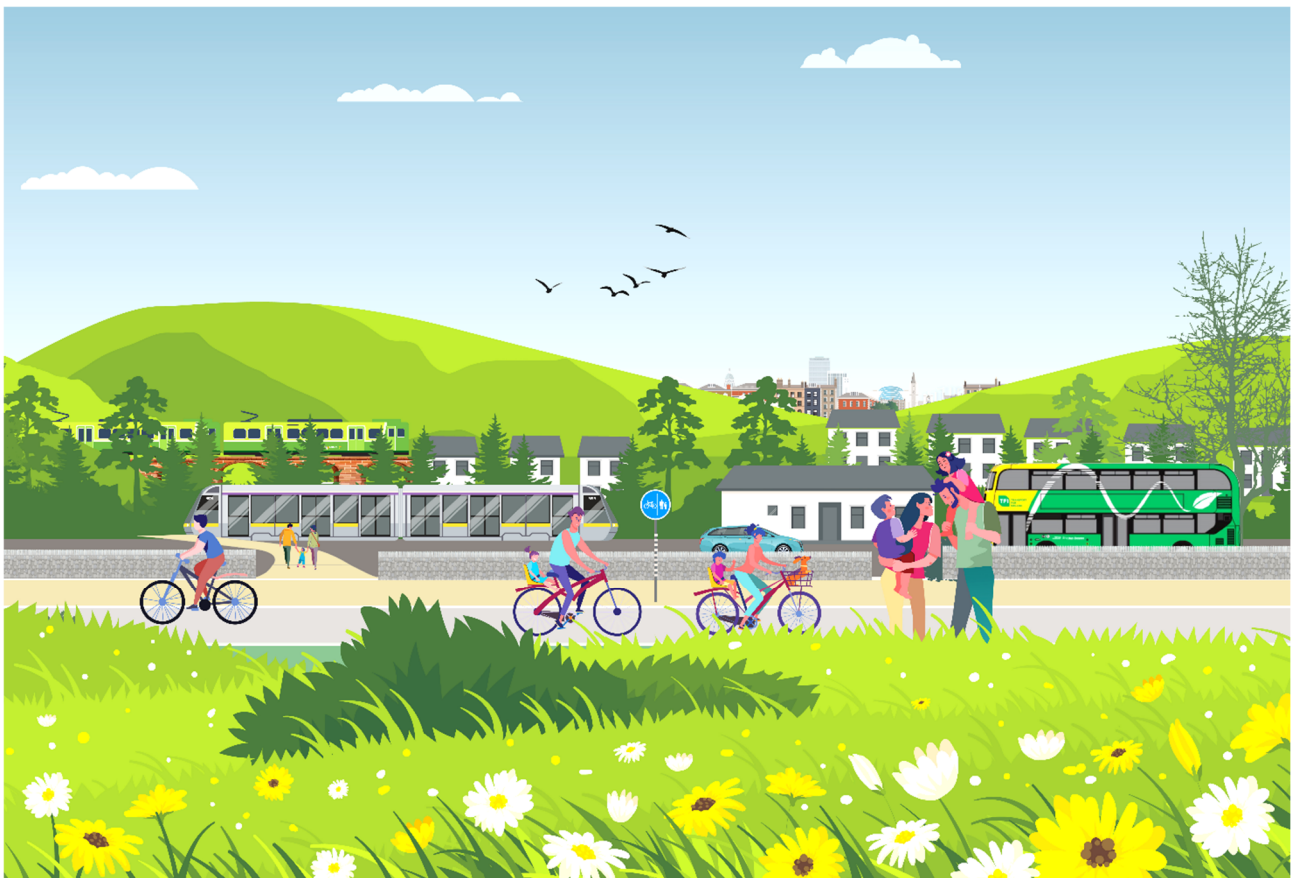


Dún Laoghaire-Rathdown County Council

Infrastructure Capacity Assessment Study

Part 5 – ICAS Final Study



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This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Appendices

Appendix A

SEA and AA Screening Reports

Appendix B

Infrastructure Overview

Disclaimer

All information contained within this ICAS Part 5 Report is point in time and should not be relied on for any purpose other than for which it was prepared, that being to inform the ICAS Study. The information contained herewith is preliminary in nature and indicative only. All information may be subject to further consideration and assessment.

1. Introduction

This Report comprises an Infrastructural Capacity Assessment Study (ICAS) of the southeast area of Dún Laoghaire-Rathdown. The purpose of the ICAS is to identify the high level strategic enabling infrastructure to facilitate the plan-led development of the proposed Local Area Plan areas of Old Connaught and Rathmichael. This Study was prepared with relevant stakeholders and infrastructure providers including, in collaboration with TII, NTA, Wicklow County Council, and in conjunction with Uisce Éireann, Department of Education, OPW, HSE, NPWS, ESB, Gas Networks Ireland and Irish Rail. The ICAS Study area is indicated in Figure 1-1.

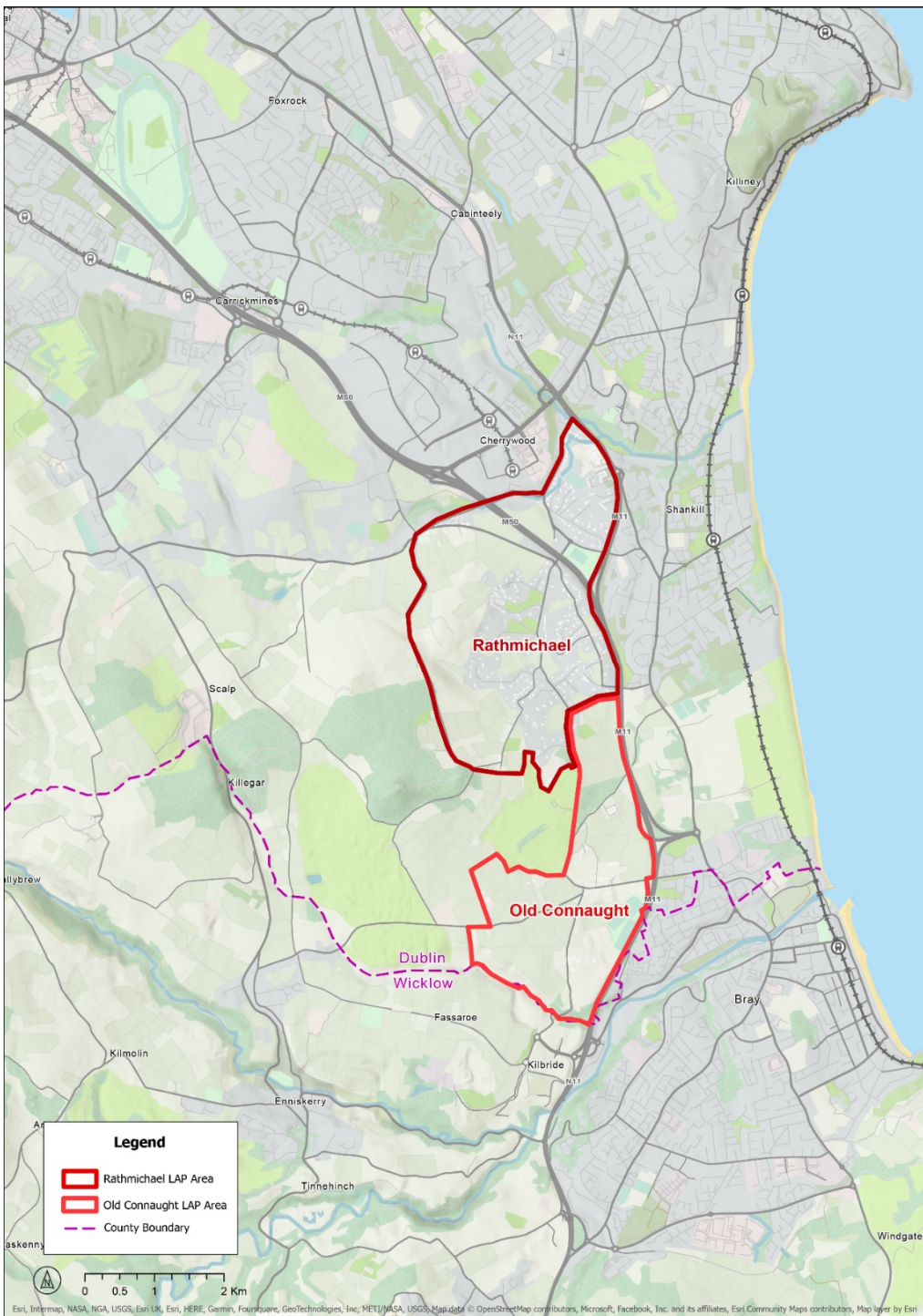


Figure 1-1: ICAS Study Area

1.1 ICAS Final Study - Report Structure

This Report comprises the ICAS Final Study. While this Report represents the Final Study it should be read in conjunction with preceding ICAS Study Reports, Part 1 to Part 4. This ICAS Final Study is structured as follows:

- Chapter 1 – Introduction
- Chapter 2 – Old Connaught and Rathmichael Infrastructure Requirements
- Chapter 3 – Phasing of Development
- Chapter 4 – Implementation and Funding
- Chapter 5 – Monitoring and Evaluation
- Chapter 6 – Conclusion

1.2 Background

Both Old Connaught and Rathmichael are identified as ‘New Residential Communities’ in the Settlement Strategy of the dlr County Development Plan 2022-2028, see Figure 1-2. The Core Strategy Table of the County Development Plan identifies a combined estimated residential yield of c. 4,500 new homes at Old Connaught and Rathmichael. Potential for a further c. 1,050 new homes is also identified at Old Connaught by way of a Strategic Land Reserve.

