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UPDATED PROVISION OF INFORMATION FOR APPROPRIATE ASSESSMENT SCREENING FOR

N6 GALWAY CITY RING ROAD

Project Reference	Status	Author	Reviewed By	Approved By	Issue Date
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1. Introduction

Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the Habitats Directive) requires that, any plan or project not directly connected with or necessary to the management of European sites[1], but likely to have significant effects thereon, either individually or in combination with other plans or projects, shall be subject to Appropriate Assessment (AA) of its implications for the European sites in view of their conservation objectives. The requirements of Article 6(3) of the Habitats Directive, as relevant to this Project, have been transposed into Irish law by Part XAB of the Planning and Development Act 2000 (as amended).

Galway County Council on behalf of itself and on behalf of Galway City Council pursuant to a Section 85 Agreement[2] submitted an application for approval under Section 51 of the Roads Act 1993 (as amended) (the "Section 51 Application") for the proposed N6 Galway City Ring Road around Galway City, hereafter referred to as the proposed N6 GCRR 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 (2018 AA Screening Report) and a Natura Impact Statement (2018 NIS) among other documentation submitted to An Bord Pleanála 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 An Bord Pleanála (ABP) for approval under Section 49 of the Roads Act 1993, (as amended).

Following a Request for Further Information issued in April 2019 (a detailed response to which was submitted by Galway County Council in August 2019[3]), and an Oral Hearing held between February 2020 and November 2020[4] (having been interrupted by the Covid-19 pandemic), 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, one of which includes the removal of the stables at Galway Racecourse)[5].

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 for approval of the N6 GCRR was remitted back to ABP by the High Court on 30 January 2023.[6] In this regard the orders of the High Court stated that the applications for approval be remitted to the point of the conclusion of ABP's Inspector's Report.

[1] Natura 2000 sites are defined under the Habitats Directive (Article 3) as a European ecological network of special areas of conservation composed of sites hosting the natural habitat types listed in Annex I and habitats of the species listed in Annex

II. The aim of the network is to aid the long-term survival of Europe's most valuable and threatened species and habitats. In Ireland these sites are designed as European sites – as defined under the Planning and Development Acts and/or Birds and Habitats Regulations as (a) a candidate site of Community importance, (b) a site of Community importance, (c) a candidate special area of conservation, (d) a special area of conservation, (e) a candidate special protection area, or (f) a special protection area. They are commonly referred to in Ireland as candidate Special Areas of Conservation (cSACs) and Special Protection Areas (SPAs).

[2] A Section 85 Agreement has been entered into under the provisions of Section 85 of the Local Government Act 2001 between Galway County Council and Galway City Council and approved by Transport Infrastructure Ireland pursuant to Section 14 of the Roads Act 1993, as amended.

[3] http://n6galwaycityringroad.ie/Response/.

[4] In response to queries raised during the oral hearing by the inspectors appointed by An Bord Pleanala, statutory consultees and members of the public in attendance at the oral hearing, various supplemental reports were prepared and information provided, all of which were submitted to An Bord Pleanála and are available at: http://n6galwaycityringroad.ie/

[5] https://www.pleanala.ie/en-ie/case/302848 and https://www.pleanala.ie/en-ie/case/302885

[6] https://www.n6galwaycityringroad.ie/sites/default/files/media/Order%20-%20Friends%20of%20the%20Irish%20Environment%20JR.pdf

On 7 December 2023, ABP requested further information (RFI) (Ref: ABP-318220-237) from Galway County Council in relation to the application for approval of the proposed N6 GCRR as follows:

- Having regard to the passage of time since the applications were lodged and the decisions made by the Board you are invited to update the motorway scheme application and the proposed road development application
- Make submissions in relation to the most recent Climate Action Plan and the implications of the new Galway City Development Plan
- Update the Environmental Impact Assessment Report
- Update the appropriate assessment screening document and the Natura Impact Statement including updated site conversation objectives

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 these 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 application for planning permission by Galway Race Committee Trust to Galway City Council (Reference 24/60279) and as set out in the grant of permission, it will only be implemented if the proposed N6 GCRR is granted approval by An Bord Pleanála and is proceeding. Equally, the permanent stables cannot be constructed until post completion of construction and handover of the operational N6 GCRR. This has resulted in the requirement for temporary stables for the continued operation of the racecourse during the demolition of the existing stables and the commissioning of the new permanent replacement stables. These temporary stables are therefore required to be fully operational before the demolition of the existing stables commences. 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 the updated EIAR and in the updated AA Screening Report and this updated NIS. Therefore, the term Project, when used throughout this updated NIS, refers to combination of the proposed N6 GCRR and the proposed development at Galway Racecourse.

This updated Provision of Information for Appropriate Assessment Screening, hereafter referred to as updated AA Screening Report, which contains information to assist the competent authorities, to undertake screening for AA in respect of the Project, was prepared by Scott Cawley Ltd. It provides information and appraises the potential, in view of best scientific knowledge, for the Project to have significant effects, either individually or in combination with other plans or projects, on any European sites.

This updated AA Screening Report has been prepared in response to the first element of item 4 in the above request for further information, and provides information to enable the Competent Authority to undertake screening for AA in respect of the Project.

[7] 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

2. Methodology

2.1 Guidance and Approach

This report has been prepared with regard to the following guidance documents, where relevant, reflecting the most recent documents and/or guidelines:

European Commission Guidance

- *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission, 2021)*
- *Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (European Commission, 2019)*
- *Communication from the Commission on the precautionary principle. European Commission (European Commission, 2000)*

Irish Guidance

- *OPR Practice Note PN01. Appropriate Assessment Screening for Development Management (Office of the Planning Regulator, 2021)*
- *Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities. (Department of Environment, Heritage and Local Government, 2010 revision)*
- *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10 (NPWS, 2010)*

Other general guidance on ecological impact assessment which has informed the assessment in this report, includes:

- *Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018)*
- *Environmental Guidelines Series for Planning and Construction of National Roads (National Roads Authority, 2005-2009)*
- *Environmental Impact Assessment of National Road Schemes – A Practical Guide (National Road Authority, 2008)*
- *Guidelines for Assessment of Ecological Impacts of National Roads Schemes*
- *(National Road Authority, 2009)*
- *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission, 2013)*
- *Environmental Impact Assessment of Projects guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017)*

2.2 Desktop Study

The desktop data sources, reflecting the most recent available sources, used in the compilation of this updated screening for Appropriate Assessment are listed below:

- Results of ecological surveys undertaken between 2022 and 2024 to inform the updated Environmental Impact Assessment Report (EIAR) and updated Natura Impact Statement (NIS)
- Results of ecological surveys undertaken to inform the 2018 EIAR and 2018 NIS

- The results of ecological surveys undertaken as part of the route selection studies for the proposed N6 Galway City Ring Road (*N6 Galway City Transport Project: Route Selection Report* (Arup, 2016)[8])
- The results of bird surveys carried out for the 2006 N6 Galway City Outer Bypass EIS (RPS, 2006)
- Ordnance Survey of Ireland mapping and aerial photography available from www.osi.ie
- Online data available on European sites, including habitat and species GIS datasets, and conservation objectives (and supporting) documents, as held by the National Parks and Wildlife Service (NPWS) from www.npws.ie
- Online protected species datasets held by the National Biodiversity Data Centre from http://maps.biodiversityireland.ie
- Environmental information/data for the area available from www.epa.ie (Envision Online Environmental Map Viewer - http://gis.epa.ie)
- Information on the status of EU protected habitats and species in Ireland (NPWS, 2019a, 2019b and 2019c)

2.3 Screening Assessment Methodology

The screening for Appropriate Assessment test is as follows: can any likelihood of the Project giving rise to significant effects on any European sites be ruled out?

This is assessed in consideration of the nature of the Project and its potential relationship with European sites in view of their conservation objectives, as well as considering other plans and projects, and applying the precautionary principle. The risk of the Project having a significant effect on any European site(s) is assessed in the absence of considering any mitigation measures that may be required to avoid, reduce or remedy any potential impact.

The following process was followed in this updated AA Screening Report to assist in answering this question:

- Establishing whether the Project is directly connected with, or necessary to, the conservation management of any European sites[9]
- Describing the Project
- Defining the Zone of Influence (ZoI) of the Project. The ZoI is the effect area over which impacts to European sites may occur, defined through identifying potential impact pathways between the Project and European sites, in consideration of the nature of the Project and how it could affect European sites' conservation objectives. In general terms, a European site's conservation objectives are to maintain or restore the favourable conservation condition of the Qualifying Interest (QI) habitats and/or species. QI habitats and species are those habitats and species for which European sites have been selected and are the basis of European sites' designations. In the case of SPAs the reasons for designation of these sites are generally known as Special Conservation Interests (SCIs) rather than QIs (although throughout this document may for simplicity have been on occasions referred to as QIs). Where detailed site specific conservation objectives for European sites have been published by the NPWS, the favourable conservation condition of a European site's QI habitats and/or QI/SCI species are defined in the site's conservation objectives as a set of specific attributes, measures and targets
- Identifying the European sites which lie within the ZoI of the Project and are potentially, or likely, to be subject to significant effects in view of their conservation objectives which, in general terms, relate to maintaining or restoring the favourable conservation condition of the species and habitats for which the European sites are designated

[8] The Route Selection Report is available from http://www.n6galwaycity.ie

[9] In this instance the Project is not directly connected with or necessary to the conservation management of any European Sites.

- Identifying any other plans or projects that may act in-combination to significantly affect any European sites

3. Provision of Information for Screening for Appropriate Assessment

3.1 Description of the Project

3.1.1 Project Phases

The Project comprises five phases, which are as follows:

- Phase 1: These works do not form part of the development of which approval is sought as part of the Section 51 Application for the proposed N6 GCRR, however Phase 1 does form part of the Project and has been considered and assessed for EIA and AA purposes. Works undertaken as part of Phase 1 will include the 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: Works undertaken as part of Phase 2 will include the following:
  - The provision 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
  - Existing stableyard at the racecourse to be demolished, including existing well, existing water tank, machinery shed and adjacent car parking.
  - Existing commercial building on the lands the subject matter of the N6 Galway City Ring Road Motorway Scheme 2018 to the north of the Galway Racecourse to be demolished and the site cleared.
  - Existing horse box parking off Racecourse Avenue to be demolished, including removal of existing access arrangement to the Ballybrit graveyard, to accommodate the Galway Racecourse Tunnel as part of the proposed N6 GCRR.
- Phase 3: Again, these 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, however Phase 3 does form part of the Project and has been considered and assessed for EIA and AA purposes. Works undertaken as part of Phase 3 will include construction of the new permanent stableyard upon completion and handover of the proposed N6 GCRR.
- Phase 4: These 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, however Phase 4 does form part of the Project and has been considered and assessed for EIA and AA purposes. Works undertaken as part of Phase 4 will include demolition of the temporary stableyard constructed in Phase 1 and reinstate the site of temporary stableyard as car parking. Retain ESB sub-station, pavilion, machinery shed, maintenance shed and pre-parade ring.
- Phase 5: Relates to the operation of the Project.

3.1.2 Description of Phase 2: Proposed N6 GCRR

The proposed N6 GCRR, the subject of the Section 51 Application, comprises of the construction of approximately 5.6km of a single carriageway from the western side of Bearna as far as the Ballymoneen Road and approximately 11.9km of a dual carriageway from there to the eastern tie in with the existing N6 at Coolagh, Briarhill, along with associated link roads, side roads, junctions and structures and localised works

to the existing electricity transmission and distribution networks (specifically comprising of the diversion of 110kV and 38kV services), as shown in Plate 1.

The total area within the Assessment Boundary is 334ha. The total area within the footprint of the development 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. Of this total area, an area of 180ha is required for the footprint of the proposed N6 GCRR.

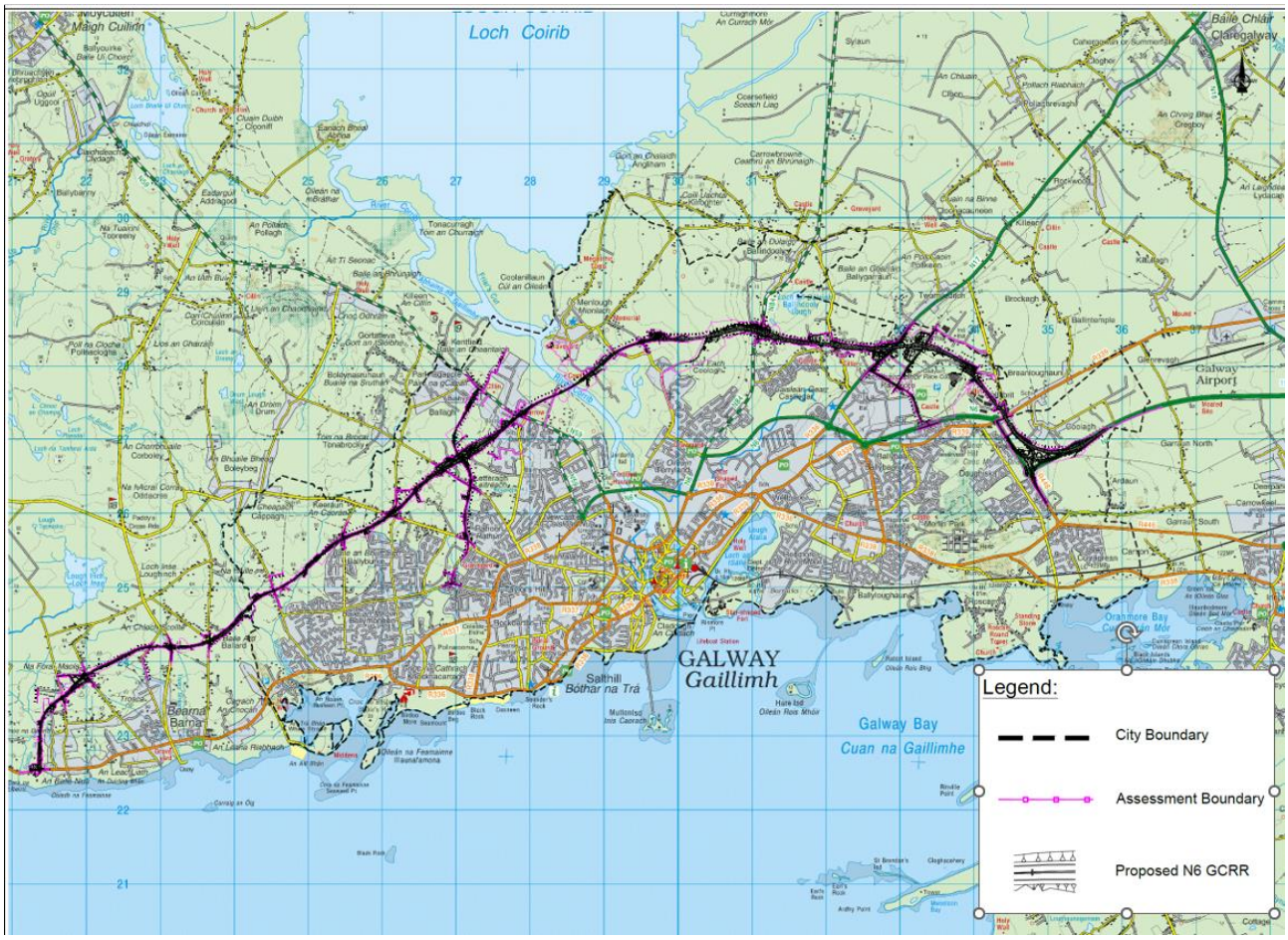

Plate 1 Project Overview

The proposed N6 GCRR follows the alignment as submitted in the Section 51 Application in 2018 for the majority of its length, but also takes account of the modifications outlined below. These modifications are described sequentially in this Section as they occur across the length 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 Road L1321. An at-grade roundabout is proposed at the Bearna to Moycullen Road L1321, and at-grade signalised junctions are proposed at Cappagh Road and Ballymoneen Road. 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 with a grade separated N59 Letteragh Junction located in Letteragh. The 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 University of Galway Sporting Campus before crossing the River Corrib (and Lough Corrib SAC) on a bridge structure. The total length of the structure

through the University of Galway Sporting Campus and over the River Corrib Bridge is 620m. The width of the bridge structure across the River Corrib is 21m. The footprint of the proposed N6 GCRR widens to 27.5m on the eastern bank of the River Corrib and within the Lough Corrib SAC between Ch. 9+250 to Ch. 9+550 widens to a maximum width of approximately 90m to allow for the road embankment and drainage design (refer Plate 2 below). There is no road lighting proposed along this section of the proposed N6 GCRR.

