

Galway County Council

N6 Galway City Ring Road

EIAR - Cumulative Impact Assessment
Update Addendum Report (Dealing with
approved and live pending applications
since publication of the EIAR)

Issue | 10 March 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Ove Arup & Partners Ireland Ltd

Arup
Corporate House
City East Business Park
Ballybrit
Galway
H91 K5YD
Ireland
www.arup.com

ARUP

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1 Introduction

1.1 Background

Annex IV (5)(e) of the EIA Directive as amended by Directive 2014/52/EU requires that the EIA shall contain:

“A description of the likely significant effects of the project on the environment resulting from, inter alia:

*(e) the cumulation of effects with other **existing and/or approved projects**, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources;*

The cumulative impact assessment of the proposed road development (N6 Galway City Ring Road (N6 GCRR)) in combination with other projects is presented in Section 19.5 (pages 1671-1709) of Chapter 19 (Major Accidents, Inter-Relationships, Interactions and Cumulative Impacts) of the EIA.

While the EIA Directive specifically requires a description of the likely significant effects of the N6 GCRR on the environment resulting from the cumulation of effects with other *existing and/or approved projects*, Galway County Council went further in the EIA and also considered and assessed any relevant proposed (but not approved at that time) developments likely to have significant cumulative effects.

As noted on page 1671 of Section 19.5.1, a review of the committed projects and the planning files for Galway City and County Council was carried out prior to publication of the EIA (October 2018). These projects were either in existence, approved or proposed at that time and were considered and assessed as to whether they have the potential for likely significant direct, indirect and cumulative impacts on the environment.

Likely significant cumulative impacts of the proposed road development (N6 GCRR) in combination with other projects and plans identified in Section 19.5.1 (page 1671) and in Table 19.3 (page 1690) of the EIA for each of the environmental factors were identified, considered and assessed in respective chapters of the EIA. Further, Section 19.5 of Chapter 19 presented all of the individual assessments together and examined and assessed whether the proposed road development in combination with those other projects and plans would be likely to have significant environmental effects both on an individual basis with the proposed road development and also cumulatively with all such plans and projects identified in Chapter 19 of the EIA. The conclusion of that assessment was that there would not be likely significant cumulative impacts other than those already identified in the individual assessments.

1.2 Other projects considered since publication of the EIAR

There are a number of projects which have been approved since the publication of the EIAR (October 2018). There are also some pending and live applications as at the date of this addendum report. Consistent with the approach taken in the EIAR, this addendum report considers and assesses the direct, indirect and in-combination effects of any projects approved since the publication of the EIAR together with any pending planning applications that might have the potential for likely significant impacts.

A review has been carried out of live and approved applications contained in the planning files for:

- i. Galway City Council
- ii. Galway County Council
- iii. County Councils in neighbouring counties
- iv. An Bord Pleanála, and
- v. Department of Housing, Planning and Local Government EIA Portal

Arising from this review, a number of live and/or approved projects (as listed in **Table 1** below) have been identified which have the potential for likely significant cumulative impacts. Drawing No GCRR-SK-OH-042 shows the location of the live and approved projects listed in **Table 1**. The assessment in this addendum considers and assesses whether any of those live and/or approved projects will have likely significant cumulative impacts in combination with the N6 GCRR either on its own or in combination with the N6 GCRR and all of the projects and plans considered in Section 19.5 of the EIAR.

There are many projects (live/approved) within Galway city, county and neighbouring counties. However, only the projects listed in **Table 1** below are considered to have the potential to cause likely significant cumulative impacts (either in-combination with the N6 GCRR on its own or in-combination with the N6 GCRR and all those projects and plans considered in Section 19.5 of the EIAR) and the potential for cumulative impacts has been ruled out in respect of other projects due either to the distance of the proposed road development from these projects or the location or design or nature of those projects.

For example, there are two recently approved/live strategic housing development (SHD) projects in Co. Galway (304203¹ and 300560²), two wind turbine projects

¹ ABP ref 304203: SHD development (212 residential units), permitted in 2019, located in townlands of Moneyduff, Oranmore, Co. Galway

² ABP ref 300560: SHD development (128 dwelling houses), permitted in 2018, located in Halfstraddle, Ballynagaddy Road, Tuam. Co. Galway

(303086³ and 191481⁴), a solar farm (191315⁵) and biogas plant (191812⁶) in Co. Galway but given the location and nature of these projects, none of them have the potential to cause likely significant impacts (either in-combination with the N6 GCRR on its own or in-combination with the N6 GCRR and all of the projects and plans considered in Section 19.5 of the EIAR). Accordingly, these have not been considered or assessed in this addendum report.

There are other applications which have been refused planning consent or have been withdrawn or invalidated and these have not been considered or assessed in this addendum report.

It is noted that there are other known projects in the public domain (such as a potential large strategic housing development (SHD) application on Sandy Road, Galway) which have not yet been the subject of an application to a planning authority for consent. These have not been considered or assessed in this addendum report.

All of the experts have reviewed the available materials relating to the approved projects and live applications in **Table 1** below in order to conduct their assessments.

The methodology used to assess the likely significant cumulative effects is that as presented in Section 19.3 (pages 1638-1639) of the EIAR.

Table 2 of this addendum report presents the results of the likely significant direct, indirect and cumulative impact assessment (under all of the individual environmental factors) for each project listed in **Table 1** in combination with the N6 GCRR. **Table 3** presents the results of the likely significant direct, indirect and cumulative impact assessment of each project listed in **Table 1** in combination with the N6 GCRR and all of those projects and plans considered in Section 19.5 of the EIAR.

The conclusion of the assessment presented in this addendum is that there are no likely significant cumulative impacts arising from an assessment of the projects listed in Table 1 above save in relation to climate as explained in the Tables below.

No additional mitigation measures are necessary or required following this assessment.

³ ABP ref 303086: Construction of up to 25 wind turbines, mast and 110kv substation, permitted in 2019, located in Ardderroo, Letter and Finnaun, Oughterard, Co. Galway.

⁴ GCoC 191481: SSE Renewables Ltd & Coillte – Live application. A change to the dimensions and locations of nine previously consented turbines, located in Derradda, Seecon, Shannapheasteen, Uggool, Letter, Finnaun, Oughterard, Co. Galway. Further Information requested Nov 2019.

⁵ GCoC Ref 191315: Solar Farm, located at Cloonascragh, Tuam, Co Galway. Permitted but on appeal to ABP (306685). Case is due to be decided by 23/06/2020.

⁶ GCoC Ref 191812: Biogas Plant. Refused but on appeal to ABP (306709). Case is due to be decided by 24/06/2020

Table 1: Live and approved projects since publication of EIAR

ABP ref	GCC ref	Details	Live/Approved Decision Date
-	19/372	NUIG New Pitches Planning permission for the development of 1 no. 3G pitch and 1 no. grassed GAA/soccer pitch plus all ancillary infrastructure, ball stop fencing, floodlighting, drainage, an enhanced biodiversity area and all associated site development works.	LIVE. FI REQUEST
305982-19	SHD 18/7	332 no. apartments, creche and all associated site works. Gort na Bró, Ragoon, Co. Galway. www.knocknacarradistrictcentre.ie	LIVE 30/03/2020
306222-19	SHD 19/1	Ballybane More Road 102 no. residential units (24 no. houses, 78 no. apartments), childcare facility and associated site works. Ballybane More Road, Ballybrit, Doughiska, Co. Galway. www.ballybanemoreroadshd.ie	LIVE 20/04/2020
306403-19 306403-20	SHD 18/9	255 no. student bedspaces. Coolough Road, Terryland, Co. Galway. www.cooloughstudentresidences.ie	LIVE 05/05/2020
306413-19	SHD 19/2	342 no. residential units (185 no. houses, 157 no. apartments). Lands at Rosshill Road, in the townlands of Roscam, Merlin Park and Murrough, Rosshill Road, Galway, Co. Galway www.rosshillmanorshd.ie	LIVE 07/05/2020
-	20/47	Augustine Hill (Rear of Ceannt Station) The proposed development is for a mixed-use urban regeneration project consisting of the following uses: residential, retail, cafes/restaurants, hotel, office, cinema, childcare facility, community, cultural, parking, and associated site development works. EIAR and NIS accompany the planning application	LIVE 21/4/2020
304345-19	SHD 18/5	Letteragh Road, Letteragh, Ragoon. 101 residential units (46 houses, 55 apts.), childcare facility & site works on lands to east of Ballymoneen	GRANT 02/08/19
304762-19	SHD 18/4	East Ballymoneen Road in the townland of Ballyburke. Demolition of an existing house and associated outbuildings, and the construction of 238 no. residential units (113 no. houses, 125 no. apartments), and a childcare facility with associated site works on lands to, Galway.	GRANT 14/10/19
304928-19	SHD 18/6	Crown Square, Monivea Road. & Joyce's Road., Mervue. 288 no res units.	GRANT 30/10/19
301693-18	SHD 18/1	Dangan, Upper Newcastle. Student Accommodation. 394 beds (53 apts.)	GRANT 04/01/19