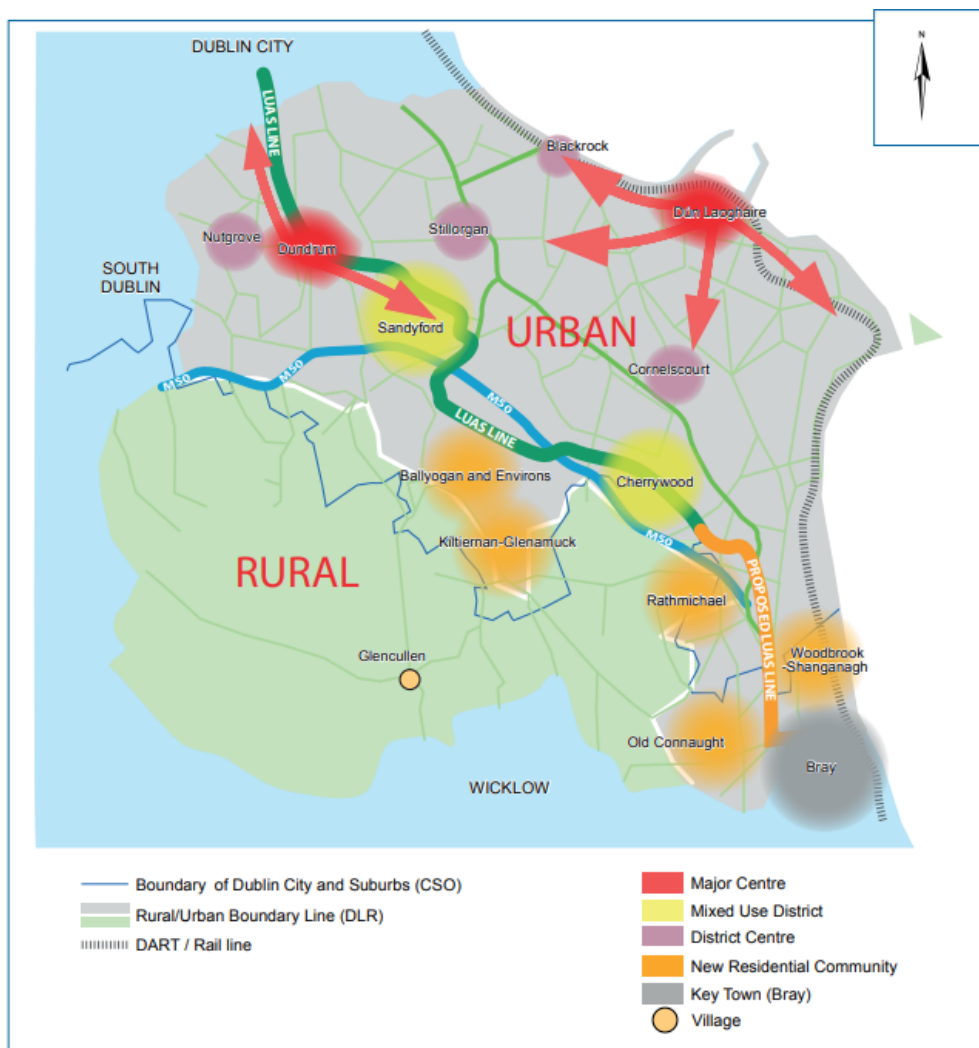


Figure 1-2: Core Strategy Map, dlr County Development Plan 2022-2028

In accordance with the requirements of the National Planning Framework, the Core Strategy of the dlr County Development Plan 2022-2028 undertook a high level assessment of zoned lands in the County in order to apply a standardised, tiered approach to differentiate between i) zoned land that was serviced and ii) zoned land that was serviceable within the life of the County Development Plan. Through this assessment, both Old Connaught and Rathmichael were identified as tier 2 zoned lands – lands that were not considered sufficiently serviced to support new development, but which had the potential to become fully serviced within the lifetime of the Plan.

Having regard to the findings of the dlr County Development Plan Infrastructure Assessment, the lands at Old Connaught and Rathmichael were both zoned Objective ‘A1’ – ‘To provide for new residential communities and Sustainable Neighbourhood Infrastructure in accordance with approved Local Area Plans’. The Development Plan highlights that the future development of these areas is contingent upon the timely delivery of supporting infrastructure and in this regard states that implementation plans incorporating phasing programmes should be prepared as part of the Local Area Plan making process for both new communities, linking development with the commensurate delivery of supporting infrastructure.

1.3 Purpose of the ICAS

The overarching purpose of the ICAS is to identify the high level strategic enabling infrastructure to facilitate the plan-led development of the two proposed LAP areas of Old Connaught and Rathmichael.

Post adoption of the dlr County Development Plan 2022-2028, the Planning Authority commenced the process of preparing Local Area Plans for both Old Connaught and Rathmichael. A fundamental component to inform these Local Area Plans was the progression of an Infrastructural Capacity Assessment Study to analyse and address the significant infrastructural deficiencies in both LAP areas. This was in response to the tier 2 zoning status of the lands at Old Connaught and Rathmichael as identified in the County Development Plan.

Following a tendering process, dlr County Council commissioned Arup consultants to prepare an ICAS for Old Connaught and Rathmichael. The scope of the ICAS was to inter alia:

- Identify the proposed high-level strategic enabling infrastructure required to facilitate plan-led development of the two Local Area Plan areas.
- Provide a high-level implementation plan to set out the strategic infrastructural and service requirements for each successive phase of development in both Local Area Plan areas.

The purpose of the ICAS is to examine a range of infrastructural elements necessary to inform plan-led development through the Local Area Plan. The range of strategic enabling infrastructure elements considered in the ICAS include transport; green infrastructure and biodiversity, heritage and conservation, open space, parks and recreation, water and wastewater, drainage, social infrastructure - community and education facilities, and utilities - power supply and telecommunications.

1.4 ICAS Governance and Stakeholder Engagement

The ICAS Study was prepared by Arup in collaboration with Dún Laoghaire-Rathdown County Council and other stakeholders. A Project Stakeholder Board for the project was established by dlr and comprised of representatives from relevant stakeholders and infrastructure providers including TII, NTA, Wicklow County Council, Uisce Éireann, Department of Education, OPW, HSE, NPWS, ESB, Gas Networks Ireland and Irish Rail. The Project Stakeholder Board performed a formative role throughout the process in the preparation and finalisation of the ICAS Study.

1.5 ICAS Methodology

The overall ICAS methodology is broadly based on the Area Based Transport Assessment (ABTA) approach. The availability of guidance for non-transport related infrastructure to support the development of sustainable communities is variable, and the ICAS therefore applied specific evidence based analysis to support recommendations with respect to other infrastructure requirements. A graphical presentation of the ICAS and ABTA methodology followed is shown in Figure 1-3.

