N6 Galway City Ring Road

Updated Environmental Impact Assessment Report (EIAR)

March 2025

Volume 1

Non-Technical Summary

An Roinn Iompair
Department of Transport

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Comhairle Cathrach na Gaillimhe
Galway City Council

Comhairle Chontae na Gaillimhe
Galway County Council

ARUP

The EIA Report contains the following documents:

- **Volume 1 – Non-Technical Summary - This Document**
- Volume 2 – Environmental Impact Assessment Report (Main Text)
- Volume 3 – Figures
- Volume 4 – Appendices

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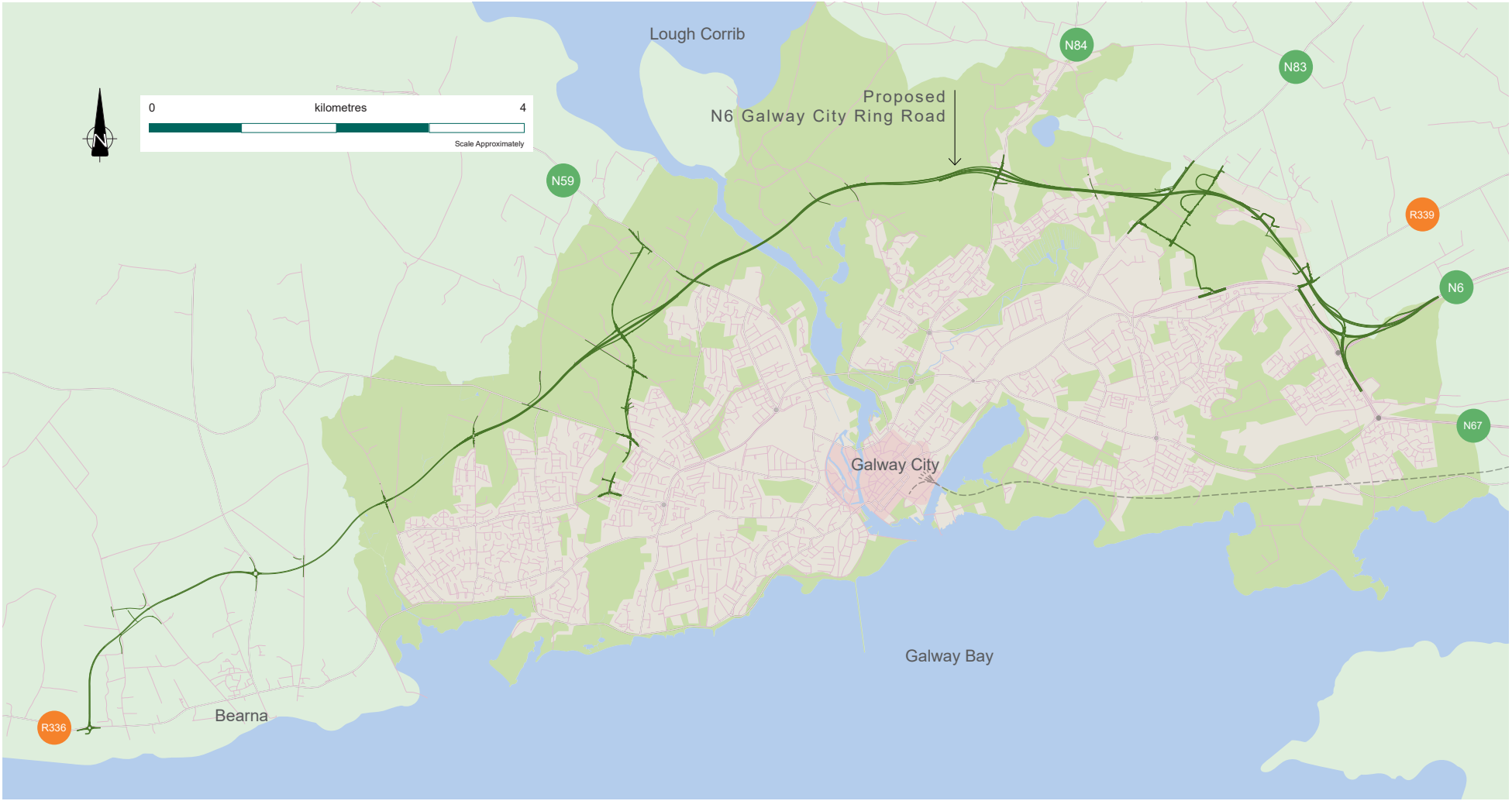
1 Introduction

Figure NTS 01 - Schematic showing the route of the proposed N6 Galway City Ring Road



1. Introduction

Galway Galway County Council on behalf of itself and on behalf of Galway City Council submitted an application for approval under Section 51 of the Roads Act 1993 (as amended) for the proposed N6 Galway City Ring Road (N6 GCRR) around Galway City to An Bord Pleanála (ABP) on 23 October 2018. The Section 51 Application included an Environmental Impact Assessment Report (2018 EIAR), an AA Screening Report and a Natura Impact Statement (2018 NIS) among other documentation submitted to ABP at that time. Galway County Council also at that time made the N6 Galway City Ring Road Protected Road Scheme 2018 and the N6 Galway City Ring Road Motorway Scheme 2018 which were also submitted to ABP for approval under Section 49 of the Roads Act 1993, (as amended).

On 4 April 2019, ABP requested further information in relation to the proposed N6 GCRR pertaining to the application for approval. A detailed Response to this request for further information was submitted to ABP in August 2019[1].

An oral hearing commenced in February 2020 and concluded in November 2020. Various supplemental reports were prepared, and information provided during the course of the hearing, all of which were submitted to An Bord Pleanála[2].

ABP granted approval under Section 51 of the Roads Act 1993 (as amended) for the proposed N6 GCRR and approval under Section 49 of the Roads Act 1993 (as amended) for the N6 Galway City Ring Road Protected Road Scheme and N6 Galway City Ring Road Motorway Scheme on 6 December 2021 (with conditions and modifications)[3].

Those approvals were challenged in the High Court by way of Judicial Review and ABP conceded to an order quashing the approvals on limited grounds and the applications of the proposed N6 GCRR was remitted back to ABP by the High Court on 30 January 2023.

On 7 December 2023, ABP requested further information (RFI) (Ref: ABP-318220-23[4]) from Galway County Council in relation to the application for approval of the proposed N6 GCRR. The full complement of material submitted to ABP in response to this request is entitled the **2025 RFI Response**. This is split into seven parts as follows:

- Part I – 2025 RFI Response Report which presents an overview of all the 2025 RFI response material
- Part II – Updated N6 Galway City Ring Road Motorway Scheme 2018
- Part III – Updated N6 Galway City Ring Road Protected Road Scheme 2018
- Part IV –Obligations under Section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended) and submissions in relation to the Climate Action Plan 2024
- Part V – Implications of new Galway City Development Plan
- **Part VI – Updated Environmental Impact Assessment Report (EIAR)**
- Part VII – Updated Provision of Information for Appropriate Assessment Screening Report and Natura Impact Statement

This document presents a non-technical summary of update to the EIAR Part VI of the 2025 RFI Response.

[1]http://n6galwaycityringroad.ie/Response/.
[2]http://n6galwaycityringroad.ie/
[3]https://www.pleanala.ie/en-ie/case/302848 and https://www.pleanala.ie/en-ie/case/302885

[4]It is noted that the reference numbers for the application in 2018, ABP-302848 and ABP-302885 has since been updated by ABP to HA07.318220 and MA07.318217 respectively

1.1 Overview of proposed N6 GCRR and Definition of the Project

The proposed N6 GCRR comprises approximately 18km of road infrastructure from a new junction with the R336 at the western side of Bearna to tie-in to the existing N6 to the east of Galway City at Coolagh, Briarhill. The route of the proposed N6 GCRR is presented on **Figure NTS 01**.

This new road will consist of a single carriageway from the R336 Coast Road to the Ballymoneen Road and a dual carriageway from the Ballymoneen Road to the eastern tie-in at Coolagh, Briarhill.

The new road will be a 'protected road'[5] from the R336 Coast Road to the N59 Letteragh Junction and a motorway from this junction to the eastern tie-in at Coolagh. The proposed N6 GCRR also incorporates associated link roads, side roads, junctions and structures and localised works to the existing electricity transmission and distribution networks.

A previous application to ABP in 2006 for the then defined 'N6 Galway City Outer By-pass' (GCOB) underwent an Environmental Impact Assessment (EIA) process, from which ABP concluded that *"the need for an outer by-pass of Galway City connecting the N6/M6 National Primary Road at Garraun to the R336 regional coast road at An Baile Nua as an essential component of the strategic transport network of the Galway area had been established"* (ABP decision 07.ER.2056). The eastern section only of that scheme was granted approval by ABP but subsequently legally challenged on environmental grounds which resulted in the scheme not progressing. The western section of this scheme did not receive planning permission from ABP due to potential environmental impacts in the area of Moycullen Bogs Natural Heritage Area (NHA) (an ecological area with national protection) at Tonabrocky.

In developing the proposed N6 GCRR project as submitted to ABP in 20218, GCC took cognisance of the need to consider all alternatives. Having established the need for the project, and in consideration in detail of alternatives, the proposed N6 GCRR was developed. The subsequent approval granted by ABP for the proposed N6 GCRR on 6 December 2021 omitted the provision of the permanent stables at Galway Racecourse. To ensure the functionality of Galway Racecourse during the construction and operation of the proposed N6 GCRR, the construction of both temporary and permanent stables (and associated development) is essential at the racecourse. In this regard, Galway Race Committee Trust applied for planning permission for temporary and permanent stables and associated development, which was granted permission by Galway City Council on 2 December 2024.

The demolition of the existing stables at the racecourse will occur as part of the construction of the proposed N6 GCRR. As set out in the grant of permission (Reference 24/60279), the temporary and permanent stables will only be implemented if the proposed N6 GCRR is granted approval by An Bord Pleanála and is proceeding. Therefore, while the proposed N6 GCRR, the subject of the Section 51 Application is separate to that of the proposed development at Galway Racecourse, it is also interconnected and interlocked with it.

Therefore, it is necessary for Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) purposes to assess the combination of both the proposed N6 GCRR and the proposed development at Galway Racecourse, which for EIA and AA purposes is referred to as the "Project" and has been considered and assessed in this updated EIAR and in the updated AA Screening Report and updated NIS. Therefore, the term Project, when used throughout this updated EIAR, refers to combination of the proposed N6 GCRR and the proposed development at Galway Racecourse.

[5]A protected road has the same protection as a motorway in terms of limiting any direct access from any land adjoining to it, or from it to such land. Pedestrians and cyclists are permitted on the protected road but not on the motorway.

The Environmental Impact Assessment Report (EIAR) is defined as

"a report of the effects, if any, which the proposed project, if carried out, would have on the environment. It is prepared by the developer to inform the EIA process."

Environmental Protection Agency (EPA) 2022

The proposed N6 GCRR forms part of, and is identified as a project within the 'Galway Transport Strategy' (GTS). The GTS was prepared by Galway City Council and GCC, in partnership with the National Transport Authority (NTA). The GTS is based on a comprehensive assessment of transport issues facing Galway City and the wider environs and the need to develop a sustainable integrated transport solution to accommodate existing and future travel demand, thereby facilitating Galway growing in an integrated, sustainable manner that aligns transport investment with settlement patterns, travel movements and also supports a sustainable use of land.

The GTS is currently being implemented by Galway City Council, both in terms of the policy objectives established and the delivery of transport projects identified within the strategy. The Galway City Development Plan 2023-2029 reinforces that the GTS "*is the transport plan that aims to establish a more sustainable approach to address current and future transport requirements and underpin the future growth on the city.*"

The updated EIAR details the consideration of alternatives, consideration and assessment of likely significant effects/impacts, mitigation and avoidance measures to reduce significant adverse effects/impacts, and assessment of residual impacts. The EIAR contains all of the information prescribed by the relevant provisions of the Roads Act, 1993 as amended, the Roads Regulations, 1994 as amended, Article 5 and Annex IV of Directive 2011/92/EU as amended by Directive 2014/52/EU , and due regard has been given to the guidelines and advice notes in preparation of same.

This updated EIAR has been compiled by Arup on behalf of GCC with assessment and reporting provided by competent experts for each individual specific topic. The EIA Report contains the following documents:

Volume 1 – Non-Technical Summary

Volume 2 – Environmental Impact Assessment Report (Main Text)

Volume 3 – Figures

Volume 4 – Appendices

This document forms Volume 1 – Non-Technical Summary. It summarises the contents of Volumes 2 to 4, to which interested readers should refer should they require more detailed information on any aspect of the Project.

In addition, potential impacts on designated Natura 2000 sites (these are special protection areas and special areas of conservation which are designated for protection under the EU Habitats Directive, and are also known as European sites) are specifically assessed in the updated Natura Impact Statement (NIS), which forms Part VII of this 2025 RFI Response to ABP.

2 Context

2 Context

The need for a transport solution was considered in the development of the Galway Transport Strategy at both a regional level in terms of its strategic function, and at a local level in terms of providing an integrated transport solution for the city and environs.

As recognised in Project Ireland 2040 'National Planning Framework' (NPF) *"Galway has been Ireland's most rapidly developing urban area for half a century and is a key driver for the west of Ireland"*. Galway is, however, a city of contrasts in terms of its physical development and transport requirements. While Galway has a compact walkable core, outside of the city centre, the suburbs have developed as a succession of low density residential areas interspersed with employment areas, leading to a predominance of private car usage as a means of travel.

As Galway City and its environs continues to grow as planned, it is crucial to safeguard the future development of the city as the principal economic centre in the west of Ireland and to ensure that its development is sustainable.

[6] Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification).
[7] Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

At a regional level, the proposed N6 GCRR is seen as key, critically enabling transport infrastructure which, through the rerouting of the national primary route, and thereby through traffic from the centre of Galway City, allows a currently dysfunctional section of the national road network to function again in terms of:

- Acting as a gateway to Connemara and the Western Region. Improving **connectivity and accessibility to and through Galway City** is essential in aiding the region to revitalise, improve and develop into the future
- Providing **well developed transport links** via roads, rail and air to the West Region[8], thereby enabling enterprises and the local economy of the west to grow and develop as a viable alternative to the east coast corridor which is of significant public interest at a national level

At a local level, the GTS identified key challenges to be addressed for the city, as:

- *"The need to transform Galway City Centre from a location typically characterised by heavy congestion and significant traffic volumes to a destination of choice for residents, workers and visitors alike;*
- *The need to reduce the reliance on travel by private car;*
- *The need to deliver a public transport network that can offer journey time reliability and frequencies sufficient to maximise the attractiveness of the service and to meet demand;*
- *The need to supplement the public transport network with complementary facilities such as Park & Ride for the benefit of people accessing the city from the surrounding rural areas;*
- *The need to facilitate city-bound, cross-city, cross-county and strategic east-west travel on the National and Regional road network without impacting on the functionality of the city;*
- *The need to improve accessibility to and through residential areas for sustainable travel modes in order to improve the appeal of alternatives to the private car;*
- *The need to maximise connectivity by walking, cycling and public transport to major employment and educational facilities;*
- *The need to minimise non-essential traffic flow through the city centre;*
- *The need to minimise the impact of traffic congestion on Galway City Centre, in order to allow the city to grow in a sustainable manner; and*
- *The need to achieve efficiency and resilience on Galway's transport network, across all modes"* (Galway Transport Strategy).

In seeking to address these issues, the transport strategy which emerged, incorporating the proposed N6 GCRR, will allow the city to 'breathe' again. The updated transport modelling shows that other measures in the GTS can deliver benefits in the short-term. However, the updated modelling which accounts for updated traffic numbers, Census data and the forecast demand as per the NPF shows that the proposed N6 GCRR is necessary to enable the optimal operation of the entire transport network, including the public transport systems. The proposed N6 GCRR is necessary to resolve the transport issues in Galway which is essential to enable Galway to accommodate the population forecasts in the NPF in a compact form in the longer term.

[8] The West Region comprises the counties of Galway, Mayo and Roscommon.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3 Consultation


An Integrated Transport Management Programme (ITMP) for Galway
An Integrated Sustainable Transport Solution
Public Display | Project Framework
Phase 1
Phase 2
Public Display | Route Selection Process
Public Display | Article 6 EU Habitats Directive
Article 6 EU Habitats Directive
Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora
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3. Consultation

Since 2014, extensive consultation has taken place via public information sessions and discussions with key stakeholders, relevant statutory bodies, property owners, local organisations and utility/service providers.

This consultation continued during the oral hearing in 2020 and recommenced in 2023 to inform this updated EIAR. All the consultations undertaken to date have been reviewed and taken into consideration in this updated EIAR

Over 950 individual property owner meetings, including many home visits, took place between the design team and property owners and such consultation informed the design of the Project and the environmental impact assessment.

Four public information sessions were held as follows:

- Public Consultation No. 1 as part of the Constraints Study in July 2014 over two days
- Public Consultation No. 2 as part of the Options Development in January/February 2015 over four days
- Public Display No. 3 of the Emerging Preferred Route Corridor for the N6 Galway City Ring Road in May/June 2015 over two days. The Galway Transport Strategy also formed part of this consultation.
- Public Display No. 4 of the Design of the N6 Galway City Ring Road in November 2016

The consultations with the public reinforced the significant existing constraints restricting the development of a new road and the need for an integrated multi-modal transport solution. Although some of the significant impacts were unfortunately unavoidable, positive changes were implemented into the design as a result of the consultation process.

A project website was created and used to keep the public informed at all stages as the Project progressed. All property owners identified as owning lands to be acquired to facilitate the construction of the proposed N6 GCRR received written correspondence in October 2016 with a copy of the design with respect to their property. As part of the final consultation process, written communication was issued to all property owners again in May 2018 with a copy of the final design with respect to their property and an explanation of the next steps. Written communication was issued to all property owners in September 2019 in respect of the 2019 RFI, in 2020 in respect of the oral hearing commencement dates, in February 2022 in respect of the ABP approval of December 2021, and again in 2022 and 2023 in respect of additional environmental surveys undertaken to inform this updated EIAR.

Relevant statutory bodies and utility/service providers including National Parks and Wildlife Services, Inland Fisheries Ireland, Office of Public Works, ESB Networks, ESB International, Gas Networks Ireland, Irish Water and other service providers were also consulted, and this consultation informed the design development and this updated EIAR.

4 Planning Policy

4 Planning Policy

A review of the relevant strategic and statutory land use planning policy and strategic transport policy was undertaken for this updated EIAR as there have been many developments in planning policy since the 2018 EIAR with new policies superseding some policies included in the 2018 EIAR. It is set out in the European context, the National context, Regional context and Local context.

4.1 European

The EU's trans-European transport network policy, the TEN-T policy, is a key instrument for planning and developing a coherent, efficient, multimodal, and high-quality transport infrastructure across the EU. In June 2024, the regulations were amended to give effect to a modified trans-European transport network[9] in a post-Brexit European Union.

The proposed N6 GCRR is part of the comprehensive road network[10] of the TEN-T network shown and is a strategic link in the road network in the West Region. It will fulfil its strategic function in accordance with European Union TEN-T transport policy, providing a strategic link to Galway City and onwards connections to the national and regional road network beyond Galway City i.e. the N83, N84, N59 and the R336.

The aim of EU Transport Policy is to strengthen the social, economic and territorial cohesion of the Union and contribute to the creation of a single multi-modal European transport area based upon mobility that is efficient, safe, resilient and environmentally friendly. Congestion is not just a nuisance for road users; it also results in an enormous waste of fuel and productivity and costs the EU economy more than 1% of GDP. The EU Commission also recognises that Europe needs transport which is cleaner and less dependent on oil by moving towards low-carbon and more energy efficient transport, as well as developing more efficient urban and intermodal transport solutions.

The objectives of the proposed N6 GCRR align with the European Union's land transport policies as its objectives include the segregation of strategic traffic from urban traffic, ensure connectivity and accessibility of the Western Region to the single European market, facilitate the implementation of sustainable transport policies for shorter commutes whilst delivering journey time certainty for all modes, including active travel and public transport trips.

In circumstances where the proposed N6 GCRR forms part of the EU TEN-T comprehensive road network in Ireland, it is, therefore, of strategic importance in a European context, as it will perform a key role in delivering congestion relief, reducing greenhouse gas emissions and strengthening economic cohesion.

Trans-European Transport Network

[9] https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t_en#:~:text=TEN%2DT%20Regulation,coherent%20quality%20throughout%20the%20EU.
[10] http://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/map/maps.html

4.2 National

Since 2018, planning policy at a national level has coalesced into a fully integrated suite of policy documents with an associated funding mechanism. As a result, some older policy documents are now subsumed into new documents and these are set out in this update.

4.2.1 Project Ireland 2040

Project Ireland 2040 is government policy which combines planning policy and investment policy to ensure a coordinated and integrated approach for the growth of Ireland over the next 20 years.

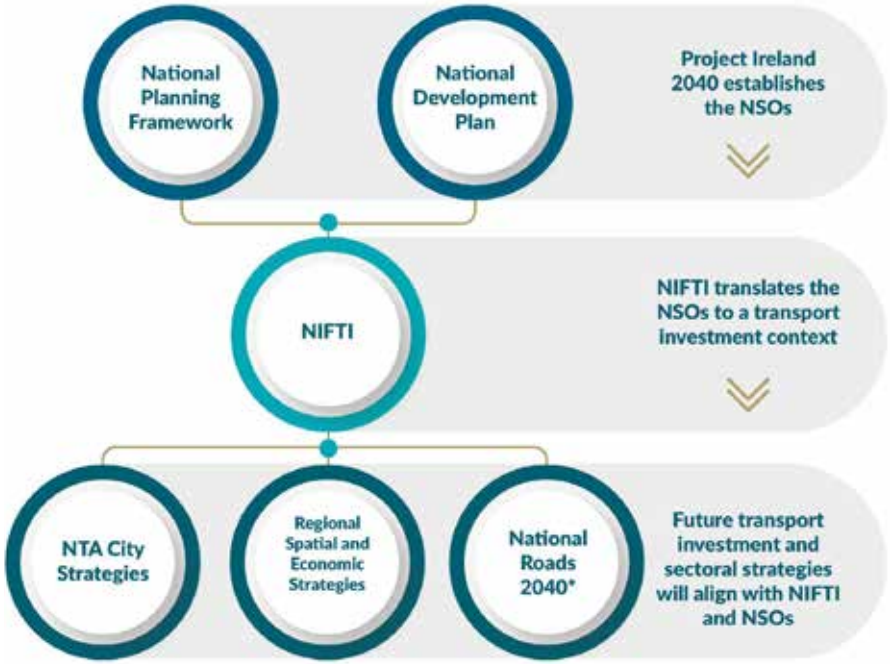
"Project Ireland 2040 is the Government's overarching policy initiative to make Ireland a better country for all of us, a country that reflects the best of who we are and what we aspire to be.

Project Ireland 2040 is informed by the Programme for a Partnership Government 2016, which recognises that economic and social progress go hand in hand, as well as by the National Planning Framework to 2040 and the National Development Plan 2018-2027.

The objective of Project Ireland 2040 is to provide a comprehensive social, economic and cultural infrastructure for all our people to flourish, so that together we can create a better society." (Project Ireland 2040)

By 2040, it is expected that an additional one million people will live in Ireland with an additional two-thirds of a million people working here. This means that more people will be travelling to work, schools and universities, more buildings will be needed to accommodate them and more infrastructure will be needed to provide services for them. Project Ireland 2040, therefore, consists of the National Planning Framework (NPF) which sets out a spatial strategy for Ireland to accommodate this significant population change in a sustainable and balanced fashion and the National Development Plan (NDP) which sets out the investment programme to deliver it. The integrated strategy presented in the NPF and the NDP seeks to avoid the pitfalls which resulted in the failure of previous spatial plans. The joint publication as Project Ireland 2040 seeks to align our investment strategy with our strategic planning documents.

The National Planning Framework is backed up by an infrastructure investment programme, the National Development Plan. In short, the State's infrastructure investment – the money – is guided by and follows the Plan. (Project Ireland 2040)



*Under development

4.2.2 National Planning Framework

The National Planning Framework (NPF) represents the overarching national planning policy document, of direct relevance to the planning functions of regional and planning authorities, including An Bord Pleanála. It replaces the National Spatial Strategy. It is the overall Plan from which other, more detailed plans will take their lead, including regional strategies and city and county development plans.

The National Planning Framework (NPF) focuses on compact growth, connectivity and sustainable mobility – all of which are necessary to deliver a strong economy. The objective is to *"enable all parts of Ireland, whether rural or urban, to successfully accommodate growth and change, by facilitating a shift towards Ireland's regions and cities other than Dublin, while also recognising Dublin's ongoing key role."* (NPF).

The NPF supports ambitious growth targets to enable Galway to grow by at least 50% to 2040 in a compact manner as per one of ten national strategic outcomes (NSO) of NPF, and to become a key driver for the west of Ireland. The NPF targets a population growth to 2040 of 40,000-48,000 people for Galway City and its environs, to achieve a total population of at least 120,000 people. The delivery of the proposed N6 GCRR is identified in the NPF as required in order to deliver a number of other "key future growth enablers" in Galway by transferring traffic out of the urban areas, thus allowing reallocation of existing road space to enable other infrastructure improvements in public transport, cycling and walking to be optimally delivered, which is another NSO of the NPF. It is also identified of national importance in enhancing regional accessibility which is a key NSO of the NPF.

4.2.3 National Development Plan 2021-2030

The first NDP covering the period 2018-2027 was reviewed and updated through the National Development Plan 2021-2030, which will drive Ireland's long term economic, environmental, and social progress across all parts of the country over the next decade. The revised NDP sets out a major public capital investment programme of €165 billion between 2021 and 2030 with €13bn to be invested in transport in the first five years of the National Development Plan.

The NDP identifies the strategic priorities for public capital investment for all sectors. In doing so, the NDP will support the achievement of more balanced development of Ireland's regions as well as Ireland's main cities, Dublin, Cork, Limerick, Galway and Waterford, whose success is central to the success of these regions.

The proposed N6 GCRR is identified as one of the major national infrastructure projects in the revised NDP, along with the plans for BusConnects and Galway City Centre regeneration. BusConnects will deliver a network of high-performing cross-city routes which will serve major city centre attractions as well as linking all major destinations across the city.

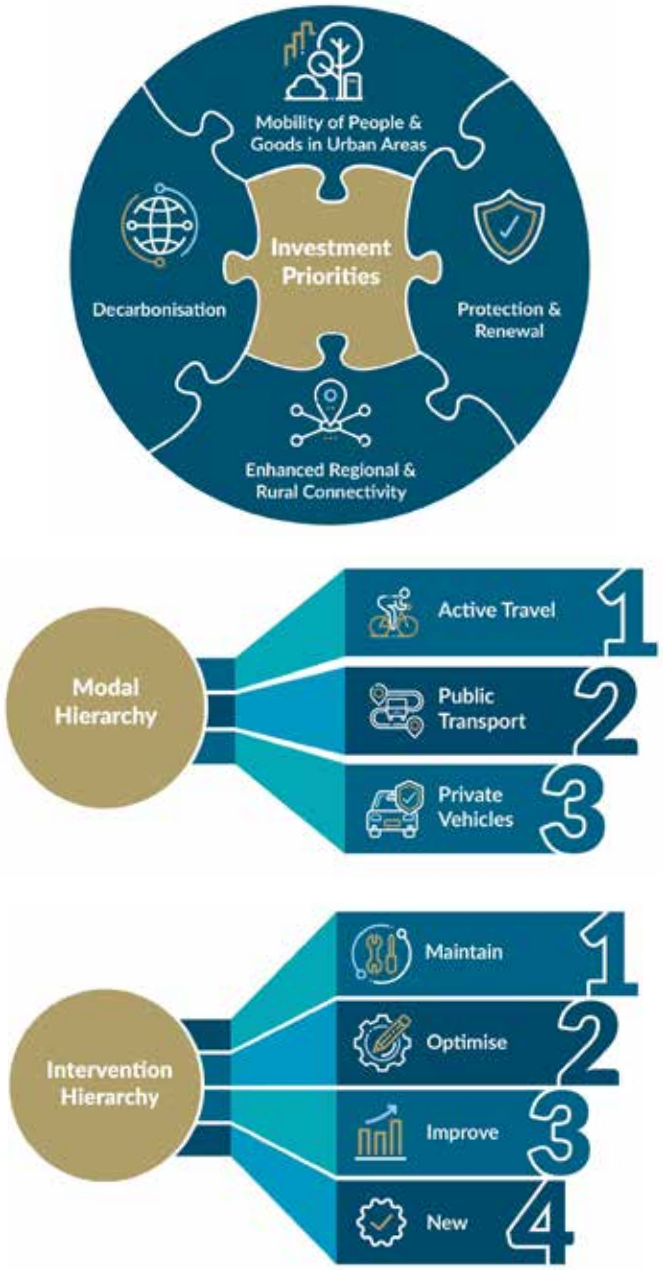
4.2.4 National Investment Framework for Transport in Ireland 2021

National Investment Framework for Transport in Ireland (NIFTI)[11] is the Department of Transport's high-level, strategic framework for future investment in the land transport network. The purpose of the NIFTI is to support the delivery of the NPF.

To deliver future investment in a sustainable manner, NIFTI promotes the most appropriate solution to a given problem or opportunity. The proposed N6 GCRR aligns with all four NIFTI Investment Priorities, particularly those of enhancing regional and rural connectivity. In addition, the Project's objectives align with measures to promote and facilitate sustainable mobility change with the inclusion of active travel infrastructure, enabling improvements to public transport through addressing urban congestion and the implementation of demand management measures[12], all of which support a modal shift to sustainable modes thus contributing to decarbonisation.

The proposed N6 GCRR seeks to reduce congestion in Galway City and its suburbs particularly at peak times thereby enabling the reprioritisation of the urban space for optimal delivery of walking, cycling and active modes.

The NIFTI Investment Priorities identify the types of investments to be undertaken and the principles-based Modal and Intervention Hierarchies will determine the appropriate solution to a given problem or opportunity.



4.2.5 National Roads 2040

National Roads 2040 (NR2040)[13] is an additional policy instrument adopted since the publication of the 2018 EIAR. NR2040 is Transport Infrastructure Ireland's ("TII") strategy to enable Project Ireland 2040 respond to evolving national policy and to align with the Department of Transport's National Investment Framework for Transport in Ireland (NIFTI).

NR2040 sets out a vision for the "National Roads network to be an evolving sustainable transport system focused on safety, innovation, accessibility and mobility of people, goods, and services". The strategy acknowledges the long-term strategic issues for national roads, including contributing to the transport sector reaching the country's climate goal of a 51% reduction in GHG emissions by 2030 (relative to 2018 levels).

In order to achieve this goal NR2040 stresses the importance of facilitating active travel measures alongside new road infrastructure. In terms of the proposed N6 Galway City Ring Road, improvements to all modes of travel, walking, cycling, and public transport are enabled, which aligns with the objectives of NR2040 by seeking to reduce congestion across the proposed N6 corridor, creating greater modal choice for people.

Road safety is another priority of NR2040 as it emphasises road safety and the need for new and existing roads to be designed and upgraded to the highest degree of safety to deliver on actions in the Road Safety Authority's Road Safety Strategy 2021-2030 towards the long-term goal of Vision Zero by 2050. The proposed N6 GCRR realises the above road safety goals by seeking to upgrade and improve the existing road which has significant safety issues.

[11] //https://www.gov.ie/en/publication/cfae6-national-investment-framework-for-transport-in-ireland-nifti/
[12] Measures aimed to influence and change travel patterns and encourage more efficient and sustainable use of transport resources
[13] Transport Infrastructure Ireland, 2023. National Roads 2040. Available from: https://www.tii.ie/news/press-releases/nr2040-final_report/

4.2.6 Programme for Government 2020 & Draft Programme for Government 2025

The Programme for Government 2020[14] was published on 29 October and is relevant to the proposed N6 GCRR because it sets out a series of commitments relating to the maintenance and improvement of transport infrastructure to improve regional connectivity and accessibility, to improve public transport and to fund safety improvements. The proposed N6 GCRR also aligns with the Programme insofar as it is a critical element of the transport infrastructure required to deliver sustainable compact urban development in one of the five cities targeted for growth.