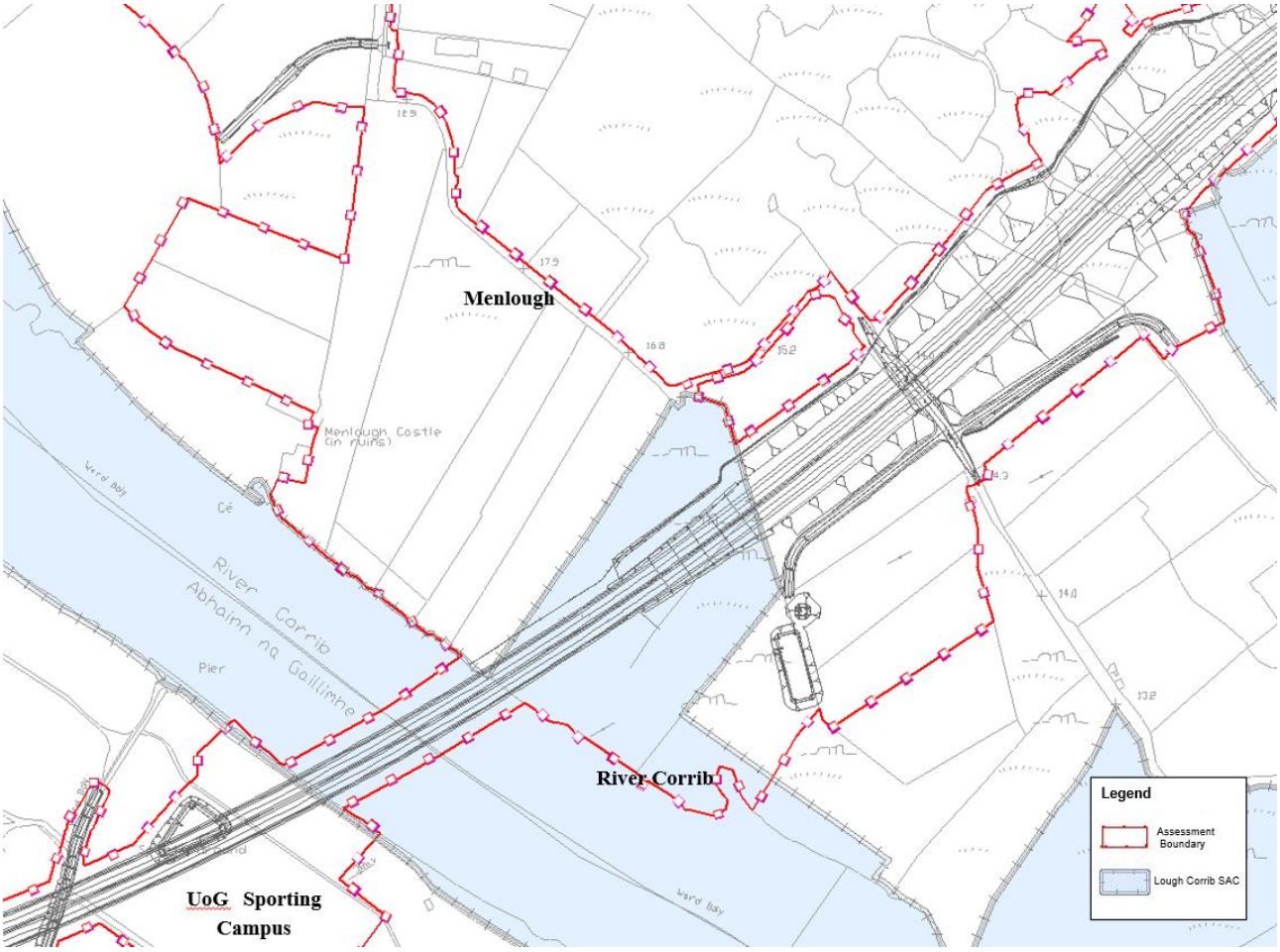

Plate 2 Project Ch. 9+250 to Ch. 9+550

The University of Galway (UoG) Sports Pavilion will be modified and will continue to function as a sports facility during and post construction. The modifications to the Sports Pavilion at UoG Sporting Campus will be undertaken as enabling works during the summer period prior to commencement of the construction of the proposed N6 GCRR. Welfare facilities at the Sports Pavilion at UoG Sporting Campus will be maintained throughout the construction works.

The Section 51 Application for the N6 GCRR submitted in 2018 included the provision of an all-weather full size GAA pitch and a training pitch at the location of the existing GAA pitches at University of Galway (UoG) Sporting Campus due to the loss of the two number grass based GAA sized playing pitches adjacent to the River Corrib. However, after the Section 51 Application was made to ABP in 2018 UoG completed their University Sports Masterplan and strategy and identified their requirements and plans for the University Sporting Campus. UoG confirmed at the oral hearing in February 2020 that they do not want the mitigation measures originally proposed in the 2018 EIAR and subsequently obtained planning permission from Galway City Council Ref 19/372 which was appealed to ABP Ref ABP-308412-20 for replacement pitches. ABP upheld the decision of Galway City Council and granted permission for the replacement pitches on 19 February 2021. These pitches are at an alternative location on UoG lands in line with their strategy and for UoG to mitigate the impacts of the proposed N6 GCRR on their sports campus and to ensure its continued operation to its requirements and in accordance with its masterplan and strategy. To ensure interconnection

for UoG Sporting Campus post completion of the construction of the proposed N6 GCRR, Galway County Council will provide a right of way for UoG to use the lands under the proposed viaduct for sporting/athletic purposes by way of a long term lease. This commitment has been included in the Schedule of Environmental Commitments.

East of the River Corrib, the proposed N6 GCRR continues east on embankment toward the townland of Menlough. Between Ch. 9+850 and Ch. 10+150 sections the proposed N6 GCRR lie within, or immediately adjacent to the Lough Corrib SAC (ref Plate 3 below). There is no road lighting proposed along this section of the proposed N6 GCRR.

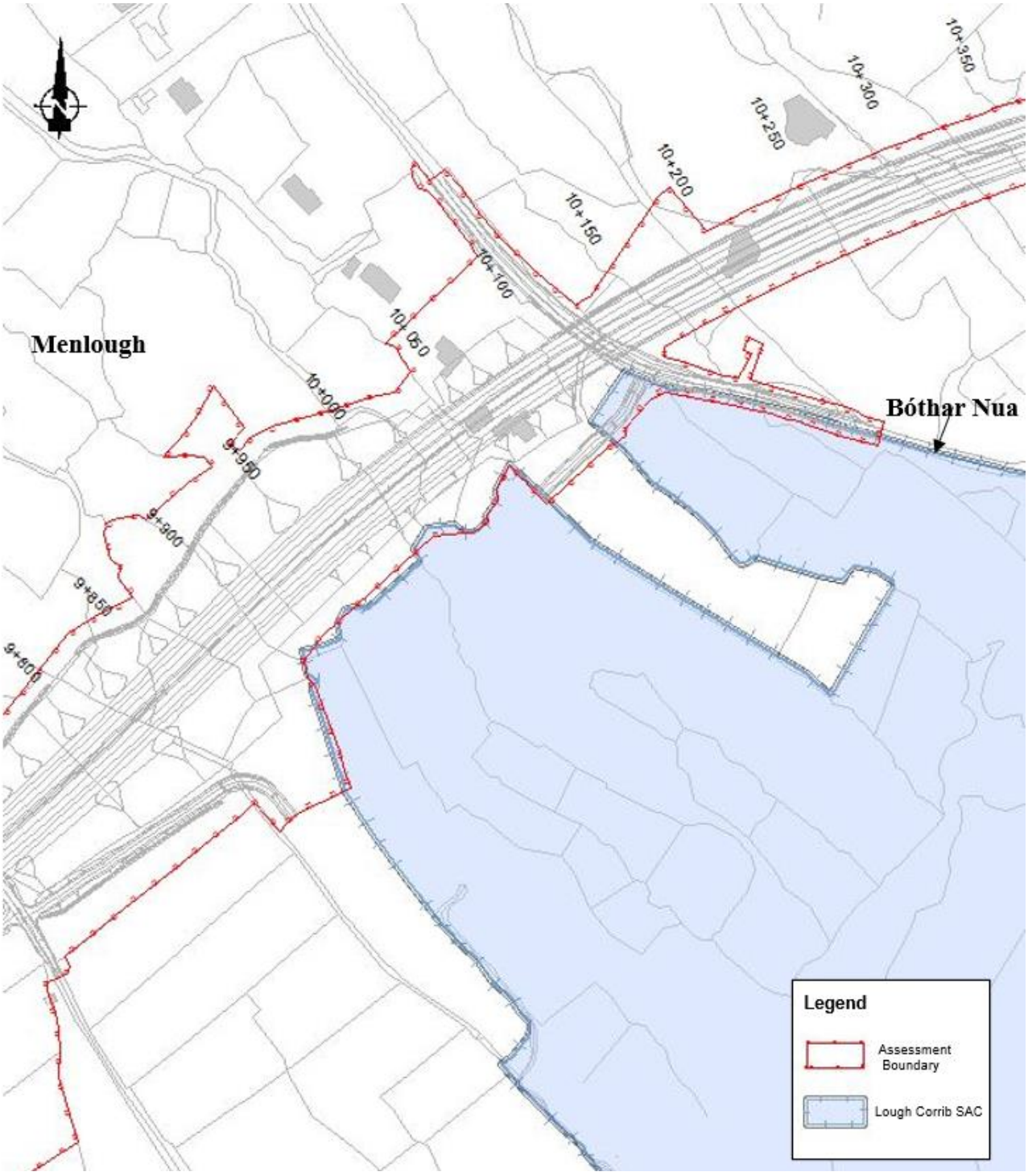

Plate 3 Project Ch. 9+850 to Ch. 10+150

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 mitigate against potential impacts to this species. These lands will be planted with additional hedgerows and maintained as agricultural lands by the local authority and will remain in their ownership.

Continuing east the proposed N6 GCRR crosses over Bóthar Nua in the townland of Menlough and remains on a viaduct section, the Menlough Viaduct (320m length), towards Seanbóthar before entering a section of cut preceding Lackagh Tunnel (length 205m), immediately west of Lackagh Quarry, and exits the tunnel in the quarry. The western approach to Lackagh Tunnel and the associated drainage lies partly within Lough Corrib SAC (Ch. 10+600 to Ch. 11+00), with the tunnel itself passing beneath the SAC (Ch. 10+150 to Ch. 11+400, refer Plate 4 below). There is no road lighting proposed along this section of the proposed N6 GCRR.

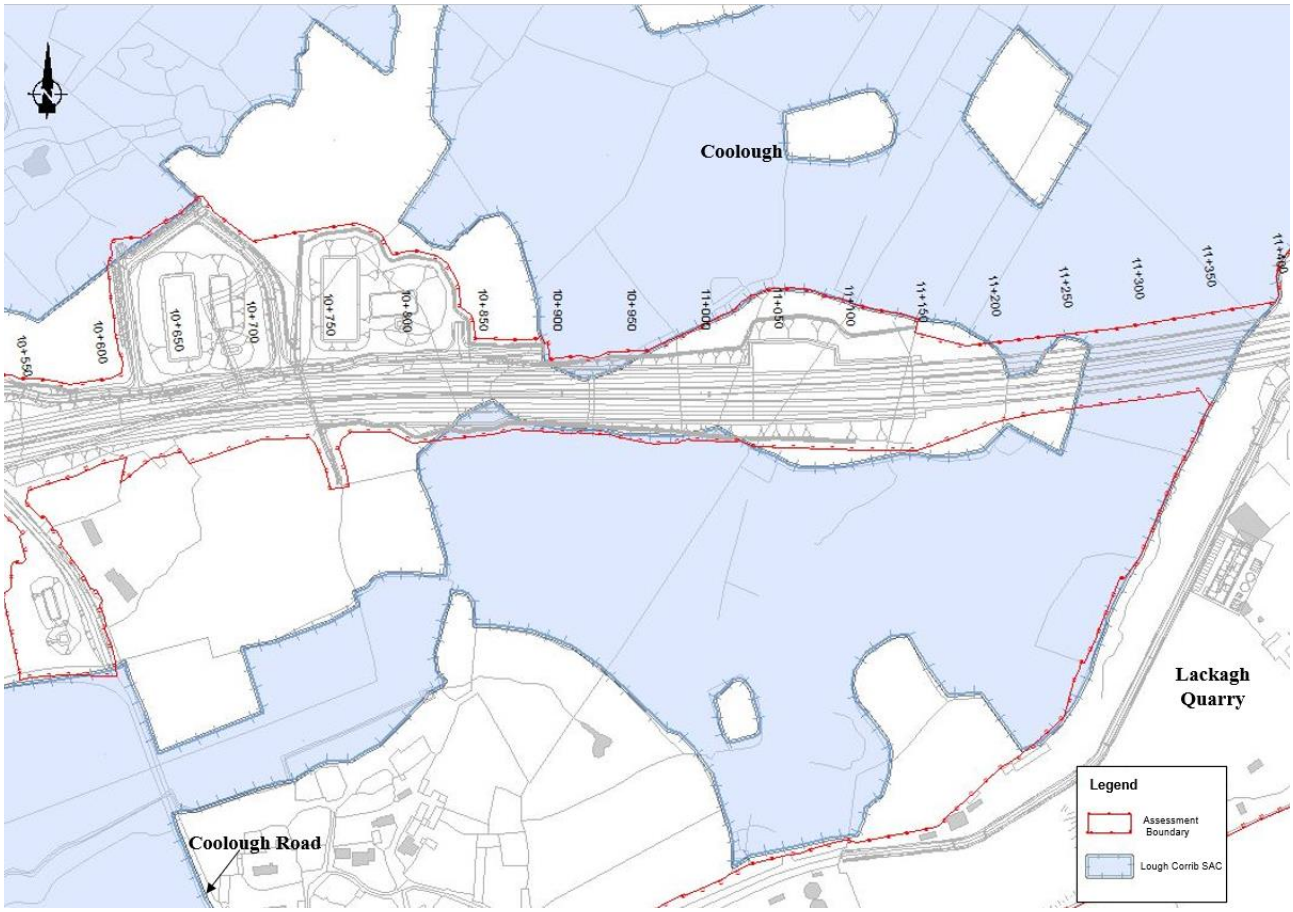

Plate 4 Project Ch. 10+260 to Ch. 11+420

The proposed N6 GCRR continues east 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 southern portion of the Parkmore Link Road was originally routed along an existing IDA road passing between Boston Scientific and Hewlett Packard and the old APC site in the Section 51 Application for the proposed N6 GCRR submitted in 2018. However, Boston Scientific subsequently acquired the site formerly occupied by APC which allowed them to expand their activities at this location to both sides of the IDA road and brought this vacant industrial building back into a high value use. The route of what was originally proposed for the Parkmore Link Road as set out in the 2018 EIAR created a conflict with necessary daily movements of both people and plant between Boston Scientific activities to the east and west of the proposed link road. In developing its masterplan for the expanded campus Boston Scientific proposed a new route for the section of the Parkmore Link Road within their lands at the oral hearing in 2020 which served the

transport functionality of the original proposal and achieved the objectives of the original alignment as follows:

- Provides the necessary link for the public transport network envisaged in the GTS and as detailed in the updated EIAR, our analysis indicates it would also be envisaged in any update to the GTS
- Provides dedicated cycle lanes as required of the primary cycle network in the GTS (and as detailed in the updated EIAR, our analysis indicates it would also be envisaged in any update to the GTS), and pedestrian facilities are also provided
- Provides a connection to the proposed N6 GCRR to enable dispersal of traffic directly to its destination

In achieving the objectives set out, it enables the type of compact employment centre located where it is easily accessed by active and public transport modes from the city's residential area. The alignment of the southern portion of the Parkmore Link Road is retained in accordance with the modification presented at the oral hearing in 2020 and for which the local authority sought such a modification (and this modification did form part of the Section 51 Approval that was since quashed and remitted back to An Bord Pleanála).

The proposed N6 GCRR then continues southeast entering the Galway Racecourse Tunnel (length 230m) at Ballybrit to the north of the racetrack which results in the demolition of the existing stables (Phase 1 of the Project). There is a tunnel maintenance building located adjacent to the Galway Racecourse Tunnel

On emerging from the tunnel the proposed N6 GCRR continues southeast, crossing over the R339 Monivea Road on embankment and continuing south to enter a cutting as it reaches its junction with the existing N6 at Coolagh Junction. The proposed Coolagh Junction will be a fully grade separated junction with partial free flow on the major movements.

The proposed N6 GCRR will also include extensive landscape planting and the creation of Annex I habitat areas[10] (e.g. Calcareous grassland habitat within Lough Corrib SAC on the east bank of the River Corrib). Noise barriers will also be installed at locations along the Project.