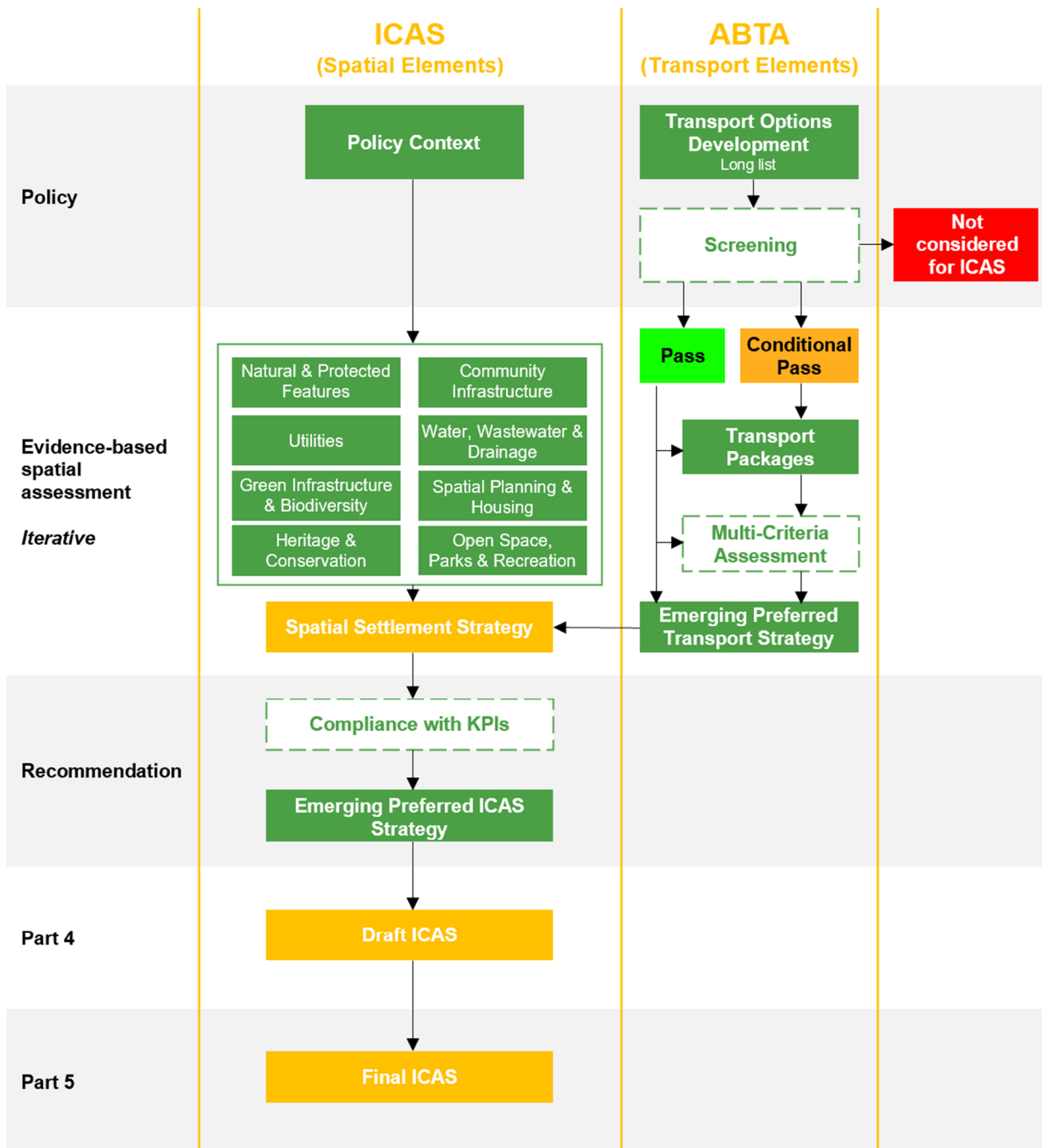


Figure 1-3: ICAS and ABTA Methodology

The ABTA methodology involved an initial options development process, for which transport options were developed. These ‘Long List’ transport options and high level land use scenarios were screened to form a short list of options which were packaged into scenarios that seek to address the transportation requirements of the LAP areas. These transportation packages were then assessed using a Multi-Criteria Assessment process to identify a preferred transport strategy.

The ICAS is multi-disciplinary in nature. The ICAS addresses a variety of other infrastructural elements including green infrastructure and biodiversity, heritage and conservation, open space, parks and recreation, water and wastewater, drainage, social infrastructure - community and education facilities, and utilities - power supply and telecommunications.

These infrastructural elements were progressed iteratively in order to identify a high level multidisciplinary infrastructure framework for the LAP areas.

1.6 ICAS Study Stages

The ICAS comprised a multi-stage reporting process. The stages of the ICAS Study are indicated in Figure 1-4.



Figure 1-4 ICAS Structure

The ICAS Part 1 and Part 2 Reports laid the groundwork for the Study by reviewing current conditions and identifying opportunities and constraints in the area. The starting point in establishing a framework for the identification of high level strategic enabling infrastructure to support the sustainable development of the LAP areas, was by examining the strategic planning context and considering various features and considerations including inter alia topography, water bodies, flood risk areas, green space and environmentally sensitive areas, heritage and conservation together with existing and planned infrastructure and the policy framework.

The Part 3 Report focused on identifying a range of high level infrastructure options for each infrastructure discipline. These options were evaluated by various multi criteria assessment processes that were tailored by discipline to select the preferred options that best achieved the study objectives. The high level enabling infrastructure identified was collated and informed the preparation of preliminary settlement strategies for the ICAS area.

The ICAS Part 4 Report developed the strategic enabling infrastructure requirements for the Study area through the preparation of a high level implementation plan, a phasing programme and potential funding options.

This current Report, the Part 5, ICAS Final Study, consolidates the findings and recommendations from the previous Reports. It outlines the strategic enabling infrastructure requirements to support the plan-led development of the Old Connaught and Rathmichael LAP areas and provides a high level implementation plan, a phasing programme and potential funding options.

1.7 ICAS and Local Area Plans

The ICAS is non-statutory document. The ICAS is not required by legislative, regulatory or administrative provisions and is not subject to a formal legislative approval procedure. The ICAS identifies proposed recommendations for high-level strategic enabling infrastructure required to facilitate plan-led development of the proposed LAP areas of Old Connaught and Rathmichael and is intended to be considered in the formulation of policy by dlr to this effect.

The preparation and adoption of Local Area Plans will comprise the relevant statutory planning documents to guide the future development of Old Connaught and Rathmichael. The formulation and adoption of Local Area Plans for each area is a reserved function of the Elected Members of Dún Laoghaire-Rathdown County Council. The formulation and adoption of the Local Area Plans will be progressed by the Local Authority and the Elected Members in accordance with the requirements of the Planning and Development Act.

1.8 Environmental Assessment

The assessment of environmental issues comprised an important component of the ICAS process. Appendix A of this Report includes a Strategic Environmental Assessment (SEA) Applicability Screening Report and an Appropriate Assessment (AA) Screening Report.

The SEA Applicability Screening Report provides the findings of the SEA Applicability Screening process for the ICAS. The ICAS Study identifies the proposed recommendations for high-level strategic enabling infrastructure required to facilitate plan-led development of the proposed LAP areas of Old Connaught and Rathmichael, which will then be considered in the formulation of policy by dlr to this effect. It has been

determined that the SEA Directive does not apply to the ICAS and that proceeding to Stage 2 Screening is not necessary in this case.

An Appropriate Assessment of a plan or project is required if it is likely to have a significant effect on a European site, either alone or in combination with other plans and projects, pursuant to the Habitats Regulations (as amended) and the Planning and Development Act 2000 (as amended). No pathways for effect were determined following review of the ICAS. Therefore, it was considered that the ICAS cannot have a conceivable effect on a European site. Additionally, it has been determined that the ICAS does not meet the definitions of a 'project' or a 'plan'.

It is highlighted that the ICAS Study is not required by legislative, regulatory or administrative provisions and nor is the ICAS subject to a formal legislative approval procedure. The Local Area Plans for Old Connaught and Rathmichael will be subject to SEA and AA processes and procedures.

2. Old Connaught and Rathmichael Infrastructure Requirements

2.1 Overview

This Chapter details the infrastructure requirements identified in the ICAS Part 3 Report - Options Development and Assessment and the Part 4 Report - Draft Study to support the plan-led development of the Old Connaught and Rathmichael LAP areas.

The development and assessment of transport options in the ICAS Part 3 Report was based on the Area Based Transport Assessment (ABTA) process while the options development and assessment process for other disciplines / infrastructure was based on methodologies specific to discipline requirements and needs.

Please refer to the ICAS Part 3 and 4 Reports for more information with regards to the analysis and assessments undertaken in order to identify the infrastructure requirements set out herein.

2.2 Transport Infrastructure

The development and assessment of transport options and the subsequent identification of proposed transport infrastructure to support the plan-led development of Old Connaught and Rathmichael was undertaken using the Area Based Transport Assessment (ABTA) process. Full details regarding the analysis undertaken is provided in the ICAS Part 3 Report.

The following section sets out the ABTA preferred transport scenario for both Old Connaught and Rathmichael and details the transport infrastructure components.

2.2.1 Transport Infrastructure - ABTA Preferred Scenario

Figure 2-1 comprises a composite illustration of the ABTA preferred transport scenario for the Old Connaught and Rathmichael LAP areas. Figure 2-2 illustrates the proposed active travel network for the LAP areas, Figure 2-3 illustrates the proposed public transport measures and Figure 2-4 illustrates the proposed road and vehicular circulation measures. The transport infrastructure illustrated in these figures is detailed in Table 2-1.

