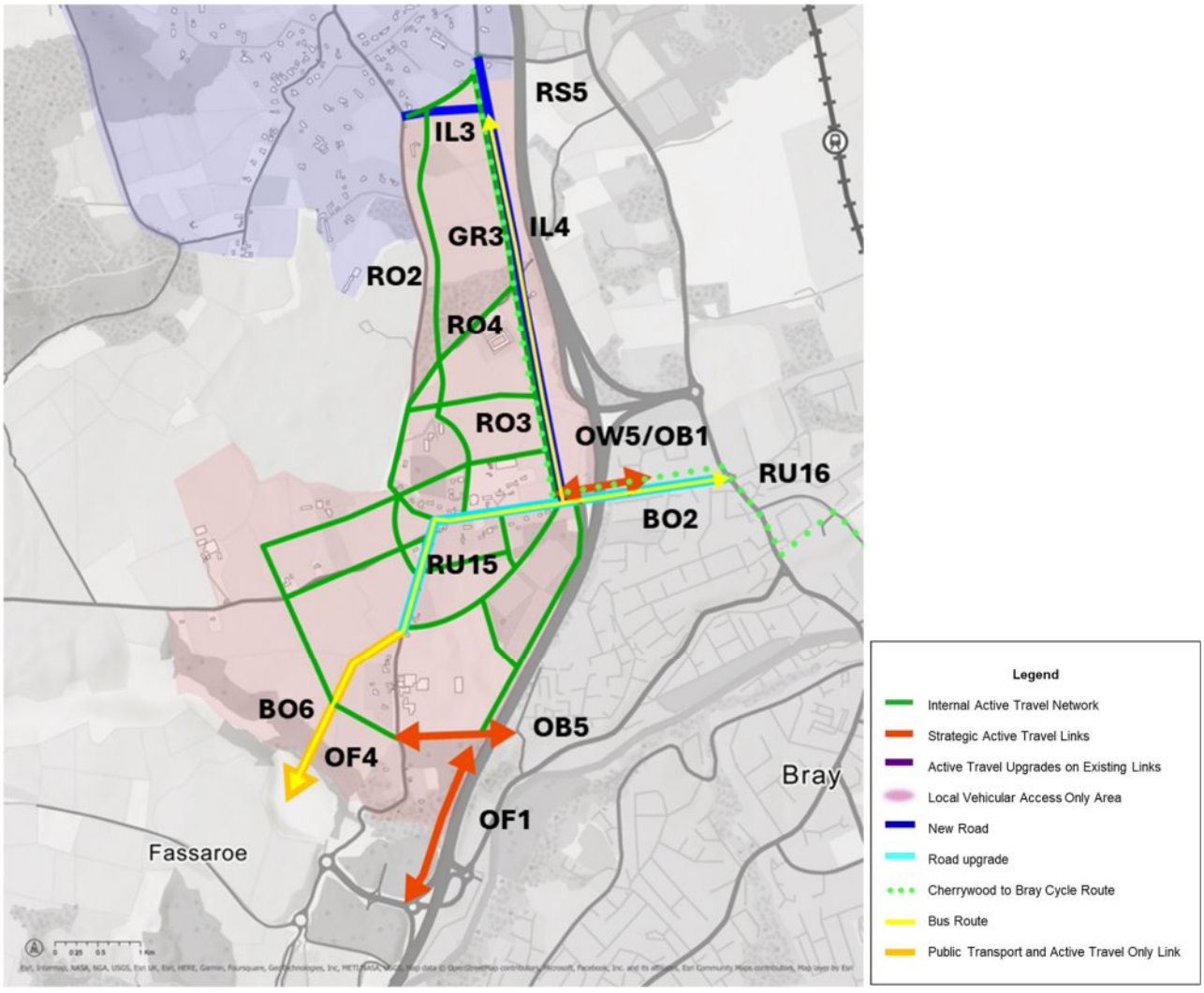


Figure 3-49 Old Connaught Transport Package 5

3.1.6.2 Rathmichael Transport Packages

This section presents the transport packages formed for the Rathmichael LAP area combining measures including active travel, public transport and road upgrades, as described in the previous sections for the long list screening. Four packages have been formed for Rathmichael.

Package 1

Figure 3-50 presents the measures combined under Transport Package 1. Table 3.42 summarises the proposed options included in Transport Package 1.

This package consists of the provision of an active travel connection across the Cherrywood viaduct (RC6) in the north of the area, along with the routing of a bus route along Stonebridge Road, Mulinastill Road, and Cherrywood Road.

In the southern part of the LAP area, cycle infrastructure is proposed along Ballybride Road and Lordello Road, along with conversion of the road to one-way for vehicles in order to avoid road widening. This package assumes the new North-South road within the Old Connaught LAP area is constructed, and so the upgrade of Crinken Lane bridge is proposed. This upgrade along with the cycle infrastructure along Ballybride Road, results in the upgrade of the existing footbridge at Lordello Road to not be required as part of this package. As a result of Ballybride Road being converted to one-way for vehicular traffic, the bus route is proposed to travel along Ferndale Road in this package.

Table 3.42 List of measures included in Transport Package 1.

Active travel measures	RC1, RC6, RC7, RS1, RS3, RS5
Cherrywood to Bray cycle route	GR2C/GR3C (depending on route taken through Old Connaught)
Road Upgrades	RU1, RU3, RU6
Internal Development Road Links	No new links
Strategic External Road Links	No new links
Bus Routes	BR4A

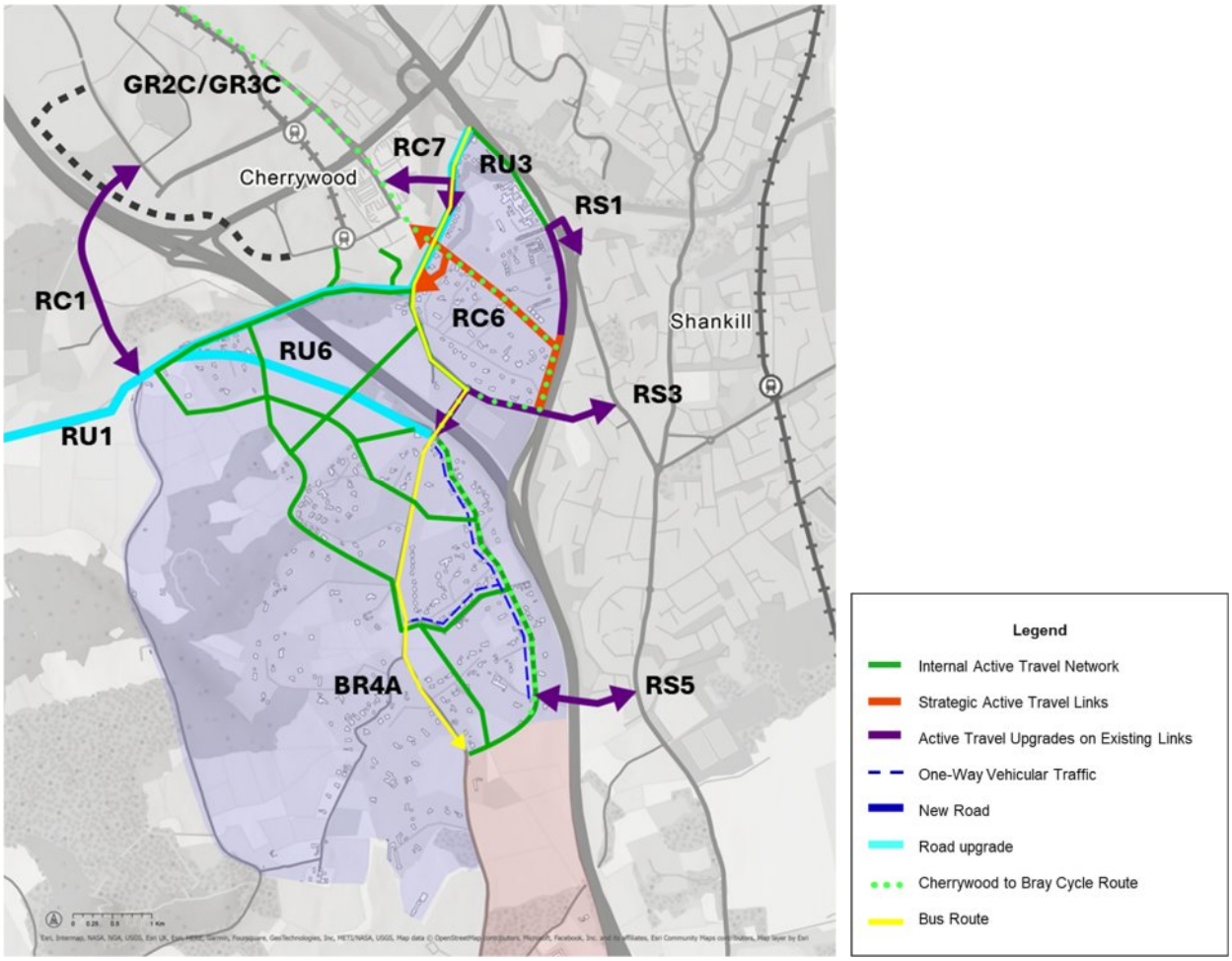


Figure 3-50 Rathmichael Transport Package 1

Package 2

Figure 3-51 illustrates the measures combined under transport package 2. Table 3.43 summarises the proposed options included in Transport Package 2.

This package proposes the implementation of the proposed active travel connection between the Rathmichael Road and Cherrywood (RC3), along with the provision of a bus route running along Rathmichael Road. This package provides a greater transport provision for Rathmichael Road area. In the southern part of the LAP area, the measures provided are unchanged from Package 1.

Table 3.43 List of measures included in Transport Package 2.

Active travel measures	RC1, RC3, RC7, RS1, RS3, RS5
Cherrywood to Bray cycle route	GR2B/GR3B
Road Upgrades	RU1, RU3, RU4, RU6
Internal Development Road Links	No new links
Strategic External Road Links	No new links
Bus Routes	BR3A

