NATURA IMPACT STATEMENT
Gort Town Centre Public Realm

Minogue Environmental Consultants Ltd.

October 2024

1 Contents

This report has been prepared by Minogue Environmental Consulting Ltd with all reasonable skill, care and diligence. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is prepared for Galway County Council and we accept no responsibility to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

1 Introduction

MEC Ltd has been commissioned by Galway County Council to prepare a Natura Impact Statement (NIS) for a proposed public realm project at Gort Town Centre, Co Galway. See Figure 1.1 for location of project site and a current aerial view of the project site).

FIGURE 1-1 PROJECT LOCATION AND AERIAL VIEW OF PROJECT SITE

In accordance with Article 6(3) of the Habitats Directive, as transposed into Irish law by Regulation 42(1) and Part 5 of the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015 (i.e. the "Habitats Regulations") and Part XAB of the Planning and Development Act, 2000 (as amended) (i.e. the "Planning and Development Act"), a Screening Report for Appropriate Assessment (AA) was prepared to assess whether it could or could not be ruled out, on the basis of objective information, that the project, either individually or in combination with other plans or projects, was likely to have a significant effect on any European Sites. The Screening Report for Appropriate Assessment was prepared by MEC Ltd. on behalf of Galway County Council and accompanies this NIS, under separate cover.

The Screening Report for Appropriate Assessment concluded, in view of best scientific knowledge and the conservation objectives of six European Sites occurring within the zone of influence of the project, that, in the absence of appropriate mitigation, it could not be ruled out at the screening stage that the project would not result in significant adverse effects to six European sites, namely the Coole Garryland Complex SAC, Lough Cutra SAC, Caherglassaun Turlough SAC, Carrowbaun, Newhall and Ballylee Turloughs SAC, Lough Coy SAC and East Burren Complex SAC . The conclusion of the Screening Report was informed by a highly precautionary approach and adopted a worst-case scenario. Such an approach was adopted to ensure consistency with the extremely low threshold for triggering likely significant effects as determined in both European and Irish case law and Section 177U of the Planning and Development Act.

On the basis of that conclusion, it has been determined that AA is required in order to assess the implications of the project for those six European Sites. In accordance with Section 177T of the Planning and Development Act an NIS of the project has been prepared in order to assist An Bord Pleanála in carrying out its Appropriate Assessment. This NIS provides an examination, analysis and evaluation of the likely impacts from the Project, both individually and in combination with other plans and projects, in view of best scientific knowledge and the conservation objectives of the European Sites concerned. It also prescribes appropriate mitigation to ensure that the Project will not adversely affect the integrity of those sites identified as being at risk of likely significant effects. Finally, it provides complete, precise and definitive findings, which are capable of removing all reasonable scientific doubt as to the absence of adverse effects on the integrity of the European sites concerned.

1.1 Statement of authority

Ruth Minogue, MCIEEM prepared this NIS. Ruth is an environmental consultant with over 25 years of experience in completing ecological impact assessments, environmental impact assessments and strategic environmental assessment. She has assisted in the writing of Appropriate Assessment screening reports and Natura Impact Statements for a range of landuse activities and types including residential, public realm, recreation and renewable energy.

This Natura Impact Statement has been reviewed by Mr. Pat Doherty BSc., MSc, MCIEEM, of DEC Ltd. Mr. Doherty is a consultant ecologist with over 20 years' experience in completing ecological impact assessments and environmental impact assessments. Pat has been involved in the completion of assessment reports for proposed developments and land use activities under the EIA Directive and Article 6 of the Habitats Directive since 2003 and 2006 respectively. He has extensive experience completing such reporting for projects located in a variety of environments and has a thorough understanding to the biodiversity issues that may arise from proposed land use activities. Pat was responsible for completing one of the first Appropriate Assessment reports for large scale infrastructure developments in Ireland when he prepared the Appropriate Assessment for the N25 New Ross Bypass in 2006/07. Since then Pat has completed multiple examinations of both plans and projects in Ireland. He has completed Natura Impact Statements for national scale plans such as Ireland's CAP Strategic Plan and National Seafood Development Plan and regional and county scale plans including County Development Plans, Local Area Plans, Tourism Strategies and Climate Action Plans. Pat has completed multiple Natura Impact Statements for a range of development types that include large scale infrastructure developments in sectors such as transport and energy as well as industrial, commercial and residential developments.

1.1 Summary of Screening

The Screening Report identified the following European Sites, occurring within the wider zone of influence of the project site. These sites are shown in Figure 1.2 below and their location with respect to the project site is also shown. The following 6 European Sites were screened in:

1. Coole Garryland Complex SAC,
2. Lough Cutra SAC,
3. Caherglassaun Turlough SAC,
4. Carrowbaun, Newhall and Ballylee Turloughs SAC,
5. Lough Coy SAC and
6. East Burren Complex SAC

The reason for identifying these European Site within the zone of influence of the project was due to the presence of a potential surface water and groundwater pathways linking the project site to them. In addition, the potential emissions from lighting to mobile species of the Coole Garryland Complex SAC, East Burren Complex SAC and Lough Cutra SAC the lesser horseshoe bat was identified as a pathway. The surface water pathway was further identified as a functional pathway for potential impacts on otter, annex II species of East Burren Complex SAC.

During the Screening of the project, it could not be ruled out that the project did not have potential to result in downstream effects to qualifying interests and special conservation interests bird species by virtue of its potential to generate polluted surface water within project site and to discharge such water to the River Gort and downstream to the Coole Garryland European sites and Caherglassaun Turlough SAC. It was acknowledged during the Screening Report that any contaminated surface drainage waters being discharged into the River Gort and downstream to the receiving waters of Coole Garryland SAC and Caherglassaun Turlough are likely to be well diluted and distributed within this water body, thereby limiting their potential to result in significant downstream effects. However the Screening Report and its conclusions have been underpinned by a precautionary approach and the very low threshold (i.e. the mere probability for a significant effect to occur) required to trigger a Stage 2 Appropriate Assessment and based on this approach it was found that the potential for such downstream effects to arise as a consequence of the project and to result in significant negative impacts to the conservation objectives of the Coole Garryland Complex, and Caherglassaun Turlough SAC could not be ruled out at the screening stage.

Applying the precautionary principle, all groundwater dependant habitats within the same groundwater body (Caherglassaun Groundwater Body) found that the potential for groundwater effects to arise on these waterbodies as a consequence of the project, and to result in significant negative impacts of the Conservation objectives of such SACs at Coole Garryland Complex SAC, Caherglassaun Turlough SAC, Carrowbaun, Newhall and Ballylee Turloughs SAC, Lough Coy SAC and East Burren Complex SAC

The results of bat surveys undertaken by Eire Ecology (2024) identified the use of the Cunnahowna/Gort River (hereafter referred to as the Gort River) by Lesser Horseshoe bats. Lesser Horseshoe Bats (LSH) have been screened in where LSH qualifying features are within 2.5km of the project area. The project site is not situated within a core zone of influence for SAC designated Lesser Horseshoe Bat roosts, however the site is located between the Coole Garryland Complex SAC (code: 000252), 0.79 km north west. Lough Cutra SAC (code:000299) is located 2.87km to the south east. Furthermore, several smaller Lesser Horseshoe Bat roosts are found surrounding the project site.

Given their proximity to the project area and the identification of lesser horseshoe bats using the Gort River and roosts within 2.5km of the project area, the Lough Cutra SAC and East Burren Complex SAC area also screened in, although outside the core sustenance zone of 2.87km, at distance of 2.61km respectively.

For otters and other Annex 2 fish species where a hydrological pathway connecting the project and any European Sites designated for their role in supporting populations of otters and such fish species. Of these sites, East Burren Complext is the only SAC designated for its role in supporting population of otters, Annex 2 species. As such East Burren Complext SAC is screened in for otter due to the functional pathway for surface waters between the Gort River and East Burren complex within the range of male otters.

In summary based on the information provided in the Screening Report, the precautionary approach adopted during the consideration of impacts for the Screening Report and the extremely low threshold required to trigger Stage 2 Appropriate Assessment, it was concluded that the potential for significant effects to the following European sites as a result of the discharge of contaminated surface drainage waters, ground water and light emissions could not be ruled out. As such the Screening Report concluded that an NIS was required to evaluate further the potential for these impacts to result in significant adverse effects to the following European Sites and where necessary prescribe mitigation measures to avoid such adverse effects.

1.2 Guidance

This NIS has been undertaken in accordance with National and European guidance documents: Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities (DEHLG 2010) and Assessment of Plans and Projects Significantly Affecting Natura 2000 sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats directive 92/43/EEC. The following guidance documents were also of relevance during this the preparation of this NIS:

• A guide for competent authorities. Environment and Heritage Service, Sept 2002. Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010). DEHLG.

• Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats Directive 92/42/EEC. European Commission (2021).

• Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats directive 92/43/EEC. European commission (2018). The information provided in this NIS is also guided by European and Irish case law guiding the approach to Stage 2 Appropriate Assessment.

In particular it is noted that the consideration of impacts provided in Section 4 this NIS has been undertaken in the absence of any regard to construction phase best practice measures and environment safeguards and operation phase design measures that aim to safeguard the receiving environment and the above European Sites from adverse impacts.

1.3 Background to Directive Article 6 Assessments

This NIS has been undertaken in accordance with National and European guidance documents: Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities (DEHLG 2010) and Assessment of Plans and Projects Significantly Affecting Natura 2000 sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats directive 92/43/EEC. The following guidance documents were also of relevance during this the preparation of this NIS:

• A guide for competent authorities. Environment and Heritage Service, Sept 2002. Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities (2010). DEHLG.

• Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites – Methodological Guidance of the Provisions of Article 6(3) and (4) of the Habitats Directive 92/42/EEC. European Commission (2021).

• Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats directive 92/43/EEC. European commission (2018). The information provided in this NIS is also guided by European and Irish case law guiding the approach to Stage 2 Appropriate Assessment. In particular it is noted that the consideration of impacts provided in Section 4 this NIS has been undertaken in the absence of any regard to construction phase best practice measures and environment safeguards and operation phase design measures that aim to safeguard the receiving environment and the European Sites identified in the Screening assessment from potential adverse impacts

Stage 1 – Screening: This stage defines the proposed project, establishes whether the proposed project is necessary for the conservation management of the European Site and assesses the likelihood of the project to have a significant effect, alone or in combination with other plans or projects, upon a European Site.

Stage 2 – Appropriate Assessment: If a plan or project is likely to have a significant affect an Appropriate Assessment must be undertaken. In this stage the impact of the plan or project to the Conservation Objectives of the European Site is assessed. The outcome of this assessment will establish whether the plan will have an adverse effect upon the integrity of the European Site.

Stage 3 – Assessment of Alternative Solutions: If it is concluded that, subsequent to the implementation of mitigation measures, a project has an adverse impact upon the integrity of a European Site it must be objectively concluded that no alternative solutions exist before the project can proceed.

Stage 4 – Where no alternative solutions exist and where adverse impacts remain but imperative reasons of overriding public interest (IROPI) exist for the implementation of a plan or project an assessment of compensatory measures that will effectively offset the damage to the European Site will be necessary.

1.4 Stage 2 Appropriate Assessment

The EC Guidance Assessment Criteria for a Stage Two Appropriate Assessment seeks the following information:

1. the collection of information on the project and on the European Sites concerned;

2. An assessment of the implications of the project in view of the site's conservation objectives, individually or in combination with other plans or projects;

3. An evaluation as to whether the project can have adverse effects on the integrity of European Sites;

4. The consideration of mitigation measures (including their monitoring).

This NIS addresses each of these items, through the following sections provided below.