Drainage for the Proposed N6 GCRR

The Project involves the construction of a new drainage system which includes the provision of a surface water collection system, earthworks drainage, sub-surface drainage, attenuation and pollution control, and the culverting of existing streams. The Project has been designed such that surface water drainage and sub-surface drainage will be provided for the proposed N6 GCRR mainline carriageway, junctions, link roads and all new sections of local roads.

Due to the contrasting geological features across the Project extent, the type of natural drainage can be split into two different broad categories west and east of the N59 Moycullen Road.

- The natural discharge of rainfall and surface water drainage west of the N59 Moycullen Road is overland to low points in the topography where shallow ditches and streams are present. The underlying bedrock is granite. This is a low importance, poor aquifer where the bedrock is generally unproductive except for local zones. In general the water table is quite close to the surface.
- The natural discharge of rainfall and surface water drainage east of the N59 Moycullen Road is directly to ground with extreme events accumulating at low points and seasonal lakes within the topography. The underlying bedrock is limestone. The aquifer is a regionally important karstified aquifer which is dominated by conduit flow. Except for the River Corrib, Terryland River, Ballindooley Lough and Coolagh Lakes there are no other significant waterbodies in the area east of the N59 Moycullen Road.

The two different categories of natural drainage informs the approach to drainage design for Phase 2 of the Project, i.e. the proposed N6 GCRR. As well as the efficient removal of water from the road surface and pavement, the drainage design aims to minimise the impact of runoff from the proposed N6 GCRR on the

[10] The Annex I habitat creation relates to addressing residual impacts to Annex I habitats outside of any European sites in the EIA Report. It is not in response to any impacts on Annex I habitats that relate in any way to effects on QIs or the conservation objectives of any European sites and that habitat creation does not constitute "compensatory measures" in the meaning of that term in Article 6(4) of the Habitats Directive.

receiving environment by replicating, as much as possible, the natural water flows across the proposed N6 GCRR. This is achieved using a variety of sustainable drainage measures.

All surface water collected by the proposed N6 GCRR will be discharged to watercourses or existing storm sewers crossed by or adjacent to the proposed N6 GCRR, if present, or will be discharged to ground via infiltration. Flow control measures will be provided at outfalls and discharge points along the length of the mainline of the proposed N6 GCRR to ensure discharge does not cause any adverse effects upstream or downstream of the receiving watercourse or sewer, in terms of flow rate. Infiltration basins have been sized to allow sufficient time for infiltration to discharge to the ground. Pollution control measures will be provided on all mainline road drainage networks prior to outfalling/discharging to ensure that receiving water bodies are not contaminated by runoff from the proposed N6 GCRR.

In summary, the design basis for the drainage strategy is as follows:

- West of the N59 Moycullen Road the surface water collected by the carriageway drainage system will be discharged into watercourses crossed by, or adjacent to, the Project that eventually outfall to Galway Bay or the River Corrib. A number of these watercourses outfall to either the area of Galway Bay that is within the Galway Bay Complex SAC and Inner Galway Bay SPA, or to the River Corrib, either directly or to a tributary, which is within the Lough Corrib SAC.
- East of the N59 Moycullen Road the surface water collected by the carriageway drainage system will be discharged to ground via infiltration, with the exception of two drainage networks (S18A and S18B) which will discharge directly to the River Corrib and three networks (S14A, S14B and S15) which discharge to tributaries which eventually outfall to the River Corrib. The proposed drainage outfall from the N59 Link Road North will discharge to a drainage ditch in Lough Corrib SAC at Kentfield (ref Plate 5 below). One infiltration basin for the drainage design (outfall S19B) is within the Lough Corrib SAC and the groundwater to which this and other infiltration basins discharge interacts with the groundwater and water bodies within the Lough Corrib SAC.
- The drainage design will include combined filter drains, carrier drains, surface water channels, narrow filter drains, cut-off and toe drains, attenuation ponds, grassed surface water channels, petrol and oil interceptors, wetlands and infiltration basins.

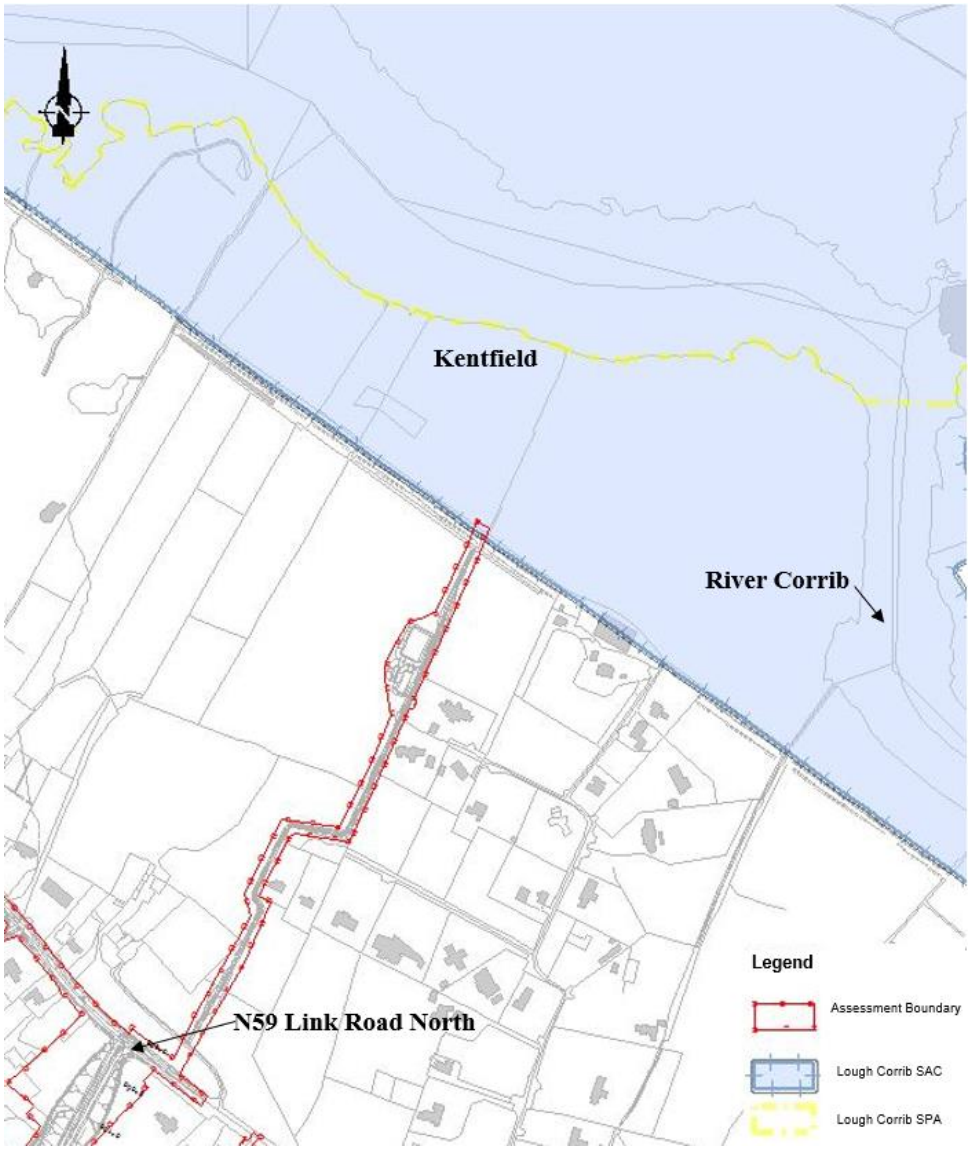

Plate 5 Project at Kentfield

3.1.3 Modifications Since 2018

Further to the submission of the Section 51 Application for the proposed N6 GCRR in 2018 and the subsequent response to the Request for Further Information in 2019, certain modifications and their associated environmental assessments were presented on the proposed N6 GCRR at the commencement of the oral hearing before An Bord Pleanála in February 2020 namely:

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

Further modifications to the proposed N6 GCRR were proposed during the oral hearing in 2020 and were presented on a series of drawings which were included in the Schedule of Commitments on 4 November 2020[11]. This suite of drawings was originally included in Appendix A.9.1 of the 2019 RFI and they were updated during the oral hearing. The final version of these drawings is shown as Figures 5.6.01 to 5.6.30 in Volume 3 of the updated EIAR. The changes proposed during the oral hearing are as follows:

[11] https://www.n6galwaycityringroad.ie/sites/default/files/media/GCRR-4.04-019_002%20Chapter%2021%20SoC_I2_Final%2004112020.pdf

- Additional access to severed lands for property 106 proposed from Access Road AR 0/02 as shown on Figure 5.6.01 in Volume 3 of the updated EIAR
- Access Road AR 1/01 was amended to facilitate access to properties 131 and 7891 as agreed with these property owners and shown on Figure 5.6.02 in Volume 3 of the updated EIAR
- Access Road AR 7/04 was extended further west to provide access to lands severed by a stream which is shown on Figure 5.6.02 in Volume 3 of the updated EIAR
- Connection between Access Road 13/06 and the N83 Tuam Road for pedestrians which is shown on Figure 5.6.18 in Volume 3 of the updated EIAR
- Changes to land ownership boundary details and/or property extents which are reflected in proposed modifications to the Motorway Scheme (Part II of the 2025 RFI Response) and Protected Road Scheme (Part III of this 2025 RFI Response) and Figures 5.6.01 to 5.6.30 in Volume 3 of the updated EIAR
- Some permanent land acquisition was changed to temporary acquisition which is reflected in proposed modifications to the Motorway Scheme (Part II of this 2025 RFI Response) and Protected Road Scheme (Part III of this 2025 RFI Response) and Figures 5.6.01 to 5.6.30 in Volume 3 of the updated EIAR
- Some land proposed to be acquired was removed which is reflected in proposed modifications to the Motorway Scheme (Part II) and Protected Road Scheme (Part III) of this 2025 RFI Response
- Additional cycle paths and footpaths were added at Gort na Bró as set out in Drawing GCRR-SK-OH-054 in the Schedule of Commitments on 4 November 2020. This is reflected in the updated series of drawings showing the Pedestrian and Cycle Facilities in Figures 5.7.12 to 5.7.13 of Volume 3 of the updated EIAR. These were originally included in Appendix A.1.13 of the 2019 RFI

A further modification was made post oral hearing based on the decision of ABP Board Order ABP-302885-18:

- Access Road AR 13/02 amended to minimise impacts on landowner while providing access to adjoining landowner as shown in Figure 5.6.17 in Volume 3 of this updated EIAR.

A further modification was made as a result of the grant of approval by ABP for a development, Glenveagh Large-scale residential development (LRD), at Gort na Bró, Knocknacarra, noting that the approval has subsequently been challenged in judicial review proceedings. This modification includes a bus bay on the southern side of the access road AR 06/04 into Galway Retail Park to align with the proposed bus bay in the LRD development, and all is possible within the proposed land acquisition within the N6 Galway City Ring Road Protected Road Scheme 2018:

- Access Road AR 06/04 amended to add a bus bay to reflect the design of the Knocknacarra District Centre Large-scale Residential Development (LRD) which obtained approval from ABP reference ABP-318687-23. This is shown on Figure 5.7.13 in Volume 3 of the EIAR

Further, the decision of An Bord Pleanála on the Section 51 Application for the proposed N6 GCRR on 6 December 2021, reference ABP-302848-18, conditioned the omission of the permanent stables at Galway Racecourse. Arising from this decision, Galway Race Committee Trust has, in order to mitigate the significant impacts of the proposed N6 GCRR on the operation of the racecourse and to ensure the continued operation of the racecourse, separately sought planning permission for replacement temporary and permanent stables, and associated development, and that application (Reference 24/60279) was granted approval by Galway City Council on 2 December 2024.

Galway Race Committee Trust in its application confirmed that that separate planning application will only be implemented if the development of the proposed N6 GCRR obtains approval and is proceeding and this is reflected in the conditions attached to the grant of planning permission by Galway City Council.

All these modifications are reflected in the updated documents submitted to An Bord Pleanála in the response to the request for further information and have been taken into account in the assessment of the Project in the updated EIAR and in this updated AA Screening Report.

3.1.4 Description of Phases 1, 3, 4 and 5: Proposed Development at Galway Racecourse

Whilst Phase 1, Phase 3 and Phase 4 of this Project are subject to a separate development consent process for which planning permission has been granted as mentioned above, those phases form part of the Project that has been considered and assessed for AA purposes in this updated AA Screening Report and the updated NIS (and for EIA purposes in the updated EIAR). These phases relate to the provision of temporary and permanent stables for Galway Racecourse arising from the demolition of the stables to facilitate the construction and operation of the proposed N6 GCRR and so that the racecourse can mitigate against the impacts of the proposed N6 GCRR on the operation of the racecourse and ensure its continued operation.

All works required for the diversion or protection of any of the services in conflict with all phases of the Project have been confirmed with each of the service providers.

3.1.4.1 Phase 1

Phase 1 includes the construction of a temporary stableyard including horsebox parking, machinery shed, maintenance shed, ESB substation, two wells, new pre-parade ring and pavilion on Galway Racecourse lands.

The proposed temporary stables are to be located on an existing grassed area in the centre of the racetrack i.e. the infield. The temporary stableyard will consist of 159 No. stables; vet, security, storage facilities and groom's pavilion and 61 No. horsebox parking spaces.

The machinery storage shed is located to the east of the temporary stables on an area currently used to store sand and grit for use around the Racecourse. A pre-parade ring will be provided to the east of the existing pre-parade ring. A maintenance shed will be provided to the east of the proposed pre-parade ring to replace the existing maintenance shed that will be demolished as part of Phase 2.

Two proposed wells for water supply for track watering will be provided in the existing horsebox parking area to replace the existing water tank within the existing stableyard that will be demolished as part of Phase 2.

An ESB substation will be provided to the rear of the proposed maintenance shed, as well as associated internal roads, drainage, site, utilities connection and landscape works will be undertaken. The external corridors of the temporary stable courtyards will be lit by dimmable LED surface mounted luminaires.

The layout of the proposed temporary stableyard and associated works is shown in Appendix A.5.3 of the updated EIAR contains the full details of the proposed development at Galway Racecourse.

Similar to the carriageway drainage, a surface water collection system will be provided in both locations. The temporary stables discharges to a natural 'swallow hole' feature in the infield area of racecourse and caters for storm events up to the 1 in 100 year return period storm event, with a limited discharge of 5l/s The proposed system incorporates critical elements of a sustainable drainage (SuDS) treatment train comprising source control (green roof system), water quality improvements (green roof system), runoff volume reduction (green roof system), runoff rate control (hydrobrake flow control) and attenuation storage (attenuation pond).

3.1.4.2 Phase 3

Phase 3 comprises the construction of the new permanent stableyard including horsebox parking post handover of the proposed N6 GCRR.

The permanent stableyard will consist of 152 No. stables; vet, security, storage facilities and Groom's Pavilion, and horsebox parking.

The permanent stables will be constructed on a brownfield site and has two outfall locations. The parking area will incorporate a Grasscrete GC1 system to facilitate a reduction in the hardstanding area and make a provision for attenuation, prior to discharging into the existing track drainage network, which discharges to the 'swallow hole' noted above. The main stable yard and buildings will discharge to the proposed diverted combined sewer via a flow control to reduce the existing flow rates to the existing network.

The drainage networks are designed to include an increase of 20% in rainfall depth to cater for the impact of climate change.

The external corridors of the temporary stable courtyards will be lit by dimmable LED surface mounted luminaires.

3.1.4.3 Phase 4

Phase 4 comprises the demolition of the temporary stables constructed in Phase 1.

The above ground structures of the stables will be demolished and removed. However, the bases beneath the temporary stables will be retained and reinstated as car parking. The rubberised surface in the temporary stableyard will be removed and this area will be repurposed as the circulatory area for carparking.

The drainage features installed as part of Phase 1 will be retained for attenuation of this repurposed parking area plus attenuation of a portion of the permanent stables installed during Phase 3.

The horsebox parking spaces will be redesignated for car parking post demolition of the temporary stables.

The ESB sub-station, pavilion, machinery shed, maintenance shed, well and pre-parade ring constructed as part of Phase 1 are retained.

3.1.4.4 Phase 5

Phase 5 is the fully operational N6 GCRR and the fully operational permeant stables.

