



N6 Galway City Ring Road

2025 RFI Response Report

March 2025

2025 Request for Further Information Response Report



An Roinn Iompair
Department of Transport



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			Prepared by	Checked by	Approved by
		Name	Mary Hurley	Eileen McCarthy	Eileen McCarthy
		Signature	<i>Mary Hurley</i>	<i>Eileen McCarthy</i>	<i>Eileen McCarthy</i>
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			

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1. Introduction

This report has been prepared as part of the Request for Further Information from An Bord Pleanála with respect to the application for approval under Section 51 of the Roads Act 1993 (as amended) for the proposed N6 Galway City Ring Road (N6 GCRR), hereafter referred to as the Section 51 Application. This report has been prepared in response to the request by ABP for further information and forms Part I of the 2025 RFI Response and provides a roadmap to explain the contents of the various parts of the 2025 RFI Response.

There are seven parts to the 2025 RFI Response as follows:

- Part I – this report which as mentioned above provides a roadmap and overview of the information presented in the other six parts
- Part II – Updated N6 Galway City Ring Road Motorway Scheme 2018
- Part III – Updated N6 Galway City Ring Road Protected Road Scheme 2018
- Part IV – Obligations under Section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended) and submissions in relation to the Climate Action Plan 2024
- Part V – Implications of new Galway City Development Plan
- Part VI – Updated Environmental Impact Assessment Report
- Part VII – Updated Provision of Information for Appropriate Assessment Screening Report and Natura Impact Statement

The structure of this report, which forms Part I of the 2025 RFI Response, is as follows:

Section 2 – provides a summary of the sequence of events since Section 51 Application was submitted in 2018

Section 3 – provides a summary of the modifications to the Section 51 Application since 2018

Section 4 – provides a summary of the updates that were required to be made to the N6 Galway City Ring Road Motorway Scheme 2018

Section 5 – provides a summary of the updates that were required to be made to the N6 Galway City Ring Road Protected Road Scheme 2018

Section 6 – provides a summary of how in granting approval for the proposed N6 GCRR An Bord Pleanála can carry out its obligations consistent with the provisions of Section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended) including specifically in relation to the Climate Action Plan 2024

Section 7 – provides a summary of any implications of the new Galway City Development Plan

Section 8 – provides an overview of the updated Environmental Impact Assessment Report

Section 9 – provides an overview of the Provision of Information for Appropriate Assessment Screening Report and updated Natura Impact Statement

2. Sequence of events since 2018

2.1.1 October 2018 – submission of application for approval

Galway County Council on behalf of itself and Galway City Council submitted an application for approval under Section 51 of the Roads Act 1993 (as amended) for the proposed N6 Galway City Ring Road (N6 GCRR) to An Bord Pleanála (ABP) on 23 October 2018. The application included an Environmental Impact Assessment Report (2018 EIAR), a Natura Impact Statement (2018 NIS), a Motorway Scheme (2018 MS) and a Protected Road Scheme (2018 PRS). The full content of this application is available at these links: on ABP at <https://www.pleanala.ie/en-ie/case/302848> and <https://www.pleanala.ie/en-ie/case/302885> and also on Galway County Council at <http://n6galwaycityringroad.ie/>.

2.1.2 April to August 2019 – Request for Further Information

On 4 April 2019, ABP requested further information pertaining to the application for approval including detailed and scaled drawings of the main structures; a copy of the Route Selection Report; details of vegetation samples (Relève data) to support the habitat mapping in the study area; clarity on the extents of some habitats; clarity on some sections of the NIS, provision of a brief “in combination” assessment which considers all the plans and projects together, rather than a pairwise with the proposed N6 GCRR, in the NIS; queries on birds, bats and other ecological issues; justification of the use of 2012 as the base year for the traffic assessment and the growth scenarios used for the traffic; and clarification on references in the EIAR. A Response to this request by ABP was submitted to ABP in August 2019. The content of the RFI is available at these links: <https://www.pleanala.ie/en-ie/case/302848> and <http://n6galwaycityringroad.ie/Response/>

2.1.3 February to March 2020 and October to November 2020 – Oral Hearing

The oral hearing for the project commenced in February 2020 and was suspended in March 2020 due to Covid-19. It was reconvened again in October 2020 and concluded in November 2020. In response to queries raised during the oral hearing by the inspectors appointed by ABP, 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. These documents are available at these links: <https://www.pleanala.ie/en-ie/case/302848> and <http://n6galwaycityringroad.ie/>

2.1.4 December 2021 – Decision to grant approval by ABP

An Bord Pleanála 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).

The decision from ABP in relation to the 2018 EIAR and 2018 NIS is available at this link: <https://www.pleanala.ie/en-ie/case/302848>

The decision from ABP in relation to the 2018 MS and 2018 PRS is available at this link: <https://www.pleanala.ie/en-ie/case/302885>

2.1.5 January 2022 to January 2023 – Judicial Review

These 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 proposed N6 GCRR was remitted back to ABP by the High Court on 30 January 2023. 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 Inspectors Report.

“An Order remitting the said application for approval for a proposed road development under section 51 of the Roads Act 1993 as amended and the said applications for approval under section 49 of the Roads Act 1993 as amended for a motorway scheme and protected road scheme entitled “N6 Galway City Ring Road Motorway Scheme 2018 and Protected Road Scheme 2018” to the First Named Respondent to be considered in accordance with law such remittal to take effect from the point in time immediately after the submission of

*the Inspector's Report (bearing the reference "ABP-302885-18 & ABP-302848- 18" and dated 22nd June 2021) to the Board"*¹

2.1.6 December 2023 – Request for Further Information

On 7 December 2023, ABP requested further information (RFI) (Ref: ABP-318220-23) 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*

¹ <https://www.n6galwaycityringroad.ie/sites/default/files/media/Order%20-%20Friends%20of%20the%20Irish%20Environment%20JR.pdf>

3. Modifications to the Application for Approval since 2018

Further to the submission of the Section 51 Application in 2018 and the subsequent response by Galway County Council to the Request for Further Information from ABP 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:

- Changes 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 and were presented on a series of drawings which were included in the Schedule of Commitments on 4 November 2020². 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 agreed during the oral hearing are as follows:

- 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 included in Part VI of this 2025 RFI Response
- 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 included in Part VI of this 2025 RFI Response
- Access Road AR 7/04 was extended further west to provide access to lands severed by a stream which is shown on Figure 5.6.10 in Volume 3 of the updated EIAR included in Part VI of this 2025 RFI Response
- 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 included in Part VI of this 2025 RFI Response
- Changes to land ownership boundary details and / or property extents which are reflected in proposed modifications to the Motorway Scheme (Part II) and Protected Road Scheme (Part III) and Figures 5.6.01 to 5.6.30 in Volume 3 of the updated EIAR included in Part VI of this 2025 RFI Response
- Some permanent land acquisition was changed to temporary acquisition which is reflected in proposed modifications to Motorway Scheme (Part II) and Protected Road Scheme (Part III) and Figures 5.6.01 to 5.6.30 in Volume 3 of the updated EIAR included in Part VI of this 2025 RFI Response
- 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 2020². 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 in Part VI of this 2025 RFI Response. 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 whilst providing access to adjoining landowner as shown in Figure 5.6.17 in Volume 3 of the updated EIAR in Part VI of this 2025 RFI Response

² https://www.n6galwaycityringroad.ie/sites/default/files/media/GCRR-4.04-019_002%20Chapter%202021%20SoC_I2_Final%2004112020.pdf

Another 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 updated EIAR in Part VI of this 2025 RFI Response

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 that, 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. The N6 Galway City Ring Road Motorway Scheme 2018 is modified as directed by the ABP Board Order ABP-302885-18 to account for the omission of the permanent stables.

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 as the construction and operation of the proposed N6 GCRR necessitates the need for the construction of both temporary and permanent stables (and associated development).

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 updated NIS. Therefore, the term Project, when used throughout the 2025 RFI Response, refers to combination of the proposed N6 GCRR and the proposed development at Galway Racecourse.

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 the updated NIS.

Where guidelines and standards have been updated or new ones have been published are of relevance to the Section 51 Application the design has been reviewed to ensure it is compliant with current standards. The design is compliant, subject to a minor change to the single carriageway, and no additional lands or changes to the vertical alignment are required to deliver a compliant design. All current guidelines and standards have been taken into account in the assessment of the Project in the updated EIAR and in the updated NIS. Where there have been changes to the assessment and/or updates since the 2018 EIAR and 2018 NIS, these have been set out in the updated reports.

4. Update to Motorway Scheme Application

The total area of proposed landtake is unchanged in the Motorway Order from that presented at the close of the oral hearing in November 2020 with the exception for the reduction in area due to the removal of one land parcel to account for the omission of the permanent stables. In addition, some lands are changed as appropriate from permanent to temporary landtake to minimise landtake as directed by the ABP Board Order ABP-302885-18 and in this regard they are listed below using references as per the Order:

- (iv) *Plot number 651a.202 shall be reduced in area so as to include only those lands required for the construction of the northern portion of Access Road 13/02 along the alignment of the existing bóithrín.*
- (v) *Plot number 713a.203 shall be subject to temporary acquisition.*
- (vi) *Plot number 713a.204, Plot number 713a.101 and Plot number 713b.101 shall be subject to temporary acquisition to a depth of 1.5 metres below ground level and subject to permanent acquisition to a depth beyond 1.5 metres below ground level.*

The Motorway Order is modified to address item (iv) above by splitting Plot Number 651a.202 into plots 651y.201 and 651x.202. Plot Number 651y.201 shall be subject to temporary acquisition and Plot Number 651x.202 shall remain as permanent acquisition following the realignment of Access Road AR 13/02. Further detail on this modification is provided in Chapter 5 in Volume 2 of the updated EIAR included in Part VI of this 2025 RFI Response.

The Motorway Scheme schedules presented at the close of the oral hearing in 2020 included all modifications which were identified further to the submission of the Section 51 Application in October 2018, up to and including those modifications identified during the oral hearing in 2020. These changes are shown in red text on the schedules at this link:

https://www.n6galwaycityringroad.ie/sites/default/files/media/MS%20Form%201%20Schedules_04112020%20TC.pdf

Since 04 November 2020, the ownership of some land has changed, additional interested parties have been identified on some lands, notification of change of address has occurred and notification of deaths has occurred, all of which is reflected in further modifications to the schedules. The subsequent changes identified are presented in blue in the tracked version of the Motorway Scheme schedules included in this 2025 RFI Response.

An updated set of Deposit Maps and Schedules for the N6 Galway City Ring Road Motorway Scheme are included in Part II of this 2025 RFI Response. A tracked version of the schedules is also included which is colour coded to detail the date of the changes, with red text denoting the edits made by the close of the oral hearing on 4 November 2020 and blue text denoting edits reflecting the current land ownership details in February 2025. Galway County Council is applying to An Bord Pleanála to modify the N6 Galway City Ring Road Motorway Scheme 2018 in accordance with these updated Deposit Maps and Schedules.

5. Update to Protected Road Scheme Application

The remaining portion of the proposed road development application is included under the N6 Galway City Ring Road Protected Road Scheme. The total area of proposed landtake is unchanged in the Protected Road Scheme from that presented at the close of the oral hearing in November 2020. In addition, some lands are changed as appropriate from permanent to temporary landtake as directed by the ABP Board Order ABP-302885-18 and in this regard, they are:

- (ii) *Plot number 195a.202 shall be subject to permanent acquisition save for the portion accommodating the final regraded entrance to the existing dwelling which shall be subject to temporary acquisition.*
- (iii) *Plot number 246a.203 shall be subject to permanent acquisition save for the portion accommodating the piped outfall which shall be subject to temporary acquisition with an associated wayleave agreement in favour of the Road Authority.*

ABP Board Order ABP-302885-18 also contained one further modification which is not reflected in the modified Protected Road Order as the significant environmental effects on this property due to the Project are unchanged since 2018:

- (i) *Plot numbers 123a.202 and 123b.201 shall be removed.*

This is a result of discussions with the landowner in 2024 after the remittal of the N6 Galway City Ring Road Protected Road Scheme application and they had requested that the then position with regards to their house not be changed i.e. Plot numbers 123a.202 and 123b.201 were included in the N6 Galway City Ring Road Protected Road Scheme 2018, their submission to ABP objecting to the scheme still stand and that ABP's Inspector's Report recommending the removal of those plots from the scheme still stands.

The Protected Road Scheme schedules presented at the close of the oral hearing in 2020 included all modifications which were identified further to the submission of the Section 51 Application in October 2018, up to and including those modifications identified during the oral hearing in 2020. These changes are shown in red text on the schedules at this link:

<https://www.n6galwaycityringroad.ie/sites/default/files/media/PRS%20Form%201%20Schedules%2004112020%20TC.pdf>

Since 04 November 2020, the ownership of some land has changed, additional interested parties have been identified on some lands, notification of change of address has occurred and notification of deaths has occurred, all of which is reflected in further modifications to the schedules. The subsequent changes identified are presented in blue in the tracked version of the Protected Road Scheme schedules included in this 2025 RFI Response.

An updated set of Deposit Maps and Schedules for the N6 Galway City Ring Road Protected Road Scheme are included in Part III of this 2025 RFI Response. A tracked version of the schedules is also included which is colour coded to detail the date of the changes, with red text denoting the edits made at the close of the oral hearing on 4 November 2020 and blue text denoting edits reflecting the current land ownership in February 2025. Galway County Council is applying to An Bord Pleanála to modify the N6 Galway City Ring Road Protected Road Scheme 2018 in accordance with these updated Deposit Maps and Schedules.

6. Obligations under Section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended) and submissions in relation to the Climate Act Plan 2024

This report, which is Part IV of this 2025 RFI Response, addresses the most recent approved Climate Action Plan, the Climate Action Plan 2024 (CAP24). This report provides the information necessary for ABP to be satisfied that, by approving the N6 GCRR, it would be discharging its obligations under section 15 of the Climate Act and performing its functions in a manner consistent with CAP24, the most recent approved long term climate strategy and the other plans and objectives specified in section 15 of the Climate Action and Low Carbon Development Act 2015 (as amended) (the “Climate Act”).

The Climate Act provides “*for the approval of plans by the Government in relation to climate change for the purpose of pursuing the transition to a low carbon climate resilient and environmentally sustainable economy....*”

As ABP will be aware, section 15(1) the Climate Act provides that:-

“15. (1) A relevant body shall, in so far as practicable, perform its functions in a manner consistent with—

- (a) the most recent approved climate action plan,
- (b) the most recent approved national long term climate action strategy,
- (c) the most recent approved national adaptation framework and approved sectoral adaptation plans,
- (d) the furtherance of the national climate objective, and
- (e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.”

ABP is a relevant body and, therefore, in considering whether to grant approval of the proposed N6 GCRR, ABP must ensure that it performs its functions in a manner consistent with CAP24, as the most recently approved CAP, and also with the long term climate action strategy and the other plans and objectives specified in Section 15.

The report should also be read in conjunction with the updated EIAR being submitted as Part VI of this 2025 RFI Response, and in particular Chapter 17 of the updated EIAR in relation to Climate, which considers the climate effects of the Project and further demonstrates how An Bord Pleanála, in granting the approval sought for the proposed N6 GCRR, will be performing its functions in a manner consistent with the plans, strategies and objectives specified in Section 15 of the Climate Act.

6.1 Consistency of N6 Galway City Ring Road with Climate Action Plan

The key targets for the transport sector from an operational perspective in the CAP24 are as follows:

- (ii) 20% reduction in total vehicle kilometres travelled relative to 2030 Business as Usual (BAU)
- (iii) 50% reduction in carbon emissions compared to 2018 levels
- (iv) Significant increases to sustainable transport trips and modal share

A traffic modelling exercise has been undertaken to look at the Galway Transport Strategy (GTS) afresh in the context of the transport problems facing Galway today, to consider whether the proposed N6 GCRR is still required as part of the GTS, and to consider whether the proposed N6 GCRR is consistent with CAP24.