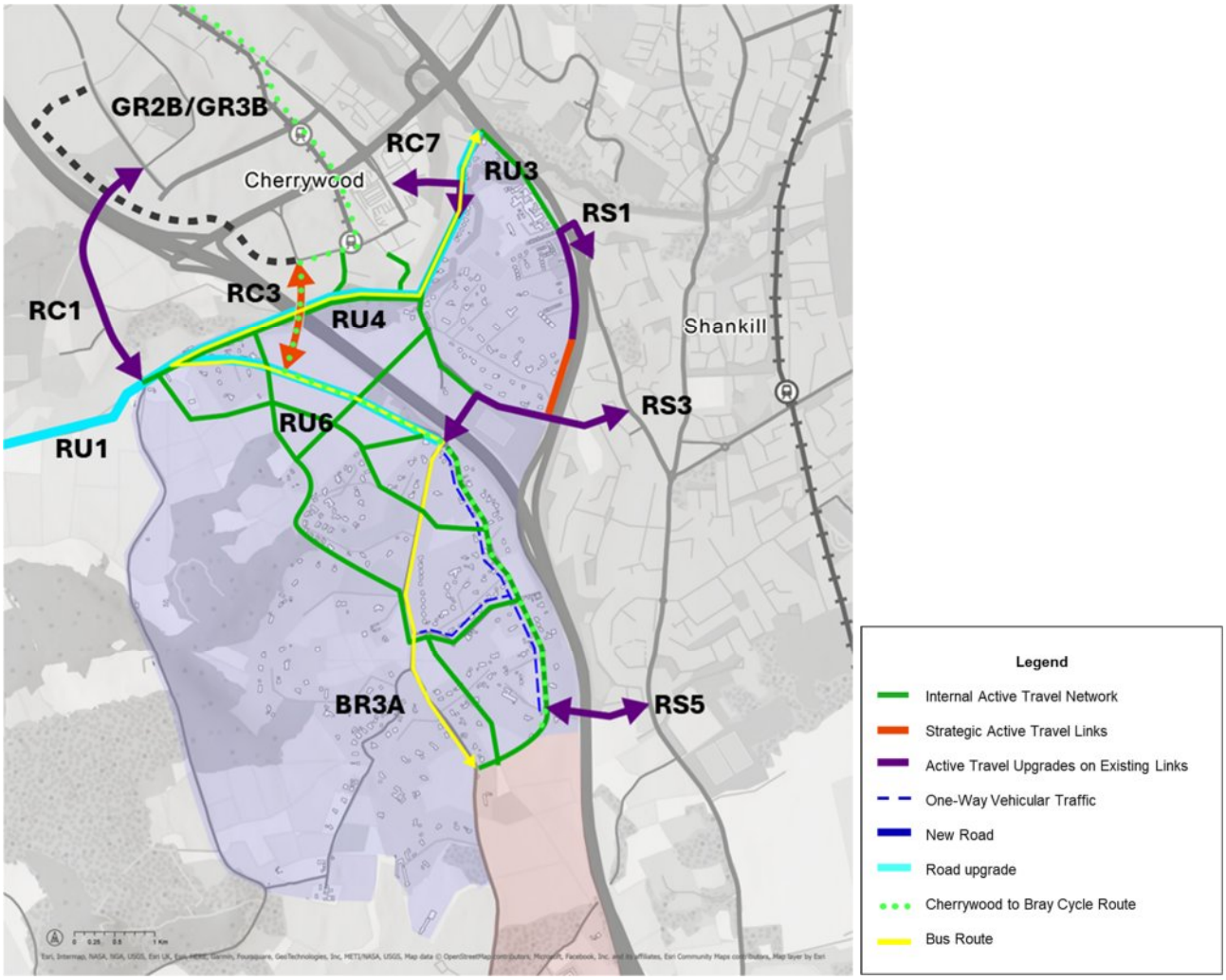


Figure 3-51 Rathmichael Transport Package 2

Package 3

Figure 3-52 presents the measures combined under transport package 3. Table 3.44 summarises the proposed options included in Transport Package 3.

Similarly to Package 1, this package consists of the provision of an active travel connection across the Cherrywood viaduct (RC6) in the north of the area, along with the routing of a bus route along Stonebridge Road, Mulinastill Road, and Cherrywood Road.

In the southern part of the LAP area, this package instead proposes the upgrading of Ferndale Road to accommodate active travel infrastructure between the junction of Rathmichael Road and the junction of Lordello Road. To the south of Lordello Road, an off-road active travel route is proposed connecting to Old Connaught in the south. Active travel infrastructure is proposed along Lordello Road, along with its conversion to one-way for vehicular traffic. In this package, the pedestrian bridge is proposed to be upgraded (RS4), with no proposals for upgrades at Crinken Lane.

Table 3.44 List of measures included in Transport Package 3.

Active travel measures	RC1, RC6, RC7, RS1, RS3, RS4
Cherrywood to Bray cycle route	GR1B
Road Upgrades	RU1, RU3, RU6, RU11
Internal Development Road Links	No new links
Strategic External Road Links	No new links
Bus Routes	BR4B

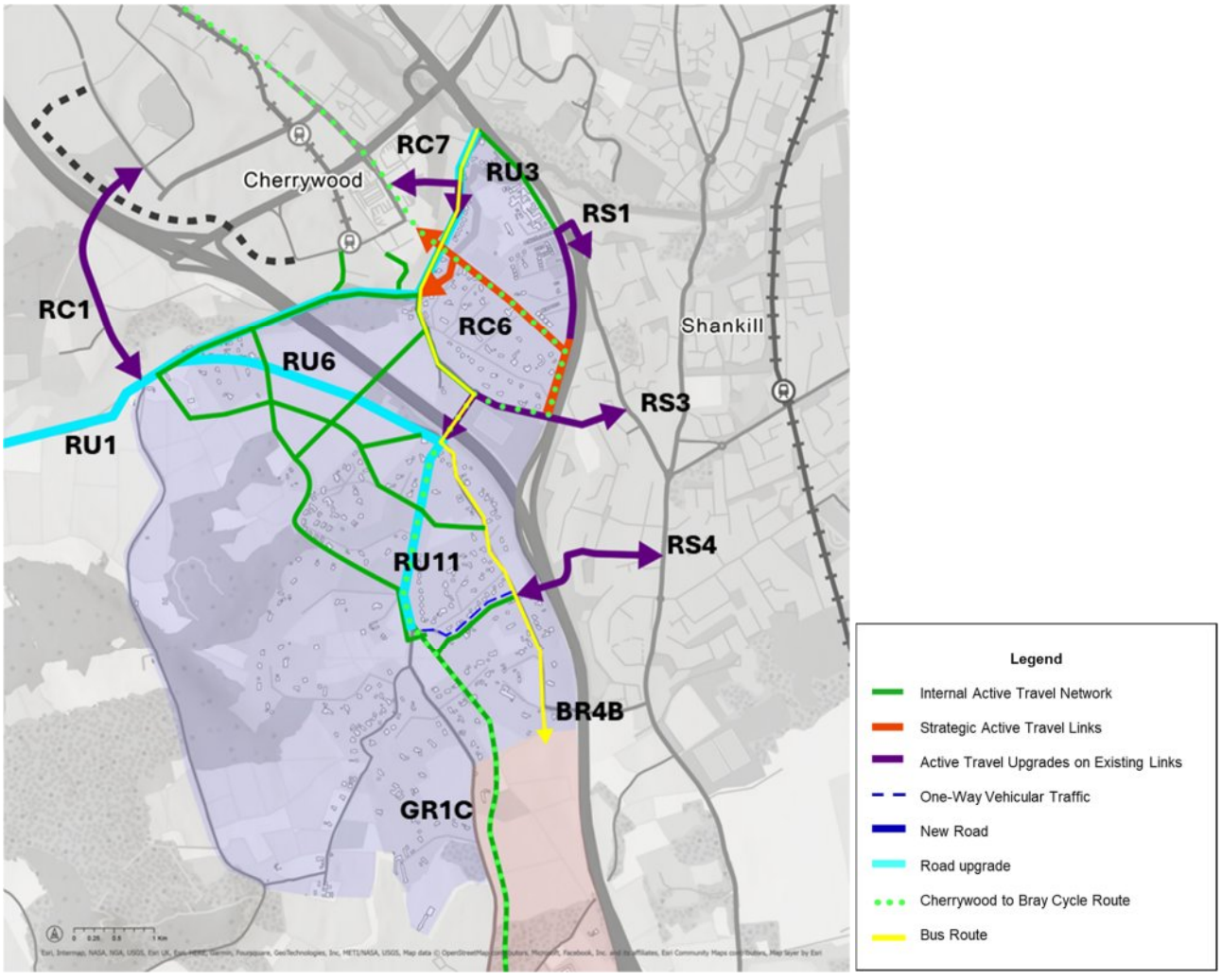


Figure 3-52 Rathmichael Transport Package 3

Package 4

Figure 3-53 presents the measures combined under Transport Package 4. Table 3.45 summarises the proposed options included in Transport Package 4.

This package combines the measures proposed for the northern area in Package 1, and the measures proposed for the southern area in Package 3.

Table 3.45 List of measures included in Transport Package 4.

Active travel measures	RC1, RC3, RC7, RS1, RS3, RS4
Cherrywood to Bray cycle route	GR1B
Road Upgrades	RU1, RU3, RU4, RU6, RU11
Internal Development Road Links	No new links
Strategic External Road Links	No new links
Bus Routes	BR3B

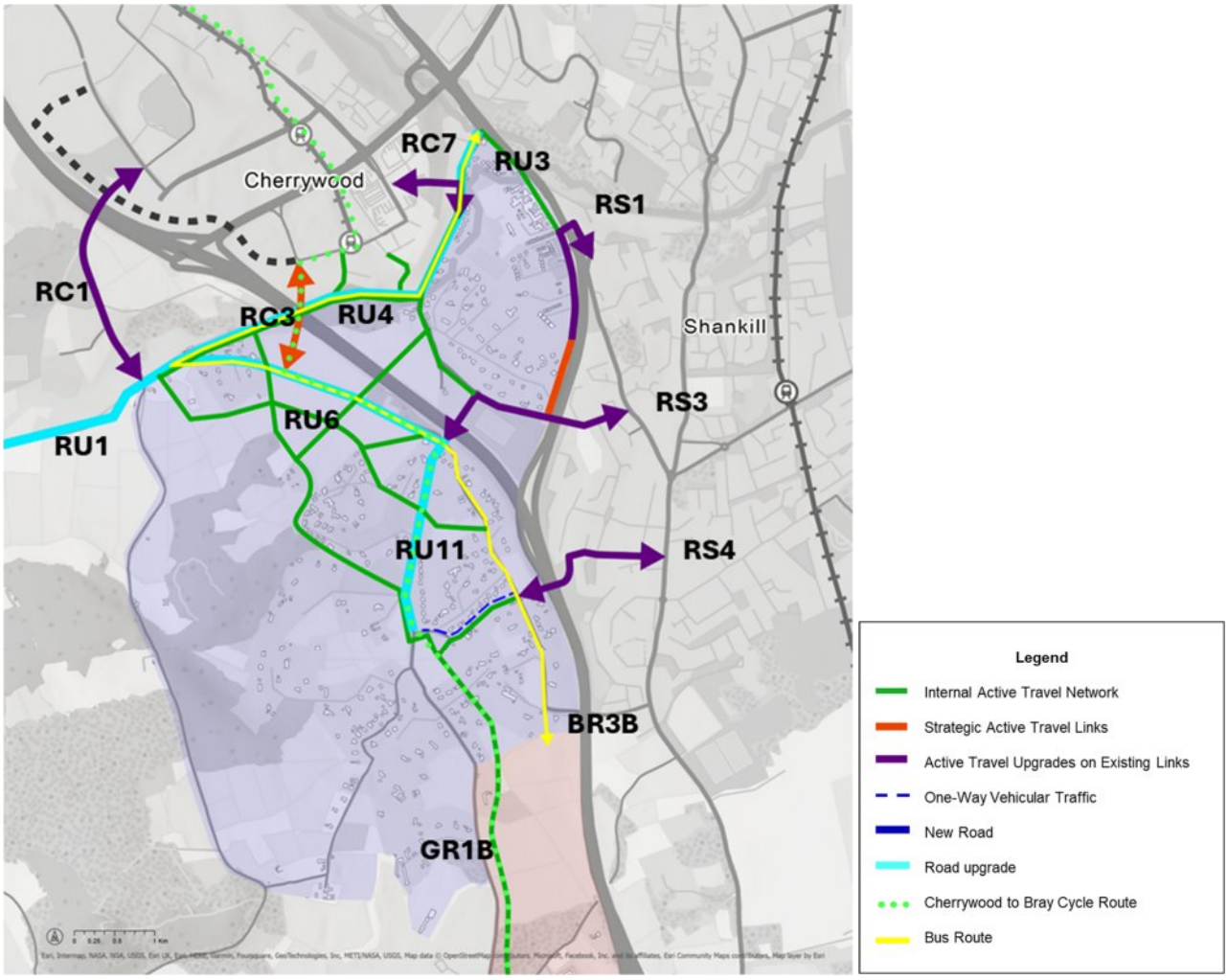


Figure 3-53 Rathmichael Transport Package 4

Package 5

Figure 3-54 illustrates the measures combined under transport package 5. Table 3.46 summarises the proposed options included in Transport Package 5.

This package proposes the implementation of an active travel connection between Rathmichael Road, Brides Glen Road to Glencarrig, which would form a connection between Rathmichael and Cherrywood. In addition, the proposed active travel connection between the Rathmichael Road and Cherrywood (RC3), as well as an active travel connection across the Cherrywood viaduct (RC6) in the north of the area are proposed. The provision of a bus route running along Rathmichael Road is proposed for this package. This package provides a greater number of connections between Rathmichael and Cherrywood. In the southern part of the LAP area, the measures provided are unchanged from Packages 1 and 2.