4.2.7 Climate Action Plan 2024

The current Climate Action Plan 2024, approved by Government on 21 May 2024, supports Project Ireland 2040, setting out the investments to be made to encourage population growth in a compact, connected and sustainable way. In doing so, CAP24 aims to close the emissions gap and to provide the roadmap for delivering on Ireland's climate action ambitions.

Transport is targeted in CAP24 as a sector required to reduce emissions by 50 percent by 2030 when compared to 2018 levels. CAP24 supports policies to transform how society travels and it identifies specific measures and actions to support the **Avoid-Shift-Improve** model which align with NIFTI. This approach involves avoiding or reducing the need to travel through compact growth, densification and enhanced spatial and transport planning and shifting to sustainable travel including active modes and public transport where travel is still necessary. The third element of the model is to improve the energy efficiency of vehicles by accelerating the electrification of road transport through the use of electric and low-emission vehicles and the increasing biofuel blend rates.

The proposed N6 GCRR supports the principles of the Climate Action Plan insofar as it is a critical part of the necessary strategic transport infrastructure required with capacity to cater for the traffic needs of Galway City and its environs thereby reducing bottle necks and congestion within the city even allowing for any increase in traffic generated by the development.

Every modal shift, however small, from private vehicles to public transport or walking or cycling is a positive change and is a gain in terms of the emissions targets. Therefore, the proposed N6 GCRR facilitates the implementation of the Galway Transport Strategy and supports the principles of the Climate Action Plan.

4.2.8 Additional National Policies

This 'joined-up' approach and strategy to delivering sustainable transport is further supported by additional national policies as follows:

- National Sustainable Mobility Policy 2022 and National Sustainability Mobility Policy Action Plan (2022-2025)
- Roadmap for Social Inclusion 2020-2025; Ambitions, Goals, Commitments
- Road Safety Authority-Road Safety Strategy 2021-2030

4.3 Regional

Regional governance and regional development are essential for identifying regional policies and coordinating initiatives that support the delivery and implementation of national planning policy at a local scale. The three Regional Assemblies are tasked to co-ordinate, promote and support the strategic planning and sustainable development of the regions. The Northern and Western Regional Assembly includes the county councils of Cavan, Donegal, Leitrim, Galway (city and county), Mayo, Monaghan, Roscommon and Sligo.

4.3.1 Northern and Western Regional Spatial and Economic Strategy

The Northern and Western Regional Spatial and Economic Strategy[15] (NWRSES) 2020-2032 was adopted on 24 January 2020. The Strategic Vision of the NWRSES is *to play a leading role in the transformation of this region into a vibrant, connected, natural, inclusive and smart place to work and live.*

[14] Department of the Taoiseach, 2020. Programme for Government: Our Shared Future. Available from: https://www.gov.ie/en/publication/7e05d-programme-for-government-our-shared-future/

The Strategy highlights the potential of the Atlantic Economic Corridor (AEC) to create an economic corridor along the western seaboard to grow the region, improve connectivity to and within the region and to strengthen the economy of the region. It recognises that Galway City and Suburbs needs to grow to become an accessible centre of scale to support the region.

The RSES acknowledges the strategic function of the national road network as part of the TEN-T comprehensive network is acknowledged in the RSES and the proposed N6 GCRR is listed as a "transport investment priority". It identifies the GTS as *'best practice example of where the integration of transport, spatial and economic planning is to be delivered'*.

4.3.2 Metropolitan Area Strategic Plan (MASP) for Galway City and Metropolitan Area

Galway City is the primary growth centre in the Northern and Western Region through its designation as a Metropolitan Area in the NPF. The MASP envisions that Galway will grow to become a globally competitive urban centre and to fulfil a critical role in the development of the Northern and Western Region because of its strong international and indigenous investment presence. It expressly supports the delivery of the Galway Transport Strategy (GTS) and the Galway City Ring Road as key transport infrastructure projects necessary to meet the transport demands associated with the projected growth in the Galway Metropolitan Area.

[15] REGIONAL SPATIAL AND ECONOMIC STRATEGY 2020-2032 (nwra.ie)

4.4 Local

Both Galway City and County Councils are committed to intensifying public transport and usage to deliver growth and improve the quality of life in Galway. Both the Galway City Development Plan 2023-2029 and Galway County Development Plan 2022-2028 support the proposed N6 GCRR as part of the GTS which is the overall transport strategy.

4.4.1 Galway City Development Plan 2023-2029

Galway City Development Plan 2023-2029 emphasises the importance of aligning land use and transportation to create sustainable cities and the critical role of the GTS in helping achieve the growth ambitions in the Core Strategy:

> "Implementation of the GTS measures will support the integration of housing with transportation, fostering sustainable transportation patterns. The Core Strategy has been informed by the GTS and provides for a co-ordinated approach with investment and the delivery of essential infrastructure, services and community facilities."

The Galway Transport Strategy is identified as a catalyst for change in the Public Realm Strategy. Galway's Transport Strategy seeks to redress the balance in favour of pedestrians and cyclists over vehicular traffic and the Public Realm Strategy seeks to capitalise on this by creating a high-quality public realm.

4.4.2 Galway County Development Plan 2022-2028

The Galway County Development Plan "promotes an integrated approach to land-use and transportation and supports development in existing towns, settlements and villages in accordance with the Core Strategy" and supports compact urban growth, consolidation of existing settlements and densification through the development of brownfield sites in accordance with the NPF and the NWRSES.

Galway County Council prepared the Metropolitan Area Strategic Plan (MASP) for Galway and is Volume 2 of the County Development Plan. The Galway MASP has a pivotal function in the proper planning and sustainable development of the Northern and Western region to ensure capacity to accommodate the significant population and employment growth anticipated in Project Ireland 2040. It too supports the delivery of the measures in the GTS and specifically the proposed N6 GCRR project as critical to the future development of the Galway Metropolitan Area and the wider region.

The N6 Galway City Ring Road seeks to deliver essential infrastructure for the West Region and aligns with the objectives set out in national, regional and local planning policy.

5 Objectives of the Project

5 Objectives of the Project

The Project is framed by, and responds to planning policies and objectives at a European, national, regional and local level.

The specific project objectives established by GCC and the City Council, and in conjunction with Transport Infrastructure Ireland (TII), are as follows:

To provide an essential link in the European Transport Infrastructure (TEN-T [16]) comprehensive transport network which will provide connectivity of the west of Ireland to the single European market without the need to route through the city

To provide the necessary infrastructure to support the economic growth of Galway and the West Region by improving connectivity to the Gateway of Galway thus supporting the economic performance of Galway by encouraging local, regional, national and international development

Enable compact growth as envisaged by NPF which is necessary to meet CAP24 targets, by displacing strategic traffic from the city centre, thus enabling public transport running optimally for a much larger population in a smaller compact area

[16] http://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/map/maps.html - The Trans-European Transport Networks are a planned set of road, rail, air and water transport networks in the European Union aimed to create connectivity between regions

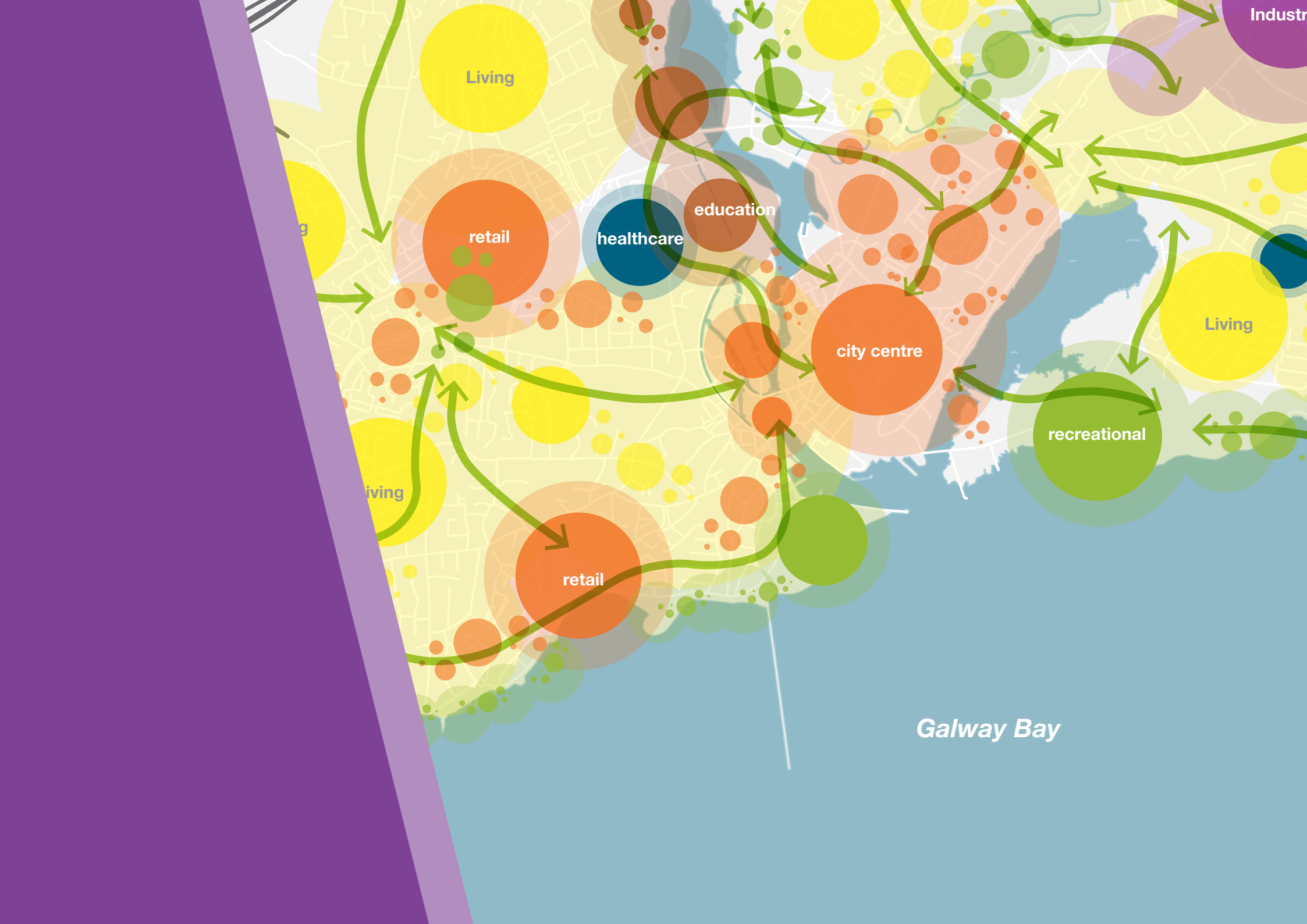
To support a shift towards environmentally friendly transport modes to bring about a sustainable transport and mobility system in Galway City and its environs, which will allow implementation of sustainable transport policies for short commutes

To reduce journey times and improve journey time reliability by removing bottlenecks that hamper the smooth functioning of the internal market

To enable other public projects to be realised and to facilitate the effective implementation of the GTS, which includes optimal running of public transport, walking and cycling measures for Galway City and its environs

To reduce road traffic collisions by providing safer urban streets by segregation of the interface of by-passable traffic from urban traffic

To improve accessibility of the Gaeltacht areas and recognise the role of Galway City as a gateway to the West Region and Connemara which have a very high quality tourist offering which is dependent on connectivity in order to achieve its potential


Living
retail
healthcare
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city centre
Living
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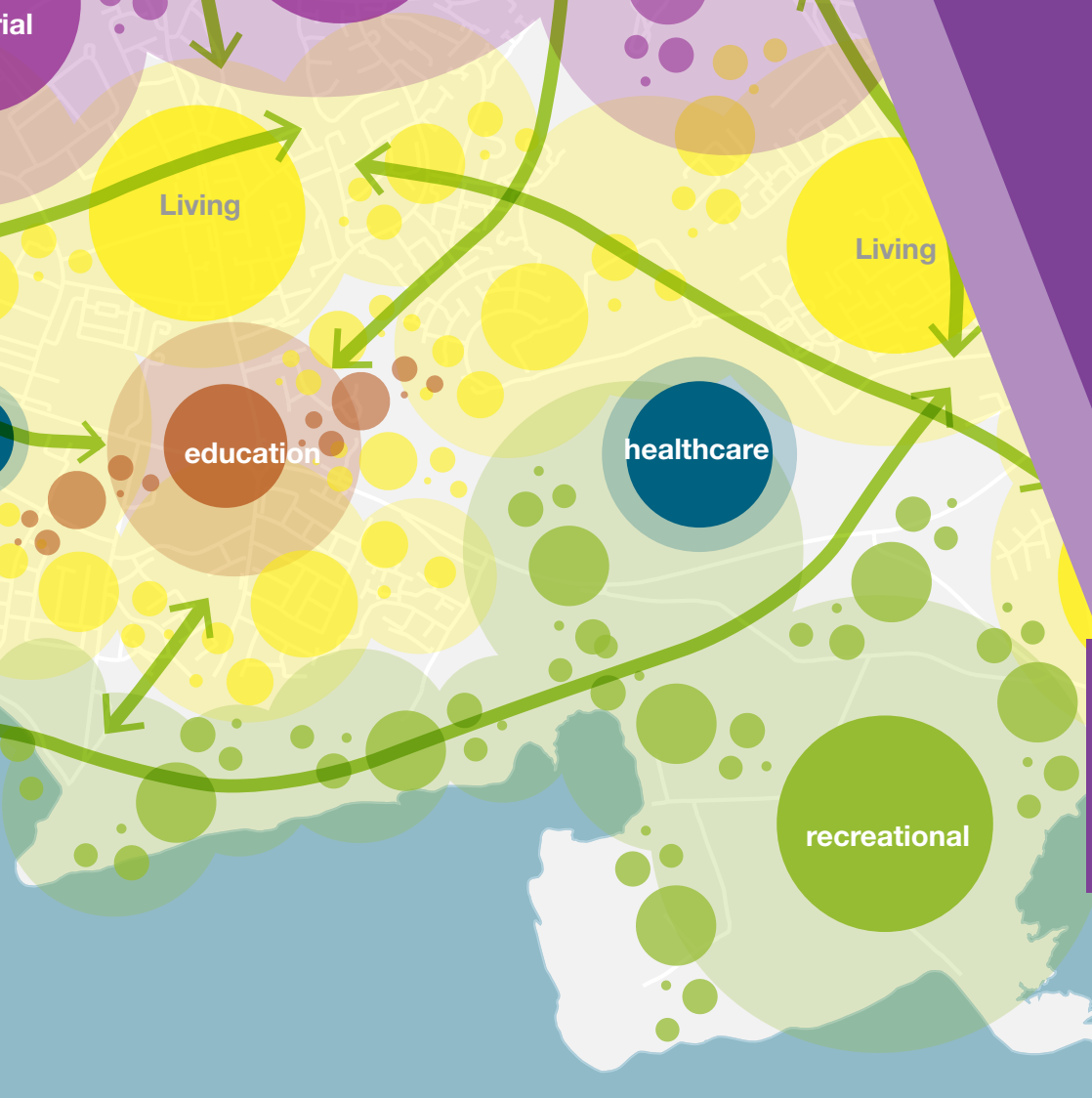
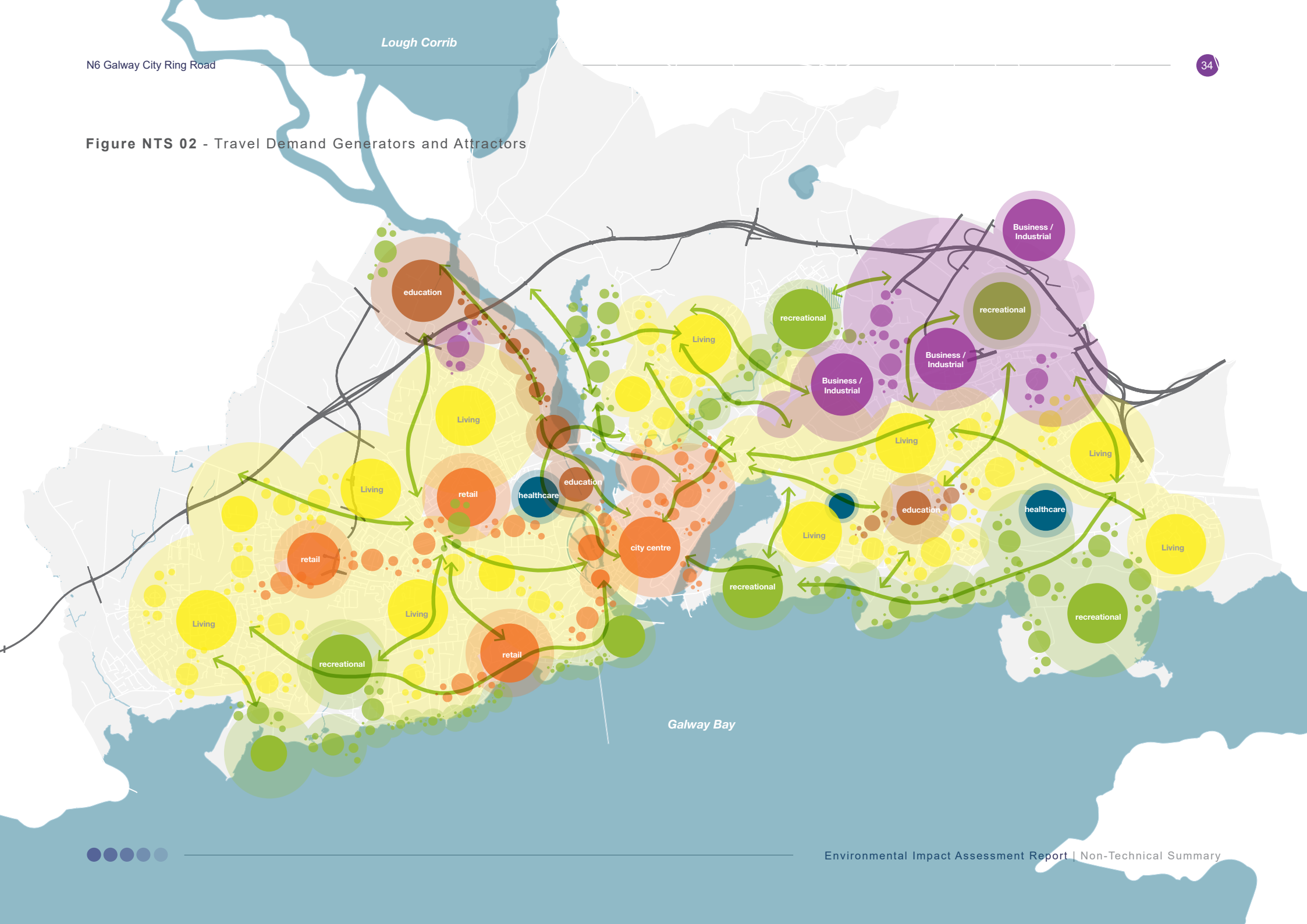
retail
Galway Bay



6 Need for a Transport Solution

Figure NTS 02 - Travel Demand Generators and Attractors



6 Need for a Transport Solution

6.1 Overview

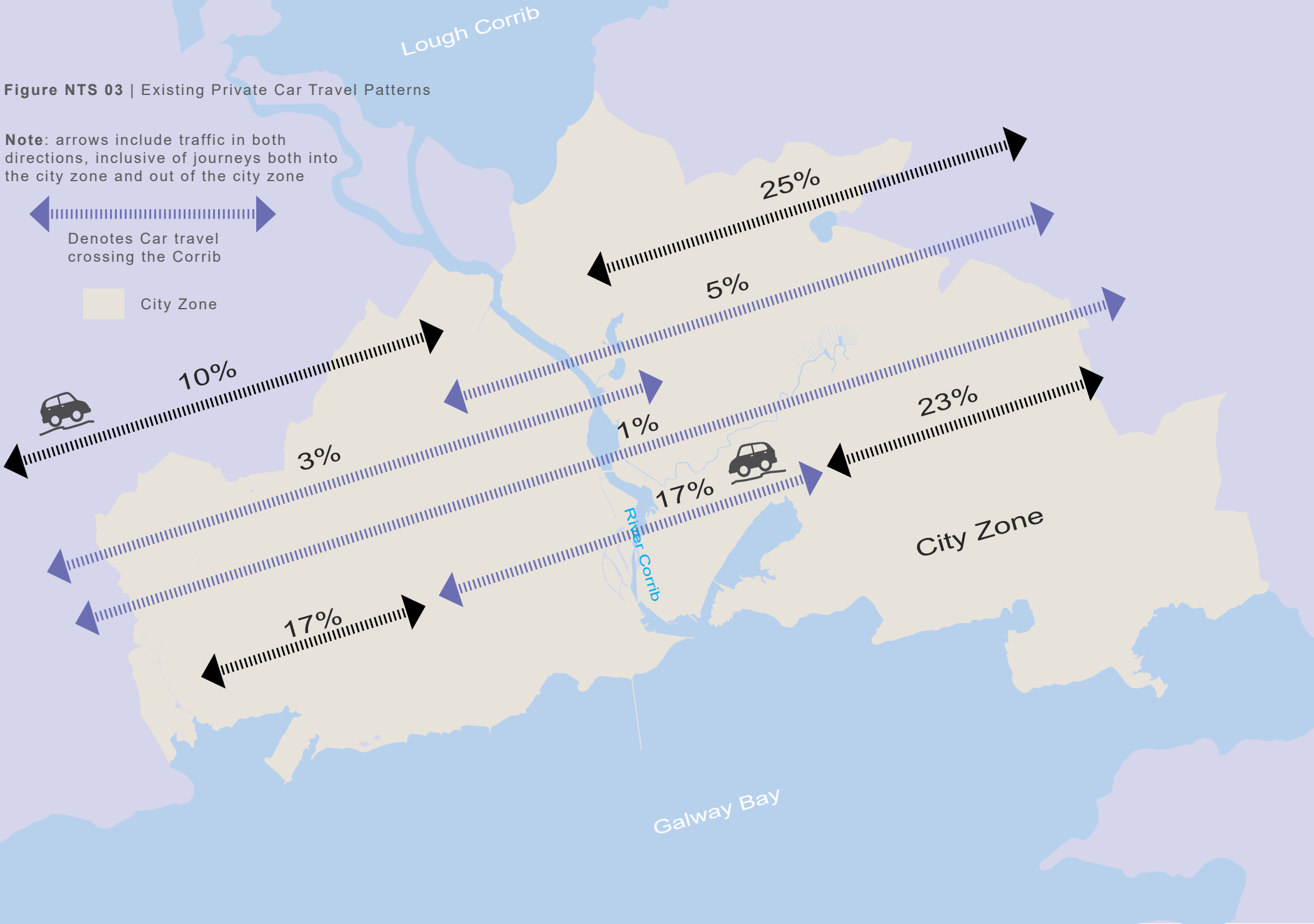
The consideration of alternatives started with the assessment of doing nothing, followed by the examination of how the incremental addition of transport measures could address the transport issues currently experienced in Galway before considering the addition of road infrastructure which aligns with the full suite of planning policy set out in Section 4.

At an early stage in the development of the proposed N6 GCRR, GCC and Galway City Council, in partnership with the NTA and supported by TII, commenced the development of the GTS which was progressed in parallel to the proposed N6 GCRR. Equally, the assessment completed through the development of the GTS tested and affirmed the need for a new orbital route around the city.

Throughout the development of the proposed N6 GCRR and the GTS, alternatives were considered. These are set out below.

In considering alternatives, it is firstly important to identify the cause of the existing traffic problems in order to develop an appropriate solution. A review and assessment of the existing transportation system (transport infrastructure and services networks) which enables active travel journeys, public transport, and private vehicular trips was undertaken as part of this updated EIAR to identify any changes to the baseline considered at the time of preparing the 2018 EIAR. A new transport model was developed to inform the assessment of the existing issues and, thereafter, was implemented to assess the continued need for the proposed N6 GCRR to resolve the transportation problem, whilst taking cognisance of the latest policies in respect of climate. The GTS identified deficiencies in the transportation system, both in terms of infrastructure and service networks, at all levels which affects the optimal efficiency of active travel, public transport and private vehicular trips. The extent of these deficiencies and the effect of them is outlined in the subsequent paragraphs.

Figure NTS 03 | Existing Private Car Travel Patterns



6.2 Understanding Galway's transport needs

During the development process, initial feasibility studies identified the zones of employment, education, retail and residential within Galway City and its environs. These zones are known as zones of traffic generators and attractors.

These zones are shown on **Figure NTS 02**, illustrating the dispersed demographics of the area with the residential areas interwoven with the key attractors of travel demand in terms of employment, social and amenity uses. It also demonstrates how the River Corrib divides this city in terms of ease of movement.

Analysis of existing travel patterns, as illustrated by the desire lines in **Figure NTS 02**, informed the understanding of travel demand to, from or through Galway City in the 2023 Base Year morning peak hour (extracted from the traffic model). The current distribution of private car journeys throughout the area is illustrated graphically in **Figure NTS 03**. Green arrows show movements that cross the River Corrib and black arrows show movements that do not cross the River Corrib and can be summarised as follows:

- 26% of all journeys into and out of the city zone and around Galway City (city zone) cross the River Corrib, of which approximately 4% are bypass traffic (i.e. 1% of 26%)
- 43% of trips either originate outside of the city zone and end in the city zone or start in the city zone and end outside of the city zone. A further 1% pass route through the city zone without a purpose in the city. This 44% of traffic would be deemed strategic traffic which can be tougher to serve by public transport and active modes of transportation
- 40% of all journeys originate and terminate within the city zone on the same side of the city as where they started i.e. do not cross the river
- Approximately 17% of all journeys are within the city zone and cross the river

This analysis pointed towards a need for a multi-modal transport solution catering for the following various demands:

- A high proportion of short journeys within the city zone can be accomplished via public transport, cycling or walking (i.e. approximately 40% of journeys commencing in the city which remain on the same side of the city as they started are short trips, both in time and distance)
- A further 17% of journeys which occur from one side of the city to the other are also short journeys, making them clear targets for a shift to public transport
- Improved connectivity to the national road network for those on the western side of the River Corrib is only possible at present by using one of the city centre bridge crossings which are all over-capacity, and this reinforces the need for another river crossing

26%

trips cross river

44%

of trips either originate or end outside the city and would be deemed 'Strategic' trips which are harder to serve by public transport or active travel

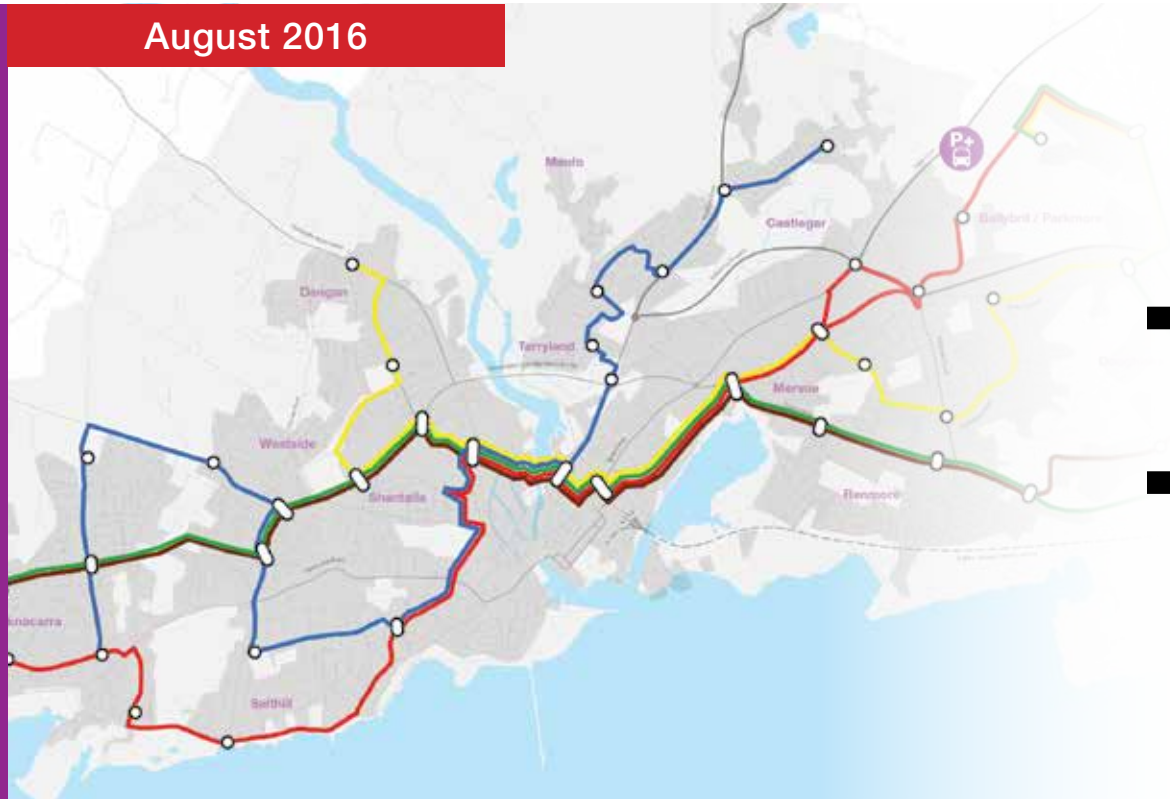
Solution

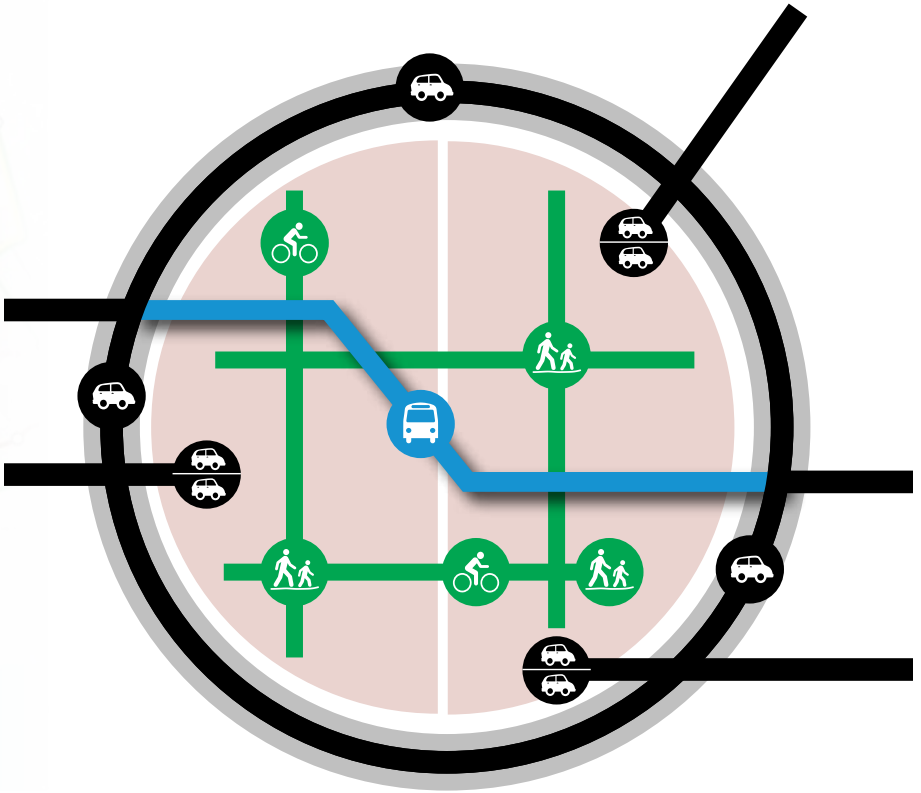
multi-modal transport solution

Straitéis Iompair na Gaillimhe
Galway Transport Strategy

An Integrated Transport Management Programme for Galway City and environs

August 2016





Comhairle Cathrach na Gaillimhe
Galway City Council

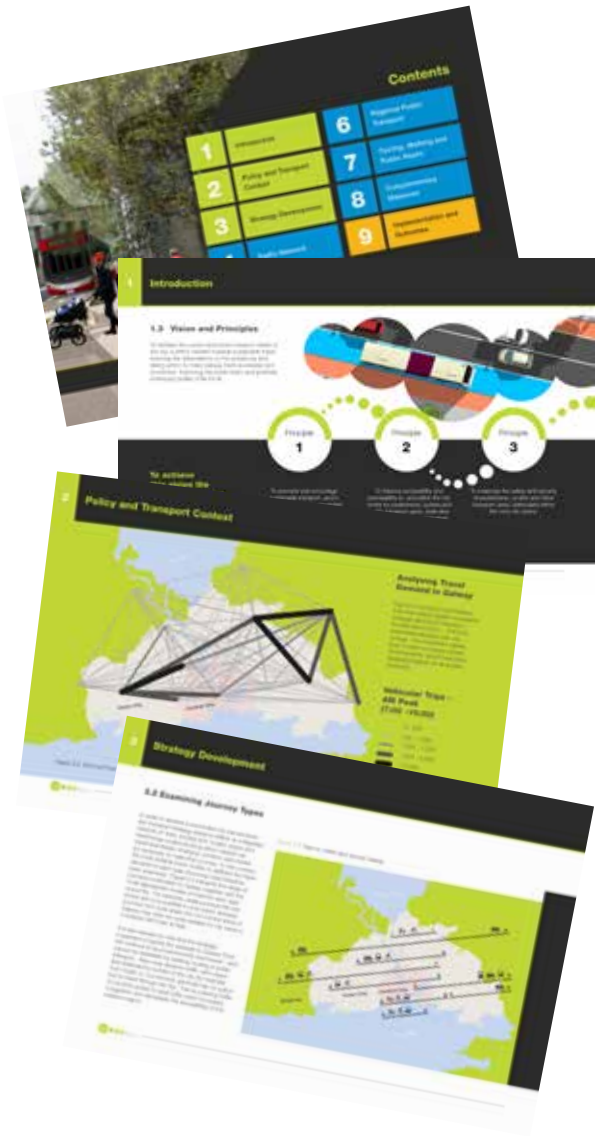
Comhairle Chontae na Gaillimhe
Galway County Council

Údarás Náisiúnta Iompair
National Transport Authority

Aonad Iompair na Gaillimhe
Galway Transport Unit

SYSTRA

ARUP



6.3 The Galway Transport Strategy (GTS)

In considering the transport needs of Galway City and environs and developing an integrated transport solution to address these, one of the key objectives of the GTS was to consider and appraise alternative transport solutions. This included consideration of alternative public transport options and investment in active travel modes (i.e. walking and cycling), in combination with, and in the absence of, an orbital ring road for the city.