As is clear from the detailed updated traffic modelling and assessment set out in Chapter 6 of the updated EIAR being submitted as Part VI of this 2025 RFI Response, the existing transport issues which triggered the need for the GTS, (including the proposed N6 GCRR) in 2016 still exist today and are impacting on all modes of transport in the city. The updated traffic modelling and assessment shows that the proposed N6 GCRR remains an integral part of the GTS and is key to the delivery of the objectives of the GTS, enabling the following outcomes aligned with the Climate Action Plan 2024 (CAP24):

- (v) A 16% reduction in total vehicle kilometres travelled in 2030, when compared to the Business as Usual (BAU)³ scenario
- (vi) A 43% reduction in carbon emissions from transport within the area of influence of the proposed N6 GCRR in 2030, when compared to 2018 levels. This substantial reduction in vehicle emissions, is achieved against a backdrop of a forecast 30% increase in population in the Greater Metropolitan Area (GMA) between 2016 and 2030

Based on that analysis and updated traffic modelling, it is clear that the delivery of the proposed N6 GCRR is still required today as an integral part of the GTS, and its delivery as part of the GTS and alongside the measures which informed the targets for transport set out in CAP23 and CAP24 (the transport targets have not changed between the CAP23 and CAP24) results in a 43% carbon emissions reduction from transport by 2030 within the area of influence of the proposed N6 GCRR when compared back to 2018 levels.

In addition to these significant contributions to the specific national targets set out in CAP24, the proposed N6 GCRR has been developed in line with and is consistent with the modal hierarchy and intervention hierarchy set out in the National Investment Framework for Transport in Ireland (NIFTI) and will also contribute to significant increases in sustainable transport trips and modal share.

When delivered alongside demand management measures to achieve CAP24 targets, the proposed N6 GCRR will:

- Enable demand management measures within the city such as car free areas and congestion charges, which would restrict general traffic from using three out of the existing four bridge crossings, and help to reduce city centre traffic, supporting potential road space reallocation for sustainable modes and public realm improvements
- Facilitate demand management measures to help achieve CAP24 targets whilst ensuring a level of mobility for residents on both sides of the city
- Enable a better performing network for all modes by reducing delays across the network by 50% compared with 2023 levels, whilst not increasing the level of car trips within the metropolitan area
- Reduce the need for HGVs to travel within the city: 25% reduction in the level of HGV kilometres within the N6/R338 cordon of the city which accounts for approx. 60% of the city's current population; benefitting pedestrians, cyclists and public transport users with a consequential improvement in air quality in line with CAP24 and supporting a safer environment for active travel trips
- Facilitate the BusConnects programme for the city, by providing another river crossing to offset restrictions on Salmon Weir Bridge and enable potential restrictions on other city centre bridges via car free urban areas and congestion charges
- Accommodate the significant planned growth within city and environs in line with National Planning Framework (NPF) targets (50% increase in population by 2040, compared to 2016 levels)

Therefore, not only will the proposed N6 GCRR be consistent with CAP24 during its operational phase, as an integral part of GTS and enabler of demand management measures set out in CAP24, the proposed N6 GCRR is essential to the optimal achievement of GTS combined with the forecast population growth and the CAP24 targets.

³ This scenario is used as the benchmark against which the vehicle kilometre reduction target is calculated.

The reduction in total vehicle kilometres travelled and carbon emissions that will be achieved through the implementation of the GTS (including the proposed N6 GCRR) and CAP24 and the significant increases to sustainable transport trips and modal share that will be facilitated during the operational phase are transformational in terms of the future compact growth of Galway City by 50% in line with national policy to reduce and minimise demand for transport in the first case. However, there are associated, but necessary negative effects during the construction process from embodied carbon associated with the materials and transport of construction materials to site.

The analysis in this report demonstrates that, by granting the approvals sought for the N6 GCRR, ABP would be performing its functions in a manner consistent with CAP24, the most recent approved long term climate strategy and the other plans and objectives specified in section 15 of the Climate Act.

7. Submission in relation to the implications of the new Galway City Development Plan

At the time of the application in 2018 for approval of the proposed N6 GCRR pursuant to Section 51 of the Roads Act 1993 (as amended), the Galway City Development Plan 2017-2023 was in force and the 2018 EIAR and in particular Chapter 2, Planning and Policy Context evidenced how the proposed N6 GCRR was a key objective of that plan and how the pursuit of the proposed N6 GCRR was consistent with and necessary for the implementation of the Galway City Development Plan 2017-2023.

That plan has since been replaced by the Galway City Development Plan 2023-2029. The updated EIAR being submitted as Part VI of this 2025 RFI Response includes an updated Chapter 2, Planning and Policy Context which specifically considers the Galway City Development Plan 2023-2029 in the context of the proposed N6 GCRR.

This additional report, which is Part V of this 2025 RFI Response, demonstrates that the proposed N6 GCRR remains a key objective of the Galway City Development Plan 2023-2029 and how the provision of the proposed N6 GCRR not only aligns with the policies and objectives in the Galway City Development Plan 2023-2029 but is consistent with those policies and objectives and necessary for the implementation of the Galway City Development Plan 2023-2029.

The NPF and Regional Spatial and Economic Strategy (RSES) acknowledge that the growth and economic success of Galway City requires investment in a range of infrastructure, including roads, and identify the delivery of the proposed N6 GCRR as a key future growth enabler for the city. Within this broader planning context, the proposed N6 GCRR remains a core objective of the Galway City Development Plan 2023-2029 to implement the Core Strategy and to integrate land use and transport planning to cater for the projected growth in the Galway Metropolitan Area Strategic Plan.

The Galway City Development Plan 2023-2029 fully integrates the aims, objectives, and strategies of the GTS incorporating the proposed N6 GCRR into its core policies and objectives. Whereas elements of the GTS can be implemented independently of the proposed N6 GCRR, the City Development Plan admits that the full extent of measures and the successful delivery of the GTS require the provision of this new orbital route. Sustainable transport policy and road network policy in the Galway City Development Plan 2023-2029 supports the full implementation of the GTS underpinned by the proposed N6 GCRR, which is also identified as a strategic addition to the EU TEN-T Comprehensive Network.

The proposed N6 GCRR therefore aligns with the strategic aims of the City Development Plan and is necessary to achieve the Council's vision for Galway City to become a successful, sustainable, competitive regional city, that creates prosperity, supports a high quality of life and maintains its distinctive identity and culture.

8. Update to Environmental Impact Assessment Report

An updated Environmental Impact Assessment Report (EIAR) has been prepared and included in Part VI of this 2025 RFI Response. Whilst the structure and format of the updated EIAR in Part VI of this 2025 RFI Response broadly follows the same structure as that in 2018, it includes a new separate chapter for the waste assessment given recent developments in waste management and new guidelines and legislation. The updated EIAR also separates the air quality and climate into two separate chapters. The cumulative impacts assessment, mitigation measures, residual impacts and Schedule of Environmental Commitments chapters have also been updated in the updated EIAR in Part VI of this 2025 RFI Response.

Chapter 1 of the EIAR has been reviewed and updated to take account of changes in legislation, Chapter 2 has been reviewed and updated to reflect current planning policy and demonstrated how the proposed N6 GCR and Project aligns with current policies and plans. The need for the Project has been reviewed and the proposed N6 GCR is needed as much today in 2025 as it was in 2018 and this is presented in Chapter 3. Chapter 4, Alternatives Considered has been reviewed and updated to include more detail on the 2006 Galway City Outer Bypass option and the light rail alternative presented at the oral hearing in 2020 has been updated to take account of the Light Rail for Galway City Assessment published by the NTA in 2024. The description of the Project presented in Chapter 5 has been reviewed and updated to reflect the modifications made since 2018 and explain the proposed development at Galway Racecourse and the construction activities associated with the Project have been reviewed and updated in Chapter 7. Updated traffic modelling was undertaken to take account of the 2022 Census data and new traffic data from surveys undertaken in 2023 and the updated results and assessment are presented in Chapter 6 of the updated EIAR.

Each of the environmental impact assessments have been reviewed and updated and the conclusions of the updated impact assessment for each environmental topic are presented below along with a response to the following questions:

1. Are there any changes to the guidance and standards for the methodology for the impact assessment? If so, what are they?
2. Has the baseline changed? If so, how and where?
3. Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of updated impact assessment guidance? If so, how?
4. Do any changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?
5. Do any changes to the mitigation strategy alter the residual impact assessment? If so, how?
6. Are there any changes to the cumulative impact assessment? If so, how?

8.1 Biodiversity

8.1.1 Overview

Since the 2018 EIAR, several key biodiversity guidelines have been published, affecting survey methodologies, impact assessments, and mitigation designs. Additionally, several updated biodiversity policies have been published since September 2022. The biodiversity assessment has been reviewed and updated to take account of these changes.

Cognisance has also been taken of the ecological assessment undertaken by the Inspector appointed by An Bord Pleanála (ABP) and presented in their report dated 22 June 2021⁴, and reflected in this updated EIAR in terms of receptor valuations, potential impacts, mitigation measures, and residual impacts under the

⁴ Inspector's Report (2021) ABP-302885-18 & ABP302848-18 and Appendix 4: Ecological Impact Assessment Report, N6 Galway City Ring Road for An Bord Pleanála, ABP Ref. ABP-302848-18, ABP302885-18, Project No.: IABP106/002 (2021), prepared by Dr Arnold of Thomson Environmental Consultants

respective headings. Where there have been any changes to the assessment and or any updates since the 2018 EIAR these have been set out in the updated biodiversity chapter.

A number of questions arose at the Oral Hearing in 2020 specifically in relation to Barn owl mitigation and foraging habitat impacts, Marsh fritillary butterfly mitigation, compensatory habitat provision, habitat classifications (including Annex I limestone pavement habitat), mammal underpass design, Common lizard impacts and mitigation, shading impact of the Menlough Viaduct on limestone pavement habitat, reuse of limestone pavement habitat for wildlife habitat creation and planning policy in relation to biodiversity, and these are specifically referred to and dealt with in the appropriate sections throughout this updated chapter. Further, the documentation submitted by GCC during the Oral Hearing in 2020 have also been reflected in this updated chapter and, where appropriate in the appendices to the updated biodiversity chapter.

The key changes to the biodiversity chapter since the 2018 EIAR involve updating:

- the description of the receiving environment to take account of the results of the surveys undertaken between 2022 and 2024
- the figures and appendices to reflect the updated data and assessment
- to take account of points raised in the RFI Response dated 30 August 2019, the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated 22 June 2021

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

- There are 22 European sites which could potentially be affected by the Project: Lough Corrib SAC, Lough Corrib SPA, Galway Bay Complex SAC, Inner Galway Bay SPA, Ardahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SPA, Rahasane Turlough SAC, Cregganna Marsh SPA, Maumturk Mountains SAC, The Twelve Bens/Garraun Complex SAC, Connemara Bog Complex SAC, Connemara Bog Complex SPA, Ross Lake and Woods SAC, East Burren Complex SAC, Moneen Mountain SAC, Black Head-Poulsallagh Complex SAC, Gortnandarragh Limestone Pavement SAC, Inishmore Island SAC and Kilkieran Bay and Island SAC. There are no other European sites at risk of impacts from the Project.
- A full assessment on the European sites has been carried out and is reflected in the updated NIS. The conclusion of the assessment in the updated NIS is that the Project will not adversely affect the integrity of any European site, either alone or in combination with other plans or projects.
- There is one NHA site which could potentially be affected by the Project: Moycullen Bogs NHA which lies immediately adjacent to the proposed N6 GCRR. However, the Project will not result in likely significant residual effects on this NHA.
- There are 31 pNHA sites which could potentially be affected by the Project: Lough Corrib pNHA, Galway Bay Complex pNHA, Furbogh Wood pNHA, Kiltullagh Turlough pNHA, Ballycurke Lough pNHA, Connemara Bog Complex pNHA, Drimcong Wood pNHA, Ross Lake and Woods pNHA, Black Head-Poulsallagh Complex pNHA, Lough Fingall Complex pNHA, Rahasane Turlough pNHA, Gortnandarragh Limestone Pavement pNHA, Moneen Mountain pNHA, East Burren Complex pNHA, Kiltiernan Turlough pNHA, Castletaylor Complex pNHA, Turloughcor pNHA, Inishmore Island pNHA, Maumturk Mountains pNHA, The Twelve Bens/Garraun Complex pNHA, Mason Island Machair pNHA, Mweenish Island Machair pNHA, Finish Island Machair pNHA, Duck Island pNHA, Inishmuskerry pNHA, Ardmore Point pNHA, Eagle Rock pNHA, Geabhrog island pNHA, Oilean Na Ngeabhrog (Glencoh Rock) pNHA, Kinvarra Saltmarsh pNHA and Oilean Na Ngeabhrog (Illaungurraig) pNHA.
- Lough Corrib pNHA is traversed by the Project at the River Corrib Bridge crossing. However, the Project will not result in likely significant residual effects on this pNHA.

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

The potential impacts of the Project on each of these key ecological receptors are identified. Mitigation measures are proposed to avoid or minimise the predicted impacts. In addition, monitoring⁵ has been proposed, where relevant. The residual impacts remaining are outlined, and (where relevant) any compensation measures proposed to further address those residual impacts are detailed.

The significant residual impacts remaining after mitigation are those associated with habitat loss, rare and protected plant species, bats, Barn owl and Peregrine falcon, and Local Biodiversity Areas. Compensatory measures will be implemented to reduce or avoid these significant residual impacts, noting that some residual impacts cannot be compensated. The compensatory measures will reduce the significant residual impacts on all bat species to a local level.

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

- Likely significant residual effect, at the international geographic scale, for the permanent loss of c.0.01ha of Active Blanket bog habitat⁶
- Likely significant residual effect, at the international geographic scale, for the permanent loss of c.0.01ha of the mosaic containing Active Blanket bog, Wet heath and Dry heath habitats⁷
- Likely significant residual effect, at the international geographic scale, for the permanent loss of c.1.54ha of Limestone pavement habitat⁸
- Likely significant residual effect, at the international geographic scale, for the permanent loss of c.0.03ha of the habitat mosaic containing Limestone pavement and Calcareous grassland⁹
- Likely significant residual effect, at the national geographic scale, for the permanent loss of c.3.9ha of Wet heath habitat¹⁰
- A likely significant residual effect, at the county geographic scale, for the permanent loss of four Petrifying spring features at Lackagh Quarry¹¹
- Likely significant residual effects on Habitat Clusters 1-12 ranging from the local to international scale, dependent upon the potential impacts of the Project on each of the individual ecological receptors that make up the biodiversity resource within a given habitat cluster A likely significant residual effect for the loss of local populations of the red-listed bryophyte species Imbricate bog moss *Sphagnum affine* at the national geographic scale
- A likely significant residual effect for the loss of local populations of the red-listed bryophyte species Woodsy thyme moss *Plagiomnium cuspidatum*, Lesser striated feathermoss *Plasteurhynchium striatulum* and Red bog-moss *Sphagnum capillifolium* subsp. *capillifolium* at the county geographic scale
- A likely significant residual effect for the loss of local populations Eyebright *Euphrasia arctica* at a local geographic scale
- A likely significant residual effect, at the local geographic scale, for the potential permanent loss of a Barn Owl nest site at Menlough

⁵ In accordance with the requirement for monitoring set out in the EIA Directive 2014/52/EU to monitor significant effects on the environment

⁶ None of these areas of habitat to be lost are within any sites designated as SAC, SPA, pNHA or NHA.

⁷ None of these areas of habitat to be lost are within any sites designated as SAC, SPA, pNHA or NHA.

⁸ None of these areas of habitat to be lost are within any sites designated as SAC, SPA, pNHA or NHA.

⁹ None of these areas of habitat to be lost are within any sites designated as SAC, SPA, pNHA or NHA.

¹⁰ None of these areas of habitat to be lost are within any sites designated as SAC, SPA, pNHA or NHA.

¹¹ None of these areas of habitat to be lost are within any sites designated as SAC, SPA, pNHA or NHA.