ABP ref	GCC ref	Details	Live/Approved Decision Date
303846-19	SHD 18/3	NUIG, Northern Campus, Dangan, 471 student beds	GRANT 11/06/19
	19/107	Galway West Water Supply Scheme – Terryland WTP Intake Works and Clifton Hill Rising Main (Irish Water). Permission for development which comprises of a new raw water intake works located on the east bank of the River Corrib, 100m downstream of Quincentenary Bridge; associated pipework to transfer raw water from the new intake works to the existing intakes works , which in turn supplies Terryland Water Treatment Plant (WTP); and a new treated water rising main extending between Terryland WTP and existing rising main on the east bank of the River Corrib. NIS included.	GRANT 24/01/20

1.3 Traffic

The air quality, climate and noise assessments are dependent on traffic data. Therefore, it is appropriate that information on the traffic assessment is referenced. Following the publication of the National Planning Framework (NPF) and associated population and employment targets for Galway, SYSTRA carried out a review of the N6 GCRR modelling, using the recently published NPF forecasts. The outputs from this modelling exercise were then used to determine the likely transport impacts of the scheme in the context of the updated demographic assumptions and this is set out at Section 8 in the Response to the Further Information Request and were considered in the air quality, climate and noise assessments as included in the Response to Further Information Response.

2 Overall Cumulative Impact Assessment

Table 2: Likely significant direct, indirect and cumulative impact assessment of live or approved projects listed in Table 1 in combination with the N6 GCRR

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
NUIG New Pitches (19/372)	<p>Socio Economic: The proposed NUIG project will have a positive cumulative impact on human beings, mitigating for the negative impact that the proposed road development will have on two existing pitches during construction. The proposed road development itself will provide a positive cumulative impact by facilitating access to users of the proposed pitches and visitors via the N59 Link Road North. There is no severance of access beneath the viaduct. There are no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed NUIG pitches project (19/372).</p>	None save in relation to Climate.
	<p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p>	
	<p>Human Health: The proposed NUIG project (19/372) consists of the provision of new playing pitches which as noted above (socio-economic) will have a positive impact on people. There are no likely significant direct, indirect cumulative impacts on human health of the N6 GCRR in combination with the proposed NUIG pitches project (19/372).</p>	
	<p>Material Assets Non-Agriculture: Given that NUIG project is for playing pitches, from a non-agricultural material assets perspective, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed NUIG pitches project (19/372).</p>	
	<p>Material Assets Agriculture: There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed NUIG pitches project (19/372) because this land (19/375) is not agricultural.</p>	
	<p>Air Quality and Climate: The proposed NUIG project (19/372) consists of the provision of new playing pitches. The construction phase of the proposed NUIG project is not expected to generate levels of dust so as to create a significant negative cumulative impact. The RFI Response updated the air impact assessment which considered the increased population as forecasted by the NPF which includes forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>will occur. The new playing pitches will not generate any impacts on air quality during the operational phase. Therefore, no likely significant cumulative impacts will occur between the N6GCRR and this project.</p> <p>It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed project are likely to have likely significant cumulative impacts on climate.</p> <p>Noise and Vibration: The proposed NUIG project (19/372) consists of the provision of new playing pitches – likely significant noise effects during construction and operation will not arise. The construction of the N6 GCRR will dominate noise and vibration levels in this area once under construction. Similarly, noise levels from the operation of the N6 GCRR will become the main noise source in this area once operational. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed NUIG pitches project (19/372) on noise and vibration.</p> <p>Landscape and Visual: The proposed NUIG project (19/372) is located south of the existing soccer pitches and to the immediate north of the proposed N6 GCRR. It is also located within the grounds of the existing NUIG Sporting Campus, adjacent to existing sports pitches and in area where the land use zoning is ‘RA’ Recreational and Amenity. The NUIG project includes for provision of a biodiversity enhancement area to the north (riverside) of the existing pitches. While the layout of the pitch development has been designed to take account of the proposed road development, it will require the removal of a small area of additional existing planting located to the north of the proposed road development. The proposed road development also includes for removal of vegetation in this area, however, the removal of additional vegetation for the pitch development is not significant given the extent of retained vegetation in the surrounding area and the new planting in the proposed biodiversity area. The proposed road development will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with the proposed NUIG sports-related project as proposed.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed NUIG project in combination with the N6 GCRR. This is due to the nature and scale of the NUIG development, the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated in this area and the fact that no visual (indirect) impacts will arise that relate to the archaeological, architectural and cultural heritage resource.</p> <p>Soils and Geology: Some peat excavation/removal will likely be required, along with the loss of soil and very high aggregate potential from the proposed NUIG project (19/372). However, the cumulative loss is still considered small on a local scale. No significant negative impacts are likely following the implementation of appropriate mitigation measures and adherence to the CEMP</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>for the NUIG project. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed NUIG pitches project (19/372) on soils and geology.</p> <p>Hydrogeology: The proposed NUIG project is located on the Ross Lake groundwater body which is traversed by the proposed road development. The NUIG pitches will require a new drainage network to be installed which may modify the recharge locally. However, changes identified by the proposed NUIG pitches project will not interact with those impacts identified in the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed NUIG pitches project (19/372) on hydrogeology.</p> <p>Hydrology: The proposed NUIG project is located adjacent to the river Corrib and will drain to the River Corrib SAC to the north of the N6 GCRR. Careful management of site runoff during construction of this NUIG project will be necessary to protect the Corrib SAC from potential pollution. The pitches avoid the flood zone being located in the low Flood Risk Zone C lands. During operation, the grassed GAA pitch may require the application of some fertilisers which will require management. However, given the proposed drainage design for the N6 GCRR and the proposed Sediment Erosion and Pollution Control Plan (within the CEMP), there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed NUIG pitches project (19/372) on hydrology.</p> <p>Biodiversity: It should be noted that this application is still live and that a request for further information has been issued. The assessment provided here is based on the information currently available.</p> <p>Areas of the priority Annex I habitat Residual alluvial forest were recorded within the 19/372 development site as part of the N6 GCRR surveys undertaken in 2014. These areas were not classified as Residual alluvial forest in the Ecological Impact Assessment submitted by the applicant for development 19/372 based on ecological surveys undertaken in 2019. If it is considered that the area of habitat to be lost to the 19/372 development is not Annex I habitat Residual alluvial forest, then there would be no cumulative loss of this habitat together with the N6 GCRR. In the alternative, if it is considered that the area of habitat to be lost to the 19/372 development is in fact Annex I habitat Residual alluvial forest, then there would be a cumulative loss of this habitat together with the loss of 0.14ha of this habitat to be lost to the N6 GCRR.</p> <p>Regardless of whether the 19/372 development site supports Residual alluvial forest habitat, the N6 GCRR project alone will not have any likely significant residual effects on this habitat type as it is proposed to create 0.18ha of this habitat as part of the N6 GCRR mitigation strategy to address the loss of 0.14ha for the proposed road development, resulting in no net permanent habitat loss.</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Therefore, the N6 GCRR project will not contribute to any potential cumulative residual effects arising from permanent loss of Residual alluvial forest habitat from any other projects including development 19/372.</p> <p>According to the Ecological Impact Assessment, development 19/372 will not result in the loss of any other Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect.</p> <p>As per the 19/372 Ecological Impact Assessment, and considering the mitigation measures proposed therein, it alone will not result in any long-term significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance.</p> <p>As development 19/372 will not result in any significant residual biodiversity impacts at any geographic scale, the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and development 19/372, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the proposed road development presented in the EIAR.</p>	
Knocknacarra District Centre, Gort na Bró, Ragoon SHD (305982-19) (SHD 18/7)	<p>Socio Economic: There will be a positive cumulative socio-economic impact arising from the N6 GCRR in combination with the proposed Knocknacarra SHD (305982-19) through provision of a cycle lane from Western Distributor Road along Gort na Bro Road towards the Gaelscoil together with pedestrian crossing facilities across Gort na Bro from the entrance to the proposed SHD (305982-19) development. In addition, there will be a positive cumulative impact between the N6 GCRR in combination with the proposed Knocknacarra SHD (305982-19) as the N6 GCRR now contains proposals for cycle lanes and pedestrian footpaths on both sides of Gort na Bro with crossing facilities at the Ragoon Junction with the N59 Link Road South. There are no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed Knocknacarra SHD (305982-19) project.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p> <p>Human Health: The proposed Knocknacarra SHD (305982-19) project is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts on human health will arise from the N6 GCRR in combination with the Knocknacarra SHD (305982-19) project.</p>	None save in relation to Climate.