The GTS, including supporting technical studies, is published and available on Galway City Council's website at the link below:

https://www.galwaycity.ie/galway-transport-strategy

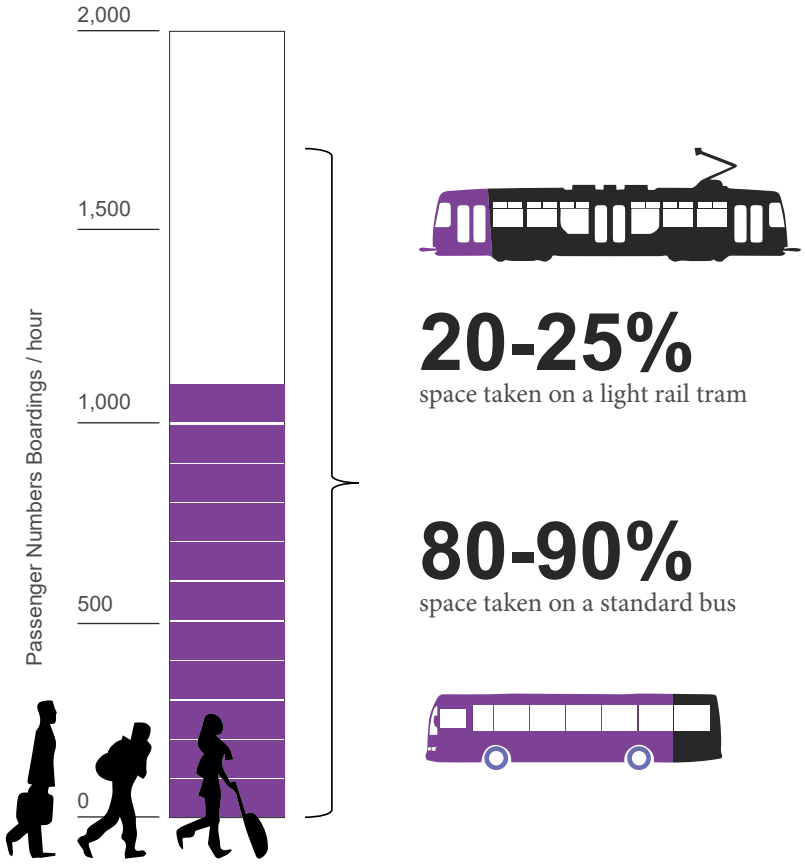
The GTS development followed a structured approach and methodology through a process of:

- Assessment of existing and projected future levels of travel demand, journey types to be served, and evaluation of existing levels of transport service provision
- The development and testing strategy options by individual transport mode and in combination to meet forecasted levels of travel demand
- The development of specific proposals which were subsequently brought together under the overall strategy

The GTS development and assessment utilised NTA's Regional Transport Modelling System, with the West Regional Model (WRM) being centred around Galway City and its environs and covers all surface access modes for personal travel and goods vehicles including private vehicles (taxis and cars), public transport (bus and rail), active modes (walking and cycling) and goods vehicles (light goods vehicles and heavy goods vehicles).

The WRM was also used to assess the proposed N6 GCRR in detail as discussed later in **Section 8.5.**

Figure NTS 04 - Estimated Maximum Occupancy of Public Transport System Options



6.4 Developing the Transport Solution

The transport solutions which emerged from the GTS were based on achieving a long-term sustainable integrated land-use and transport plan for Galway City and its wider environs within the county.

Walking and Cycling

As a compact city, the strategy places particular emphasis on the improvement of the public realm and the street network for walking, while developing a safe, legible cycle network to better cater for the short journey demand identified within, to, from and through the city centre.

Thereafter, and sequentially in terms of the strategy development and assessment, a number of key questions were considered in terms of public transport and road network choices to be made.

Public Transport

In terms of public transport choices, the type of public transport network configuration that best suits Galway, both in terms of alternative modes and network configuration was considered and assessed in detail.

Transport modelling to test the potential passenger use of high frequency public transport services along the busiest corridors in Galway, looking at a bus-based or light rail-based options on these indicated that with high-frequency services in place, the maximum single directional passenger demand would only be approximately 1,100 over a 1-hour period (in the AM Peak). As indicated in **Figure NTS 04**, this broadly equates to 80-90% of the passenger capacity of a frequent bus service, and less than 25% of the capacity of a frequent light rail service.

It was therefore concluded that a light rail service would provide capacity far in excess of what is practically required in the short to medium term, with the potential in the future for light rail linked to development growth on specific corridor(s).

Hence, when considering the greater cost of building and operating light rail services at the same frequency as bus services, it was clear that bus-based public transport represents the most appropriate system for Galway over the period considered in the GTS.

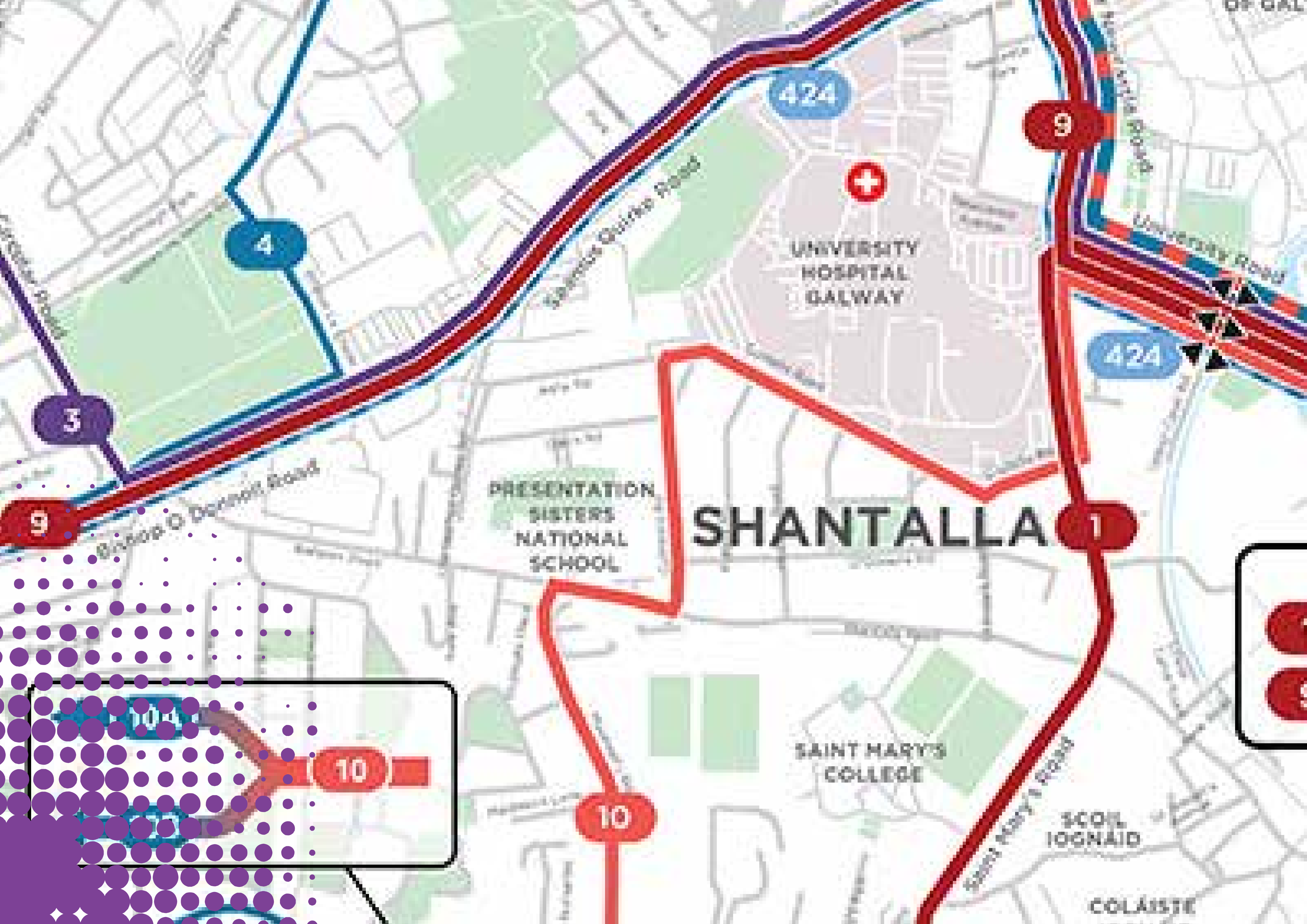
The public transport network and type of system (or mode) is also dependent on a number of further considerations:

- **Street Network:** Galway is an historic city and its layout and road network reflect a city that has developed over many years with some roads and streets, especially in the city centre, being very narrow, resulting in turning movements being difficult for some modern public transport vehicles to navigate.
- **Network or Corridor:** The most successful public transport networks and services are generally those that offer a consistently high frequency throughout the day on a network of services, and hence can attract a broad variety of trip purposes such as commuter trips, trips to education and trips for retail and leisure activities.

It was concluded that a high-quality bus-based public transport service will most appropriately cater for the forecasted passenger demand and provide significant flexibility in terms of network options and the ability to integrate with other modes. In particular, a bus-based public transport network can cater for high volumes of demand along combined corridor sections (for example through the city centre) whilst diverging out to efficiently provide greater direct catchment within less-dense suburban areas of Galway.

Having identified the most appropriate form of public transport solution to serve Galway, a further key consideration was the form of network upon which bus services should be reorganised and developed. The primary consideration was whether concentration should be given to increased orbital bus services (for example, via the Quincentenary Bridge) versus services through the city centre.

Analysis from the transport modelling undertaken confirmed the patronage for an orbital service would be approximately half of what would use an equivalent service routed via the city centre. This outcome clearly indicated that cross-city bus services via the city centre will be both more attractive to passengers and more financially viable than operating orbital services. This guided the final bus network and service pattern adopted in the GTS, which has been developed by the NTA and Galway City Council as BusConnects.



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UNIVERSITY
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GALWAY
424
University Road
Seamus Quirke Road
Bishop O'Donnell Road
PRESENTATION
SISTERS
NATIONAL
SCHOOL
SHANTALLA
1
SAINT MARY'S
COLLEGE
Saint Mary's Road
SCOIL
IOGNÁID
COLÁISTE
10
10

THE SPORTSGROUND
10
1
4
9
3
THE PLOTS
FISHERIES FIELD
Prospect Hill
College Road
424
LOUGH ATALIA
Forster St
FRIARS RIVER CANAL
Eyre Square
1
4
7
9
10
424
7
424
Queen St
Merchants Road
Dock Rd
COMMERCIAL DOCK

Road Network

The GTS affirmed a key aspect of addressing current traffic issues in Galway as being to support and facilitate a shift to more sustainable transport modes, where practical to do so.

As set out earlier, increasing the rates of travel by sustainable modes in Galway City will require a significant improvement in the quality of the public transport, pedestrian and cycling networks. This will require specific traffic management measures to be implemented and the targeted reallocation of road space from general traffic to sustainable modes, which is addressed in the GTS and is separate to the proposed N6 GCRR.

For example, to deliver cross-city journeys by public transport, major priority measures, such as bus lanes and traffic restrictions are required through the city centre. Whilst this will support travel mode shift, it will also reduce the capacity for general traffic. Therefore, without accompanying road network and traffic management interventions, the GTS concluded that traffic congestion issues will remain.

The road and street network options considered by the GTS were primarily focused on better traffic management, rather than increasing capacity for traffic demand. The strategy which emerged from the GTS aims to remove non-essential motorised traffic from the core city centre area (i.e. traffic travelling through the city centre whose destination lies outside the city centre). This will be done using a combination of routes around the city centre, and will prioritise other modes within the core city centre area via the 'Cross-City Link', a proposed corridor (shown schematically in **Figure NTS 05**) through the core city centre area which will allocate increased priority to walking, cycling and public transport over private car traffic.

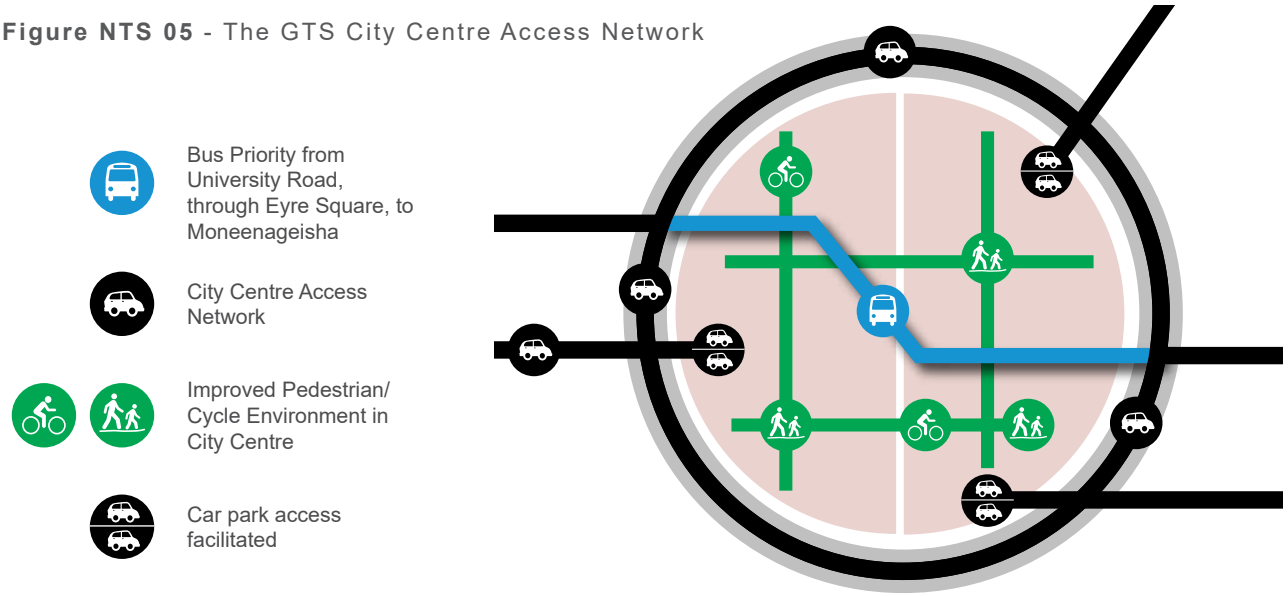
Given the catchment of Galway City, the GTS road network proposals are intended to provide a balanced approach to facilitating necessary car trips, with emphasis provided on improving legibility and access to car parking in particular, while also recognising that Heavy Goods Vehicles (HGVs) will continue to need access to the city and the port.

This will be facilitated by means of the now clearly defined 'city centre access network' as illustrated in **Figure NTS 06**.

The need for a Ring Road

The GTS specifically looked at the impact of, and need for, a new ring road for Galway City which the national primary network improvement provided by the proposed N6 GCRR project would facilitate.

Figure NTS 05 - The GTS City Centre Access Network



The NTA's transport model was again used to assess the emerging GTS strategy with and without such a ring road. This analysis clearly concluded that, given the strong negative impact of congestion on achieving the objectives of the transport strategy, unless additional capacity is provided for traffic, the overall objectives of the GTS will not be met. Furthermore, the GTS concluded that this additional road capacity should not be in conflict with the enhanced sustainable transport network planned, rather it should focus on supporting trips that cannot be facilitated by the proposed measures (i.e. outer-city movements and external-to-external trips).

Figure NTS 06 - The GTS City Centre Access Network

In the interim since 2018, Galway City Council is advancing bus network improvements to achieve the objectives of service plans developed by the National Transport Authority. The delivery of the GTS is already underway with a focus on providing walking, cycling and public transport measures to meet the current needs of the city and to ensure alignment with CAP24.

Under the National Planning Framework (NPF), which post-dates the GTS, the population of Galway City is planned to increase by approximately 50% by 2040. Within the metropolitan area, the population is expected to grow to approximately 150,000 people by 2040 from the 2016 level of approximately 95,000.

The Western Regional Model was utilised to assess the impact of such population growth on travel demand as part of this updated EIAR. This planned increase in population and employment within the metropolitan area will increase the demand for travel across all modes (including freight), thereby exacerbating the transport capacity issues experienced currently and this factor must be considered in the context of the transport problem facing Galway, and the implementation of measures set out in the Climate Action Plan.

Therefore, in progressing the Project, consideration of alternatives at a project level concentrated on the identification and appraisal of options which had the potential to deliver the project objectives set.

A new ring road to the north of the city is therefore proposed as part of the GTS to deliver the necessary capacity to sustain the City and environs in terms of planned development and growth and to support the delivery of the sustainable transport measures which emerged from the strategy.

It is clear therefore that the proposed N6 GCRR project, in addition to meeting strategic regional requirements in terms of the functionality of the national road network, will also facilitate this specific objective of the GTS.

7 Alternative Options

The physical form of the city in terms of the **built and natural environment and residential areas** on both sides of the River Corrib, together with the **limited available space between the lake and the bay**, plus the **presence of the designated sites** presents significant constraints for developing new infrastructure for the city. The presence of these constraints focused attention on the importance of considering all alternatives in order to minimise the impact on the human environment and the designated sites.

7.1 Constraints

The identification of the most appropriate route for any proposed N6 GCRR starts with the developing of an understanding of constraints. In this regard, a comprehensive baseline study of the wider Galway environs was undertaken. The extents of the study area is shown on **Figure NTS 07** and an overview of the significant constraints is shown on Figure **NTS 08**.

In summary, the significant constraints for developing new transport infrastructure in Galway can be principally categorised as being:

(i) The physical form of the city

(ii) The limited space available

(iii) The built environment and residential areas on both sides of the River Corrib, and

(iv) The presence of ecological areas protected by national and European law (designated sites)

Figure NTS 07
Study area

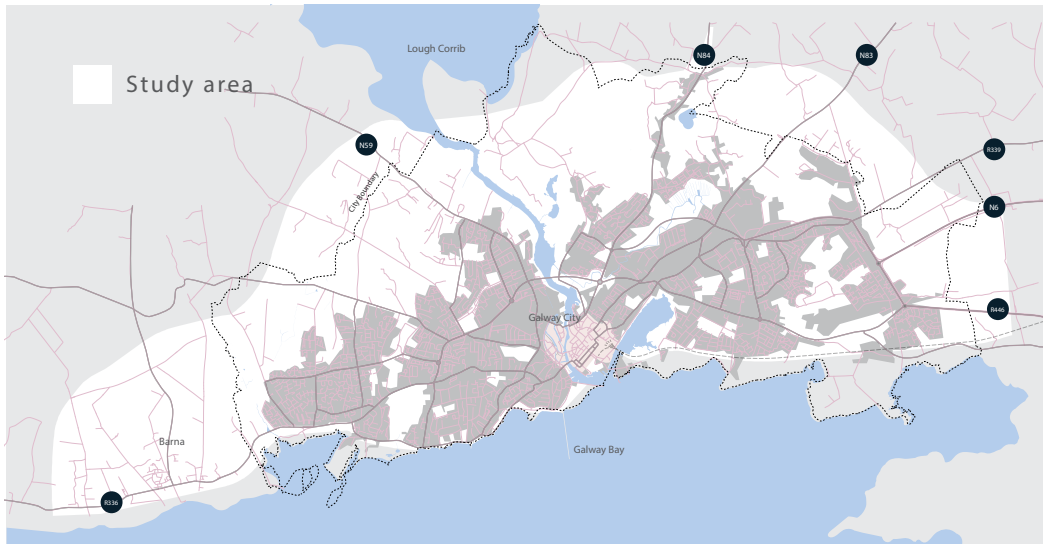
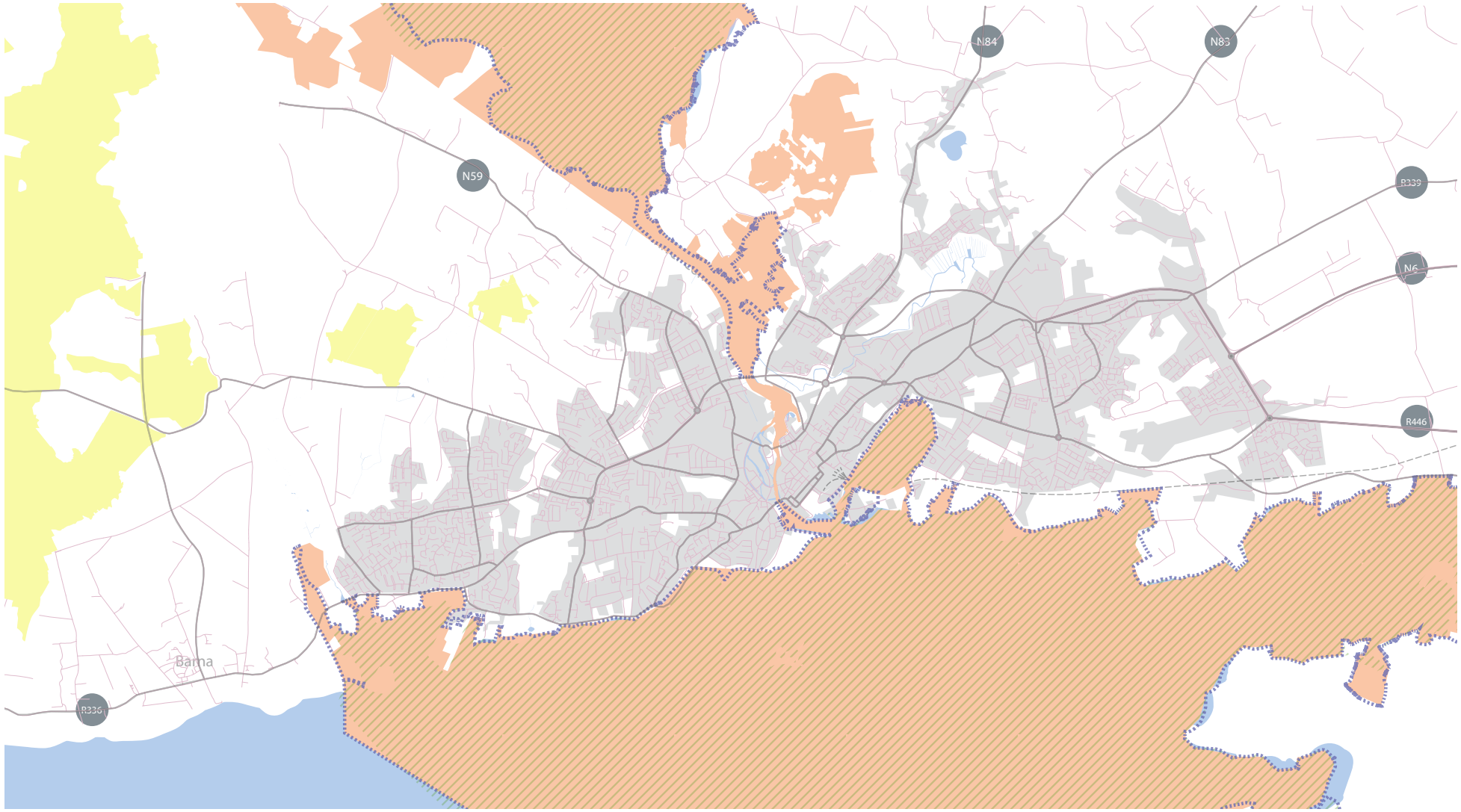
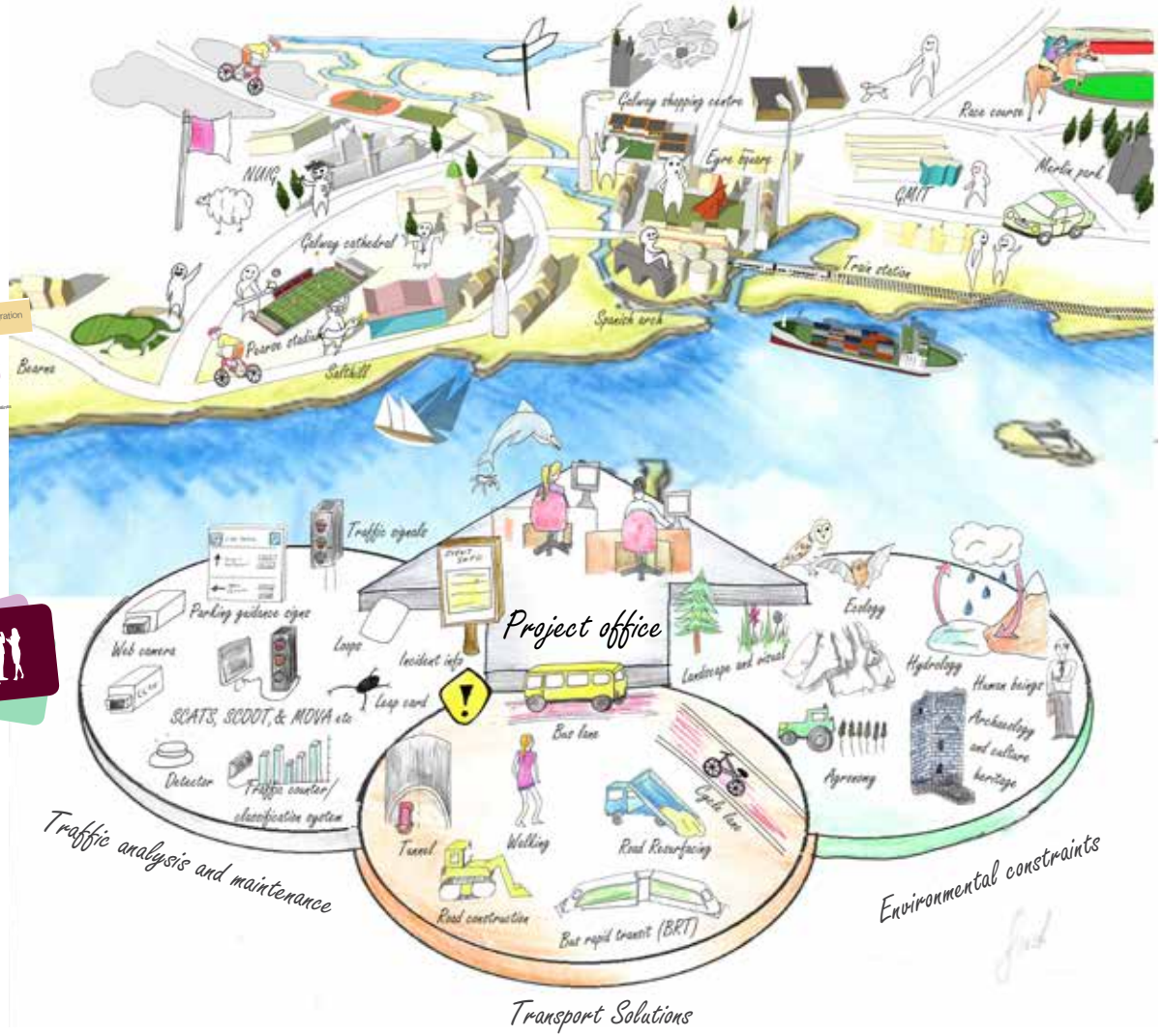


Figure NTS 08: Significant constraints



Working from a blank canvas we want to create

a safer, smarter and sustainable integrated transport system for Galway



7.2 Function of the N6 GCRR

The function of the proposed N6 GCRR is to facilitate the reduction of existing traffic congestion and future proof the effectiveness of this part of the national road network. To achieve this dual functionality, the proposed N6 GCRR design sought to:

1. provide for the strategic need of the TEN-T comprehensive road network and connectivity of Galway City and the West Region to the national road network

2. provide an additional crossing of the River Corrib, thus facilitating the reduction of congestion on city centre roads, and allow the reallocation of road space in the city network to non-motorised modes of transport, thereby facilitating the effective implementation of all the elements contained in the GTS, namely the improvement of public transport, cycling and walking measures

The transport strategy for Galway (i.e. the GTS) recognised the need for an additional resilient/reliable orbital route so as to facilitate the re-allocation of existing road space for use by pedestrians, buses and cyclists. In particular, it identified the need for an additional crossing of the River Corrib to effectively implement the orbital route for journeys which could not be completed by non-car modes.

The proposed N6 GCRR provides this required outer edge route, which will develop the road network of the northern half of the city, thereby facilitating more direct journeys, divert through traffic away from the central spine and facilitate the reallocation of road space in the city centre to active modes and public transport, see **NTS 08a**.

In addition, the proposed N6 GCRR will replace the function of the existing (and substandard) N6/R338 road network. By serving strategic traffic currently crossing the city via the existing N6, as well as the strategic traffic that is currently attempting to "rat-run" through the city using the existing city street network (as a result of congestion levels on the national road network), the proposed N6 GCRR will free up significant road space in the city centre which can then be used by other modes of transport. Indeed, the displacement of this strategic traffic from the city centre will facilitate the optimal operation and performance of a much larger number of cross city bus services planned as part of the NTA's BusConnects Programme for the city (50% increase in services).

The worsening congestion and delay have continued, as predicted, since 2018 in the absence of the proposed N6 GCRR. The need for, and justification of, the proposed N6 GCRR is even more pronounced now than it was in 2018, and the proposed N6 GCRR is undoubtedly necessary for the strategic transport development of Galway City and its environs, including modal shift, active travel and significantly improved public transportation, all of which are enabled by the development of the proposed N6 GCRR.