- A likely significant residual effect, at the county geographic scale, for the potential permanent loss of a Peregrine falcon nest site at Lackagh Quarry
- A likely significant residual effect, at the local geographic scale, on all bat species (including lesser horseshoe bat) due to the presence of the Project within their foraging areas
- A likely significant residual effect, at the local geographic scale, for the permanent loss of 18 calcareous springs (FP1) (Non-Annex I habitat type) at Lackagh Quarry, c.5.24ha of Dry-humid acid grassland (GS3) (Non-Annex I habitat type) and c.1.30ha of Poor fen and flush habitat (PF2) (Non-Annex I habitat type)¹²

These significant residual effects will also affect the following local biodiversity areas¹³: Coast Road (R336) to the N59 Moycullen Road, the River Corrib and the Coolagh Lakes, Menlough to Coolagh Hill, Ballindooley – Castlegar, Doughiska local biodiversity area, Cooper’s Cave Terryland local biodiversity area, Terryland Glenanail local biodiversity area, City Canal System local biodiversity area, and Waterbody local biodiversity area.

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

A bat derogation licence application for the Project was submitted to the NPWS in March 2024, and granted in April 2024 (see Appendix A.8.25 Part 1 in Volume 3 of the updated EIA for the 2024 bat derogation licence). As the 2024 bat derogation licence expired on 31 December 2024, a new derogation licence application was submitted to the NPWS on 1 April 2025 (included in Appendix A.8.25 Part 2 in Volume 3 of the updated EIA).

Further to the collection of the bat survey data in 2023, a review was undertaken in March 2025 to evaluate whether there have been any landscape scale habitat changes since then that might influence the movement or foraging behaviour of bats along, and in the immediate vicinity of, the Project. The review comprised an examination of recent orthophotography, along with a drive through and vantage point validation from the nearest publicly accessible location (generally a roadside), to record any large-scale land-use changes that might materially affect bat movement. The conclusion of the review was that there were no material landscape scale habitat changes since 2023 that would affect bat the movement or foraging behaviour of bats along, and in the immediate vicinity of, the Project. Therefore, it is the professional opinion of the author of Chapter 8 (Biodiversity) of the updated EIA that the scientific data presented within the updated EIA and the Bat Derogation Licence application remains valid to robustly inform and support the bat impact assessment and conclusions set out in the bat derogation licence application.

Derogation licences granted by the NPWS are published, along with the application and any supporting documentation, on their website at <https://www.npws.ie/licensesandconsents/disturbance/application-for-derogation/bat-derogations-issued>. **Please note, ABP will be able to see when the Bat Derogation Licence is granted, and obtain a copy of the final granted licence, by clicking on this link.**

8.1.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? Is so, what are they?

The following key biodiversity guidelines relating to survey methodology, impact assessment, and mitigation design have been published since the application for approval under Section 51 of the Roads Act 1993 (as amended) for the proposed N6 GCRR was submitted to ABP in October 2018:

¹² None of these areas of habitat to be lost are within any sites designated as SAC, SPA, pNHA or NHA.

¹³ These local biodiversity areas are defined in the *Galway City Development Plan 2017–2023* and the most recent draft of the *Galway City Biodiversity Action Plan 2014–2024*

- *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition) (Collins (ed.), 2023)*
- *Bat Mitigation Guidelines for Ireland V2 (NPWS, 2022)*
- *UK Bat Mitigation Guidelines (Reason and Wray, 2023)*
- *Survey and Mitigation Standards for Barn Owls to inform the Planning, Construction and Operation of National Road Projects (TII, 2021)*
- *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports [1]*
- *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2 (CIEEM, 2018)*

Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition) (Collins (ed.), 2023) was published by the UKs Bat Conservation Trust in September 2023, after the bat surveys informing the updated EIAR were completed. Therefore, changes to the survey methodologies set out in the BCT guidance document are not reflected in how the bat survey data was collected for the Project. Nevertheless, the bat survey programme and methodologies applied between 2018 and 2023 were undertaken with reference to Environmental Guidelines Series for Planning and Construction of National Roads (NRA, 2005- 2009) and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn) (Collins (ed.), 2016)* and the survey methodologies were robust and provide sufficient information to inform the impact assessment and mitigation strategy presented in the bat derogation licence application and the updated EIAR.

Bat Mitigation Guidelines for Ireland V2 (NPWS, 2022) were published in 2022 and the *UK Bat Mitigation Guidelines (Reason and Wray, 2023)* were published in September 2023. These guidelines were used, in conjunction with TIIs Environmental Guidelines Series for Planning and Construction of National Roads (NRA, 2005- 2009), to inform the bat mitigation strategy for the proposed Project, ensuring the protection of bats during construction and operation of the proposed Project.

The impact assessment and mitigation strategy related to bats formed the basis for the bat derogation licence application made to the NPWS in March 2024, which was granted by the NPWS (DER/BAT 2024 – 96) on 10 April 2024 with no queries raised in relation to the survey approach, impact assessment conclusion and no amendments proposed to the mitigation strategy.

The Barn owl surveys undertaken in 2023 follow the methodology set out in the 2021 guidelines which are comparable to and consistent with the methodologies used for the 2014-2018 surveys. The Barn owl mitigation strategy has also been reviewed and updated for consistency with the current guidelines.

The Environmental Protection Agency (EPA) published revised environmental impact assessment guidelines in May 2022 (*Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*) and the Chartered Institute of Ecology and Environmental Management (CIEEM) published revised ecological impact assessment guidelines in September 2018 (CIEEM, 2018). The biodiversity chapter of the updated EIAR has been developed with regard to, and is consistent with the approach set out in, both sets of guidelines.

The following new or updated plans, relevant to biodiversity policy at a national and local authority level, have been published since September 2022:

- a) *Ireland's 4th National Biodiversity Action Plan 2023-2030*
- b) *Galway City Development Plan 2023-2029*
- c) *Galway City Biodiversity Action Plan 2014-2024*
- d) *Ardaun Local Area Plan 2018-2024*
- e) *Galway County Development Plan 2022-2028*
- f) *Galway County Heritage and Biodiversity Plan 2017-2022*
- g) *TII Biodiversity Plan 2023*
- h) *TII Landscape Plan 2023*

The proposed Project complements the TII Biodiversity Plan 2023 and the TII Landscape Plan 2023.

8.1.3 Has the baseline changed? If so, how and where?

The list of European sites considered as KERs in the biodiversity assessment has been expanded from Lough Corrib SAC, Lough Corrib SPA, Galway Bay Complex SAC and Inner Galway Bay SPA to align with the assessment presented in the updated NIS. The following additional European sites are included in the assessment (see Section 9 of this report for more details): Ardrahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SPA, Rahasane Turlough SAC, Cregganna Marsh SPA, Maumturk Mountains SAC, The Twelve Bens/Garraun Complex SAC, Connemara Bog Complex SAC, Connemara Bog Complex SPA, Ross Lake and Woods SAC, East Burren Complex SAC, Moneen Mountain SAC, Black Head-Poulsallagh Complex SAC, Gortnandarragh Limestone Pavement SAC, Inishmore Island SAC and Kilkieran Bay and Island SAC.

In including additional European sites into the assessment, and with the additional impact pathways considered in the updated NIS, the following additional pNHA sites are also now incorporated into the biodiversity assessment as KERs: Furbogh Wood pNHA, Kiltullagh Turlough pNHA, Ballycuirke Lough pNHA, Connemara Bog Complex pNHA, Drimcong Wood pNHA, Ross Lake and Woods pNHA, Black Head-Poulsallagh Complex pNHA, Lough Fingall Complex pNHA, Rahasane Turlough pNHA, Gortnandarragh Limestone Pavement pNHA, Moneen Mountain pNHA, East Burren Complex pNHA, Kiltiernan Turlough pNHA, Castletaylor Complex pNHA, Turloughcor pNHA, Inishmore Island pNHA, Maumturk Mountains pNHA, The Twelve Bens/Garraun Complex pNHA, Mason Island Machair pNHA, Mweenish Island Machair pNHA, Finish Island Machair pNHA, Duck Island pNHA, Inishmuskerry pNHA, Ardmore Point pNHA, Eagle Rock pNHA, Geabhrog Island pNHA, Oilean Na Ngeabhrog (Glencoh Rock) pNHA, Kinvarra Saltmarsh pNHA and Oilean Na Ngeabhrog (Illaungurraig) pNHA.

In general, the distribution and extent of habitats, and the distribution and abundance of flora and fauna species, is broadly consistent with that recorded previously to inform the impact assessment presented in the 2018 EIAR.

The habitat baseline has been updated and, in general, the changes comprise relatively minor and expected changes habitat classifications and extents given the four year period between the last habitat survey in 2019 and the most recent survey in 2023. The habitat changes have arisen as a result of factors including land use change, development or natural succession. Land use changes observed included reduced intensity or abandonment of agricultural management, increased intensification or resumption of agricultural use, and vegetation clearance (e.g. scrub). Site clearance and construction activities associated with development projects continues to result in semi-natural habitat loss around the margins of Galway City. Areas of former bare ground have naturally developed vegetation cover over time and, where land management is absent or significantly reduced, grasslands have become overgrown and bracken/scrub cover has increased, often to the detriment of surrounding or enclosed semi-natural habitat. Changes in the habitat baseline are described and shown on Figures 8.20.1 to 8.20.15 and Figures 8.23.1 to 8.23.15 and the following is a summary of some of the key changes that have occurred:

- Abandoned or less intensively managed grassland fields developing into rank dry meadows and grassy verges (GS2) habitat and/or becoming encroached by bracken (HD1) or scrub (WS1)
- Grassland or scrub habitats developing, or buildings/artificial surfaces constructed, on former areas of bare or recolonising bare ground
- Vegetation clearance creating new areas of spoil and bare ground (ED2) or recolonising bare ground (ED3), or resulting in losses of habitat areas/features such as hedgerows (WL1), treelines (WL2) grasslands, woodland and scrub
- Small area losses of Annex I habitats – dry heaths [4030], wet heaths [4010], calcareous grassland [6210], limestone pavement [*8240] and alkaline fens [7230]
- The largest single area of habitat change (c.11.9ha) relates to the reclassification of Lackagh Quarry from an active quarry (ED4) to spoil and bare ground (ED2) given the timeframe that has elapsed since the quarry site was last actively worked.

- The River Corrib has been reclassified as corresponding to the Annex I vegetation of flowing waters [3260] habitat.
- The distribution of calcareous spring (FP1) features corresponding to the Annex I Petrifying springs [*7220] habitat in Lackagh Quarry has changed.

Three additional non-native invasive flora species were recorded in 2023, within the survey area but outside of the Assessment boundary, the first two of which are listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011: three cornered garlic *Allium triquetrum*, Giant rhubarb *Gunnera tinctoria* and old man's beard *Clematis vitalba*.

No additional rare or protected plant species were recorded in 2023. However, the following additional plant species were included as KERs in the updated EIAR to align with assessment undertaken by the ecologist appointed by ABP and presented in the ABP's Inspector's Report dated 20 June 2021: Woodsy thyme moss *Plagiomnium cuspidatum*, Lesser striated feathermoss *Plasteurhynchium striatulum*, Imbricate bog-moss *Sphagnum affine*, Red bog-moss *Sphagnum capillifolium*, Spring gentian *Gentiana verna*, Brown beak-sedge *Rhynchospora fusca*, Fern grass *Catapodium rigidum*, Eyebright *Euphrasia artica* and Downy oat-grass *Avenula pubescens*.

The distribution of otter holts and activity is consistent with that presented in the 2018 EIAR.

The number of bat species present, and their distribution across the survey area, is consistent with that published in 2018. There were minor changes to the location of, and species composition and numbers occupying, bat roosts. These changes are described in Section 8.3.7.2 of Chapter 8 of the updated EIAR and Section 5.2 of the Bat Derogation Licence Application included in Appendix A.8.25 Part 2 in Volume 3 of the updated EIAR.

The distribution of badger activity is consistent with that presented in the 2018 EIAR. Seven additional badger setts were recorded in 2023; none of which are located within the Assessment boundary.

There has been a reduction in the distribution and extent of suitable marsh fritillary habitat within, and in the vicinity of, the Assessment boundary in 2023, compared with previous years.

An additional six wintering bird species of highest conservation concern and considered to be Key Ecological Receptors (KERs)¹⁴, were recorded within the wintering bird survey area between 2022 and 2024: gadwall, little egret, red grouse, redwing, ringed plover and whooper swan.

An additional four breeding bird species of conservation concern and considered to be Key Ecological Receptors (KERs)¹⁵, were recorded within the survey area in 2023: common gull, little egret, snipe and tree sparrow.

No additional barn owl breeding sites were confirmed in 2023 but there were two new occupied, non-breeding sites confirmed. Only one of those is in near proximity to the Project, in the Doughiska/Ardaun/Roscam area.

An additional peregrine falcon nest site was confirmed locally in 2023. The nest site is located to the north of Bearna but lies beyond the zone of influence of the Project.

The baseline with respect to fish is consistent with that presented in the 2018 EIAR, with the exception of the presence of the invasive species zebra mussel in the River Corrib and at the Coolagh Lakes, and the detection of European eel in Ballindooley Lough by employing eDNA sampling techniques in 2023.

The baseline with respect to white-clawed crayfish, the freshwater pearl mussel, red grouse, woodcock, common frog, smooth newt and the common lizard is consistent with that presented in the 2018 EIAR;

¹⁴ Special Conservation Interests (SCIs), for a wintering population, of nearby SPAs, species listed under Annex I of the Birds Directive (2008/144/EC), and/or Red and Amber species listed for their wintering populations from *Birds of Conservation Concern in Ireland 4: 2020–2026* (Gilbert *et al.* 2020)

¹⁵ Special Conservation Interests (SCIs), for a breeding population, of nearby SPAs, species listed under Annex I of the Birds Directive (2009/147/EC), and/or Red and Amber species listed for their breeding populations from *Birds of Conservation Concern in Ireland 4: 2020–2026* (Gilbert *et al.* 2020)

noting that a greater number of common lizard were recorded in 2023 compared with 2015, and across a greater number of survey sites, including east of the River Corrib where common lizard were not recorded in 2015.

8.1.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

The impact assessment has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process including in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties, and the assessment undertaken by the Inspector appointed by An Bord Pleanála (ABP) dated 22 June 2021¹⁶.

Although the baseline changes have required some level of minor updates to the impact assessment to capture the biodiversity baseline variances recorded between 2018 and 2024, the baseline updates are not material and do not affect the conclusions of the impact assessment.

As noted above in Section 6.1.2, additional pNHA sites and rare plant species have been included as KERs and these sites have been incorporated into the impact assessment and are at risk of likely significant effects.

8.1.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties and also including as appropriate, recommended mitigation measures by Dr Arnold, the ecologist appointed by An Bord Pleanála (for biodiversity in the Ecological Impact Assessment Report appended (as Appendix 4) to the ABP's Inspector's Report dated 22 June 2021 and accepted by ABP's Inspector).

The minor updates made to the impact assessment resulting from the updated baseline results, and the conclusions of the updated impact assessment, have not resulted in any material changes to the mitigation strategy.

8.1.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

The changes to the mitigation strategy do not alter the conclusions of the residual impact assessment.

8.1.7 Are there any changes to the cumulative impact assessment? If so, how?

The cumulative impact assessment has been updated, see Section 8.8 of Chapter 8 of the updated EIAR, and Section 19.5 of Chapter 21 of the Updated EIAR to capture new planned or committed projects since the conclusion of the oral hearing in 2020. With the implementation of the specified mitigation measures, the new planned and committed projects do not change the assessment of residual likely significant effects of the Project on biodiversity as set out in Section 8.7 of Chapter 8 of the updated EIAR.

8.1.8 Conclusion

Although the biodiversity baseline has changed slightly since 2018, the changes are relatively minor, in line with what would have been expected or predicted in 2018, and the overall biodiversity baseline is broadly consistent with that recorded in 2018.

The baseline changes have had no material effect on the impact assessment and its conclusion, or on the mitigation strategy for the Project.

The impact assessment and mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third

¹⁶ Inspector's Report (2021) ABP-302885-18 & ABP302848-18 and Appendix 4: Ecological Impact Assessment Report, N6 Galway City Ring Road for An Bord Pleanála, ABP Ref. ABP-302848-18, ABP302885-18, Project No.: IABP106/002 (2020), prepared by Richard Arnold of Thomson Environmental Consultants

parties, including the Ecological Impact Assessment Report undertaken by Dr Arnold and appended (as Appendix 4) to the ABP's Inspector's Report dated 22 June 2021 and accepted by ABP's Inspector.