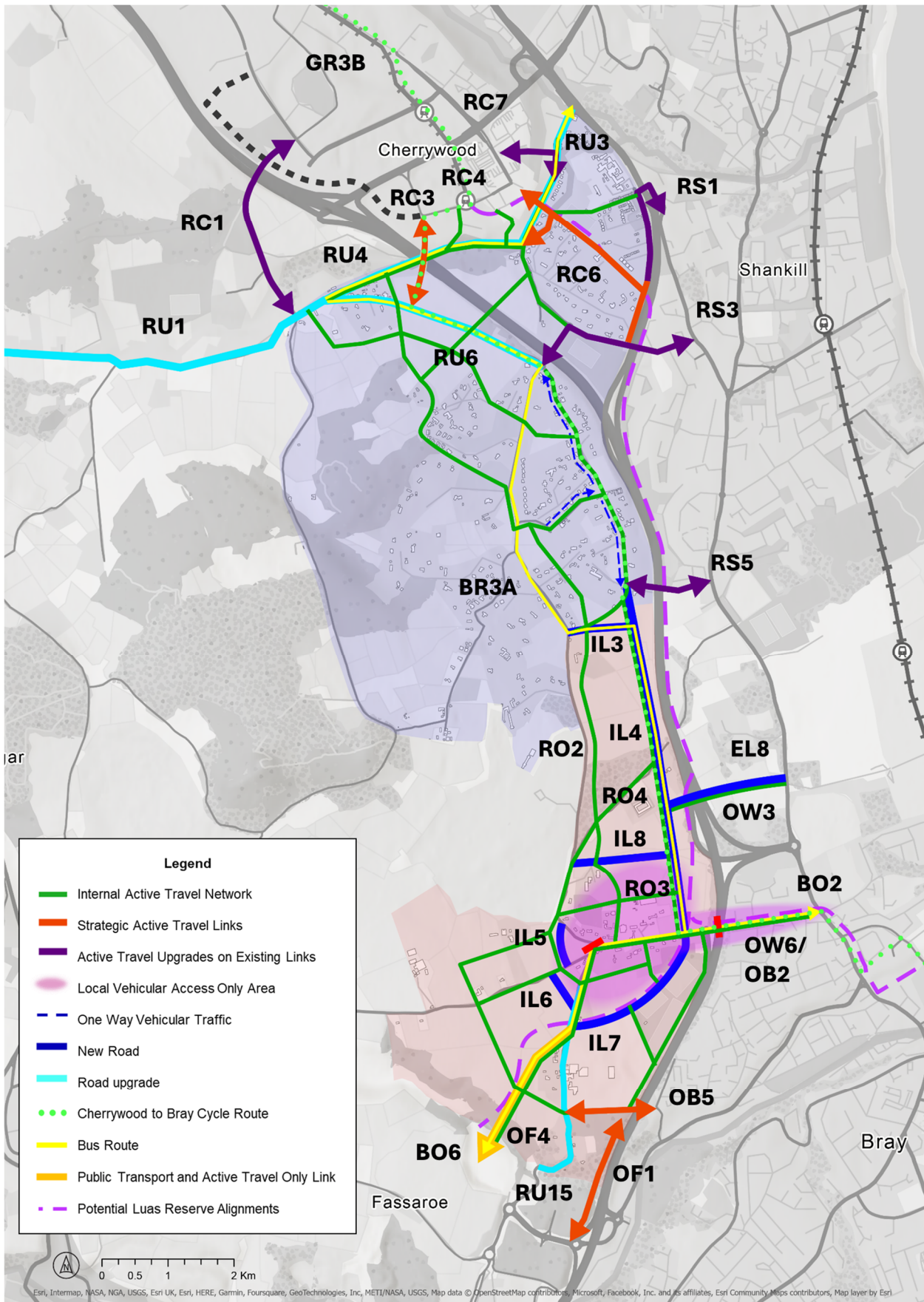


Figure 2-1: ABTA Preferred Scenario – Transport Overview

*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.

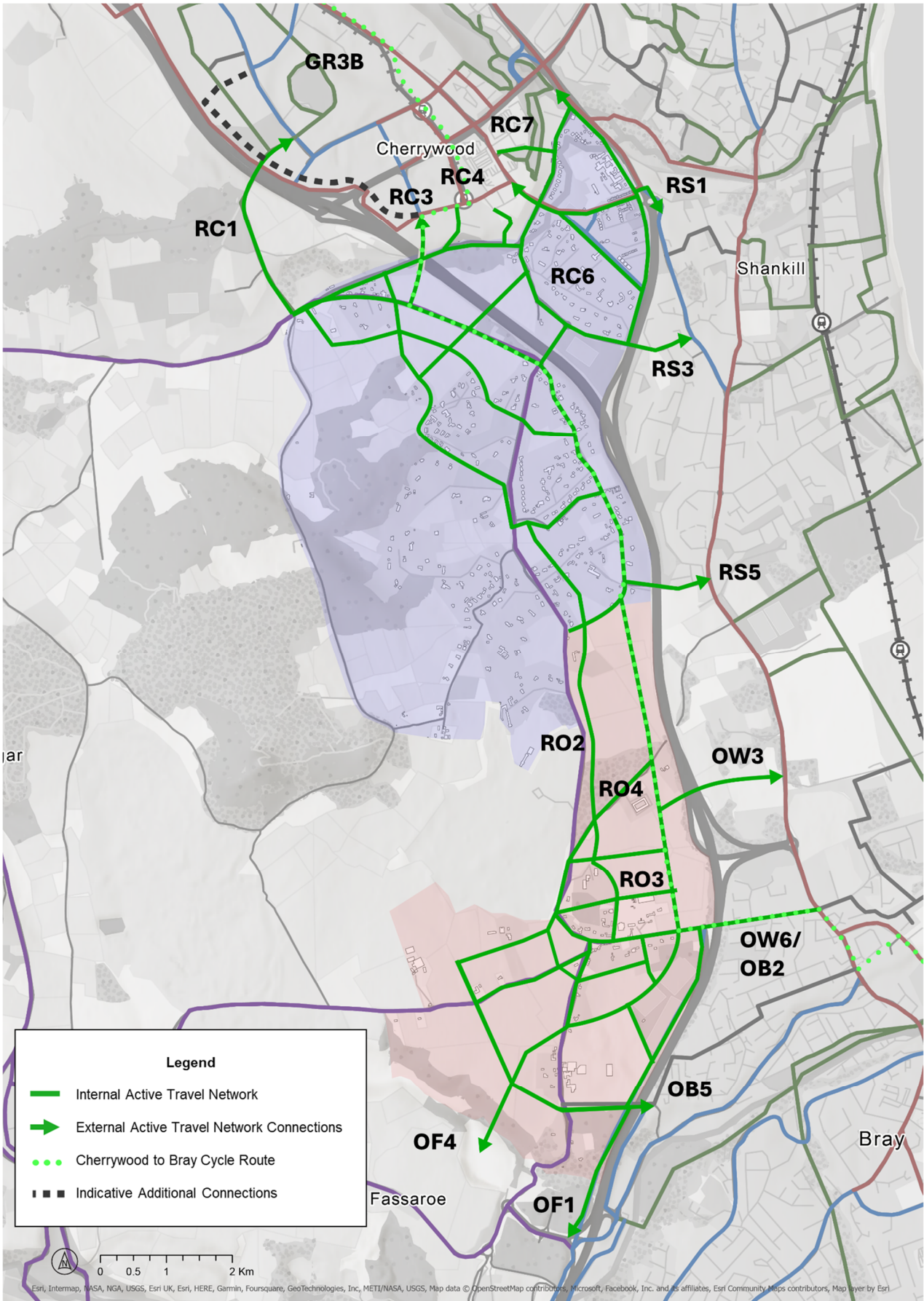


Figure 2-2: ABTA Preferred Scenario – Active Travel

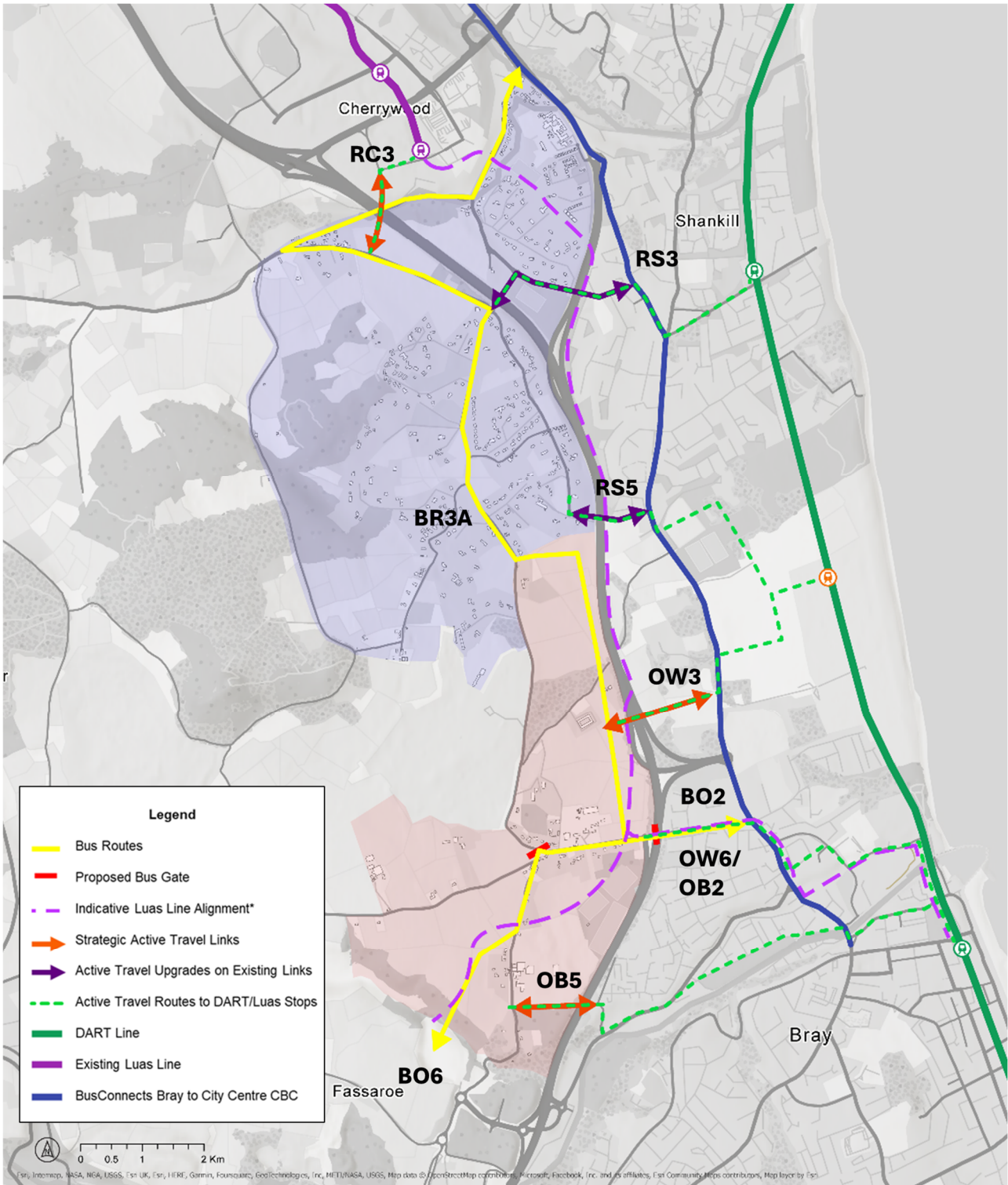


Figure 2-3: ABTA Preferred Scenario – Public Transport Measures

*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.