3.2 Existing Ecological Baseline

3.2.1 European Sites

There are many European sites present in the local and surrounding areas. Lough Corrib SAC is the only European site traversed by the Project. Galway Bay Complex SAC and Inner Galway Bay SPA are downstream of the Project. Galway Bay Complex SAC lies c.145m to the south of the Project at Bearna. Inner Galway Bay SPA also lies to the south of the Project (c.1.1km). Lough Corrib SPA is c.190m to the north of the Project at Kentfield and c.70m from the Project at Menlough. While Lough Corrib SPA is generally upstream of the Project, a single outfall (the proposed drainage outfall for the N59 Link Road North) eventually discharges to a part of the River Corrib which falls within the SPA designation. All other European sites are at a greater distance from the Project.

The Project and its Assessment Boundary overlaps with, i.e. traverses through or adjacent to, the Lough Corrib SAC at four locations:

- at the termination of the proposed drainage outfall from the N59 Link Road North at Kentfield (refer to Plate 5)
- at the site of the proposed River Corrib Bridge between Dangan and Menlough (refer to Plate 2)
- to the west of the Coolagh Lakes (Ch. 9+850 to Ch. 10+100 of the proposed N6 GCRR) (refer to Plate 3)
- and, to the west and north of Lackagh Quarry where the Project will consist of a tunnel (Lackagh Tunnel) and approach road infrastructure (Ch. 10+620 to Ch. 11+800 of the proposed N6 GCRR) (refer to Plate 4)

There are 23 European sites (18 SACs and five SPAs) located within or in the vicinity of the ZoI for the Project (refer to Plate 6). This has increased from the 19 sites presented in the 2018 AA Screening Report, with the following additional sites now considered:

- Kilkieran Bay and Island SAC and Inishmore Island SAC - two nearby marine/coastal SACs, due to the recent evaluation and inclusion of cetacean QIs for various coastal and marine SACs in March 2024
- Maumturk Mountains SAC and The Twelve Bens / Garraun Complex SAC - the inclusion of two additional European sites on a precautionary basis based on the Appropriate Assessment undertaken by the Inspector appointed by ABP and appended to ABP's Inspector's Report date 22 June 2021

Updated traffic modelling has been undertaken dated 2024 which is set out in Appendix A to this updated AA Screening Report, which takes account of 2020 Census data, traffic surveys undertaken in November

2023 and an update of the planned and committed projects within the transport appraisal area, and forms the basis of the transport appraisal for the Project. This transport appraisal has informed this updated AA Screening Report and in particular has informed the identification of sites within the Zone of Influence of the Project (including any potential recreational pressure). Based on this updated traffic modelling, the following European Sites have been identified as being within the Zone of Influence of the Project for potential impacts arising from recreational pressure:

- Lough Corrib SAC
- Galway Bay Complex SAC
- Lough Corrib SPA
- Inner Galway Bay SPA
- Ardrahan Grassland SAC
- Castletaylor Complex SAC
- Maumturk Mountains SAC
- The Twelve Bens/Garraun Complex SAC
- Connemara Bog Complex SAC
- Connemara Bog Complex SPA
- Ross Lake and Woods SAC

For completeness, because the transport appraisal is based on an updated model, this list of sites differs from the list of sites identified as being within the ZoI for the planning application for the proposed development at Galway Racecourse (which application is referenced in Section 3.1.4 above). Specifically, based on the updated traffic modelling, Lough Rea SAC and Lough Rea SPA are outside the ZOI of the Project (including any potential recreational pressure), and there is no potential for this Project to have any impact on those European sites. For the same reason, although Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SAC and Rahasane Turlough SPA do fall within the ZOI of the Project, the updated traffic modelling, confirms that there is no potential for recreational pressure on those four sites, and therefore that particular pathway is not a reason for there being potential for impacts on those European sites as a result of the Project.

Table 1 below lists these sites, their distance from the Assessment Boundary for the Project, and the sites' Qualifying Interests/Special Conservation Interests. As discussed above, the Project traverses only one of these, namely Lough Corrib SAC.

Table 1 European sites (SACs and SPAs) in the vicinity of identified Zone of Influence (ZoI)

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
Special Areas of Conservation		
Lough Corrib SAC [000297]	Crossed by the proposed N6 GCRR	[1029] Freshwater pearl mussel *Margaritifera margaritifera* [1092] White-clawed crayfish *Austropotamobius pallipes* [1095] Sea lamprey *Petromyzon marinus* [1096] Brook lamprey *Lampetra planeri* [1106] Atlantic salmon *Salmo salar* (only in fresh water) [1303] Lesser horseshoe bat *Rhinolophus hipposideros*

[12] Distance in km/m from the Assessment Boundary

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
		[1355] Otter *Lutra lutra* [1393] Varnished hook-moss *Drepanocladus (Hamatocaulis) vernicosus* [1833] Slender naiad *Najas flexilis* [3110] Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae)* [3130] Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* [3140] Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (*important orchid sites) [6410] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [7110] * Active raised bogs [7120] Degraded raised bogs still capable of natural regeneration [7150] Depressions on peat substrates of the *Rhynchosporion* [7210] * Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7220] * Petrifying springs with tufa formation (*Cratoneurion*) [7230] Alkaline fens [8240] * Limestone pavements [91A0] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91D0] * Bog woodland *S.I. No. 384/2022 - European Union Habitats (Lough Corrib Special Area of Conservation 000297) Regulations 2022*. NPWS (2017a) *Conservation Objectives: Lough Corrib SAC 000297. Version 1*. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
Galway Bay Complex SAC [000268][13]	145m	[1140] Mudflats and sandflats not covered by seawater at low tide [1150] Coastal lagoons* [1160] Large shallow inlets and bays [1170] Reefs [1220] Perennial vegetation of stony banks [1230] Vegetated sea cliffs of the Atlantic and Baltic coasts [1310] Salicornia and other annuals colonising mud and sand [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1355] Otter *Lutra lutra* [1365] Harbour seal *Phoca vitulina* [1410] Mediterranean salt meadows (*Juncetalia maritimi)* [3180] Turloughs* [5130] *Juniperus communis* formations on heaths or calcareous grasslands

[13] Inner Galway Bay is also a Ramsar site, under the Ramsar Convention (Ramsar site No. 838) and is a marine protected site under the OSPAR Convention - Galway Bay Complex MPA (O-IE-0002969)

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
		[6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (*important orchid sites) [7210] Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae** [7230] Alkaline fens [8240] Limestone Pavements *S.I. No. 548/2021 - European Union Habitats (Galway Bay Complex Special Area of Conservation 000268) Regulations 2021.* NPWS (2013a) *Conservation Objectives: Galway Bay Complex SAC 000268. Version 1*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Connemara Bog Complex SAC [002034]	6.02km	[1065] Marsh fritillary butterfly *Euphydryas (Eurodryas, Hypodryas) aurinia* [1106] Atlantic salmon *Salmo salar* (only in fresh water) [1150] * Coastal lagoons [1170] Reefs [1355] Otter *Lutra lutra* [1833] Slender naiad *Najas flexilis* [3110] Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3130] Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or Isoeto-Nanojuncetea [3160] Natural dystrophic lakes and ponds [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [4010] Northern Atlantic wet heaths with *Erica tetralix* [4030] European dry heaths [6410] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [7130] Blanket bogs (* if active only) [7140] Transition mires and Quaking bogs [7150] Depressions on peat substrates of the *Rhynchosporion* [7230] Alkaline fens [91A0] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles *S.I. No. 549/2023 - European Union Habitats (Connemara Bog Complex Special Area of Conservation 002034) Regulations 2023.* NPWS (2015a) *Conservation Objectives: Connemara Bog Complex SAC 002034. Version 1*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Ross Lake and Woods SAC [001312]	10.35km	[1303] Lesser horseshoe bat *Rhinolophus hipposideros* [3140] Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. *S.I. No. 656/2019 - European Union Habitats (Ross Lake and Woods Special Area of Conservation 001312) Regulations 2019.* NPWS (2018) *Conservation Objectives: Ross Lake and Woods SAC 001312. Version 1*. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
Black Head-Poulsallagh Complex SAC	10.53km	[1170] Reefs [1220] Perennial vegetation of stony banks

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
[000020]		[2130] Fixed coastal dunes with herbaceous vegetation (grey dunes) [1395] Petalwort *Petalophyllum ralfsii* [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [4060] Alpine and Boreal heaths [5130] *Juniperus communis* formations on heaths or calcareous grasslands [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (*important orchid sites) [6510] Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) [7220] Petrifying springs with tufa formation (*Cratoneurion*) [8240] Limestone pavements [8330] Submerged or partially submerged sea caves *S.I. No. 758/2021 - European Union Habitats (Black Head-Poulsallagh Complex Special Area of Conservation 000020) Regulations 2021* NPWS (2014a) *Conservation Objectives: Black Head-Poulsallagh SAC 000020. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Lough Fingall Complex SAC [000606]	11.17km	[1303] Lesser horseshoe bat *Rhinolophus hipposideros* [3180] * Turloughs [4060] Alpine and Boreal heaths [5130] *Juniperus communis* formations on heaths or calcareous grasslands [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (*important orchid sites) [7210] * Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [8240] * Limestone pavements NPWS (2019d) *Conservation Objectives: Lough Fingall Complex SAC 000606. Version 1.* National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
Rahasane Turlough SAC [000322]	12.77km	[3180] * Turloughs *S.I. No. 503/2017 - European Union Habitats (Rahasane Turlough Special Area of Conservation 000322) Regulations 2017.* NPWS (2020) *Conservation Objectives: Rahasane Turlough SAC 000322. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Moneen Mountain SAC [000054]	13.25km	[1065] Marsh fritillary butterfly *Euphydryas (Eurodryas, Hypodryas) aurinia* [1303] Lesser horseshoe bat *Rhinolophus hipposideros* [3180] * Turloughs [4060] Alpine and Boreal heaths [5130] *Juniperus communis* formations on heaths or calcareous grasslands [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (*important orchid sites) [7220] * Petrifying springs with tufa formation (*Cratoneurion*) [8240] * Limestone pavements *S.I. No. 518/2021 - European Union Habitats (Moneen Mountain Grassland Special Area of Conservation 000054) Regulations 2021*

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
		NPWS (2021a) *Conservation Objectives: Moneen Mountain SAC 000054. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
East Burren Complex SAC [001926]	13.46km	[1065] Marsh fritillary butterfly *Euphydryas* (*Eurodryas, Hypodryas) aurinia* [1303] Lesser horseshoe bat *Rhinolophus hipposideros* [1355] Otter *Lutra lutra* [3140] Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. [3180] * Turloughs [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [4060] Alpine and Boreal heaths [5130] *Juniperus communis* formations on heaths or calcareous grasslands [6130] *Calaminarian* grasslands of the *Violetalia calaminariae* [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (*important orchid sites) [6510] Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) [7210] * Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7220] * Petrifying springs with tufa formation (*Cratoneurion*) [7230] Alkaline fens [8240] * Limestone pavements [8310] Caves not open to the public [91E0] * Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) *S.I. No. 463/2023 - European Union Habitats (East Burren Complex Special Area of Conservation 001926) Regulations 2023.* NPWS (2022a) *Conservation Objectives: East Burren Complex SAC 001926. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Gortnandarragh Limestone Pavement SAC [001271]	13.48km	[8240] * Limestone pavements *S.I. No. 492/2018 - European Union Habitats (Gortnandarragh Limestone Pavement Grassland Special Area of Conservation 001271) Regulations 2018* NPWS (2019e) *Conservation Objectives: Gortnandarragh Limestone Pavement SAC 001271. Version 1*. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Kiltiernan Turlough SAC [001285]	13.85km	[3180] * Turloughs *S.I. No. 547/2023 - European Union Habitats (Kiltiernan Turlough Special Area of Conservation 001285) Regulations 2023.* NPWS (2021b) *Conservation Objectives: Kiltiernan Turlough SAC 001285. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Castletaylor Complex SAC [000242]	13.96km	[3180] * Turloughs [4060] Alpine and Boreal heaths [5130] *Juniperus communis* formations on heaths or calcareous grasslands [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco Brometalia*) (*important orchid sites) [8240] * Limestone pavements

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
		S.I. No. 73/2018 - European Union Habitats (Castletaylor Complex Special Area of Conservation 000242) Regulations 2018. NPWS (2021c) *Conservation Objectives: Castletaylor Complex SAC 000242. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Ballyvaughan Turlough SAC [000996]	15.00km	[3180] * Turloughs *S.I. No. 205/2019 - European Union Habitats (Ballyvaughan Turlough Special Area of Conservation 000996) Regulations 2019* NPWS (2021d) *Conservation Objectives: Ballyvaughan Turlough SAC 000996. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Ardrahan Grassland SAC [002244]	15.07km	[4060] Alpine and Boreal heaths [5130] *Juniperus communis* formations on heaths or calcareous grasslands [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [8240] * Limestone pavements *S.I. No. 522/2019 - European Union Habitats (Ardrahan Grassland Special Area of Conservation 002244) Regulations 2019.* NPWS (2024a) Conservation Objectives: Ardrahan Grassland SAC 002244. Version 2. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Kilkieran Bay and Island SAC [002111]	25.42km	[1140] Mudflats and sandflats not covered by seawater at low tide [1150] Coastal lagoons [1160] Large shallow inlets and bays [1170] Reefs [1351] Harbour Porpoise *Phocoena phocoena* [1355] Otter *Lutra lutra* [1365] Harbour Seal *Phoca vitulina* [1833] Slender Naiad *Najas flexilis* [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1410] Mediterranean salt meadows (*Juncetalia maritimi*) [21A0] Machairs (* in Ireland) [3130] Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea* [6510] Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) *S.I. No. 144/2024 - European Union Habitats (Kilkieran Bay and Islands SAC 002111) Regulations 2024* NPWS (2014b) *Conservation Objectives: Kilkieran Bay and Islands SAC 002111. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Inishmore Island SAC [000213]	29.19km	[1014] Narrow-mouthed Whorl Snail *Vertigo angustior* [1150] Coastal lagoons [1170] Reefs [1220] Perennial vegetation of stony banks [1230] Vegetated Sea cliffs of the Atlantic and Baltic coasts [1351] Harbour Porpoise *Phocoena phocoena*

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
		[2110] Embryonic shifting dunes [2120] Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2130] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2170] Dunes with Salix repens ssp. argentea (*Salicion arenariae*) [2190] Humid dune slacks [21A0] Machairs (* in Ireland) [4030] European dry heaths [4060] Alpine and Boreal heaths [6210] Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6510] Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) [8240] Limestone pavements [8330] Submerged or partially submerged sea caves NPWS (2024b) Conservation Objectives: Inishmore Island SAC 000213. Version 2. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Maumturk Mountains SAC [002008]	31.57km	[1106] Salmon *Salmo salar* [1833] Slender Naiad *Najas flexilis* [3110] Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [4010] Northern Atlantic wet heaths with *Erica tetralix* [4060] Alpine and Boreal heaths [7130] Blanket bogs (* if active bog) [7150] Depressions on peat substrates of the *Rhynchosporion* [8220] Siliceous rocky slopes with chasmophytic vegetation *S.I. No. 431/2021 - European Union Habitats (Maumturk Mountains Special Area of Conservation 002008) Regulations 2021* NPWS (2017b) *Conservation Objectives: Maumturk Mountains SAC 002008. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
The Twelve Bens/Garraun Complex SAC [002031]	44.70km	[1029] Freshwater Pearl Mussel *Margaritifera margaritifera* [1106] Salmon *Salmo salar* [1355] Otter *Lutra lutra* [1833] Slender Naiad *Najas flexilis* [3110] Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) [3130] Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoeto-Nanojuncetea* [4060] Alpine and Boreal heaths [7130] Blanket bogs (* if active bog) [7150] Depressions on peat substrates of the *Rhynchosporion* [8110] Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani)* [8210] Calcareous rocky slopes with chasmophytic vegetation [8220] Siliceous rocky slopes with chasmophytic vegetation

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
		[91A0] Old sessile oak woods with Ilex and Blechnum in the British Isles *S.I. No. 548/2023 - European Union Habitats (Twelve Bens/Garraun Complex Special Area of Conservation 002031) Regulations 2023* NPWS (2017c) *Conservation Objectives: Twelve Bens/Garraun Complex SAC 002031. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Special Protection Areas		
Lough Corrib SPA [004042]	66m	Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] - wintering Gadwall (*Anas strepera*) [A051] - wintering Shoveler (*Anas clypeata*) [A056] - wintering Pochard (*Aythya ferina*) [A059] - wintering Tufted Duck (*Aythya fuligula*) [A061] - wintering Common Scoter (*Melanitta nigra*) [A065] - breeding Hen Harrier (*Circus cyaneus*) [A082] – post-breeding/roost Coot (*Fulica atra*) [A125] - wintering Golden Plover (*Pluvialis apricaria*) [A140] - wintering Black-headed Gull (*Chroicocephalus ridibundus*) [A179] - breeding Common Gull (*Larus canus*) [A182] - breeding Common Tern (*Sterna hirundo*) [A193] - breeding Arctic Tern (*Sterna paradisaea*) [A194] – breeding Wetlands & Waterbirds [A999] *S.I. No. 455/2012 - European Communities (Conservation of Wild Birds (Lough Corrib Special Protection Area 004042)) Regulations 2012.* NPWS (2023a) *Conservation Objectives: Lough Corrib SPA 004042. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Inner Galway Bay SPA [004031]	1.06km at Oranmore Bay and Rusheen Bay	Black-throated Diver *Gavia arctica* [A002] – wintering Great Northern Diver (*Gavia immer*) [A003] - wintering[14] Cormorant (*Phalacrocorax carbo*) [A017] - breeding Grey Heron (*Ardea cinerea*) [A028] - wintering Light-bellied Brent Goose (*Branta bernicla hrota*) [A046] - wintering Wigeon (*Anas penelope*) [A050] - wintering Teal (*Anas crecca*) [A052] - wintering Red-breasted Merganser (*Mergus serrator*) [A069] - wintering Ringed Plover (*Charadrius hiaticula*) [A137] - wintering Golden Plover (*Pluvialis apricaria*) [A140] - wintering Lapwing (*Vanellus vanellus*) [A142] - wintering Dunlin (*Calidris alpina*) [A149] - wintering Bar-tailed Godwit (*Limosa lapponica*) [A157] - wintering

[14] A recently listed QI for Inner Galway Bay SPA with no specific published conservation objective, attributes or targets. There are no other European sites for which the species is listed in Ireland. The conservation objectives, attributes and targets listed for the Black-throated diver (both are wintering species with similar behaviours and habitat/forage needs.