Overall the residual impacts of the Project remain consistent with those published in October 2018. There have been minor changes to the areas of habitat types being lost, and there is an additional likely significant residual effect on Barn owl at the local geographic scale. There are also additional likely significant residual effects on Imbricate bog moss *Sphagnum affine* at the national geographic scale, Woodsy thyme moss *Plagiomnium cuspidatum*, Lesser striated feathermoss *Plasteurhynchium striatulum* and Red bog-moss *Sphagnum capillifolium* at the county geographic scale, and Eyebright *Euphrasia arctica* at a local geographic scale.

8.2 Soils and Geology

8.2.1 Overview

Since the 2018 EIAR, the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR. Where there have been any changes to the assessment and or any updates since the 2018 EIAR, these have been set out in this updated chapter.

The soils and geology chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR involve updating:

- the methodology to take account of updated guidelines
- the description of the receiving environment and impact assessments to take account of changes, new developments, updated to the Galway City Development Plan and Galway County Development Plan, etc.
- the evaluation of the effect on geological features of importance, such as a more detailed assessment of soil in line with the EU Soil Strategy for 2030
- the appendices and figures associated with Chapter 9
- to take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated June 2021
- In terms of significant soils and geology residual effects, this updated EIAR confirms one new additional significant/moderate residual effect due to the loss of a proportion of the Geological Heritage Site (GC001) Doughiska N6 Road Cut. This is in addition to the unchanged significant/moderate residual impact to Limestone pavement

8.2.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? If so, what are they?

Yes, since the submission of the 2018 EIAR as part of the application in 2018, the RFI response submitted in 2019, and the conclusion of the Oral Hearing in 2020, the Environmental Protection Agency (EPA) published updated guidelines which have been updated in the preparation of the updated EIAR as follows:

- Environmental Protection Agency (2022) Guidelines on the Information to be contained in Environmental Impact Assessment Reports (May 2022) (EPA Guidelines)

As a result of this new guidance, the soils and geology assessment now refers to effects as opposed to impacts. An updated description of effects has been provided in Table 9.3 of Chapter 9 of the updated EIAR, as per the above EPA guidelines, and has been incorporated into the Soils and Geology assessment methodology. However, there are no specific additions to the updated EPA guidelines which result in significant changes to the soils and geology assessment methodology contained in the update EIAR.

The soil and geology assessment methodology has also been updated to include for the effect on topsoil health due to excavation activities.

8.2.3 Has the baseline changed? If so, how and where?

A review of all available regional and local baseline desk study information was undertaken to inform the following:

1. To determine the regional and local soils and geology baseline environment as of March 2025 for the soils and geology study area
2. To determine if any baseline changes have occurred since 2018

Baseline data collection included a site walkover in July 2024, as outlined in Section 9.2.4.3 of Chapter 9 of the updated EIAR. A site-specific ground investigation was also undertaken to inform the soils and geology assessment of the temporary stables proposed at Galway Racecourse.

Based on the information outlined above, the following baseline changes have been identified and assessed in Chapter 9 of the updated EIAR:

- Deposit of Lacustrine soils identified in the vicinity of Galway Racecourse and referenced in Table 9.8 of Chapter 9 of the updated EIAR
- Feature importance of High assigned to Topsoil and Peat, as shown in Table 9.8 of Chapter 9 of the updated EIAR
- Following a Hydrogeological Karst Survey in 2024, the following karst features can no longer be found: K158, K161, K166, K176, K178, K180 and K181. Table 9.10 of Chapter 9 of the updated EIAR has been updated to reflect this finding
- Review of the Galway County Development Plan (2022-2028) and relevant Heritage and Biodiversity policy (NHB 5) and Geological Sites policies
- Updates and amendments to the Geological Heritage Areas within the study area to account for updates to the Irish Geological Heritage Programme, as stated below and outlined in Table 9.14 in Chapter 9 of the updated EIAR:
 - Removal of Igneous Intrusions (GHA06) in Section 1
 - Addition of Lough Corrib (GY093) (County Geological Site recommended for Geological NHA) in Section 2
 - Amendment of Roadstone Quarry (GHA01) to Two Mile Ditch Quarry (GY132) in Section 3
 - Addition of newly defined Doughiska N6 Road Cut (GC001) (County Geological Site) in Section 4

8.2.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

Yes, the changes to the baseline have altered the conclusions of the impact assessment for the following features:

- A feature importance of high for both topsoil and peat results in a more detailed impact assessment associated with topsoil and a new impact associated with peat
 - Topsoil: While the assessment undertaken for the 2018 EIAR had identified a potential impact involving compression of substrata and loss of agricultural land, the updated EIAR provides a more detailed assessment of soil in line with the EU Directive on Soil Monitoring and Resilience, specifically in terms of potential reduction in topsoil quality, erosion, compaction, sealing and loss of the feature. All of these effects have a significance of moderate/ slight (prior to mitigation measures)
 - Peat: The loss or damage of peat is now assessed and is assigned a significance of moderate/ slight
- The removal of karst features K158, K161, K166, K176, K178, K180 and K181 results in a reduction in the impacts when compared with the 2018 EIAR

- A new geological heritage site (GC001 – Doughiska N6 Road Cut) has now been assessed since the 2018 EIAR. The Project will result in the loss or damage of a proportion of this new Geological Heritage Area, where the significance of the effect will be significant/moderate
- As no major works are planned directly adjacent to or within close proximity to the other Geological Heritage Areas, the magnitude of the effect of loss or damage to a proportion of the features is considered negligible

The remaining baseline updates, as presented above in Section 6.2.2, are of an insignificant scale to result in an overall change to the impact assessment, and so the assessment results for those features remain unchanged.

The impact assessment has also been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process including in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties.

8.2.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process, including any mitigation measures suggested by ABP as appropriate, in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties. No further mitigations measure have been identified as part of the updated assessment presented in the updated EIAR.

In the case of the new geological heritage site (GC001 – Doughiska N6 Road Cut), a commitment was made to Geology Survey Ireland (GSI) during the Oral Hearing as per the following and this has been included in the updated EIAR:

- Prior to backfilling/removal of portions of the existing exposed rock face (which would include the existing road cutting along the N6 in Doughiska), the Contractor shall notify the GSI to ensure a site visit can be arranged for an assessment of the rock face prior to backfilling/removal.
- Where the design permits (including environmental mitigation measures, safety requirements and engineering constraints), significant bedrock cuttings will be designed to remain visible. Where this cannot be achieved, digital photographic records of significant new excavations will be recorded by the Contractor and/or visits from GSI will be facilitated by the Contractor.

8.2.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

There are no changes to the residual impact assessment as a result of the current mitigation strategy, including any mitigation measures suggested by ABP as appropriate. However, there are changes to the residual impact assessment due to the inclusion of new effects.

In the case of the effects associated with the topsoil and peat, the execution of mitigation measures outlined in the 2018 EIAR, the RFI response submitted in 2019 and the agreed environmental commitments from the Oral Hearing in 2020, and any mitigation measures suggested by ABP as appropriate will result in a residual impact of moderate/slight.

In the case of the effects associated with the new Geological Heritage Area (GC001 – Doughiska N6 Road Cut), the execution of mitigation measures outlined in the 2018 EIAR, the RFI response submitted in 2019 and the agreed environmental commitments from the Oral Hearing in 2020, and any mitigation measures suggested by ABP as appropriate will result in a residual impact of significant/moderate.

8.2.7 Are there any changes to the cumulative impact assessment? If so, how?

Yes, there will be a significant/moderate cumulative effect on the new Geological Heritage Area (GC001 – Doughiska N6 Road Cut).

8.2.8 Conclusion

The soils and geology assessment has been updated since the 2018 EIAR. Updated guidelines from the Environmental Protection Agency on the information to be contained in an EIAR have been included in the updated soils and geology assessment.

A review of the available information has resulted in an update to the baseline since the 2018 EIAR including identification of one new Geological Heritage Area (GC001 – Doughiska N6 Road Cut). The Project will result in the loss or damage of a proportion of this new Geological Heritage Area. Despite the application of mitigation measures proposed, including any mitigation measures suggested by ABP as appropriate, the post-mitigation significance will remain significant/moderate.

8.3 Hydrogeology

8.3.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR. Where there have been any changes to the assessment and or any updates since the 2018 EIAR, these have been set out in this updated chapter.

The Hydrogeology chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR include:

- the description of the receiving environment and impact assessments to take account of changes, new developments, etc.
- the figures and appendices to reflect the updated data and assessment
- to take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated June 2021 including in particular the Hydrogeology Report by Mr. Dodds and appended (as Appendix 5) to the ABP's Inspector's Report dated 22 June 2021

8.3.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? If so, what are they?

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR¹⁷. None of the updates to these guidelines change the guidance and standards for the methodology used for the hydrogeology impact assessment. Two additional ratings are included in the EPA (2022) guidelines and are incorporated and aligned into this updated EIAR. These additional ratings do not change the methodology. Furthermore, there are no other specific additions to the updated guidelines which change the methodology and standards used in the 2018 EIAR.

8.3.3 Has the baseline changed? If so, how and where?

While the physical baseline environment has not changed in any material way, the following outlines new information that has become available, changes to feature mapping and new studies completed to confirm the baseline condition.

Available data has been reviewed and groundwater monitoring undertaken to assess if there are any changes since 2018 to the baseline conditions or hydrogeological features of importance. The desktop study included a review of publicly available data from statutory bodies as well as aerial photographs and recent surveys undertaken by Arup within the study area.

¹⁷ EPA (2022) [Guidelines on the information to be contained in Environmental Impact Assessment Reports \(EIAR\)](https://www.epa.ie/publications-and-reports/assessment-reports/guidelines-on-the-information-to-be-contained-in-environmental-impact-assessment-reports-eiar) (epa.ie)

The EPA¹⁸, Geological Survey of Ireland (GSI)¹⁹ and Office of Public Works (OPW)²⁰ are statutory bodies that update publicly available hydrogeological datasets in Ireland. This data is used to develop the conceptual understanding of the baseline hydrogeological conditions.

- EPA data includes groundwater quality and quantity data (including for groundwater supplies), which are used to determine Water Framework Directive (WFD) status for each groundwater body. This data is continuously updated as timeseries data becomes available. The EPA define the status of groundwater bodies for each six-year cycle of the WFD
- The GSI datasets include maps of wells and springs, karst features, groundwater vulnerability, aquifers, groundwater flooding and geology. These datasets were most recently updated by the GSI in 2023
- OPW data include water level and water quality data for watercourses. This data is continuously updated as timeseries data becomes available

The updated EPA, GSI and OPW data have been reviewed and the baseline updated where necessary to inform the updated EIAR.

Seven additional groundwater wells have been identified since the 2018 EIAR, five of which were identified during the 2020 oral hearing, and all are assessed in the updated EIAR.

The findings from the ground investigations undertaken at Galway Racecourse in 2024 has also been incorporated into the updated baseline. This ground investigation included geophysical surveys, groundwater well drilling, groundwater level measurements and karst feature surveys. These assessments have confirmed the following:

- One additional karst feature in the project karst database, a swallow hole 65m north of Ballybrit castle within the racecourse. This addition has been included in the project karst database and has been included in the hydrogeology assessment presented in the updated EIAR
- The geophysical survey identified deep infilled karst paleo-channels extending east-west across the western area of the racecourse and an infilled depression at the centre of the racecourse. This was confirmed with drilling within these paleo-channels. This was identified in the 2018 EIAR and confirmed during the 2024 surveys
- The trial well drilling (TW101) identified a karst cavern (5m in height) located at a depth of 220mbgl
- Monitoring of the deep trial wells (TW101 and TW103) confirmed the presence of a deep water table (45mbgl) and monitoring of the shallower boreholes (BH01, BH02 and BH03) confirmed a shallow perched water table at the subsoil/bedrock interface

Further details are provided below about those datasets which have been included in the baseline, these include:

1. groundwater bodies
2. groundwater supplies
3. groundwater dependent habitats
4. groundwater flooding
5. karst features
6. groundwater quality and levels

¹⁸ EPA (2024) Data Viewer, available: [EPA Maps](#)

¹⁹ GSI (2023) Groundwater Data Viewer, available: [Geological Survey Ireland Spatial Resources \(arcgis.com\)](#)

²⁰ OPW (2023) Data Viewer, available: [maps.opw.ie](#)

8.3.3.1 *Groundwater body status*

The second cycle of Water Framework Directive (WFD) status has been completed for the period 2016-2021. However, there has been no change to the WFD status of the groundwater bodies included in the 2018 EIAR from the first WFD cycle between 2013-2018 and the second cycle between 2016-2021, which is the most recent cycle for which status has been defined. In both cycles the groundwater bodies were classified as being at Good status.

An assessment of the potential impact of the proposed N6 GCRR on the WFD Status of the underlying groundwater bodies is included in the updated EIAR.

8.3.3.2 *Groundwater Supplies*

The EPA maintains a Water Abstractions Register of groundwater abstractions of more than 25m³/day under the Water Abstraction Regulations (S.I. 261 of 2018). This register was not available in 2018 but has subsequently been published by the EPA.

Based on the review of the EPA register two additional commercial groundwater abstractions have been added to the project database (W50-21 and W50-22 shown on Figure 10.5.001 and 10.5.002 of Volume 3 of the EIAR in Part VI of this RFI Response). These two abstractions are present on the current EPA register published in June 2023 within the study area which was previously not known and therefore not included in the 2018 EIAR or presented at the oral hearing in 2020. Neither supply will be impacted by the Project.

Five additional wells were identified by the close of the oral hearing namely W50-16, W50-17, W50-18, W50-19 and W50-20.

8.3.3.3 *Groundwater Dependant Habitats*

Based on the 2023 habitat surveys the following changes have been identified to the groundwater dependant habitats:

- Additional Annex I habitat located outside of the European sites at Knocknabrona (Ch. 7+700 to Ch. 7+750)
- Extents of Annex I habitats at three locations namely Na Foraí Maola Thiar (Ch. 0+650 to Ch. 0+750), Aille (Ch. 3+600 to Ch. 3+850) and Ballyburke (Ch. 4+650 to Ch. 4+800) has changed
- An additional three new petrifying springs were identified in Lackagh Quarry and three petrifying springs, which were classified as petrifying springs in the 2018 EIAR, are declassified
- An additional four non-Annex I wetland sites were identified on the Galway Granite Batholith namely An Baile Nua (Ch. 0+150), Na Forai Maola Thoir (Ch. 1+150), Bearna (Ch. 3+100 and Ch. 3+400), Knocknabrona (Ch. 7+850 to Ch. 8+150)
- Two new non-Annex I calcareous springs/seepages identified in Lackagh Quarry

All of the above have been assessed as part of the updated EIAR.

8.3.3.4 *Groundwater Flooding*

The GSI has developed groundwater flooding maps, which were first published in 2020 and have been updated since in 2022²¹. The flooding probability maps are based on infield measurements, satellite images and hydrological models. The historic flooding maps are based on field data, photography and past records.

The groundwater flooding maps show an area of high probability groundwater flooding around Ballindooley Lough and within the footprint of the proposed N6 GCRR where the road will be on embankment.

8.3.3.5 *Karst Features*

The 2018 EIAR included 116 karst features within the study area based on a desk study of publicly available data (GSI database) and the interrogation of lidar data. These features were then confirmed during site

²¹ GSI (2022) Groundwater Flooding Data Viewer, available: [Geological Survey Ireland Spatial Resources \(arcgis.com\)](https://www.gsi.ie/arcgis/)

walkovers. Following a Hydrogeological Karst Survey in 2024, one additional karst feature (K328) has been confirmed and included on the GSI karst database in the study area. Feature K328 is included in the Karst database presented in Appendix A.10.2 in Volume 4 of the updated EIAR in Part VI of this RFI Response.