1.4.1 Scientific Investigations

A range of scientific site investigations have been completed for the project and these are relied upon in this Natura Impact Statement. A detailed description of methods to undertake these scientific

investigations are set out in the Bat Surveys completed by EireEcology[1] over 2023-2024 and Sustainable Urban[2]Drainage Strategy are provided in full under separate cover with the planning application.

Site visits to ground truth habitats were undertaken in July 2024.

[1] Bat Survey Report Gort Streetscape, Eire Ecology 2024
[2] SuDS Assessment Gort Town Centre Public Realm, Co. Galway September 2024 Mc Cloy Consulting

2 Project description

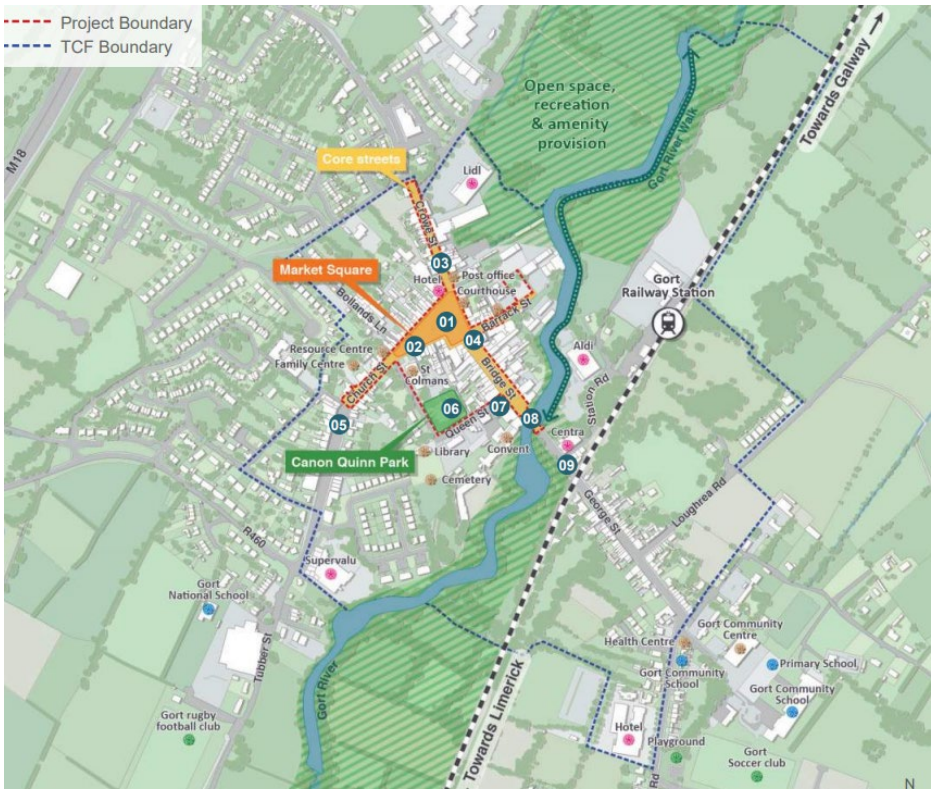
The development will consist of the following:

Gort Town Centre Public Realm Enhancement Project on Market Square, Bridge Street, George Street, Crowe Street, Barrack Street, Queen Street, Church Street, and Canon Quinn Park to include:

1. Redesigned paved areas along Market Square, Bridge Street, George Street, Crowe Street, Barrack Street, Queen Street and Church Street including new surface materials, installation of a new lighting scheme, hard and soft landscaping and street furniture (The proposed works are located within the Architectural Conservation Area, and in the vicinity of Recorded Protected Structures RPS No 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 436, 437, 438, 439, 440, 441, 442, 3445, 3451, 3452, 3453, 3459, 3464, 3467, 3468, 3469, 3471, 3472.
2. Provision of an upgraded and expanded pedestrianised civic/public space in the Market Square.
3. Provision of new pedestrian crossings.
4. Installation of new road alignments including reduction in carriageway widths and traffic calming measures.
5. Installation of new street furniture and cycle parking.
6. Rationalised on-street car parking throughout the application area including the provision of new disabled and age friendly parking provision.
7. The provision of 2No. new public off-street car parks and Crowe Street and Barrack Street.
8. Installation of new landscaping including street trees and planting.
9. Upgrade works to the existing Canon Quinn Park including the installation of play equipment, seating, lighting and ancillary infrastructure.
10. Installation of a new signage and way-finding scheme.
11. Undergrounding of overhead cables and the removal of redundant overhead cabling.
12. Installation of upgraded surface water drainage infrastructure including provision of nature-based, sustainable urban drainage solutions.
13. The relocating of existing public bus-stop to Bridge Street/George Street and provision 1No. new coach drop off area on Market Square.
14. All other associated site and ancillary works at Market Square, Bridge Street, George Street, Crowe Street, Barrack Street, Queen Street, Church Street, and Canon Quinn Park.

Figure 2.1 presents a summary of the public realm locations.

FIGURE 2-1 GORT TOWN CENTRE, PUBLIC REALM LOCATIONS



2.1.1 Surface Water management

Currently within the project area there are four surface water drains which discharge into the Gort river. A 450mm diameter concrete pipe runs along the northern edge of the Market Square (shown in blue on the attached drawing) in a westerly direction towards the river, the second drain is a 375mm concrete pipe which runs southwards down Main Street entering the river on the western side of the Gort River bridge, the third and fourth are 375mm diameter concrete pipes which run parallel to each other northwards down Bridge Street entering the river on the eastern and western side of the bridge. The surface water runoff is untreated. The water is collected in roadside gulleys along the carriageway and is directed into the river.

2.1.2 Proposed Surface Water Management

A detailed Suds assessment has been prepared by McCloy Consulting [3] and is presented here. The drainage and SuDS strategy is a robust and multitiered approach to reduce the rate in which surface water is discharged into the below ground surface water network. The proposed

[3] M02191-03 SuDS Assessment Gort Town Centre Public Realm, Co. Galway 9 September 2024

strategy takes into consideration the existing site topography and falls to create a system that captures the rain fall at multiple points across the public realm.

The purpose of the SuDS Assessment is quantitatively evaluate the SuDS features proposed as part of the Gort Town Centre Public Realm scheme. The assessment considers both the hydraulic and treatment performance of the proposed SuDS components. This assessment considered the areas that incorporate SuDS and areas that contribute to a proposed SuDS features (i.e., contributing subcatchments) which is estimated to approximate to c. 80% of the Gort Town Centre Public Realm scheme.

The proposed surface water management design presented in Figure 2.1 comprises three types of SuDS components:

- Permeable pavement
- Bioretention rain gardens
- SuDS tree pits

Figure 2-2 SuDS proposals

Flow rates are in accordance with the requirements of GDSDS and Galway CC for restriction of post development runoff to greenfield rates. Greenfield rates were calculated using the Flood Studies Supplementary Report (FSSR) and Institute of Hydrology Report no. 124 (IoH124) methodologies with catchment-specific characteristics.

Notwithstanding, flows from individual (or hydraulically linked) SuDS features will be controlled to a minimum of 1 litre/second, which will apply to a number of smaller subcatchments identified within the scheme area. SuDS components will include overflows and consider exceedance routes as part of detailed design. It is noted that based on best available geological / soil data, infiltration is unlikely to be a feasible method of discharge from the site.

SuDS components provide significant quantity and quality benefits compared to the existing pre-development scenario. The hydraulic benefit will vary depending on the available storage at each SuDS component (or hydraulically linked SuDS component). It is noted that this assessment provides an early indication and outcomes (particularly around the hydraulic assessment) may be influenced through the development of the design. Storage provision may

be reduced due to presence of utilities for example or increased through allocation of additional storage as part of the design process. All SuDS measures and calculations are described in full in the McCloy SuDS Assessment report, provided under separate cover with the planning application documentation.

2.1.3 Foul Water Drainage and Water services

No foul water provision or water supply is associated with this public realm project, and no changes are proposed for the existing current baseline.

2.1.4 Landscaping

The Landscape element has been developed with a strong emphasis enhancing the biodiversity of the urban centre that is dominated by built land and artificial surfaces. Within these character areas, there are three plant palettes that respond to the specific requirements for Gort Public Realm. These palettes are grouped under the following headings:

- Rain Garden Palette
- General Planting Mix
- Roadside Mix

In addition to the above, Canon Quinn Park has its own unique planting palette to respond to the existing trees and soil conditions. Planting beds with a strong variety of species helps provide added biodiversity to Gort Public Realm. Although the species selected are of low demand in terms of rate of growth and natural form, maintenance will be needed for the future success and establishment. The following suggestions apply to the above palettes:

• Shrubs: Annual prune where necessary in early spring.

• Ornamental Deciduous Grasses: Annual cut back to the base in early spring. Retain for structural interest over winter.

• Evergreen Grasses: Annual tidy in early spring to remove dead material.

• Herbaceous perennials: annual tidy and cut back in autumn, leaving some with structural interest/seed heads over winter to be cut back early spring.

2.1.5 Lighting

Lighting must provide a safe environment for visitors to Gort Town Centre. This includes providing code-compliant light levels and high-quality and robust fittings. Lighting must always promote accessibility: highlighting level changes and designing with DDA requirements in mind are key. Light should encourage social interaction which ultimately benefits the night-time economy. We aim to create a memorable place for people.

The functional lighting scheme for Gort is designed to achieve illuminance levels on all roads, lanes and spaces to allow safe pedestrian and vehicular movement at all times. An emphasis is put in the lighting strategy on Market Square, as it will contribute to creating a welcoming and vibrant space at the heart of Gort, which celebrates the centre of the local community. The landmarks on Market Square are a key feature within central Gort and offer up a fantastic opportunity for feature lighting. The new off street car parks are essential for the town's infrastructure and should be illuminated appropriately as functional spaces.

Artificial lighting in Canon Quinn park is not recommended as part of this scheme. This space will not be used at nighttime and there is no pedestrian route through we want to encourage. Keeping the light levels to a minimum will also ensure optimum conditions for the local nocturnal wildlife. A review of the lighting strategy has been undertaken by EireEcology and revisions made to lighting proposals over the course of the project design process.

2.1.6 Construction Phasing

The work programme could extend upto 24 months and will be phased to incur as little disruption to the local economy and school traffic.

Ancillary car parks would be completed first, Market Square and Cannon Quinn Park would be followed. One side of Main Street and Bridge Street would be completed and then the opposite side of the same streets.

The proposed car park on Barrack Street and Crowe Street would be used as site compounds with the works sequenced such that the works compound could be relocated when one car park has been completed, to allow for completion of the other.

Machinery for construction would be standard machinery and materials associated with traffic construction works.

3 Baseline descriptions

3.1 Description of the Site location

The scheme area currently comprises c. 2.8 ha of primarily developed / urban land across Gort town centre including environs and access roads. The plan area comprises the following streets and squares and are centrally located in the town of Gort.

3.1.1 Review of historical Maps

A review of historical mapping (6-inch colour map 1829 to 1842; 6 inch Cassini, 1830's) and the 25 inch map, 1888 to 1913) for the plan area shows the presence of the Market Square, Georges Street, Bridge Street, Crowe Lane (not Crowe Street) are present. The Barracks complex is present but no street is named as such, nor is Queen Street marked on the 1st Edition 6" colour map.