Table 3.46 List of measures included in Transport Package 5.

Active travel measures	RC1, RC3, RC4, RC6, RC7, RS1, RS3, RS5
Cherrywood to Bray cycle route	GR2B/GR3B
Road Upgrades	RU1, RU3, RU4, RU6
Internal Development Road Links	No new links
Strategic External Road Links	No new links
Bus Routes	BR3A

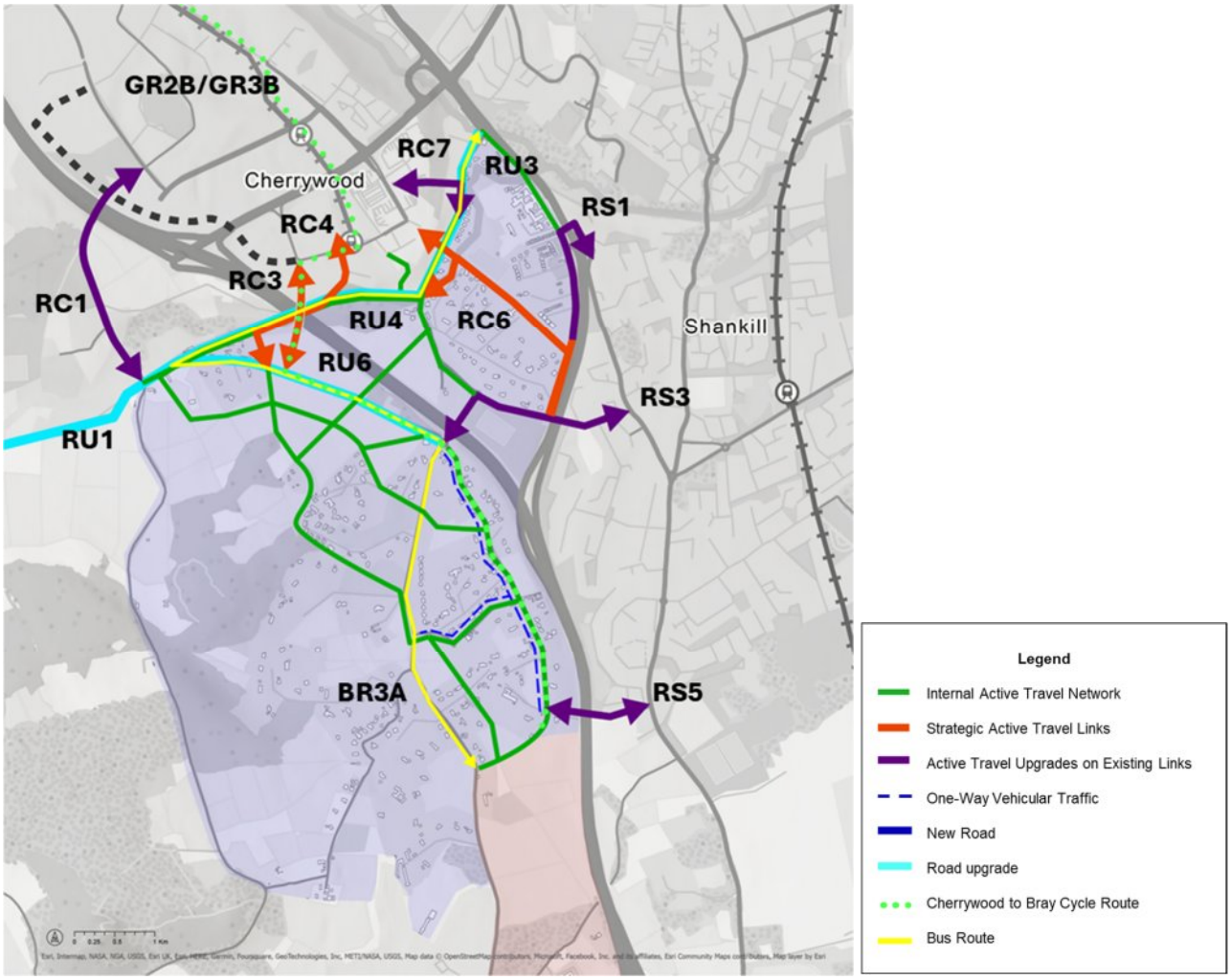


Figure 3-54 Rathmichael Transport Package 5

3.1.6.3 Junction Modelling

Junction modelling has been undertaken to determine the potential traffic impacts of certain elements of the packages outlined above. This section presents a summary of the findings from the full Junction Modelling Note which can be found in Appendix C.

For Old Connaught, two distinct traffic scenarios were assessed, which were:

1. Maintaining vehicular traffic along Old Connaught Avenue
2. Provision of two bus gates on Old Connaught Avenue and construction of new road north of Junction 5

In order to compare these scenarios, three junctions were assessed:

- Junction 1: Old Connaught Avenue - Dublin Road
- Junction 2: M11/R119/R761 Roundabout
- Junction 3: New T-Junction (tested as both priority and signalised junction)

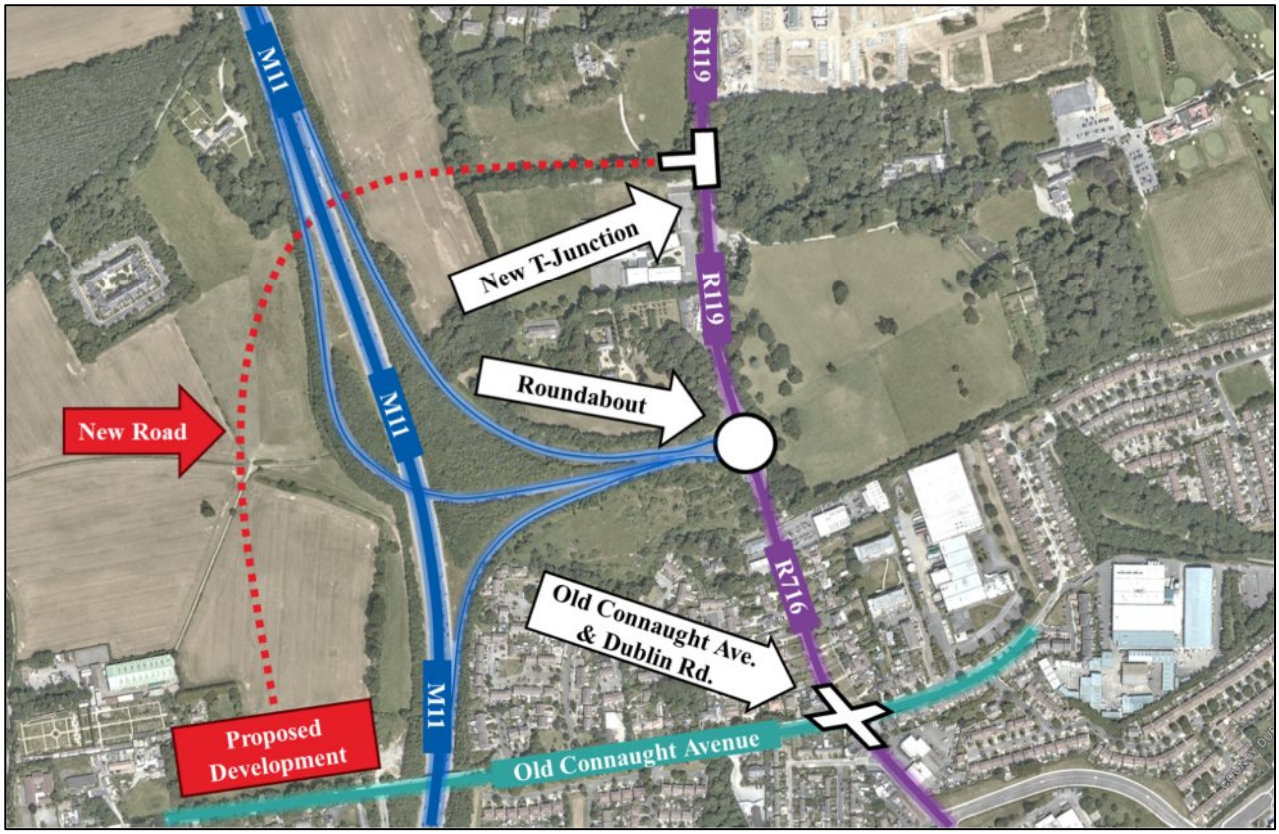


Figure 3-55 Old Connaught Junctions Modelled

Figure 3-56 provides a summary of the Flow Capacity (RFC) or Practical Reserve Capacity (PRC) levels of each junction under the different scenarios. This shows that in Scenario 1, maintaining vehicular traffic along Old Connaught Avenue, the junction of Old Connaught Avenue and Dublin Road performs very poorly, while in scenario 2, the junction operates within capacity. The M11/R119/R761 roundabout performs within capacity in both scenarios, but slightly better in scenario 2. The proposed new T-junction only exists in scenario 2, but the modelling shows that it would be over capacity as a priority junction but operates within capacity as a signalised junction.

The junction modelling exercise for Old Connaught therefore shows that scenario 2, the provision of a bus gate on Old Connaught Avenue, and new road to the north of Junction 5, results in an overall better traffic performance.

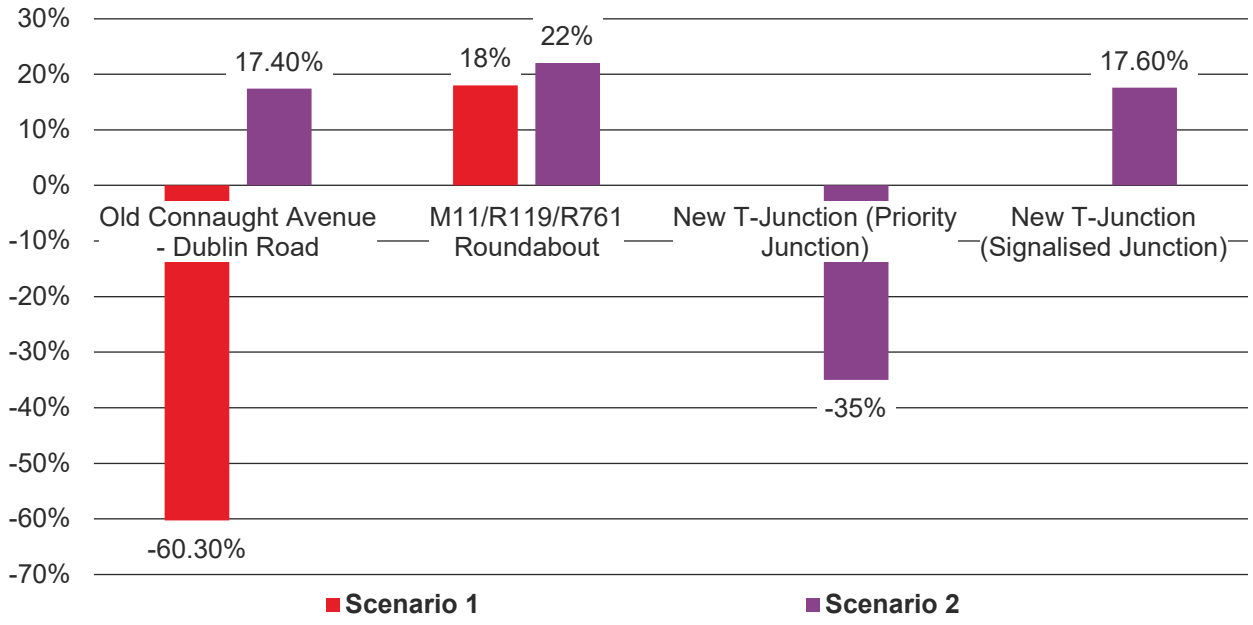


Figure 3-56 Comparison of Ratio of Flow Capacity (RFC) or Practical Reserve Capacity (PRC) levels of junctions during AM Peak in different scenarios.