Site Name	Distance[12]	Reasons for Designation – Qualifying Interests (QIs) or Special Conservation Interests (SCIs)
		Curlew (*Numenius arquata*) [A160] - wintering Redshank (*Tringa totanus*) [A162] - wintering Turnstone (*Arenaria interpres)* [A169] - wintering Black-headed Gull (*Chroicocephalus ridibundus*) [A179] - wintering Common Gull (*Larus canus*) [A182] - wintering Sandwich Tern (*Sterna sandvicensis*) [A191] - breeding Common Tern (*Sterna hirundo*) [A193] - breeding Wetlands & Waterbirds [A999] *S.I. No. 515/2019 - European Union Conservation of Wild Birds (Inner Galway Bay Special Protection Area 004031) Regulations 2019* NPWS (2013b) *Conservation Objectives: Inner Galway Bay SPA 004031. Version 1.* National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Cregganna Marsh SPA [004142]	4.14km	Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] – wintering *S.I. No. 514/2019 - European Union Conservation of Wild Birds (Cregganna Marsh Special Protection Area 004142) Regulations 2019.* NPWS (2023b) *Conservation Objectives: Cregganna Marsh SPA 004142. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Connemara Bog Complex SPA [004181]	9.27km	Cormorant (*Phalacrocorax carbo*) [A017] - breeding Merlin (*Falco columbarius*) [A098] - breeding Golden Plover (*Pluvialis apricaria*) [A140] - breeding Common Gull (*Larus canus*) [A182] – breeding *S.I. No. 390/2021 - European Union Conservation of Wild Birds (Connemara Bog Complex Special Protection Area 004181) Regulations 2021* NPWS (2023c) *Conservation Objectives: Connemara Bog Complex SPA 004181. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Rahasane Turlough SPA [004089]	12.75km	Whooper Swan (*Cygnus cygnus*) [A038] - wintering Wigeon (*Anas penelope*) [A050] - wintering Golden Plover (*Pluvialis apricaria*) [A140] - wintering Black-tailed Godwit (*Limosa limosa*) [A156] - wintering Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] - wintering Wetlands & Waterbirds [A999] *S.I. No. 311/2012 - European Communities (Conservation of Wild Birds (Rahasane Turlough Special Protection Area 004089)) Regulations 2012.* NPWS (2023d) *Conservation Objectives: Rahasane Turlough SPA 004089. Version 1.* National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

3.4 Identification of Potential Impact Pathways in the Absence of Mitigation

European sites are at risk of significant effects from the Project where a source-pathway-receptor link exists between the Project and the European site. In order for an impact to occur there must be a risk enabled by having a 'source' (*e.g.* construction), a 'receptor' (*e.g.* a SAC/SPA or their QI habitats/species), and a pathway between the source and the receptor (*e.g.* a watercourse which connects the impact source at a site of proposed works to a SAC/SPA). The risk of the impact does not automatically mean it will occur, nor that it will be significant. However, identification of the risk does mean that there is a possibility of ecological or environmental impact occurring, with the level and significance of the impact depending upon the nature and exposure to the risk, and the characteristics of the receptor.

Through the development of the Project, elements were included in the design to address some of the potential impacts discussed below. The design progressed in tandem with environmental studies which were undertaken to both inform both the baseline environmental data and the design to minimise impacts to the receiving environment. Therefore, the identification and avoidance of potential impacts followed an iterative process between the design and environmental teams as follows:

- Potential impacts were identified by the environmental team
- Data on the potential impacts was assessed by the design team to establish design solutions to eliminate a potential impact, and the design was updated to include these advanced solutions
- The updated design was reassessed by the environmental team
- The final design has addressed, where possible, the identified potential direct and indirect impacts and where potential direct and indirect impacts were not designed out, mitigation measures were incorporated

The risk of the Project having a significant effect on European sites is assessed in the absence of considering any mitigation measures that might reduce or remedy any potential impact.

The impact assessment has been updated to incorporate the modifications made to the proposed N6 GCRR since 2018 and all relevant clarifications and amendments presented in the 2019 RFI Response and at the oral hearing in 2020 and the assessment undertaken by the Inspector appointed by ABP and presented in ABP's Inspector's Report dated 22 June 2021.

The Inspector appointed by ABP, following their review of the appointed ecologist Dr. Richard Arnold's Appropriate Assessment Report, appended (as Appendix 16) to the Inspector's Report dated 22 June 2021, concluded in Section 12.9 of the Inspector's Report dated 21 June 2021, that the proposed N6 GCRR, "*individually or in combination with other plans or projects, would not adversely affect the integrity of the Lough Corrib …SAC; Galway Bay Complex …SAC; Lough Corrib SPA or inner Galway Bay SPA in view of the Conservation Objectives of those sites*" and "*any possibility of adverse effects on the integrity of other European sites in the wider area due to in-combination effects has been firmly excluded with the application of mitigation measures…*". The Inspector did however include additional potential impact pathways, screened in additional European sites for appropriate assessment and included additional mitigation measures. All of these have been taken into account, on a precautionary basis, in the preparation of this updated AA Screening Report and are summarised below.

Dr Arnold, the ecologist appointed by ABP, concurred with the potential impact pathways set out in the 2018 NIS and included these in ABP's appropriate assessment appended to ABP's Inspector's Report dated 21 June 2021. They also included three additional potential pathways which have been included in this updated AA Screening Report and described below. As such, all of the potential impact pathways identified in the 2018 NIS have been retained and updated where relevant in terms of ecological findings or updated literature in this updated AA Screening Report. As per the 2018 NIS, the Project has the potential to have the following types of impacts on the receiving ecological environment:

- Direct loss of habitat area
- Fragmentation and potential isolation of habitat areas and/or the territories of fauna species, including the dissection of areas of the Lough Corrib SAC north and south of the proposed N6 GCRR

- Tunnelling and deep excavations affecting the structural integrity15 of the rock mass supporting the surface-level habitats
- Tunnelling and excavations affecting the existing hydrogeological regime and/or construction works affecting groundwater quality from contaminated surface water runoff and/or an accidental spillage or pollution
- Affect water quality in receiving watercourses during construction from contaminated surface water runoff and/or an accidental spillage or pollution event affecting habitats and/or species, and has been expanded to discuss the QIs/SCIs recently added to relevant European sites
- Affect air quality which in turn can affect the vegetation composition and structure of nearby habitats
- Introduce or spread non-native invasive species
- Disturb fauna species (e.g. through noise, vibration, artificial lighting or increased human presence) resulting in the displacement of affected species from breeding/resting places or supporting habitat, potentially at key life-cycle stages
- Create a barrier to species movements as a consequence of constructing/introducing a new road carriageway into the natural environment
- Pose a mortality risk to aquatic species through accidentally dropping construction materials into watercourses when constructing new structures over watercourses
- Shade habitats beneath elevated structures, or next to high embankment or retaining walls, causing a reduction in sunlight and direct precipitation affecting the vegetation composition and structure
- Pose a mortality risk to fauna species from road traffic collisions or collisions with bridge structures

As noted above and in light of the approach adopted by the Inspector appointed by ABP (and the appointed ecologist, Dr Arnold) in their Appropriate Assessment Report prepared in February 2021, and appended (Appendix 6) to the ABP's Inspector's Report dated 22 June 2021, and on a precautionary basis, the potential impact pathways have been updated to include the potential impact pathways identified by Dr. Arnold, over and above those considered and assessed in the 2018 NIS as follows:

- Potential deterioration/decline in European site QIs/SCIs due to associated effects from loss of supporting habitats/populations
- Increase in recreational pressure
- Increase in construction-related traffic

In addition to these new potential impact pathways, there have been other amendments necessary in this updated AA Screening Report as a result of the following:

- Updated European site boundaries and the most recent published QIs/SCIs for each European site at the time of publication (see Table 1) and their relevant attributes and targets are considered
- Updated baseline habitat and species, although changes have been minor, have required some level of minor updates to the impact assessment to capture the biodiversity baseline variances recorded (the updates are not material and do not affect the conclusions of the impact assessment)
- Two nearby European sites, for which Harbour porpoise has been added as a QI in March 2024, due to the potential for the Project to affect water quality in Galway Bay: Inishmore Island SAC and Kilkieran Bay and Islands SAC

[15] Structural Integrity of the rock mass that supports the mosaic of Limestone pavement and Calcareous grassland is the physical and mechanical geotechnical properties that control the behaviour of the geotechnical Limestone pavement environment

3.5 Defining the Zone of Influence (ZoI) of the Project

The Zone of Influence (ZoI) is the area within which the Project could affect the receiving environment such that it could potentially have significant effects on the QI habitats or QI/SCI species of a European site (as defined in CIEEM, 2018).

The mechanism to define the ZoI is summarised as follows:

- Consider the nature, size and location of the Project (see Section 3.1 for a description of the Project)
- Consider the sensitivities of the relevant ecological receptors (see Section 3.2 for a description of the baseline environment)
- Identify potential impact sources and pathways (see Section 3.3 for the potential impacts associated with the Project)
- Determine the ZoI based on the potential extent of the impact

Table 2 describes the predicted ZoI associated with each potential impact identified for the Project.

Table 2 Potential impacts associated with the Project, and their potential zone of influence

Impact	Zone of Influence (ZoI)
Construction Impacts	
Habitat loss	Generally, within the footprint of the proposed N6 GCRR but can also result from extreme cases of habitat degradation (see below)
Habitat fragmentation	Habitat areas or species ranges/territories through which the Project traverses
Habitat degradation as a result of tunnelling/excavations	Area immediately above the Lackagh Tunnel and along the western and eastern approaches to the tunnel
Habitat degradation as a result of hydrogeological impacts	Groundwater dependant habitats within the hydrogeological ZoI.
Habitat degradation as a result of hydrological impacts	Any wetland, coastal or marine habitat downstream of any watercourse crossings or drainage outfalls, and any aquatic/marine species therein
Habitat degradation as a result of air quality impacts related to dust	Dust generated during construction is only likely to be deposited in measurable quantities in the immediate vicinity of the construction works
Habitat degradation as a result of introducing/spreading non-native invasive plant species	Potentially any habitats crossed by, immediately adjacent to, or downstream of the Project or along any of the haul routes are at risk from contaminated soil/material both sourced from within the Assessment Boundary or that imported from offsite sources
Disturbance/displacement	Habitat areas used by wintering birds within 300m of general construction activities or those within 800m of areas requiring blasting over a prolonged period
Mortality risk from construction works	Aquatic species foraging or commuting along the River Corrib corridor
Increase in construction-related traffic	The increase in construction related traffic will contribute to potential habitat degradation as a result of hydrogeological and hydrological impacts, air quality impacts and possible introduction and spread non-native invasive plant species.
Potential deterioration or decline in European site QIs/SCIs due to loss of supporting habitats/populations of typical species and positive indicator species	The four principle European sites associated with Galway Bay and Lough Corrib, but possibly other European sites with similar / dependent QIs/SCIs.

Impact	Zone of Influence (ZoI)
Operational Impacts	
Habitat degradation as a result of hydrogeological impacts	Groundwater dependant habitats within the hydrogeological ZoI.
Habitat degradation as a result of shading impacts	Habitats beneath, or immediately adjacent to, viaduct structures, embankments or retaining walls where habitat will not be permanently lost – i.e. the proposed River Corrib Bridge, the proposed Menlough Viaduct, and sections of embankment and retaining walls between these structures.
Habitat degradation as a result of air quality impacts related to emissions	Generally local to the road edge and not greater than a distance of 200m
Habitat degradation as a result of introducing/spreading non-native invasive plant species	Potentially any habitats crossed by, or immediately adjacent to, the Project are at risk from contaminated soil/material both sourced from within the Assessment Boundary or that imported from offsite sources
Barrier effect	The Bearna Stream catchment
Mortality risk from road traffic	Relevant to aquatic species along the River Corrib corridor and in the vicinity of the Coolagh Lakes, and within the Bearna Stream catchment
Increase in recreational pressure	Various European sites accessible to visitors within the vicinity of Galway
Potential deterioration or decline in European site QIs/SCIs due to loss of supporting habitats/populations of typical species and positive indicator species	The four principle European sites associated with Galway Bay and Lough Corrib, but possibly other European sites with similar / dependent QIs/SCIs.

3.6 Identifying European sites within the ZoI of the Project

The nature and scale of the Project, the identified potential impact pathways and their relationship to European sites were considered in order to determine which European sites were within the ZoI of the Project, and therefore potentially at risk of significant effects.

In the case of QI habitats, if a European site lies beyond the ZoI, then the Project cannot affect habitats within that site.

Consideration was also given as to whether the Project had the potential to have ex-situ impacts on species listed as QIs/SCIs of any European sites beyond the ZoI of the Project, taking into consideration the species' foraging range, home range and connections between maternity, breeding and hibernation sites. This is discussed further below.

Table 3 below lists the potential impacts associated with the Project, their ZoI, and which European sites could be affected by each and has been updated to take account of the additional potential impact pathways identified above.