A review of the 6" Cassini map shows the presence of the above streets and market as well as Queen Street is now mapped. The lands associated identified for off street parking off Crowe Street are laid out in long gardens associated with existing buildings off the market square.

The 1995 satellite imagery for the plan area shows the existing landuses of build land and artificial surface in the plan area; with some wider infill development and the continued presence of grassland and the presence of a treeline at the Crowe Street off street car parking lands.

The 2001 – 2005 imagery shows the continued landuse and layout in the plan area as above.

3.1.2 Geology Overview

The bedrock underlying the plan area comprises various families of limestone with Visean shelf limestone to the west of the plan area and Waulsortian limestones to the east of town of Gort. Karst features are common in the vicinity of, but not located within the public realm plan boundary.

The plan area is located the -Caherglassaun Turlough groundwater body (GWB). The GWB occupies the area between Kinvara-Gort lowlands. The land surface is low lying and relatively flat, with elevations ranging from sea level to 30 mAOD. The GWB is bounded by the coastline at Kinvara. The boundary to the east is with the poor aquifer lithologies of the Derrybrien GWB. To the north and south, surface water divides act as the boundaries. The groundwater body is 256km^2.

Groundwater vulnerability underlying the project lands ranges from extreme to rock at surface. Two no. karst features are identified by the Geological Survey of Ireland (GSI) to the south of the project area. These relate to the Gort Kinvara karst system and are the Coole Garryland complex, a very large complex of turloughs, risings and sinks in the Gort lowlands, located c 0.79km north and west of the project areas. The second includes the Beagh Sink - Pollduagh System, a sequence of linked karstic features along the course of the Beagh River located c .1.8km south east of the plan area. A springwell is mapped to the east of the Convent, c 105m east of the Gort River and 334m from the nearest plan area at the Bridge Street crossing of the above river.

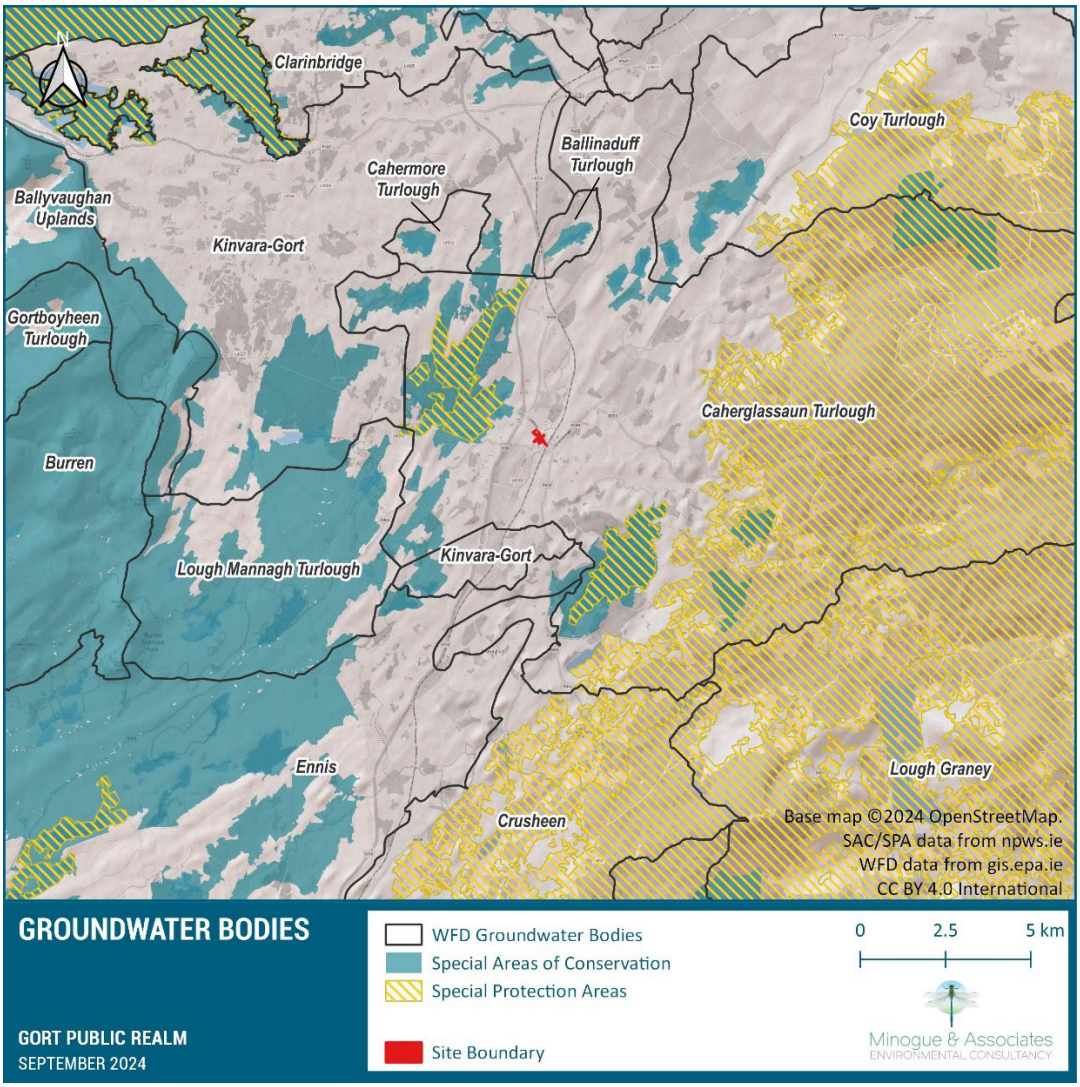
The Geological Survey of Ireland (GSI) note in their first draft Gort Kinvara Groundwater Body Description[4] that a large number of karst features occur, including turloughs, caves, dolines, swallow

[4] Transmissivity and well yields are variable. Rapid groundwater flow velocities have been recorded through groundwater tracing. With Recharge occurs via losing streams, point and diffuse mechanisms. • In general, the degree of interconnection in karstic systems is high and they support regional scale flow systems. Flow paths are up to 10 kilometres in length. • Surface water catchments are often bypassed by groundwater flowing beneath surface water channels and across surface water catchment divides. A proportion of groundwater from the Burren Uplands is considered to discharge to Kinvara. • Some areas are of extreme vulnerability due to the thin nature of the subsoil, as well as the frequency of karst features, allowing point recharge. Storativity is low and the potential for contaminant attenuation in such aquifers

holes and springs. It notes the GWB is composed primarily of high transmissivity karstified limestone. There is a high degree of interaction between surface water and groundwater. In the eastern area water frequently sinks and rises before being transmitted underground mostly to Kinvara.

As such it is likely that surface waters draining to ground at the plan area are likely to discharge to the Gort River which runs adjacent to the southeastern part of the project area at Bridge Street. Given the plan area is within the Caharglassaun Turlough groundwater body, groundwater pathways represent a functional pathway to groundwater dependant habitats within this groundwater body. Groundwater within the plan area and groundwater body is classified as being at risk of not meeting the Water Framework Directive objectives for good status by 2027. Figure 3.1 presents the project area with groundwater bodies and European Sites.

FIGURE 3-1 GROUNDWATER BODIES, PLAN AREA AND EUROPEAN SITES



is limited. • • The groundwater has a calcium bicarbonate signature. The water is saline up to several kilometers inland. Microsoft Word - Kinvara-Gort.doc (geodata.gov.ie) accessed 28/09.24

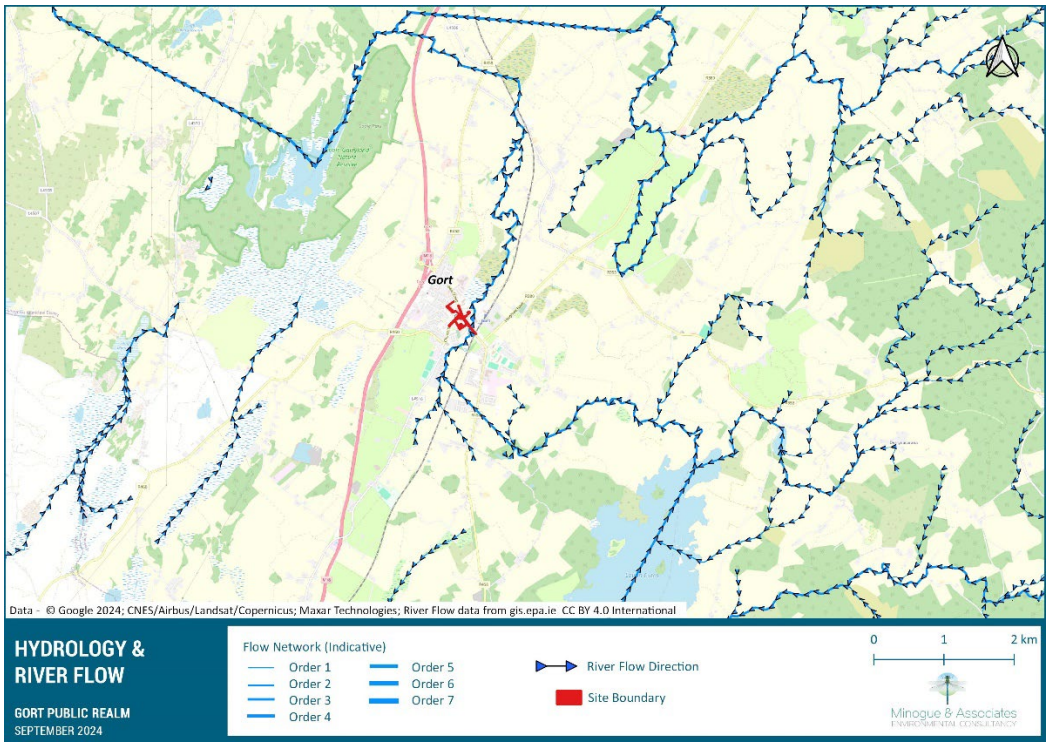
3.1.3 Hydrology

The plan area is located within the Galway Bay South East Water Framework Directive catchment (code 29) and Cannahowna_SC_010 sub-catchment. The Gort River runs immediately adjacent to the plan area at Bridge Street. The site is located within Hydrometric Area . HYDRO Catchments29_676.

Water quality is monitored downstream at the bridge over the Gort River (site RS29C010100) and downstream of the wastewater treatment plant (site RSC010200) and the most recent data available (2021) states Q value of 3-4 and the river overall is classified as moderate quality under the Water Framework Directive. This waterbody is at risk of not meeting the Water Framework Directive objectives by 2027.

Currently surface water drains into the existing drainage system, within the project area there are four surface water drains which discharge into the Gort river. The surface water runoff is untreated. The water is collected in roadside gulleys along the carriageway and is directed into the river. Figure 3.2 presents the plan area and indicative surface water flows.

FIGURE 3-2 PLAN AREA AND INDICATIVE SURFACE WATER FLOWS



3.1.4 Designated conservation area

No European Sites occur at in the project site. The nearest European Sites to the project site are the Coole Garryland Complex (Site Code: 00252), approximately 0.79km to the north and west of the plan area. The Coole-Garryland SPA (004107)SPA is the nearest SPA at 1.19km north and west of the site.

The nearest proposed Natural Heritage Area (p NHA) to the project site is the Coole Garryland pNHA located 0.79km north and west of the project area. The next pNHA is the Polldullagh Cave pNHA located approximately 1.72 south of the plan area. Please see Figures 3.3 showing Special Areas of Conservation and Figure 3.4 showing Special Protection Areas within 5, 10 and 15km of the plan area.