For Rathmichael, two junctions were modelled in order to assess the impacts of the proposed level of development within the LAP area in comparison to the existing situation, as shown in Figure 3-57 below:

- Junction 4: Stonebridge Road – Dublin Road
- Junction 5: N11 – Cherrywood Road.

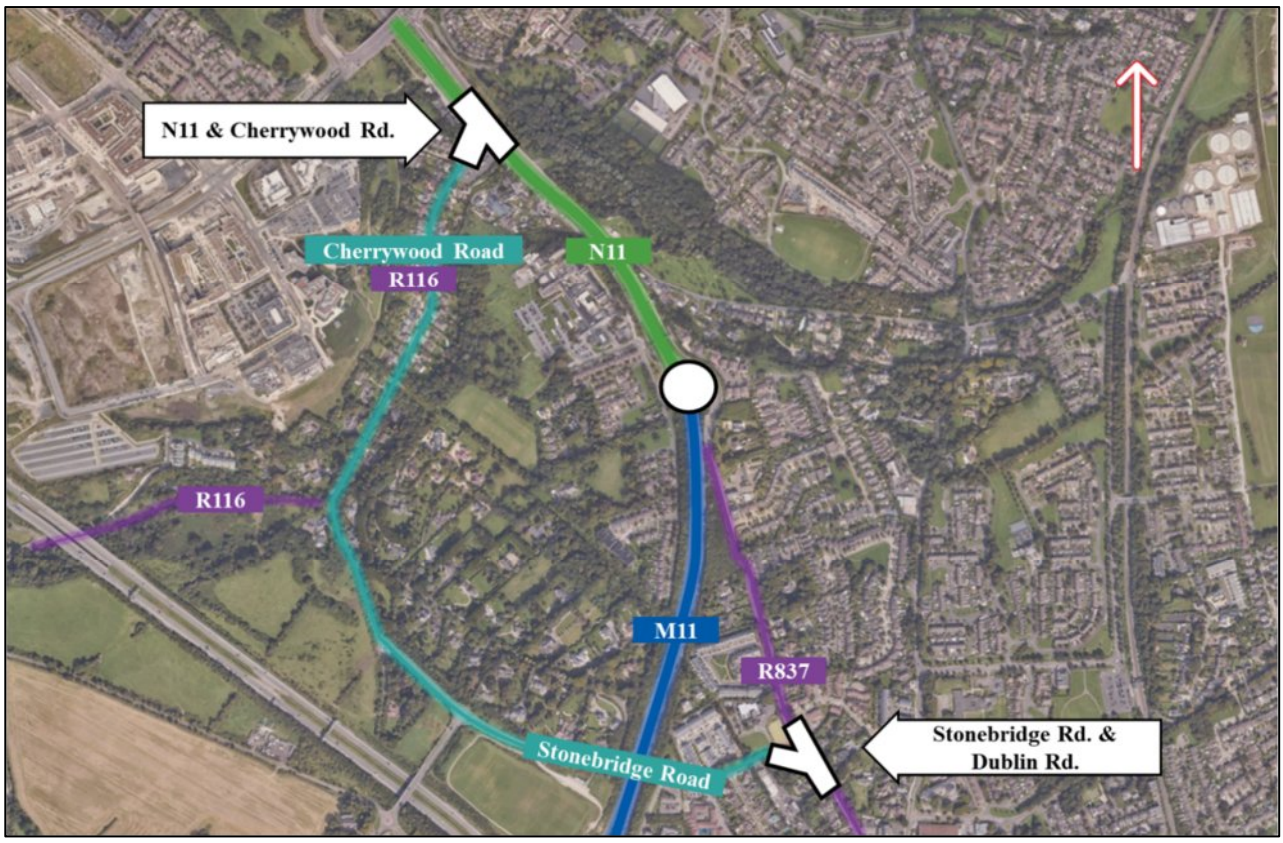


Figure 3-57 Rathmichael Junctions Modelled

Figure 3-58 below shows that for both junctions, the introduction of the new development traffic does reduce the RFC. PRC, however does not decrease it below 0, meaning the junctions still operate within capacity.

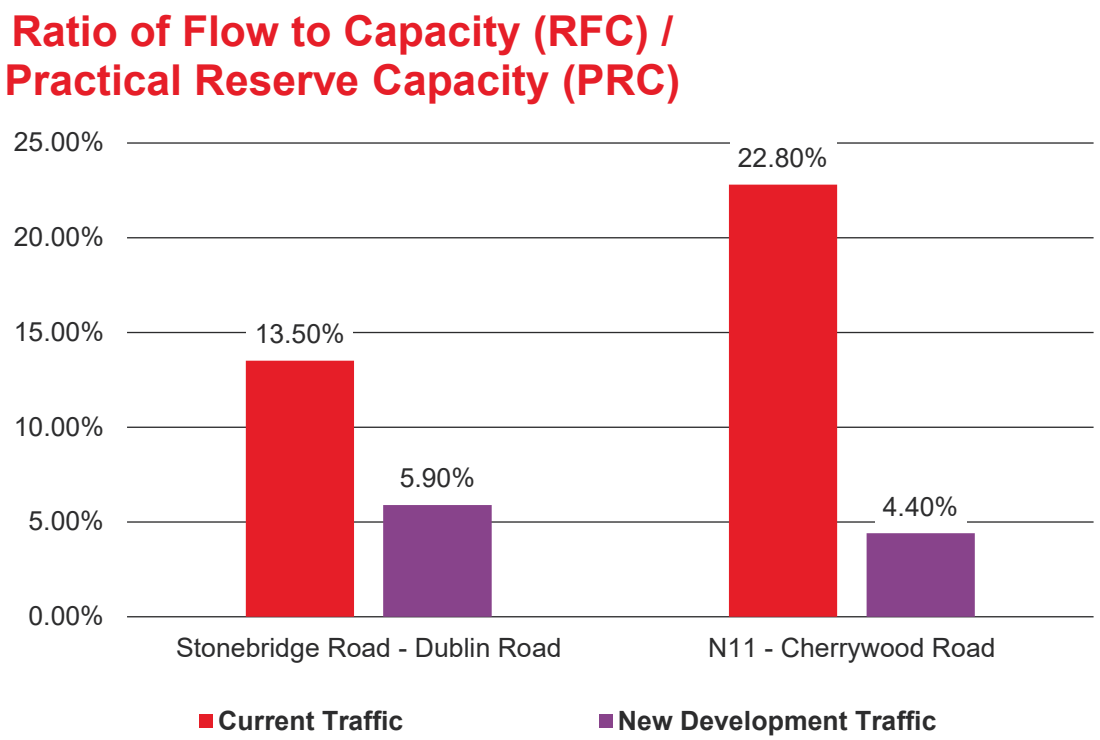


Figure 3-58 Comparison of Ratio of Flow Capacity (RFC) or Practical Reserve Capacity (PRC) levels of Rathmichael junctions during AM Peak in different scenarios

3.1.7 Multi Criteria Analysis

3.1.7.1 Old Connaught

Following the grouping of measures into transport packages, these packages were then assessed on the basis of several Key Performance Indicators (KPIs) as described in section 3.1.1.3. Table 3.47 presents the multi-criteria assessment of the defined transport packages for Old Connaught.

	KPIs	Package 1	Package 2	Package 3	Package 4	Package 5
Transport	Availability of an attractive and safe pedestrian network linked to internal and external opportunities					
	Journey time and distance reduction for sustainable modes of transport					
	Availability of a safe cycle route network linked to internal and external opportunities					
	High level of permeability and reduction of walking and cycling distance and time					
	LAP areas linked to adjacent centres and key transport interchanges through Public Transport					
	Public transport stops within 10-minute walking distance					
	Mode split which favours sustainable modes over car usage when compared to the existing situation					
	Impact on National Road Network					
	Proposed road network accommodates expected demand					
Environmental	Protection and enhancement of biodiversity					
	Protection of environmentally sensitive areas (e.g. aquifers, groundwater, streams and rivers)					
	Improvement of air quality and reduction in noise pollution					
	Protection and enhancement of archaeology and cultural heritage					
	Impact on Emissions					

Table 3.47 Old Connaught Transport Packages' MCA

	KPIs	Package 1	Package 2	Package 3	Package 4	Package 5
Transport	Availability of an attractive and safe pedestrian network linked to internal and external opportunities	Many services within 10 minute walking distance	Some services within 10 minute walking distance	Many services within 10 minute walking distance	Many services within 10 minute walking distance	Some services within 10 minute walking distance

	KPIs	Package 1	Package 2	Package 3	Package 4	Package 5
	Journey time and distance reduction for sustainable modes of transport	Similar directness and journey time for sustainable modes when compared with vehicular travel	Similar directness and journey time for sustainable modes when compared with vehicular travel	Somewhat direct routes available when travelling by sustainable modes	Somewhat direct routes available when travelling by sustainable modes	Similar directness and journey time for sustainable modes when compared with vehicular travel
	Availability of a safe cycle route network linked to internal and external opportunities	Some services within 10 minute cycling distance along safe infrastructure	Some services within 10 minute cycling distance along safe infrastructure	Many services within 10 minute cycling distance along safe infrastructure	Many services within 10 minute cycling distance along safe infrastructure	Some services within 10 minute cycling distance along safe infrastructure
	High level of permeability and reduction of walking and cycling distance and time	Cycling and walking catchments somewhat restricted	Cycling and walking catchments somewhat restricted	Cycling and walking catchments less restricted	Cycling and walking catchments less restricted	Cycling and walking catchments more restricted
	LAP areas linked to adjacent centres and key transport interchanges through Public Transport	LAP areas each connected to many centres/key public transport interchanges	LAP areas each connected to many centres/key public transport interchanges	LAP areas each connected to many centres/key public transport interchanges	LAP areas each connected to many centres/key public transport interchanges	LAP areas each connected to some centres/key public transport interchanges
	Public transport stops within 10-minute walking distance	70-80% of residential area within 10 minute walking distance of a public transport stop	70-80% of residential area within 10 minute walking distance of a public transport stop	70-80% of residential area within 10 minute walking distance of a public transport stop	70-80% of residential area within 10 minute walking distance of a public transport stop	70-80% of residential area within 10 minute walking distance of a public transport stop
	Mode split which favours sustainable modes over car usage when compared to the existing situation	Measures proposed slightly favour sustainable modes	Measures proposed balance car usage and sustainable modes	Measures proposed slightly favour sustainable modes	Measures proposed Greatly favour sustainable modes	Measures proposed balance car usage and sustainable modes
	Impact on National Road Network	Slight- Moderate positive impact on road network expected	Slight-Moderate positive impact on road network expected	Slight- moderate negative impact on road network expected	No impact on road network expected	Slight-Moderate positive impact on road network expected

	KPIs	Package 1	Package 2	Package 3	Package 4	Package 5
	Proposed road network accommodates expected demand	Capacity expected to somewhat outweigh demand	Demand and Capacity are expected to be roughly equal	Demand and Capacity are expected to be roughly equal	Demand expected to somewhat outweighs capacity	Demand and Capacity are expected to be roughly equal
Environmental	Protection and enhancement of biodiversity	Significant negative impact on biodiversity expected	Significant negative impact on biodiversity expected	Significant negative impact on biodiversity expected	Significant negative impact on biodiversity expected	Significant negative impact on biodiversity expected
	Protection of environmentally sensitive areas (e.g. aquifers, groundwater, streams and rivers)	Slight- moderate negative impact on water quality/water resources expected	Slight-moderate negative impact on biodiversity expected	Slight- moderate negative impact on biodiversity expected	Significant negative impact on biodiversity expected	Slight-moderate negative impact on biodiversity expected
	Improvement of air quality and reduction in noise pollution	Slight- Moderate positive impact on air/noise environment	No significant air/noise emissions expected	Slight- Moderate positive impact on air/noise environment	Significant positive impact on air/noise environment	No significant air/noise emissions expected
	Protection and enhancement of archaeology and cultural heritage	Slight- moderate negative impact on archaeology, architectural heritage or cultural heritage expected	Slight-moderate negative impact on archaeology, architectural heritage or cultural heritage expected	Slight- moderate negative impact on archaeology, architectural heritage or cultural heritage expected	Slight-moderate negative impact on archaeology, architectural heritage or cultural heritage expected	Significant negative impact on archaeology, architectural or cultural heritage expected
	Impact on Emissions	Slight- Moderate positive impact on emissions environment expected	No significant impact on emissions expected	Slight- Moderate positive impact on emissions environment expected	Significant positive impact on emissions expected	No significant impact on emissions expected

As can be seen from the above table, most of the packages generally score well in terms of the Transport KPIs.