NTS 08a Overlay of proposed N6 GCRR and Population Centres (in orange) to the north of Existing N6

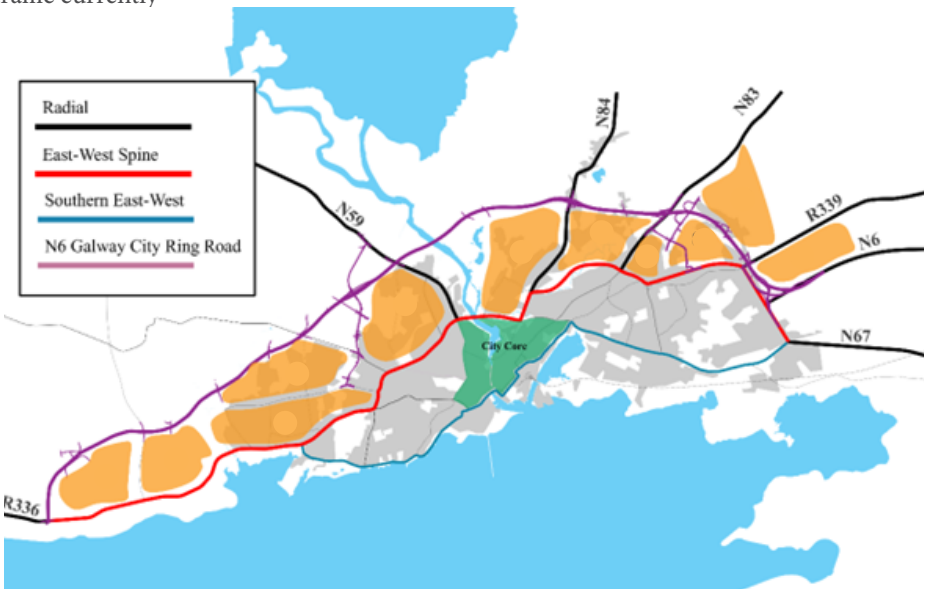
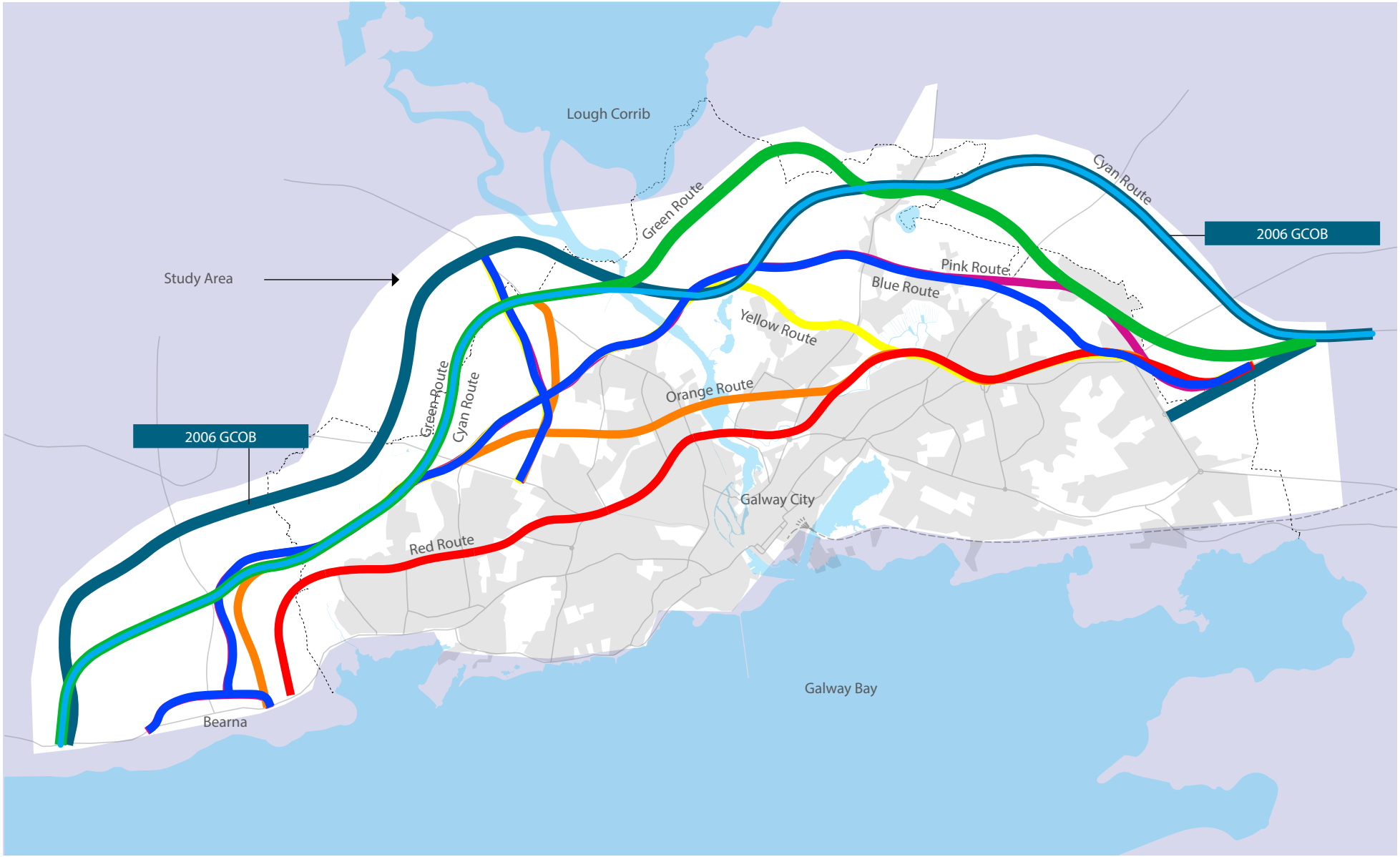


Figure NTS 09 : Route Options



7.3 Options Assessment

7.3.1 Do-Nothing

In addition to the GTS, at a project level the proposed N6 GCRR also considered a 'Do-Nothing' option in terms of the existing transportation network and infrastructure and its ability to meet future transportation demands, in the absence of any upgrade works other than routine maintenance. This alternative did not provide for any investment in the transportation network and infrastructure of Galway City and its environs. It compounded existing significant congestion issues experienced across the city, particularly during peak hours, which impacts on the economic capability of the city and did not facilitate the implementation of the measures identified in the Galway Transport Strategy measures. As this was unsatisfactory, this alternative was discounted.

7.3.2 Do-Minimum

Similarly, the 'Do-Minimum' was updated for this updated EIAR to include the GTS measures advanced since the 2018 EIAR, such as the Cross-City Link which received approval with conditions from ABP on 27 September 2024, the construction of the Salmon Weir Cycling and Pedestrian Bridge, the submission of BusConnects Galway Dublin Road scheme to ABP, and the 30km/h city centre speed limit. The reassessment of the updated 'Do-Minimum' alternative concluded that whilst it would achieve more economic benefit than the 'Do-Nothing' alternative it would not serve to reduce the existing congestion sufficiently such that the overall transportation issues would be solved. As this was unsatisfactory, this alternative was discounted.

7.3.3 Non Road Alternative

A 'Do-Something Non Road' alternative was considered which represented alternatives that seek to respond to transportation problems by maximising the value of existing infrastructure without construction of major new infrastructure in the first instance. Thereafter, once the existing asset is exhausted, investment in public transport is considered as the next potential intervention.

The 'Do-Something Non Road' alternatives included local road safety improvements, monetary measures or traffic control measures to manage demand on the transport infrastructure, public transport priority schemes, improvements to pedestrian and cycling provision and technology improvements to traffic signals to improve reliability, safety and operation capacity. The next order of intervention may include more significant infrastructure to support improved public transport such as buses and light rail.

An assessment using the updated transport model of the fully developed BusConnects scheme shows significant increases in demand from current levels, as the city grows population per National Planning Framework predicted levels. However, as traffic along these routes also increases, bus users would suffer from longer and more unreliable journey times compared to today's levels. The results show that the BusConnects programme will not alone, solve the city's serious transport issues as it grows its population.

In October 2024, the National Transport Authority (NTA) published a Galway Light Rail Transit Feasibility Study Report[17]. This report explored key issues and the potential feasibility of introducing a Light Rail line to the city of Galway along one corridor linked to development growth on the specific corridor(s).

An assessment using the updated transport model of the demand and potential impact of the proposed N6 GCRR, when added to a city transport network which already contains a Light Rail line as per the alignment in the feasibility study published by the NTA, was undertaken. The same stops and frequencies in the feasibility report, were also used for this assessment. The analysis shows that the LRT and the proposed N6 GCRR, when delivered in tandem with the climate action plan demand management measures, serve complimentary functions. The LRT services the travel requirements for residents and workers across the city within the city boundary, whereas the proposed N6 GCRR services the travel requirements for longer distance strategic passenger and freight requirements of the wider city and region. The proposed N6 GCRR does not preclude the provision of light rail in the future when sufficient demand for it is there. However, Light Rail alone will not resolve the significant transport issues currently experienced in Galway City and its environs and does not meet the Project Objectives and as such is discounted as an alternative to the proposed N6 GCRR.

[17] https://www.nationaltransport.ie/wp-content/uploads/2024/10/GMATS-LRT-Feasibility-Study-report-v0.4_Final.pdf

Demand management measures, also assessed in the updated transport model, will not deliver a solution to the transport issues in Galway City and its environs as a stand-alone option as there will be a significant suppressed demand, public transport will experience delays (albeit less than in 2023 but significantly more delay than if the proposed N6 GCRR is in place) and HGV traffic through the city in population centres will continue to frustrate the ability to implement active travel infrastructure. The current AADT crossing the Quincentenary Bridge is at capacity carrying approx. 40,000 vehicles daily and it does not have sufficient capacity to carry the additional forecasted level of cross-city traffic, approx. 70,000 total with Demand Management Measures in place, particularly during peak hours.

7.3.4 Do-Something Road Alternative

Whilst the non road alternatives worked towards resolving the transport issues experienced in Galway, they did not resolve the strong negative impact of congestion and limited the ability to achieve the objectives of the transport strategy. Additional capacity is required for traffic to meet the strategic regional requirements in terms of the functionality of the national road network and to connect the east and west of Galway City and County plus to enable the optimal implementation of the GTS.

Table NTS-1: Route Options - Property Demolition Assessment

Route Option	Residential Demolitions	Commercial/Industrial Demolitions	Total
Red	94	19	113
Orange	53	9	62
Yellow	106*	11	117
Blue	54	5	59
Pink	46	6	52
Green	76	10	86
2006 GCOB	The western section of this scheme did not receive planning permission from ABP due to potential environmental impacts in the area of Tonabrocky Bog pNHA. Therefore, the property demolitions are not a true reflection of the likely property impacts of a new scheme that would meet the present scheme objectives. It does not provide a connection to the N83 Tuam Road, or does not serve the employment centres at Parkmore and Ballybrit. It had an adverse impact on the site integrity of the Lough Corrib cSAC per the European Court decision.		10
Cyan	41	0	41
	This addresses some of the issues of 2006 GCOB scheme. It avoids Tonabrocky Bog pNHA. It does provide a connection to the N83 Tuam Road, but does not serve the employment centres at Parkmore and Ballybrit. It had an adverse impact on the site integrity of the Lough Corrib cSAC per the European Court decision.		
N6 GCRR	44	5	51

*An apartment block accounts for 37 residential demolitions

As additional road infrastructure is required, numerous alternatives for connecting the east and west of Galway City and County with a 'Do-Something Road Based Alternative' were considered as shown on **Figure NTS 09**. Alternatives across Lough Corrib and Galway Bay or a tunnel from the far west of the study area to the east were all considered and discounted as they did not meet the project objectives for various reasons.

The development of a road based alternative included an assessment of the previous 2006 GCOB project as well as new route options which included an upgrade of the existing road network known as the on-line upgrade, a partial on-line upgrade coupled with new road infrastructure and a totally new road. The on-line upgrade to the existing N6 utilised the existing Quincentenary Bridge for the strategic traffic and included a new bridge immediately south of it to cater for local traffic. Detailed environmental studies were undertaken on the entire study area so that a comprehensive multi-criteria assessment of the various options could be completed. Included in this environmental assessment and criteria is an assessment of the impact on people, homes and communities.

Although the route of the proposed N6 GCRR has been designed to skirt the city and lands zoned for development, and every effort was made to avoid homes, the avoidance of all properties is unfortunately not possible given the linear development of the city with housing along every road radiating out of the city.

The final set of road based alternatives assessed during the route selection phase of the project are shown in **Figure NTS 09**. In addition to detailed comparative environmental assessment, a comparative assessment of the potential property demolition on each of the route options was undertaken, and the results are shown in **Table NTS 01**.

Both the 2006 GCOB and the Cyan Route Options were not progressed further due to the reasons outlined in Table NTS-1 above. Of the remaining options, the option selected has the least number of residential demolitions, whilst also being the least impacting on the receiving environment. It was also acknowledged that significant engineering infrastructure, such as a tunnel beneath Lough Corrib SAC, a tunnel beneath Galway Racecourse, a viaduct over Limestone pavement outside the Lough Corrib SAC and a viaduct over NUIG sports campus would form part of the design measures to enable advancement of this preferred route.

In accordance with the Department of Transport's "Guidelines on a Common Appraisal Framework for Transport Projects and Programmes" (CAF, March 2016), the alternatives were assessed against the six criteria of Economy, Safety, Physical Activity, Environment, Accessibility and Social Inclusion and Integration. The CAF (2016) has since been replaced, in July 2024, by the ***Transport Appraisal Framework (TAF)***, which again provides *"appraisal and implementation guidance that aims to promote investment in the transport system which meets the needs of society, fulfils strategic policy objectives, and delivers value for money"*.

The original CAF sub-criteria are aligned to the TAF sub-criteria, albeit that they are described slightly differently, and "Climate Change" is addressed specifically as an individual criterion as opposed to sitting within "Environment". The Project objectives align with the most recent and current TAF and are retained with minor additions.

Upon completion of this multi-criteria assessment, the Emerging Preferred Route Corridor of the preferred road based alternative, as shown on **Figure NTS 10**, was developed as an amalgamation of different route options over the length of the study area, which in combination, were considered to be the least impacting on the receiving environment in terms of impacts on people, ecology and all other environmental factors.

The proximity of the proposed N6 GCRR to the urban environment, which is necessary to provide the optimal solution for a new ring road, results in the unfortunate but unavoidable demolition of 44 dwellings to facilitate construction, and the acquisition of a further 10 dwellings due to the impacts on those properties. This is a significant impact on the people living in these homes. However, this must be viewed and considered and balanced with the overall benefits (as set out in more detail in Section 10 below) that the proposed N6 GCCRR presents for the future of Galway and its environs and connectivity to the West Region.

Figure NTS 10: Emerging Preferred Route Corridor

Further refinement continued during the design, during the 2020 oral hearing and in the subsequent approval granted by ABP for the proposed N6 GCRR on 6 December 2021, to eliminate and reduce impacts on the human environment as follows:

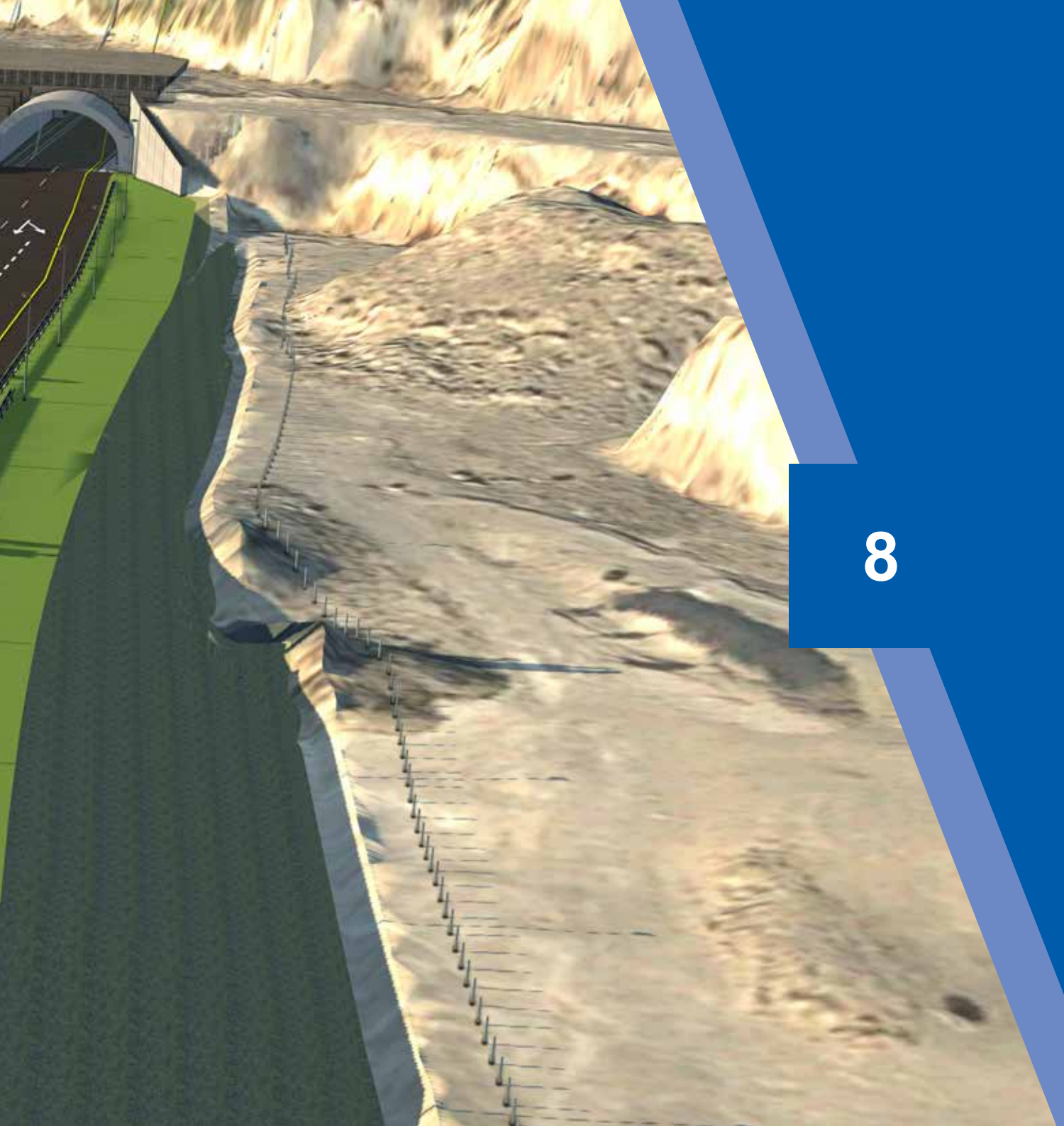
- Alternative alignment for the southern portion of the Parkmore Link Road through Boston Scientific campus
- Changes to the mitigation proposed for Galway Racecourse
- Changes to the mitigation proposed for University of Galway (formerly NUIG) Sporting Campus

7.4 Alternatives considered at Galway Racecourse

As set out in Section 1, the need for temporary and permanent stables at Galway Racecourse is triggered by the demolition of the existing stables to enable construction of the proposed N6 GCRR. Various alternatives, beginning with doing nothing to trying to manage using technology to then moving to a higher level of intervention in the form of new stables were considered. As key facilities to corral and contain animals safely are essential to obtain a licence to operate race meetings, the do-nothing alternative and technological alternative are not feasible and were discounted from further consideration.

The next incremental step in consideration of alternatives is replacement stables. Four alternative locations were considered, including a comparison of the environmental effects of each. The preferred location selected is to the north-east of Galway Racecourse on lands which are acquired temporarily for the construction of the Galway Racecourse Tunnel. This option allows the retention of the existing flow through the Racecourse and maintains the existing network and infrastructure in so far as possible as the orientation vis-à-vis the existing facilities remains as per existing.

Upon detailed review of the available space within the property ownership of Galway Racecourse, the temporary stables have been located in the infield, noting that this is for a temporary period only. It is sufficiently removed and independent of the lands required for the construction of the proposed N6 GCRR and can operate in the short-term whilst the construction of the proposed N6 GCRR and the proposed permanent stables is underway.



8 The Project

8 The Project

8.1 Description of the Project

The Project comprises five phases, with an asterix* indicating that the works do not form part of the development for which approval is sought as part of the Section 51 Application for the proposed N6 GCRR:

Phase 1*: Construction of the temporary stableyard, machinery shed, maintenance shed, water supply wells, ESB substation and new pre-parade ring and pavilion on Galway Racecourse lands.

Phase 2: Construction of the proposed N6 GCRR in two stages which will take place concurrently:

- Stage A - N6 Coolagh Junction to N59 Letteragh Junction
- Stage B - N59 Letteragh Junction to R336 west of Bearna

The existing stableyard and existing commercial building on the lands to the north of the Galway Racecourse will be demolished and the site cleared to enable construction of Galway Racecourse Tunnel.

Phase 3*: Construction of the new permanent stableyard upon completion and handover of the proposed N6 GCRR.

Phase 4*: Demolition of the temporary stableyard constructed in Phase 1 and reinstate the site as a car park. Retain ESB sub-station, pavilion, machinery shed, maintenance shed and pre-parade ring.

Phase 5: Relates to the operation of the Project.

Refer to Volume 2 of this updated EIAR for further details.

Phases 1, 3 and 4 of the Project will be maintained by the Galway Race Committee Trust (GRCT). Phase 2 of the Project will form part of the TII maintenance contracts and all elements including the drainage will be maintained on a regular basis to ensure all elements function as per their design and achieve the required standards.

8.2 Description of the proposed N6 GCRR

The design of the proposed N6 GCRR advanced from the Emerging Preferred Route Corridor identified, taking cognisance of the consultation with property owners. Its route is described in more detail here.

Plan layout of the Project plans are presented in Figures **NTS 17 to NTS 31**.

The proposed N6 GCRR will run from the existing R336 Coast Road west of Bearna to tie-in with the existing N6 at Coolagh Junction. The total area within the Assessment Boundary[18] is 334ha. The total area within the Assessment Boundary was 280ha in the 2018 EIAR. This increase of 54ha is due to the additional lands included at Galway Racecourse for the purposes of the application for the Galway Race Committee Trust Planning Permission relating to the proposed development at Galway Racecourse for which planning permission has been granted in December 2024 by Galway City Council. Of this total area, an area of 180ha is required for the footprint of the proposed N6 GCRR.

The proposed N6 GCRR ties into the existing R336 Coast Road in An Baile Nua with an at-grade roundabout junction approximately 2km to the west of Bearna Village and then proceeds north and east as a single carriageway to the north of Bearna Village and onwards towards Ballymoneen. Local connectivity is maintained via the Troscaigh/Na Foraí Maola Overbridge Link whilst an at-grade roundabout is proposed at the Bearna to Moycullen (Maigh Cuilinn) Road L1321. At-grade signalised junctions are proposed at Cappagh Road and Ballymoneen Road.

To the east of the Ballymoneen Road Junction, the proposed N6 GCRR is a dual carriageway and continues east to the grade separated N59 Letteragh Junction located in Letteragh. This junction connects to the N59 Moycullen Road via the proposed N59 Link Road North, and to the Letteragh Road and Rahoon Road via the proposed N59 Link Road South. The proposed N6 GCRR continues eastwards to cross the existing N59 Moycullen Road at Dangan and travels on a viaduct over the NUIG Sporting Campus before crossing the River Corrib (and the Lough Corrib cSAC). The total length of the structure through the NUIG Sporting Campus and over the River Corrib Bridge is 620m. The NUIG sports pavilion will be modified and will continue to function as a sport facility post construction.

East of the River Corrib, the proposed N6 GCRR

[18]The term Assessment Boundary, when used throughout this updated EIAR refers to lands required for the construction and /or operation of the proposed N6 GCRR plus the extents of the lands included within the planning boundary for the proposed development at Galway Racecourse boundary.

continues east on embankment toward the townland of Menlough. Additional lands to the north of Menlo Castle are included as part of the Project to provide lands for the enhancement of the core foraging habitat for the Lesser horseshoe bat known to roost at Menlo Castle, and to mitigate potential impacts on this species. These lands will be planted with additional hedgerows, maintained as agricultural lands by the local authority and will remain in their ownership.

Continuing east, the proposed N6 GCRR crosses over Bóthar Nua on a viaduct section, the Menlough Viaduct (length 320m), towards Sean Bóthar before entering a section of cut preceding the Lackagh Tunnel (length 250m), immediately west of Lackagh Quarry, and exits the tunnel in the quarry. There is a tunnel maintenance building located adjacent to Lackagh Tunnel.

The proposed N6 GCRR continues east from Lackagh Quarry with a grade separated junction located at the N84 Headford Road Junction at Ballinfoyle and continues east through the townland of Castlegar to the grade separated junction at the N83 Tuam Road. This junction provides access to both the N83 Tuam Road and the proposed Parkmore Link Road between the Ballybrit Business Park and the Parkmore Industrial Estate via the proposed City North Business Park Link Road to provide full connectivity at this location.

The proposed N6 GCRR then continues southeast entering the Galway Racecourse Tunnel (length 230m) at Ballybrit to the north of the racetrack. There is a tunnel maintenance building located adjacent to the Galway Racecourse Tunnel and new stables provided for the Galway Racecourse. On emerging from the tunnel, the proposed N6 GCRR continues southeast, crossing over the R339 Monivea Road on embankment and continuing south to a tie-in with the existing N6 at Coolagh Junction. The proposed Coolagh Junction will be a fully grade separated junction.

The Project will also include extensive landscape planting for screening and the creation of specific habitat areas to compensate for loss of habitat elsewhere. To mitigate noise impacts across the proposed N6 GCRR, a low noise road surface (LNRS) will be incorporated to reduce noise at source. In addition, an extensive scheme of noise barriers has also been incorporated into the design to further reduce noise levels along the Project.

Cross-section of the Proposed N6 GCRR

The proposed cross-section is selected based on the forecasted transport demand. As the forecasted traffic numbers decrease in a westerly direction from the M6, the level of provision steps down from motorway to single carriageway.

A dual carriageway cross-section is required for the forecasted traffic numbers from the eastern tie-in with the existing N6 at Coolagh, Briarhill to the Ballymoneen Road, with a speed limit of 100kph. The use of a dual carriageway is proportionate to the existing road network in this area and the motorway designation is also required to secure and future proof it. Junctions have been restricted to the national roads, namely the N6, N83, N84 and N59.

A single carriageway is required from the Ballymoneen Road to the western side of Bearna, with a speed limit of 80kph, to serve the forecasted transport demand. The use of a single carriageway is proportionate to the existing road network in this area and the protected road designation is also required to secure and future proof it.

The extents of single carriageway and dual carriageway is in **Figure NTS 16**. A cross section of the single carriageway is presented in **Figure NTS 11 to 13** and of the dual carriageway in **Figure NTS 14 to 15**.

Access to the single carriageway is limited to the terminus at the R336 and the Bearna Moycullen Road in the county area, and the Cappagh Road and the Ballymoneen Road in the city. The Bearna Moycullen Road is an effective north-south distributor for traffic and hence justifies the connection to the strategic network at this point. Access is provided at the Cappagh Road and the Ballymoneen Road as both are radial routes distributing traffic to the Western Distributor Road in the whole of the western city suburbs.

This level of provision, both in terms of cross-section and designation, is deemed necessary to serve the strategic travel demand requiring access as far as the R336 on the west in addition to strategic traffic accessing Galway City.

NTS 11: Single Carriageway

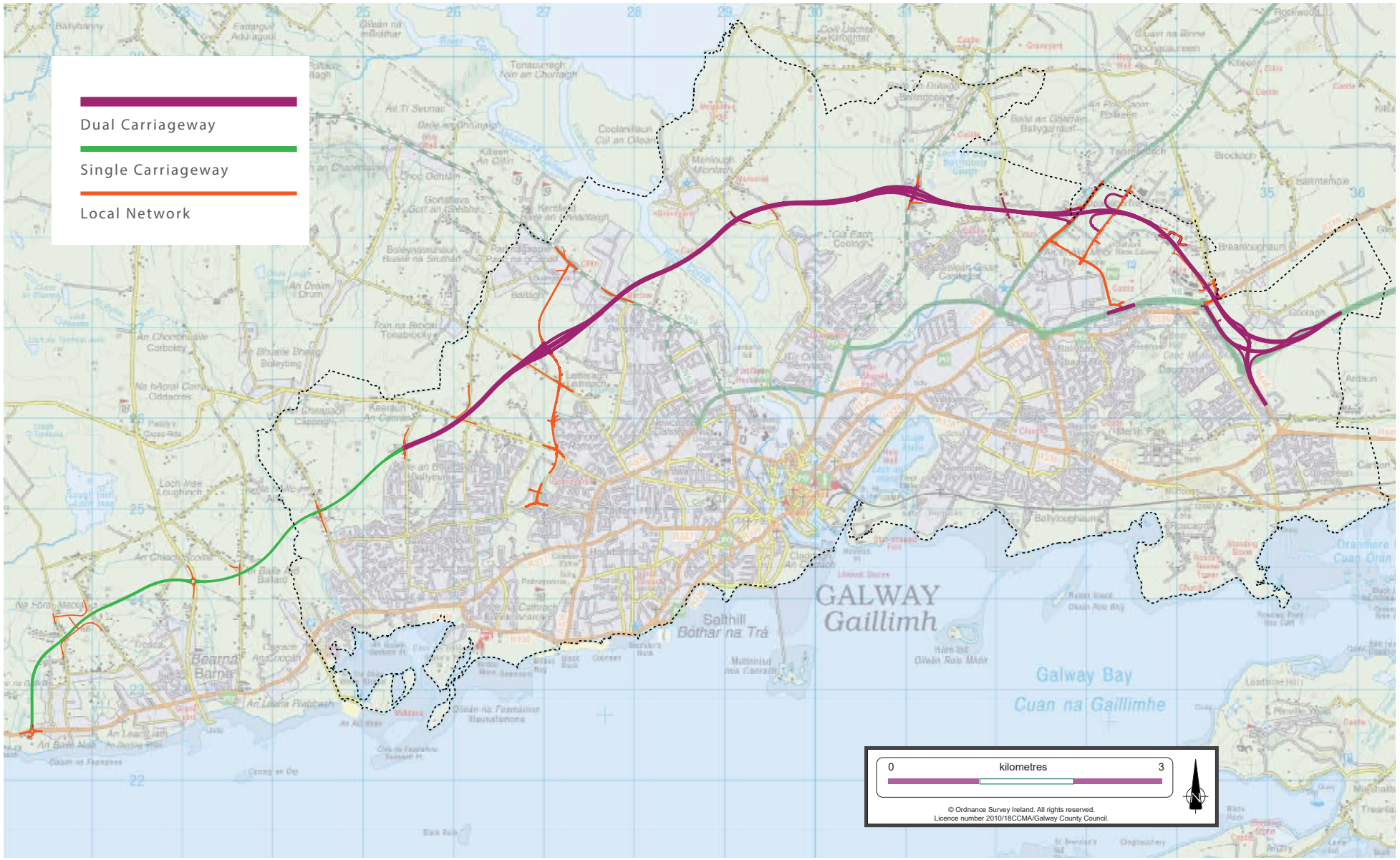
NTS 12: Single Carriageway (With Footway)

NTS 13: Carriageway (With Footway & Cycleway)

NTS 14: Standard Dual Carriageway Motorway (2 Lane Urban)

NTS 15: Standard Dual Carriageway Motorway (3 Lane Urban)

Figure NTS 16: Extents of Single and Dual Carrigway



Legend for following Figures :

- City Boundary
- Assessment Boundary
- Proposed N6 GCRR
- Earthworks - Fill
- Earthworks - Cut
- Proposed Carriageway Pavement
- Proposed Grass Verge
- Proposed Cycleway
- Proposed Footpath
- Proposed Shared Footpath/Cycleway
- Proposed Traffic Island
- Structure (S)
- Proposed Retaining wall (R)
- Proposed Mammal Underpass (C)
- Proposed Culvert (C)
- Proposed Attenuation Pond / Infiltration Basin / Wetlands
- Proposed Stream Diversion
- AR - Access Road
- WC - Watercourse