FIGURE 3-3 SPECIAL AREAS OF CONSERVATION

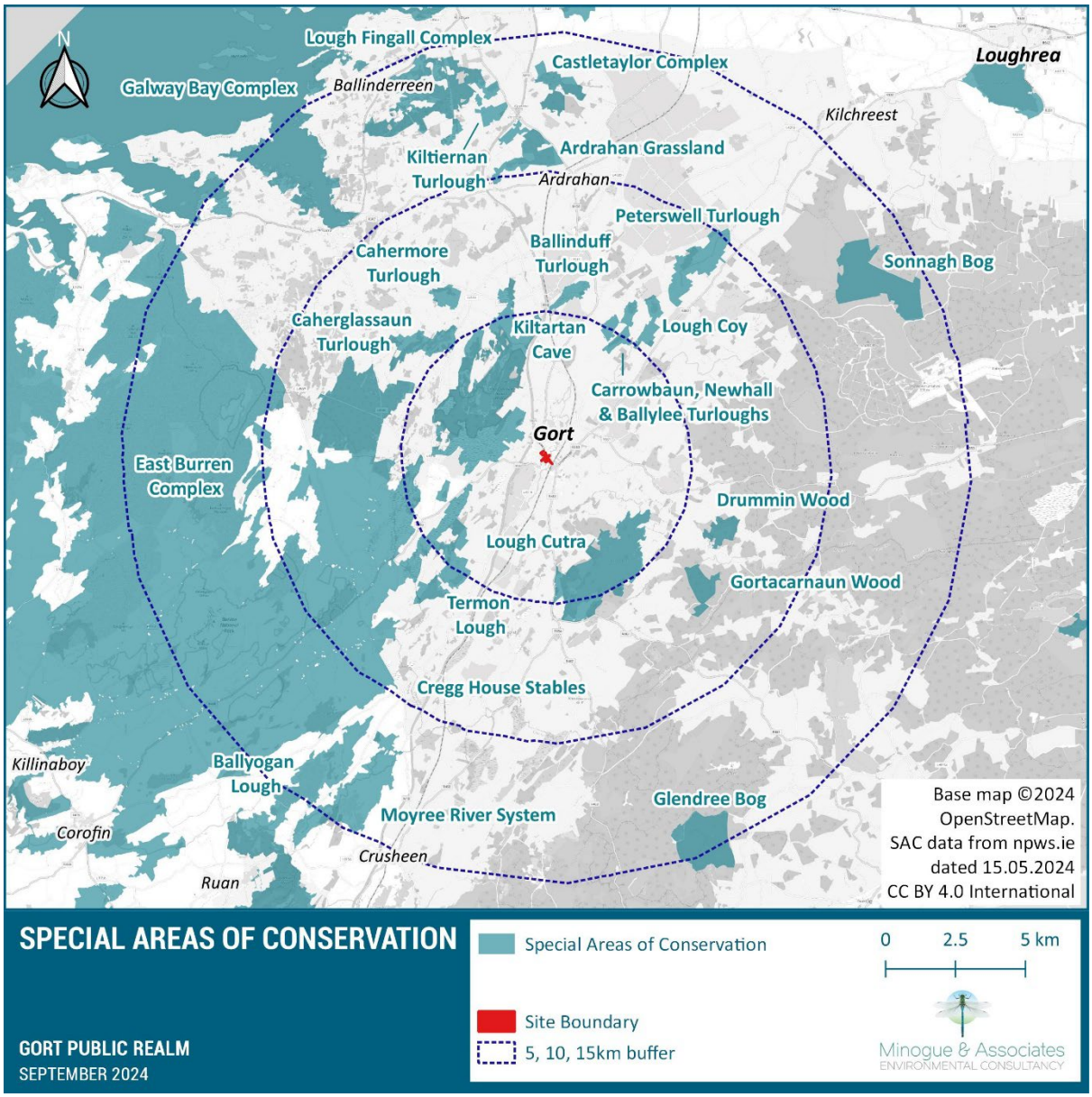
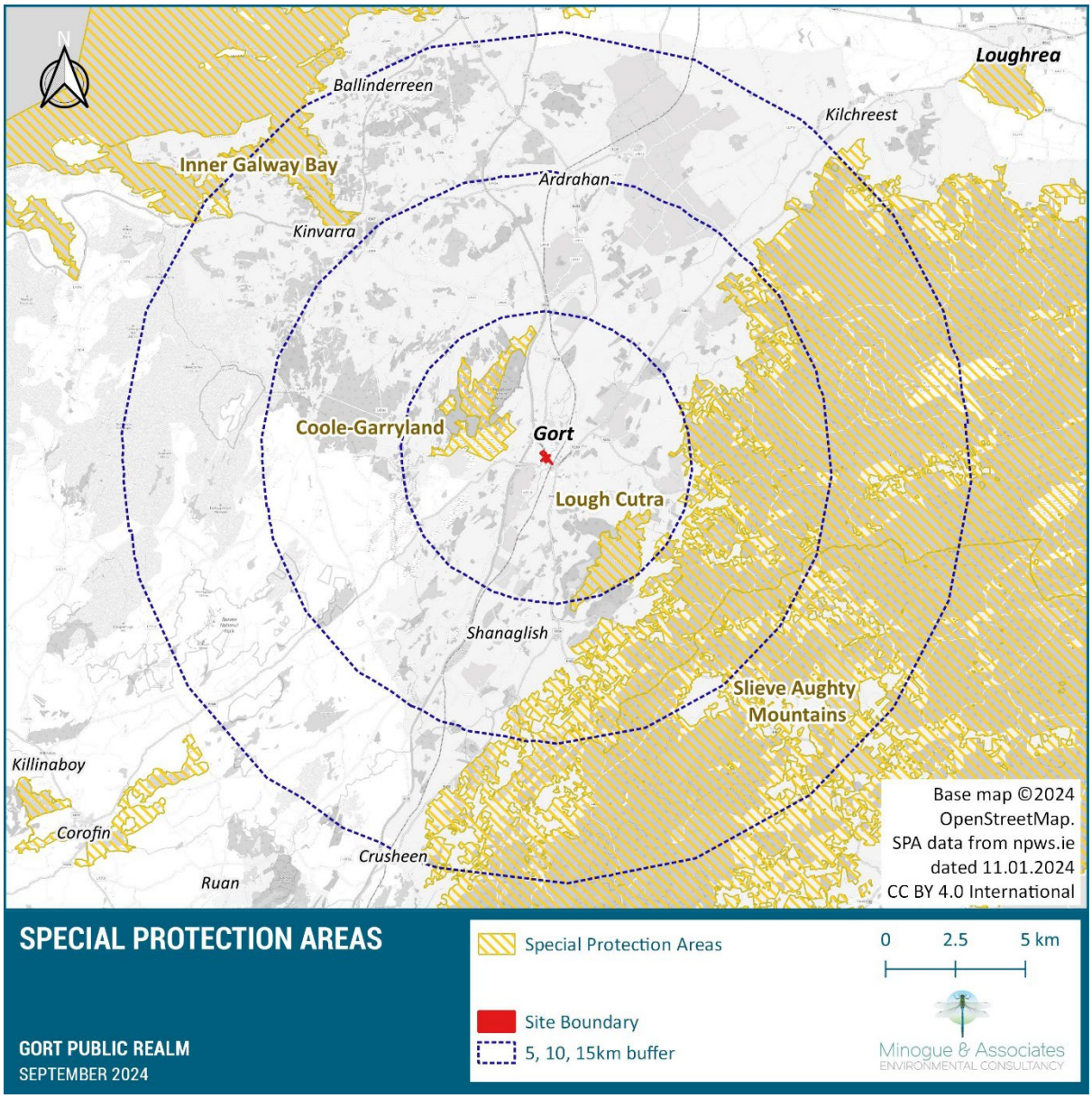


FIGURE 3-4 SPECIAL PROTECTION AREAS



3.1.5 Land cover & Habitats

The current land cover within the project site is characterised by built lands and artificial surfaces with the parkland and amenity planting present at Canon Quin Park. A description of land cover and habitats in presented below in Table 3.1

TABLE 3-1 LANDCOVER AND HABITATS

Market Square	Comprises built land and artificial surfaces no woodland habitats are present such as trees or ornamental planting.
Canon Quinn Park	Comprises amenity grassland with trees of various sizes and species, a large row of Leylandii are present on the eastern boundary of the park.
Bridge Street	Comprises built land and artificial surfaces, with the bridge crossing the Gort River that flows north east through the town. The Gort River is crossed by Bridge Street.
Crowe Street	Comprises built land and artificial surfaces including the street and housing/built development
Georges Street	Comprises built land and artificial surfaces including the street and housing/built development
Barrack Street	This comprises bare ground, built land and artificial surfaces, with a stone wall. A ditch where the Gort river was previously diverted around the old Barracks provides a hydrological connect to the Gort River
Queen Street	Comprises built land and artificial surfaces including the street and housing/built development. The stone walls support some ivy growth along parts of Queen Street..
Church Street	Comprises built land and artificial surfaces including the street and housing/built development
Off street parking (Lowry Lane)	this comprises spoil, bare ground, recolonising bare ground with grass. with some woodland habitat in the form of semi mature trees. A review of aerial photography (see Section 3.1) indicated the presence of these trees from 1995 aerial imagery.

3.1.6 Fauna

3.1.6.1 Non-volant mammals

No evidence indicating the presence of protected non-volant mammals, such as badgers, has been recorded within the project site during site visit in July 2024...A search of the National Biodiversity Centre database based on a polygon search of the plan area returned the following records of protected species.

TABLE 3-2 NATIONAL BIODIVERSITY CENTRE DATABASE

Species	Count	Data of record	Status
Common Frog (Rana temporaria)	1	31/12/1979	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex V || Protected Species: Wildlife Acts
European Otter (Lutra lutra)	2	11/10/2010	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex II || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts
Lesser Horseshoe Bat (Rhinolophus hipposideros)	10	26/01/2015	Protected Species: EU Habitats Directive || Protected Species: EU Habitats Directive >> Annex II || Protected Species: EU Habitats Directive >> Annex IV || Protected Species: Wildlife Acts

A further search of the NBDC database returned a record of evidence of otter activity in 2005, with one otter spraint observed on flat ledges downstream of the bridge, approximately 250m downstream, just beyond the Aldi shop.

3.1.6.2 Bats

Bat surveys were undertaken by EireEcology[5] over 2024 and the full report is provided under separate cover. In summary, the surveys revealed the presence of seven bat species as follows:

- Common pipistrelle (Pipistrellus pipistrellus)
- Soprano pipistrelle (Pipistrellus pygmaeus)
- Leisler's bat (Nyctalus leisleri)
- Brown Long- eared bat (Plecotus auratus)
- Natterer's Ba (Myotis nattereri)
- Daubentons bat (Myotis daubentonii), and
- Lesser Horseshoe Bat (Rhinolophus hipposideros)

The project site is not situated within a core zone of influence for SAC designated Lesser Horseshoe Bat roosts, the site is located between the Coole Garryland Complex SAC (code: 000252), 0.79km north west. Lough Cutra SAC (code:000299) is located 2.9km to the south east. Furthermore, several smaller Lesser Horseshoe Bat roosts are found surrounding the project site. The Eire Ecology report also identifies LSH bat roosts based on Bat Conservation Ireland's database as shown below.