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Material Assets Non-Agriculture: Given that that the Knocknacarra SHD (305982-19) project is set at sufficient distance from the proposed road development, from a non-agricultural material assets perspective, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project.</p> <p>Material Assets Agriculture: There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed Knocknacarra SHD project because this land (located on a 2.96 hectare site) is not agricultural.</p> <p>Air Quality and Climate: Due to the separation of the proposed road development from the proposed Knocknacarra SHD (305982-19) project, no significant air quality cumulative construction impacts will occur. The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur. Therefore, taking the N6GCRR with this project, no likely significant cumulative impacts will occur.</p> <p>The proposed SHD residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance⁷, any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination. Accordingly, the construction of this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate during the construction phase and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.</p> <p>Noise and Vibration: The proposed Knocknacarra SHD project is set at sufficient distance from the proposed road development such that no cumulative noise impacts will arise as a result of construction or operational phase of this SHD development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed Knocknacarra SHD project (19/372) on noise and vibration.</p> <p>Landscape and Visual: The proposed Knocknacarra SHD is located on lands zoned for 'CI' (Enterprise, Light Industry and Commercial) development. The site has an urban/suburban context and is adjacent to the Gort na Bró Link Road (effectively an urban/suburban tie-in from the N59 Link Road South) element of the proposed road development. The Knocknacarra SHD will give rise to visual impacts during construction and operation. These visual impacts will be typical of urban development and will be greatest during construction stage in this established, developed and appropriately zoned location. Likewise, in this location the</p>	

⁷ Institute of Environmental Management and Assessment (IEMA) guidance note on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>proposed road development provides for an urban/suburban tie-in road network. The proposed road development will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with the proposed Knocknacarra SHD project at this location.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed Knocknacarra SHD project in combination with the N6 GCRR, This is due to the nature and scale of the development and the proposed N6 GCRR at this location, the existing developed nature of the receiving environment, the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated in this area and the fact that no visual (indirect) impacts will arise that relate to the archaeological, architectural and cultural heritage resource.</p> <p>Soils and Geology: While the majority of the site consists of shallow bedrock, the Knocknacarra SHD EIAR assessment concluded that there will be a small loss of soil (based on Teagasc/EPA soil mapping), in addition to the loss of very high aggregate potential. However, the cumulative loss is considered small on a local scale. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: The proposed Knocknacarra SHD project is located on granite and is significantly down gradient of the proposed road development. Although excavations and some dewatering may be required at the site these will not interact with impact identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p> <p>Hydrology: The proposed Knocknacarra SHD project is down gradient of the proposed road development and will manage its storm runoff as required by the current Development Plan such that greenfield flood runoff rates will be maintained post development with attenuation for the 100-year rainstorm event with 20% climate change. This development will discharge to the Knocknacarra Stream which outfalls into Rusheen Bay within the Galway Bay Complex cSAC. The proposed road development discharges to this stream from the mainline and the N59 Link Road. The foul effluent from the proposed Knocknacarra SHD project will be discharged to the public foul sewer and will be treated at the Mutton Island wastewater treatment plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff and storm water quality so as to protect the receiving environment. The foul discharge from the proposed development has been assessed and permissions obtained from Irish Water. There</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology</p> <p>Biodiversity: As per the Biodiversity chapter of the Ecological Impact Assessment Report submitted by the applicant for development SHD 18/7, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance.</p> <p>According to the Ecological Impact Assessment Report, development SHD 18/7 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development SHD 18/7 will not result in any significant residual biodiversity impacts at any geographic scale (being an urban site comprising predominantly of spoil and bare ground habitat), the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and SHD 18/7, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the proposed road development presented in the EIAR.</p>	
<p>Ballybane More Road SHD (306222-19) (SHD 19/1)</p>	<p>Socio Economic: The proposed road development provides very slight positive cumulative socio-economic impact in making the proposed SHD project potentially easier to access due to expected reduction in congestion in the area of Briarhill where the R339 meets the existing N6. There are no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed Ballybane SHD (306222-19) project.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p> <p>Human Health: Proposed Ballybane SHD project is set at sufficient distance from the proposed road development such that no cumulative human health impacts arise as a result of construction or operational phase of this SHD development.</p> <p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR.</p>	<p>None save in relation to Climate</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Material Assets Agriculture: There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed Ballybane SHD project because this land (located on a 2.09 hectare site) is not agricultural.</p> <p>Air Quality and Climate: Due to the separation of the proposed road development from the proposed SHD project, no likely significant air quality cumulative construction impacts will occur. The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore no likely significant cumulative impacts will occur between the N6GCRR and this project.</p> <p>The proposed residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance⁸, any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination. Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.</p> <p>Noise and Vibration: The proposed development is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project will arise. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment considered the increased population as forecasted in the NPF and the forecasted traffic volumes in proximity to the proposed road development and concluded that there are no likely significant impacts and therefore, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration.</p> <p>Landscape and Visual: The proposed Ballybane SHD is set within the existing developed urban/sub-urban context of Ballybane More Road, which is physically and visually separated from the proposed road development by surrounding developed context. The proposed development is located on 'R' Residential zoned lands. The proposed road development will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with the proposed SHD project at this location.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed Ballybane SHD project</p>	

⁸ Institute of Environmental Management and Assessment (IEMA) guidance note on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>and the proposed N6 GCRR. This is due to the nature and scale of the development, the existing developed nature of the receiving environment; the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated in this area and the fact that no visual (indirect) impacts will arise that relate to the archaeological, architectural and cultural heritage resource.</p> <p>Soils and Geology: While there is a small loss of soil, and very high aggregate potential from the proposed Ballybane SHD project, the cumulative loss is considered small on a local scale. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: The proposed Ballybane SHD is located on limestone and is within the Clarinbridge groundwater body. It is located down gradient of the proposed road development. Although excavations and some dewatering may be required at the SHD site, these will not interact with impact identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p> <p>Hydrology: The proposed Ballybane SHD project is down gradient of the proposed road development and will manage its storm runoff as required by the current Development Plan such that greenfield flood runoff rates will be maintained post development. The storm drainage from the Ballybane SHD project will discharge to the Public Storm Drain at Doughiska. The proposed road development will also discharge to the public storm sewer at Doughiska. The foul effluent will be collected and treated at Mutton Island Wastewater Treatment Plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff and water quality so as to protect the receiving environment and permissions obtained from Irish Water to discharge to public storm sewer. The foul discharge from the proposed development has been assessed and permissions obtained from Irish Water. There will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p> <p>Biodiversity: As per the Ecological Impact Assessment submitted by the applicant for development SHD 19/1, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance.</p> <p>According to the Ecological Impact Assessment, development SHD 19/1 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development SHD 19/1</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>will not result in any significant residual biodiversity impacts at any geographic scale, the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and SHD 19/1, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the proposed road development presented in the EIAR.</p>	
<p>Coolough Residences, Coolough Road, Terryland (306403-19, 306403-20) (SHD 18/9)</p>	<p>Socio Economic: The proposed Coolough SHD project is some distance away from the proposed road development. Coolough Road connects Dyke Road and onto Menlo, but the proposed road development crosses it on a viaduct and so no additional traffic is added due to the proposed road development between here and the NUIG campus (1km). For any students accessing GMIT (>3km) additional traffic is added to the N84 and therefore to the junction between this road and the existing N6, although traffic would be reduced on the latter. Therefore, no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed Coolough SHD project will arise.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p> <p>Human Health: Proposed development is set at sufficient distance from the proposed road development such that no cumulative human health impacts arise as a result of construction or operational phase of this SHD development.</p> <p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR.</p> <p>Material Assets Agriculture: There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed Coolough SHD project because this land is not agricultural.</p> <p>Air Quality and Climate: Due to the separation of the proposed road development from the proposed SHD project, no likely significant air quality cumulative construction impacts will occur. The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore there is no likely significant cumulative impact of the N6GCRR with this project.</p>	<p>None save in relation to Climate.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>The proposed residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance⁹, any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination. Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate during the operational phase.</p> <p>Noise and Vibration: Proposed Coolough SHD project is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project will arise. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment considered the increased population as forecasted in the NPF and the forecasted traffic volumes in proximity to the proposed road development and concluded that there are no likely significant impacts and therefore there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration.</p> <p>Landscape and Visual: The proposed Coolough SHD is set within the existing developed sub-urban context of Coolough Road and is physically and visually separated from the proposed road development by means of topography, vegetation and distance. The proposed SHD development is located on 'R' Residential zoned lands. The proposed road development will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with the proposed SHD project at this location.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed Coolough SHD project and the proposed N6 GCRR. This is due to the nature and scale of the SHD project, the distance from the scheme, the existing developed nature of the receiving environment and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated in this area.</p> <p>Soils and Geology: While there is a small loss of soil, and very high aggregate potential from this SHD project, the cumulative loss is considered small on a local scale. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p>	