Figure NTS 17: Plan layout of the proposed road development - 1of 15

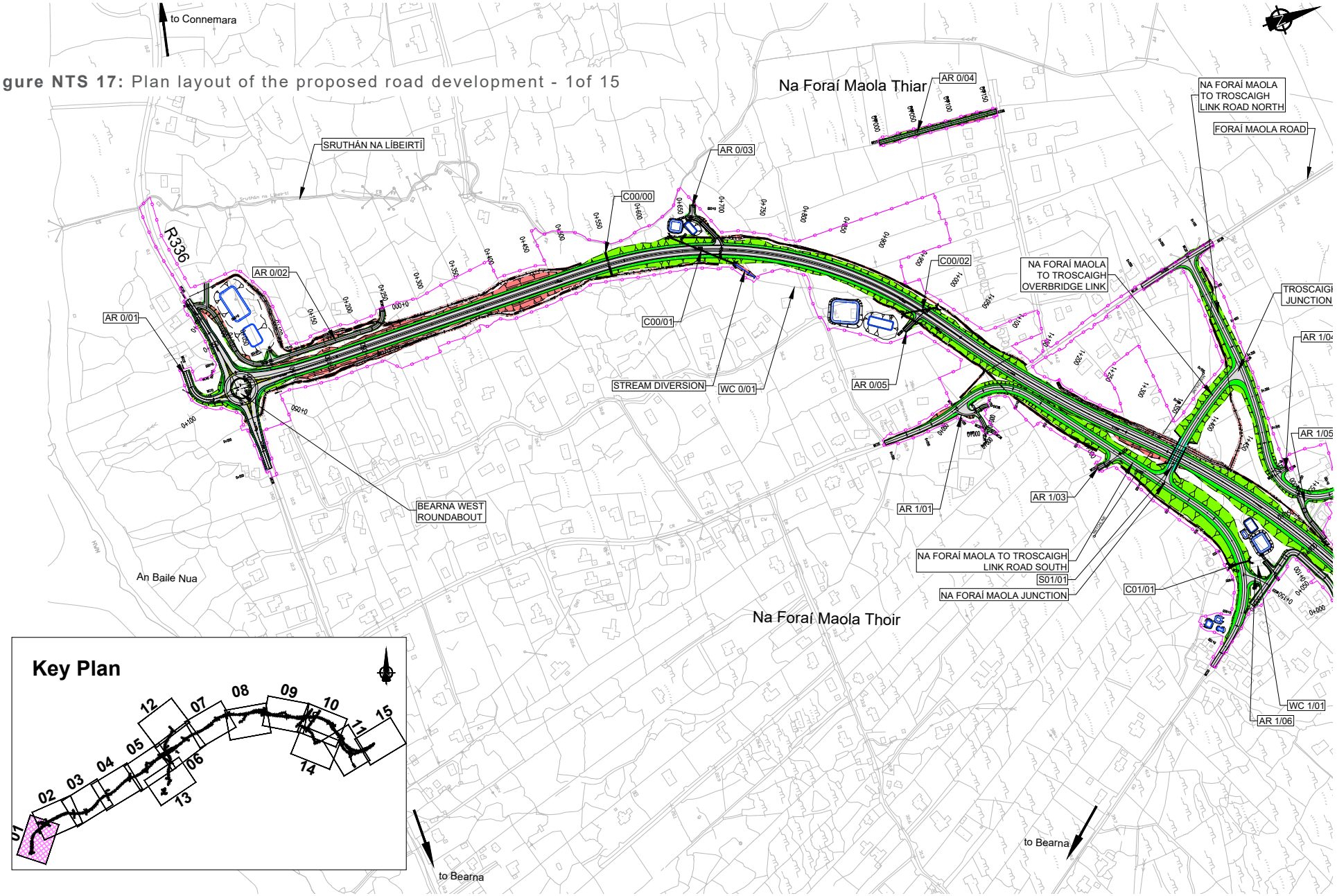


Figure NTS 18: Plan layout of the proposed road development - 2 of 15

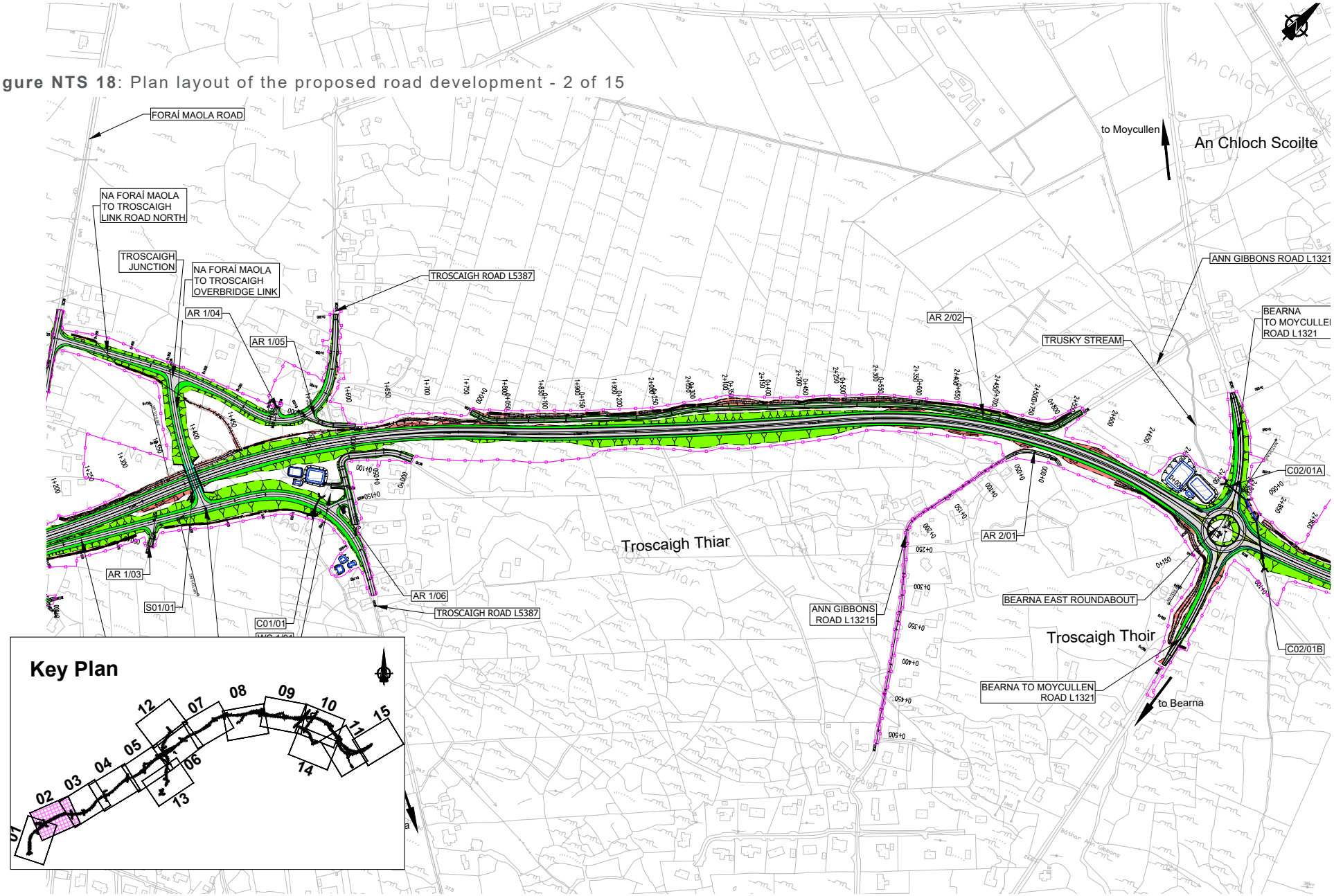


Figure NTS 19: Plan layout of the proposed road development - 3 of 15

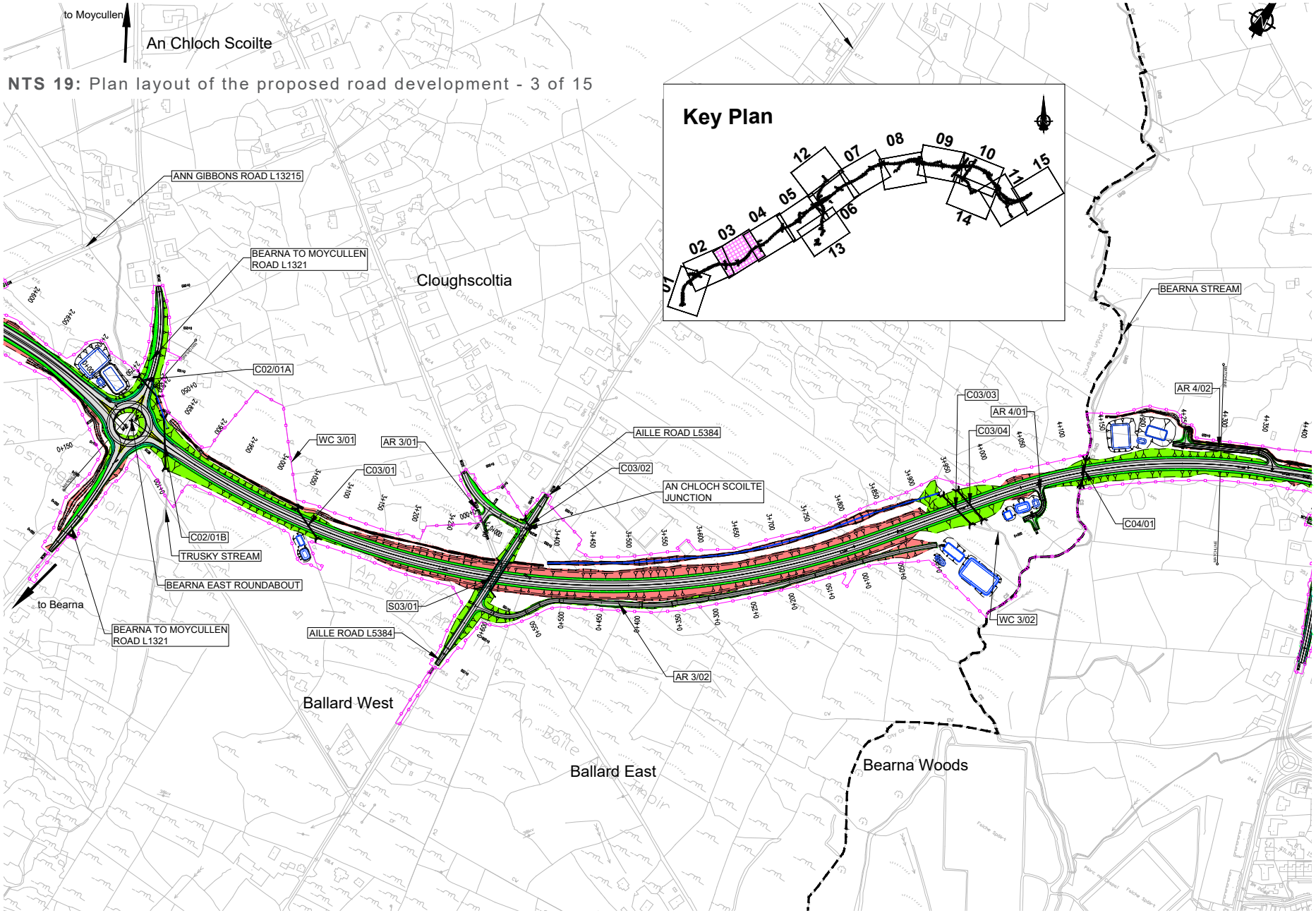


Figure NTS 20: Plan layout of the proposed road development - 4 of 15

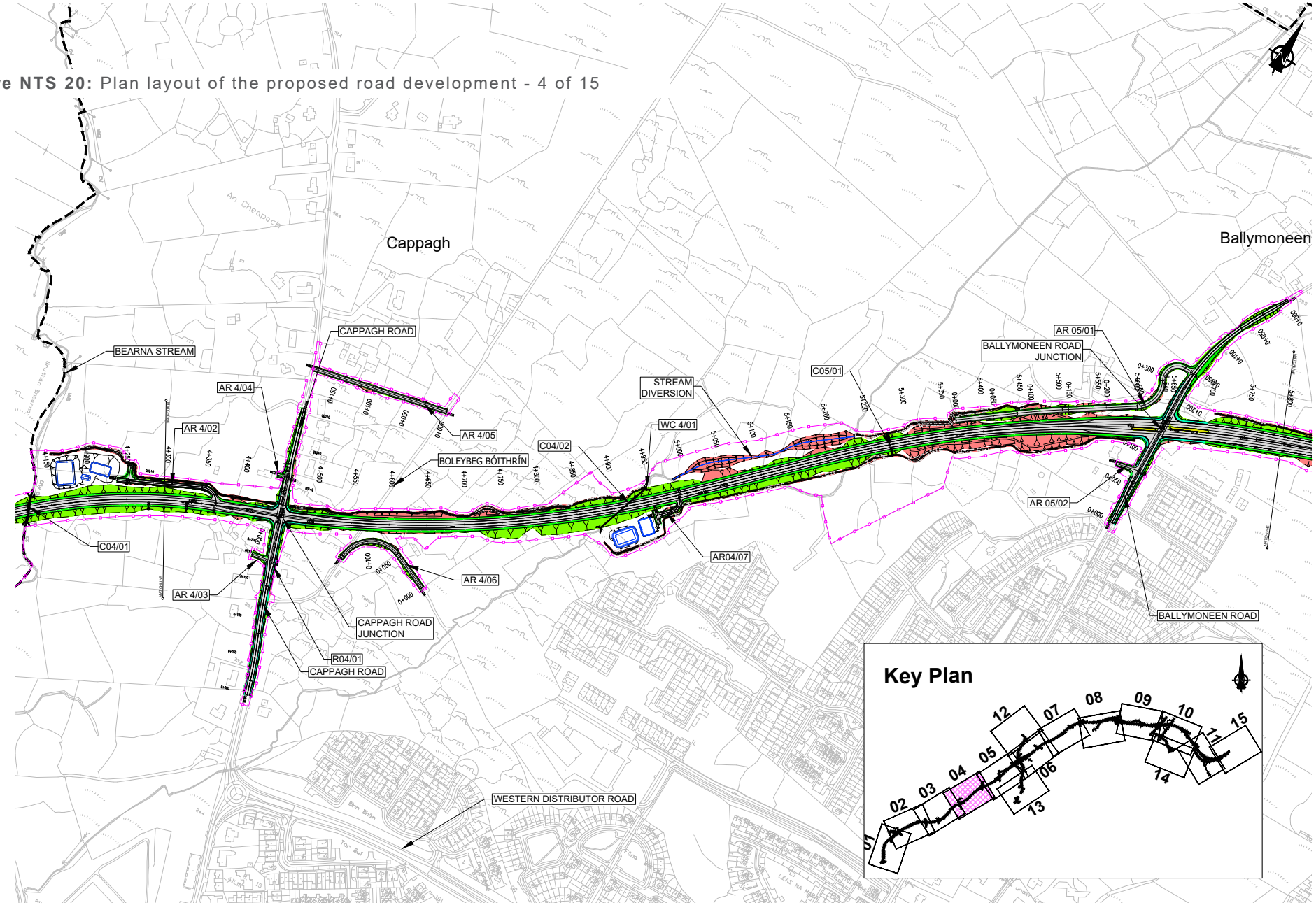


Figure NTS 21: Plan layout of the proposed road development - 5 of 15

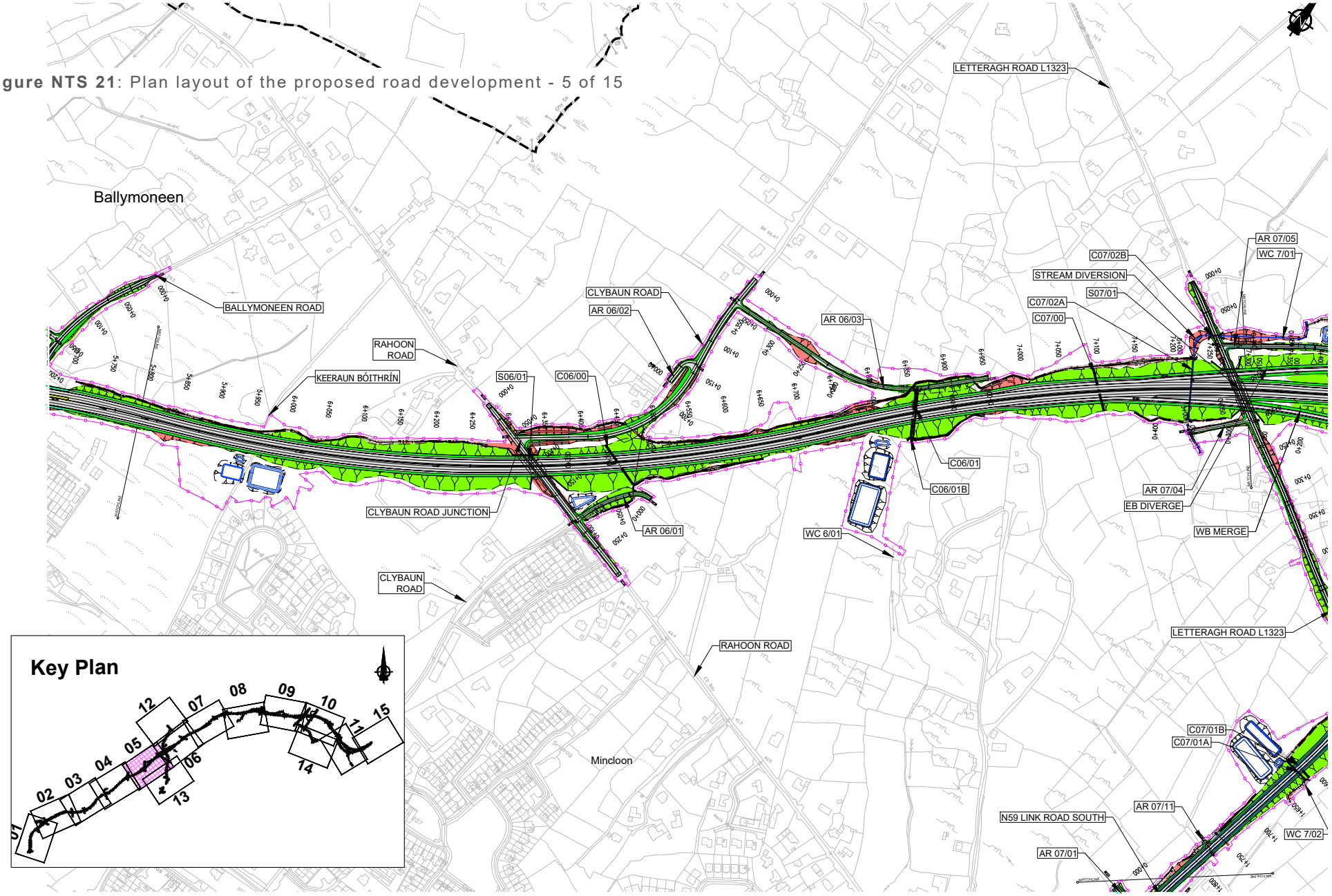


Figure NTS 22: Plan layout of the proposed road development - 6 of 15

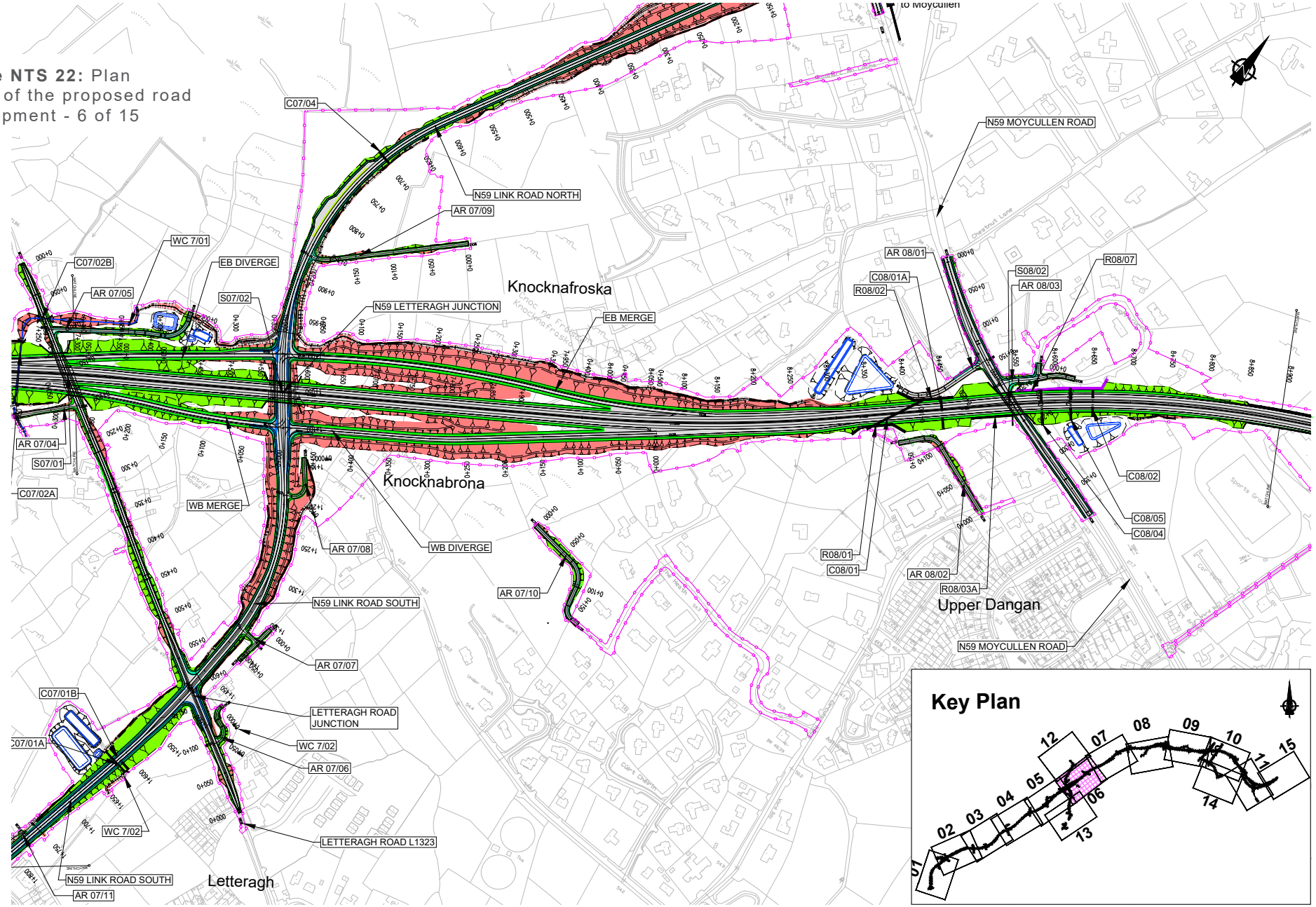
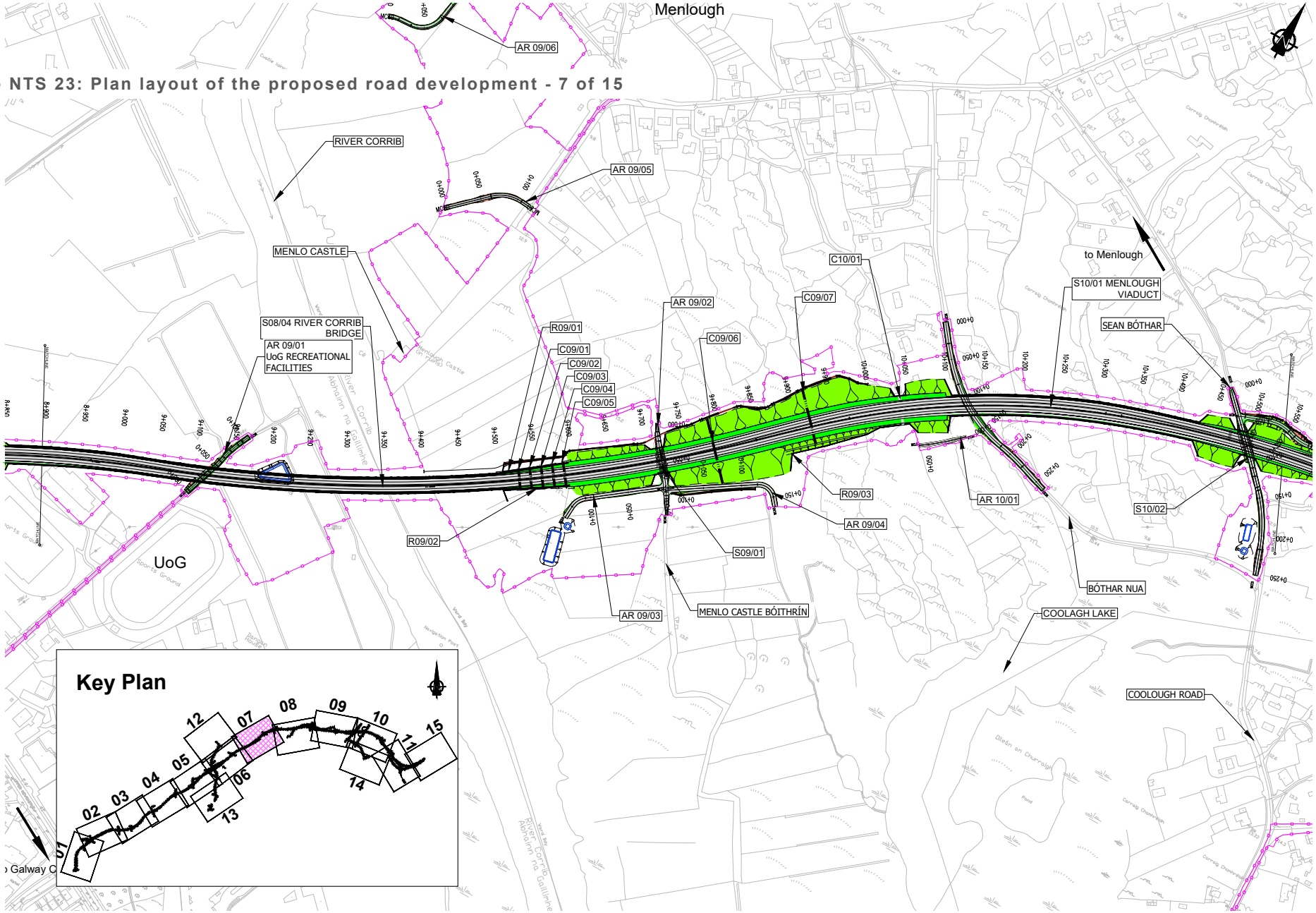