[5] Bat Survey Report, Eire Ecology, September 2024

TABLE 3-3 BAT CONSERVATION IRELAND DATABASE – LESSER HORSESHOE ROOSTS

Species name	Distance of record from site	Last record	Details	Designation	Potential connectivity with subject site (for roost records)
Lesser Horseshoe Bat (*Rhinolophus hipposideros*)	1.19km	2000	Souterrain. Droppings found in 2000	EU Habitats Directive Annex II &	Within the 2.5km Core Sustenance Zone (CSZ) for this species (BCT, 2020) for this roost. Connectivity via hedges although R458 separates site
	1.8km	2010	Cave winter roost to 22 bats in 2001 and 12 bats in 2010		Potential connectivity along treelines and hedgerows. Within the 2.5km CSZ for this roost.
	1.9km	2006	Cave winter roost to 50 bats in 1996 (summer) and 2 bats in 2006.		Within the 2.5km CSZ for this roost. Connectivity via hedgerows.
	2.1km		Souterrain. Winter roost		Within the 2.5km CSZ. Connectivity via Gort River although town in-between

The same report recorded 80.903 registrations over the course of 21 nights from 5 static bat detectors placed in key locations throughout the plan area. Locations along the Gort river were of highest value to bats, alongside the adjoining railway. Lesser Horseshoe bat recordings were confined to the river… Lowest activity was recorded at Cannon- Quinn Park. The proposed off street car park had activity dominated by pipistrelle and leisler bats. A detector attached to a tree close to the railway bridge where land has not yet been developed showed very high activity levels of 118 bat passes/hour. Highest activity was noted along the river to the north east and south west.

The literature review carried out as part of the bat survey, shows the presence of Lesser Horseshoe Bat roosts along a potential commuting corridor that follows the course of the river. It is considered likely that these are satellite roosts for the larger SAC protected roosts located to the south east and north west of Gort. Night time surveys show that the existing lighting regime along the Gort Rive, especially to the north east of the Gort Bridge create a barrier for low flying bats such as Lesser Horseshoe and Daubenton bats creating a barrier to commuting route. Figure 3.5 presents the total activity recorded by EireEcology and Figure 3.6 presents the Lesser Horseshoe Bat commuting routes identified by EireEcology. Figure 3.7 presents potential foraging habitat for Lesser Horseshoe Bat based on core sustenance zone and woodland habitat.

FIGURE 3-5 TOTAL ACTIVITY (EIREECOLOGY 2024)

Figure 3-3: Combined Bat Activity. Size of circle represents activity level (Bp/Hr)

FIGURE 3-6 LESSER HORSESHOE COMMUTING ROUTES (EIREECOLOGY 2024)

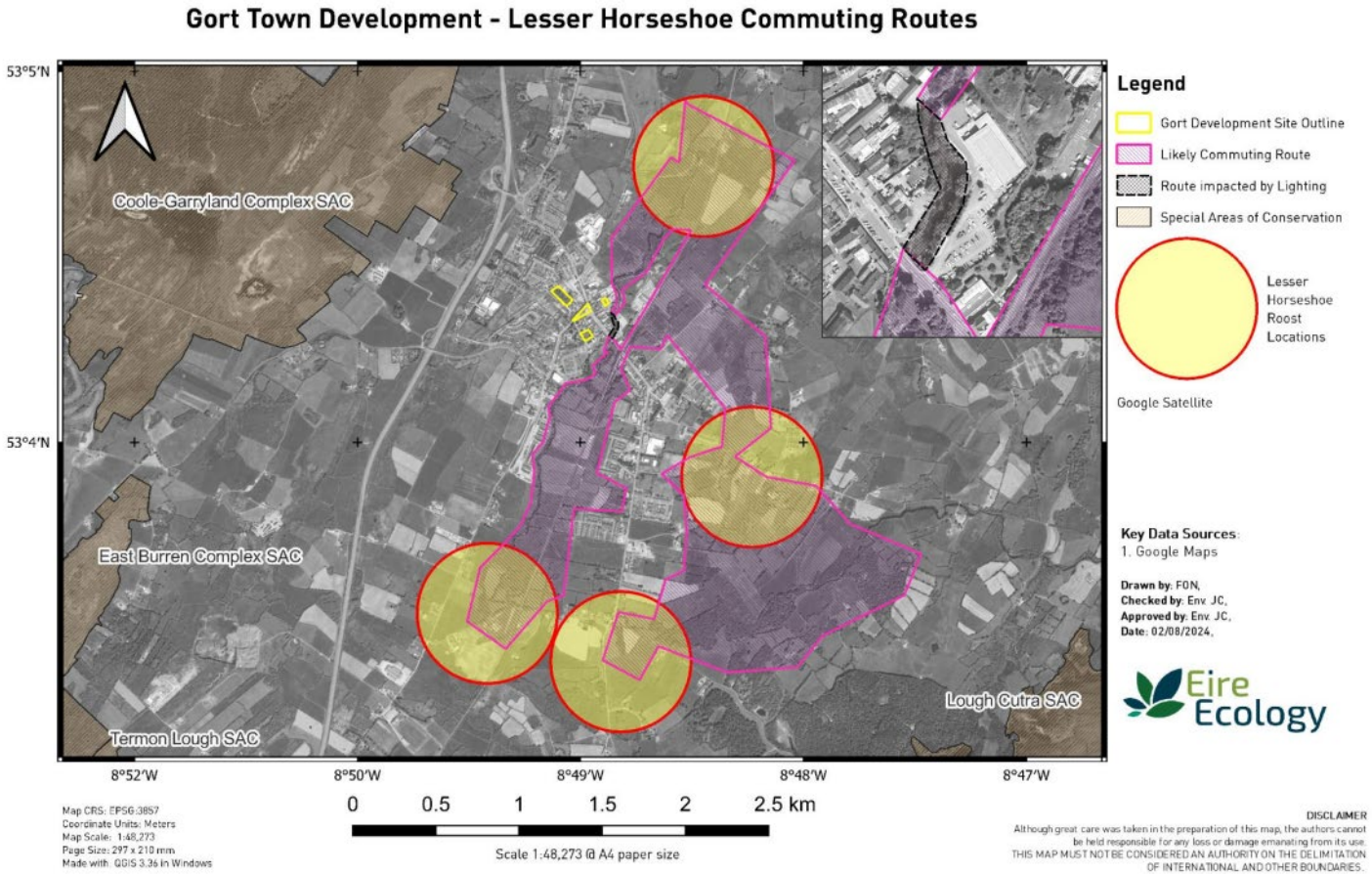
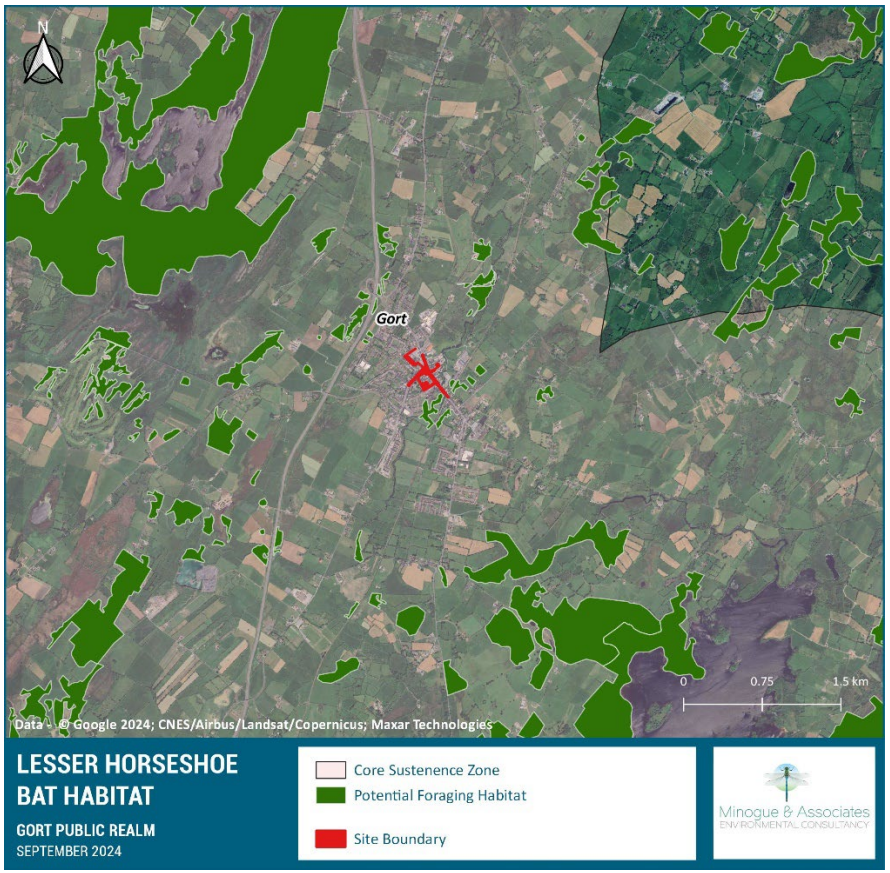


Figure 4-1: Lesser Horseshoe roosts surrounding the site alongside possible commuting corridors with SAC's designated for this species.

FIGURE 3-7 POTENTIAL FORAGING HABITAT FOR LESSER HORSESHOE BATS WITHIN CORE SUSTENANCE ZONE OF LESSER HORSESHOE BAT ROOSTS.



3.1.7 Birds

The site does not support habitats that are suitable for wetland and waterbirds. Low numbers of birds were observed during site visit in July and include blue tit, pigeon, and blackbird.

The impact to these species is considered to be low and insignificant.

3.1.8 Flora

3.1.8.1 Rare & Protected Flora

A polygon search of the plan area using the National Biodiversity Centre database did not return any records of rare and protected flora within the plan area.

3.1.8.2 Non-native invasive plant species

No high impact non-native invasive plant species have been recorded at the project site during baseline surveys in Julye 2024. A review of the NBDC database based on the plan area polygon returned the following records; these include high impact invasive species including Cherry Laural.

Canada Goose (Branta canadensis)	1	31/12/2011	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) || Protected Species: Wildlife Acts || Protected Species: EU Birds Directive || Protected Species: EU Birds Directive >> Annex II, Section I Bird Species
Cherry Laurel (Prunus laurocerasus)	1	31/12/2010	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species
Himalayan Honeysuckle (Leycesteria formosa)	1	10/06/2021	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
Sycamore (Acer pseudoplatanus)	1	31/12/2010	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
Budapest Slug (Tandonia budapestensis)	1	07/08/1970	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
Common Garden Snail (Cornu aspersum)	3	07/08/1970	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
Jenkins' Spire Snail (Potamopyrgus antipodarum)	2	07/08/1970	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
Keeled Slug (Tandonia sowerbyi)	2	07/08/1970	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
Wrinkled Snail (Candidula intersecta)	1	31/12/1940	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> Medium Impact Invasive Species
Fallow Deer (Dama dama)	2	31/12/2008	Invasive Species: Invasive Species || Invasive Species: Invasive Species >> High Impact Invasive Species || Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) || Protected Species: Wildlife Acts

4 Baseline description of the European sites SACs screened in for Appropriate Assessment.

Table 4.1 below provides an overview of European sites, overview description, and a list of qualifying features of interest SACs as occurring the zone of influence of this project and examined as part of this NIS.