⁹ Institute of Environmental Management and Assessment (IEMA) guidance note on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Hydrogeology: The proposed development at Coolough Road is located on limestone and is within the Clare-Corrib (Terryland) groundwater body. It is located down gradient of the proposed road development. Although excavations and some dewatering may be required at the site these will not interact with impact identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p> <p>Hydrology: The proposed Coolough SHD project is down gradient of the proposed road development and will manage its storm runoff as required by the current Development Plan such that greenfield flood runoff rates will be maintained post development. The storm drainage will discharge to the combined Public Sewer. The foul effluent will be collected and treated at Mutton Island Wastewater Treatment Plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff and storm water quality so as to protect the receiving environment. The foul discharge from the proposed development has been assessed and permissions obtained from Irish Water. There will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p> <p>Biodiversity: As per the Ecological Impact Assessment submitted by the applicant for development SHD 18/9, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance.</p> <p>According to the Ecological Impact Assessment, development SHD 18/9 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development SHD 18/9 will not result in any significant residual biodiversity impacts at any geographic scale, the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and SHD 18/9, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the proposed road development presented in the EIAR.</p>	
Rosshillmanor Rosshill Road	Socio Economic: The Rosshillmanor SHD project is within the city over 2km from the nearest connection between the proposed road development and the N67. Therefore, no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed Rosshillmanor SHD (306413-19) project will arise.	None save in relation to Climate

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
SHD (306413-19) (SHD 19/2)	Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.	
	Human Health: Proposed development is set at sufficient distance from the proposed road development such that no cumulative human health impacts arise as a result of construction or operational phase of this SHD development.	
	Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR	
	Material Assets Agriculture: This 10 hectare grassland site located at Rosshill Road, is not within the study area - it is located approx. 1.75 km south west of and is not directly affected by the N6 GCRR. This land parcel is currently farmed with a medium sensitivity equine enterprise. While the loss of 10 hectares of agricultural land would represent a significant adverse individual impact, it has no cumulative effects on the land parcels within the study area. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed Rosshillmanor SHD project within the study area nor within a regional basis.	
	Air Quality and Climate: Due to the separation of the proposed road development from the proposed SHD project, no likely significant air quality cumulative construction impacts will occur. The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore no likely significant cumulative impacts will occur between the N6GCRR and this project. The proposed residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance ¹⁰ , any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination. . Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.	
	Noise and Vibration: Proposed SHD project is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project will arise. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population	

¹⁰ Institute of Environmental Management and Assessment (IEMA) guidance note on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment the increase in population forecasted in the NPF and the forecasted traffic volumes in proximity to the proposed road development and concluded that there are no likely significant impact and therefore there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration.</p> <p>Landscape and Visual: The proposed Rosshillmanor SHD is located south of railway and south of Merlin Park University Hospital. The proposed development is located on 'LDR' Low Density Residential zoned lands. The site is physically and visually separated from the proposed road development with intervening development and significant distance. The proposed N6 GCRR will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with the proposed SHD project at this location.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed Rosshillmanor SHD project and the proposed N6 GCRR. This is due to the nature and scale of the SHD development; the distance from the scheme, the existing developed nature of the receiving environment and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated in this area.</p> <p>Soils and Geology: The SHD assessment concluded that while there is shallow bedrock, there will be a small loss of soil (based on Teagasc/EPA soil mapping), in addition to the loss of very high aggregate potential. However, the cumulative loss is considered small on a local scale. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: The proposed SHD project at Rosshill Road, is located on limestone and is within the Clarinbridge groundwater body. It is located down gradient of the proposed road development. Although excavations and some dewatering may be required at the site these will not interact with impact identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p> <p>Hydrology: The proposed Rosshillmanor SHD project at Roscam is down gradient of the proposed road development and will manage its storm runoff as required by the current Development Plan such that greenfield flood runoff rates will be maintained post development. Its storm water will discharge to Galway Bay. The foul effluent will be collected and treated at Mutton Island Wastewater Treatment Plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>and storm water quality so as to protect the receiving environment. The foul discharge from the proposed development has been assessed and permissions obtained from Irish Water. There will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p> <p>Biodiversity: As per the Biodiversity chapter of the Ecological Impact Assessment Report submitted by the applicant for development SHD 19/2, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance.</p> <p>According to the Ecological Impact Assessment Report, development SHD 19/2 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development SHD 19/2 will not result in any significant residual biodiversity impacts at any geographic scale (being an urban site comprising predominantly of spoil and bare ground habitat), the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and SHD 19/2, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the proposed road development presented in the EIAR.</p>	
<p>Letteragh Road, Ragoon SHD (304345-19) (SHD 18/5)</p>	<p>Socio Economic: Letteragh Road connects with the N59 Link Road South and some additional traffic is likely to use Letteragh Road to access the city, but the proposed SHD project itself is contained with two access roads to the Letteragh Road (slight negative). However, access to the proposed SHD project is made easier by the proposed road development (moderate positive). Therefore, no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed Letteragh SHD (304345-19) project will arise and, on balance, it will give rise to a slight positive cumulative socio-economic impact.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p> <p>Human Health: In the event that both projects are constructed simultaneously, construction activities associated with the Letteragh SHD project will dominate at closest noise or air sensitive locations to its boundary. There are no cumulative human health impacts associated with the operational phase due to the insignificant noise or air sources from this SHD development.</p>	<p>None save in relation to Climate</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR</p> <p>Material Assets Agriculture: This housing development affects land parcel Ref No 258/464 located on the Letteragh Road. The impact of the proposed N6 GCRR on this medium sensitivity beef enterprise is slight adverse. The loss of a further 2.5 hectares to the housing development increases the impact to significant adverse on this individual land parcel. The impact on the study area will not change due to a further loss of 2.5 hectares and the impact is not significant at a regional basis. Thus are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on Letteragh Road within the study area nor within a regional basis.</p> <p>Air Quality and Climate: Due to the separation of the proposed road development from the proposed SHD project, no likely significant air quality cumulative construction impacts will occur. The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore no likely significant cumulative impacts will occur between the N6GCRR and this project.</p> <p>The proposed residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance¹¹, any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination. Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.</p> <p>Noise and Vibration: In the event both projects are constructed simultaneously, construction activities associated with Letteragh SHD project will dominate at closest noise sensitive locations to its boundary. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project at operation stage due to the insignificant noise sources from this SHD development. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment considered NPF forecasted traffic volumes which includes the increased population in proximity to the proposed road development and concluded</p>	

¹¹ Institute of Environmental Management and Assessment (IEMA) guidance note on ‘Assessing Greenhouse Gas Emissions and Evaluating their Significance’