Figure NTS 23: Plan layout of the proposed road development - 7 of 15



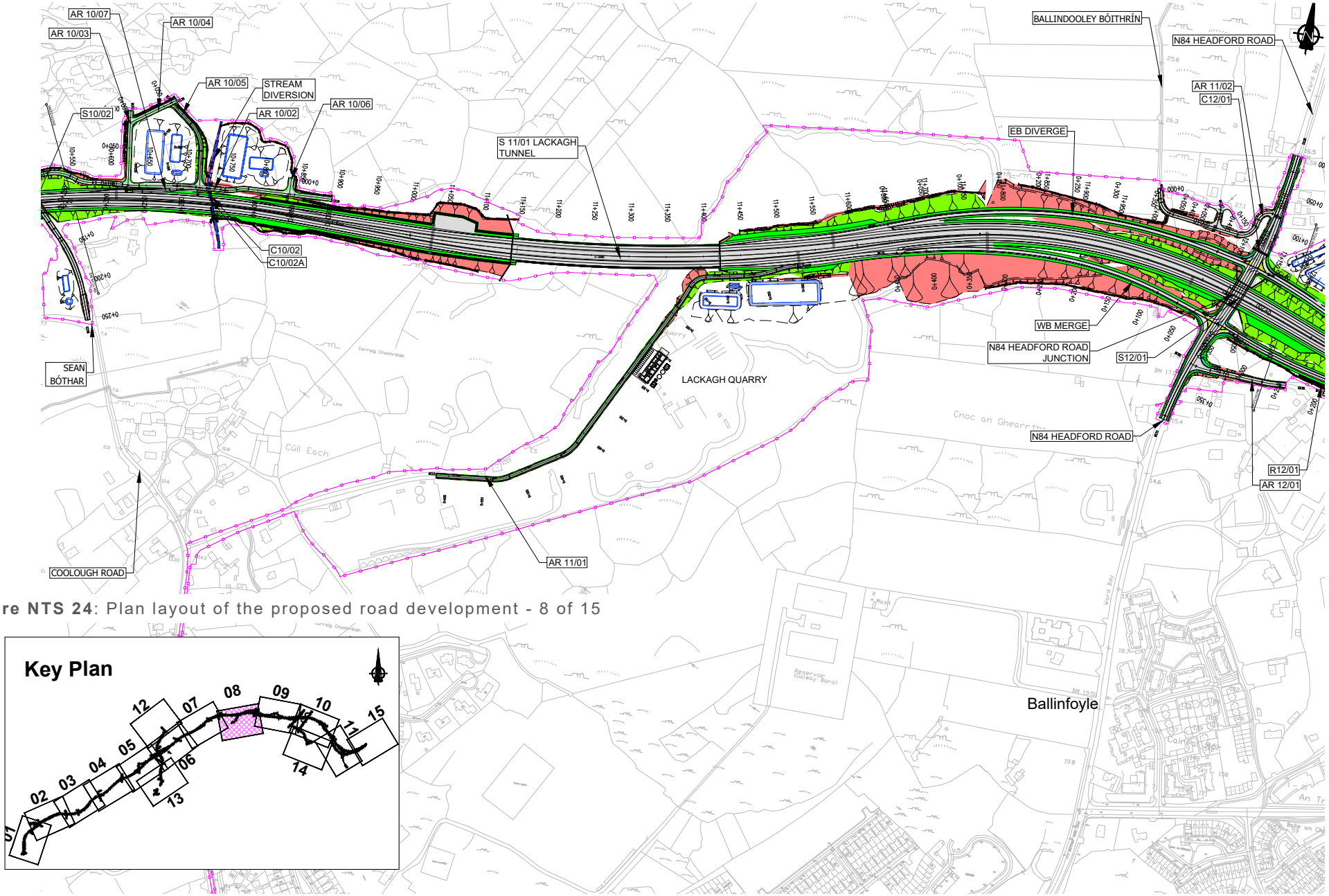


Figure NTS 24: Plan layout of the proposed road development - 8 of 15

Figure NTS 25: Plan layout of the proposed road development - 9 of 15

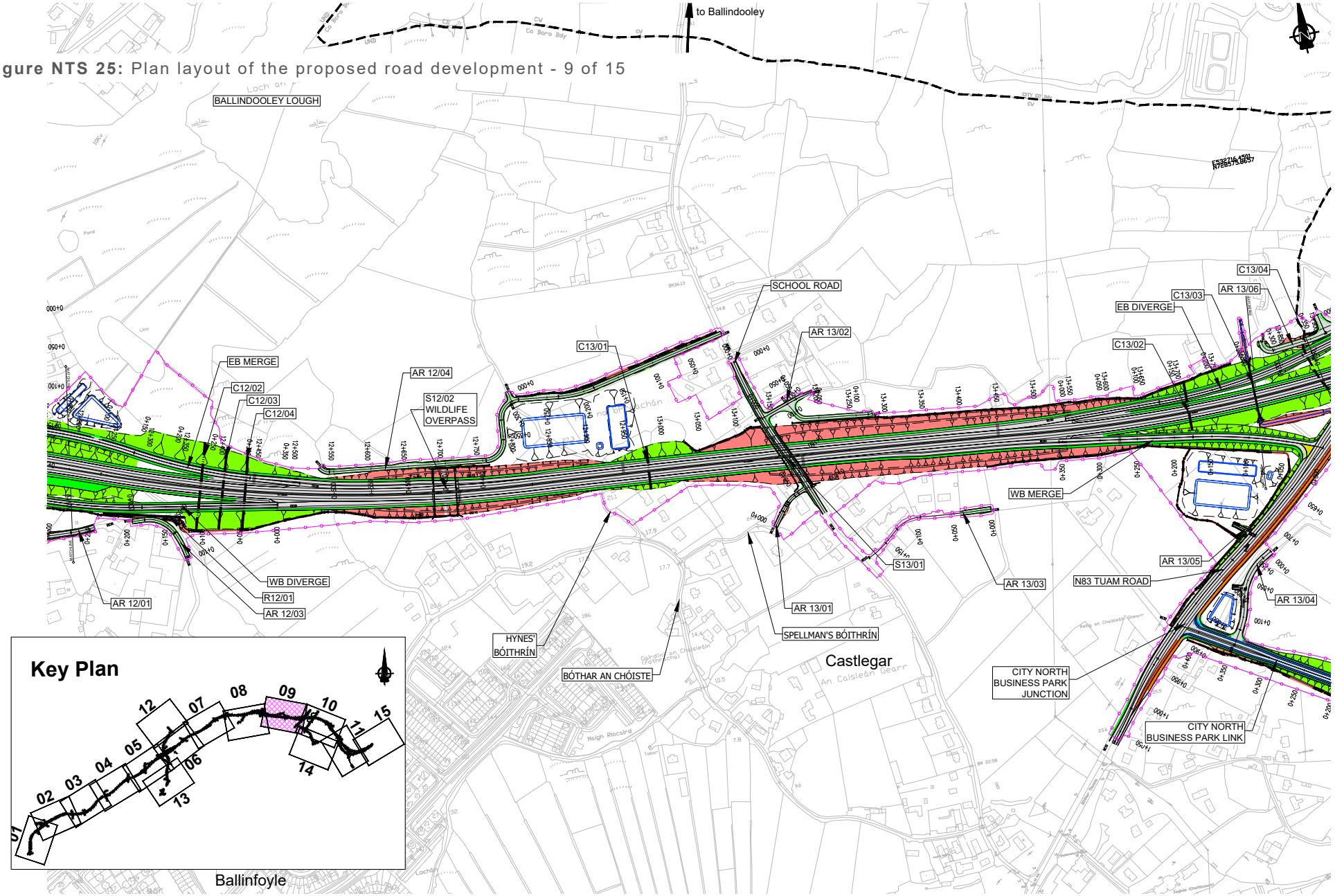


Figure NTS 26: Plan layout of the proposed road development - 10 of 15

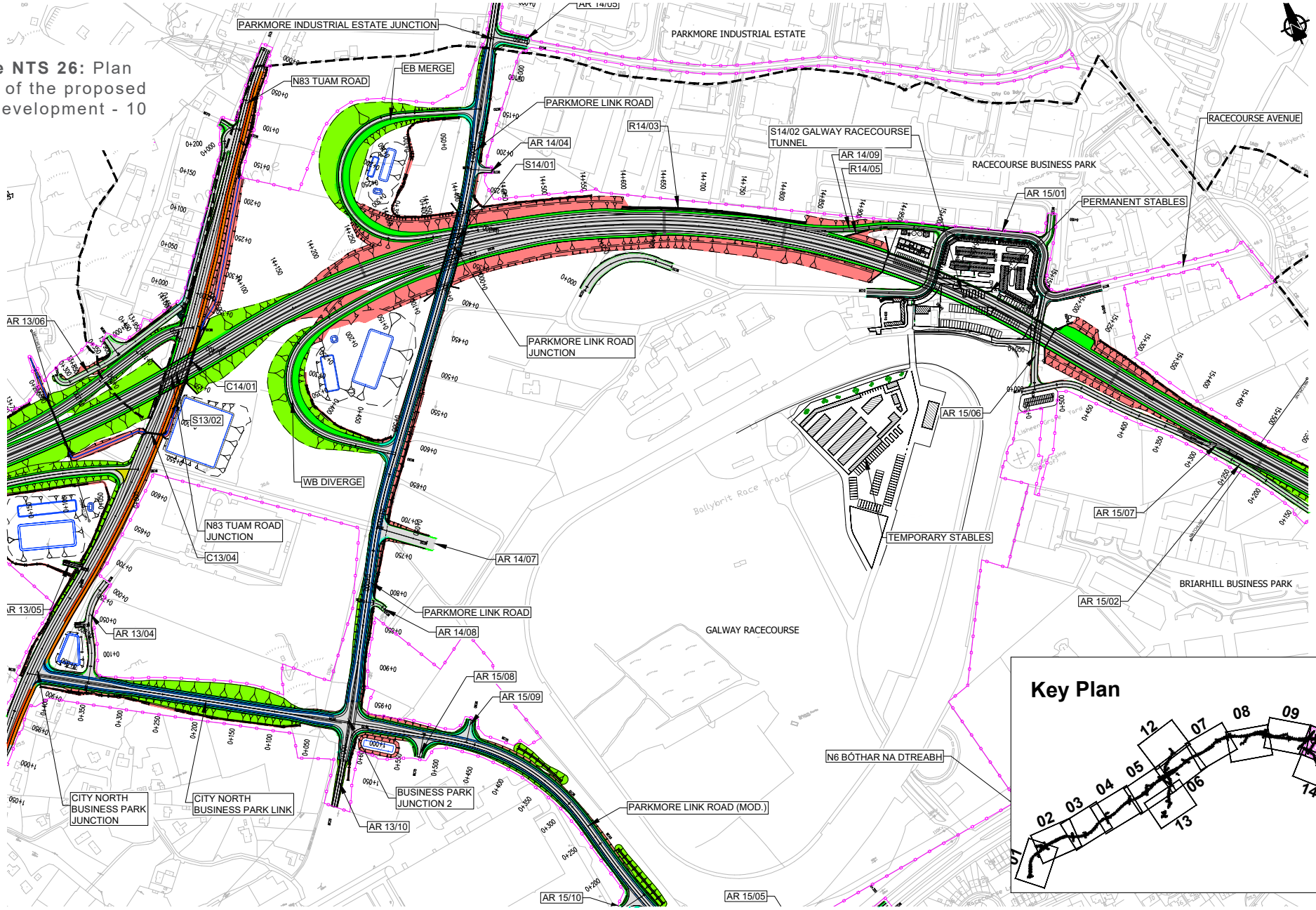


Figure NTS 27: Plan layout of the proposed road development - 11 of 15

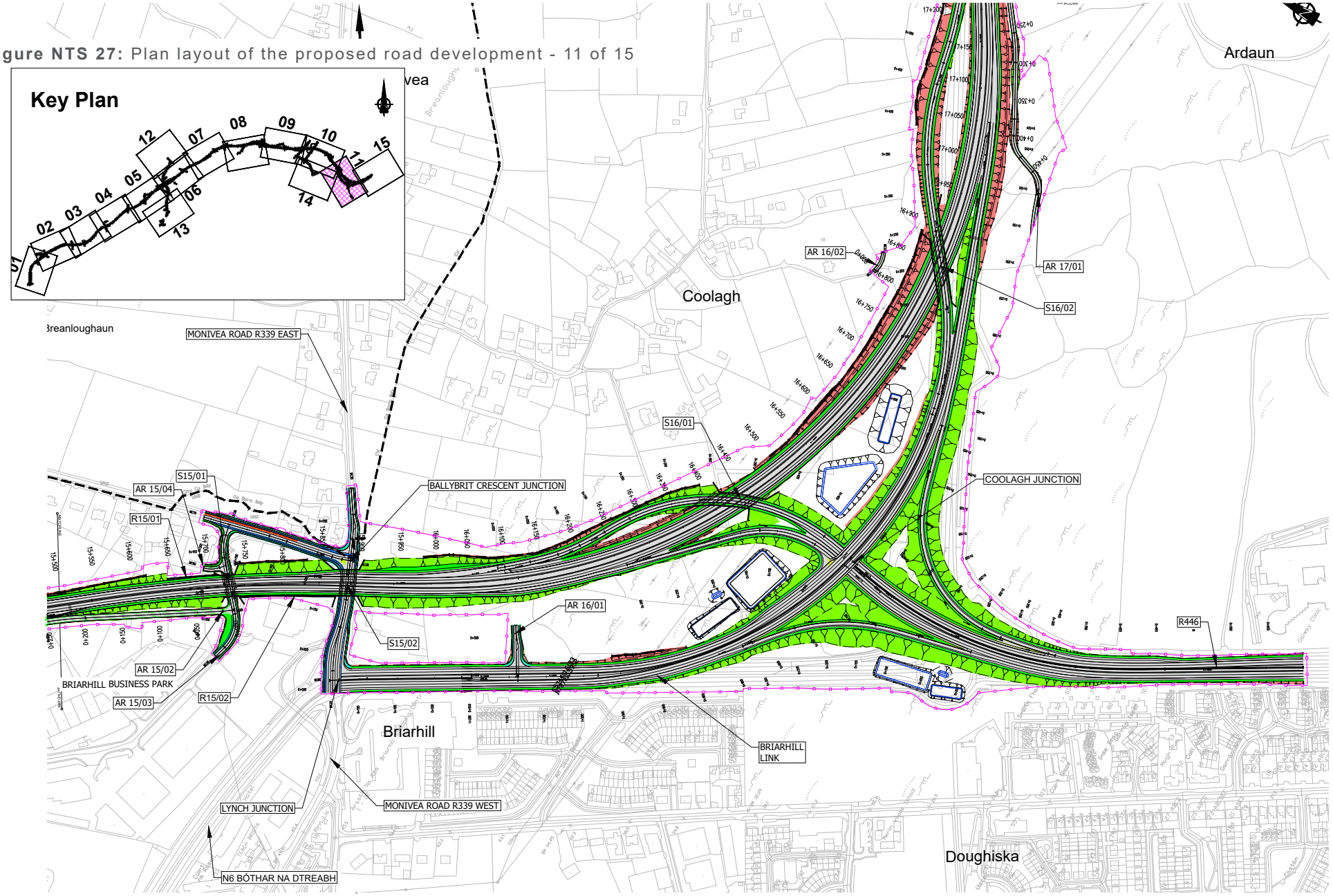


Figure NTS 28: Plan layout of the proposed road development - 12 of 15

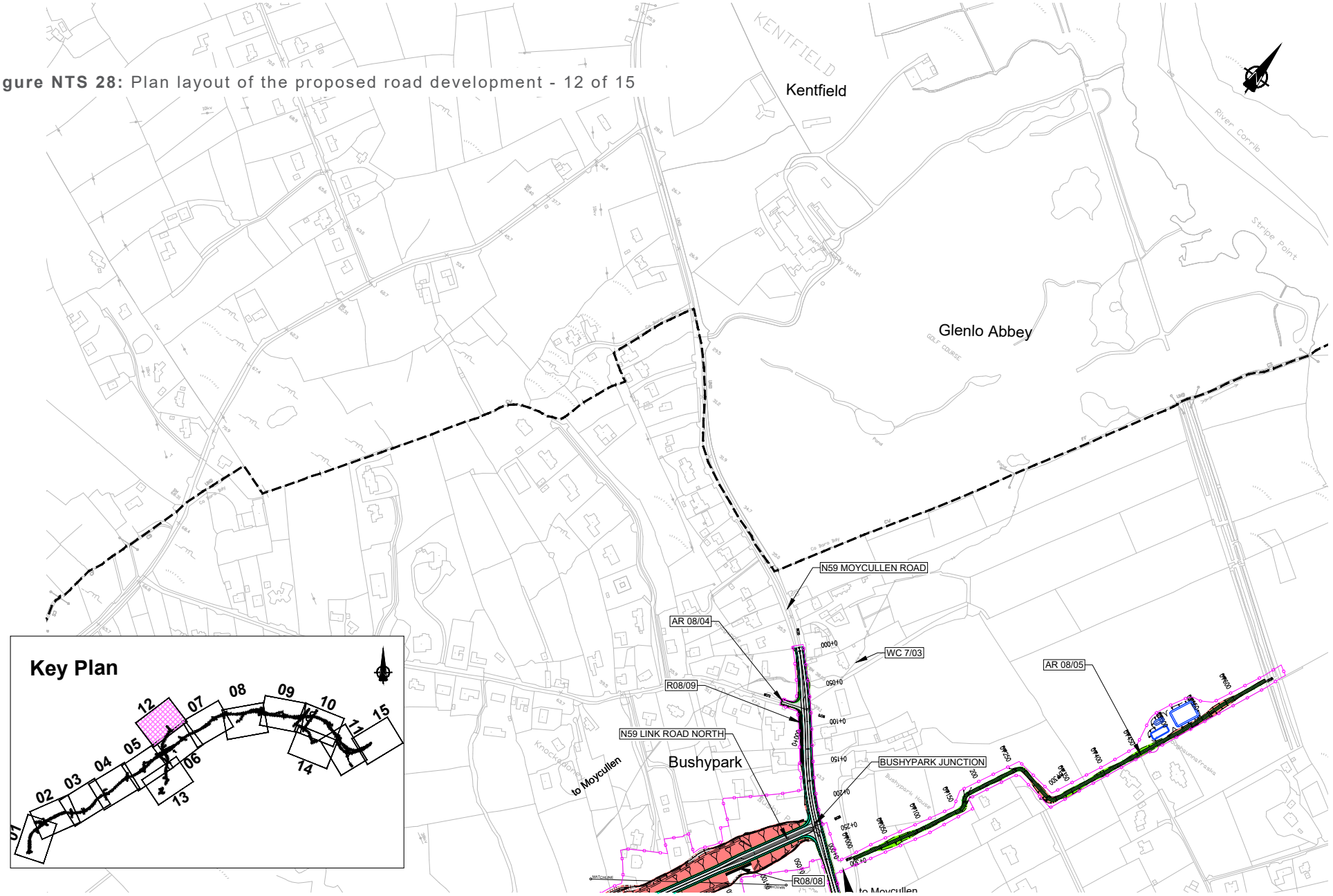
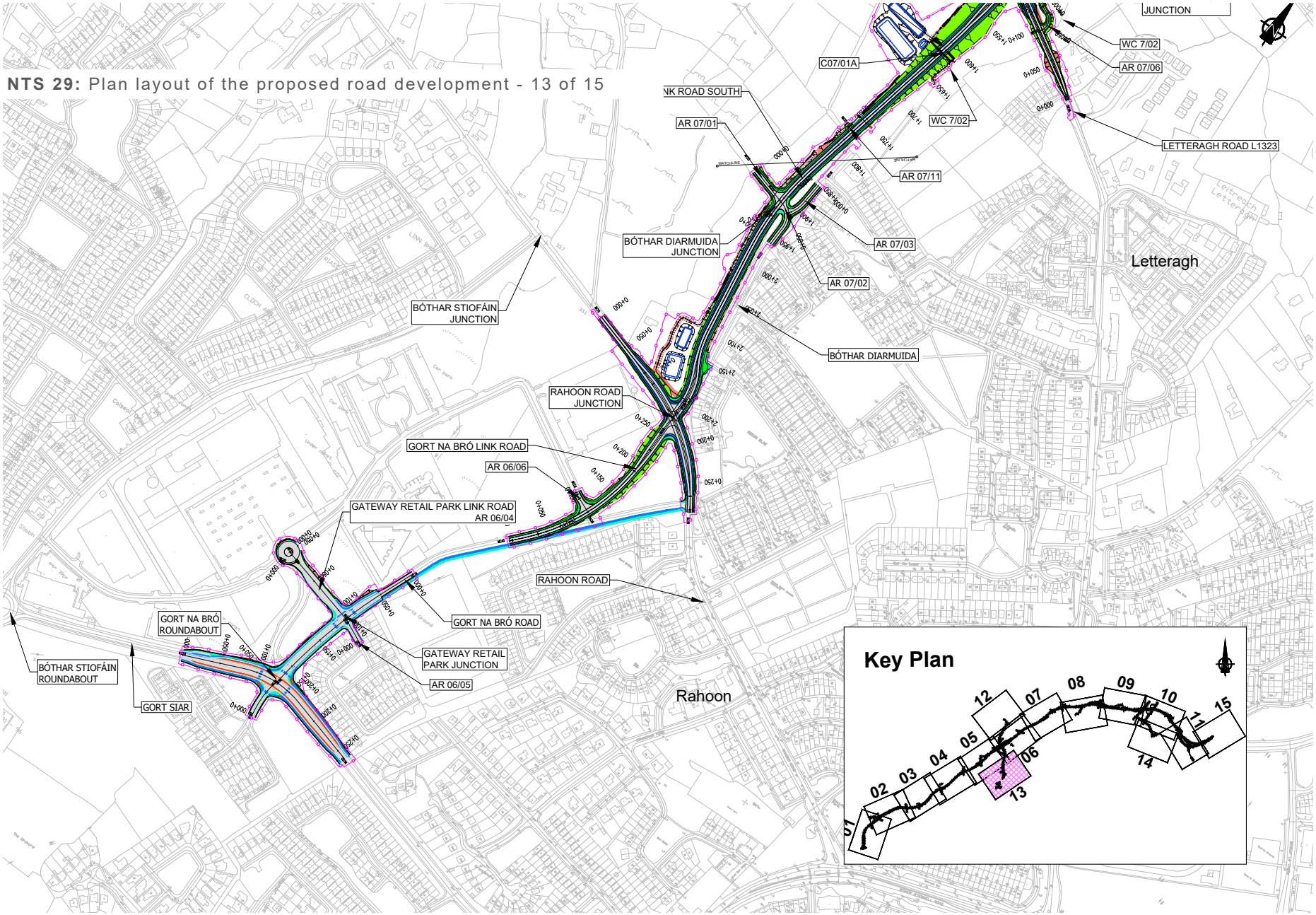


Figure NTS 29: Plan layout of the proposed road development - 13 of 15



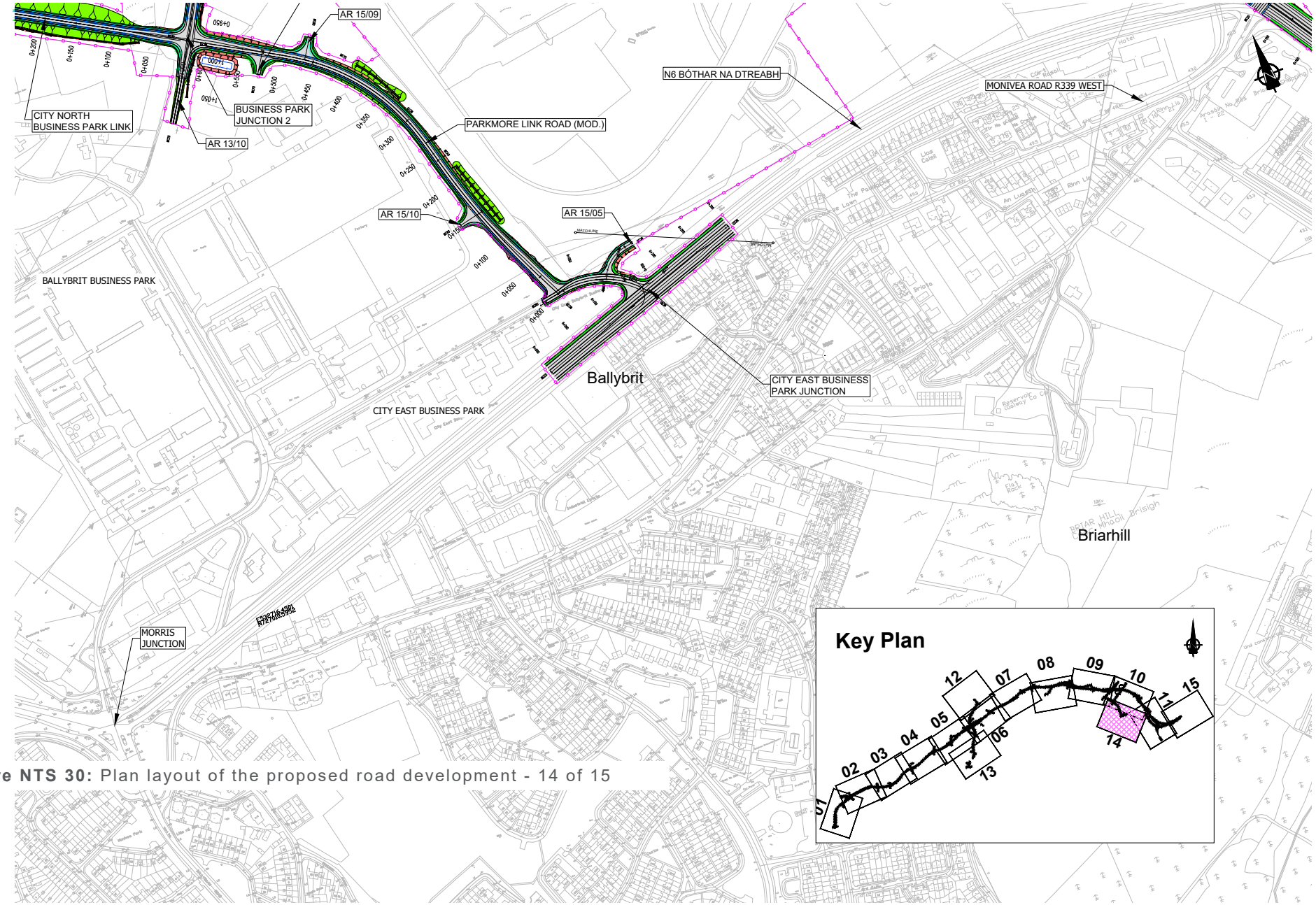


Figure NTS 30: Plan layout of the proposed road development - 14 of 15

Figure NTS 31: Plan layout of the proposed road development - 15 of 15

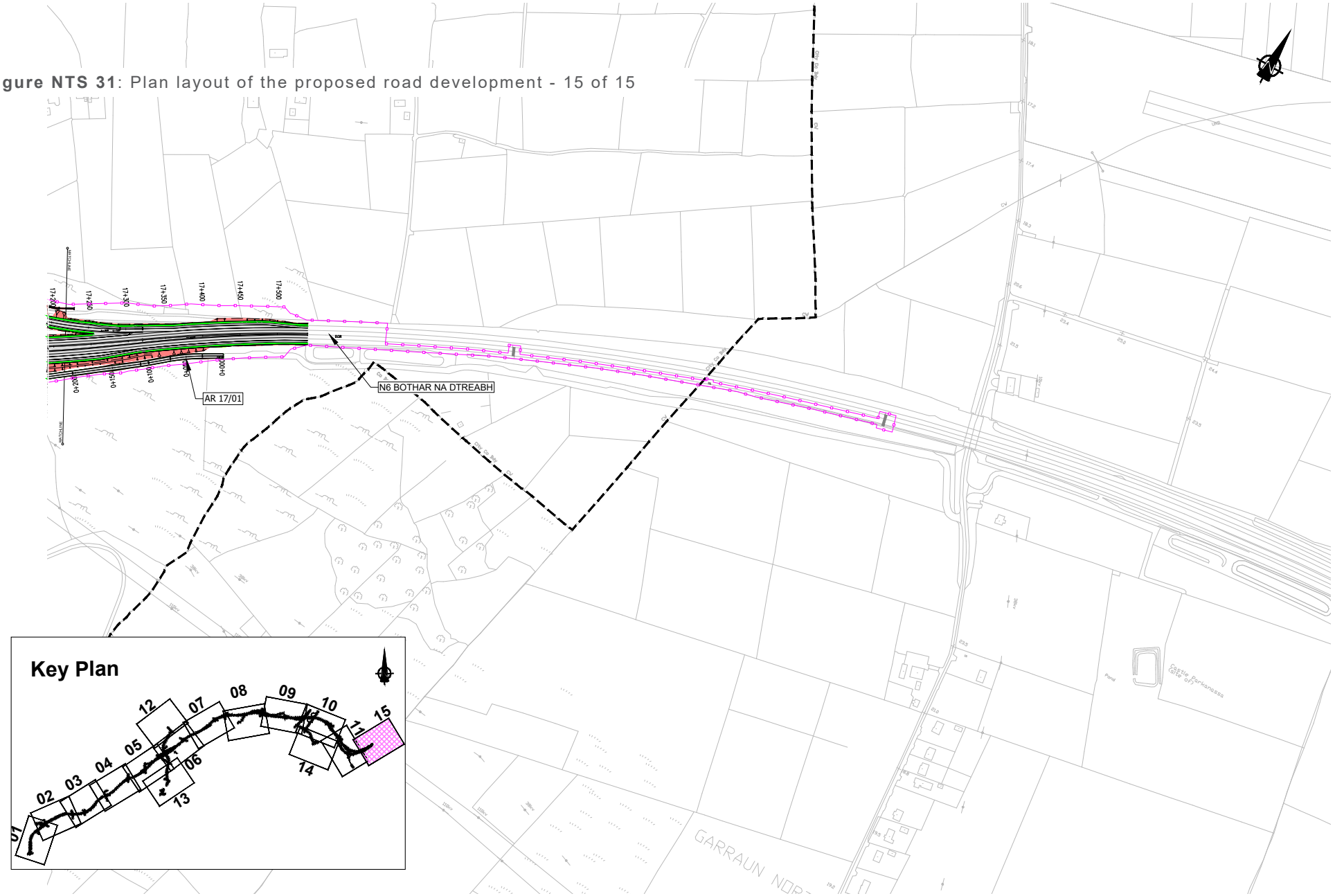


Figure NTS 32: TEN-T Network Ireland

8.3 TEN-T Function

The proposed N6 GCRR is classified as part of the TEN-T comprehensive road network, shown in **Figure NTS 32**, as it is a strategic link in the road network in the West Region functioning in accordance with the European Union's (EU) TEN-T transport policy.

The European Union's (EU) TEN-T transport policy aims to create connectivity between regions, remove bottlenecks that hamper the smooth functioning of the EU's internal market and promote a sustainable, multi-modal network for passengers. The proposed N6 GCRR was developed as a high-quality road as part of the TEN-T comprehensive network for the following reasons:

- Supports the economic and social development of the West Region
- Ensures connectivity and accessibility of this region to the single European market, including the port of Rossaveel, Connemara Airport and the Gaeltacht areas which lie west of the city along the R336
- Improves the accessibility of Galway City to its main markets, by facilitating the crossing of the River Corrib without the need to go through the city centre
- Protects the connectivity of key strategic services within Galway, such as UoG and Galway University Hospital, to the national motorway network
- Removes bottlenecks and congestion in Galway City, which is impacting on the economic capability and functionality of the city
- Attracts traffic from the city centre area, which will facilitate a reallocation of road space to improve capacity and reliability of public transport and facilitate greater opportunities for cycling and walking
- Promotes the reduction of greenhouse gas emissions as it facilitates the advancement of a low-carbon, multi-modal and more energy efficient transport system

The proposed N6 GCRR will be a protected road from the R336 to the N59 Letteragh Junction and a motorway from N59 Letteragh Junction to the existing N6 at Coolagh, affording it additional protection from future access demands. The junctions have been designed and located so as to fulfil the role of the proposed N6 GCRR and to ensure that the entire route is not undermined by local traffic. The functionality of the proposed N6 GCRR is twofold in so far as it serves both strategic traffic connecting to Galway as well as providing the necessary river crossing to facilitate the reallocation of road space within the city. These dual roles are entirely complementary.

8.4 Construction Activities

It is estimated that the overall construction period will last for approximately 60 months with Phase 2 of the Project spanning 36 months, with Phase 1 and Phase 3 & 4 occurring over a 12-month period before and after Phase 2 respectively. An east to west build sequence is likely for Phase 2 and a variety of construction activities will occur simultaneously to ensure efficient delivery.

The constructability of the Project and the associated impacts of the following were assessed:

- construction phasing
- enabling works (including archaeological test trenching and ground investigations)
- site preparation and clearance works (including the demolition of existing structures)
- proposed road closures and diversions
- main construction activities (including mitigation measures such as landscaping measures, noise barriers and ecological habitat planting)
- proposed construction methodologies
- material sources and transportation
- proposed haul routes and construction compounds
- service and utility diversions
- commissioning and decommissioning of various elements of the Project

Additionally, the constructability of bespoke, and complex, structural elements and their interaction with the receiving environment was assessed. The construction of the River Corrib Bridge, the Menlough Viaduct, the Lackagh Tunnel, and the Galway Racecourse Tunnel were assessed for their specific construction impacts.

Construction methods employed shall be in accordance with best practice standards and guidelines. All necessary precautions and mitigation measures to reduce the potential impacts of construction activities on the environment will be implemented. A Construction Environmental Management Plan has been prepared which outlines the overall environmental management strategy that will be adopted and implemented during construction. This plan illustrates how construction works can be delivered in a logical, sensible, and safe sequence via the incorporation of specific environmental control measures relevant to road construction.

Major construction activity such as excavation work, requires the use of powerful and often large and heavy equipment. These works take a significant time period to complete and progressive phases of construction entail different activities and require the use of various types of equipment. Overall, however, construction is a temporary activity. Modern machinery and techniques are sophisticated and are designed to be operated to minimise the impact on their surroundings. Residual impacts to the receiving environment, such as deterioration of public roads used as haul routes, will be repaired. In the unlikely event of unintentional structural damage caused to buildings/structures/wells as a result of the construction activities, those affected will undergo full stabilisation and rehabilitation works. The residual impacts of the other construction related activities of the proposed N6 GCRR such as noise, dust, climate etc., are assessed separately within the relevant chapters of the updated EIAR for each individual topic.

8.5 Traffic Impact Assessment

The modelling approach used for the assessment is similar, in principle, to the approach undertaken in relation to the assessment contained in the 2018 EIAR, however, the assessment has been updated in a number of material respects using the following tools:

- The most recently available Western Regional Model (WRM) which forms part of the National Transport Authority's (NTA) suite of Regional Models.
- A project specific road traffic model, which has a base year of 2023, and has been validated using November 2024 traffic data, and so is reflective of latest traffic conditions within Galway city. The model also incorporates Census 2022 Place of Work, School, College or Childcare - Census of Anonymised Records (POWSCCAR) data, so is reflective of latest travel movements within the city.

The 2018 assessment assumed an opening year of 2024 and a design year of 2039 for the Project, but these have been revised to account for the time that has passed. An opening year of 2031 and a design year of 2046 has been assumed for this updated assessment. As a result of the change in opening and design year assumptions, new land use forecasts have been used for the traffic impact assessment. The level of infrastructure assumed to be in place, in the opening and design years has also been updated and are based upon the latest available information, following consultation with relevant stakeholders.

These scenarios were used to estimate the impact of the proposed N6 GCRR on the existing and future transport network, determine whether it was necessary to mitigate for such impacts, and to forecast what significant residual impacts remained post mitigation. In addition to assessing traffic impacts, traffic modelling results were used to inform environmental assessments for the EIA Report including, but not limited to, air quality, climate, noise and vibration, human beings, population and health.

Traffic impacts were assessed against key performance indicators. The key performance indicators adopted were journey time on identified key routes to understand strategic impacts, junction performance to understand local impacts at key junctions (as shown on **Figure NTS 33)**, and network statistics as indicators of congestion and delay. These key performance indicators served as a means of evaluating and maximising, via design, the benefits accrued through the introduction of the proposed N6 GCRR.

The traffic impact analysis determined that the introduction of the proposed N6 GCRR will result in significant benefits in terms of journey times, junction performance, and network statistics, including, but not limited to, the following in the 2046 Design Year:

- Journey times on key routes around, and into, the city will be reduced because of the introduction of the proposed N6 GCRR, most notably:
    - Route 3 inbound along the existing Western Distributor Road, which is targeted for a Core Bus Route, will experience approximately 55% reduction in journey time on the inbound direction in the AM peak period
    - Route 4a along the existing Seamus Quirke Road, a route targeted for a Core Bus Route, will experience approximately 55% reduction in journey time inbound and 27% reduction in journey time outbound in the AM peak period
    - Route 4b along the existing N6 from Kirwan Roundabout to the existing N6 at Coolagh, Briarhill will experience approximately 41% reduction in journey time inbound and 31% outbound in the AM peak period
    - Route 5 from Briarhill to Moneenageisha Junction and onto Lough Atalia along the R4339, a route targeted for a Core Bus Route, will experience approximately 14% reduction in journey time inbound and 7% on the outbound in the AM peak period
    - Route 11 along the Old Dublin Road, a route targeted for a Core Bus Route will experience approximately 11% reduction in journey time on the inbound direction in the AM peak period
    - Route 4b above will experience significant improvements in journey time of up to 24% in the PM peak period also
    - Route 5 above will experience significant improvements in journey time of up to 23% in the PM peak period also
- Junction analysis in the 2046 peak travel periods shows that the proposed N6 GCRR will lead to a decrease of approx. 20% across both peak hours in the number of number of links in the network which have an RFC over 90%. For the key junctions, there is an equivalent decrease of between 15% - 20% across both peak hours
- The consequent reduction in delay (between 30% - 45% reduction in peak hours), removes several bottlenecks which were present in the Do-Minimum scenarios, and which prevented traffic from finishing their journeys within the hours which were modelled. The reduction in delay time, in turn, results in approx. 15% less time spent driving as illustrated by the reduction in total travel time saved by the implementation of the Project.
- By providing an alternative route around the city, the proposed N6 GCRR will result in reduced traffic levels and congestion in the city centre

Figure NTS 33: - Key Routes and key junctions

9 Environmental Assessment of the Project

9 Environmental Assessment of the Project

9.1 EIA Process

Environmental Impact Assessment (EIA) is a process for anticipating the effects on the environment caused by a development, noting that the environment includes people, communities, property, human health, heritage, archaeology, landscape and visual, climate, noise and air, as well as those topics usually associated with it such as ecology, biodiversity, soils and water. Mandatory EIA is required because the Project includes a motorway and a bridge, a viaduct plus two tunnels each of which will be more than 100 metres in length. The EIAR is submitted to An Bord Pleanála (ABP) under Section 51 of the Roads Acts, from whom approval for the proposed N6 GCRR is sought.