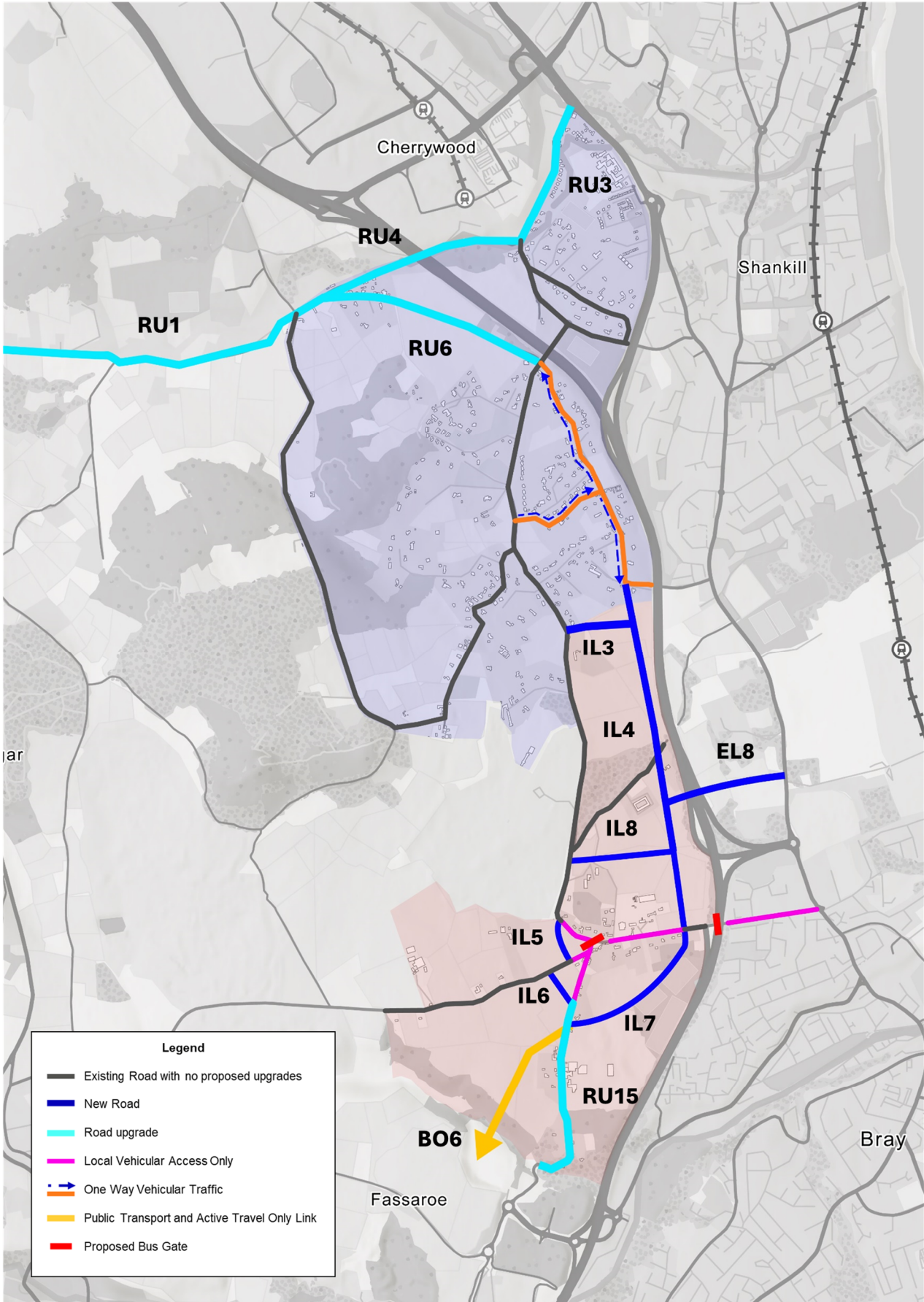


Figure 2-4: ABTA Preferred Scenario – Proposed Road and Vehicular Circulation Measures

Table 2-1 Transport Infrastructure Requirements

Infrastructure / Spatial Element	Sub-Element	Infrastructure Requirements
Transport	Active Travel	<ul style="list-style-type: none"> • Upgrade of Herenford Lane / Lehaunstown Lane • Provision of SLO 150 - Active Travel Link from Rathmichael Road to Cherrywood • Potential active travel link connecting Rathmichael and Cherrywood via the viaduct • Active travel link from Rathmichael Road via Brides Glen Road to Cherrywood • Provision of active travel link between Falls Road and Parc Na Silla Rise • Active Travel upgrades along Stonebridge Road from the roundabout junction of Ferndale Road to the junction with Dublin Road, part of which is proposed as part of the BusConnects Bray to City Centre CBC. • Bus Gates on Old Connaught Avenue • Love Lane and Love Lane Bridge • Active Travel Connection between Love Lane bridge and Fassaroe Lane • Internal Active Travel Network including north-south route parallel to Ferndale Road and an internal connection across M50, approximately 500m west of Stonebridge Road bridge • Designation of a Greenway route connecting Cherrywood to Bray which utilises a potential bridge between Cherrywood and Rathmichael Road, Rathmichael Road, Ballybride Road, a new link between Crinken Lane and Allies River Road, Old Connaught Avenue and Dublin Road. • Crinken Bridge - Active travel upgrades
	Public Transport	<ul style="list-style-type: none"> • Provision of a bus route running along Cherrywood Road, Brides Glen Road, Rathmichael Road, Ferndale Road, linking onto the proposed new North-South Link road and on to Old Connaught Avenue, with an additional route serving Fassaroe. • Accommodate for future Luas provision. • Accommodate for future provision of bus way bridge linking Fassaroe and Old Connaught across the Ballyman Glen.
	Vehicular Circulation	<ul style="list-style-type: none"> • Provision of a new road running North-South, connecting Ballybride Road/Crinken Lane with Old Connaught Avenue. • Provision of new road connecting Ferndale Road and the new North-South link Road • New development roads in the periphery of Old Connaught Village which allow for the removal of through traffic along Old Connaught Avenue • Conversion of Ballybride Road and Lordello Road to one-way circulation to allow for the provision of cycle facilities along these roads without the necessity for road widening. • Provision of a new road and bridge linking Old Connaught to the Old Dublin Road (N11 Overbridge to Dublin Road or N11/M11 Junction 4 to Junction 14 Improvement Scheme in this vicinity.) • Road upgrades as per Figure 2-4.

Note: Appendix G of the Part 3 - Options Development and Assessment Report provides a full list and descriptions of the transport measures proposed as part of the preferred scenario.

2.3 Water Infrastructure

The ICAS Part 3 and 4 Reports include a review of the existing Uisce Éireann (UÉ) networks and identifies preliminary high level strategies and workable options for the provision of water networks to support development in Old Connaught and Rathmichael.

The preferred strategy for both LAP areas is to create looped networks through connections to the existing watermains that are in the area. This would improve resiliency and reliability of the water supply and facilitate new development.