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	<p>that there are no likely significant impacts and therefore there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration.</p> <p>Landscape and Visual: The permitted Letteragh SHD is located within the sub-urban edge of Letteragh Road on 'R' Residential zoned lands. The site is physically and visually separated from the proposed road development by intervening topography and vegetation. The proposed N6 GCRR will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with the proposed SHD project at this location.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed Letteragh Road SHD project and the proposed N6 GCRR. This is due to the distance of the SHD development from the scheme and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6GCRR will be fully mitigated.</p> <p>Soils and Geology: Some of the SHD site will result in the loss of very high aggregate potential, in addition to the loss of soil. However, the cumulative loss is considered small on a local scale. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: The proposed development at Letteragh Road is located on granite and is significantly down gradient of the proposed road development. Although excavations and some dewatering may be required at the site these will not interact with impact identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p> <p>Hydrology: The proposed Letteragh Road SHD residential development is down gradient of the proposed road development and will manage its storm runoff as required by the current Development Plan with attenuation for the 100 year rainstorm event with 20% climate change. This development will discharge to the Knocknacarra Stream which outfalls into Rusheen Bay within the Galway Bay Complex cSAC. The proposed road development discharges to this stream from the Mainline and the N59 Link Road. The foul effluent from the proposed Letteragh Road SHD project will be discharged to the public foul sewer and will be treated at the Mutton Island wastewater treatment plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff and storm water quality so as to protect the receiving environment. The foul discharge from the proposed development</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>has been assessed and permissions obtained from Irish Water. There will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p> <p>Biodiversity: As per the Biodiversity chapter of the Ecological Impact Assessment Report submitted by the applicant for development SHD 19/2, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance.</p> <p>According to the Ecological Impact Assessment Report, development SHD 19/2 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development SHD 19/2 will not result in any significant residual biodiversity impacts at any geographic scale (being an urban site comprising predominantly of spoil and bare ground habitat), the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and SHD 19/2, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the proposed road development presented in the EIAR.</p>	
<p>East Ballymoneen Road SHD (304762-19) (SHD 18/4)</p>	<p>Socio Economic: The proposed road development provides a net slight positive cumulative socio-economic impact by facilitating access to and from the proposed East Ballymoneen Road SHD project via the Ballymoneen Junction, although there will be an increase in traffic on Ballymoneen Road south of the junction compared with current levels. Therefore, no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed East Ballymoneen Road SHD (304762-19) project will arise.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p> <p>Human Health: There are no cumulative human health impacts associated with the operational phase of this SHD development combined with the N6 GCRR due to the insignificant noise or air sources from this development.</p> <p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR.</p>	<p>None save in relation to Climate.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Material Assets Agriculture: This land parcel is very low sensitivity with very low agricultural activity for the past number of years. The cumulative impact of this SHD on the lands to the south of the proposed road development in plot 229 would reduce the agricultural area of this land parcel increasing the proportionate land-take and reducing the effect from severance. Overall there would be no change to the assessment of impacts on this land parcel due to this SHD. There no likely significant direct, indirect cumulative impacts of the N6 GCRR on agriculture in combination with the proposed SHD project (2.56 ha site) within the study area or at a regional level.</p> <p>Air Quality and Climate: No likely significant air quality cumulative construction impacts will occur due to the mitigation measures proposed for the N6 GCRR and the implementation of the CEMP required under permission 304762-19. The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore no likely significant cumulative impacts will occur between this project and the N6GCRR.</p> <p>The proposed residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance¹², any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination. Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.</p> <p>Noise and Vibration: There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project during the operational phase due to the insignificant noise sources from this SHD development. In the unlikely scenario both projects will be constructed at the same time, construction activities associated with the proposed road development will be the dominant noise and vibration source at the closest sensitive buildings to its alignment. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment considered NPF forecasted traffic volumes associated with the increased population in proximity to the proposed road development and concluded that there are no likely significant impact and therefore there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration.</p>	

¹² Institute of Environmental Management and Assessment (IEMA) guidance note on ‘Assessing Greenhouse Gas Emissions and Evaluating their Significance’

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Landscape and Visual: The permitted SHD is located on the existing sub-urban edge at Ballymoneen Road. The site is on 'R' Residential zoned lands and is adjacent to the proposed road development. The permitted SHD will give rise to landscape and visual impacts both during the construction stage, and in operation when new residential development will be established on zoned, but nevertheless previously undeveloped agricultural. The proposed road development will reinforce the degree of change that the permitted SHD will introduce to the area. The zoned and adjacent nature of the site was considered during the landscape and visual impact assessment in the EIAR and screen planting has been provided along the proposed road development to mitigate potential cumulative visual impacts in this area as per Figure 12.1.04 of the EIAR. The proposed N6 GCRR will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with the proposed SHD project at this location.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed development and the proposed N6 GCRR. This is due to the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated and no visual (indirect) impacts will arise that relate to the archaeological, architectural and cultural heritage resource.</p> <p>Soils and Geology: Some peat excavation/removal may be required at the proposed SHD project, along with the loss of soil and very high aggregate potential. However, the cumulative loss is still considered small on a local scale. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: The proposed SHD project at East Ballymoneen Road is located on granite and is significantly down gradient of the proposed road development. Although excavations and some dewatering may be required at the site these will not interact with impacts identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p> <p>Hydrology: The proposed Ballymoneen Road SHD project is down gradient of the proposed road development and will manage its storm runoff as required by the current development plan such that greenfield flood runoff rates will be maintained post development with attenuation for the 100year rainstorm event with 20% climate change. This development will discharge to the Tonabrocky Stream which is a tributary of the Bearna Stream and which discharges into the Galway Bay Complex cSAC at Rusheen Bay. The proposed road development discharges to this stream from the Mainline. The foul effluent from the proposed Ballymoneen Road SHD project will be discharged to the public foul sewer and will be treated at the Mutton Island wastewater treatment plant prior to disposal to sea</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>via the Mutton Island outfall. The proposed road development will manage its storm runoff and storm water quality so as to protect the receiving environment. The foul discharge from the proposed development has been assessed and permissions obtained from Irish Water. There will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p> <p>Biodiversity: As per the Ecological Impact Assessment submitted by the applicant for development SHD 18/4, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance. An Bord Pleanála, in granting permission for SHD 18/4, concluded that <i>“by reason of the nature, scale and location of the subject site, the proposed development would not be likely to have significant effects on the environment”</i>.</p> <p>According to the Ecological Impact Assessment, development SHD 18/4 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development SHD 18/4 will not result in any significant residual biodiversity impacts at any geographic scale, the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and SHD 18/4, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the proposed road development presented in the EIAR.</p>	
<p>Crown Square, Monivea Road & Joyce’s Road, Mervue SHD (304928-19) (SHD 18/6)</p>	<p>Socio Economic: No significant cumulative socio-economic impact. The proposed Crown Square SHD project is located 300m from the junction between the Tuam Road and existing N6 and over 2km from the proposed road development. Therefore, no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed SHD (304928-19) project will arise.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p> <p>Human Health: Proposed development is set at sufficient distance from the proposed road development such that no cumulative human health impacts arise as a result of construction or operational phase of this SHD development.</p> <p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR.</p>	<p>None save in relation to Climate.</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Material Assets Agriculture: This 5.1 hectare site is located at Crown Square, Monivea Road, and is not within the study area. It is not agricultural land. Thus, no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project will arise.</p> <p>Air Quality and Climate: Due to the separation of the proposed road development from the proposed SHD project, no likely significant air quality cumulative construction impacts will occur. Further, the RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality are will occur and therefore no likely significant cumulative impacts will occur between this project and the N6GCRR.</p> <p>The proposed residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance¹³, any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination. Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.</p> <p>Noise and Vibration: Proposed SHD development is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project during the construction or operational phase will arise. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment considered NPF forecasted traffic volumes which includes the increased population in proximity to the proposed road development and concluded that there are no likely significant impacts and therefore there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration..</p> <p>Landscapes and Visual: The permitted SHD is located on 'CI' (Enterprise, Light Industry and Commercial) zoned lands within the existing developed urban edge of the city. The site is physically and visually separated from the proposed road development with intervening established development and by distance. The proposed road development will not give rise likely significant direct, indirect cumulative impacts in combination with the permitted development at this location.</p>	

¹³ Institute of Environmental Management and Assessment (IEMA) guidance note on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed development and the proposed N6 GCRR. This is due to the distance of the SHD development from the scheme; the already developed nature of the site and its surrounding and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated.</p> <p>Soils and Geology: No contamination was identified and little to no loss of natural soil is likely to occur, given the urban location of the proposed SHD development and the indication of made ground according to available mapping. Loss of aggregate potential is considered small on a local scale. There are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: The proposed SHD development at Crown Square is located on limestone and is within the Clarinbridge groundwater body. It is located down gradient of the proposed road development. Although excavations and some dewatering may be required at the site these will not interact with impacts identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p> <p>Hydrology: The proposed SHD residential development is down gradient of the proposed road development and will manage its storm runoff as required by the current Development Plan such that greenfield flood runoff rates will be maintained post development. The foul effluent will be collected and treated at Mutton Island Wastewater Treatment Plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff and storm water quality so as to protect the receiving environment and consequently, there will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p> <p>Biodiversity: As per the Biodiversity chapter of the Ecological Impact Assessment Report submitted by the applicant for development SHD 18/6, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance. An Bord Pleanála, in granting permission for SHD 18/6, concluded that <i>“subject to the implementation of the mitigation measures set out in the EIAR, and subject to compliance with the conditions set out below, the effects on the environment of the proposed development, by itself and in combination with other development in the vicinity, are not considered significant”</i>.</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>According to the Ecological Impact Assessment Report, development SHD 18/6 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development SHD 18/6 will not result in any significant residual biodiversity impacts at any geographic scale (being an urban site comprising predominantly of spoil and bare ground habitat), the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and SHD 18/6, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the N6 GCRR presented in the EIAR.</p>	
Dangan, Upper Newcastle. Student Accommodation. (301693-18) (SHD 18/1)	<p>Socio Economic: The proposed road development will have a slight positive socio-economic impact by providing improved access to N59 and through transfer of a proportion of traffic from the existing N6. Therefore, no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed SHD (301693-19) project will arise.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p> <p>Human Health: Proposed SHD development is set at sufficient distance from the proposed road development such that no cumulative human health impacts arise as a result of construction or operational phase of this SHD development.</p> <p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR.</p> <p>Material Assets Agriculture: This 5.7 hectare site located at Dangan, Upper Newcastle is not agricultural land. There no likely significant direct, indirect cumulative impacts of the N6 GCRR on agriculture in combination with the proposed SHD (301693-18) project.</p> <p>Air Quality and Climate: Due to the separation of the proposed road development from the proposed SHD project, no likely significant air quality cumulative construction impacts will occur.</p> <p>The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore no likely significant cumulative impacts will occur between this project and the N6GCRR.</p>	None save in relation to Climate.