Table 3 Identified European sites within the Zone of Influence (ZoI)

Potential Impact	Zone of Influence (ZoI)	European Sites within the ZoI
Potential Construction Impacts		
Habitat loss	Generally, within the footprint of the proposed N6 GCRR but can also result from extreme cases of habitat degradation (see below)	Lough Corrib SAC and potentially *ex-situ* sites associated with Lough Corrib SPA and Inner Galway Bay SPA

Potential Impact	Zone of Influence (ZoI)	European Sites within the ZoI
Habitat fragmentation	Habitat areas or species ranges/territories through which the Project traverses	Lough Corrib SAC and potential *ex-situ* sites associated with Lough Corrib SPA and Inner Galway Bay SPA
Habitat degradation – tunnelling/excavation	Area immediately above the Lackagh Tunnel and along the western and eastern approaches to the tunnel as part of the proposed N6 GCRR	Lough Corrib SAC
Habitat degradation – hydrogeology	Groundwater dependant habitats within the hydrogeological ZoI.	Lough Corrib SAC Galway Bay Complex SAC Inner Galway Bay SPA and potential *ex-situ* sites associated with Lough Corrib SPA and Inner Galway Bay SPA
Habitat degradation – hydrology	Any wetland, coastal or marine habitat downstream of any watercourse crossings or drainage outfalls, and any aquatic/marine species therein	Lough Corrib SAC Galway Bay Complex SAC Inner Galway Bay SPA and potential *ex-situ* sites Lough Corrib SPA and potential *ex-situ* sites Kilkieran Bay and Island SAC marine QI species Inishmore Island SAC marine QI species
Habitat degradation – air quality	Dust generated during construction is only likely to be deposited in measurable quantities in the immediate vicinity of the construction works	Lough Corrib SAC
Habitat degradation – non-native invasive species	Potentially any habitats crossed by, or immediately adjacent to, the Project or along any of the haul routes are at risk from contaminated soil/material both sourced from within the Assessment Boundary or that imported from offsite sources	Lough Corrib SAC Galway Bay Complex SAC Inner Galway Bay SPA
Disturbance/displacement	Habitat areas used by SCI wintering birds within 300m of general construction activities or those within 800m of areas requiring blasting over a prolonged period	Potential *ex-situ* sites associated with Lough Corrib SPA and Inner Galway Bay SPA
Mortality risk – construction materials	Aquatic species foraging or commuting along the River Corrib corridor	Lough Corrib SAC
Increase in construction-related traffic	The increase in construction related traffic will contribute to potential habitat degradation as a result of hydrogeological and hydrological impacts, air quality impacts and possible introduction and spread non-native invasive plant species.	Lough Corrib SAC Galway Bay Complex SAC Inner Galway Bay SPA and potential *ex-situ* sites Lough Corrib SPA and potential *ex-situ* sites Ardrahan Grassland SAC Castletaylor Complex SAC Kiltiernan Turlough SAC Lough Fingall Complex SAC

Potential Impact	Zone of Influence (ZoI)	European Sites within the ZoI
		Rahasane Turlough SPA Rahasane Turlough SAC Cregganna Marsh SPA
Potential deterioration or decline in European site QIs/SCIs due to loss of supporting habitats/populations of typical species and positive indicator species	The four principle European sites associated with Galway Bay and Lough Corrib, but possibly other European sites with similar / dependent QIs/SCIs.	Lough Corrib SAC Galway Bay Complex SAC Inner Galway Bay SPA Lough Corrib SPA Ardrahan Grassland SAC Castletaylor Complex SAC Kiltiernan Turlough SAC Lough Fingall Complex SAC Connemara Bog Complex SAC Connemara Bog Complex SPA Rahasane Turlough SAC East Burren Complex SAC Moneen Mountain SAC Black Head-Poulsallagh Complex SAC Gortnandarragh Limestone Pavement SAC Ross Lake and Woods SAC.
Potential Operational Impacts		
Habitat degradation – hydrogeology	Groundwater dependant habitats within the hydrogeological ZoI.	Lough Corrib SAC Galway Bay Complex SAC Inner Galway Bay SPA and potential ex-situ sites associated with Lough Corrib SPA and Inner Galway Bay SPA
Habitat degradation – shading	Habitats beneath, or immediately adjacent to, viaduct structures, embankments or retaining walls where habitat will not be permanently lost – i.e. the proposed River Corrib Bridge, the proposed Menlough Viaduct, and sections of embankment and retaining walls between these structures as part of the proposed N6 GCRR.	Lough Corrib SAC
Habitat degradation – air quality	Nitrogen-based compounds dispersed and deposited to surrounds from emissions, generally local to the road edge and not greater than a distance of 200m.	Lough Corrib SAC
Habitat degradation – non-native invasive species	Potentially any habitats crossed by, or immediately adjacent to, the Project or along any of the haul routes are at risk from contaminated soil/material both sourced from within the Assessment Boundary or that imported from offsite sources	Lough Corrib SAC Galway Bay Complex SAC Inner Galway Bay SPA
Barrier effect	The Bearna Stream catchment	Galway Bay Complex SAC
Mortality risk	Relevant to aquatic species along the River Corrib corridor and in the vicinity	Lough Corrib SAC

Potential Impact	Zone of Influence (ZoI)	European Sites within the ZoI
	of the Coolagh Lakes, and within the Bearna Stream catchment	Galway Bay Complex SAC
Increase in recreational pressure	Various European sites accessible to visitors within the vicinity of Galway	Lough Corrib SAC Galway Bay Complex SAC Lough Corrib SPA Inner Galway Bay SPA Maumturk Mountains SAC The Twelve Bens / Garraun Complex SAC Connemara Bog Complex SAC Connemara Bog Complex SPA Ross Lake and Woods SAC Ardrahan Grassland SAC Castletaylor Complex SAC
Potential deterioration or decline in European site QIs/SCIs due to loss of supporting habitats/populations of typical species and positive indicator species	The four principle European sites associated with Galway Bay and Lough Corrib, but possibly other European sites with similar / dependent QIs/SCIs.	Lough Corrib SAC Galway Bay Complex SAC Inner Galway Bay SPA Lough Corrib SPA Ardrahan Grassland SAC Castletaylor Complex SAC Kiltiernan Turlough SAC Lough Fingall Complex SAC Connemara Bog Complex SAC Connemara Bog Complex SPA Rahasane Turlough SAC East Burren Complex SAC Moneen Mountain SAC Black Head-Poulsallagh Complex SAC Gortnandarragh Limestone Pavement SAC Ross Lake and Woods SAC.

In the absence of mitigation measures, and considering the ZoI of the Project, which has been updated for this updated AA Screening Report, the Project was assessed as being likely to have significant effects on the following 22 European sites (whilst there are 23 European sites within the vicinity of the ZoI of the Project, one of those sites, namely, Ballyvaughan Turlough SAC, are not actually within the ZoI of the Project):

- Lough Corrib SAC
- Lough Corrib SPA
- Galway Bay Complex SAC
- Inner Galway Bay SPA
- Kilkieran Bay and Island SAC
- Inishmore Island SAC
- Ardrahan Grassland SAC

- Castletaylor Complex SAC
- Kiltiernan Turlough SAC
- Lough Fingall Complex SAC
- Rahasane Turlough SAC
- Rahasane Turlough SPA
- Cregganna Marsh SPA
- Connemara Bog Complex SAC
- Connemara Bog Complex SPA
- East Burren Complex SAC
- Moneen Mountain SAC
- Black Head – Poulsallagh Complex SAC
- Gortnandarragh Limestone Pavement SAC
- Ross Lake and Woods SAC
- Maumturk Mountains SAC
- The Twelve Bens/Garraun Complex SAC

The locations of these European sites relative to the Project, and the predicted ZoI, are shown on Plate 6.

Ballyvaughan Turlough SAC is located c. 15km to the south of the Project.

There are no hydrological or hydrogeological linkages between the Project and these three European sites and the unmitigated ZoI for hydrogeology does not extend to include any groundwater pathways to these three European sites.

As explained in Section 3.2.1 of this updated AA Screening Report, a transport appraisal has informed this updated AA Screening Report which defines which European sites fall within the ZoI of the Project for the purposes of recreational pressure. Based on that analysis none of these three sites fall within the ZOI of the Project for the potential impact pathway of recreational pressure.

There are no other potential impact pathways to these three European sites.

Therefore, it can be concluded that there are no impact pathways between the Project and Ballyvaughan Turlough SAC, either direct or indirect, which will compromise the conservation objectives of these European sites or their Qualifying Interests (as listed in Table 1), and therefore likely significant effects on these three European sites, as a result of the Project, can be excluded.

All other European sites are located beyond the ZoI and therefore cannot be affected by the Project.

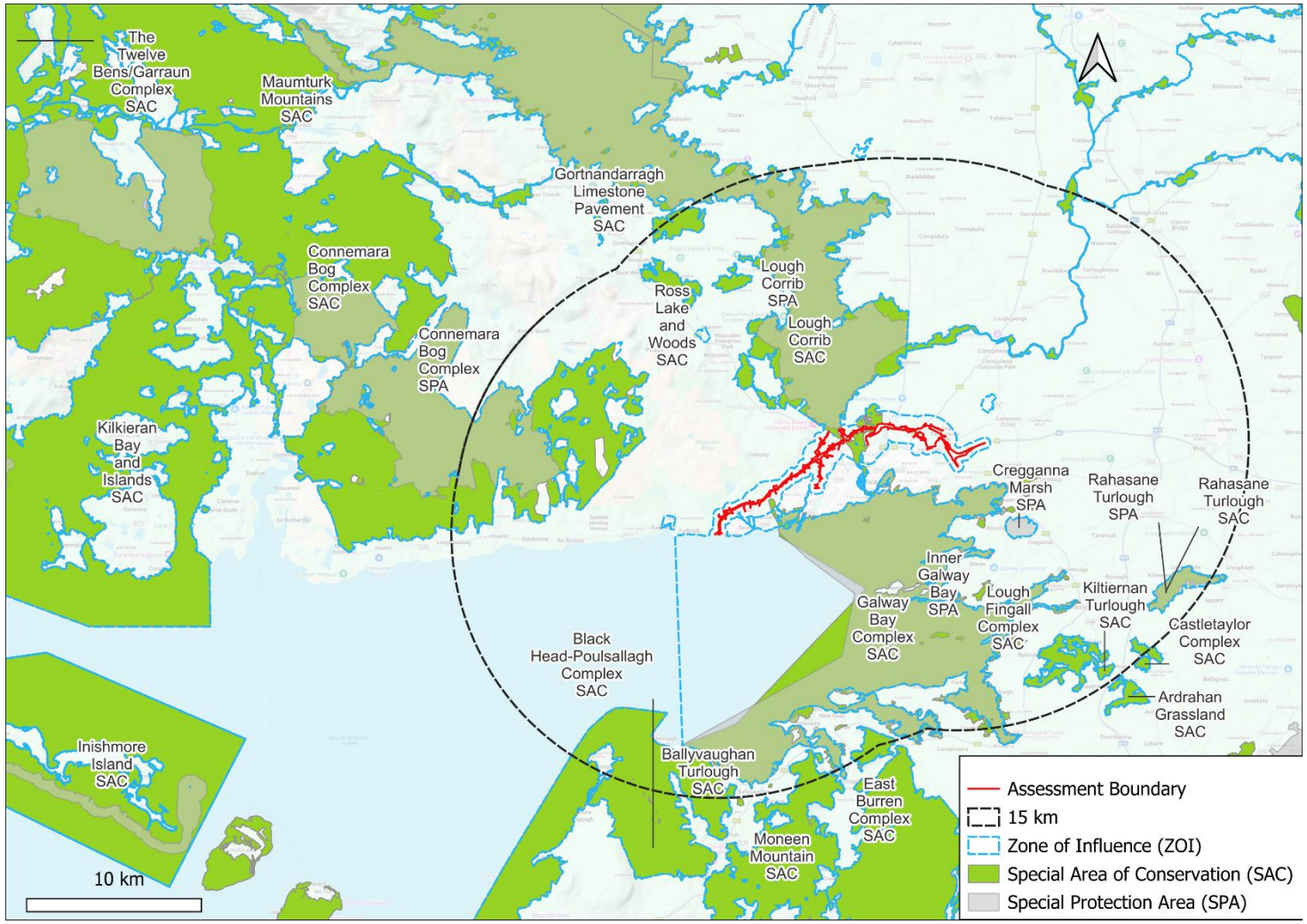

Plate 6 Combined ZoI of the Project and European sites

3.7 Identifying Likely Significant Effects of the Project on European sites

The potential impacts associated with the Project, their ZoI, and which European sites could be affected by each, is summarised below in Table 4.

Table 4 Identified impact pathways and European Sites (receptors) at risk of Significant Effects from the Project in the absence of mitigation

Impact Source	Impact Pathway and European Site(s) at risk of Likely Significant Effects
Habitat Loss	The proposed N6 GCRR passes through Lough Corrib SAC at the River Corrib crossing and under the SAC in the vicinity of Lackagh Quarry. In the absence of mitigation there is potential for temporary and/or permanent loss of both QI and non-QI habitats or the loss of habitat supporting the QI species (e.g. Otter habitat and/or breeding or resting sites) within the SAC. The proposed N6 GCRR also traverses potential ex-situ sites associated with Lough Corrib SPA and Inner Galway Bay SPA. In the absence of mitigation, there is potential for the loss of important supporting habitat areas outside of the SPA boundary affecting the conservation objectives to maintain the distribution of areas used by SCI birds and those relating to population trends of these European sites.
Habitat Fragmentation	The proposed N6 GCRR traverses two areas within the Lough Corrib SAC, as well as potential ex-situ sites associated with Lough Corrib SPA and Inner Galway Bay SPA. These areas are therefore at risk of habitat fragmentation or isolation effects.
Habitat degradation – tunnelling/excavation	Tunnelling and/or deep excavations at Lackagh Quarry could have the potential to affect the structural stability of surface-level QI habitat within and immediately adjacent to the Lough Corrib SAC boundary. This has the potential to result in the loss, or degradation, of QI Annex I habitat area in Lough Corrib SAC.
Habitat degradation – hydrogeology	The Project has the potential to impact the existing hydrogeological regime, including groundwater levels, pollution, recharge, and loss of aquifer area during construction and operation. These changes have potential to affect groundwater-dependent habitats (GWDTE) and groundwater quality within Lough Corrib SAC and Galway Bay Complex SAC as well as potential ex-situ wetland sites supporting SCIs of Lough Corrib SPA and Inner Galway Bay SPA which are located within the hydrogeological zone of influence (ZoI).
Habitat degradation – hydrology	A reduction in water quality in the receiving environment during construction or operation (from contaminated surface water runoff and/or accidental spillage or pollution events and changes to the hydrological regime) has the potential to impact on aquatic/marine QI habitats downstream of any watercourse crossings or drainage outfalls, and any aquatic/marine species therein and includes Lough Corrib SAC, Lough Corrib SPA, Galway Bay Complex SAC and Inner Galway Bay SPA, and ex-situ marine habitats used by QIs from Kilkieran Bay and Island SAC and Inishmore Island SAC.
Habitat degradation – air quality	A reduction in air quality due to dust from construction. In addition, during operation, the emission and deposition of nitrogen-based compounds, dispersed and deposited to surroundings, generally local to the road edge and not greater than a distance of 200m, has the potential to affect QI habitats (and in a worst case scenario consequently on habitats upon which QI fauna species rely) within Lough Corrib SAC (e.g. negatively affect vegetation composition and structure of QI habitats).
Habitat loss or degradation – shading	A reduction in sunlight and direct precipitation has the potential to affect the vegetation composition and structure in habitats beneath, or immediately adjacent to, viaduct structures, embankments or retaining walls where habitat will not be permanently lost – i.e. the proposed River Corrib Bridge, the proposed Menlough Viaduct, and sections of embankment and retaining walls between these structures. This has the potential to affect the QI species and conservation objectives of Lough Corrib SAC.

Impact Source	Impact Pathway and European Site(s) at risk of Likely Significant Effects
Habitat degradation – non-native invasive species	Introducing or spreading non-native invasive species during construction works or from maintenance works during operation of the Project, has the potential to affect QI habitats within Lough Corrib SAC and Galway Bay Complex SAC. Lough Corrib SPA is excluded from the ZoI being upstream of the Project and Inner Galway Bay SPA will not support terrestrial non-native species in its marine/coastal habitat.
Disturbance/displacement	Disturbance during construction or operation (e.g. noise, vibration, artificial lighting or increased human activity) has the potential to result in damage, disturbance and/or displacement of QI species from breeding/resting/feeding sites or supporting habitat (e.g. foraging habitat), potentially at key life-cycle stages, including consideration of ex-situ sites6 and their role in supporting the SCI bird species of affected SPAs such as Lough Corrib SPA and Inner Galway Bay SPA.
Barrier effect	The Project will require the construction of new watercourse crossings of streams within the Bearna Stream catchment and these structures haves the potential to present a barrier to Otter movement within the Bearna Stream catchment, which includes part of the Galway Bay Complex SAC.
Mortality risk	The Project has the potential to result in the mortality of aquatic species in the River Corrib during construction of the River Corrib Bridge. It also has the potential to result in the mortality of Otter through the increased risk of road traffic collisions which could affect the Otter populations that use the River Corrib and Coolagh Lakes and those that use watercourses within the Bearna Stream catchment. This has the potential to affect the QI species and conservation objectives of Lough Corrib SAC and Galway Bay Complex SAC.
Increase in construction-related traffic	The Project will generate increased construction-related traffic along the surrounding road network and impacts associated with increase in emissions, dust, spread of invasive species, and leaks or spills from construction traffic could impact on Lough Corrib SAC, Galway Bay Complex SAC, Inner Galway Bay SPA and Lough Corrib SPA, Ardrahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SPA, Rahasane Turlough SAC and Cregganna Marsh SPA. This has the potential to affect the QI habitats and QI/SCI species and conservation objectives of these European sites.
Increase in Recreational Pressure	The Project will generate operational traffic along the surrounding road network with the associated risk of a potential increase in recreational pressure on QI habitats or SCI bird species as a result of increased visitor numbers on the following European sites: Lough Corrib SAC, Galway Bay Complex SAC, Lough Corrib SPA, Inner Galway Bay SPA, Maumturk Mountains SAC, The Twelve Bens/Garraun Complex SAC, Connemara Bog Complex SAC, Connemara Bog Complex SPA, Ross Lake and Woods SAC, Ardrahan Grassland SAC and Castletaylor Complex SAC.
Potential deterioration or decline in European site QIs/ SCIs due to loss of supporting habitats/ populations of typical species and positive indicator species	The Project, through a variety of potential impact pathways (as described above), has the potential to affect local flora and fauna populations within the Assessment Boundary. Some of those local populations may be typical or positive indicator species of QI habitats or support the QI/SCI fauna populations of European sites in the vicinity of the Project. The following European sites could be affected by such a potential impact: Lough Corrib SAC, Galway Bay Complex SAC, Lough Corrib SPA, Inner Galway Bay SPA, Ardrahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Connemara Bog Complex SAC, Connemara Bog Complex SPA, Rahasane Turlough SAC, East Burren Complex SAC, Moneen Mountain SAC, Black Head-Poulsallagh Complex SAC. Gortnandarragh Limestone Pavement SAC and Ross Lake and Woods SAC.