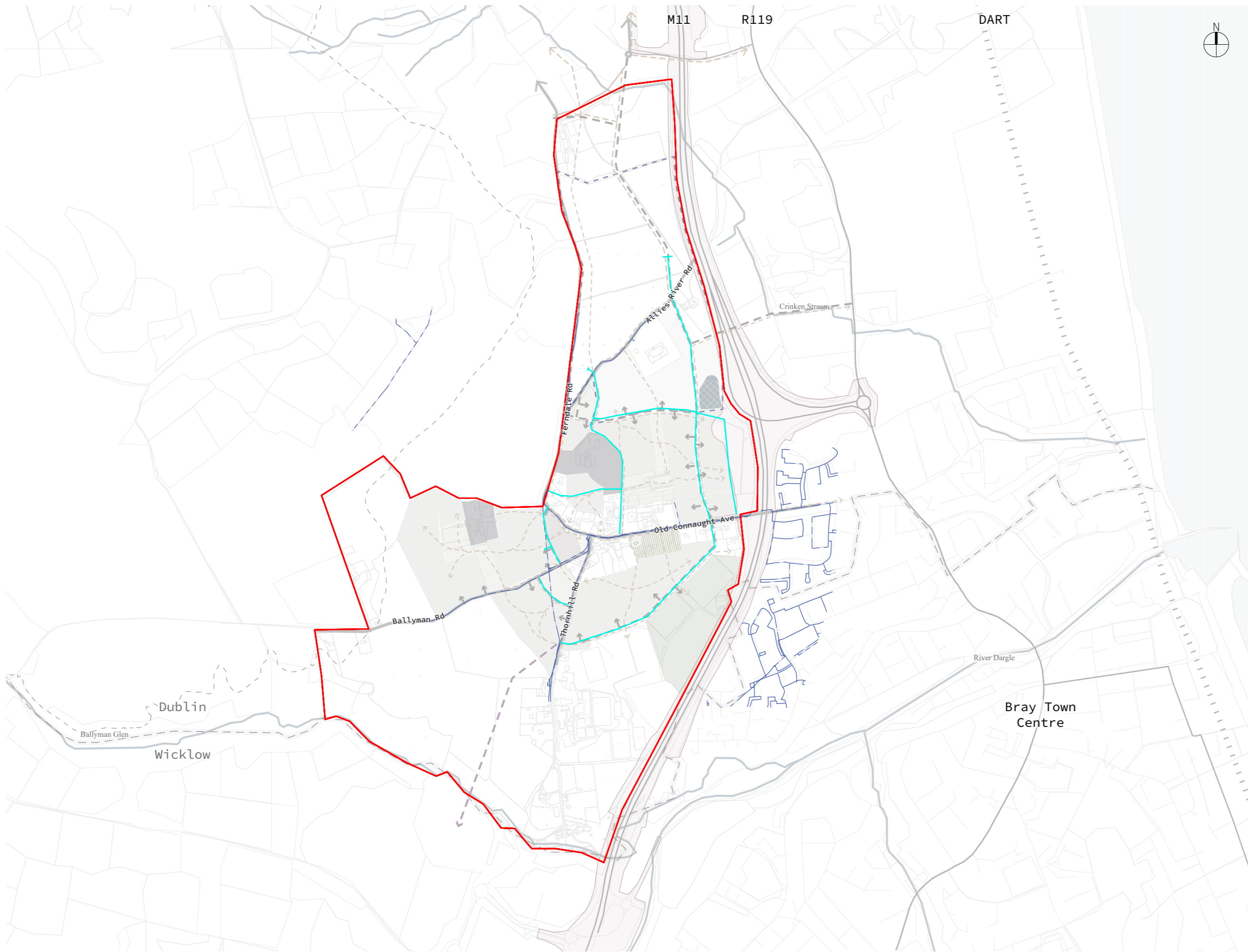
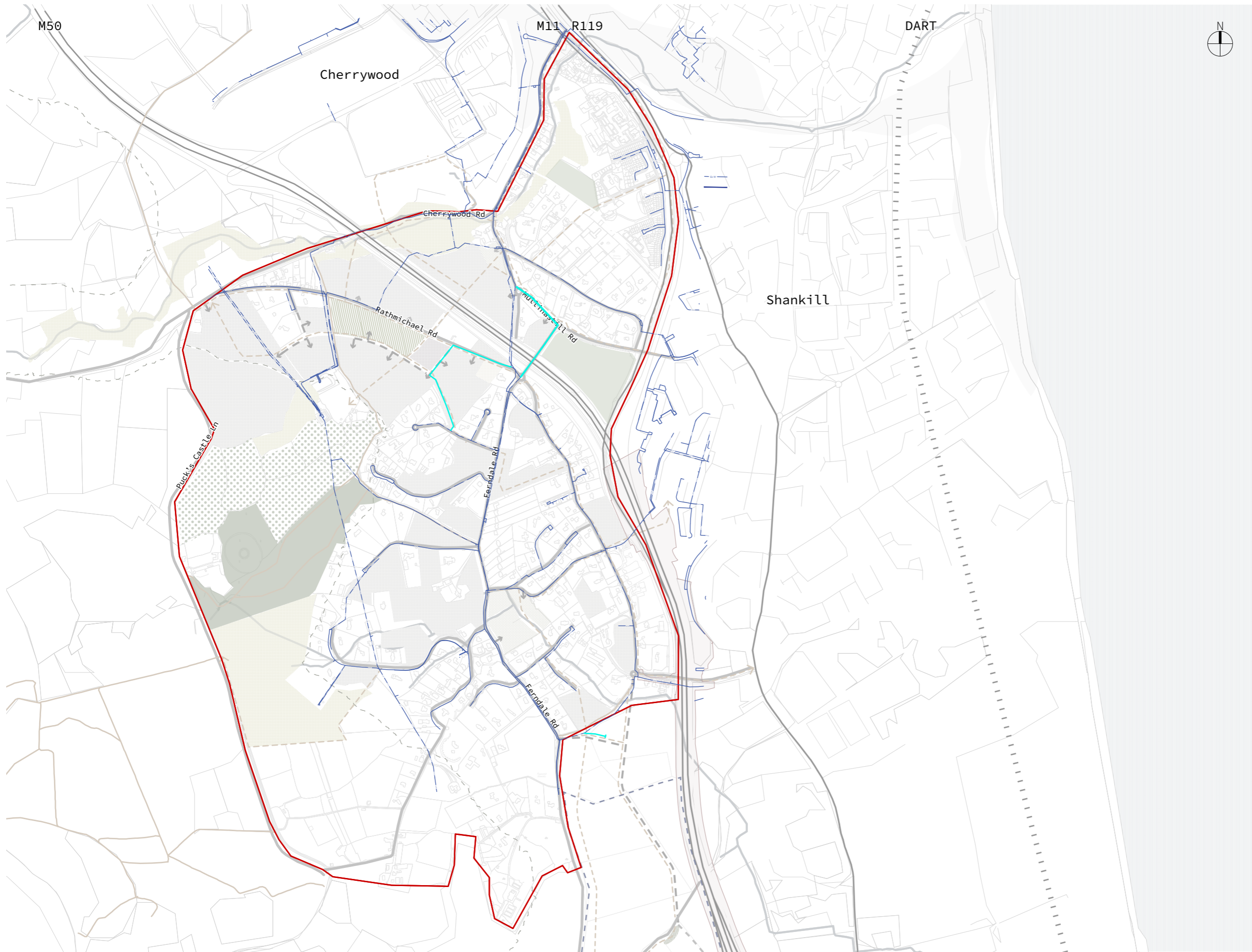


Figure 2-5: Indicative Water Supply Distribution Network for Old Connaught LAP area



LEGEND

- Ex W — Ex W — Existing watermain
- Indicative watermain
- Rathmichael LAP

Figure 2-6: Indicative Water Supply Distribution Network for Rathmichael LAP area

Table 2-2 Water Infrastructure

Infrastructure / Spatial Element	Sub-Element	Infrastructure Requirements
Water	Potable Water	<p>Old Connaught: Develop new looped watermain networks connecting to existing watermains to serve new developments.</p> <p>Rathmichael: Develop new looped watermain networks connecting to existing watermains to serve new developments.</p>