8.3.3.6 *Groundwater quality and levels*

Groundwater quality monitoring was undertaken in all wells previously sampled between 2015 to 2018 and between January 2024 and July 2024 to inform the updated EIAR. This updated water quality sampling dataset conforms with the water quality data presented in the 2018 EIAR and is agreement with the hydrogeological conclusions at that time.

Groundwater level monitoring was also undertaken in wells sampled for water quality analyses between November 2023 and July 2024. The results of this monitoring aligns with the data collected between 2015 – 2018. The peak groundwater levels of December 2015/January 2016 presented in the 2018 EIAR remain valid and aligned with OPW datasets (2001-2024) that show peak levels in the River Corrib occurred December 2015/January 2016.

8.3.3.7 *Baseline Summary*

The methodology and standards used in the 2018 EIAR remain valid. It is noted that additional hydrogeology receptors have been identified since the 2018 EIAR, 2019 RFI Response and the oral hearing held in 2020 as follows:

- Two new groundwater wells W50-21 and W50-22
- One new karst feature K328
- Additional Annex I habitat located outside of the European sites at Knocknabrona (Ch. 7+700 to Ch. 7+750)
- Extents of Annex I habitats at three locations namely Na Forai Maola Thiar (Ch. 0+650 to Ch. 0+750), Aille (Ch. 3+600 to Ch. 3+850) and Ballyburke (Ch. 4+650 to Ch. 4+800) has changed
- An additional three new petrifying springs were identified in Lackagh Quarry and three petrifying springs, which were classified as petrifying springs in the 2018 EIAR, are declassified
- An additional four non-Annex I wetland sites were identified on the Galway Granite Batholith namely An Baile Nua (Ch. 0+150), Na Forai Maola Thoir (Ch. 1+150), Bearna (Ch. 3+100 and Ch. 3+400), Knocknabrona (Ch. 7+850 to Ch. 8+150)
- Two new non-Annex I calcareous springs/seepages identified in Lackagh Quarry

An assessment of these has been included in the updated EIAR. Furthermore, there are additional risk assessments that have been undertaken by statutory bodies (WFD and groundwater flooding) as follows:

- 2016-2021 Water Framework Directive (WFD) cycle 2
- GSI groundwater flooding map assessments 2022 revisions

8.3.4 *Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?*

The impact assessment has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process including in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties.

The overall conclusion of the hydrogeology impact assessment has not changed as a result of the changes to the baseline as there has been no change in the hydrogeological conceptual model for any of the groundwater bodies in the hydrogeological study area. However, the location of the impacts to water dependent ecological receptors has changed in certain locations due to updates following 2023/2024 surveys. This is taking cognisance of the updated EPA impact assessment guidance, the updates following the 2023 habitat mapping and 2024 ground investigations.

8.3.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties including any mitigation measures suggested by ABP as appropriate. No further mitigation measures have been identified as part of the updated assessment presented in the updated EIAR.

8.3.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

The updates to the impact assessment and review of the mitigation strategy outlined above do not result in any changes to the hydrogeological residual impacts. However, the lowering of groundwater levels below water dependent habitats, it is not possible to mitigate. On this basis, there is potential for profound residual effect on five Annex I habitat and slight moderate residual effect on four non-Annex I habitat.

8.3.7 Are there any changes to the cumulative impact assessment? If so, how?

The cumulative impact assessment has been updated to take account of all planned and committed projects within the study area and the overall conclusion of the updated cumulative impact assessment is unchanged in that it is considered that these will not further increase the adverse or negative impacts associated with the Project. The likely significant direct or indirect cumulative impacts in combination with the other proposed projects are in relation to the residual profound impacts on the water dependent habitats associated with the Project.

8.3.8 Conclusion

The hydrogeology assessment has been updated to include the additional groundwater wells and the additional karst feature as well as updated EPA groundwater body WFD assessments and GSI groundwater flooding assessments. These updates incorporate all available new information identified since the 2018 EIAR, the 2019 RFI Response and the oral hearing held in 2020 and since the Inspectors Report of June 2021.

There are no changes to the hydrogeological conceptual model as presented in the 2018 EIAR. However, the extent and number of Annex I and non-Annex I habitat impacted by the Project has changed since the 2018 EIAR. These changes are entirely due to changes in the mapped extents of these habitats, where extents have changed or in part been downgraded from Annex I to non-Annex I. The impact assessment and mitigation strategy has been reviewed and updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process including in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties. The cumulative impact assessment has been updated to take account of any new planned or committed projects within the study area and the conclusion of the cumulative impact assessment is also unchanged in that cumulatively there are profound impacts which arise from the Project.

8.4 Hydrology

8.4.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR. Where there have been any changes to the assessment and or any updates since the 2018 EIAR, these have been set out in this updated chapter.

The Hydrology chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR include:

- The description of the receiving environment and impact assessments to take account of changes, new developments, etc.
- Appendix A.11.1 and Figures 11.1 series, 11.2 series, 11.3 series, 11.4 series, 11.5 series, 11.6 series and 11.7 series to take account of changes, new developments, etc.

- To take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector’s Report dated June 2021

8.4.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? If so, what are they?

The guidelines and standards pertaining to hydrology have not changed from those considered in the 2018 EIAR. In particular road drainage design and Sustainable Urban Drainage system requirements in respect to attenuation and treatment remain the same as have the flood risk management planning guidelines (Nov 2009). Climate change recommended allowances and adaptation in respect to sea level rise, coastal wave climate allowances, rainfall and fluvial flood and dry weather flow remain valid and remain unchanged from the those considered in the 2018 EIAR. The EPA have published updated guidelines, and these were taken into consideration in the preparation of the updated EIAR as follows:

- Environmental Protection Agency (2022) Guidelines on the Information to be contained in Environmental Impact Assessment Reports (May 2022) (EPA Guidelines)

8.4.3 Has the baseline changed? If so, how and where?

The hydrology baseline has not changed significantly from that assessed in the 2018 EIAR. River body status from the Water Framework Directive (WFD) latest third cycle status (2016 to 2021) is now available and it generally retains the previous assessment of good status for the River Corrib and other watercourses. Water quality sampling of the waterbodies indicates no significant change in chemical composition over the previous test presented in the 2018 EIAR.

The River Corrib gauged flow estimates have changed slightly from those used in the 2018 EIAR due to the time lapse since then and also due to a change and update to the OPW gauged flow data for the River Corrib. It now uses a new flow rating relationship applied to the data from 2009 to present. The water quality and the groundwater river, lake, transitional waters and coastal waters have not changed in terms of their quality status and their risk vulnerability.

8.4.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

The guidelines and standards and the baseline have not changed in any material way and have not altered the conclusions.

8.4.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties.

8.4.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

There are no changes to the mitigation requirements either at constructional or operational phases over the those presented in the 2018 EIAR and the oral hearing in 2020 in respect to hydrology and flood risk. As such there are no changes to the residual impacts.

8.4.7 Are there any changes to the cumulative impact assessment? If so, how?

There are no changes to the conclusion reached in the 2018 EIAR namely that there will be no likely significant cumulative impact between the proposed N6 GCRR and any new planned or committed projects identified since the last update to the Cumulative Impacts Assessment in November 2020. Further, many of the projects previously considered both in the 2018 EIAR and the updated cumulative impact assessment presented at the oral hearing have since been constructed and now form part of the baseline for the Project.

8.4.8 Conclusion

The EIAR for the proposed N6 GCRR has been updated to reflect the current hydrological baseline conditions. No material changes to the potential, residual and cumulative impacts in the updated EIAR have been identified over those presented in the 2018 EIAR and during the oral hearing in 2020, nor has there been any additional mitigation requirements either at the constructional or the operational phases. The flood risk assessment has been updated and there are no material changes to flood risk or flood impact over those quantified in the 2018 EIAR.

8.5 Landscape and Visual

8.5.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) has produced updated guidelines on the information to be contained in an EIAR. Where there have been any changes to the assessment and or any updates since the 2018 EIAR, these have been set out in this updated chapter.

The Landscape and Visual chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR involve updating:

- the description of the receiving environment and impact assessments to take account of changes, new developments, etc.
- the description of the receiving landscape and visual planning environment to take account of the current Galway City and Galway County Development Plans, and changes to Local Area Plans (LAPs), etc.
- Appendix A.12.1 and Figures 12.1 series, 12.2 series and 12.3 series to take account of changes, new developments, etc. (including those above)
- to take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated June 2021

8.5.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? If so, what are they?

Yes.

The Environment Protection Agency (EPA) published Guidelines on the Information to be contained in Environmental Impact Assessment Reports in 2022.

TII published Landscape Character Assessment (LCA) and Landscape and Visual Impact Assessment (Overarching Technical Document) in 2020, Landscape Character Assessment (LCA) and Landscape and Visual Impact Assessment (LVIA) of Proposed National Roads (Standard) in 2020 and Design and Delivery of Soft Landscape Treatments in Urban Transport Environments in 2024.

All of the above have been taken into account in the landscape and visual assessment presented in the updated EIAR.

8.5.3 Has the baseline changed? If so, how and where?

Yes as follows:

- New residential estates have been constructed off the Ballymoneen Road and the Ragoon Road close to the proposed N6 GCRR
- A number of residential properties have been constructed west of the N59 in the Barnacranny/Dangan Upper area close to the proposed N6 GCRR
- New development permitted and built
- Ivy has been removed from Menlo Castle (ruin)
- The city and county development plans have been replaced by the Galway City Development Plan 2023-2029 (GCiDP) and the Galway County Development Plan 2022-2028 (GCoDP)

- The assessment and description of the Landscape Character of County Galway (in Appendix 4 of the GCoDP) has been updated and changed
- The number and location of protected views/scenic viewpoints in the GCoDP have been revised and changed. These are drawn from the updated Landscape Character of County Galway (Appendix 4 of the GCoDP)
- The Bearna Local Area Plan 2007-2017 - Amended 2012 (BLAP) has lapsed. Land use planning for the settlement of Bearna was subsequently included by means of Variation 2(a) into the 2015-2021 GCoDP. Bearna is now included under Metropolitan Settlements in Volume 2 of the current GCoDP
- The BLAP considered a wide environment around the settlement of Bearna, and identified an ‘Amenity Network’, ‘Green Wedges’ and ‘Environmental Management Areas’ extending west and north of Bearna. Some of these areas, (outside of the core settlement of Bearna) were impacted by the proposed N6 GCRR. However, these designations were not been carried forward into the GCoDP

8.5.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

The impact assessment has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process including in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties. However there is no change to the conclusions of the assessment presented in the 2018 EIAR.

8.5.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties. A number of additional landscape mitigation measures proposed during the course of the oral hearing in 2020, including any mitigation measures suggested by ABP as appropriate have been incorporated. Primarily, these relate to Aughnacurra, but also to PRS Plots 195 and 229 and these have been included in the updated EIAR.

In addition, the updated NIS calls for a specific measure of relevance to the landscape treatment of the Project in the vicinity of the Lough Corrib SAC.

8.5.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

No

8.5.7 Are there any changes to the cumulative impact assessment? If so, how?

Yes. The cumulative impact assessment has been updated to take account of all new planned and committed projects within the study area since the conclusion of the oral hearing in 2020 and the overall conclusion of the updated cumulative impact assessment has updated.

8.5.8 Conclusion

While there have been changes to the baseline, most notably to the consideration of landscape related planning/land use objectives (i.e. landscape character, protected views etc.), there is no change to the findings of the overall assessment of the likely significant impact of the Project as a whole, on the landscape and/or visual environment.

8.6 Cultural Heritage

8.6.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR and TII published Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects in 2024. As per the TII Cultural Heritage Guidelines published in 2024, the term ‘Cultural Heritage’ includes archaeological, architectural and cultural

heritage. Where there have been any changes to the assessment and or any updates since the 2018 EIAR, these have been set out in this updated chapter.

The Cultural Heritage chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR involve updating:

- The description of the receiving environment to take account of any additional sites or structures that have been added to the Record of Monuments and Places, Record of Protected Structures and previous archaeological excavations
- Assessment methodologies to take account of the ‘Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects’, 2024, TII
- Appendix A.13.1 to A.13.11 to take account of changes or additions to sites and structures listed in the various inventories
- Figures 13.1.1 to 13.1.15 to show additional sites and structures
- The chapter to take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector’s Report dated June 2021
- The impact assessment to take account of the 2024 TII Guidance and any news sites or structures recorded in the various inventories

8.6.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? Is so, what are they?

In 2024 TII published their ‘Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects’. These guidance documents contain an impact evaluation methodology that includes criteria for the determination of receptor sensitivity, criteria for determination of the magnitude of impacts and an impact assessment matrix to determine the significance of effect. The Archaeological, Architectural and Cultural Heritage chapter (now referred to as the Cultural Heritage chapter) has been updated fully in accordance with the 2024 guidelines.

The Environment Protection Agency (EPA) have also produced updated guidelines on the information to be contained in an EIAR in 2022. The 2022 EPA guidance aligns with the methodology used in the cultural heritage assessment undertaken to inform the 2018 EIAR.

The other documents referred to within Chapter 13 of the 2018 EIAR for the impact assessment methodology are also unchanged and have not required any changes to the impact assessment methodology.

8.6.3 Has the baseline changed? If so, how and where?

The baseline has changed slightly, as new Cultural Heritage sites have been added to the baseline due to the increase in the footprint of the assessment boundary of the Project to take account of the proposed development at Galway Racecourse. One new recorded archaeological heritage site (AH 42 Structure) has been added to the Record of Monuments and Places within the assessment boundary of the Project. In addition, a number of more recent archaeological excavations have been carried out within the study area. In 2024 the practice of traditional dry stone wall construction was also added to ‘The Representative List of the Intangible Cultural Heritage of Humanity’, which is maintained by UNESCO and this is acknowledged within the updated EIAR chapter. All baseline information has been reviewed and updated in the updated EIAR.

8.6.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

Based on the application of the 2024 TII Cultural Heritage guidelines, and the revised baseline conditions, the impact assessment has changed slightly in the updated EIAR. With regards to the construction phase, no direct negative impacts of profound significance are predicted. Impacts at AH 42, AH 2 and BH 12 are defined as having a very significant significance of effect. The operational impacts predicted remain unchanged.

8.6.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties. Additional mitigations measure have been identified and included in the updated EIAR.

8.6.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

No changes to the predicted residual effects have been identified.

8.6.7 Are there any changes to the cumulative impact assessment? If so, how?

There are no changes to the conclusion reached in the 2018 EIAR or in the updated cumulative assessment of November 2020 namely that there will be no likely significant cumulative impact between the Project and any other planned or committed projects. Further, many of the projects previously considered both in the 2018 EIAR and the updated cumulative impact assessment presented at the oral hearing have since been constructed and now form part of the baseline for the Project.

8.6.8 Conclusion

The Cultural Heritage assessment for the updated EIAR has been fully revised in line with the TII ‘Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects’, which were published in 2024. In addition, the baseline has been fully reviewed and revised and new sites added to the study area. One new recorded archaeological site is now located within the assessment boundary of the Project (AH 42) and this has been accounted for within the baseline and the impact and mitigation strategy. The adoption of the new guidelines and revised baseline has not resulted in major changes to the overall assessment, and there are no predicted changes to the residual or cumulative effects.

8.7 Material Assets Agriculture

8.7.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR.

A new Common Agricultural Policy was introduced in 2023 which amends conditions relating to farmer schemes. An updated Climate Action Plan was introduced in 2024 which aligns with the legally binding targets agreed for the agricultural sector by the Irish Government in July 2022.

The 2022 EPA guidance aligns with the methodology used in the Material Assets Agricultural Impact Assessment presented in 2018 to derive significance of effect. The changes in the 2023 Common Agricultural Policy do not impact the assessment criteria and do not change the assessment of sensitivity of the baseline nor the assessment of magnitude of effects; and therefore do not significantly affect the assessment of significance of effects.

Having considered the guidance and standards within the EPA Guidance (2022), the Common Agricultural Policy 2023 and Climate Action Plan 2024, there are no changes required for the methodology of impact assessment for agriculture.