The objective of the EIA process is to firstly consider alternatives, and thereafter to identify and predict any likely significant impacts of the Project on the environment, to describe the ways in which these can be mitigated or reduced, and to interpret and communicate all this information through a formal document known as an EIAR, formerly known as an Environmental Impact Statement (EIS).

Consultation was carried out with the general public, statutory and non-statutory consultees through open information sessions and informative engagement. This consultation continued during the oral hearing in 2020 and recommenced in 2023 to inform this updated EIAR. All the consultations undertaken to date have been reviewed and taken into consideration in this updated EIAR.

In addition, potential impacts on designated Natura 2000 sites (these are special protection areas and special areas of conservation which are designated for protection under the EU Habitats Directive, and are also known as European sites) are specifically assessed in the updated Natura Impact Statement (NIS), which also forms part of this application for approval to ABP. The conclusion of the NIS is that the Project will not adversely affect the integrity of any European site, whether by itself or in-combination with any other plan or project and there is no scientific doubt in relation to that conclusion.

9.2 Population and Human Health

The Project results in the unfortunate but unavoidable impacts on the local communities and people living in the vicinity of it. The impact assessment under the heading of Population and Human Health is a broad ranging topic which covers the existence, activities and health of people, usually considering people as groups or 'populations'. Aspects examined primarily relate to impacts from the Project on socio-economic activities and on local community health, each of which is outlined below.

A new Standard (PE-ENV-01108) *Population and Human Health Assessment of Proposed National Roads (TII, September 2024*) has recently been published by Transport Infrastructure Ireland. The EPA guidance has been updated as *'EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports' (May 2022)*. New baseline demographic data from Census 2022 (Central Statistics Office, 2023) reported a significant increase of 7.3% in the population of Galway City and Suburbs since the previous Census of 2016 from 76,668 to 84,414 persons. This is reflected in new developments completed since 2018, and a corresponding increase in traffic flow in parts of the city. All of these are considered in this updated assessment.

Potential impacts on humans are also now considered under the headings of Material Assets-Agricultural and Non-Agricultural, Soils, Water, Noise and Vibration, Air Quality, Climate and Landscape and Visual.

Aspects related to **socio-economic activities** include journey patterns, amenity and community severance, business, tourism and employment, ecosystem services, and use of the Irish language. Other aspects relevant to human beings such as visual amenity, built and natural heritage, material assets and nuisance are dealt with under their relevant topic.

Human health impacts are primarily considered through an assessment of the environmental pathways by which health can be affected such as air, noise, water or soil. Therefore, the health assessment relies on these specific assessments and draws on them, as necessary, to examine whether the effects arising from any identified impacts may have a health impact. Such impacts may arise from a link to impacts on contaminated lands under the topic of Soils and Geology, to impacts on groundwater identified under the topic of Hydrogeology, to any potential impacts on surface water and areas of flood risk identified under the topic of Hydrology, and to the predicted air quality impacts and noise and vibration impacts at properties adjacent to the Project.

The health assessment also considers psychological effects, health improvement and improvement of access to services.

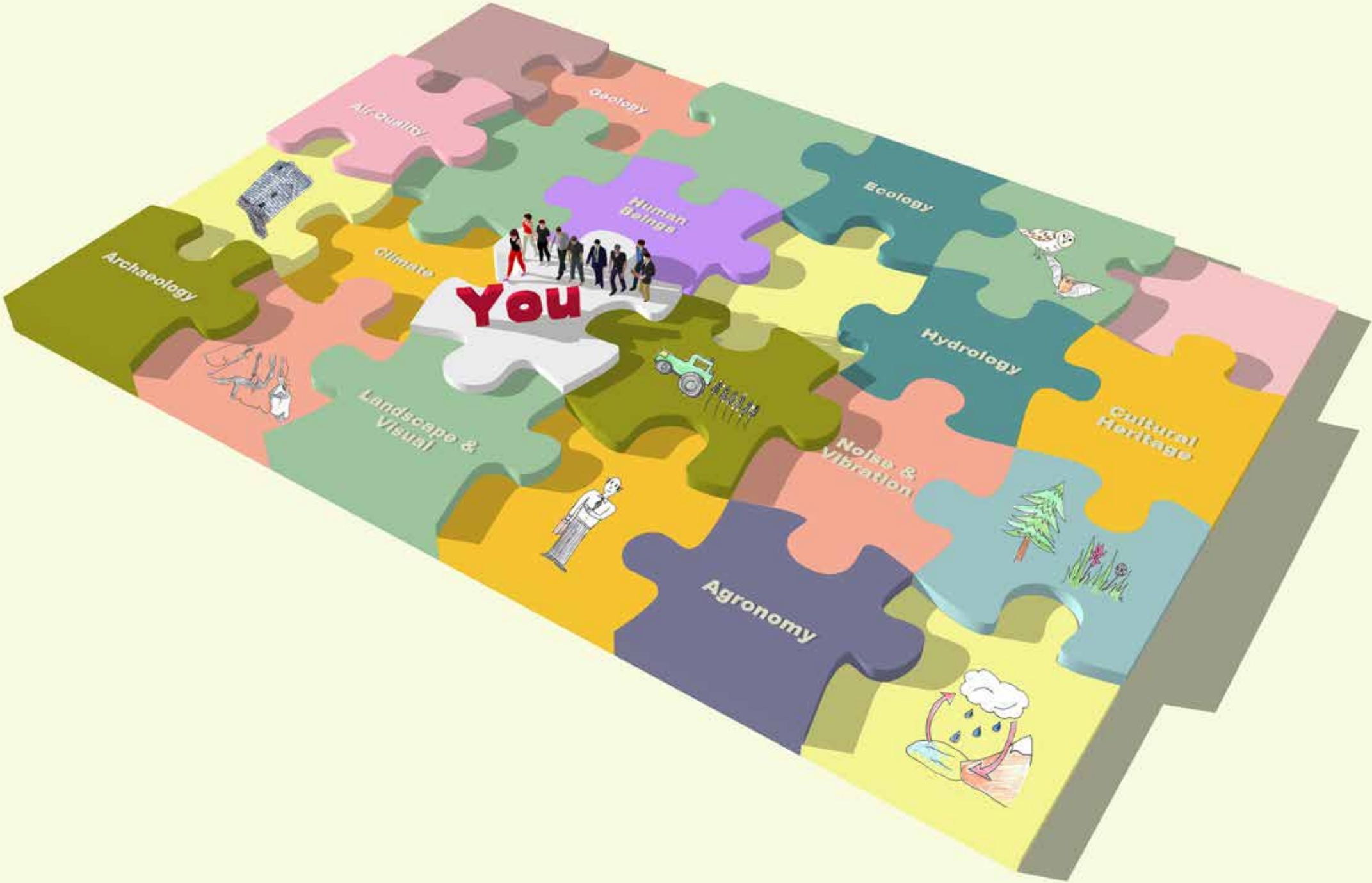
9.2.1 Socio-Economic

A socio-economic assessment of the proposed N6 GCRR was carried out and focused on aspects such as journey patterns, amenity and community severance, business, tourism, employment, and use of the Irish language.

9.2.1.1 Journeys

Overall, the proposed N6 GCRR will provide a much needed ring road around Galway City, and will serve to link Galway, including its strategic services such as UoG and Galway University Hospital, to the rest of Ireland. It will provide a very significant reduction in journey times. It will improve the accessibility of Galway City by facilitating the crossing of the River Corrib without the need to go through the central suburbs of the city. It will also improve the accessibility of remote regions, thereby facilitating reductions in the economic and social isolation of remote areas, particularly the Gaeltacht areas.

The transfer of traffic from city centre locations will improve journey amenity for all users of the existing transport infrastructure, including public transport services using existing road infrastructure. In particular, it will open up road space for the provision of improved pedestrian and cycle facilities and provide opportunities for new public transport in line with the objectives of the GTS. The transfer of traffic will contribute to improve amenity and general well-being of communities living within or beside busy urban roads.


Air Quality
Geology
Human Beings
Ecology
Archaeology
Climate
You
Hydrology
Cultural Heritage
Landscape & Visual
Noise & Vibration
Agronomy

9.2.1.2 Community

The proposed N6 GCRR has been designed to avoid as many residential properties as possible, but given the distribution of development and the presence of linear development of the city with housing along most roads radiating out of the city, its construction will unfortunately and unavoidably result in a number of property demolitions or acquisitions. This will be concentrated in particular areas. As well as the direct negative impact on the householders themselves, this will present a varying negative impact on remaining residents and at a community level depending on the strength of community interaction that has evolved at each location and the sustainability of community facilities such as schools.

In several locations, and particularly in Na Foraí Maola and in the vicinity of the N59 Moycullen Road, the N84 Headford Road and in Castlegar, there will be a significant impact on local communities due to the need to acquire or demolish a significant number of existing properties in these areas.

9.2.1.3 Amenity & Business

The proposed N6 GCRR will impact on commercial premises in the areas of the N84, N83 and Ballybrit. All of these impacts will be addressed as part of the land acquisition process and through financial compensation, but again these businesses represent the livelihoods of many individuals and so impacts will be moderate to significant.

The Project will have a very significant negative during construction but the residual impact on the UoG Sporting Campus at Dangan can be reduced to a moderate residual impact as UoG have secured approval for replacement facilities in line with their sporting campus plan and strategy. The sports facility will be permanently impacted by the presence of an overhead viaduct carrying the road towards the crossing of the River Corrib. There will be no physical severance, but the crossing will impact on the amenity of users of the sports facility and amenity use of the riverside.

The proposed location of the Galway Racecourse Tunnel and mitigation measures means that there will be no direct amenity impacts on the racecourse business or racing events during operation. New permanent access will be available to the N83 Tuam Road via the City North Business Park Link and Parkmore Link Road and much improved access will be possible from the existing N6 such that the net impacts will be positive.

9.2.1.4 Irish Language

In relation to the Irish language, there is a low-level of daily Irish usage among the population of the area directly affected by the Project, and where it exists, the use of Irish is particularly concentrated in an education context. While population is increasing, the use of Irish as a community language is not growing in parallel. The Project will not have any negative impact on the use of Irish into the future. However, it is noted that an improved transport network would facilitate further migration and economic growth into the wider Galway Gaeltacht, by improving access to employment opportunities to the east of the city, and facilitates Irish speakers to commute more easily from their own communities and lessen the need to re-locate for economic reasons.

9.2.1.5 Employment & Tourism

The Project will have a significant positive impact on the Galway economy by reducing traffic congestion which currently constrains economic growth and competitiveness. The improved connection provided with destinations to the west of Galway City will have a positive impact on the potential for economic development and continued growth in tourism numbers.

9.2.1.6 Ecosystem services

Ecosystem services provide many varied benefits that humans freely gain from the natural environment. A properly functioning ecosystem has the capacity to regulate and support the natural environment that contributes to human well-being. The potential impacts on ecosystem services were considered through the assessment of the environmental factors (pathways) through which ecosystem services could be affected such as water, soils, air, noise and general amenity and relied on the biodiversity assessment in terms of potential impacts to biodiversity and indirectly to ecosystem services. There are no impacts identified in those assessments which would result in a significant residual impact on ecosystem services during the construction of the Project.

9.2.2 Human Health Assessment

The potential health impacts due to the Project were also assessed with the focus on likely significant effects, i.e. on effects that are deemed likely to occur and, if they were to occur, would be expected to be significant. The health assessment focused on three main areas: *health protection, health improvement and improvement of access to services*. A review of current and emerging guidance on assessing health in EIA was undertaken. This health assessment utilised both a standards based approach and a wellness assessment which included psychological health issues such as stress and anxiety.

9.2.2.1 Health Protection

The data collected in relation to the protection of human health focused on the results of technical assessments of noise, air, soil, water and landscape and visual and their mitigation to establish any potential hazard directly attributed to what is proposed.

These technical assessments use standards[19] (such as air quality standards) in order to identify whether significant impacts will arise or not. It is important to point out that health standards do not only exist to protect robust groups within the population, but are primarily intended to protect the vulnerable. The standards are set at levels for which there will be no significant health effects, but do not exclude each and every effect, i.e. slight or moderate health effects are possible even below the levels at which health based standards would apply.

[19] The term standards in this instance covers guidelines for example noise guidelines as such standard are not currently available.

Noise

Construction noise is expected to have some negative effects; however, it will be short term and limited by work practices and restricted working hours. The results of the noise modelling carried out for the operational phase shows that there will be potential noise impacts on people in residential properties adjacent to the proposed N6 GCRR, but that the implementation of low noise road surfacing and noise barriers will mitigate these potential impacts. The noise assessment also shows that there will be a benefit for a significant number of people within the city due to a proportion of current traffic being transferred from those currently used. On the basis of WHO night-time noise guidelines, there will be beneficial effects for the community living along existing roads where traffic will be reduced.

Air

Air quality has been considered in both the construction and operational phases. Given the proposed mitigation measures with regards to control of dust and other air emissions during the construction phase, and the relative limited period of time duration, air quality impacts are not expected to have an adverse effect on human health during the construction phase. Detailed modelling based on worst case traffic scenarios identify that Air Quality Standards will not be breached, thereby protecting the vulnerable such as asthmatics, the elderly, the very young or the sick in general.

Soils & Water

Adverse effects on soils, water quality or quantity are not predicted either during the construction or the operational phases.

Landscape & Visual

The impact on health and in particular psychological health associated with landscape change is assessed as slight negative and long term, as people tend to get accustomed to the new visual landscape. The impacts therefore are not assessed as significant.

Psychological

Whilst some annoyance during the construction phase is to be expected, this will be of limited duration and is not usually considered to be a health effect. There are potential psychological benefits for the general public in terms of reduced journey times, reduced unforeseen delays as well as movement of traffic away from currently congested and more populated areas. The transfer of a proportion of traffic to inherently safer roads, together with the prospect of reduced traffic accidents and fatalities, is also an important potential benefit.

This does not take away from the adverse effects on individuals whose homes are to be compulsorily acquired. As noted above, the proposed N6 GCRR has been designed to avoid as many properties as possible, but there remains a significant number of property acquisitions and, although subject to financial compensation, it is important to recognise that these individuals may experience stress and anxiety as a result of this process. Mitigation will include seeking to negotiate acquisition of such properties as soon as possible, subject to attaining consent, availability of funding and no legal challenges, to give these people the maximum amount of time to acquire new homes.

9.2.2.2 Health improvement and improving services

Opportunities for health improvements and improved access to services have been identified during extensive public consultations and analysis of the updated transport model and include, but are not limited to the following:

- Economic growth and development of tourism which can result in improved socio-economic status and can have a positive impact on health outcomes
- Increased employment and reduced unemployment, particularly long-term unemployment, can lead to improved health. If this is achieved, there will also be benefits in terms of social health including decreased social inequality
- Opportunities for a potential decrease in road traffic accidents
- Potential for improved public transport and an improved environment for cycling and walking within the city centre along roads previously occupied by heavy traffic leading to an overall increase in the health benefits

A quantification of some of the accessibility and social inclusion benefits of the proposed N6 GCRR and all the GTS measures is outlined as follows:

- There will be improvements in accessibility and social inclusion for almost all parts of Galway City with reduced journey times for all modes of transport
- There is potential for more efficient access to emergency services including ambulances
- There is also the potential for increased opportunities to exercise due to an environment more amenable to walking and cycling, leading to the associated health benefits
- There are significant opportunities for improved access to services. For those within Galway City and its environs, reduced traffic along city streets will facilitate access to services including health centres. For those living outside of Galway City, there is the potential for improved access to the national road network and thereby access to other services including national hospitals

Overall, therefore the impacts of the Project on human health are primarily positive. From a community perspective, there are clear benefits in terms of health protection, opportunities for health improvements and access to services. There are, however, a limited number of individuals, primarily those living close to the Project for whom there may be slight adverse outcomes in terms of noise and air quality. These will be minimised through the use of mitigation measures.

In summary from a human health perspective, the Project will have no significant adverse effects on human health.

9.3 Material Assets – Non-Agriculture

Non-agricultural material assets include settlements and property, utility infrastructure, and land use. Property ownership changes, changes which were agreed during the 2020 oral hearing, and developments completed since 2018 are considered in this updated assessment. The Project will acquire land from non-agricultural properties including residential, commercial, industrial properties, lands zoned for development, nursing home, sporting grounds, racecourse lands, school lands, and church lands. Acquisition of lands currently located within the public road in the registered ownership of private individuals are included in this list. Road bed acquisition has an imperceptible impact on affected properties as works are entirely outside of the existing property boundary. Non-agricultural material asset impacts were evaluated to determine whether it was necessary to mitigate for such impacts, and to determine what significant residual impacts remained post mitigation.

From the outset of the design of the Project, every effort was made to avoid property demolitions where possible. Even though specific consideration was given to the number of residential properties to be acquired in the alternatives to the proposed N6 GCRR, avoidance of all properties was unfortunately not possible given the significant constraints for developing new transport infrastructure in Galway including the linear development of the city and the need for proximity between the proposed N6 GCRR and the urban environment for the delivery of an optimal solution for a new ring road. Unfortunately, there still are a number of property demolitions necessary for the construction of the Project and to secure the many benefits the proposed N6 GCRR offers, as follows:

- 44 residential properties
- 2 industrial properties (one property includes four buildings)
- 2 commercial properties

In addition to the demolition of 44 residential properties, an additional 10 residential properties, one commercial property and one residential site require full acquisition.

The Project will have a very significant impact on the UoG Sporting Campus at Dangan during construction which reduces to moderate during operation. Operational impacts upon the stable yard and associated facilities at Galway Racecourse will be mitigated via their relocation. It is considered that the Project will result in a slight positive residual impact on Galway Racecourse.

Mitigation will include seeking to negotiate acquisition of properties as soon as possible, subject to attaining consent, availability of funding and no legal challenges, to give these people the maximum amount of time to acquire new homes.

There are a number of impacts to utility services including Electricity Supply Board (ESB), Gas Networks Ireland (GNI), Eir, Virgin Media, E-Net, BT, Vodafone, Three Networks Ireland, and Irish Water. Where there is an impact on existing services during the construction phase, an alternative supply will be made available. It will be necessary to maintain supply to existing services, as far as possible, during construction. There will be no residual impacts on services.

9.4 Material Assets – Agriculture

The Project will traverse an area mainly consisting of small agricultural holdings. The land quality west of the River Corrib is generally poor and, although mixed, the quality of land is better east of the River Corrib. The main farming enterprise is beef cattle. There is a relatively high proportion of very low to medium sensitivity equine enterprises along the route of the proposed N6 GCRR.

Again, property ownership changes, changes which were agreed during the 2020 oral hearing, and changes to farming enterprises completed since 2018 are considered in this updated assessment. The Project will acquire approximately 220 hectares of land from 192 land parcels and will create separated land on 61 land parcels. Material Asset-Agricultural impacts were evaluated to determine whether it was necessary to mitigate for such impacts and to determine what significant residual impacts remained post mitigation.

Measures are proposed in order to mitigate the identified impacts during construction and operation upon agricultural material assets. During construction, these include maintenance of access, services, and boundaries. Construction related mitigation will also include the management of environmental impacts deriving from construction related activities such as dust and water runoff. With respect to the operational phase, the loss of agricultural lands is permanent and can only be mitigated via financial compensation. Where agricultural material assets are severed these impacts have been mitigated via or with the provision of access.

During construction, the generation of noise, dust and traffic will give rise to impacts which are temporary in nature and, with mitigation, generally do not result in significant residual impacts. The operational phase will begin once the road opens to traffic and will continue indefinitely. Residual impacts that occur for this duration are permanent and more significant than the temporary impacts that occur during the construction phase. As a result, there will be the following residual impacts:

- 101 not significant and slight adverse (52.5% of land parcels along the Project)
- 41 moderate adverse (21.5% of land parcels along the Project)
- 39 significant adverse (20.5% of land parcels along the Project)
- 7 very significant adverse (3.5% of land parcels along the Project)
- 4 profound impacts (2.0% of land parcels along the Project)

The impact on agriculture at a regional level (i.e. County Galway) is not significant.

9.5 Air Quality

The potential impact of the Project on air quality was assessed for both the construction and operational phases by considering the pollutant background concentrations, emissions from road traffic, potential for construction dust, and emissions from construction traffic. Predicted concentrations were compared to the relevant limit values. The TII Air Quality Assessment of Proposed National Roads – Standard (TII PE-ENV-01107) (TII 2022) was published since 2018. New software for the calculation of transport emissions, the REM tool, is also available. In addition, updated traffic volumes and new developments, all informed this updated EIAR.

Road traffic on the national routes (including the existing N6, N83, N67, N59 and N84) and on the local road network currently contributes to air quality pollution in the study area. Emissions are higher under congested traffic conditions, such as those experienced in certain areas of Galway City, particularly during peak times. The Environmental Protection Agency (EPA) carries out air quality monitoring at the Bodkin Junction in Galway. This monitoring shows that all current baseline pollutant concentrations are in compliance with Air Quality Standards. Site specific monitoring of particulate matter and nitrogen dioxide was also carried out over a period of three months in the vicinity of the Project to validate the use of this EPA monitoring data.

During the operational phase, compliance with all air quality standards will be achieved with and a worst-case impact of moderate adverse is expected at one modelled receptor. No significant residual air quality impacts are envisaged for human receptors as it is predicted that compliance with all air quality standards for the protection of human health will be achieved.

For the ecologically sensitive designated sites, predicted nitrogen dioxide levels are predicted to comply with existing air quality standards in 2031 and 2046. Concentrations of ammonia are predicted to exceed the maximum critical level in 2031 and 2046 from the proposed Project in the vicinity of Lough Corrib SAC.

Total nitrogen deposition is predicted to comply with critical loads in 2031 but predicted exceedances within 10m of the proposed Project in 2046 at the Lough Corrib SAC only. The biodiversity impact assessment determines if such air quality impacts at a sensitive designated habitat are significant.

During the construction phase, particulate monitoring and dust deposition monitoring will be carried out to ensure the effectiveness of the mitigation measures and compliance with air quality standards.

9.6 Climate

There have been significant changes since 2018 with respect to addressing climate change in Ireland with the passing of the Climate Action and Low Carbon Development (Amendment) Act 2021 and the subsequent agreement of legally binding carbon budgets and sectoral emissions by the Government in 2022. Transport Infrastructure Ireland (TII) developed a new standard for assessment of climate impacts to ensure the transport sector is aligned with delivery of Ireland's climate action ambitions. This standard *Climate Assessment of Proposed National Roads – Standard (PE-ENV-01105) (2022) (TII Climate Standard)* has been applied in the assessment of potential climatic impacts, alongside the *Climate Guidance for National Roads, Light Rail, and Rural Cycleways (Offline & Greenways) - Overarching Technical Document PE-ENV-01104 (2022)*. The EPA have produced updated guidelines on the information to be contained in an EIAR and the government published Climate Action Plan 2024. In addition, updated traffic volumes and new developments, plus the availability of the TII Carbon Assessment Tool (Version 3) (TII 2022) to assess carbon emissions, all informed this updated EIAR.

In line with the EIA Directive, the assessment of effects on climate during the construction and operation phase of the Project compares the emissions in a scenario with the proposed Project to a scenario without the proposed Project in the Opening Year and Deign Year. Applying the TII Climate Standard, and the updated methodology, the Project is predicted to result in a permanent moderate adverse effect on climate. However, this effect is likely to reduce over time due to the implementation of measures subscribed by the EU Commission and CAP 24. In addition, the decarbonisation of the grid will reduce indirect carbon emissions from electric vehicles over time.

However, as the EIA assessment only considers the effects of the Project, it cannot account for emission reductions associated with additional commitments which will arise from the delivery of the Galway Transport Strategy (GTS) or the most recent approved climate action plan, CAP24.

9.7 Noise and Vibration

An assessment relating to the potential noise and vibration impacts of the Project was undertaken for both the construction phase and the operational phase, which included consideration of new developments completed since 2018, updated traffic volumes, Galway City and County Noise Action Plans and updated EPA guidance.

During the construction phase, the assessment has determined that noise impacts will be negative moderate short-term, and in some instances negative significant and momentary to short-term depending on the activities involved. The use of best practice noise control measures, hours of operation, scheduling of works within appropriate time periods, strict construction noise limits, and noise monitoring during the construction phase will ensure impacts are controlled to within the adopted criteria. Similarly, vibration impacts during the construction phase will be well controlled through the use of low impact equipment and adherence to strict limit values which will be subject to monitoring at the nearest sensitive buildings.

During the operational phase, noise levels will be increased at the majority of noise sensitive locations along the length of the Project. Whilst noise levels of varying increases and impact magnitudes are calculated at the assessment locations, the incorporation of a low noise road surface and the use of noise barriers along the proposed roadside boundary will reduce noise levels to within the design goal of 60dB Lden or to the pre-existing Do-Minimum noise levels at the majority of noise sensitive locations. Residual noise levels at a small number of locations will remain above the 60dB Lden design goal by 1 to 2dB.

The overall balance of residual effects are determined to be moderate or less across the Project with a small number of localised residual moderate to significant effects in the short and long-term assessment periods.

Overall, noise levels will be increased at properties along the proposed N6 GCRR once operational and a change in the noise environment will occur. The road has, however, been designed to reduce operational noise levels to within national design guidelines through the incorporation of detailed noise mitigation measures. The number of properties adjacent to the proposed N6 GCRR is relatively low compared to those within the city centre which are currently exposed to significantly higher noise levels from passing road traffic. The reduction in high volumes of traffic traversing the city centre will result in a moderate to major positive noise impact to an extensive number of noise sensitive properties along the existing road network. There are no significant residual noise and vibration impacts.

9.8 Landscape and Visual

Landscape has two separate closely related aspects. The first is visual impact which is the extent to which the Project can be seen in the landscape. The second is impact on landscape character which is the effects of the Project on the fabric or structure of the landscape.

The visual impact assessment considered visual receptors along the route of the Project. Most receptors involve residential properties; however, cultural and heritage properties, community facilities, e.g. churches, amenities and recreational facilities, open spaces, walkways, and other viewers within the environment are also considered.

Landscape character derives from the appearance of the land and takes account of natural and man-made features such as topography, landform, vegetation, land uses and built environment and their interaction to create specific patterns that are distinctive to particular localities. Aspects such as landscape character and landscape designations are also considered in the description of the receiving landscape.

The Project passes through a generally rural landscape on the western, northern and eastern edge of Galway City. Residential development is a prominent feature, particularly north of Bearna, Dangan Upper, Dangan Lower, Ballindooley, and Castlegar. Some areas along the Project are of very high landscape and visual quality and sensitivity.

The main features of significance and sensitivity in the receiving landscape are:

- The semi-natural landscape character of marginal grasslands, scrub plantings, small stream valleys and stone walls to the west and north of Bearna Village
- The open rising landscape, including open space lands, northwest of Galway City
- The River Corrib corridor and its wider landscape setting, which includes the prominent ruins of Menlo Castle, as well as a diverse mosaic of semi-natural and man-influenced landscapes, riparian plantings, grasslands, scrub and woodland. Protected views and prospects and lands on east bank designated as High Amenity Agriculture
- The recreation, sports and amenity lands of UoG Sporting Campus and surrounding areas. Lands on west bank of River Corrib designated as Recreation, Open Space
- The limestone, grassland and scrub landscape with stone walls northeast of Galway City
- The wider drumlin and valley landscape setting with protected views and prospects around Ballindooley Lough
- The open recreational lands of Galway Racecourse and surrounding areas

The main features of visual significance and sensitivity in the receiving landscape are:

- The presence, prominence and visual amenity of residential property and development in general, especially west and north of Bearna; west and northwest of the city; to either side of the N59 Moycullen Road north of the city; at Ballindooley; and at Castlegar, Ballybrit and Coolagh-Briarhill
- The location of a number of protected views and prospects
- The visual amenity associated with UoG Sporting Campus
- The visual amenity associated with the River Corrib corridor, including the setting of Menlo Castle
- The visual amenity associated with Galway Racecourse

Due to the nature of the baseline landscape, the construction and initial operational stage of the proposed N6 GCRR will give rise to a range of significant, very significant and profound landscape and visual impacts, at least until such stage as the extensive landscape mitigation proposals are established and become effective. With the development of mitigation planting, the significance and severity of landscape and visual impacts will gradually decrease over time.

However, even with the development of mitigation planting, some degree of residual visual impact will continue to arise for residential and other properties located close to or adjoining the boundary of the Project and where the proposed N6 GCRR, including the major River Corrib Bridge, crosses sensitive landscape areas. Therefore, the Project will have longer-term visual impacts for properties located close to the proposed N6 GCRR and close to high embankments and retaining walls. This includes established residential areas at Barnacranny/Dangan, Ballindooley, and Castlegar as well as many individual properties located along the proposed N6 GCRR. The proposed bridge and associated embankments and viaduct on the east bank of the river will have a permanent and significant impact on the semi-natural landscape valley and setting of the River Corrib and Menlo Castle, as well as on the recreational and sports amenity of the northern end of UoG Sporting Campus and the limestone landscape of Menlough and Coolough east of the river.

9.9 Cultural Heritage

Cultural heritage impacts were evaluated to determine whether it was necessary to mitigate for such impacts, and to identify what significant residual impacts remained post mitigation. The examination identified, as far as reasonably possible, the nature of the archaeological, architectural, and cultural heritage resource within the footprint and in the vicinity of the proposed N6 GCRR from existing records and site visits. The TII *'Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects'*, 2024, TII was published since 2018 and is considered in this updated EIAR.

One recorded monument, which is listed as a Bullaun Stone will be very significantly and directly impacted by the Project. This feature was not located during a field inspection and could not be previously located during a survey carried out by the Archaeological Survey of Ireland. The Project will also have a moderate impact on a quarry site which is post medieval in date and possesses little archaeological significance.

One protected structure will be very significantly and directly impacted. This building, which consists of a single storey thatched structure, will be demolished following a full architectural survey prior to the construction of the proposed N6 GCRR.

The demesne landscape associated with Menlo Castle will be subject to a direct significant impact. The direct impact on the demesne landscape at Dangan Lower is defined as moderate and at Bushypark House is defined as slight. Due to the developed nature of the environs at Rahoon House, the impact, whilst direct, is not significant. A total of two very significant, two significant, 18 moderate and two slight direct impacts on previously unrecorded sites or structures of cultural heritage significance were identified.

Ground disturbance associated with the Project has the potential to directly and negatively impact previously unknown archaeological features, deposits or artefacts which may survive beneath the current ground surface or water level.

A total of 34 Townland Boundaries will be crossed by the Project. The impact upon 32 of the 34 townland boundaries has been defined as direct and moderate in nature due to the relatively small percentage of a feature to be impacted upon.

Predicted indirect operational residual impacts include significant negative impacts on the ruined summer house at Dangan Lower and Menlo Castle. Moderate indirect negative impacts are predicted at a recorded cashel site, a thatched cottage and church.

The Designed Landscapes will all be subject to the same level of impacts during operation as during construction due to the impacts on setting. One cultural heritage sites will experience significant indirect impacts and three will experience moderate indirect impacts.

A programme of archaeological testing (followed by full excavation, where appropriate, of any identified archaeological features, deposits or artefacts), archaeological underwater or wade surveys, building surveys and townland boundary surveys has been recommended within the footprint of the proposed N6 GCRR; this will be carried out in advance of construction.

9.10 Soils and Geology

A detailed study of the existing geological baseline along the route of the Project was undertaken using all available regional and local information and more site-specific data obtained from walkover surveys and ground investigations. This was supplemented by additional ground investigations in 2024 to inform this updated EIAR.

An evaluation was made of potential likely significant impacts on the soils and geology environment followed by a determination of whether it was necessary to mitigate for such impacts, and what significant residual impacts remained post mitigation.