Packages 3 and 4 score particularly well in terms of pedestrian and cycle network connectivity, largely as a result of the proposed active travel and public transport only link proposed along Old Connaught Avenue, providing for the most direct connection between Old Connaught and Bray.

Package 4 scores better in terms of the expected mode split favouring sustainable modes, this is due to the lack of direct vehicular road provision across the M11, which is expected to favour sustainable modes to a greater degree than other options still allow for a direct vehicular link. Package 4 however, scores worse in terms of the network accommodating the expected demand, due to a lack of direct road connection between Old Connaught and Bray.

Package 1 generally performs well across the transport criteria, with no negative categorisation given to any of the criteria, although no dark green given either. Package 2 similarly is given no red classifications but is given fewer green scores than package 1.

In terms of environmental criteria, due to the proposed construction of a new bridge across the Ballyman Glen in close proximity to the SAC, each of the options are marked as having a potential significant impact on biodiversity. Package 5 scores particularly poorly on protection and enhancement of archaeology and cultural heritage due to the required road upgrades along Old Connaught Avenue.

From these results, Package 3 is seen as the preferred scenario, with package 4 being the next preferred option, followed by Package 1.

3.1.7.2 Rathmichael

Following the grouping of measures into transport packages, these packages were then assessed on the basis of several Key Performance Indicators (KPIs) as described in section 3.1.1.3. Table 3.48 presents the multi-criteria assessment of the defined transport packages for Rathmichael.

	KPIs	Package 1	Package 2	Package 3	Package 4	Package 5
Transport	Availability of an attractive and safe pedestrian network linked to internal and external opportunities					
	Journey time and distance reduction for sustainable modes of transport					
	Availability of a safe cycle route network linked to internal and external opportunities					
	High level of permeability and reduction of walking and cycling distance and time					
	LAP areas linked to adjacent centres and key transport interchanges through Public Transport					
	Public transport stops within 10-minute walking distance					
	Mode split which favours sustainable modes over car usage when compared to the existing situation					
	Impact on National Road Network					
	Proposed road network accommodates expected demand					
Environmental	Protection and enhancement of biodiversity					
	Protection of environmentally sensitive areas (e.g. aquifers, groundwater, streams and rivers)					
	Improvement of air quality and reduction in noise pollution					
	Protection and enhancement of archaeology and cultural heritage					
	Impact on Emissions					

Table 3.48 Rathmichael Transport Packages' MCA

	KPIs	Package 1	Package 2	Package 3	Package 4	Package 5
Transport	Availability of an attractive and safe pedestrian network linked to internal and external opportunities	Many services within 10 minute walking distance	Many services within 10 minute walking distance	Many services within 10 minute walking distance	Many services within 10 minute walking distance	Many services within 10 minute walking distance
	Journey time and distance reduction for sustainable modes of transport	Somewhat direct routes available when travelling by sustainable modes	Similar directness and journey time for sustainable modes when compared with vehicular travel	Somewhat direct routes available when travelling by sustainable modes	Similar directness and journey time for sustainable modes when compared with vehicular travel	Similar directness and journey time for sustainable modes when compared with vehicular travel
	Availability of a safe cycle route network linked to internal and external opportunities	Some services within 10 minute cycling distance along safe infrastructure	Many services within 10 minute cycling distance along safe infrastructure	Many services within 10 minute cycling distance along safe infrastructure	Many services within 10 minute cycling distance along safe infrastructure	Many services within 10 minute cycling distance along safe infrastructure
	High level of permeability and reduction of walking and cycling distance and time	Cycling and walking catchments less restricted	Cycling and walking catchments less restricted	Cycling and walking catchments somewhat restricted	Cycling and walking catchments somewhat restricted	Cycling and walking catchments less restricted
	LAP areas linked to adjacent centres and key transport interchanges through Public Transport	LAP areas each connected to some centres/key public transport interchanges	LAP areas each connected to many centres/key public transport interchanges	LAP areas each connected to some centres/key public transport interchanges	LAP areas each connected to many centres/key public transport interchanges	LAP areas each connected to many centres/key public transport interchanges
	Public transport stops within 10-minute walking distance	60-70% of residential area within 10 minute walking distance of a public transport stop	70-80% of residential area within 10 minute walking distance of a public transport stop	60-70% of residential area within 10 minute walking distance of a public transport stop	70-80% of residential area within 10 minute walking distance of a public transport stop	70-80% of residential area within 10 minute walking distance of a public transport stop
	Mode split which favours sustainable modes over car usage when compared to the existing situation	Measures proposed slightly favour sustainable modes	Measures proposed slightly favour sustainable modes	Measures proposed balance car usage and sustainable modes	Measures proposed balance car usage and sustainable modes	Measures proposed slightly favour sustainable modes
	Impact on National Road Network	No impact on road network expected	No impact on road network expected	No impact on road network expected	No impact on road network expected	No impact on road network expected
	Proposed road network accommodates expected demand	Demand and Capacity are expected to be roughly equal	Demand and Capacity are expected to be roughly equal	Demand and Capacity are expected to be roughly equal	Demand and Capacity are expected to be roughly equal	Demand and Capacity are expected to be roughly equal
Environm	Protection and enhancement of biodiversity	Slight- moderate negative impact on biodiversity expected	Slight- moderate negative impact on biodiversity expected	Slight- moderate negative impact on biodiversity expected	Slight- moderate negative impact on biodiversity expected	Slight- moderate negative impact on biodiversity expected

	KPIs	Package 1	Package 2	Package 3	Package 4	Package 5
	Protection of environmentally sensitive areas (e.g. aquifers, groundwater, streams and rivers)	No impact on water quality/water resources expected	Slight- moderate negative impact on water quality/water resources expected	No impact on water quality/water resources expected	Slight- moderate negative impact on water quality/water resources expected	Slight- moderate negative impact on water quality/water resources expected
	Improvement of air quality and reduction in noise pollution	No significant air/noise emissions expected	Slight- Moderate positive impact on air/noise environment	No significant air/noise emissions expected	Slight- Moderate positive impact on air/noise environment	Slight- Moderate positive impact on air/noise environment
	Protection and enhancement of archaeology and cultural heritage	No impact on archaeology, architectural or cultural heritage expected	Slight- moderate negative impact on archaeology, architectural heritage or cultural heritage expected	No impact on archaeology, architectural or cultural heritage expected	Slight- moderate negative impact on archaeology, architectural heritage or cultural heritage expected	Slight- moderate negative impact on archaeology, architectural heritage or cultural heritage expected
	Impact on Emissions	No significant impact on emissions expected	Slight- Moderate positive impact on emissions environment expected	No significant impact on emissions expected	Slight- Moderate positive impact on emissions environment expected	Slight- Moderate positive impact on emissions environment expected

As can be seen from the above table, all of the packages score well in terms of the transport KPI's.

Packages 1 and 3 score higher in terms of journey time reduction for sustainable modes of transport, largely as a result of the provision of a more direct bus route, however this also results in these packages scoring worse in terms of provision of access to public transport as areas to the west are not served.

Package 1 scores slightly worse in terms of availability of a safe cycle route network linked to internal and external opportunities primarily due to the lack of a direct connection to Cherrywood or improvements to the bridge between Lordello Road and Shankill, which is included in Package 3.

Packages 3 and 4 score worse in terms of potential mode share due to the proposed upgrade of Ferndale Road and lack of one-way system along Ballybride Road which is more favourable to vehicular traffic compared to packages 1, 2 and 5.

In terms of environmental criteria, all packages are broadly equal, with packages 2, 4 and 5 scoring worse in terms of potential impacts to rivers due to construction of the proposed bridge over the Brides Glen river, but score better in terms of impact on air quality, noise pollution and emissions.

Overall, packages 2 and 5 are the preferred packages, scoring equally, however 5 is the chosen package due to the assessment undertaken in the MCA and the increased accessibility due to the potential active travel routes.

3.1.8 Emerging Preferred Scenario

3.1.8.1 Overview

Following the MCA process of all transport packages considered, the preferred scenario emerged. This scenario is described in this section.

Table 3.49 and Figure 3-59 summarise and illustrates the combined emerging preferred transport scenario for both the Rathmichael and Old Connaught LAP areas.

The details of the preferred scenario illustrated in Figure 3-59, Figure 3-60, Figure 3-61, and Figure 3-62 are diagrammatic only, and have been identified to inform the strategic infrastructure requirements for the LAP areas. The information included is not definitive. All information illustrated will be further considered and assessed as part of the Local Area Plan making process.

The Emerging Preferred Scenario is a combination of Old Connaught Package 3, and Rathmichael package 5. This scenario provides a balanced approach to transport provision across the two LAP areas, in which the needs of sustainable modes are prioritised while still accommodating the necessary vehicular circulation through the areas. Active travel provision is prioritised through the construction of key links across existing barriers where necessary, along with a strong internal network of active travel infrastructure across the LAP areas. The provision of active travel infrastructure directly along Ferndale Road is minimised in favour of alternative off-road cycle routes in order to maintain the character of the road while still accommodating for the movement of cyclists in the North-South axis and avoiding the need for lengthy one-way vehicular circulation routes.

The creation of one-way vehicular route along Lordello Road and Ballybride Road allows for the provision of two-way active travel infrastructure along these roads, while still allowing for access to these roads with minimal diversion routes and removing the potential for its use as a through route by creating opposing one-way directions along Ballybride Road. The provision for new vehicular routes around the periphery of Old Connaught Village facilitates the conversion of the existing village roads to Public Transport and Active Travel priority areas through the removal of through traffic along Old Connaught Avenue, along with the provision of a bus gate along the Old Connaught Avenue Bridge which extends this priority area to the east along Old Connaught Avenue as far as the junction with Dublin Road, while still facilitating local access for residents and access to facilities. The provision of new vehicular routes from Old Connaught to Crinken Lane and Dublin Road provides alternative vehicular access routes to the North and across the M11 to the east.

A bus route is proposed running through each of the LAP areas utilising the northern section of Ferndale Road with routes to Bray and Fassaroe to the south. The exact service and routing of the proposed bus routes beyond the LAP areas is subject to further analysis and consultation with the NTA and may be delivered in the form of a local route or offshoot of the E-spine depending on the needs of the area, however, should be of high frequency to accommodate the required number of units. In order to enable the active travel and public transport priority zone along Old Connaught as outlined in section 3.1.6.1, two bus gates are proposed along Old Connaught Avenue, one at the junction of Ferndale Road and Thornhill Road, and one along the Old Connaught Avenue bridge across the N11. These bus gates will create an active travel and public transport priority area within Old Connaught Village and along Old Connaught Avenue as far as the junction with Dublin Road. The provision of new active travel connections also facilitates easier access to existing and proposed public transport services such as the Luas Brides Glen stop, the DART Shankill, Woodbrook, and Bray Stations, and the proposed BusConnects Bray to City Centre CBC along Dublin Road. Any associated impacts to the national road network as a result of the proposed bus gates will have regard to the presence of the M11/N11, the requirements of SPNR and demonstrate compliance with TII Publications as part of any further development stages.