Chapter 14, Material Assets Agriculture, of the updated EIAR has been updated to take account of the above. The impacts on affected agricultural land parcels have been reassessed and detailed in the updated chapter and Appendix A.14.1 of the updated EIAR.

Post construction of the Project and implementation of the mitigation measures specified in the updated EIAR the residual impacts on the 192 affected agricultural land parcels are as follows:

- There will be 56 not significant impacts (compared to 59 in the 2018 Assessment)
- There will be 45 slight adverse impacts (compared to 44 in the 2018 Assessment)
- There will be 41 moderate adverse impacts (same as the 2018 Assessment)

- There will be 39 significant adverse impacts (compared to 38 in the 2018 Assessment)
- There will be 7 very significant adverse impacts (compared to 9 in the 2018 Assessment)
- There will be 4 profound adverse impacts (same as the 2018 Assessment)

The updated assessment of the impacts on the Galway Racecourse land parcel has taken into account the information on the sequencing of construction as outlined in Chapter 5, as updated from the 2018 EIAR, However, it has not changed the findings of the impact assessment.

Since publication of the 2018 EIAR there have been some minor changes in the baseline due to housing developments located on eight agricultural land parcels. This has resulted in a reduction of three (192 compared to 195) in the number of affected agricultural land parcels and a reduction in the agricultural area of five land parcels. Also, the 2018 EIAR included the effects of the M6 road in Doughiska as cumulative effects on 4 land parcels at the eastern end of the Project which now forms part of the existing environment baseline. The reduction in land parcel numbers since the 2018 EIAR along with the reduced impact on 3 land parcels at the eastern end of the Project has resulted in minor changes to the summary tables of the updated EIAR.

Following assessment of concerns expressed by landowners at the 2020 Oral Hearing in relation to stonewall boundary removal, level of impact and access, there are no changes in the required mitigation measures or in the results of assessment of individual land parcel impacts. The commitments during the Oral Hearing in 2020 do not change the results of the assessment of impacts.

8.7.2 Has the baseline changed? If so, how and where?

A new Census of Agriculture was conducted in 2020. The standardised methodology for agricultural impact assessment involves the examination of the available agricultural census data to determine baseline farm types (e.g. average farm size and farm enterprise types). The original assessment was carried out using data from the 2010 Agricultural Census. The agricultural census is carried out every 10 years and the 2020 Agricultural Census is available and has been used for the assessment in the updated EIAR. The methodology used to categorise farm enterprises in the 2010 census and the 2020 census is the same. While there are slight changes in average farm size and percentage of farm types (as illustrated in Table 14.3.1 of Chapter 14 of the updated EIAR) these changes do not indicate any significant change in the farm types in County Galway or in Irish State. This information confirms that there are no new trends to suggest that agriculture within the study area is likely to change significantly between 2010 and 2020.

The methodology for assessing magnitude of impact uses baseline data for grass and crops yields as discussed in Section 14.2.5.2 of Chapter of the updated EIAR. The data sources used (Teagasc, UCD and CSO) to represent crops and grass yields in the baseline have been updated as far as 2023. The change in baseline yield trends due to this additional data is of a small magnitude; i.e. 0%, 1% and -1.5% respectively for spring barley, winter wheat and grass. These changes do not materially affect the criteria used to assess magnitude of impact.

There are eight land parcel changes:

- Part of land parcel Ref No 229 is excluded from the agricultural assessment because it has been used for a housing development and is now included in the material assets non-agriculture assessment presented in Chapter 15 of the updated EIAR. The part of the land parcel north of the proposed N6 GCRR remains in agricultural use. The agricultural part of the land parcel is no longer severed, and the sensitivity is reduced to very low
- Land parcel 242 is excluded from the agricultural assessment because all this land parcel has been used for a housing development and is now included in the material assets non-agriculture assessment presented in Chapter 15 of the updated EIAR
- Land parcel 482 has been excluded from the assessment. Part of this land parcel has been used for a housing development and is now included in the material assets non-agriculture assessment presented in Chapter 15 of the updated EIAR. The part that remains in agricultural use is no longer affected by the proposed N6 GCRR

- Part of land parcel 464 has been excluded from the assessment because it has been used for a housing development and is now included in the material assets non-agriculture assessment presented in Chapter 15 of the updated EIAR
- Land parcel 483 is excluded from the agricultural assessment because all this land parcel has been used for a housing development and is now included in the material assets non-agriculture assessment presented in Chapter 15 of the updated EIAR
- Part of land parcel 486 has been excluded from the assessment because it has been used for a housing development and is now included in the material assets non-agriculture assessment presented in Chapter 15 of the updated EIAR
- Part of land parcel 501 has been excluded from the assessment because it has been used for a housing development and is now included in the material assets non-agriculture assessment presented in Chapter 15 of the updated EIAR
- Part of land parcel 627 has been excluded from the assessment because it has been used for a housing development and is now included in the material assets non-agriculture assessment presented in Chapter 15 of the updated EIAR

Following the exclusion of three land parcels (Ref No 242, 482 and 483) and the reduction in the area of five land parcels (Ref No 464, 486, 501 and 627) the study area is now comprised of 192 agricultural land parcels (compared to 195 land parcels in the original assessment) and the area of the study area (i.e. combined area of affected land parcels) has changed from 1,096 hectares to 1,078 hectares.

The number of severed land parcels has changed from 62 to 61 because Ref. No. MS 229 is no longer severed.

The change in the number of affected land parcels has resulted in corresponding changes in the summary tables in Chapter 14 of the updated EIAR, i.e. Tables 14.3.1, 14.5.1 and 14.7.1. The changes in the number and size of land parcels is also reflected in Appendix A.14.1 of the updated EIAR. These changes are summarised as follows:

- Table 14.5 of Chapter 14 of the updated EIAR – the number of beef land parcels is reduced to 122 and number of ‘not farmed’ land parcels is reduced to 30
- Table 14.6 of Chapter 14 of the updated EIAR – the number of not significant impacts is reduced to 56 (from 59)
- Table 14.7 of Chapter 14 of the updated EIAR – the number of not significant impacts is reduced to 56 (from 59)

8.7.3 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

These changes alter the description of the baseline which relate to the number of land parcels within each impact category (Table 14.5 of Chapter 14 of the updated EIAR).

These changes alter the conclusions which relate to the number of land parcels within each impact category (Tables 14.6 and Table 14.7 of Chapter 14 of the updated EIAR).

8.7.4 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties. No further mitigations measure have been identified as part of the updated assessment presented in the updated EIAR.

8.7.5 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

The residual impact assessment is not altered because there are no changes in mitigation strategy.

8.7.6 Are there any changes to the cumulative impact assessment? If so, how?

While additional developments have been assessed in the cumulative assessment there are no changes to the conclusions of this assessment i.e. a moderate adverse effect on agriculture within the study area and a not significant effect on agriculture within County Galway.

8.7.7 Conclusion

The changes in guidance and available data sources does not materially change the assessment criteria or methodology. Changes have occurred in the study area due to housing developments resulting in the reduction in size of five land parcels and the exclusion of three land parcels.

8.8 Material Assets Non-Agriculture

8.8.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR. Where there have been any changes to the assessment and or any updates since the 2018 EIAR, these have been set out in this updated chapter.

The Material Assets Non-Agriculture chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR involve updating:

- The description of the receiving environment and impact assessments to take account of changes, new developments, etc.
- Appendices 15.1 and 15.2 to reflect updated mitigation at UoG and the proposed development at Galway Racecourse
- Figures 15.1 series, 15.2 series, 15.3 series and 15.4 series to take account of changes, new developments, etc. (including those above)
- To take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated June 2021

8.8.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? If so, what are they?

Since the publication of the 2018 EIAR, the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR.

The 2022 EPA guidance aligns with the methodology used in the Material Assets Non-Agricultural Impact Assessment presented in the 2018 EIAR to derive significance of effect. Having considered the guidance and standards within the EPA Guidance (2022), there are no changes required for the methodology of impact assessment.

8.8.3 Has the baseline changed? If so, how and where?

Since publication of the 2018 EIAR there have been some changes in the baseline which are relevant to the material asset non-agricultural assessment as follows:

- Completion of the construction of housing developments which were previously treated as affected planning permissions
- Lapse of planning applications
- Expansion of Boston Scientific's campus across the IDA cul-de-sac into the former APC site, and redevelopment of the existing buildings and the full integration of the existing buildings with the new facilities within the APC site
- UoG obtained planning permission for replacement pitches in February 2021 in line with their University Sports Masterplan which negates the need for the mitigation proposed in the 2018 EIAR

- Galway Race Committee Trust received planning permission for replacement temporary and permanent stables, and associated development (Planning Reference 24/60279) noting that this planning permission will only be implemented if the proposed N6 GCRR is granted approval and is proceeding
- Galway County Council has entered into binding agreements with the owners and lessees of the builders providers to the north of the Galway Racecourse property pursuant to a contract for sale for the acquisition of these lands

8.8.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

Chapter 15, Material Assets Non-Agriculture, of the updated EIAR has been updated to take account of the above changes to the baseline. The impacts have been reassessed and detailed in the updated chapter.

The changes to the baseline results in the following changes to the impact assessment:

- The assessment of the impact on UoG has changed
- The alignment of the Parkmore Link Road is realigned to the eastern Boston Scientific boundary which enables interlinkages of existing and new buildings in the campus. This reduced this impact on Boston Scientific and other adjoining properties
- The lapsed planning permissions removed the impacts on all the planning applications identified in the N6 Galway City Ring Road Motorway Scheme 2018 and N6 Galway City Ring Road Protected Road Scheme 2018
- Addition of new landowners due to split of land parcel and sale to multiple landowners
- Removal of landowners due to removal of parcels of land acquisition during the 2020 oral hearing

There is an overall reduction of one in the total number of affected land parcels since the 2018 EIAR, with a total of 319 non-agricultural properties affected in this updated EIAR. The changes to the baseline noted above along with the change from permanent to temporary acquisition on some land parcels has resulted in minor changes to the summary tables of Chapter 15 of the updated EIAR.

8.8.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties.

There are changes required to the mitigation strategy for UoG and Galway Racecourse which are presented as follows:

- Appendix A.15.1 is updated to reflect the layout of the GAA pitches as agreed with UoG at the close of the oral hearing in 2020
- Appendix A.15.2 has been updated to reflect the changes to the proposals for Galway Racecourse in respect of the provision of temporary and permanent stables by Galway Race Committee Trust granted planning permission under a separate planning process

8.8.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

Post construction of the Project and implementation of the mitigation measures specified in the updated EIAR the residual impacts on the 319 affected land parcels are as follows:

- There will be 99 imperceptible impacts (same as the 2018 Assessment)
- There will be 103 slight adverse impacts (same as the 2018 Assessment)
- There will be 59 moderate adverse impacts (same as the 2018 Assessment)
- There will be 26 significant adverse impacts (compared to 28 in the 2018 Assessment)

- There will be 32 very significant adverse impacts (compared to 31 in the 2018 Assessment)

There are no changes to the impacts, mitigation or residual impacts on the services and utilities.

8.8.7 Are there any changes to the cumulative impact assessment? If so, how?

While new planned and committed projects have been assessed in the cumulative assessment there are no changes to the conclusions of this assessment in that it is considered that these will not further increase the adverse or negative impacts associated with the Project. There will be significant cumulative impacts in combination with the other proposed projects due to the significant impacts already identified for the Project on its own.

8.8.8 Conclusion

The changes in guidance and available data sources does not materially change the assessment criteria or methodology. Changes have occurred in the study area due to completion of construction of housing developments, lapses in planning permissions, the ABP's direction, resulting in the reduction in the overall number of impacted parcels by one number.

8.9 Air Quality

8.9.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR and TII published a new standard, namely Air Quality Assessment of Proposed National Roads – Standard (TII PE-ENV-01107) (TII 2022) which significantly changes the methodology applied to the air quality assessment. These changes to the assessment and all updates since the 2018 EIAR have been set out in the updated chapter.

The Air Quality chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR involve updating:

- The description of the receiving environment and impact assessments to take account of changes, new developments, updated traffic surveys and traffic modelling outputs, etc.
- Updated assessment through the application of the new TII Air Quality Standard
- New software to calculate transport emissions – REM tool
- Appendices 16.1, 16.2 and 16.3 and Figures 16.1 series to take account of new monitoring, new developments, updated modelling results etc.
- To take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated June 2021

8.9.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? Is so, what are they?

Yes, the TII Air Quality Assessment of Proposed National Roads - Standard was published in December 2022. The Environment Protection Agency (EPA) has also produced updated guidelines on the information to be contained in an EIAR. The 2022 EPA guidance aligns with the methodology used in the Air Quality Impact Assessment undertaken to inform the 2018 EIAR to derive significance of effect.

The 2018 EIAR applied the TII 2011 guidance for the assessment of construction dust and refers to *Control of dust from construction and demolition activities* (BRE, 2003) for appropriate mitigation measures. In accordance with the 2022 TII Standard, the 2024 IAQM guidance is applied in the revised assessment. The 2024 IAQM guidance also contains a detailed list of mitigation measures that should be employed at different phases of works. These measures are proposed, where applicable.

The TII REM tool was used in the updated EIAR to compute local operational phase pollutant concentrations (at human and ecological receptors). The TII REM tool has been developed for the Irish context with Irish emission factors and vehicle type projections so is considered more robust than the UK DMRB spreadsheet

which is UK based and was developed in 2011. Ammonia concentrations were not calculated as part of the 2018 EIAR in the absence of a tool for calculation. The 2020 CREAM tool has been applied in this assessment of Ammonia emissions. In 2023, the APIS GIS tool was extended to include the Republic of Ireland, providing critical loads and levels for relevant pollutants as well as background values at ecological sensitive designated habitats.

The NTA ENEVAL model was used to compute operational phase regional emissions as per the 2018 EIAR. This model includes for changes in traffic on a regional basis and is considered more robust than the DMRB spreadsheet used in the 2018 assessment which only considers changes in traffic at a local level. The NTA ENEVAL model also uses up-to-date emission factors which have been developed in the Irish context, generating a more accurate output when compared to DMRB.

As all of the above tools were not available for the modelling undertaken to inform the 2018 EIAR, the reporting of this air assessment does not replicate the 2018 EIAR but provides a more robust and accurate assessment than the 2018 EIAR.

8.9.3 Has the baseline changed? If so, how and where?

Yes, new EPA air monitoring data is available. The latest EPA monitoring data for 2018 to 2023 plus the data collected in 2023 and 2024 is used in this updated assessment. Background concentrations remain broadly the same over the intervening period.

Also new site specific air quality monitoring of particulate matter, nitrogen dioxide and ammonia has been completed over a period of three months in the vicinity of the Project to inform the baseline environment.

8.9.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

There are minor variations to the baseline air quality environment since the 2018 EIAR – based on on-site and long-term EPA monitoring. In addition, there are changes to the significance criteria contained in the new TII Air Quality Standard compared to previous TII guidance. However, these changes do not alter the conclusions of the impact assessment with all current baseline and predicted future pollutant concentrations in compliance with air quality standards.

8.9.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord Pleanála, statutory consultees, members of the public and other participating third parties. No further mitigations measures have been identified as part of the updated assessment presented in the updated EIAR.

8.9.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

No changes to the mitigation strategy are required, the outcome of the impact assessment is unchanged and therefore there are no changes to the conclusions of the residual impact assessment.

8.9.7 Are there any changes to the cumulative impact assessment? If so, how?

No, whilst the cumulative impact assessment has been updated to take account of any new planned and committed projects within the study area, and takes account of new sensitive receptors, the overall conclusion of the cumulative impact assessment is unchanged.

8.9.8 Conclusion

The changes in guidance and available data sources does not materially change the assessment outcome. The conclusions of the impact assessment, mitigation strategy and residual effects are unchanged for that presented in the 2018 EIAR and at the oral hearing in 2020.