The area west of the N59 Moycullen Road generally consists of granular glacial deposits derived from the underlying Granite bedrock. In many situations, the glacial deposits are overlain by peat. The area east of the N59 Moycullen Road generally consists of glacial till with a more cohesive matrix. The glacial till is derived from the underlying karstified[20] Limestone, with some significantly deep infilled buried valleys. No known areas of contaminated ground were identified.

The potential soils and geology impacts are as follows:

- A portion of well drained fertile soil and crushed rock aggregate potential will be lost within the footprint of the Project which leaves a moderate/ slight and significant/moderate residual impact respectively. The re-use of the crushed rock aggregate potential is considered to be a reduction in effect to future quarry reserves, thus reducing the effect to a residual effect of moderate / slight.
- The loss of part of two enclosed depressions and a spring will result in a moderate residual impact
- Introduction of material derived from a different lithology
- Deposition of sediment on agricultural land due to washout of fines
- Spread of contamination
- Construction induced flooding
- Unwanted disturbance of environment
- The Project traverses locations of Limestone pavement located both within and outside European designated sites. The geological assessment (importance and impact) has not differentiated between Limestone pavement located within or outside the European designated sites.
    - Lackagh Tunnel passes under an area of Limestone pavement that is within a European designated site resulting in minimal to no impact on the feature from a geological perspective
    - Menlough Viaduct and a culvert in Menlough traverse over Limestone pavement (both outside European designated sites), resulting in a loss of a small part of the attribute under the viaduct piers and no direct geological impact on the area under the culvert
    - There are three locations where the Project traverses and covers Limestone pavement (all outside European designated sites): two locations in Menlough and one location in Coolagh. At these locations (outside of the European designated sites), it will result in loss of a small part of the Limestone pavement. From a geological perspective, this was assessed at each location with the results ranging from imperceptible where there is no loss to significant/moderate where loss of a small part of the attribute occurs
- This updated EIAR confirms one additional impact as the Project will also result in the loss of a proportion of a Geological Heritage Area in Doughiska of rock cutting along the proposed N6 GCRR, as identified during a review of the publicly available information as part of this updated EIAR. The significance of the loss is significant / moderate.

[20] Karst refers to a distinctive terrain that evolves through dissolution of the bed-rock and development of efficient underground drainage. The special landforms of karst include sinkholes, dry valleys, pavements, cave systems and associated springs (Waltham et al. 2005)

Potential impacts due to construction or operational activities have the potential to occur, but the significance of the impact will be reduced, where possible, with implementation of mitigation measures.

Introduction of material derived from a different lithology, washout of fines, spread of contamination, or unwanted disturbance of the soils and geology environment are all potential construction effects on the receiving environment. Development and implementation of mitigation measures reduce such impacts to a moderate/slight or imperceptible residual impact on the soils and geology environment.

All operational activities of the Project are deemed to produce imperceptible impacts to the surrounding geological environment.

9.11 Hydrogeology

Hydrogeological desk studies, field studies, and ground investigations were undertaken to facilitate a comprehensive assessment of the hydrogeological impacts of the Project. Additional groundwater monitoring undertaken during 2023 and 2024, an additional karst feature which was identified during 2023 and 2024 site walkovers, 2024 ground investigations at Galway Racecourse, and updated information available from EPA, GSI and OPW, all informed this updated EIAR.

The potential impacts of the Project on hydrogeological receptors including groundwater resources, groundwater supplies, groundwater dependant terrestrial ecosystems, and groundwater contributions to surface water have been assessed. Groundwater receptors were identified and include groundwater resources, groundwater abstractions, groundwater dependent habitats, and groundwater dependent surface water features. These potential impacts were evaluated to determine whether it was necessary to mitigate for such impacts and to determine what significant residual impacts remained post mitigation.

The hydrogeological study area associated with the Project is divided into two principal areas based on the contrasting aquifer properties for the two main geological rock types in the region. The western section, underlain by granite, is a poor aquifer that is only productive in local zones. The combination of the poor aquifer and blanket bog cover, where rock is not exposed, limits the quantity of recharge that can infiltrate to ground. The groundwater table remains close to the surface and generally follows the topography. The eastern section, underlain by limestone, is a regionally important aquifer that includes surface karst features and underground conduit flows. The aquifer is capable of supplying regionally important abstractions and is associated with the presence of karst landforms and features but also associated with the relatively low abundance of surface water features and man-made drainage.

Groundwater Resources and Supplies

Road cuttings are included as part of the Project and, where these occur, part of the respective aquifer will be removed; however, the amounts are very small and will have no perceptible impact on groundwater quantity. The water quality of the aquifers will not deteriorate due to the Project. Therefore, the Project meets the requirements of the European Water Framework directive in terms of maintaining, protecting, and enhancing the water quality status of the groundwater.

Groundwater Dependant Terrestrial Ecosystems

Potential impacts upon groundwater dependant terrestrial ecosystems due to the Project were assessed. The assessment has identified that habitats are dependant on both the granite and limestone aquifers. This assessment identified the need to mitigate the risk of interfering with the karst environment and its role in supporting groundwater dependent terrestrial ecosystems, and a karst protocol has been developed to remove this risk. There are no significant negative residual hydrogeological impacts to European sites due to the Project.

There will be residual hydrogeological impacts due to the drawdown of groundwater on groundwater dependent terrestrial ecosystems and the assessment of the impact is covered in biodiversity.

Groundwater Contributions to Surface Water

Groundwater contributions to surface water were assessed, including identification of the surface water to which groundwater bodies contribute. The assessment identified that there will be no significant negative impact in the groundwater contribution to surface water.

9.12 Hydrology

All watercourses and water bodies which could be affected, directly or indirectly, by the Project were assessed through a series of initial walkover visits followed up by a more detailed survey and hydrological assessment. These assessments included an assessment of the potential hydrological impacts on European sites and Ballindooley Lough which supports the wintering birds from the local European sites.

Over the extent of the Project, there are two distinct regions of hydrological response, with the area west of the N59 Moycullen Road associated with granite bedrock having high surface run-off and poor drainage characteristics and the area east of the N59 Moycullen Road having low surface run-off associated with generally permeable karst limestone bedrock formation. These geological landscapes result in a reasonably dense network of surface drains and wetland features in the western section and a very sparse surface drainage network in the eastern section associated with the karstified limestone bedrock. Consequently, the drainage solution for the Project is challenging in the eastern section, requiring infiltration to groundwater for suitable disposal of road drainage waters. The drainage system for the Project will include fifty-four road drainage outfalls, which comprise outfalls to watercourses, groundwater, and existing sewers. The Project will require seventeen culvert crossings and one major bridge crossing. All the culverts cross small watercourses with catchment areas less than 5 km^2. A number of local watercourse diversions and realignments are associated with the proposed road culvert crossings so as to facilitate channel transition to and from the new culverts.

Stringent mitigation and control of potential polluting activities, associated with construction activities, is proposed. This will significantly reduce the risk of accidental spillages from routine road run-off discharges, untreated sediment run-off, construction spillages of concrete and hydrocarbons entering water bodies.

The Project has undergone a detailed Flood Risk Assessment in accordance with the Flood Risk Management Guidelines for Planning Authorities (2009). The assessment identified various sources and their respective flood pathways of flood risk to the Project from fluvial, pluvial, and groundwater sources. Coastal flooding source was screened out as the Project is sufficiently set back and elevated out of the coastal flood zone. The flood risk assessment included suitable allowance for climate change associated with increased rainfall, storm intensity, land use changes and sea level rise. Overall the assessment has concluded that the design of the Project is sustainable and manages flood risk and will not cause unacceptable flood risk to the Project itself and elsewhere to third party lands.

The Project satisfies the requirements of the Water Framework Directive in terms of maintaining, protecting, and enhancing the water quality status of the receiving watercourses and groundwater systems. Protection is achieved through the provision of storm water treatment systems and controlled discharges at the proposed road drainage outfalls and enhancement is achieved by taking road traffic from existing unprotected roads where uncontrolled road runoff enters adjacent watercourses and the groundwater aquifers.

Potential hydrological impacts from the Project have been identified and assessed. Appropriate design and mitigation measures have been incorporated to minimise the risk of significant hydrological impact on the receiving environment. There are no significant negative residual hydrological impacts due to the Project.

The overall residual hydrological impact from the Project on European sites is rated as imperceptible. This is achieved through design of appropriate pollution control measures at the proposed road drainage outfalls, the proposed full spanning bridge structure of the River Corrib channel and effective floodplain area and the proposed implementation of construction environmental controls.

There will be a moderate to significant positive residual impact on flooding and flood risk at N83 Tuam Road Twomileditch area, as the proposed mitigation measure will reduce the flood risk to the existing road and to the six remaining houses. However negative slight residual flood impacts associated with the N83 Tuam Road flood relief measures will remain.

9.13 Biodiversity

The potential impacts of the Project on biodiversity, also referred to as ecology as a broader term to refer to the relationships of biodiversity receptors to one another and to their environment, were assessed. A desktop study was carried out to inform the initial scope of the ecological surveys required for the environmental impact assessment. The desktop study involved collection and review of relevant published and unpublished sources of data, collation of existing information on the ecological environment and consultation with relevant statutory bodies (e.g. National Parks & Wildlife Service (NPWS) and Inland Fisheries Ireland (IFI)).

A comprehensive range of field surveys were carried out between 2013 and 2024 to inform the impact assessment. These included habitat surveys, surveys for protected plant species, mammal surveys (including dedicated surveys for Otter, Badger and bats), White-clawed crayfish surveys, molluscan surveys (including Freshwater pearl mussel and Vertigo snail species surveys), Marsh fritillary butterfly surveys, breeding and wintering bird surveys (including dedicated Barn owl, Peregrine falcon, Red grouse and Woodcock surveys), amphibian surveys, Common lizard surveys and fish surveys (including assessment of biological water quality status).

Within the study area, there are areas which are designated for nature conservation at European level i.e. the European sites (SAC & SPA), and at national level i.e. Natural Heritage Areas (NHA & pNHA):

- There are 22 European sites which could potentially be affected by the Project: Lough Corrib SAC, Lough Corrib SPA, Galway Bay Complex SAC, Inner Galway Bay SPA, Ardrahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SPA, Rahasane Turlough SAC, Cregganna Marsh SPA, Maumturk Mountains SAC, The Twelve Bens/Garraun Complex SAC, Connemara Bog Complex SAC, Connemara Bog Complex SPA, Ross Lake and Woods SAC, East Burren Complex SAC, Moneen Mountain SAC, Black Head-Poulsallagh Complex SAC, Gortnandarragh Limestone Pavement SAC, Inishmore Island SAC and Kilkieran Bay and Island SAC. There are no other European sites at risk of impacts from the Project. - A full assessment on the European sites has been carried out and is reflected in the updated NIS. The conclusion of the assessment in the updated NIS was that the Project will not adversely affect the integrity of any European site, either alone or in combination with other plans or projects.
- There is one NHA site which could potentially be affected by the Project: Moycullen Bogs NHA which lies immediately adjacent to the proposed N6 GCRR. However, the Project will not result in likely significant residual effects on this NHA.
- There are a number of pNHA sites which could potentially be affected by the Project : Lough Corrib pNHA, Galway bay Complex pNHA, Furbogh Wood pNHA, Kiltullagh Turlough pNHA, Drimcong Wood pNHA, Turloughcor pNHA, Ballycuirke Lough pNHA, Connemara Bog Complex pNHA, Ross Lake and Woods pNHA, Black Head-Poulsallagh Complex pNHA, Lough Fingall Complex pNHA, Rahasane Turlough pNHA, Gortnandarragh Limestone Pavement pNHA, Moneen Mountain pNHA, East Burren Complex pNHA, Kiltiernan Turlough pNHA, Castletaylor Complex pNHA, Inishmore Island pNHA, Maumturk Mountains pNHA and The Twelve Bens/Garraun Complex pNHA.

Lough Corrib pNHA is traversed by the proposed N6 GCRR at the River Corrib Bridge crossing. However, the Project will not result in likely significant residual effects on this pNHA.

Other receptors considered in the ecological assessment for the Project are habitats, rare and protected flora species, mammal species including in particular otter, bats and badgers, mollusc species, the marsh fritillary butterfly, breeding birds, wintering birds, amphibians, reptiles, and fish.

The potential impacts of the Project on each of these key ecological receptors are identified. Mitigation measures are proposed to avoid or minimise the predicted impacts. In addition, monitoring[21] has been proposed, where relevant. The residual impacts remaining are outlined, and (where relevant) any compensation measures proposed to further address those residual impacts are detailed.

The significant residual impacts remaining after mitigation are those associated with habitat loss, rare and protected species, bats, Barn owl and Peregrine falcon, and Local Biodiversity Areas. Where possible, compensatory measures will be implemented to reduce or avoid these significant residual impacts. The compensatory measures will reduce the significant residual impacts on all bat species to a local level.

However, despite the implementation of the mitigation and compensation measures proposed, the Project will have the following likely significant residual effects on biodiversity:

- A likely significant residual effect, at the international geographic scale, for the permanent loss of c.1.54ha of the priority Annex I habitat Limestone pavement [*8240]
- A likely significant residual effect, at the national geographic scale, for the permanent loss of c.3.95ha of a mosaic containing Wet heath [4010], Dry heath [4030] and Molinia [6410][22]
- A likely significant residual effect, at the international geographic scale, for the permanent loss of c.0.01ha of the priority Annex I habitat Blanket bog (active) [*7130]
- A likely significant residual effect, at the international geographic scale, for the permanent loss of c.0.01ha of the mosaic containing the priority Annex I habitat Blanket bog (active) [*7130], Wet heath [4010] and Dry heath [4030]
- A likely significant residual effect, at the county geographic scale, for the permanent loss of four Petrifying spring [*7220] features at Lackagh Quarry
- A likely significant residual effect, at the international geographic scale, for the permanent loss of c.0.03ha of the mosaic containing the priority Annex I habitat Limestone pavement [*8240], and Calcareous grassland [6210]
- Likely significant residual effects on Habitat Clusters 1-12 ranging from the local to international scale, dependent upon the potential impacts of the Project on each of the individual ecological receptors that make up the biodiversity resource within a given habitat cluster (additional since 2018 EIAR)
- A likely significant residual effect for the loss of local populations of the red-listed bryophyte species Imbricate bog moss Sphagnum affine at the national geographic scale (additional since the 2018 EIAR)
- A likely significant residual effect for the loss of local populations of the red-listed bryophyte species Woodsy thyme moss Plagiomnium cuspidatum, Lesser striated feathermoss Plasteurhynchium striatulum and Red bog-moss Sphagnum capillifolium at the county geographic scale (additional since the 2018 EIAR)
- A likely significant residual effect for the loss of local populations Eyebright Euphrasia arctica at a local geographic scale (additional since the 2018 EIAR)

[21] In accordance with the requirement for monitoring set out in the EIA Directive 2014/52/EU to monitor significant effects on the environment

[22] This comprises c.2.54ha of Wet heath dominated habitat and an additional c.1.41 ha of habitat mosaic which contains Wet heath.

- A likely significant residual effect, at the county geographic scale, for the potential permanent loss of a Peregrine falcon nest site at Lackagh Quarry
- A likely significant residual effect, at the local geographic scale, for the potential permanent loss of a Barn Owl nest site at Menlough
- A likely significant residual effect, at the local geographic scale, on all bat species (including lesser horseshoe bat) due to the presence of the proposed N6 GCRR within their foraging areas
- A likely significant residual effect, at the local geographic scale, for the permanent loss of 18 Calcareous springs (FP1) at Lackagh Quarry, c.5.24ha of Dry-humid acid grassland (GS3) and c.1.30ha of Poor fen and flush habitat (PF2).

These significant residual effects will also affect the following local biodiversity areas[23]: Coast Road (R336) to the N59 Moycullen Road, the River Corrib and the Coolagh Lakes, Menlough to Coolagh Hill, Ballindooley – Castlegar, Doughiska local biodiversity area, Cooper's Cave Terryland local biodiversity area, Terryland Glenanail local biodiversity area, City Canal System local biodiversity area, and Waterbody local biodiversity area.

The losses of Limestone pavement habitat (outside any European site), Petrifying springs (outside any European site) and Wet heath habitat (outside any European site), associated with the Project cannot be directly compensated. However, areas of related habitats will be created to provide a biodiversity gain for both peatland and limestone associated habitats locally. The area of Dry heath habitat being created is c.4.10ha which is greater than the combined losses of peatland habitats containing dry heath (i.e. [4030], and the mosaics [4030/4010], [4030/4010/*7130] and [4030/4010/6410]) combined (c.3.18ha). The area of Calcareous grassland habitat being created is c.7.98ha which is greater than the combined losses of Limestone pavement and Calcareous grassland habitat combined (c.1.82ha).

9.14 Waste

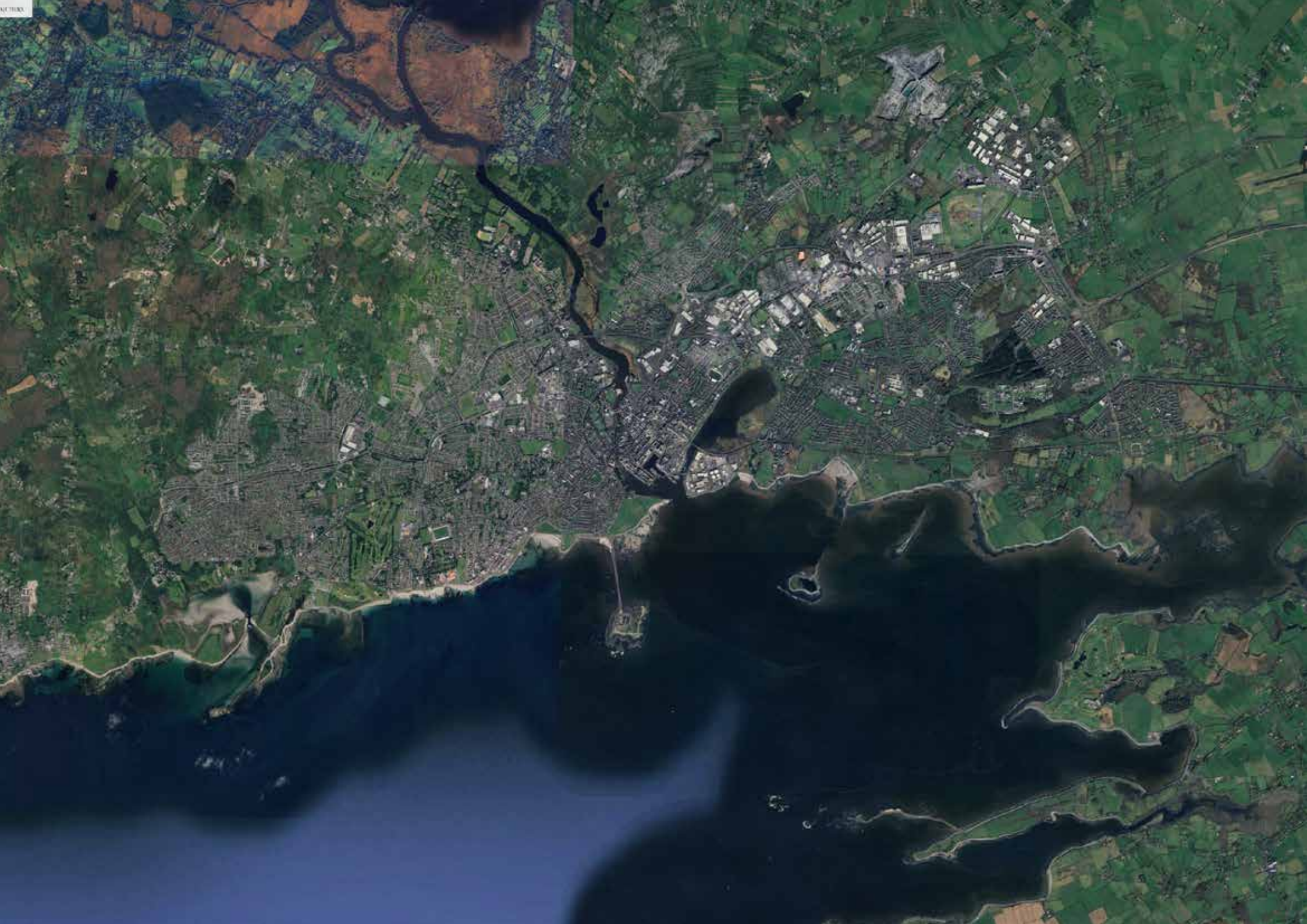
Since 2018, additional guidelines have been published which provide further detail around the consideration of waste as an environmental factor to be considered in EIARs. Furthermore, additional policy and guidance documents have come into force since 2018 which set out Irelands policy for waste planning and resource and management so that circular economy principles and climate action is embedded in such public policy.

The use of resources and the potential for waste and surplus materials to be generated during the construction and operational phases of the Project are assessed. The potential environmental effects of the use of resources and the generation and management of solid waste arisings are examined in the context of the existing local, regional and national resource and waste management environment. Mitigation measures are identified, where necessary, to reduce the impact of resource use and waste generation from the Project during the construction and operational phases.

The construction works taking place throughout Phases 1, 2, 3 and 4 are not predicted to have any significant residual impacts with the adoption of sustainable resource and waste management principles. Nonetheless, appropriate mitigation measures have been identified to further ensure that the sustainable resource and waste management principles, including circular economy principles related to the use of resources and adherence to the waste hierarchy, are implemented.

The operation of the Project is not predicted to give rise to any significant residual impacts with the adoption of sustainable resource and waste management principles. The residual impact on resource and waste management is predicted to be negative, not significant and long-term.

[23] These local biodiversity areas are defined in the Galway City Development Plan 2017–2023 and the most recent draft of the Galway City Biodiversity Action Plan 2014–2024



9.15 Major Accidents, Inter-Relationships, Interactions and Cumulative Effects

The interactions and inter-relationships between environmental factors were taken into consideration as part of the individual environmental assessments. A pairwise comparison of the effects of the Project against other relevant committed projects was undertaken for each environmental discipline. Thereafter, cumulative effects of all environmental effects associated with the Project and with other planned and committed projects were also assessed. This has shown that no additional cumulative effects other than those already identified in the individual assessments will arise. This comparison is presented in Chapter 21 of the updated EIAR.

Chapter 21 of the updated EIAR also presents an assessment of the likely significant adverse effects on the environment arising from the vulnerability of the Project to risks of major accidents and/or natural disasters. The site-specific risk assessment identifies and quantifies risks due to the Project focusing on: unplanned, but possible and plausible events occurring during the construction and operational phases. From examining all plausible risks associated with the Project, the scenarios which are considered to be the highest risk in terms of a major accident and/or disaster included:

- vehicular events
- structural collapse events
- tunnel fire events
- service utilities events
- ground conditions related events
- water related events

The outcome of the assessment identified that while these events would have 'very serious' consequences should they occur; the risk is considered 'unlikely'. These events have been considered throughout the design process and measures have been included in the design to reduce the severity and potential consequences of such events.

9.16 Schedule of Environmental Commitments

A summary of the mitigation measures and significant residual impacts of the Project are presented in Chapter 22 of the updated EIAR. The Schedule of Environmental Commitments including monitoring requirements are presented in Chapter 23 of the updated EIAR.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Summary - The Solution and its Benefits

10 Summary – The Solution and its Benefits

To summarise, Galway City and its environs have critical transport issues, as identified above, that require urgent resolution.

There are, however, significant constraints for developing new transport infrastructure for Galway given (i) the physical form of the city, (ii) the limited space available, (iii) the built environment and residential areas on both sides of the River Corrib, and (iv) the presence of designated sites.

To address these transport issues, an overall transportation solution for Galway was developed by Galway County Council, Galway City Council and NTA, culminating in the GTS, of which the proposed N6 GCRR forms a key element as the road component of this strategy.

The conclusion of all the analysis and work on this strategy is that the proposed N6 GCRR delivers on the objectives set out in **Section 5** and represents the optimal solution for a new ring road, both from the perspective of human environment and the natural environment.

The functionality of the proposed N6 GCRR is twofold. It provides for the strategic need of the TEN-T comprehensive road network and connectivity of Galway City and the West Region to the national road network, as well as providing a solution to relieve the city centre roads of unnecessary strategic traffic and providing the necessary road space for other modes of transport, namely walking, cycling and public transport. These two functions are complementary.

The capacity of the existing road network is wholly inadequate as all traffic mixes and is interspersed with pedestrians, cyclists and vulnerable road users. The overall transport solution segregates traffic movements and travel demand and directs it to the most appropriate route or alternative mode. The capacity of the proposed N6 GCRR is designed to provide for the demand into the future.

The complexity of the proposed N6 GCRR is a result of (i) the complexity of the transport issues it seeks to address and (ii) the number of significant constraints within which the design team had to work. This has required some significant engineering interventions in places.

However, these engineering interventions are necessary to mitigate and reduce the potential negative impacts of the proposed N6 GCRR that would otherwise arise and are entirely proportionate and justifiable in the circumstances.

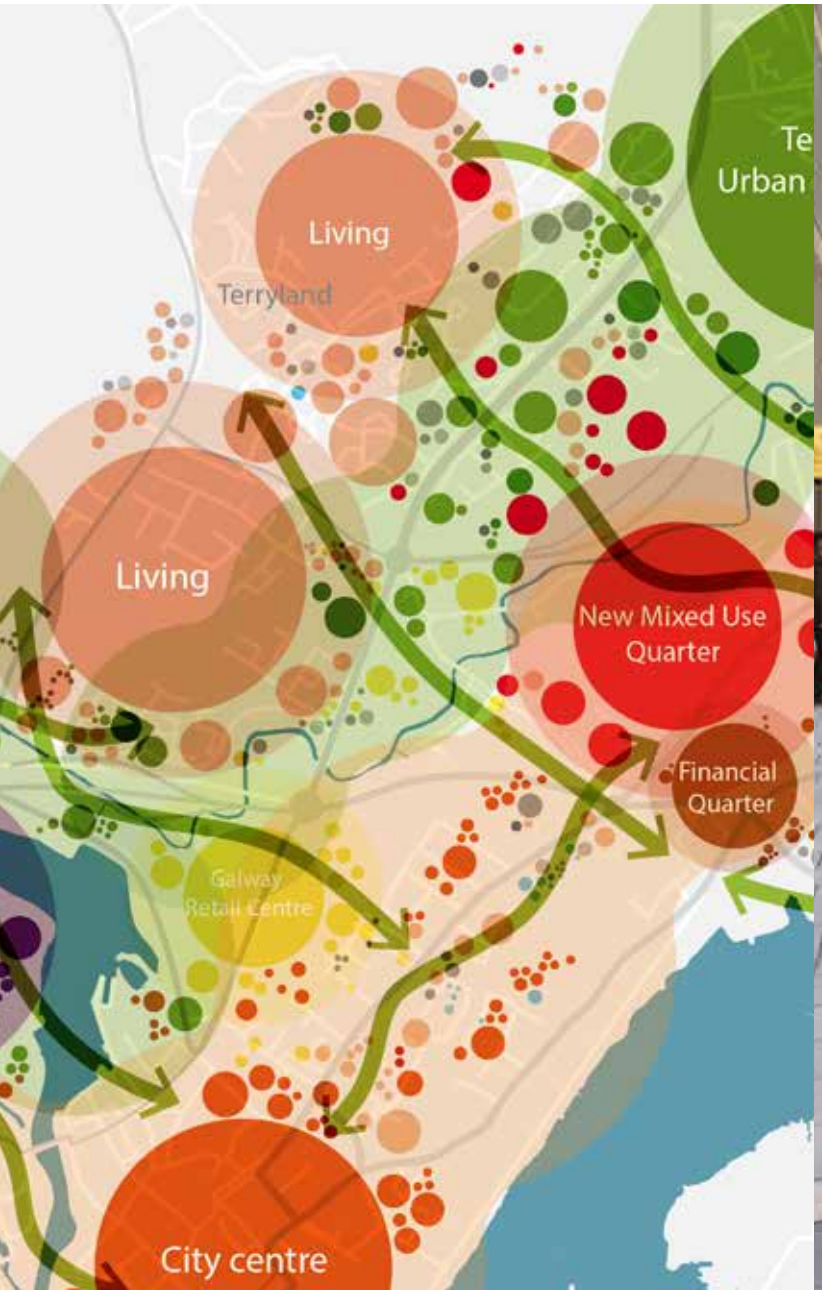
Given the built environment and the unavoidable proximity of the Project to residential areas, the Project will unfortunately and unavoidably result in a number of property demolitions. However, this must be viewed and balanced in the context of the overall benefits that the proposed road development will deliver as summarised again below:

- It will provide a **strategic route**, forming part of the TEN-T comprehensive network, across the River Corrib without the need to go through the city
- This strategic route will be of a **high standard** cross-section and will provide the **capacity required for the strategic traffic** serving the city and connecting the county to the national network
- Improves **connectivity to the West Region**, i.e. the county areas and hinterland beyond the city zone and provides the necessary connectivity to all the national roads and the Western Region and for those living within Galway and the rest of the country.
- Moreover, access to this strategic route is limited to the junctions which will **protect the road asset in the future** and means that its **capacity is secure**
- This route is of European importance given that the **TEN-T comprehensive network designation** extends west of the city to the terminus of proposed N6 GCRR and will provide a link to the West Region of the standard of a comprehensive route in accordance with TEN-T
- Provides for **strategic traffic accessing Galway City** and connectivity with zones of traffic generators and attractors.
- This route provides connections to **essential city links** to better distribute traffic
- It meets the functionality of the **road component of the overall intermodal transport solution** and enables the reallocation of existing road space within the city to public transport and smart mobility measures and is part of a sustainable holistic transport solution. Thus, facilitating a **more efficient public transport system** and the provision of a multi-modal choice of travel.
- **Improves safety** levels for all public road users.
- By **tackling the city's congestion issues**, it will provide a **better quality of life** for the city's inhabitants and provide a much **safer environment** in which to live
- By **reducing the number of cars** on the roads within the city centre and improving streetscapes, workers and students are facilitated to commute using **multi-modal transport means**. This includes travelling on foot, by bicycle and on the public transport system
- It provides connectivity to the national roads via junctions to maximise the transfer of cross-city movements to the new road infrastructure, thus **releasing and freeing the existing city centre zone from congestion** caused by traffic trying to access a city centre bridge to cross the River Corrib
- It attracts traffic from the city centre zone, thus facilitating reallocation of road space to public transport leading to **improved journey time reliability for public transport**
- It **caters for the strong travel demand** between zones on either side of the city, both directly and through enabling significant improvements to walking, cycling and public transport services.
- It provides additional river crossing with **connectivity back to the city** either side of the bridge crossing
- It facilitates **improved city centre environment** for all due to reduced congestion, thus **encouraging walking and cycling** as safe transport modes

Numerous alternatives have been considered. However, the alternatives are more damaging in terms of property demolitions and other potential environmental impacts in comparison to the proposed N6 GCRR.

The proposed N6 GCRR is the optimum solution for a new road and is consistent with proper planning and sustainable development. This view is supported and validated by recent inclusion of policy support for both GTS and constituent measures, including the proposed N6 GCRR, in the relevant Galway Development Plans.

11 What Happens Next?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Urban
Living
Terryland
Living
New Mixed Use
Quarter
Financial
Quarter
Galway
Retail Centre
City centre

11 What Happens Next?

A copy of the updated EIA Report and the updated Natura Impact Statement (NIS) for the Project are available to view or download from www.N6GalwayCityRingRoad.ie

The maps and schedules associated with the statutory Schemes are also available on

www.N6GalwayCityRingRoad.ie

All other documentation pertaining to this response to the 2025 RFI is available on

www.N6GalwayCityRingRoad.ie

An Bord Pleanála (ABP) must consider the updated information before making a decision on whether to grant approval to the proposed N6 GCRR. ABP may approve the N6 Galway City Ring Road Scheme or any part thereof under Section 51 of the Roads Act 1993 as amended, with or without conditions or modifications or may refuse to approve such development or any part thereof.

Subject to ABP approval, availability of funding and no legal challenges, the Project then advances to land purchase, detailed design, the procurement of a contractor and, ultimately, the construction phase.

www.n6galwaycity.ie

N6 Galway City Ring Road
Updated Environmental Impact Assessment Report (EIAR)