The indicative Luas line alignments illustrated in the Emerging Preferred Scenario (Figures 3-55 and 3-57) are consistent with that identified in the Land Use Zoning Maps of the dlr County Development Plan 2022-2028. As stated in the GDA Transport Strategy 2022-2042, the alignment and the locations to be served between Bride's Glen and Bray have yet to be determined and will be subject to detailed design and planning work. It is noted that while the Luas spur towards Fassaroe is included in the Emerging Preferred Scenario, and is illustrated in the dlr County Development Plan 2022-2028, it is not indicated as part of the GDA Transport Strategy 2022-2042.

In addition to the indicative active travel network identified in Figure 3-59 and Figure 3-60, it is envisaged that the proposed bridge over the N11 (EL8), may comprise a fundamental component of the bus network, connecting Old Connaught with the old Dublin Road, facilitating more direct access to existing and planned public transport facilities, amenities and services.

In order to combine the two packages, in which the bus route is proposed along Ferndale Road for the Rathmichael section, and along the proposed new road for the Old Connaught Section, the bus route is now

proposed to travel between Ferndale Road and the new road via the proposed internal link in the north of the SLR (IL3).

This scenario will be carried forward into the overall ICAS emerging preferred strategy, where adjustments will be made to further integrate the proposed measures into the overall LAP area strategy, accounting for the spatial requirements of other infrastructural and housing proposals in the areas.

Figure 3-60 shows the proposed cycle network and Figure 3-61 shows the proposed public transport measures for the two LAP areas.

Table 3.49 Emerging Preferred Scenario - Old Connaught and Rathmichael

Measure Type	Proposed Measures
Active Travel Connections	OB5, OF1, OF4, OW6, OW3, RC1, RC3, RC4, RC6, RC7, RO2, RO3, RO4, RS1, RS3, RS5
Cherrywood to Bray cycle route	GR3B
Road Upgrades	RU1, RU3, RU4, RU6, RU15
Internal Development Road Links	IL3, IL4, IL5, IL6, IL7, IL8
Strategic External Road Links	EL8*
Bus Routes	BR3A, BO2, BO6

*If the N11/M11 Junction 4 to Junction 14 Improvement Scheme is progressed in this vicinity then re-consideration should be given to the progression or otherwise of EL8.

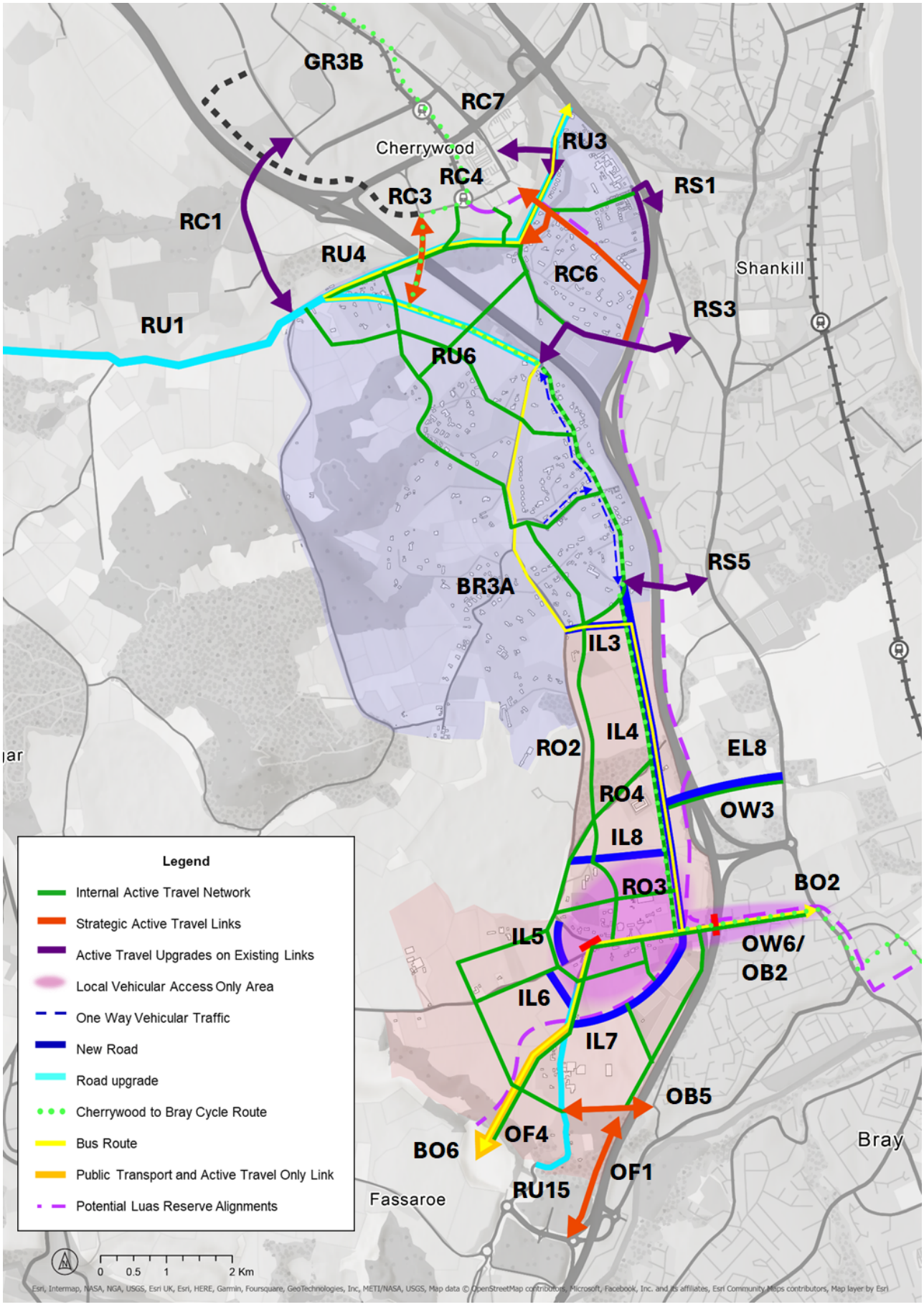


Figure 3-59 Emerging Preferred Scenario Overview

*Note: The Luas Line alignment illustrated is indicative. As stated in the GDA Transport Strategy 2022-2042, the alignment of the Luas extension and the locations to be served between Bride's Glen and Bray have yet to be determined and will be subject to detailed design and planning work.