3.8 Potential for In-combination Effects

Any other plans or projects which have impact pathways connecting them to the same European sites as those within the ZoI of the Project have the potential to act in-combination to have significant effects on these European sites - Lough Corrib SAC, Lough Corrib SPA, Galway Bay Complex SAC, Inner Galway Bay SPA, Kilkieran Bay and Island SAC, Inishmore Island SAC, Ardrahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SAC, Rahasane Turlough SPA, Cregganna Marsh SPA, Connemara Bog Complex SAC, Connemara Bog Complex SPA, East Burren Complex SAC, Moneen Mountain SAC, Black Head – Poulsallagh Complex SAC, Gortnandarragh Limestone Pavement SAC, Ross Lake and Woods SAC, Maumturk Mountains SAC and The Twelve Bens/ Garraun Complex SAC.

The following key plans and projects have been identified as having a potential to act in-combination with the Project to affect these European sites:

Table 5 Land Use and Projects Considered for the In Combination

National Plans
National Development Plan Ireland 2021-2030
Project Ireland 2040 – National Planning Framework
National Marine Planning Framework. The Project Ireland 2040
National Spatial Strategy for Ireland 2002-2020
Climate Action Plan 2024
River Basin Management Plan for Ireland 2018-2021
The River Basin Management Plan for Ireland (2022-2027) – (under review)
National Sustainable Mobility Policy 2022-2025
4th National Biodiversity Action Plan 2023-2030
National Energy & Climate Plan 2021-2030
Climate Action and Low-Carbon Development – National Policy Position Ireland (Updated 2021)
National Air Pollution Control Programme (NAPCP) Report 2021
Water Services Strategic Plan 2015
National Water Resources Plan – Framework Plan 2021
The draft Water Services Strategic Plan 2050 (WSSP 2050)
Ireland's Rural Development Programme 2014-2020
Our Rural Future Rural Development Policy 2021-2025
Foodwise 2025
Food Vision 2030
Regional Plans
Regional Spatial & Economic Strategy- Northern and Western Region 2020-2032 (RSES)
Regional Planning Guidelines for the West Region 2010-2022
West Catchment Flood Risk Assessment and Management (CFRAMS) Study
Wild Atlantic Way Operational Programme 2015-2019
Galway Transport Strategy (GTS)
Water supply schemes
Wastewater Treatment Works (Public and Private)
Pollution Reduction Plans and Programme
County/Local Plans
Galway County Development Plan 2022-2028

Galway County Heritage and Biodiversity Plan 2017-2022

Galway County Council Climate Action Plan 2024-2029

Draft Loughrea Local Area Plan 2024-2030

Galway City Council Development Plan 2023-2029

Galway City Biodiversity Action Plan 2014-2024

Galway City Climate Adaption Strategy 2019-2024

Ardaun Local Area Plan 2018-2024

Clare County Development Plan 2023-2029

Clare Biodiversity Action Plan 2017-2023 (still in effect according to local authority website)

Clare County Council Climate Adaptation Strategy 2019-2024

Galway Masterplan GCC 20/47 ABP310568-28

Mayo County Development Plan 2022-2028

Galway County Development Plan 2015-2021

Galway City Council Development Plan 2017-2023

Clare County Development Plan 2017-2023

Mayo County Development Plan 2014-2020

Draft Loughrea Local Area Plan 2024-2030

Ardaun Local Area Plan 2018-2024

Athenry Local Area Plan 2012-2018 - Now Athenry Local Area Plan 2012-2022

Gort Local Area Plan 2013-2019

Now Gort Local Area Plan 2013-2023

Headford Local Area Plan 2015-2021

Loughrea Local Area Plan 2012-2018

Maigh Cuilinn Local Area Plan 2013-2019

Maigh Cuilinn Local Area Plan 2013-2023

Oranmore Local Area Plan 2012-2018

Tuam Local Area Plan 2011-2017

Tuam Local Area Plan 2018-2024

Gaeltacht Local Area Plan 2008-2018

Bearna Local Area Plan 2007-2017 Variation No.2(a) to the Galway County Development Plan 2015-2021-Bearna is effective from 23rd July 2018

Galway City Local Economic and Community Plan 2015-2021

Local Economic and Community Plan Framework Plan 2024–2029

Vision 2020 NUI Galway Strategic Plan 2015–2020

NUI Shared vision, shaped by values Strategic Plan 2020–2025

Projects/Strategies

N59 Maigh Cuilinn (Moycullen) Bypass Road Project

Galway to Dublin Cycleway

Connemara Greenway (from Galway City to Clifden))

Galway to Spiddal Greenway (Bearna to Spiddal Cycleway)

R336 Bearna to Scríb via Ros an Mhíl Upgrade/Improvements

Sáilín to Silverstrand Coastal Protection Scheme

Salthill Coastal Protection Works (Blackrock to Galway Golf Club)

Proposed Galway Harbour Port Extension

There have been numerous developments within the last 5 years in the locality of the Project which also need to be taken into consideration for the in-combination assessment and which could give rise to significant effects on European sites within the ZoI of the Project.

4. Conclusions

Following an examination, analysis and evaluation of the relevant information, including in particular, the nature of the Project and its potential relationship with European sites, as well as considering other plans and projects, and applying the precautionary principle, it is the professional opinion of the authors of this updated AA Screening Report that it is not possible to rule out the possibility of significant effects on 22 European sites; Lough Corrib SAC, Lough Corrib SPA, Galway Bay Complex SAC, Inner Galway Bay SPA, Kilkieran Bay and Island SAC, Inishmore Island SAC, Ardrahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SAC, Rahasane Turlough SPA, Cregganna Marsh SPA, Connemara Bog Complex SAC, Connemara Bog Complex SPA, East Burren Complex SAC, Moneen Mountain SAC, Black Head – Poulsallagh Complex SAC, Gortnandarragh Limestone Pavement SAC, Ross Lake and Woods SAC, Maumturk Mountains SAC, The Twelve Bens/Garraun Complex SAC,

This judgement has been reached on the basis of the following potential impact sources and pathways associated with the Project which QI/SCI species and habitats may be at risk from:

- direct habitat loss, fragmentation and/or degradation as a result of tunnelling, excavation or other construction works
- direct habitat loss or degradation as a result of shading from elevated structures
- indirect habitat degradation as a result of impacts to the existing hydrogeological regime
- indirect habitat degradation as a result of a reduction in water quality in receiving watercourses/waterbodies
- indirect habitat degradation as a result of the introduction or spread or non- native invasive plant species (including both terrestrial and surface water pathways)
- indirect habitat degradation as a result of a reduction in air quality
- either direct or indirect disturbance and/or displacement impacts to fauna species including to their breeding, resting and feeding sites/resources
- construction works or permanent structures creating a barrier to species movement and mortality risks which the Project may pose to fauna species
- increase in recreational pressure
- increase in construction-related traffic
- potential deterioration/decline in European site QIs/SCIs due to associated effects from loss of supporting habitats/populations

For these reasons, it is the professional opinion of the authors of this report that the application for consent for the Project requires an AA to assess whether the Project would adversely affect the integrity of 22 European sites; Lough Corrib SAC, Lough Corrib SPA, Galway Bay Complex SAC, Inner Galway Bay SPA, Kilkieran Bay and Island SAC, Inishmore Island SAC, Ardrahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SAC, Rahasane Turlough SPA, Cregganna Marsh SPA, Connemara Bog Complex SAC, Connemara Bog Complex SPA, East Burren Complex SAC, Moneen Mountain SAC, Black Head – Poulsallagh Complex SAC, Gortnandarragh Limestone Pavement SAC, Ross Lake and Woods SAC, Maumturk Mountains SAC and The Twelve Bens/Garraun Complex SAC.

It is the professional opinion of the authors of this updated Screening for Appropriate Assessment Report that the scope of the AA may be limited to the stated 22 European sites as it has been demonstrated in this report, that all other European sites fall outside of the ZoI of the Project and therefore any likelihood of significant effects on any other European sites can be ruled out.

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Appendix A

Traffic Assessment to inform Recreational Pressure Assessment

A.1

ARUP

Galway County Council

N6 Galway City Ring Road

Traffic Assessment to inform Recreational Pressure Assessment

Reference: GCRR-4.04-30.10-002

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ARUP

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Appendices

1. Introduction

The proposed N6 GCRR, will generate operational traffic along the surrounding road network and there is an associated risk of a potential increase in recreational pressure on qualifying interest habitats/species or special conservation interest bird species as a result of increased visitor numbers to European sites.

The purpose of this report is to set out the traffic modelling undertaken to quantify the potential increase in operational traffic and what roads will see a significant increase which could result in increased visitor numbers to European sites and which European sites are at risk from increased recreational pressure.

2. Traffic Modelling Methodology

2.1 Overview

The traffic model developed for the proposed N6 GCRR has been utilised to inform the assessment of the potential impacts of increased vehicular travel in the region. An opening year of 2031 and a design year of 2046 has been assumed for the traffic model and the following tools were used in developing the model:

- The most recently available Western Regional Model (WRM) which sits within the National Transport Authority's (NTA) suite of Regional Models. The WRM was used to forecast the level of traffic growth in the study area, using land use assumptions (levels of population and jobs) for the opening and design years of the Project.
- A project specific road traffic model which has a base year of 2023, 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 full modelling approach used is detailed in Chapter 6 of the updated EIAR and is summarised as follows:

- Undertake a **baseline review** in relation to the existing traffic situation, including consultation with Galway City and County Councils, Transport Infrastructure Ireland (TII) and National Transport Authority (NTA)
- Undertake **traffic modelling** to assess future year scenarios, with the Project ('Do-Something'[1]) and without the Project ('Do-Minimum'[2]) in place
- **Evaluate the traffic modelling results** which forecast the impact of existing and future traffic on the road network
- **Identify any traffic impacts**, develop and test proposed **mitigation measures** to remove and/or reduce any identified negative traffic impacts of major significance
- **Determine any residual impacts** arising from the forecast traffic combined with the proposed mitigation measures

1 'Do-Something' relates to a situation where the Project is included.

2 'Do-Minimum' relates to a situation where the Project is not included.

2.2 Traffic Model Development

2.2.1 West Regional Model

The West Regional Model (WRM) is a strategic transport multi-modal model for the counties Galway, Mayo, Roscommon, Sligo, Leitrim and Donegal, with a focus on the city of Galway. It is part of a hierarchical multi-modal transport modelling system for Ireland (known as the 'Regional Modelling System' RMS) that allows the appraisal of a wide range of potential future transport and land use options. The regional models are focussed on the travel-to-work areas of major population centres (e.g. Dublin, Cork, Galway, Limerick, and Waterford). The WRM has 5 sub models which represent different times of an average work day (Monday – Friday): AM, Interpeak 1 (Lunchtime), Interpeak 2 (School Run), PM and Off-peak. These sub models are designed to represent an average workday across the year and are underpinned by Place of Work, School, College or Childcare Census of Anonymised Records (POWSCCAR) which gives a dataset for weekday travel.

2.2.2 Local Area Model

The WRM was used as a starting point in order to build the Local Area Model (LAM) which was developed for the Project and also to estimate the level of traffic growth in the study area, using estimates of population and jobs which were aligned to the National Planning Framework. For further details on this process, see Chapter 6 of the updated EIAR and Appendix A.6.1 of the updated EIAR in Part VI of the 2024 RFI Response.

The objective in developing the LAM was to develop a traffic model that accurately reflects existing traffic conditions in the study area at a sufficient level of detail to allow for an accurate traffic assessment. The model software used for the highway assignment element of the model is the SATURN (Simulation Assignment of Traffic to Urban Road Networks) suite of transportation modelling programs.

The LAM was developed using surveys from November 2023 and is therefore representative of current traffic levels and conditions. Given the current available WRM has a base year of 2016 (aligned to the 2016 Census), Census 2022 Place of Work, School, College or Childcare - Census of Anonymised Records (POWSCCAR) data was also used to inform movements within the city and ensure the modelling is reflective of the latest available data.

Three time period models were developed in line with standard practice as follows:

- AM Morning peak hour model (08:00 – 09:00)
- Average hour Inter-peak model (Average hour model of 10:00 – 16:00)
- PM Evening peak period model (16:00 – 17:00)

While the existing available version of the WRM has a base year of 2016 and is based upon data from the 2016 Census, it is still the most appropriate tool to use currently, for modelling modes like public transport, walking and cycling, until the WRM is updated with data from the 2022 Census.

Further details of the modelling process are contained within the Traffic Modelling Report, contained in Appendix A.6.1 of the updated EIAR.

2.3 Traffic Assessment for recreational traffic

Following the completion of the LAM for the base year (2016), the LAM incorporated traffic growth from the WRM for the design year of 2046. This additional traffic growth was assigned in the LAM, which was used to inform the potential increase in traffic across the study area and its associated potential recreational pressures on European sites.

The model used this dataset to forecast traffic for a future scenario with and without the proposed N6 GCRR. The differences in traffic between both scenarios and each time period, were calculated and those figures were combined and expressed in terms of the annual average daily traffic (AADT). AADT is the number of vehicles expected on any road on an average day across the full year.

As mentioned above, the LAM incorporated data from the 2022 Census, specifically the Place of Work, School, College or Childcare - Census of Anonymised Records (POWSCCAR) dataset. This dataset provides information on the movements of people for commuting purposes i.e. travelling to work, school or college on an average workday. As such, this gives a dataset for weekday travel. However, recreational travel and travel to European sites would likely take place on a weekend. A dataset to inform weekend travel however does not exist as weekend travel is unpredictable i.e. what one person does this weekend can be unrelated to what they do the following weekend or the previous weekend. Therefore, the WRM and LAM above only include models which represent an average workday.

In the absence of a weekend model, the WRM and LAM mentioned above were used to estimate the potential increase in recreational travel to European sites in terms of the annual average daily traffic (AADT), which is the number of vehicles expected on any road on an average day across the full year. Therefore, the calculations relate weekday traffic levels to weekend levels and the final AADT value is expressed in terms of the average number of vehicles per day over a year. This will provide a conservative estimate of the weekend travel as it utilises an average daily traffic which takes an average of the five busier working day traffic levels plus the two weekend days.

As these AADT figures represent the differences in total traffic on any road i.e. it comprises many travel purposes like Commuting, Education, Shopping etc., and travel to European sites would be considered as recreational, they were broken down to predict the split of recreational traffic differences on the road. The NTA's National Household Travel Survey (2022) was used to provide an estimate on the split of recreational traffic. The National Household Travel Survey states that 15% of travel is for recreational and other reasons. As such, 15% of the total AADT differences were calculated and used to represent all recreational travel for this assessment. Traffic and Transport Assessment Guidelines use thresholds of 10% increases in traffic for determining whether an increase is significant and requires a Transport Assessment. These guidelines were also used here to determine potential recreational trip increases of significance on roads within the transport model. The AADTs identified on the roads modelled which shows an increase of 10% or greater for recreational trips are shown in Table 1 below (the numbers below are rounded to the nearest whole).