TABLE 4-1 OVERVIEW OF EUROPEAN SITES AND QUALIFYING INTERESTS OCCURRING WITHIN THE ZONE OF INFLUENCE OF THE PROJECT

	SAC name	Description	Qualifying Interests
1	Coole-Garryland Complex SAC 000252	The Coole-Garryland Complex is situated in a low-lying karstic limestone area west of Gort, in Co. Galway. It contains a series of seasonal lakes (turloughs), which are fed by springs and a partly submerged river, surrounded by woodland, pasture and limestone heath. A remarkable feature of Coole-Garryland is that several of the turloughs are surrounded by woodland. The complex of habitats at Coole-Garryland provides habitat for a variety of mammal species, including Otter, Lesser Horseshoe Bat and Pine Marten. Otter and Lesser Horseshoe Bat are listed in Annex II of the E.U. Habitats Directive. This SAC contains a building (Garryland Lodge) which has been renovated specifically to make it suitable for use by bats. The Coole-Garryland complex is also home to one of the most important and unique assemblages of insects in the country, including several notable species of beetles and flies	[3150] Natural Eutrophic Lakes [3180] Turloughs* [3270] Chenopodion rubri p.p. and Bidention p.p. Vegetation [5130] Juniper Scrub [6210] Orchid-rich Calcareous Grassland* [8240] Limestone Pavement* [91J0] Yew Woodlands*
2	Caherglassaun Turlough SAC	Situated in a natural depression just to the north-west of Coole Nature Reserve, this site comprises a permanent lake at its core, while the rest of the basin functions as a turlough. At times of high water, the site can flood to a depth of 10-15 m. A series of collapse features act as swallow-hole. Caherglassaun is an interesting site and shows some features which are not typical of turloughs. Firstly, it has a permanent lake at its base which is relatively deep and has an aquatic flora of Pondweeds (Potamogeton spp.) and Rigid Hornwort (Ceratophyllum demersum). Secondly, because of its proximity to sea-level, the lake fluctuates 30 cm or so in a tidal cycle, but it is delayed significantly behind tidal height at Kinvarra. A bat roost exists within the site. Lesser Horseshoe Bat and Natterer's Bat, which is listed in the Irish Red Data Book, roost here. Lesser Horseshoe Bat is listed on Annex II of the E.U. Habitats Directive, and Ireland has the largest national population in Europe.	Turloughs [3180] Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation [3270] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]
3	Carrowbaun, Newhall and	The Carrowbaun, Newhall and Ballylee Turloughs SAC complex is a group of three turloughs which are hydrologically linked in times of high flood	Turloughs [3180]

	SAC name	Description	Qualifying Interests
	Ballylee Turloughs SAC 0002293	The lowest part of Carrowbaun turlough is at its northern end and an artificial channel links the marsh with the Ballylee River. At the north end of Ballylee there is a swallow-hole (Pollaleen) which introduces water from Lough Coy. The Ballylee River is joined from the south (via the castle) by the Streamstown River and water sinks into the channel floor, or disappears in a tangle of scrub at Pollanoween further south. Newhall lies in a broad peaty depression with gravel deposits at the southern end. At high-water levels Newhall floods into Carrowbaun West. The northern end of Carrowbaun is covered by a wet Common Sedge (Carex nigra) community which remains wet all year. Turlough scrub at the northern end contains Blackthorn (Prunus spinosa), Buckthorn (Rhamnus catharticus) and some Ash (Fraxinus excelsior). This grades up into dry rocky Hazel (Corylus avellana) scrub with a good ground flora. The southern end of Carrowbaun floods less often and is largely modified by fertilisation and heavy grazing.	
4	Lough Coy SAC	The site consists of a small permanent lake in the middle of an almost circular turlough basin. There are drift deposits, as well as outcropping rocks and boulders on the relatively steep side walls, and small areas of scrub towards the top of the basin. Lough Coy is an excellent example of a eutrophic (nutrient-rich) turlough. The extreme water fluctuation supports a distinctive zonation of vegetation and provides many niches for specialist plants. It is an important site for wintering waterfowl.	Turloughs [3180]
5	East Burren Complex SAC	This large site incorporates all of the high ground in the east Burren in Counties Clare and Galway, and extends south-eastwards to include a complex of calcareous wetlands. The area encompasses a range of limestone habitats that include limestone pavement and associated calcareous grasslands and heath, scrub and woodland together with a network of calcareous lakes and turloughs. The site exhibits some of the best and most extensive areas of oligotrophic limestone wetlands to be found in the Burren and in Europe The site has an excellent array of turloughs. These turloughs represent some of the best examples of this habitat type found in Ireland and display a wide diversity in trophic status, water	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140] Turloughs [3180] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Alpine and Boreal heaths [4060] Juniperus communis formations on heaths or calcareous grasslands [5130] Calaminarian grasslands of the Violetalia calaminariae [6130]

	SAC name	Description	Qualifying Interests
		fluctuations, water retention and vegetation types. The aquatic plant communities are well developed and the rare, Red Data Book species, Mudwort (Limosella aquatica), occurs here. Most of the lakes in the southern part of this site are considered examples of hard water lakes, a type listed in Annex II of the E.U. Habitats Directive. These are classic marl lakes, often surrounded by limestone pavement and scrub. They range from extreme oligotrophic types, such as Lough Bunny, to more mesotrophic or even eutrophic systems. The site supports an internationally important population of Lesser Horseshoe Bat, with an estimated 400 individuals. There are two known nursery roosts, a transition roost and four known winter sites, the latter all in natural limestone caves. Pipistrelle and Brown Long-eared Bats also occur. The site includes a large population of Marsh Fritillary, a species of butterfly listed on Annex II of the E.U. Habitats Directive. Pine Marten and Otter have been recorded regularly within the site - both are listed in the Red Data Book as they are considered threatened in Europe, the latter also on Annex II of the E.U. Habitats Directive.	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510] Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210] Petrifying springs with tufa formation (Cratoneurion) [7220] Alkaline fens [7230] Limestone pavements [8240] Caves not open to the public [8310] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Euphydryas aurinia (Marsh Fritillary) [1065] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303] Lutra lutra (Otter) [1355]
6	Termon Lough SAC (	Termon Lough SAC is situated approximately 6 km south-west of Gort, on the border between Counties Clare and Galway. It consists of a series of three turloughs, with low, drift-covered slopes on all sides except in the north-east, where a small area of limestone pavement is found. The turloughs are hydrologically linked at times of high water. Termon Lough itself is now largely a reedswamp, and is underlain by marl deposits. This is a particularly wet turlough system which seldom dries out.	Turloughs [3180]

4.1 Qualifying features of interests of European Sites to be examined.

All other Qualifying Features of Interest of the SACs listed Table 4.1 above are not connected to the project by any functional impact pathways and do not occur within the zone of influence of the project. As such, have been screened out during the screening exercise. The above Table 4.1 lists the qualifying features of interest of the above European Sites. The Screening for AA that accompanies this Natura Impact Statement, identified the qualifying features of interest that occur within zone of influence within the project, and are at risk of effects from the project. These qualifying features of interest are:

- Alkaline fens
- Naturally eutrophic lakes
- Hard oligo-mesotrophic waters with benthic vegetation of Chara spp (East Burren Complex)
- Rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation
- Turloughs
- Lesser Horseshoe Bat
- Otter

The remainder of this NIS will examine the potential adverse effects that could arise from the implementation of the project, the implication of such effects to these Qualifying Features of Interest and will outline mitigation measures to eliminate the risk of such adverse effects.

4.2 Examination of impacts on how the project could affect key habitats and species

4.2.1 Water dependant habitats

All Qualifying feature of interest habitats listed above in Section 4.1 including alkaline fen, turloughs and Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation are groundwater dependant habitats, Hard oligo-trophic waters, and naturally eutrophic lakes are surface water dependant habitats. Section 4.2.2 outlines the sensitivity of each of these habitats and Section 4.2.3 discusses the potential impacts on these qualifying features of interest.

4.2.1.1 Groundwater dependant habitat

Alkaline fens are very sensitive to changes to water quality. Alkaline fens are groundwater fed, generally peat-forming systems with extensive areas of species-rich small sedge and brown moss communities. They occur in areas where there is a high water table and a base-rich, often calcareous, water supply[6].

Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation are mainly confined to turloughs in the western half of the country. The habitat is restricted to the muddy bottoms of turloughs which are the last areas to dry out during the summer and its distribution is very confined. Bare mud generally dominates the habitat, usually covering greater than 60% of the ground

[6] IWM143 Appendices.pdf (npws.ie)

area and the height of the vegetation is typically less than 10 cm. These habitats are sensitive to alterations in groundwater quality.

Turloughs are subject to numerous pressures and threats and are a habitat that require good water quality. Turloughs, being groundwater fed, are typically associated with high water quality. This is demonstrated by naturally low dissolved nutrients, clear water and low algal growth.

4.2.1.2 Surface water dependant habitats

Hard oligo-mesotrophic waters with benthic vegetation of Chara spp habitat are usually found in low to medium nutrient-rich, clear water and tends to disappear due to eutrophication. The habitat is dependant on good water quality with absence of pollution or fertilisation.

Naturally eutrophic lakes are associated with base rich lakes, with circumneutral or higher pH, in lowlying, large, naturally more productive catchments and is characterised by high abundance and diversity of pondweeds. Both these habitats are sensitive to changes or perturbations in water quality being surface water dependant.

4.2.2 Examination of impacts

Construction activities arising from the project could give rise to adverse effects by increasing pollutants from the surface water pathway via groundwater pathway. Potentially contaminating materials, such as hydrocarbons, cement-base materials, other construction-related solutions and silt will occur on site during the construction phase and will have the potential to become entrained in and pollute groundwaters waters. This water will be discharged to the Caherglassaun Turlough GWB. The potential also exists, for contaminating materials to drain to groundwater bodies and as such have the potential to pollute other groundwater dependant habitats within the same groundwater body as the Caherglassuane Turlough GWB

Surface water generated during the construction phase will ultimately be discharged to the River Gort and groundwater body. Construction activities arising from the project could give rise to adverse effects by increasing pollutants from the surface water pathway via the Gort River. Potentially contaminating materials, such as hydrocarbons, cement-base materials, other construction-related solutions and silt will occur on site during the construction phase and will have the potential to become entrained in and pollute surface drainage waters generated on site.

While it is acknowledged that the volume of surface drainage waters discharging from the project site to the River Gort and Caherglassaune Turlough GWB will be miniscule in the context of the receiving waterbodies, in the absence of appropriate safeguards the potential will exist for the discharge of pollutants that could further perturb water quality.

4.2.3 Lesser Horseshoe Bats

4.2.3.1 Sensitivity

Lesser horseshoe bats are extremely sensitive to artificial light, even at low light intensities, and they avoid brightly lit areas. Artificial light at or near roosts may impact the bats by delaying their emergence time at dusk, reducing reproductive success or even cause roosts to be abandoned (Stone, 2014; Voigt et al., 2018; Bat Conservation Trust & Institute of Lighting Professionals, 2018).

4.2.3.2 Examination of impacts

As the bat surveys by Eire Ecology(2024) have identified, existing lighting at the Gort River is acting as a barrier for bats including Lesser Horseshoe Bats (LSH). No LSH bats were recorded at the off street car park or Canon Quin Park so limited vegetation removal associated with the project will not result in loss of foraging or commuting habitat for this species.

Lighting at construction and operational stage, could result in additional illumination in the Gort River and river corridor and result in adverse effects on Lesser Horseshoe bats foraging and commuting. The project could give rise to additional artificial illumination at construction and operation stage in the absence of appropriate safeguards the potential will exist for the additional light emissions and adverse effects on the population of Lesser Horseshoe Bats using the Gort River.