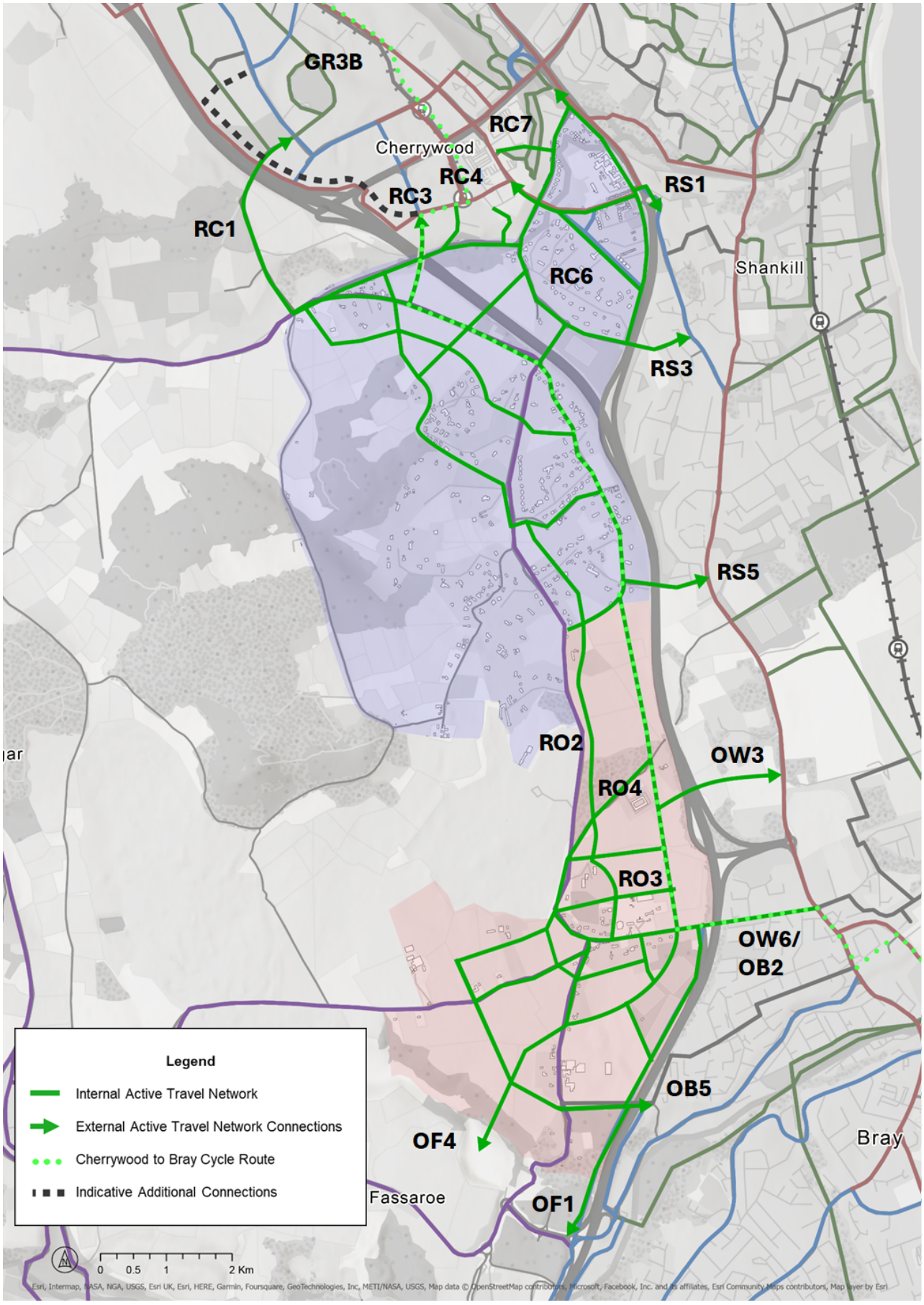


Figure 3-60 Emerging Preferred Scenario – Proposed Cycle Network

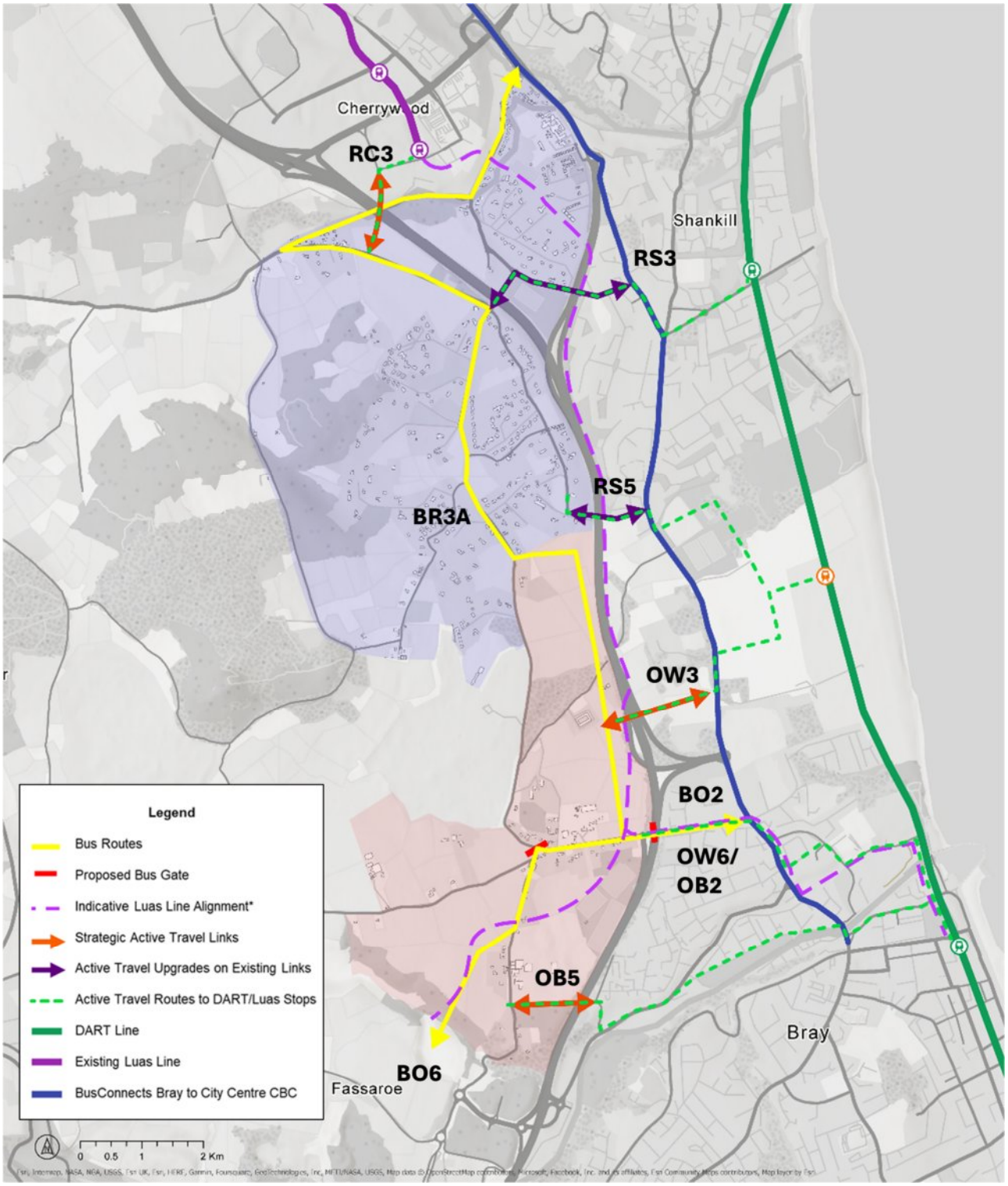


Figure 3-61 Emerging Preferred Scenario – Proposed Public Transport Measures

*Note: The Luas Line alignment illustrated is indicative. As stated in the GDA Transport Strategy 2022-2042, the alignment of the Luas extension and the locations to be served between Bride's Glen and Bray have yet to be determined and will be subject to detailed design and planning work.

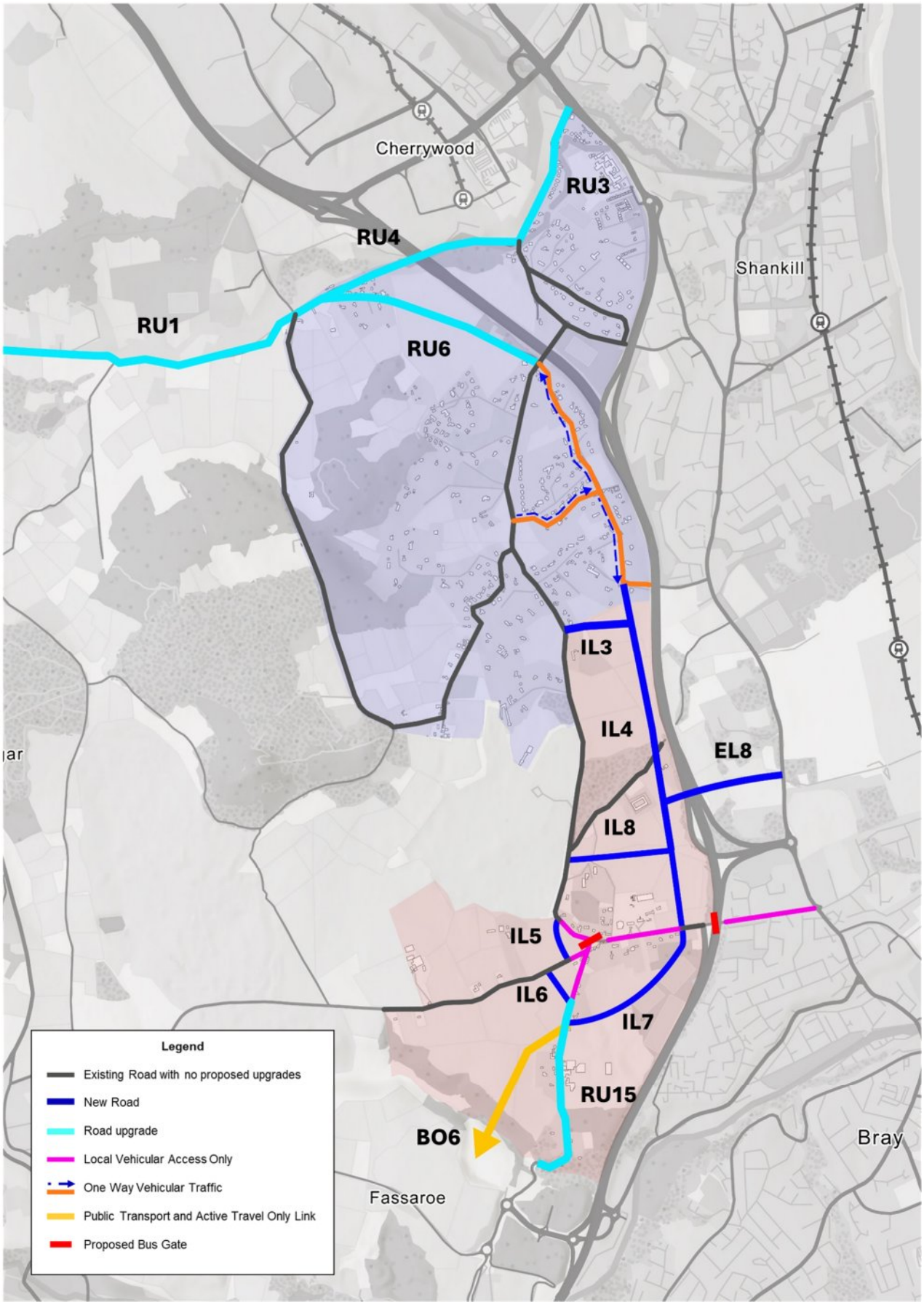


Figure 3-62 Emerging Preferred Scenario – Proposed Road and Vehicular Circulation Measures

3.2 Green Infrastructure and Biodiversity, Parks and Open Spaces, Heritage and Conservation

3.2.1 Green Infrastructure and Biodiversity - Policy and Requirements

The DLR CDP includes a Green Infrastructure (GI) Strategy. The strategy includes a high level, county-wide network of integrated green infrastructure, connected to surrounding and regional green infrastructure networks. In particular, the GI Strategy identifies a chain of 'gateway hubs' (major parks and gardens) to transition and provide access between the urban area and the Dublin Mountains. Development in the Rathmichael and Old Connaught LAP areas will need to protect this area as a county amenity and enhance the green infrastructure network, which is shown in Figure 3-63. Key actions identified in the GI Strategy within Corridor 6 'Gateway Parks', which have relevance to the LAP areas include:

- No 1. Improve corridor links across the M50, linking habitat and water functions. It is accepted that some breaks in habitat connectivity is likely for such large infrastructure crossings
- No. 11. Enhance the ecological corridor from Rathmichael Wood to Shanganagh Park.

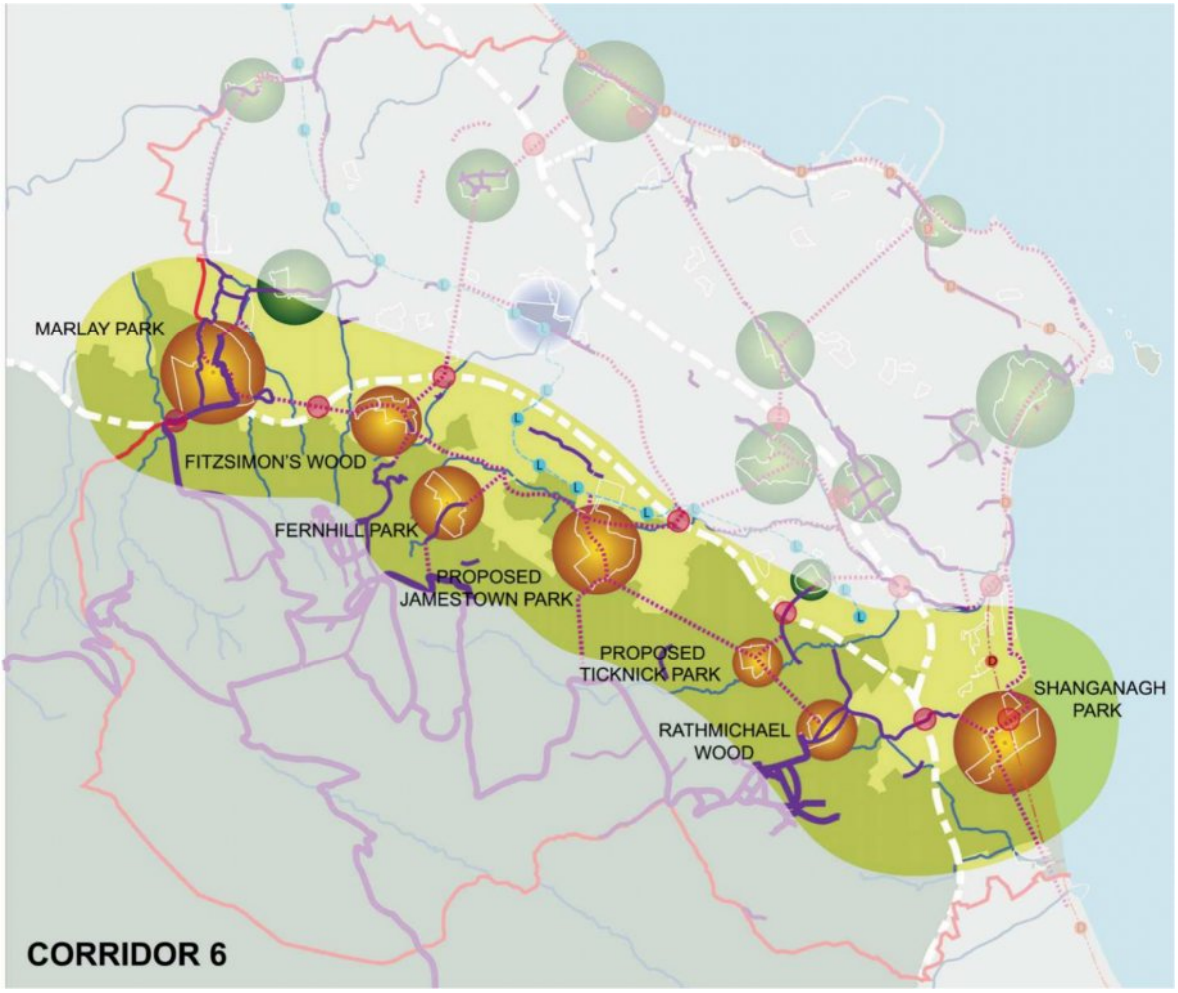


Figure 3-63 Green Infrastructure Strategy Gateway Parks - Corridor 6

The overarching objective (as per DLR CDP Policy Objective PO GIB1) for green infrastructure and biodiversity is to protect existing green infrastructure and encourage and facilitate, the development, design and management of high quality natural and semi-natural areas.

If adequately planned and implemented, the landscape can assimilate development into the existing environment in harmony with the overall character of the area (PO GIB27). Sense of place will be enhanced by conserving, as far as possible, the form of the landscape, its topography, vegetation (PO GIB25), cultural heritage assets (PO GIB18), coupled with a high level of development design. Landscape Character Assessments were undertaken for Rathmichael and Ballyman (which mentions Old Connaught) and are included in Appendix 8 of the County Development Plan. The principles for development based on this

landscape character assessment inform landscape protection measures, landscape management to maintain or enhance character and guide decision making on development that individually or cumulatively changes the character of a place.