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>The proposed residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance¹⁴, any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination. Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.</p> <p>Noise and Vibration: Proposed SHD development is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project during the construction or operational phase will arise. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment considered NPF forecasted traffic volumes associated with the increased population as forecasted in proximity to the proposed road development and concluded that there are no likely significant impact and therefore there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration.</p> <p>Landscape and Visual: The permitted SHD is located on part 'R' Residential and part 'CI' (Enterprise, Light Industry and Commercial) zoned lands within the existing developed suburban context of Thomas Hynes/N59 Roads. The development is nearing completion and is physically and visually separated from the proposed road development with intervening established development vegetation and significant separation distance. The proposed road development will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with the permitted development at this location.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR. This is due to the distance of the development from the scheme, the developed nature of the site and its surrounding and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated.</p> <p>Soils and Geology: Some of the SHD site will result in the loss of soil, while some is categorised as made ground. There is also the loss of high aggregate potential. However, the cumulative loss is considered small on a local scale. There are no likely significant</p>	

¹⁴ Institute of Environmental Management and Assessment (IEMA) guidance note on 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: The proposed SHD development at Dangan, Upper Newcastle, is located on limestone and is within the Ross Lake groundwater body. It is located down gradient of the proposed road development. Although excavations and some dewatering may be required at the site these will not interact with impacts identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p> <p>Hydrology: The proposed SHD project is down gradient of the proposed road development and will manage its storm runoff as required by the current Development Plan and will discharge to the existing storm Sewer that serves Dangan Area which eventually outfalls into Distillery Stream at NUIG Campus. This is a brown field site that previously had hotel and carparking areas. The foul effluent will be collected and treated at Mutton Island Wastewater Treatment Plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff and storm water quality so as to protect the receiving environment and consequently, there will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p> <p>Biodiversity: As per the Ecological Impact Assessment submitted by the applicant for development SHD 18/1, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance. An Bord Pleanála, in granting permission for SHD 18/1, concluded that <i>“by reason of the nature, scale and location of the subject site, the proposed development would not be likely to have significant effects on the environment”</i>. According to the Ecological Impact Assessment, development SHD 18/1 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development SHD 18/1 will not result in any significant residual biodiversity impacts at any geographic scale (being an existing city centre hotel complex), the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations. Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and SHD 18/1, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the N6 GCRR presented in the EIAR.</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
NUIG, Northern Campus, Dangan (303846-19) (SHD 18/3)	<p>Socio Economic: The proposed road development provides a slight positive socio-economic impact by providing improved access to N59 and through transfer of a proportion of traffic from the existing N6. Therefore, no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed SHD (303846-19) project will arise.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p> <p>Human Health: Proposed development is set at sufficient distance from the proposed road development such that no cumulative human health impacts arise as a result of construction or operational phase of this SHD development.</p> <p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR.</p> <p>Material Assets Agriculture: This 0.88 hectare site located at Northern Campus, Dangan, is not agricultural land. There no likely significant direct, indirect cumulative impacts of the N6 GCRR on agriculture in combination with the proposed SHD (303846-19) project.</p> <p>Air Quality and Climate: Due to the separation of the proposed road development from the proposed SHD project, no significant air quality cumulative construction impacts are predicted to occur.</p> <p>The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore no likely significant cumulative impacts will occur between this project and the N6GCRR.</p> <p>The proposed residential development will generate carbon emissions during the construction phase. In accordance with IEMA guidance¹⁵, any increase in carbon emissions could be considered significant whether that be from this SHD or the N6 GCRR or in-combination.</p> <p>Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.</p>	None save in relation to Climate.

¹⁵ Institute of Environmental Management and Assessment (IEMA) guidance note on ‘Assessing Greenhouse Gas Emissions and Evaluating their Significance’

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Noise and Vibration: Proposed SHD development is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this SHD project during the construction or operational phase will arise. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment considered NPF forecasted traffic volumes which includes the increased population in proximity to the proposed road development and concluded that there are no likely significant impacts and therefore there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration.</p> <p>Landscape and Visual: The permitted SHD is located on ‘CF’ ‘Community, Cultural and Institutional’ zoned lands within the existing partly developed campus of NUIG. While the site is physically separated from the proposed road development, the proposed River Corrib bridge will be visible from the development. Nevertheless, the permitted SHD is set within an existing partly developed campus location and the proposed road development will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with this development.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR. This is due to the distance of the development from the scheme and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6GCRR will be fully mitigated.</p> <p>Soils and Geology: According to available GSI/Teagasc mapping, there will be loss of soil and very high aggregate potential. However, this is considered small on a local scale. According to the SHD screening report, it is not likely that there will be any significant effect on the environment with regards to soils and geology. As such, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: The proposed SHD project at Dangan, is located on limestone and is within the Ross Lake groundwater body. It is located down gradient of the proposed road development. Although excavations and some dewatering may be required at the site these will not interact with impacts identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on hydrogeology.</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Hydrology: The proposed student accommodation development is down gradient of the proposed road development and will manage its storm runoff as required by the current development plan such that greenfield flood runoff rates will be maintained post development. The foul effluent will be collected and treated at Mutton Island Wastewater Treatment Plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff and storm water quality so as to protect the receiving environment and consequently, there will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p> <p>Biodiversity: Areas of the priority Annex I habitats Calcareous grassland and Residual alluvial forest were recorded within the SHD 18/3 development site as part of the N6 GCRR surveys undertaken in 2014. A reduced area of both habitat types was noted in the Ecological Impact Assessment submitted by the applicant for development SHD 18/3 and it is stated that the areas of priority Annex I Calcareous grassland and Residual alluvial forest habitats recorded there in 2016 will be retained and not directly impacted by the SHD 18/3 development. Regardless, the N6 GCRR project will not have any likely significant residual effects on either habitat type as the losses of each that are associated with the proposed road development will be addressed as a result of the creation of Calcareous grassland and Residual alluvial forest habitat proposed as part of the N6 GCRR mitigation strategy.</p> <p>According to the Ecological Impact Assessment, Development SHD 18/3 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect.</p> <p>As per the SHD 18/3 Ecological Impact Assessment, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance. An Bord Pleanála, in granting permission for SHD 18/3, concluded that <i>“by reason of the nature, scale and location of the subject site, the proposed development would not be likely to have significant effects on the environment”</i>.</p>	
<p>Augustine Hill, GCC ref 2047</p>	<p>Socio-Economics: The proposed Augustine Hill development will be located to the rear of Ceannt Station over 3km from the proposed road development. Therefore, no negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed Augustine Hill project will arise.</p> <p>Irish Language: Having considered the proposed road development in tandem with this project, it is considered that no significant negative cumulative impact upon the status of Irish as a community language will occur.</p>	<p>None save in relation to Climate</p>

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Human Health: Proposed development is set at sufficient distance from the proposed road development such that no cumulative human health impacts arise as a result of construction or operational phase of this SHD development.</p> <p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR.</p> <p>Material Assets Agriculture: This site is not located on agricultural land. Therefore, no likely significant direct, indirect cumulative impacts of the N6 GCRR on agriculture in combination with the proposed Augustine Hill project will arise.</p> <p>Air Quality and Climate: Due to the separation of the proposed road development from the proposed development, no significant air quality cumulative construction impacts are predicted to occur. The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore no likely significant cumulative impacts will occur between this project and the N6GCRR. The proposed Augustine Hill development will generate carbon emissions during the construction phase. In accordance with IEMA guidance¹⁶, any increase in carbon emissions could be considered significant whether that be from this development or the N6 GCRR or in-combination. Accordingly, this proposed SHD project will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed SHD project are likely to have significant cumulative impacts on climate.</p> <p>Noise and Vibration Proposed development is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this project during the construction or operational phase will arise. Operational traffic associated with the proposed road development assessed as part of the RFI sensitivity analysis has included for significant population growth in Galway City in line with NPF forecasts. The RFI noise sensitivity assessment considered NPF forecasted traffic volumes associated with the increased population as forecasted in the NPF in proximity to the proposed road development and concluded that no likely significant impacts will occur and therefore there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the SHD project on noise and vibration.</p>	