8.10 Climate

8.10.1 Overview

The 2018 EIAR and documentation for the proposed N6 GCRR submitted to An Bord Pleanála during the application for approval were published prior to the publication of the TII Climate Standard and associated carbon assessment tools. Those previous assessments relied upon IEMA guidance, the UK Environment Agency construction carbon calculator and the UK DMRB spreadsheet for the purposes of assessing carbon, calculating construction carbon and calculating operational phase carbon respectively. In addition, the EPA have produced updated guidelines on the information to be contained in an EIAR and the government published Climate Action Plan 2024. The Climate chapter is a separate chapter in this updated EIAR whereby it was in a chapter combined with Air Quality in the 2018 EIAR.

The Climate assessment of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR involve updating:

- The description of the receiving environment and impact assessments to take account of changes, new standards, updated traffic surveys and traffic modelling outputs, new legislation and new developments, etc.
- Updated assessment through the application of the new TII standard
- New carbon assessment tools to calculate transport emissions
- Appendix A.17.1 to reflect the updated embodied carbon assessment using the TII carbon tool
- To take account of points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector's Report dated June 2021

8.10.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? Is so, what are they?

The methodology applied in the climate assessment is significantly different to the 2018 EIAR (as well as updates provided as part of the 2019 RFI and during the oral hearing) due to various changes to guidance and legislation but mainly as a result of the new TII Climate Standard (2022) where none previously existed in Ireland.

The IEMA guidance was superseded in 2022, and the revised significance criteria to a large degree aligns with the 2022 TII Climate Standard. The TII Climate Standard includes significance criteria which are directly applicable to the Irish context and is therefore appropriate to apply in the context of the Project.

In addition, the assessment has been revisited in light of updated traffic data which has been revised to account for new opening (2031) and design (2046) years for assessment (previously 2024 and 2039 respectively).

The previous IEMA guidance advised that all carbon emissions contribute to climate change and in the absence of a defined threshold (e.g. national sector specific targets and trajectories), any increase (or decrease) to carbon emissions may be considered as significant. On the basis that no national sector specific targets were available at the time of the oral hearing in 2020, the previous IEMA guidance was applied, leading to the conclusion *“that the proposed road development is regarded as likely to have a significant adverse impact on carbon emissions and climate”*, refer to Statement of Evidence of Sinéad Whyte, Arup at the oral hearing in February 2020.

8.10.3 Has the baseline changed? If so, how and where?

Yes, new EPA national level transport projections of CO₂ emissions is available for future years and the assessment has been updated to account for the new EPAs data for the Project opening and design years. These future projections are used to represent the future baseline environment.

8.10.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

The TII Climate Standard now allows the application of significance criteria relative to the Irish situation and sectoral carbon budgets. Applying the TII Climate Standard, the Project is predicted to result in a permanent moderate adverse effect on climate, which is considered to be significant.

The change in impact rating from previous assessments is mainly due to the application of the TII Climate Standard significance criteria which separates significant adverse impacts into “major adverse” and “moderate adverse”, whereas the IEMA guidance did not split out the significant rating. However, a number of other changes from the previous assessments in the methodology used are also relevant:

- The use of the TII carbon tool for the assessment of embodied carbon which is developed for the Irish context rather than the previously applied UK Environment Agency tool and allows for a more robust assessment in predicting embodied carbon for the Project
- The use of the ENEVAL allows for a more robust assessment of carbon emissions than the DMRB spreadsheet as it is developed for the Irish situation and assesses carbon emissions within the full extent of the transport model

The proposed N6 GCRR forms part of the GTS which is an integrated transport solution covering all modes of transport. The proposed N6 GCRR will also facilitate demand management measures to help achieve CAP24 targets. The EU Technical guidance on climate proofing of infrastructure in the period 2021-2027 advises that as projects taken in isolation are likely to result in an increase in CO_{2eq} emissions, projects should be considered in the context of the plan from which they arise. On this basis, an assessment of emissions without the Project, without GTS and without CAP24 is compared to emissions with the Project, with the GTS and with CAP24. An 8% decrease in CO_{2eq} emissions due the predicted traffic changes on the road network in 2030 is expected to arise in this case.

8.10.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation proposed in the 2018 EIAR is retained but is augmented. In June 2024, the Government provided procurement guidance to public bodies to promote the reduction of embodied carbon in publicly supported construction projects and construction materials and this is included in the updated EIAR.

8.10.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

No.

8.10.7 Are there any changes to the cumulative impact assessment? If so, how?

There is no change to the cumulative impact assessment in the updated EIAR. The assessment of residual effects considers that the Project is expected to have a permanent moderate adverse effect on climate over its lifecycle. This level of impact assessment is based on the TII Climate Standard significant criteria which is determined in the context of the Project’s alignment to Ireland’s trajectory of net zero. As outlined in the TII Climate Standard, the assessment of the Project relative to Ireland’s national carbon reduction target is inherently cumulative.

8.10.8 Conclusion

The TII Standard significance criteria is applied to reach a conclusion on residual effects which has been updated from that set out in the Climate Statement of Evidence, presented at the 2020 oral hearing. The 2020 statement provided updated figures showing a reduction in carbon emissions at both construction and operational phases compared to the 2018 EIAR, but considered that the proposed N6 GCRR was likely to have a significant negative impact on carbon emissions and climate. The industry’s best practice guidance in the UK at that time, advised that all carbon emissions contribute to climate change and in the absence of a defined threshold (e.g. national sector specific targets and trajectories), any increase (or decrease) to carbon emissions may be considered as significant.

This updated EIAR, applying the significance criteria set out in the 2022 TII Climate Standard, has concluded that the Project is expected to have a permanent moderate adverse effect on climate over its lifecycle.

8.11 Noise and Vibration

8.11.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR. Where there have been any changes to the assessment and or any updates since the 2018 EIAR, these have been set out in this updated chapter.

The Noise and Vibration chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR involve updating:

- Reviewing and updating elements of the chapter to address points raised from the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ABP Inspector’s Report dated June 2021
- Update to the assessment of significance of effects having regard to the EPA 2022 EIAR guidelines, Design Manual for Roads and Bridges (DMRB) Sustainability & Environmental Appraisal LA 111 Noise and Vibration, Revision 2. (UKHE 2020), WHO European Noise Guidelines (2018), the Galway City Council Draft Noise Action Plan 2024–2028 and the Galway County Council Draft Noise Action Plan 2024–2028
- Updated operational traffic modelling based on the most up to date traffic forecasts for the revised opening and design years of the Project
- Update of Appendices 18.1 and 18.2 and Figures 18.1.1 to 18.1.15 to take account of additional noise monitoring and noise modelling results

8.11.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? Is so, what are they?

The key guidelines used for the assessment of construction noise, construction vibration and operational noise remain unchanged compared to the 2018 EIAR. The relevant criteria for the aforementioned topics are couched within the TII Noise Guideline Documents for National Road Schemes, namely:

- NRA 2004 Guidelines for the Treatment of Noise and Vibration in National Road Schemes
- TII 2014 Document Good Practice Guidelines for the Treatment of Noise during the Planning of National Road Schemes, (TII 2014)

The majority of the other documents referred to within Chapter 17 of the 2018 EIAR for the impact assessment methodology are also unchanged and have not required any changes to the impact assessment methodology. The following documents have been updated since the 2018 EIAR.

- The UK DMRB Noise and Vibration document was updated in 2020 (UK Highways Agency (UKHA) Design Manual for Roads and Bridges (DMRB) LA 111 Sustainability & Environmental Appraisal LA 111 Noise and Vibration Revision 2, 2020). The updated version includes the same magnitudes of change relating to road traffic noise over the short-term and long-term periods as the previous 2011 version referred to in the 2018 EIAR. The magnitudes of change assigned to changes in road traffic noise for the short and long-term assessment periods are therefore based on the same criteria as the 2018 EIAR.
- The updated DMRB LA 111 Sustainability & Environmental Appraisal LA 111 Noise and Vibration Revision 2, 2020 has included guidance on the assessment of significance ratings relating to construction noise and vibration. In the absence of similar ratings in Irish documentations, these have been applied in the updated EIAR.
- The Galway City and Galway County Noise Action plans (2013 to 2018) have been updated. The new Draft Galway City Noise Action Plan (NAP) (2024 – 2028) and Draft Galway County NAP (2024 –

2028) include new thresholds for the onset of noise management in key identified areas. Both NAPs reference the WHO Environmental Noise Guidelines for the European Region (2018) as the basis for identifying areas of potential health affects relating to traffic noise. A summary of the two NAPs is included within the updated noise and vibration assessment presented in Chapter 18 of the updated EIAR. The Priority Important Areas (PIAs) identified within each NAP based on the traffic noise exposure and population density are summarised in Chapter 18 of the updated EIAR. It is noted the proposed Project does not add to traffic noise levels in the identified PIAs and traffic noise is calculated to reduce along the roads within Galway City where highest impacts are identified within the Draft Galway City NAP.

- The 2018 EIAR Chapter 17 made reference to community response studies for road traffic noise to identify the percentage of the population likely to be Highly Annoyed (HA) by various road traffic noise levels in terms of the Lden parameter. The approach for categorising the significance effects relating to operational noise has been updated since the 2018 EIAR to take account of the TII 2004 and 2014 Noise Guidelines, the Draft Galway City and County NAPs (2024), the WHO (2018) Noise Guidelines and the DMRB (2020) documents.

The Environment Protection Agency (EPA) have also produced updated guidelines on the information to be contained in an EIAR in 2022. The 2022 EPA guidance aligns with the methodology used in the noise and vibration assessment undertaken to inform the 2018 EIAR.

8.11.3 Has the baseline changed? If so, how and where?

There are no major new sources of noise, changes in infrastructure etc. that has significantly altered the prevailing noise environment since the 2018 EIAR. Review of traffic flow data between the original base year of 2016 and the new base year 2023 indicate traffic flows have increased over the 7 year period. The percentage of traffic flows changes are below 50% along all roads, corresponding to a traffic noise level change of 3 dB or less. The exception to this is along Cappagh Road where significant additional traffic flows between 2016 and 2023 have occurred (of the order of 78%). A corresponding traffic noise level difference of the of the order of 6 to 7dB would therefore be expected along this road. Specific information relating to changes in traffic flow along the surrounding road network are discussed in the updated Chapter 6, Traffic Assessment and Route Cross Section.

An updated round of unattended noise surveys were undertaken at 29 locations during 2023 and 2024. The updated survey locations were monitored at the same locations as the 2018 EIAR or at equivalent adjacent locations to evaluate the change in the ambient noise environment over time.

Section 18.2.4 of Chapter 18 of the updated EIAR discusses the baseline survey results during both survey rounds.

The results of the baseline noise survey indicate that the noise environment varies across the proposed N6 GCRR depending on the surrounding noise sources. In general, properties facing directly onto existing roads are dominated by road traffic and experience noise levels in excess of 60dB L_{den}. Properties in more rural settings set back from road traffic experience noise levels typically less than 55dB L_{den} depending on local sources in the vicinity.

The variation in the prevailing ambient noise levels between 2016/2017 surveys and the updated 2023/2024 surveys show an insignificance difference when compared against the same monitoring conditions. Variations in measured noise levels are noted to be influenced by the position of the monitoring equipment (closer to or set back from road traffic) or from localised temporary sources in the area (e.g. from construction activities). A notable variation in ambient noise levels were measured along Cappagh Road, corresponding to the noted increased traffic flows along this road. For the most part, the prevailing noise environment described in the 2018 EIAR is largely unchanged compared to the current scenario within a tolerance of 1 to 2 dB.

There are additional noise sensitive locations (NSLs) constructed across the study area since the 2018 EIAR. These relate to a combination of one off houses and clusters of new properties within residential developments that are at various stages of completion in proximity to the proposed Project. In addition there are some granted but not yet constructed residential properties in the vicinity of the proposed Project.. The additional NSLs are within Na Forai Maola Thoir, Trusky West, Knocknagreana, Ballymoneen Road, Clybaun Road, Ragoon Road,

Letteragh Road South, Lakehill View, Coolagh Road, and Castlegar. These NSLs have been included in the updated noise models to assess the potential noise impact of the Project at these locations.

8.11.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

The changes in the measured baseline noise surveys or the presence of new NSLs do not alter the conclusions of the construction impact assessment. The impact assessment for the construction phase makes reference to absolute construction noise thresholds in line with the NRA 2004 and TII 2014 guidelines and hence there is no change in the assessment approach for this element of the chapter. Updated descriptions of significance ratings have been applied based on the DMRB 2020 document and EPA 2022 EIAR guidelines.

The operational traffic noise impact assessment is based on future traffic flows for the opening year and the design year of the proposed N6 GCRR. The opening year and design year of the proposed N6 GCRR have changed since the 2018 EIAR (now 2031 and 2046 respectively) and hence updated traffic noise modelling has been undertaken to account for updated traffic flows. As discussed in Section 6.11.2 above, the additional NSLs within the baseline environment have been added to the noise models to account for the addition of new and granted properties in the vicinity of the Project.

Traffic volumes along the proposed N6 GCRR for both the opening and design years and the surrounding road network vary compared to those in the 2018 EIAR. For the majority of modelled NSLs locations, calculated traffic noise levels along the proposed NG GCRR are typically between 0 and +/-2 dB compared to the original calculated results. The updated modelled noise results are set out in Chapter 18 of the updated EIAR and in full in Appendix A.18.3 of the updated EIAR.

At the additional modelled NSLs representing newly constructed or granted NSLs, the calculated traffic noise levels are below the TII traffic noise design goal of 60dB L_{den} with the suite of mitigation measures from the 2018 EIAR in place. The exception to this relates to a new residential development along Ballymoneen Road south of the proposed N6 GCRR which is under construction.

The grant of planning for this development by An Bord Pleanála (ABP-304762-19) included a condition for the developer to provide noise mitigation measures within the development site such that noise levels are attenuated to acceptable levels in accordance with internationally accepted standards. Mitigation measures for this residential development are therefore outside the scope of this Project.

Chapter 18 sets out the traffic noise levels calculated across the assessment locations. Assessment locations where residual traffic noise levels remain 1 or 2 dB above the TII noise design goal are identified in Section 18.7.3.1 of the updated EIAR. It is noted that reducing traffic noise levels to at or below 60dB L_{den} at these properties will require substantial additional barrier lengths and heights over and above those in place in order to achieve an insignificant change to the overall noise level at a property.

The extent of screening deemed feasible to achieve the target design goal at the relevant properties has been assessed, taking into account a level of proportionality with respect to changes in noise levels.

8.11.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

There are no new barriers proposed over those within the 2018 EIAR or the schedule of commitments submitted at the end of the oral hearing in 2020. The suite of barriers set out in the 2018 EIAR have been maintained within this updated EIAR.

There are two changes to previous detailed barriers as follows:

- An extension in height of noise barrier NB8/02 has been included as additional mitigation in vicinity of Upper Dangan. This has been increased from 2.5m to 3m
- An extension of noise barrier NB10/01 has been included as additional mitigation in vicinity of Coolagh Road. This has been extended west by 120m at a height of 2.5m (NB10/02)

The updated noise barrier locations and dimensions are set out in Table 18.18 of Chapter 18 of the updated EIAR.

In addition to the physical barriers proposed, the following sections of road, outside of the Assessment Boundary are proposed to be resurfaced with LNRS to reduce potential significant impacts in the opening and design years:

- Ballymoneen Road: South of the proposed N6 GCR to Western Distributor Road Junction
- Ballymoneen Road: North of the proposed N6 GCR to Ragoon Road Junction
- Letteragh Road/Circular Road: South of the proposed N6 GCR to Seamus Quirke Road

This proposed approach aligns with the Draft Galway City and Galway County NAPs which identifies the use of resurfacing roads with a LNRS (10mm SMA) areas with identified significant effects.

8.11.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

Traffic noise levels have been updated for all previous and new assessment locations along the Project taking account of all mitigation proposals. The residual traffic noise levels with the inclusion of the 2018 and updated noise mitigation measures result in a similar magnitude of impact to those originally assessed.

Residual traffic noise levels for all modelled locations are included in full in Appendix A.18.3 of the updated EIAR and summarised for the key affected locations in Table 18.27 of Chapter 18 of the updated EIAR.