Table 1 Predicted change in AADTs on the road network

Road ID	Predicted ADDTs without the Project (A)	Predicted ADDTs with the Project (B)	Difference (A-B)	Recreational Traffic Increase 15% of (A-B)	% Increase in Recreational Traffic
6	2425	4199	1773	266	11.0%
7	1761	2953	1193	179	10.2%
72	769	1385	616	92	12.0%
114	4643	8329	3686	553	11.9%
116	4643	8329	3686	553	11.9%
119	4643	8329	3685	553	11.9%
292	2219	3702	1483	222	10.0%
438	469	946	477	72	15.3%
597	67	144	77	12	17.4%
622	2487	5405	2918	438	17.6%
683	6	13	7	1	18.1%
754	69	189	120	18	26.2%
778	149	254	105	16	10.6%
788	646	1544	898	135	20.9%

Road ID	Predicted ADDTs without the Project (A)	Predicted ADDTs with the Project (B)	Difference (A-B)	Recreational Traffic Increase 15% of (A-B)	% Increase in Recreational Traffic
796	77	196	120	18	23.4%
830	431	1504	1073	161	37.3%
916	147	309	161	24	16.4%
1005	3129	7161	4032	605	19.3%
1097	4494	8383	3890	583	13.0%
1196	2437	4701	2264	340	13.9%
1230	2419	4386	1967	295	12.2%
1244	1295	2406	1111	167	12.9%
1245	1761	3239	1478	222	12.6%
1278	2115	3925	1810	271	12.8%
1281	1295	2406	1111	167	12.9%
1282	1761	3239	1478	222	12.6%
1284	1761	3239	1478	222	12.6%
1323	769	1385	616	92	12.0%
1347	769	1385	616	92	12.0%
1374	5113	8874	3761	564	11.0%
1437	1504	5042	3538	531	35.3%
1467	2654	5626	2972	446	16.8%
1546	1504	5042	3538	531	35.3%
1558	4413	8004	3591	539	12.2%
1564	2437	4701	2264	340	13.9%
1574	147	309	161	24	16.4%
1593	5333	9007	3674	551	10.3%
1814	2442	5778	3337	501	20.5%
1824	747	3805	3058	459	61.4%
1895	4494	8383	3890	583	13.0%
1899	4413	8004	3591	539	12.2%
1901	4413	8004	3591	539	12.2%
1903	4494	8383	3890	583	13.0%
1909	4413	8004	3591	539	12.2%

Road ID	Predicted ADDTs without the Project (A)	Predicted ADDTs with the Project (B)	Difference (A-B)	Recreational Traffic Increase 15% of (A-B)	% Increase in Recreational Traffic
1913	340	1602	1262	189	55.6%
1915	1295	2406	1111	167	12.9%
1987	4643	8329	3685	553	11.9%
2016	4643	8329	3685	553	11.9%
2061	3171	7217	4047	607	19.1%
2084	2903	6026	3123	468	16.1%
2170	1106	2568	1461	219	19.8%
2207	769	1385	616	92	12.0%
2236	147	309	161	24	16.4%
2287	392	1012	620	93	23.7%
3090	35	59	24	4	10.2%
3601	187	332	145	22	11.7%
3638	187	332	145	22	11.7%
3825	187	332	145	22	11.7%

As can be seen from this table there are a number of roads which will have a 10% or greater increase in recreational trips as a result of the proposed N6 GCRR. These are shown on Figure 1 in Annex A and include the following that could create recreational pressure to European sites:

- An unnamed local road which forms the boundaries of the townlands of Shantallow, Furzypark, Ballyglass, Fiddaun, Monksfield and Lismoylan, in southern Co. Galway, which lies in proximity to Ardrahan Grassland SAC and Castletaylor Complex SAC
- An unnamed local road in the townlands of Liss, Ballycolgan, Skeaghbeg, Ballybaun, Ballycasey, Kilcoona and Mausrevagh, in northern Co. Galway, which lies in proximity to Lough Corrib SAC and SPA
- An unnamed local road on the eastern edge of Galway City and the townlands of Ardaun, Garraun North and Garraun South which lies in proximity to Inner Galway Bay SPA and Galway Bay Complex SAC
- An unnamed local road in the townlands of Forramoyle West and Forramoyle East which is in proximity to Galway Bay Complex SAC and Inner Galway Bay SPA
- Multiple local roads in and around Galway City, its suburbs and the River Corrib, with Lough Corrib SAC and SPA, Galway Bay Complex SAC and Inner Galway Bay SPA being in close proximity to most of these

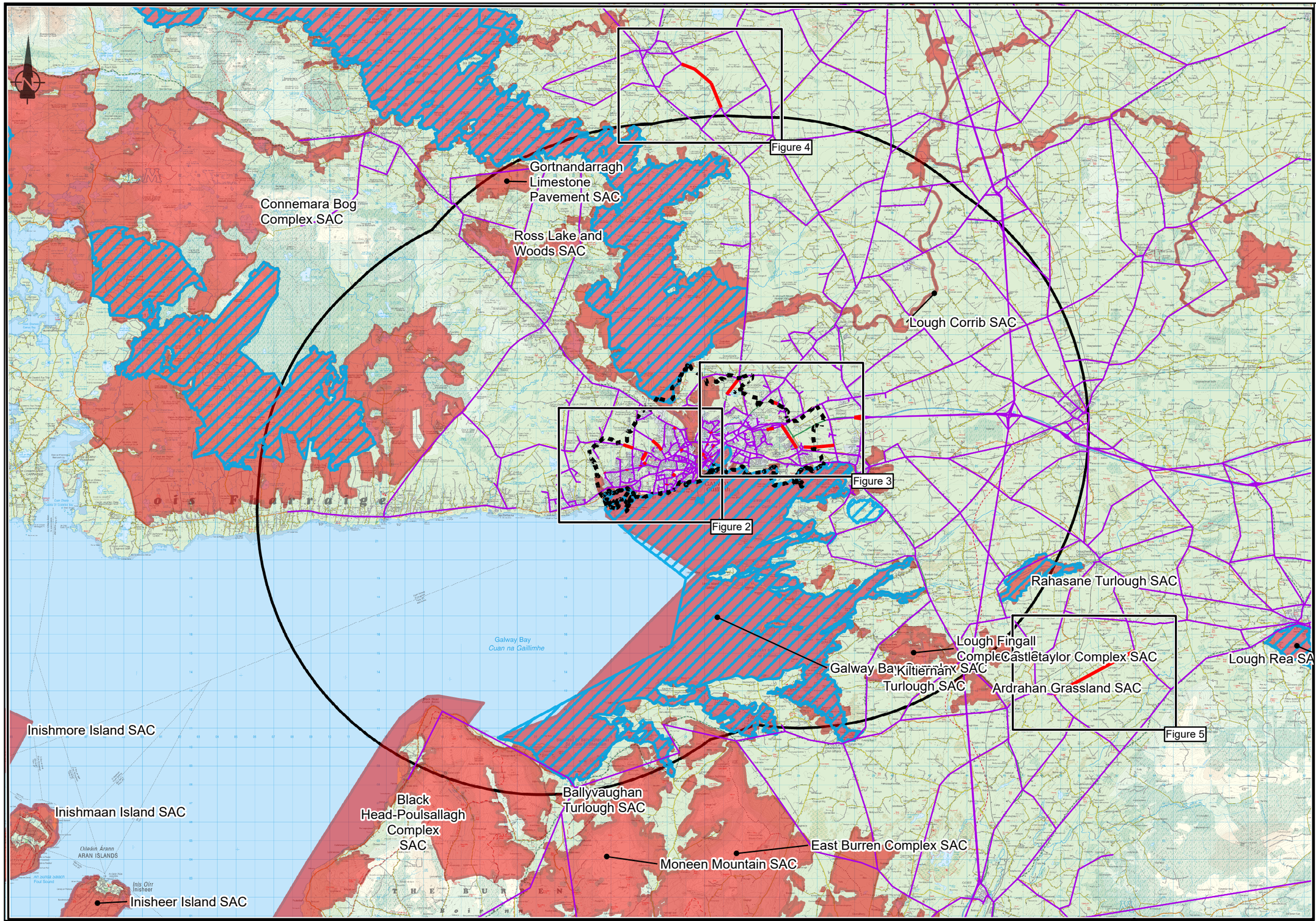
No other roads in proximity to European sites within the area of influence of the proposed N6 GCRR were modelled as having an increase of 10% or above in recreational traffic and as such do not need to be considered further.

Annex A

Figures

A.1

A3



FOR INFORMATION

Legend

- City Boundary
- Development Boundary 15km buffer
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Recreational Traffic Modelled
- Recreational Traffic Modelled - Increase > 10%

Disclaimer Note:
The Study Area shown is draft only and subject to change. More detailed assessments, on-going studies and the information received from the public may result in changes to the Study Area.

Clients

An Roinn Iompair Department of Transport

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Scale: 1: 200000 @A3

Date: February 2025

DRAFT

Issue	Date	By	Chkd	Appd
I1	28/02/2025	KW	MH	EMC

Drawing Title
Extent of Road Network with Induced Recreational Traffic
Sheet 1 of 5

Drawing Status
For Information

Job No	Drawing No	Issue
233985	Figure 1	I1

A3

FOR INFORMATION

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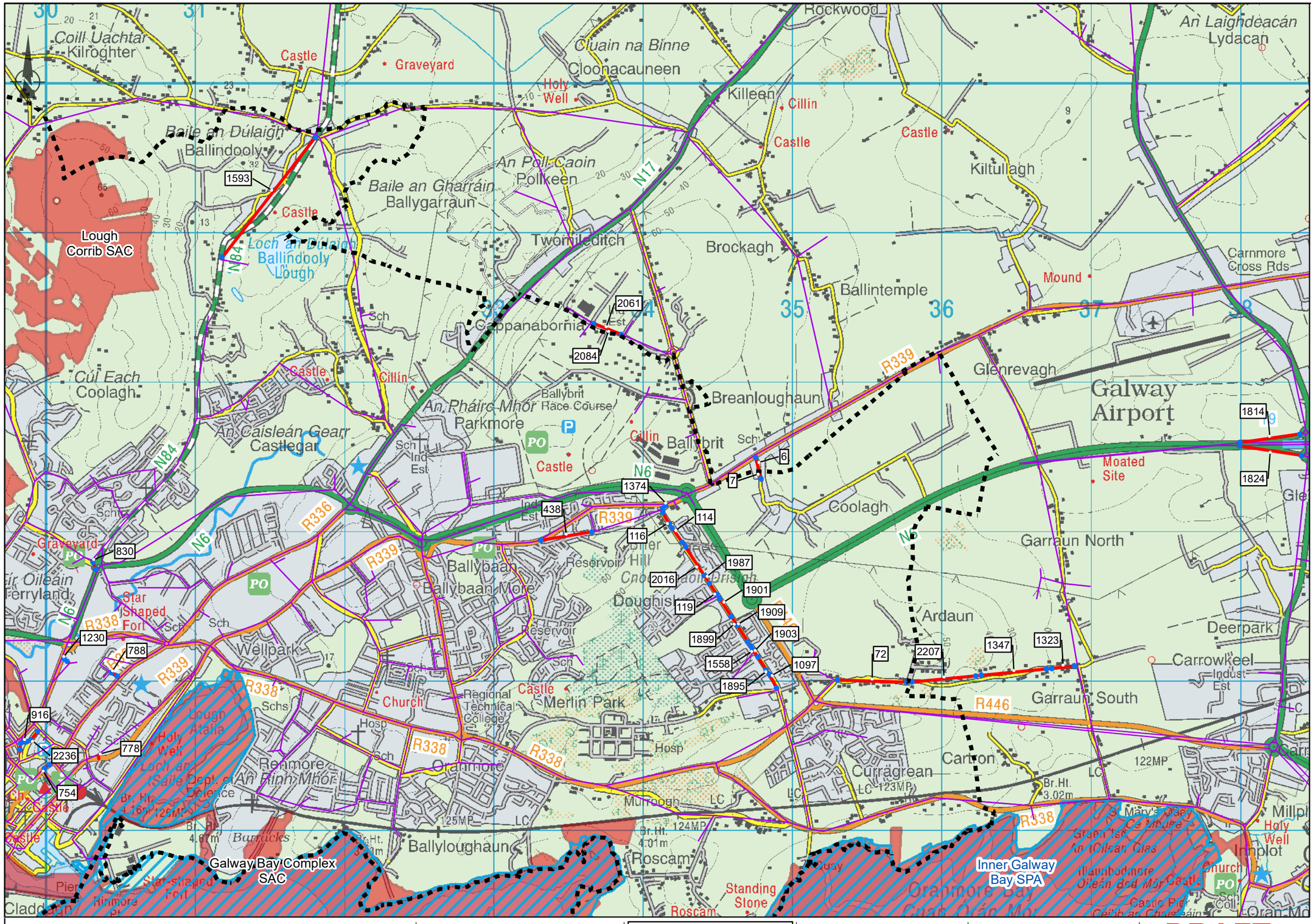
Issue	Date	By	Chkd	Appd
I1	28/02/2025	KW	MH	EMC

Drawing Title
Extent of Road Network with Induced Recreational Traffic
Sheet 2 of 5

Drawing Status
For Information

Job No	Drawing No	Issue
233985	Figure 2	I1

A3



FOR INFORMATION

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Issue	Date	By	Chkd	Appd
I1	28/02/2025	KW	MH	EMC

Drawing Title
Extent of Road Network with Induced Recreational Traffic
Sheet 3 of 5

Drawing Status
For Information

Job No	Drawing No	Issue
233985	Figure 3	I1

A3

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Issue	Date	By	Chkd	Appd
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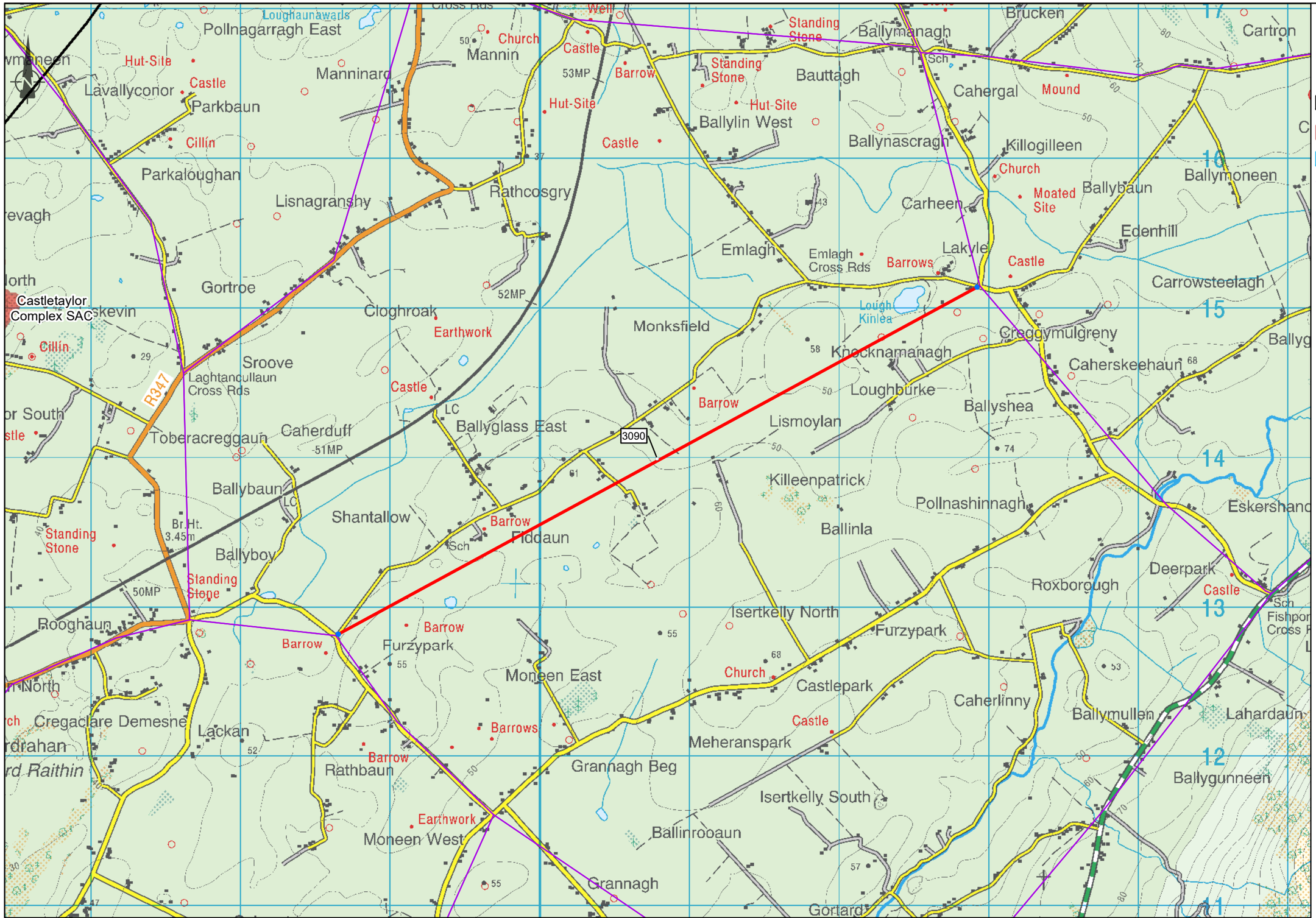
Drawing Title
Extent of Road Network with Induced Recreational Traffic
Sheet 4 of 5

Drawing Status
For Information

Job No	Drawing No	Issue
233985	Figure 4	I1

A3



FOR INFORMATION

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Drawing Title
Extent of Road Network with Induced Recreational Traffic
Sheet 5 of 5

Drawing Status
For Information

Job No	Drawing No	Issue
233985	Figure 5	I1