4.2.4 Otters

4.2.4.1 Sensitivities

The main pressure affecting this species in Ireland is pollution, particularly from organic pollution resulting in fish kills and accidental deaths as a result of road traffic and fishing gear (NPWS, 2019b). The NPWS also list diffuse and point source pollution of freshwaters as a likely indirect impact to otters through changes in prey abundance. However, the NPWS conclude that these threats are considered to produce local impacts only and are not of significance for the national otter population. Nevertheless, such impacts have the potential to be of local significance in the context of a population supported by the East Burren Complex SAC. As such, in the event of pollution arising from construction activities migrating to suitable otter foraging habitat downstream of the project, the potential will exist for indirect impacts to the conservation status of otters within the SAC, by way of reductions in the abundance of prey species and a diminution of foraging habitat.

4.2.4.2 Examination of impacts

Otters require good quality water to support their feeding habitats and impacts that result in declining water such as emissions to surface water during construction activities can result in declining water quality, or pollution events that can impact on prey availability. Potential impacts arising from construction fuel or lubricants to the Gort River could adversely affect water quality and habitats. Poorly designed or increasing light spill may also affect otters that may use the Gort River. In the absence of appropriate safeguards the potential will exist for the discharge of pollutants that could perturb water quality in the Gort River and adversely affect population of otters.

4.3 Implications of the project for Conservation Objectives

An NIS is required to assess the potential for impacts to the integrity of a European Site, with respect to the site's structure and function and its Conservation Objectives. The structural and functional elements of a European Site to maintain the favourable conservation status of qualifying features of interest are embedded into the list of detailed SSCOs for each of the site's interest features. As such a European Sites' SSCOs represent the parameters against which a project's potential to adversely affect the integrity of a European Sites should be considered.

Table 4.2 lists the Conservation Objectives attributes and targets for each of special conservation interests of Coole-Garryland Complex SAC, Caherglassaun Turlough SAC, Carrowbaun, Newhall and Ballylee Turloughs SAC, Lough Coy SAC, East Burren Complex SAC and Termon Lough SAC assesses the potential for the project to result in adverse effects to these attributes and targets. . It is noted that the appraisal

outlined in Table 4.2 has been completed without any regard to the mitigation measures that will be implemented as part of the project. These mitigation measures are considered later in Section 5.

TABLE 4-2 CONSIDERATION OF POTENTIAL IMPACT TO THE ATTRIBUTES AND TARGETS FOR EACH QUALIFYING FEATURES OF INTEREST.

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
East Burren Complex SAC *Alkaline Fens*				
1	Habitat Area	Area stable or increasing, subject to natural processes	The project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
2	Habitat distribution	No decline, subject to natural processes	For reasons outlined for Attribute No 1 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
3	Ecosystem function: soil nutrients	Maintain soil pH and nutrient status within natural ranges	For reasons outlined for Attribute No 1 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
4	Ecosystem function: peat formation	Maintain active peat formation, where appropriate	The discharges associated with the project will not have the potential to alter the peat formation functions of East Burren Complex alkaline fens	No
5	Ecosystem function: hydrology, groundwater levels	Maintain, or restore where necessary, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habita	For reasons outlined for Attribute No 1 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
6	Ecosystem function: hydrology,	Maintain, or restore where necessary, as close as possible to natural or seminatural drainage c	For reasons outlined for Attribute No 1 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological	No

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
	surface water flow		regime, as such it will not have the potential to undermine the target of this attribute.	
7	Ecosystem function: various, water quality	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat under natural conditions.	The discharge of inadequately treated and contaminated water to this habitat could undermine the target of this attribute.	Yes
8	Vegetation composition: community diversity	Maintain variety of vegetation communities, subject to natural processes	For reasons outlined for Attribute No 1 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
9	Vegetation composition: typical brown mosses	Maintain adequate cover of typical brown moss species	For reasons outlined for Attribute No. 1 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	Yes
10	Vegetation composition: typical vascular plants	Maintain adequate cover of typical vascular plant species	For reasons outlined for Attribute No. 1 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	Yes
11	Vegetation composition: native negative indicator species	Cover of native negative indicator species at insignificant levels	For reasons outlined for Attribute No. 1 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
12	Vegetation composition:	Cover of non-native species less than 1%	The project is at a remote distance from this habitat and does not have the potential to affect the	No

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
	non native species		vegetation composition, as such it will not have the potential to undermine the target of this attribute.	
13	Vegetation composition: native trees and scrub	Cover of scattered native trees and shrubs less than 10%	The project is at a remote distance from this habitat and does not have the potential to affect the vegetation composition, as such it will not have the potential to undermine the target of this attribute	No
14	Vegetation composition: algal cover	Cover of algae less than 2%	The project will not have the potential to result in emissions of nutrients as part of the construction and operation phase, as such will not undermine the attributes of this target	No
15	Vegetation structure: vegetation height	At least 50% of the live leaves/flowering shoots are more than either 5cm or 15cm above ground surface depending on community type	The project is at a remote distance from this habitat and does not have the potential to affect the vegetation structure, as such it will not have the potential to undermine the target of this attribute	No
16	Physical structure: disturbed bare ground	Cover of disturbed bare ground not more than 10%	The project is at a remote distance from this habitat and does not have the potential to affect the physical structure, as such it will not have the potential to undermine the target of this attribute	No
17	Physical structure: tufa formations	Disturbed proportion of vegetation cover where tufa is present is less than 1%	For reasons outlined for Attribute No 1 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
18	Indicators of local distinctiveness	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	For reasons outlined for Attribute No 1 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
19	Transitional areas between	Maintain adequate transitional areas to support/protect the alkaline fen habitat and the services it provides	For reasons outlined for Attribute No 1 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological	No

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
	fens and other habitats		regime, as such it will not have the potential to undermine the target of this attribute.	
East Burren Complex SAC *Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.*				
20	Habitat Area	Area stable or increasing, subject to natural processes	The project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the habitat area habitat, resulting over time in a decrease in the extent of this habitat.	No
21	Habitat distribution	No decline, subject to natural processes	For reasons outlined for Attribute No. 20 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute. habitat, resulting over time in a decrease in the extent of this habitat.	No
22	Vegetation composition: typical species	Typical species present, in good condition, and demonstrating typical abundances and distribution	For reasons outlined for Attribute No. 20 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
23	Vegetation composition: characteristic zonation	Restore characteristic charophyte and crust zones	For reasons outlined for Attribute No. 20 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute. habitat, resulting over time in a decrease in the extent of this habitat.	No

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
24	Vegetation composition: maximum depth	Restore maximum depth of vegetation (euphotic depth), subject to natural processes	For reasons outlined for Attribute No. 20 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	NO
25	Hydrological regime: water level fluctuations	Maintain appropriate hydrological regime necessary to support the habitat	For reasons outlined for Attribute No. 20 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute. habitat, resulting over time in a decrease in the extent of this habitat.	No
26	Lake substratum quality	Maintain appropriate substratum type, extent and chemistry to support the vegetation	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
27	pH and alkalinity	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes	For reasons outlined for Attribute No. 26 The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
28	Nutrients	Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species	The project will not have the potential to result in emissions of nutrients as part of the construction and operation phase, and won't undermine the attributes of this target.	No
29	Water colour	Restore appropriate water colour to support the habitat	For reasons outlined for Attribute No. 26 The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
30	Dissolved organic carbon (DOC)	Maintain/restore appropriate organic carbon levels to support the habitat	For reasons outlined for Attribute No. 26 The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
31	Turbidity	Maintain appropriate turbidity to support the habitat	For reasons outlined for Attribute No. 26 The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
32	Transparency	Maintain/restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency	For reasons outlined for Attribute No. 26 The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
33	Attached algal biomass	Maintain trace/absent attached algal biomass (	The source of algal blooms is derived from excess nutrient inputs. The project will not result in release of nutrients and will not under mind the target of this attribute	No
34	Fringing habitat: area and condition	Maintain/restore the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat	Given that the source of potential impacts to water quality relate to construction activity which will be of short term duration the project is not considered to have the potential to undermine the fringing habitat and as such will not undermine the target for this attribute.	No
Coole Garryland Complex SAC Naturally eutrophic lakes				
35	Habitat Area	Area stable or increasing, subject to natural processes	The project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the habitat area habitat, resulting over time in a decrease in the extent of this habitat.	No
36	Habitat distribution	No decline, subject to natural processes	For reasons outlined for Attribute No 35 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
37	Typical species	Typical species present, in good condition, and demonstrating typical abundances and distribution	For reasons outlined for Attribute No.35 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
38	Vegetation composition: characteristic zonation	All characteristic zones should be present, correctly distributed and in good condition	For reasons outlined for Attribute No. 35 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
39	Vegetation composition: maximum depth	Maintain maximum depth of vegetation (euphotic depth), subject to natural processes	For reasons outlined for Attribute No. 35 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
40	Hydrological regime: water level fluctuations	Maintain appropriate hydrological regime necessary to support the habitat	For reasons outlined for Attribute No. 35 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
41	Lake substratum quality	Maintain appropriate substratum type, extent and chemistry to support the vegetation	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
42	Transparency	Maintain/restore appropriate Secchi transparency. There should be no decline in Secchi depth/transparency	For reasons outlined for Attribute No. 41 The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
43	Nutrients	Restore the concentration of nutrients in the water column to sufficiently low levels to support the habitat and its typical species	The project does not release nutrients during construction or operation stage and does not undermine the target of this attribute.	No
44	Phytoplankton biomass	Maintain/restore appropriate water quality to support the habitat, including high chlorophyll a status	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
45	Attached algal biomass	Maintain/restore trace/absent attached algal biomass (	The source of algal blooms is derived from excess nutrient inputs. The project will not result in release of nutrients and will not under mind the target of this attribute	No
46	Acidification status	Maintain appropriate water and sediment pH, alkalinity and cation concentrations to support the habitat, subject to natural processes	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
47	Water colour	Maintain/restore appropriate water colour to support the habita	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
48	Dissolved organic carbon (DOC)	Maintain/restore appropriate organic carbon levels to support the habitat	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
49	Turbidity	Maintain appropriate turbidity to support the habitat	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
50	Fringing habitat: area and condition	Maintain/restore the area and condition of fringing habitats necessary to support the natural structure and functioning of habitat 3140	Given that the source of potential impacts to water quality relate to construction activity which will be of short term duration the project is not considered to have the potential to undermine the fringing habitat and as such will not undermine the target for this attribute.	No
Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation *Coole Garryland Complex SAC* *Caherglassaun Turlough SAC*				

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
51	Habitat area	Area stable, subject to natural fluctuations	The project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the habitat area habitat, resulting over time in a decrease in the extent of this habitat.	No
53	Habitat distribution	No decline, subject to natural processes	For reasons outlined for Attribute No 51 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
54	Hydrological regime	Maintain appropriate natural hydrological regime necessary to support the natural structure and functioning of the habitat	For reasons outlined for Attribute No 51 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
53	Soil type	Maintain area and extent of soil types necessary to support the habitat	For reasons outlined for Attribute No 51 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
54	Soil nutrient status: nitrogen and phosphorus	Maintain nutrient status appropriate to soil types and vegetation communities/units	Nutrients are not released as part of this project and will not undermine the target of this attribute	No
55	Physical structure: bare ground	Maintain sufficient wet bare ground, as appropriate	For reasons outlined for Attribute No 51 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
56	Chemical processes: calcium	Maintain appropriate calcium carbonate deposition rate and concentration in soil	For reasons outlined for Attribute No 51 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological	No