¹⁶ Institute of Environmental Management and Assessment (IEMA) guidance note on ‘Assessing Greenhouse Gas Emissions and Evaluating their Significance’

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Landscape and Visual: The site is located within the centre of Galway City at substantial distance and physical and visual separation from the proposed road development. Thus the proposed road development will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with this development.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed development and the proposed N6 GCRR. This is due to the distance of the development from the scheme, the developed nature of the surrounding environs and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6 GCRR will be fully mitigated.</p> <p>Soils and Geology: The aggregate potential is considered to be low at this proposed development. In addition, little to no loss of natural soil is likely to occur, given the urban location of the proposed development and the indication of made ground according to available mapping. According to Chapter 7 of the EIAR for the Augustine Hill development, there is no likely significant effect on the land and soils. As such, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed SHD project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p> <p>Hydrogeology: This site is located over 3km from the proposed road development in the city centre. Although excavations and some dewatering may be required at the site these will not interact with impacts identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed development on hydrogeology.</p> <p>Hydrology: The proposed Augustine Hill project, located to the rear of Ceannt Station is down gradient of the proposed road development and will manage its storm runoff as required by the current development plan such that greenfield flood runoff rates will be maintained post development with attenuation for the 100year rainstorm event with 20% climate change. This development will discharge to the Combined Public Sewer. The foul effluent from the proposed project will be discharged to the public foul sewer and will be treated at the Mutton Island wastewater treatment plant prior to disposal to sea via the Mutton Island outfall. The proposed road development will manage its storm runoff and storm water quality so as to protect the receiving environment. The foul discharge from the proposed development has been assessed and permissions obtained from Irish Water. There will be no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed SHD project on hydrology.</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Biodiversity: As per the Biodiversity chapter of the Ecological Impact Assessment Report submitted by the applicant for development 20/47, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale.</p> <p>According to the Ecological Impact Assessment Report, development 20/47 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development 20/47 will not result in any significant residual biodiversity impacts at any geographic scale (being an urban site comprising predominantly of spoil and bare ground habitat), the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and development 20/47, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the proposed road development presented in the EIAR.</p>	
Galway West Water Supply Scheme – Terryland WTP Intake Works and Clifton Hill Rising Main (Irish Water) 19/107	<p>Socio-Economics: No likely significant cumulative effects due to the nature of the proposed development.</p>	None save in relation to Climate
	<p>Irish Language: No likely significant cumulative effects due to the nature of the proposed development.</p>	
	<p>Human Health: The proposed Irish Water development will improve waste water infrastructure in Galway city. No negative likely significant direct, indirect cumulative socio-economic impacts of the N6 GCRR in combination with the proposed development will arise.</p>	
	<p>Material Assets Non-Agriculture: From a non-agricultural material assets perspective, no negative cumulative impacts have been identified in relation to this proposed SHD development and the proposed N6 GCRR.</p>	
	<p>Material Assets Agriculture: This site is not agricultural land. Therefore, no likely significant direct, indirect cumulative impacts of the N6 GCRR on agriculture in combination with the proposed project (19/107) will arise.</p>	
	<p>Air Quality and Climate: During the construction phase, the implementation of mitigation measures (on both N6 GCRR and this project) will ensure that no likely significant direct or indirect cumulative air quality impacts will arise at sensitive receptors. The RFI Response updated the air quality impact assessment taking into account the increased population forecasted in the NPF which included forecasted traffic volumes in proximity to the proposed road development and concluded that no likely significant impacts on air quality will occur and therefore no likely significant cumulative impacts will occur between this project and the N6GCRR.</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>The proposed development will generate carbon emissions during the construction phase. In accordance with IEMA guidance¹⁷, any increase in carbon emissions could be considered significant whether that be from this development or the N6 GCRR or in-combination. Accordingly, proposed project (19/107) will have a likely significant impact on climate. It has already been concluded that the N6 GCRR will have a likely significant impact on climate and it follows that, when taken in combination, the N6 GCRR and this proposed project are likely to have significant cumulative impacts on climate.</p> <p>Noise and Vibration Proposed development is set at sufficient distance from the proposed road development such that no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this project during the construction or operational phase will arise.</p> <p>Landscape and Visual: The development is located on the east side of the River Corrib over 1.5km south/southeast of the proposed road development. The main raw water intake structure is located south of the existing Quincentenary Bridge and adjoining road embankment. There is no physical or visual connection between the development and the proposed road development. Thus, the proposed road development will not give rise to likely significant direct, indirect cumulative landscape and visual impacts in combination with this development.</p> <p>Archaeology, Architectural and Cultural Heritage: From an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified in relation to this proposed development and the proposed N6 GCRR. This is due to the distance of the development from the scheme and the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6GCRR will be fully mitigated.</p> <p>Soils and Geology: The proposed Irish water project will result in the loss of a small quantity of soil and the loss of very high and high aggregate potential. However, this is considered small on a local scale. In addition, mitigation measures are outlined to protect the environment if contamination arises from construction or the existing soil (i.e. NIS outlines that hazardous construction waste will be stored within temporary bunded storage areas prior to removal). As such, there is no likely significant effect on the land and soils and there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed project on soils and geology following implementation of appropriate mitigation measures outlined in the N6 GCRR and adherence to the CEMP.</p>	

¹⁷ Institute of Environmental Management and Assessment (IEMA) guidance note on ‘Assessing Greenhouse Gas Emissions and Evaluating their Significance’

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Hydrogeology: Although excavations and some dewatering may be required at the site these will not interact with impacts identified for the proposed road development. Thus, there are no likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with the proposed development on hydrogeology.</p> <p>Hydrology: No likely significant direct, indirect cumulative impacts of the N6 GCRR in combination with this proposed Irish Water project on hydrology due to the nature of the proposed development. The proposed road development will have no noticeable effect on the flow regime, salinity, sedimentation process or water quality downstream in the River Corrib Estuary and Inner Galway Bay, both during construction and operation stages. Refer also to Schedule of Environmental Commitments in relation to Irish Water.</p> <p>Biodiversity: As per the Ecological Impact Assessment submitted by the applicant for development 19/107, and considering the mitigation measures proposed therein, it alone will not result in any significant residual biodiversity impacts at any geographic scale including any related to European sites, nationally designated areas for nature conservation, hydrology, hydrogeology, air quality or species disturbance. An Bord Pleanála, in granting permission for development 19107, concluded that <i>“by reason of the nature, scale and location of the subject site, the proposed development would not be likely to have significant effects on the environment”</i>.</p> <p>According to the Ecological Impact Assessment, development 19107 will not result in the loss of any Annex I habitat types or any other habitat types for which the proposed road development will have a likely significant residual effect. As development 19107 will not result in any significant residual biodiversity impacts at any geographic scale, the proposed N6 GCRR will not act cumulatively with it to affect the local bat or peregrine falcon populations.</p> <p>Considering the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR and development 19107, and the mitigation measures proposed for each of those projects, there is no potential for any cumulative effects to arise that would affect the conclusions in the environmental impact assessment for the N6 GCRR presented in the EIAR.</p>	

Table 3: Likely significant direct, indirect and cumulative impact assessment of the likely significant direct, indirect and cumulative impact assessment of the N6 GCRR in combination with all of the projects and plans considered in Section 19.5 of the EIAR together with all of the projects listed in Table 1 above.