2.4 Wastewater Infrastructure

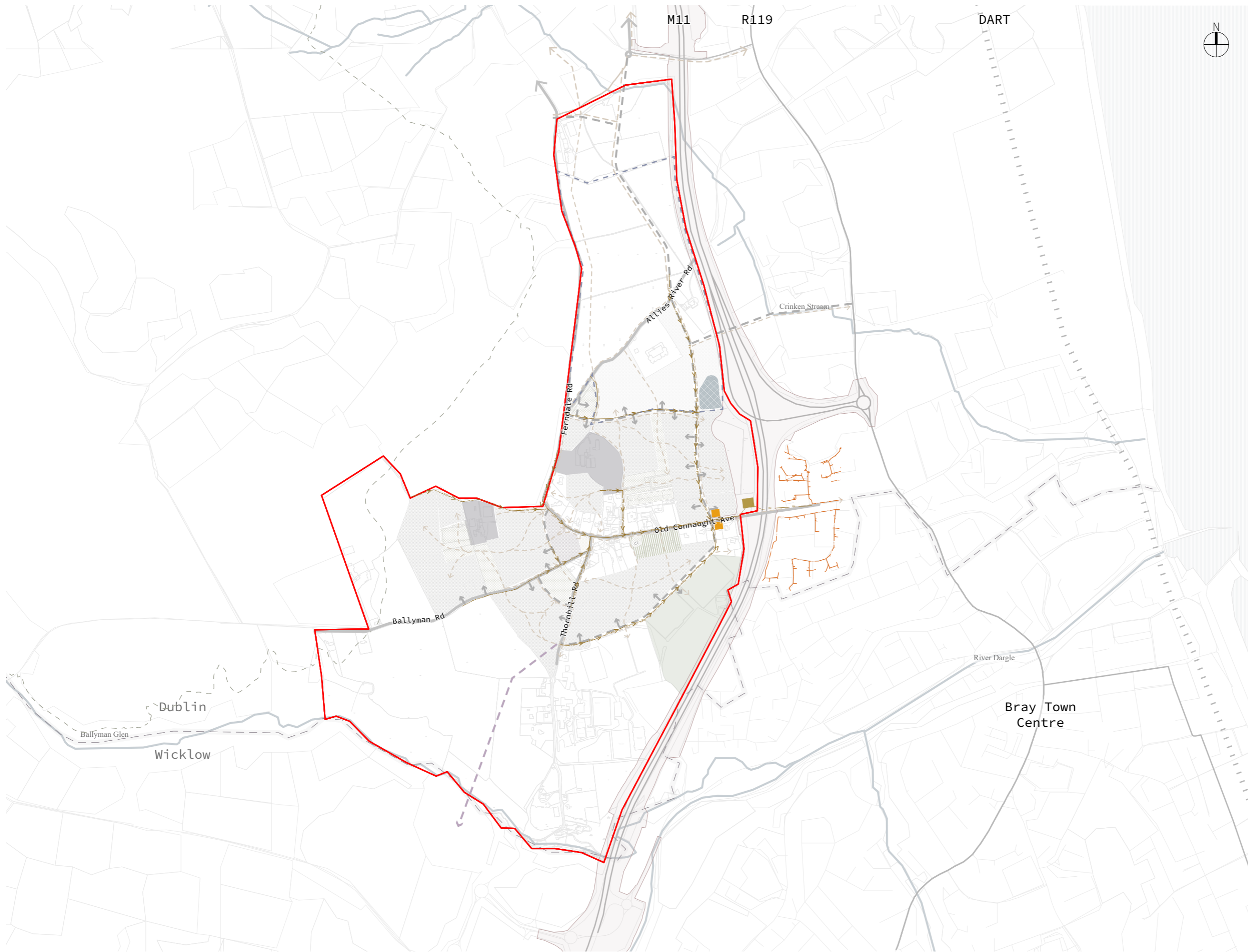
The ICAS Part 3 and 4 Reports include a review of the existing Uisce Éireann (UÉ) networks and identifies preliminary high level strategies and workable options for the provision of wastewater networks to support development in Old Connaught and Rathmichael.

There are no existing wastewater networks within the Old Connaught area. The preferred strategy for the Old Connaught LAP area is to develop a new gravity wastewater network to facilitate new development and the future connection of existing dwellings. A pumping station and rising main crossing of the M11, in the vicinity of Old Connaught Avenue, are required to connect the Old Connaught LAP area to the existing wastewater network. Preliminary discussions between UÉ, TII, dlr and Arup have determined that a wastewater crossing of the M11 is feasible, subject to detailed design and technical agreement between the relevant parties.

Through the assessment process a potential interim connection solution was also identified which proposes using the space occupied by an existing spare duct in the Old Connaught Avenue bridge to install a rising main of up to 100mm diameter. This could act as an interim measure to facilitate development of up to 850 residential dwellings in Old Connaught in advance of the permanent solution to provide for full development of the Old Connaught LAP area.

There are limited existing wastewater networks within the Rathmichael area. The preferred strategy for the Rathmichael LAP area is to develop a new gravity wastewater network to facilitate new development and future connection of existing dwellings. A pumping station and rising main crossing of the M11, in the vicinity of Crinken Lane, are required to connect the Rathmichael LAP area to the existing wastewater network. Uisce Éireann has advised that a pumping station and rising main crossing of the M11 to the south of Crinken Lane are being progressed as a strategic asset project, which will provide capacity to service 3,000 residential units.

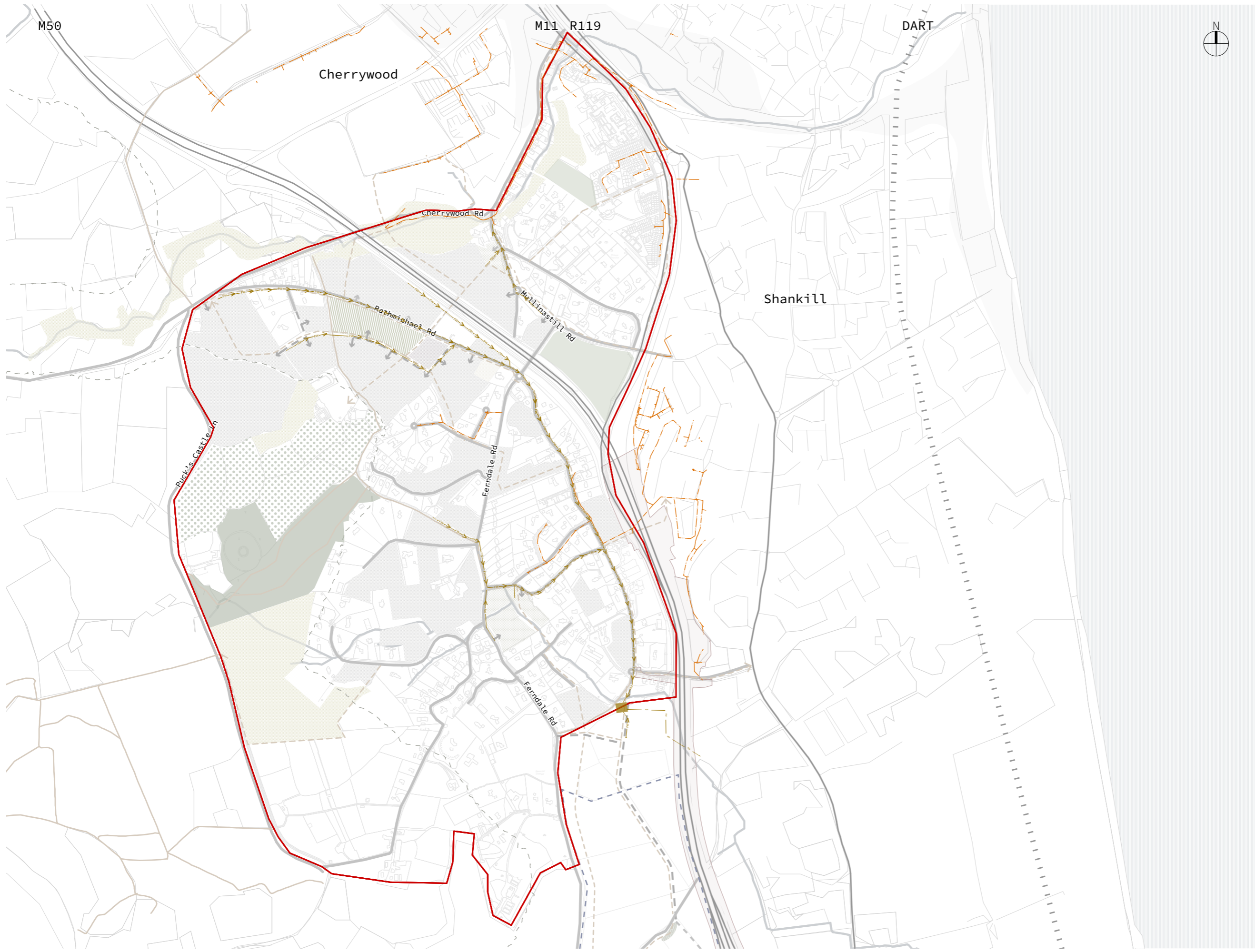
Indicative wastewater networks, including potential locations for pumping stations, to serve the LAP areas are shown in Figure 2-7 and Figure 2-8 below. The wastewater infrastructure illustrated is detailed in Table 2-3.



LEGEND

- Ex F — Ex F — Existing wastewater pipe
- FW —> FW —> Indicative wastewater pipe
- RM — RM — Indicative rising main
- UÉ Shanganagh & Bray DAP Stage 4 - Indicative Pumping Station Location
- Potential Alternative Pumping Station Location (general area indicated - subject to further assessment)
- Old Connaught LAP

Figure 2-7: Indicative Wastewater Network for Old Connaught LAP area



LEGEND

- - - Ex F - Ex F Existing wastewater pipe
- - - FW -> FW Indicative wastewater pipe
- — — RM — — — Indicative rising main
- UÉ Shanganagh & Bray DAP Stage 4 - Indicative Pumping Station Location
- — — Rathmichael LPA