The landscape approach will ensure that existing ecological networks and designation areas will be conserved (PO GIB18, 21, 23) and that new landscape elements will link into this network both structurally and in terms of appropriate plant species selection and habitat creation (PO GIB20, 22).

Enhancing protected views to the surrounding landscape will provide a distinctive experience in Rathmichael and Old Connaught. Sense of place will be reinforced by ensuring that the views and connections to the surrounding landscapes will be protected and enhanced (PO GIB6).

Open spaces will provide the opportunity to manage drainage, flood risk and incorporate SuDS (PO GIB29), while preserving existing water courses and their ecological value (PO GIB24). The landscape will accommodate appropriately designed sustainable drainage elements. These landscape elements can function as attractive amenities and enhance biodiversity net gain.

As per DLR Green Infrastructure Strategy 2022-28, regarding Corridor 6, the first key action includes an objective to improve corridor links across the M50, which should attempt to link habitat and water functions. It is accepted that some breaks in habitat connectivity is likely for such large infrastructure crossings.

It is important to distinguish between public open spaces and biodiversity areas so we can establish their purpose and function. Public open spaces are designed for human recreation and social activities, while biodiversity areas are managed to protect and enhance ecological diversity and habitats. Public open spaces require maintenance for safety and recreational use, whereas biodiversity areas need conservation-focused management to protect ecosystems and species. Public open spaces prioritise accessibility and high human activity, which can sometimes degrade the environment, while biodiversity areas restrict access to minimize human impact and preserve natural conditions. Biodiversity areas play a critical role in conserving species and ecosystems, whereas public open spaces primarily enhance human well-being and social interaction.

Figure 3-64 highlights key habitats identified in the LAP areas and Figure 3-65 highlights species of higher conservation value associated with the key habitats.

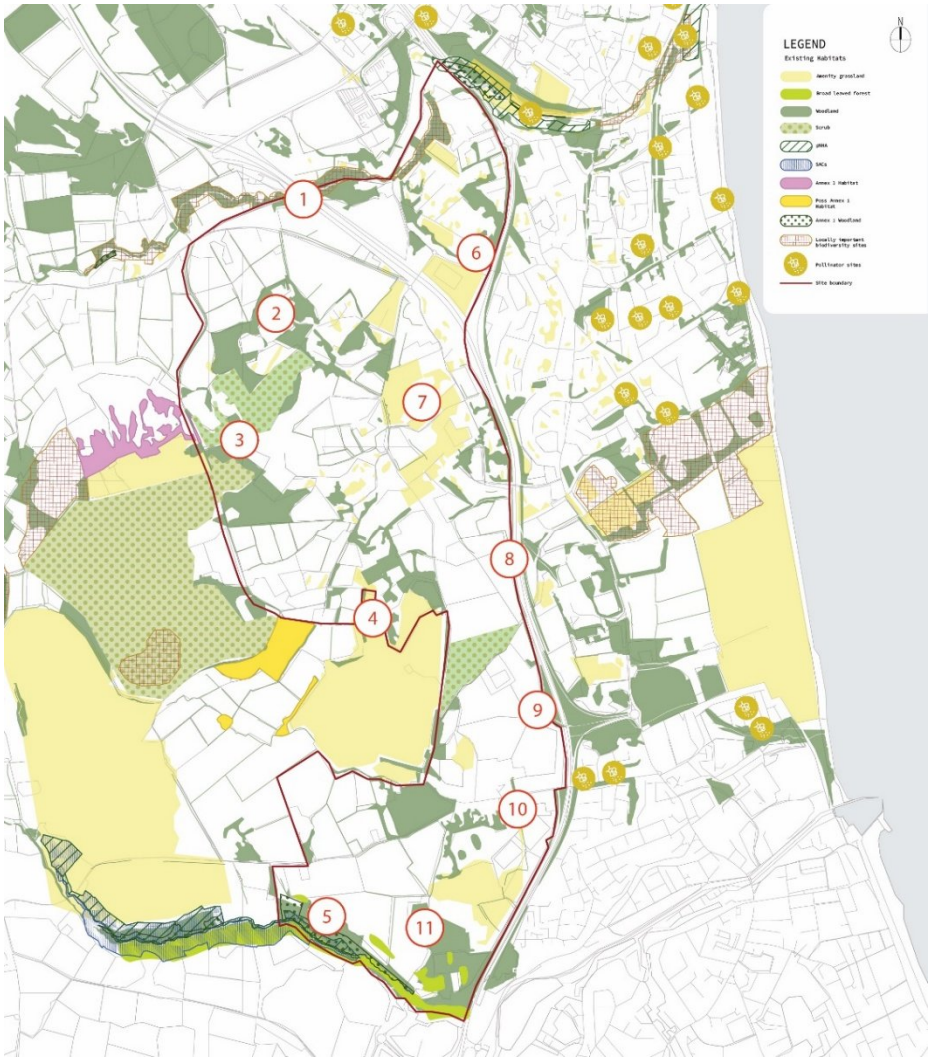


Figure 3-64 Key Habitats Identified

1. Riparian Corridor between Dingle Glen pNHA and Loughlinstown Wood pNHA.

2. Mosaic of habitat offering suitability for species of conservation concern including scrub, mixed broadleaf woodland, dry humid acid grassland.

3. Combination of Annex I dry heathland, scrub, dry humid acid grassland, wet grassland and coniferous plantation.

4. A junction where two possible Annex I habitats occur with adjoining woodland and scrub habitat.

5. SAC (Tufa) and proposed Natural Heritage Area (Ballyman Glen). Existing water courses provide riparian ecological connectivity across M11. However, limitations of ecological connectivity exist with the M11 being a physical barrier.

6. Corridor offering potential between pNHA and M11 and centre of northern portion of site.

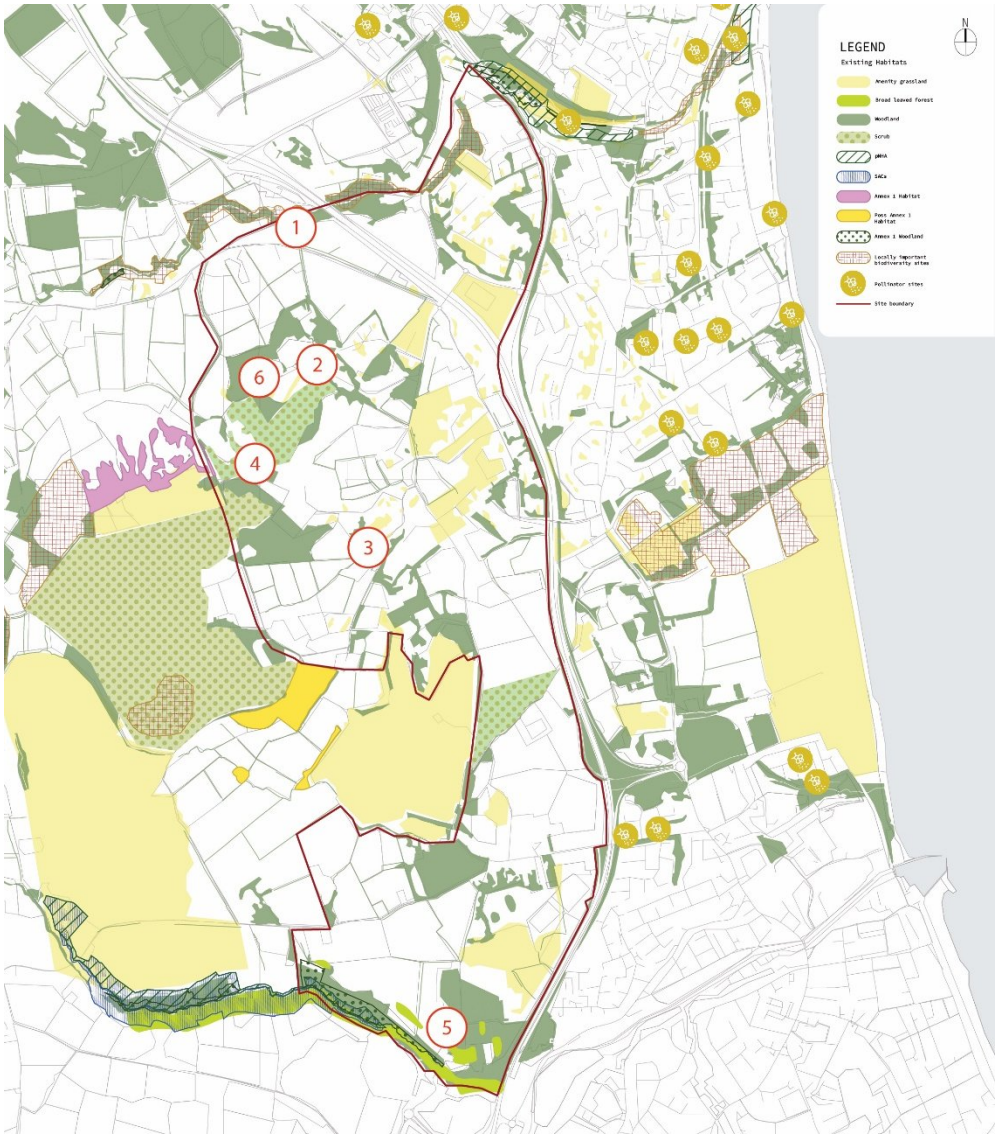
7. Other potential habitats include residential gardens dominant with associated wooded vegetation abundant. Potential to improve connectivity Rathmichael Wood to Shanganagh Park.

8. Four no. county level hedgerows with woodland and scrub. Potential to improve connectivity Rathmichael Wood to Shanganagh Park.

9. Habitat adjacent the M11 that runs perpendicular to several county hedgerows and consists of moderate quality hedgerow.

10. Native woodland and residential hedgerow adjacent to the M11 with potential for mammal and bird connectivity across M11 and south.

11. Habitat >50% artificial surface and amenity grassland also.



Enicocerous exsculptus 1
Moss beetle that lives in the moss on stones in streams either in the middle of the flow or on margins.

Small Sallow Mining Bee 4
Associated with willow-rich deciduous woodland edges, scrub and brownfield sites. Oligolectic on willows, particularl Goat and Grey Willow. Requires loose aggregation to nest.

Dark Green Fritillary 2
Uses a range of open sunny and flower rich habitats. Depends particularly on Viola species as larvae.

Common Furrow Bee 5
A wide variety of flowery areas with Dandelion, hawkweeds, hawkbits, thistles, knapweeds, buttercups, willow blossom, geraniums and many other wil plants.

Grey Banded Mining Bee 3
A species of dry grassland, warm scrubby sites, and occasionally flower-rich parks and gardens, requires loose aggregation to nest.

Skylark 6
A ground nesting species of rough open grassland with a diet that consists of seeds and insects. Very vulnerable to disturbance.

Figure 3-65 Species of Higher Conservation Value Associated with Key Habitats

The following options are proposed for the maintenance and enhancement of ecological integrity in accordance with the Lawton principles[2]. Consideration is also given to where habitat heterogeneity can be improved, in particular based upon the species and habitats noted to be of conservation status in the area in the base-mapping phase. They have also been selected for their strategically considered ability to provide for the forementioned DLR policy objectives.

Figure 3-66 High Level Opportunities and Emerging Options Mapping

The below options include three overarching objectives illustrated in red, orange and green. It should be noted that all four options are not exclusive and the overarching objectives should be considered as a general direction for management rather than each management objective to be considered exclusive. It may be that protection i.e. red outline, is recommended for a site, but that in some options this is also given a green management option which relates to restoration.

Red highlights areas for protection of existing designated sites including Ballyman Glen SAC/pNHA and Loughlinstown Woods pNHA. The protection of these designated sites is of primary importance and is a minimum requirement for the area. This will maintain existing biodiversity and function with the aim of

[2] Professor John Lawton 'Making Space for Nature' 2010