8.11.7 Are there any changes to the cumulative impact assessment? If so, how?

The cumulative traffic noise impacts have been assessed at each of the modelled receptor locations considered in full as part of this assessment. During the Do-Minimum scenario for both assessment years (2031 and 2046), road traffic flows along the existing road network have been modelled and the cumulative traffic noise level calculated. For the modelled Do-Something scenarios, road traffic along the existing road network coupled with traffic along the proposed N6 GCR are combined to obtain a cumulative traffic noise level for both assessment years. The assessment takes account of any alignment alterations to the existing roads and junction and the re-distribution of traffic along the existing road network as a result of the proposed N6 GCR. In addition, the traffic model outputs used for the noise impact assessment, consider cumulative effects of traffic relating to other planned and committed transport projects in the area.

The cumulative impact assessment has been updated taking into account new planned and committed projects in the study area. The results of the assessment conclude there are no likely significant cumulative effects relating to noise and vibration.

8.11.8 Conclusion

An updated noise and vibration impact assessment has been prepared for this application taking into account changes to any relevant guidelines, standards, plans and policies, changes in the baseline environment and future forecasted traffic flows along the proposed N6 GCR for the new opening and design years of the Project.

The assessment has determined there is no material significant differences between the conclusions of the 2018 EIAR and the updated assessment.

8.12 Population and Human Health

8.12.1 Overview

Since the 2018 EIAR the Environment Protection Agency (EPA) have produced updated guidelines on the information to be contained in an EIAR. Where there have been any changes to the assessment and or any updates since the 2018 EIAR, these have been set out in this updated chapter.

A new Standard (PE-ENV-01108) *Population and Human Health Assessment of Proposed National Roads (PHH Standard)* was published by TII in 2024 and taken into account in the updated EIAR.

The chapter has also been updated to include new baseline demographic data from Census 2022 (Central Statistics Office, 2023) which reported a significant increase of 7.3% in the population of Galway City and Suburbs since the previous Census of 2016 from 78,668 to 84,414 persons. This increase has been

accompanied by an increase in traffic flow in parts of the city and consequently these are considered, although these do not significantly alter the assessment.

The Population and Human Health chapter of the updated EIAR has been reviewed and updated to take account of the above and the key changes to the chapter since the 2018 EIAR involve updating:

- Reviewing and updating elements of the chapter to address points raised in the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020, in response to the ABP Inspector's Report dated 22 June 2021 and ABP's Board Order ABP-302885-18
- Update to the assessment of significance of effects having regard to the EPA 2022 EIAR guidelines, Design Manual for Roads and Bridges (DMRB) Sustainability & Environmental Appraisal LA 111 Noise and Vibration, Revision 2. (UKHE 2020), WHO European Noise Guidelines (2018), the Galway City Council Noise Action Plan 2024–2028 and the Galway County Council Noise Action Plan 2024–2028
- Updated operational traffic modelling based on the most up to date traffic forecasts for the revised opening and design years of the Project which also generated updated noise predictions
- Review of updated noise, air, soils, water, landscape and visual assessments as they relate to the population and health impact assessment

8.12.2 Are there any changes to the guidance and standards for the methodology for the impact assessment? If so, what are they?

The TII Population and Human Health Assessment of Proposed National Roads (PHH Standard) of September 2024 provides new guidance for this assessment. In this respect, the assessment criteria used for the 2018 EIAR have been retained for the population assessment as they already cover the principal areas of assessment introduced by the new standard. The TII PHH Standard requires consideration of the effect of landscape and visual and climate as potential determinants on human health, and therefore, these are additional considerations included for scoping in this update of the health assessment over and above the assessment presented in the 2018 EIAR.

IEMA also published the following new guidance, IEMA 2022: Guide to Effective Scoping of Human Health in Environmental Impact Assessment (Pyper et al., 2022) and IEMA 2022: Guide to Determining Significance for Human Health in Environmental Impact Assessment (Pyper et al., 2022). These documents describe what is required for a proportionate assessment of the impacts on health that should be included in an EIA and are useful documents when considering what can and should be assessed.

A review of all the new guidance and TII Standard concluded that *health protection, health improvement and improving access to services* should be considered in the health assessment of this updated EIAR which is as per the 2018 EIAR. This is consistent with the latest EPA guidance of 2022, IEMA guidance of 2022 and the current TII PHH Standard. Therefore, whilst there is new guidance, the methodology is as per the 2018 EIAR.

8.12.3 Has the baseline changed? If so, how and where?

The receiving environment is broadly similar with the exception of recent population growth and residential infill, employment and retail development in the city in line with the City Development Plan, RSES and NPF and with new road infrastructure, such as the N59 Moycullen Bypass and the M18, along with county and junction upgrades and improvements in the city which have been reflected in the updated traffic model.

8.12.4 Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of the updated impact assessment guidance? If so, how?

No, there are no changes to the conclusions of the impact assessment.

8.12.5 Do the changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

These changes do not alter the mitigation strategy.

8.12.6 Do any of changes to the mitigation strategy alter the residual impact assessment? If so, how?

There are no changes in the residual impact assessment.

8.12.7 Are there any changes to the cumulative impact assessment? If so, how?

No, whilst the cumulative impact assessment has been updated to take account of all new planned and committed projects within the study area, the overall conclusion of the cumulative impact assessment is unchanged.

8.12.8 Conclusion

The proposed N6 GCRR will greatly improve connectivity by providing a direct link between the existing N6 in the east and the R336 and N59 to the west with onward links to Connemara and the Aran Islands. The proposed N6 GCRR will also connect with the N83 and N84 regional primary roads. By providing, an additional connection between the east and west of the city, the proposed N6 GCRR will help to reduce the significant level of traffic congestion which is experienced on a daily basis by Galwegians.

This improved connectivity will contribute significantly to the economic development of peripheral areas in the west of County Galway. The much-enhanced link between the east and west of the city itself will also open up new opportunities for economic and social development and employment. The transfer of a sizeable proportion of traffic to the proposed N6 GCRR will make space available for new pedestrian, cycle and public transport infrastructure. The active travel facilities included in the Project will complement the new infrastructure planned under the Galway Transport Strategy, with benefits for the urban realm, liveability, social inclusion, health and quality of life. However, it is assessed that construction and operation of the Project on its own gives rise to significant and very significant negative impacts at specific locations arising from the demolition of 44 dwellings and further acquisition of 10 dwellings on those involved in the compulsory purchase process but also the integrity of the communities left behind in terms of their identity.

This assessment of the impacts of the Project for Human Beings, using criteria relevant to the assessment of Population and Human Health has determined there is no material change between the conclusions of the 2018 EIAR and the updated assessment.

9. Update to Appropriate Assessment Screening document and the Natura Impact Statement

An updated AA Screening Report and an updated NIS have been prepared and included in Part VII of this 2025 RFI Response. The updated AA Screening Report takes account of the additional impact pathways identified by Dr Arnold, the ecologist appointed by ABP, in his appropriate assessment and additional sites have been screened in. The conclusions of the updated AA Screening is that a Stage 2 Appropriate Assessment (AA), is still required. The following questions are answered to identify any changes from the 2018 NIS.

1. Are there any changes to the guidance and standards for the methodology for the Stage 2 Appropriate Assessment? If so, what are they?
2. Has the baseline changed? If so, how and where?
3. Do these changes to the baseline alter the conclusions of the impact assessment taking cognisance of updated impact assessment guidance? If so, how?
4. Do any changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?
5. Do any changes to the mitigation strategy alter the residual impact assessment? If so, how?
6. Are there any changes to the in combination assessment? If so, how?

9.1 Overview

Since the 2018 NIS, several key Appropriate Assessment guidelines have been published, providing guidance on preparing AA Screening and NIS assessments, and undertaking Appropriate Assessment. The guidance updates draw on experience in implementing the Habitats Directive and in relation to related case-law of the Irish courts and the Court of Justice of the European Union. The assessments presented in the updated AA Screening Report and updated NIS have been reviewed and updated to take account of current best practice guidance.

Cognisance has also been taken of the assessment undertaken by the ecologist appointed by An Bord Pleanála (ABP) and presented in their report appended (as Appendix 4) to the ABP's Inspector's Report dated 22 June 2021²², and reflected in the updated NIS in terms of the additional potential impact pathways and European sites considered by ABP in undertaking their Appropriate Assessment in 2021. Where there have been changes to the assessment and or updates since the 2018 NIS these have been set out in the updated NIS.

A number of Appropriate Assessment related questions arose at the Oral Hearing in 2020, specifically in relation to habitat classifications (including Annex I limestone pavement habitat) and mitigation measures, and these are specifically referred to and dealt with in the appropriate sections throughout the updated NIS. Further, the documentation submitted by GCC during the Oral Hearing in 2020 has also been reflected in the updated NIS and, where appropriate, the appendices to the updated NIS.

The key changes to the NIS since the 2018 NIS involve updating:

- the description of the receiving environment to take account of the results of the surveys undertaken between 2022 and 2024 and changes to European site boundaries, their qualifying interests/special conservation interests, and their conservation objectives
- the figures and appendices to reflect the updated data and assessment

²² Inspector's Report (2021) ABP-302885-18 & ABP302848-18 and Appendix 4: Ecological Impact Assessment Report, N6 Galway City Ring Road for An Bord Pleanála, ABP Ref. ABP-302848-18, ABP302885-18, Project No.: IABP106/002 (2021), prepared by Dr Arnold of Thomson Environmental Consultants

- the report to reflect that updated data and assessment, and to take account of points raised in the RFI Response dated 30 August 2019, the Brief of Evidence presented to An Bord Pleanála (ABP) at the oral hearing in 2020 and from the ecologist appointed by An Bord Pleanála (ABP) and presented in their report appended (as Appendix 4) to ABP’s Inspector’s Report dated 22 June 2021

9.2 Are there any changes to the guidance and standards for the methodology for the Stage 2 Appropriate Assessment? If so, what are they?

The following guidelines relating to Appropriate Assessment have been published since October 2018:

- *Assessment of Plans and Projects in Relation to Natura 2000 sites: Methodological Guidance on 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)*
- *OPR Practice Note PN01. Appropriate Assessment Screening for Development Management (Office of the Planning Regulator, 2021)*

The updated AA Screening Report and the updated NIS have been prepared with regard to, and are consistent with the approaches set out in, the most recent Appropriate Assessment guidelines.

9.3 Has the baseline changed? If so, how and where?

The National Parks and Wildlife Service designated area spatial data has been updated on multiple occasions since October 2018. In terms of Lough Corrib SAC, the only European site through which the Project passes, there have been minor revisions to the site’s boundary in the vicinity of the Project. These revisions have resulted in a slight reduction in the extent of overlap between the Project and the boundary of Lough Corrib SAC from c.4ha in 2018 to c.3.8ha in 2024.

The list of Special Conservation Interests (SCIs) for Inner Galway Bay SPA were adjusted in 2019²³ to add black-throated diver *Gavia arctica* and remove Shoveler *Anas clypeata*. In March 2024 two cetacean species (bottlenose dolphin *Tursiops truncatus* and harbour porpoise *Phocoena phocoena*) were added as qualifying interests at 16 existing marine and coastal SAC sites, the closest of which are Inishmore Island SAC (c.29km to the south-west of the Project) and Kilkieran Bay and Islands SAC (c.25.5km to the west of the Project).

The underlying hydrological and hydrogeological baseline environment supporting the conservation condition of the QI/SCI habitats and species of the European sites within, and in the vicinity of, the Project has not changed.

There have been minor changes to the habitat baseline within Lough Corrib SAC but no changes to the location or extent of QI habitats within, or in the vicinity of, the Project.

There have been minor changes to the fauna baseline, as set out in Section 5.1.2 of the updated NIS, as it relates to the Appropriate Assessment, but overall the distribution and abundance of QI/SCI species is consistent with that published in 2018. Four additional bird species, listed as SCIs for nearby SPA sites, were recorded during the 2022-2024 bird surveys and have been incorporated into the assessment: common gull, gadwall, ringed plover and whooper swan.

9.4 Do these changes to the baseline alter the conclusion of the impact assessment taking cognisance of updated impact assessment guidance? If so, how?

The impact assessment has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by An Bord

²³ S.I. No. 515/2019

Pleanála, statutory consultees, members of the public and other participating third parties, and the assessment undertaken by the Inspector appointed by An Bord Pleanála (ABP) dated 22 June 2021²⁴.

The assessment presented in the updated AA Screening Report and the updated NIS is based on the most recent European site boundaries²⁵, the most recent published QIs/SCIs for each European site at the time of publication (see Table 5.3 of the updated NIS), and the 2023 baseline habitat and species information of relevance to the Appropriate Assessment.

Although the baseline changes have required some level of minor updates to the impact assessment to capture the biodiversity baseline changes recorded between 2018 and 2024, the updates are not material and do not affect the conclusions of the impact assessment.

The impact assessment has been updated to include the 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.

The impact assessment has been updated (for consistency with the assessment undertaken in 2021 by An Bord Pleanála) to consider and assess the following additional European sites that, due to their proximity to the wider road network, have the potential to be affected by an increase in construction traffic: Ardrahan Grassland SAC, Castletaylor Complex SAC, Kiltiernan Turlough SAC, Lough Fingall Complex SAC, Rahasane Turlough SAC, Rahasane Turlough SPA and Cregganna Marsh SPA.

A potential increase in recreational pressure associated with the operation of the Project could affect the following European sites, in addition to Lough Corrib SAC, Galway Bay Complex SAC, Lough Corrib SPA and 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.

A potential deterioration or decline in European site QIs/SCIs due to loss of supporting habitats/populations of typical species and positive indicator species could affect the following additional European sites:

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.

The assessment has ruled out the potential for an increase in recreational pressure or deterioration or decline in European site QIs/SCIs due to loss of supporting habitats/populations of typical species and positive indicator species to adversely affect the integrity of any European sites.

9.5 Do any changes to the conclusions of the impact assessment alter the mitigation strategy? If so, how?

The mitigation strategy has been updated to incorporate all relevant clarifications, amendments and updates made throughout the post-application public consultation process in response to queries raised by the ecologist appointed by ABP and ABP themselves, statutory consultees, members of the public and other participating third parties and also including, as appropriate, recommended mitigation measures by Dr Arnold, the ecologist appointed by An Bord Pleanála (in the Appropriate Assessment Report appended (as Appendix 6) to the ABP's Inspector's Report dated 22 June 2021 and accepted by ABP's Inspector).

The minor updates made to the impact assessment resulting from the updated baseline results, and the conclusions of the updated impact assessment, have not altered the mitigation strategy.

²⁴ Inspector's Report (2021) ABP-302885-18 & ABP302848-18 and Appendix 6: Appropriate Assessment Report, N6 Galway City Ring Road For An Bord Pleanála, ABP Ref. ABP-302848-18, ABP302885-18, Project No.: IABP106/001 (2021), prepared by Richard Arnold of Thomson Environmental Consultants

²⁵ The most recent Special Area of Conservation (SAC) boundary dataset is SAC_ITM_2024_05 (released on 15 May 2024) and the most recent Special Protection Area (SPA) boundary dataset is SPA_ITM_2024_01 (released on 11 January 2024)

9.6 Do any changes to the mitigation strategy alter the residual impact assessment? If so, how?

The changes to the mitigation strategy do not alter the conclusions of the residual impact assessment with respect to the absence of adverse effects on the integrity of any European sites.

9.7 Are there any changes to the in combination effects assessment? If so, how?

The in combination effect assessment has been updated (see Section 12 of the updated NIS) to capture updated Plans and new planned or committed projects since the conclusion of the oral hearing in 2020.

Considering the plan level environmental protective policies and objectives and the mitigation measures at the project level, the conclusion of the in combination effects assessment is that there is no potential for adverse effects on the integrity of any European sites to arise as a consequence of the Project acting in combination with any, or all, of the plans or projects considered as part of the in combination effects assessment.

9.8 Conclusion

Although there have been guideline updates, minor baseline changes, and updates to the content of the impact assessment presented in the NIS, the overall conclusion of the assessment with respect to whether the Project will adversely affect the integrity of any European sites remains as follows:

It has been objectively concluded by Scott Cawley Ltd. following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the Project and with the implementation of the mitigation measures proposed, that the Project does not pose a risk of adversely affecting (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects, and there is no reasonable scientific doubt in relation to this conclusion.