Figure 2-8: Indicative Wastewater Network for Rathmichael LPA area

Table 2-3 Wastewater Infrastructure

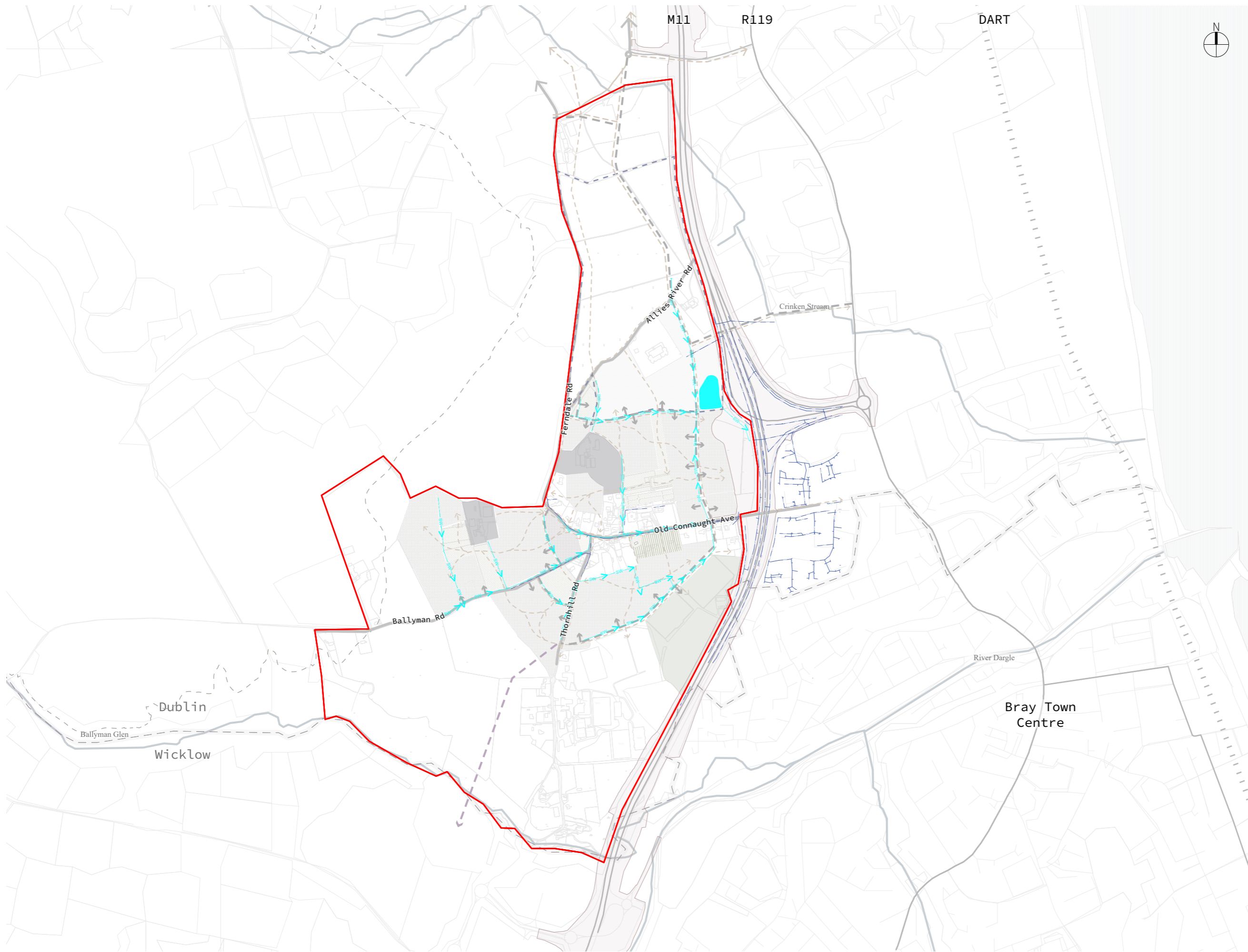
Infrastructure / Spatial Element	Sub-Element	Infrastructure Requirements
Water	Wastewater	<p>Old Connaught:</p> <ul style="list-style-type: none"> • Develop new gravity wastewater sewer network to serve new developments and existing dwellings within the LAP area. • 1 no. wastewater pumping station and associated rising main with trenchless crossing of the M11 motorway to connect the Old Connaught LAP area to the existing Uisce Éireann network to the east of the motorway. • Interim temporary proposal for a wastewater rising main in the Old Connaught Avenue bridge and a potential temporary wastewater pumping station <p>Rathmichael:</p> <ul style="list-style-type: none"> • Develop new gravity wastewater sewer network to serve new developments and existing dwellings within the LAP area. • 1 no. wastewater pumping station and associated rising main with trenchless crossing of the M11 motorway to connect the Rathmichael LAP area to the existing Uisce Éireann network to the east of the motorway.

2.5 Drainage Infrastructure

The ICAS Part 2: SuDS Strategy and the Part 3 and Part 4 Reports for Old Connaught and Rathmichael LAP Areas, detail the surface water drainage and Sustainable Drainage Systems (SuDS) strategies for the Rathmichael and Old Connaught LAP areas.

The preferred strategy for the two LAP areas is to develop a new gravity stormwater network to facilitate new development. At plot level treatment should be provided and attenuation should accommodate the 3.3% AEP (or 1 in 30 year event) and provide for flood routing in the event of exceedance events. In addition to the plot level requirements for attenuation and treatment, regional SuDS features are to be provided for attenuation for the whole area for the 1% AEP (annual exceedance probability) and to attenuate and treat runoff from the catchment roads and public areas.

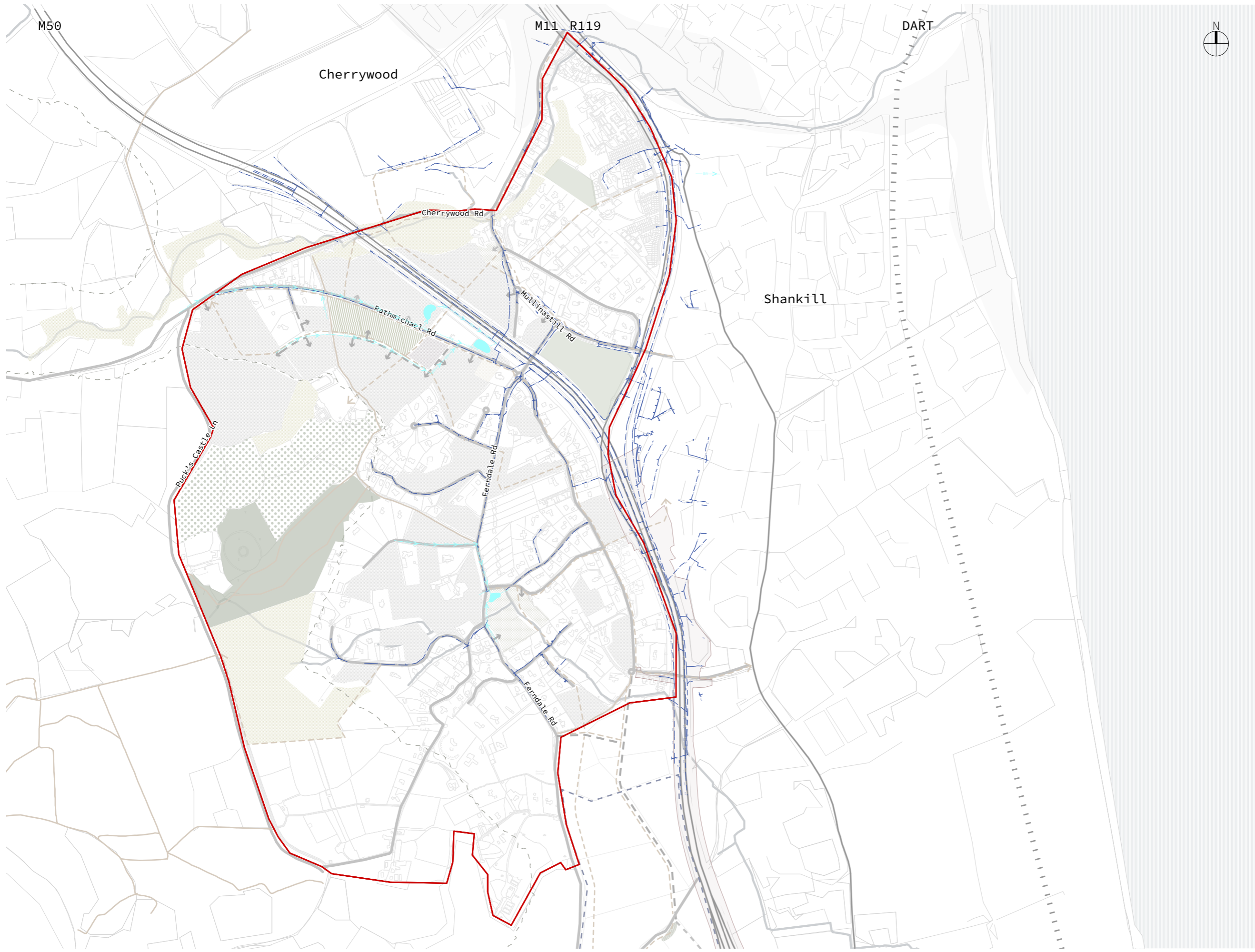
The indicative drainage networks and regional ponds to serve the LAP areas are show in Figure 2-9 and Figure 2-10. The drainage infrastructure illustrated is detailed in Table 2-4.



LEGEND

- Ex S — Ex S — Existing surface water pipe
- SW — SW — Indicative surface water pipe
- Indicative surface water attenuation pond
- Old Connaught LPA

Figure 2-9: Indicative Stormwater Network for Old Connaught LPA area



LEGEND

- Ex S — Existing surface water pipe
- SW — Proposed surface water pipe
- ▭ Proposed surface water attenuation pond
- Rathmichael LPA

Figure 2-10: Indicative Stormwater Network for Rathmichael LPA area