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
Cumulative Impact Assessment of all the above live or approved projects identified since the publication of the EIAR together with the N6 GCRR and the projects and plans considered in Section 19.5 of the EIAR.	Socio-Economics: From a socio economic perspective, taking the N6 GCRR in combination with all of the projects listed in Section 19.5 of the EIAR and in Table 1 of this addendum, there is no potential for any significant negative direct or indirect cumulative impact to arise. As identified in Chapter 18 of the EIAR, the proposed N6 GCRR will have a significant positive residual impact from a socio economic perspective. While the cumulative assessment carried out in Section 19.5 of the EIAR and in Table 1 identifies some limited slight negative socio economic impacts, these will be mitigated by the net positive socio economic benefits introduced by the proposed N6 GCRR.	None save in relation to Climate.
	Irish Language: Having considered the proposed N6 GCRR in combination with all of the projects listed in Section 19.5 of the EIAR and in Table 1 of this addendum, it is considered that no likely significant direct or indirect cumulative effects will arise upon the status of Irish as a community language.	
	Human Health: The construction of the proposed road development will generate the highest noise, vibration and air quality impacts at the properties closest to its alignment such that this development will dominate human health impacts in its immediate environment during its construction phase. Moving further from the construction of the proposed road development, construction of other projects (as listed in Table 1 of this addendum and in Section 19.5 of the EIAR) will dominate the human health impacts environment at the closest sensitive properties to their site boundaries. However, overall the impact on human health is broadly positive. When assessing the in-combination impacts of the N6 GCRR with the plans and projects identified in Chapter 19 of the EIAR and those listed in Table 1 above and given that the nature of those developments and their location, no likely significant direct, indirect cumulative impacts on human health will arise.	
	Material Assets Non-Agriculture: From a non-agricultural material assets perspective, taking into account the N6 GCRR in combination with all of the projects listed in Section 19.5 of the EIAR and in Table 1 of this addendum, no likely significant direct, indirect cumulative impacts will arise.	
	Material Assets Agriculture: Given that the agricultural area of Co Galway is approx. 346,881 hectares (2010 CSO Statistics), the area of land lost to all of these projects combined (i.e. N6 GCRR in combination with all of the projects listed in Section 19.5 of the EIAR and in Table 1 of this addendum) would have to exceed 3,439 hectares (1%) to approach any level of significance. It does not do	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>so. In the period 2010 to 2018, cattle numbers in the Western Region increased by 3% and sheep numbers increased by 11% (CSO). This upward trend verifies the ability of agriculture to increase production despite land lost to urban and new road developments. Thus, likely significant direct, indirect cumulative impacts on agriculture will not arise.</p> <p>Air Quality and Climate: During the construction phases, where the development of the projects (as listed in Table 1 of this addendum and in Section 19.5 of the EIAR) occurs in proximity to the N6 GCRR construction site, the implementation of mitigation measures (on both N6 GCRR and those other projects) will ensure that no likely significant direct or indirect cumulative air quality impacts will arise at sensitive receptors.</p> <p>The proposed N6 GCRR in-combination with the proposed developments (as listed in Table 1 of this addendum and in Section 19.5 of the EIAR) and in particular the residential developments will generate carbon emissions during the construction phase. In accordance with IEMA guidance¹⁸, any increase in carbon emissions could be considered significant whether that be from these projects or the N6 GCRR or in-combination. Accordingly, when taken in combination, the N6 GCRR, the projects listed in Section 19.5 of the EIAR and the projects listed in Table 1 of this addendum are likely to have significant cumulative impacts on climate and significant cumulative impacts are predicted to occur.</p> <p>Noise and Vibration: The construction of the N6 GCRR will generate the highest noise and vibration impacts at the properties closest to its alignment such that this development will dominate noise levels in its immediate environment during its construction phase. Moving further from the construction of the proposed road development, construction of other projects (as listed in Table 1 of this addendum and in Section 19.5 of the EIAR) will dominate the noise and vibration environment at the closest sensitive properties to their site boundaries. Assessing the in-combination impacts of the N6 GCRR with the plans and projects identified in Chapter 19 of the EIAR and those listed in Table 1 above, given the nature of those developments and their location, no likely significant direct, indirect cumulative impacts on noise and vibration will arise.</p> <p>Landscape and Visual: From a landscape and visual perspective, taking into account the N6 GCRR in combination with all of the projects listed in Section 19.5 of the EIAR and in Table 1 of this addendum, no likely significant direct, indirect cumulative impacts will arise for reasons of distance, physical or visual separation, appropriate land use zoning or by reason of existing or proposed screening.</p>	





¹⁸ Institute of Environmental Management and Assessment (IEMA) guidance note on ‘Assessing Greenhouse Gas Emissions and Evaluating their Significance’

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>Archaeology, Architectural and Cultural heritage: When considering all of the above projects in Table 1 together with those set out in Chapter 19 of the EIAR in combination with the proposed N6 GCRR, from an archaeological, architectural and cultural heritage perspective, no negative likely significant direct, indirect cumulative impacts have been identified. This is due in main to the fact that any negative impacts upon the archaeological, architectural and cultural heritage resource arising from the proposed N6GCRR will be fully mitigated. It is also due to the distance of the developments from the proposed road scheme, the nature and extent of developments and their existing receiving environments.</p> <p>Soils and Geology: When considering all of the projects together (i.e. those listed in Table 1 above as well as those identified in Chapter 19 of the EIAR) in combination with the N6 GCRR, the loss of soil and geology features is still considered small on a local scale. Mitigation measures and requirements are set out in the project specific CEMPs and also in the N6 GCRR CEMP. As such, no likely significant direct, indirect cumulative impacts on soils and geology will arise from the proposed N6 GCRR in combination with all of the projects listed in Section 19.5 of the EIAR and in Table 1 of this addendum.</p> <p>Hydrogeology: From a hydrogeological perspective, taking into account the N6 GCRR in combination with all of the projects listed in Section 19.5 of the EIAR and in Table 1 of this addendum, no likely significant direct, indirect cumulative impacts will arise. This is due in the main to the fact that any negative impacts on hydrogeology arising from the proposed N6 GCRR will be fully mitigated. It is also due to the location of the developments from the proposed road development (e.g. distant or downgradient of the N6 GCRR), the nature and extent of developments and the lack of interaction with impacts identified for the proposed road development.</p> <p>Hydrology: From a hydrological perspective, taking into account the N6 GCRR in combination with all of the projects listed in Section 19.5 of the EIAR and in Table 1 of this addendum, no likely significant direct, indirect cumulative impacts on hydrology will arise because storm drainage runoff will be managed as part of SUDS (sustainable urban drainage systems) development policy so as not to cause increased flooding from all of the projects, water quality is protected through site specific design measures for the N6 GCRR and the all of the proposed developments described in Table 1 will be connected to the Galway City Foul Drainage system which undergo secondary and tertiary treatment at Mutton Island prior to outfalling to Galway Bay.</p> <p>Biodiversity: None of the projects assessed above identified that there were any likely significant negative residual effects on biodiversity. In all cases, mitigation measures were/are proposed to ensure that those projects, either alone or in cumulatively with one another, will not result in any likely significant negative residual effects on biodiversity.</p> <p>As concluded in Chapter 10, Biodiversity of the EIAR for the proposed N6 GCRR, and having regard to the mitigation measures detailed therein (see Section 8.6 of the EIAR), the proposed road development will have likely significant residual effects on</p>	

Plan/Project Ref No	Potential Cumulative Impacts on Environmental Factors	Overall Cumulative Impact (if any)
	<p>biodiversity as a result of habitat loss (including areas of priority and non-priority Annex I habitat types), permanent displacement of peregrine falcon from nest sites at Lackagh Quarry and impacts on local bat populations arising from habitat loss, severance, disturbance and mortality risk. With regard to Annex I habitat loss, the predicted significant residual biodiversity effects have accounted for the fact that the proposed road development will be contributing to an existing trend of Annex I habitat loss locally. However, as assessed in Section 8.8 of the EIAR, none of the plans or projects originally considered as part of the cumulative impact assessment, either individually or cumulatively with one another, are likely to result in a significant effect cumulatively with the proposed road development.</p> <p>Considering the mitigation measures for all the developments considered above and the mitigation measures proposed in the EIAR for the N6 GCRR, there is no potential for any cumulative effects to arise as a consequence of the proposed road development acting together with any, or all, of the additional projects assessed in this document, or cumulatively with those plans and projects originally assessed in the EIAR, that would increase the likely significant residual effects on biodiversity predicted in relation to the N6 GCRR.</p>	



FOR INFORMATION

- Legend**
-  Proposed Road Development
 -  Proposed Development Boundary
 -  City Boundary
 -  Live/Permitted Projects

San áireamh tá sonraíocht Shuirbhíreacht Ordánais Éireann arna ástigeadh faoi Cheadúnas OSI Uimh. 2010/19CCMA/Comhairle Chontae na Gaillimhe. Sáráilonn ástigeadh neamhdáilíocht cóipeáir Shuirbhíreacht Ordánais Éireann agus Rialtas na hÉireann. © Suirbhíreacht Ordánais Éireann, 2010.

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Clients



Consultant



Corporate House
City East Business Park
Ballybrit, Galway, Ireland

Tel +353 (0)91 460675
www.arup.ie

Job Title

N6 Galway City Ring Road

Scale: **1:50,000**

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