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
	carbonate deposition and concentration		regime, as such it will not have the potential to undermine the target of this attribute.	
57	Water quality	Restore appropriate water quality to support the natural structure and functioning of the habitat	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
58	Vegetation composition: vegetation communities	Maintain area of sensitive and high conservation value vegetation communities/units	For reasons outlined for Attribute No. 51, the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
59	Vegetation composition: vegetation zonation	Maintain vegetation zonation/mosaic characteristic of the site	For reasons outlined for Attribute No. 51, the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
60	Typical species	Maintain typical species	For reasons outlined for Attribute No. 51, the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute	No
61	Fringing habitats: area and condition	Maintain the area and condition of fringing habitats necessary to support the natural structure and functioning of the habitat	Given that the source of potential impacts to water quality relate to construction activity which will be of short term duration the project is not considered to have the potential to undermine the fringing habitat and as such will not undermine the target for this attribute.	No
Turloughs *Coole-Garryland Complex SAC, Caherglassaun Turlough SAC, East Burren Complex SAC* *Lough Coy SAC [002117] Carrowbaun, Newhall and Ballylee Turloughs SAC*				

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
62	Habitat area	Area stable or increasing, subject to natural processes	The project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the habitat area habitat, resulting over time in a decrease in the extent of this habitat	No
63	Habitat distribution	No decline, subject to natural processes	For reasons outlined for Attribute No. 62 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
64	Hydrological regime	Maintain appropriate natural hydrological regime necessary to support the natural structure and functioning of the habitat	For reasons outlined for Attribute No. 62 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	N
65	Soil type	Maintain variety, area and extent of soil types necessary to support turlough vegetation and other biota	For reasons outlined for Attribute No. 62 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	N
66	Soil nutrient status: phosphorous and nitrogen	Maintain nutrient status appropriate to soil types and vegetation communities	For reasons outlined for Attribute No. 62 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
67	Physical structure: bare ground	Maintain sufficient wet bare ground, as appropriate	For reasons outlined for Attribute No. 62,,the project is at a remote distance from this habitat and does not have the potential to affect the	No

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
			hydrological regime, as such it will not have the potential to undermine the target of this attribute.	
68	Chemical processes: calcium carbonate deposition and concentration	Maintain appropriate calcium carbonate deposition rate and concentration in soil	For reasons outlined for Attribute No 62 the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
69	Water quality: various	Restore appropriate water quality to support the natural structure and functioning of the habitat	The discharge of inadequately treated and contaminated water during construction to this habitat could undermine the target of this attribute	Yes
70	Active peat formation	Maintain active peat formation	For reasons outlined for Attribute No. 62, the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
71	Vegetation composition: area of vegetation communities	Restore area of sensitive and high conservation value vegetation communities/units	For reasons outlined for Attribute No. 62, the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
72	Vegetation composition: vegetation zonation	Maintain vegetation zonation/mosaic characteristic of the turlough	For reasons outlined for Attribute No. 62, the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
73	Vegetation structure: sward height	Maintain sward heights appropriate to the vegetation unit, and a variety of sward heights across the turlough	For reasons outlined for Attribute No. 62, the project is at a remote distance from this habitat and does not have the potential to affect the	No

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
			hydrological regime, as such it will not have the potential to undermine the target of this attribute.	
74	Typical species	Maintain typical species within the turlough	For reasons outlined for Attribute No. 62, the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
75	Fringing habitats: area	Maintain marginal fringing habitats that support turlough vegetation, invertebrate, mammal and/or bird populations	Given that the source of potential impacts to water quality relate to construction activity which will be of short term duration the project is not considered to have the potential to undermine the fringing habitat and as such will not undermine the target for this attribute.	No
76	Vegetation structure: turlough woodlands	Maintain appropriate turlough woodland diversity and structure	For reasons outlined for Attribute No. 62 ,the project is at a remote distance from this habitat and does not have the potential to affect the hydrological regime, as such it will not have the potential to undermine the target of this attribute.	No
Lesser horseshoe Bat *Coole Garryland Complex SAC, Caherglassaune Turlough SAC, East Burren Complex SAC, Lough Cutra SAC*				
76	Population per roost	*Coole Garryland Complex SAC* Minimum number of 218 bats for the summer roost with roost id. 226 (in NPWS database). *Caherglassaune Turlough SAC* Minimum number of 20 bats for the winter roost (roost id. 246 in NPWS database). Lough Cutra SAC Minimum number of 100 bats for the summer roost (roost id. 228 in NPWS	Potential impact on populations of LSH foraging and commuting along the Gort River if increased lighting results in strengthening existing barrier effect. This could affect the satellite roosts assumed to be associated with the SACs identified within the surrounding area.	Yes

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
		database); minimum number of 76 bats for the winter roost (roost id. 228) *East Burren Complex SAC* Minimum number of 103 bats for the linked summer roosts (roost id. 132 and roost id. 825 in NPWS database), minimum number of 150 bats for the summer roost with roost id. 216 and minimum number of 100 bats for the summer roost with roost id. 130; minimum number of 50 bats for the winter roost with roost id. 126 and minimum number of 108 bats for the winter roost with roost id. 144.		
77	Summer roosts	No decline. –	For reasons outlined for Attribute No. 76 above light emissions associated with the project could result in decline in summer roosts	Yes
78	Auxiliary roosts:	No decline.	For reasons outlined for Attribute No. 76 above light emissions associated with the project could result in decline in auxiliary roosts	Yes
79	Extent of potential foraging habitat	No significant decline within 2.5km of qualifying roosts	No vegetation or linear woodland habitat identified through surveys as supporting LSH are proposed for removal as part of the project.	No
80	Linear features	No significant loss within 2.5km of qualifying roosts	No vegetation or linear woodland habitat identified through surveys as supporting LSH are proposed for removal as part of the project.	No
81	Light pollution	No significant increase in artificial light intensity adjacent to named roosts or along commuting routes within 2.5km of those roosts	For reasons outlined for Attribute No. 76 above light emissions associated with the project could result in decline in summer roosts	Yes

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
Otters Otters of the East Burren Complexr SAC (where individuals from the SAC population use/rely upon surface waters within the sub-catchments and Gort Riverdownstream of the project				
82	Distribution	No significant decline	Adverse effects to water quality in the catchment downstream of the project will have the potential affect the distribution of otters using this catchment for foraging.	Yes
83	Extent of terrestrial habitat	No significant decline	The project will not result in the loss of any terrestrial habitat used by otters.	No
84	Extent of freshwater habitat (river)	No significant decline	As per attribute no. 82 above adverse impacts to water quality will have the potential to undermine the potential for waterbodies downstream of the project to support otters.	Yes
85	Extent of freshwater habitat (lakes)	No significant decline	As per attribute no. 82 above adverse impacts to the water quality downstream of the project will have the potential to undermine its potential to support otters.	Yes
86	Couching sites and holts	No significant decline	No breeding or resting habitat for otters occurs in the vicinity of the project. As such the project will not have the potential to undermine this target.	No
87	Fish biomass	No significant decline	As per attribute no. 82 above the project will have the potential to undermine water quality downstream project likely to be used by the otter population of the East Burren complex SAC. Any adverse impacts to these waterbodies could result in a decrease in fish biomass (i.e. through mortalities resulting from a major pollution event) and undermine the target for this attribute.	Yes

Attribute number	Attribute	Target	Consideration of likely significant effects	Mitigation required yes/no?
88	Barriers to connectivity	No significant increase	No in stream works are proposed as part of the project and no barriers to connectivity. Lighting baseline levels currently may deter otters and fish from relying on the Gort River near the bridge where light levels are currently excessive.	Yes

5 Mitigation measures

The following measures relate to biodiversity, flora and fauna, water resources and cultural heritage. They are derived from Bat Survey prepared by EireEcology and the EIAR Screening Report[7] both of which are prepared in support of this planning application. The mitigation measures outlined in the following sections aim to ensure that all potential negative impacts associated with the project are avoided or minimised to an imperceptible level.

5.1.1 Best Practice Construction Approach

All construction works, relating to the activities and construction sequence outlined in Section 2 above, will be undertaken in accordance with the following:

- Inland Fisheries Ireland's *Requirements for the Protection of Fisheries Habitat during Construction and Development Works.*
- GE-ENV-01104 The Management of Invasive Alien Plant Species on National Roads – Standard (TII)
- GE-ENV-01105 The Management of Invasive Alien Plant Species on National Roads – Technical Guidance (TII)
- CIRIA (Construction Industry Research and Information Association) Guidance Documents
    - Control of water pollution from construction sites (C532)
    - Control of water pollution from linear construction projects: Technical Guidance (C648)
    - Control of water pollution from linear construction projects: Site Guide (C649)
    - Environmental Good Practice on Site (C692)

[7] MEC Ltd EIA Screening Report of Gort Public Realm 2024

- Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes

- Guidelines for the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads

- Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, during and Post Construction of National Road Schemes.

5.1.2 Measures to Minimise Impacts to Water Resources

All wastewater generated during the construction phase will be directed to the Irish Water sewer network and then to the existing Irish Water Wastewater Treatment Plant (WWTP). Given the nature of the public realm works no additional wastewater requirements are part of the project and no operational requirements exist.

5.1.3 Management of Surface Water

The construction management of the site will take account of the recommendations of the CIRIA guides

- Control of Water Pollution from Construction Sites (2001) and Control of Water Pollution from Linear Construction Projects (2006) and
- Inland Fisheries Ireland's (IFI's) Requirements for the Protection of Fisheries Habitat during Construction and Development Works.

The provision of these design features will ensure that surface water emitted from the project site during the construction phase is adequately treated. The SuDS strategy as outlined in Section 2.1.2 will attenuate estimated 80% of surface water within the project area. Given the existing conditions which currently provide for surface water run off to roadside gulleys and discharge without attenuation to the Gort River, this will improve the existing baseline conditions and will eliminate any risk of polluted surface water being discharged from the project site during operation.

5.1.4 Measures to minimise impacts to Habitats

To control dust emissions during construction works, standard mitigation measures shall include:

- spraying of exposed earthwork activities and site haul roads during dry and/or windy conditions; provision of wheel washes at exit points; control of vehicle speeds and speed restrictions (20 km/h on any un-surfaced site road);

- covering of haulage vehicles; and, sweeping of hard surface roads.

These procedures will be strictly monitored and assessed on a daily basis.

Dust screens will be implemented at locations where works will take place within 100m of sensitive ecological receptors (i.e. Gort River) during the construction phase.

5.1.5 Measures to reduce the spread of invasive species

It is confirmed that no non-native invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 were recorded within the proposed development site. Mitigation measures to confirm continued absence of invasive species in light of the ongoing construction activity in and around the development site are outlined below:

• In the event that additional topsoil and quarried stone is required on the site, it will be sourced from a stock that has been screened for the presence of any invasive species and where it is confirmed that none are present.

• All machinery will be thoroughly cleaned and disinfected prior to arrival and departure from the site (through pre-agreed Biosecurity Protocols) to prevent the spread of invasive species. This process will be detailed in the contractor's method statement.

These will be developed in line with

• TII: The Management of Invasive Alien Plant Species on National Roads – Standard (2020)

• NRA (2008). Guidelines for the Management of Waste from National Road Construction Project.

• Biosecurity protocols available for aquatic and riparian species available on the Control of Aquatic Invasive Species and Restoration of Natural Communities in Ireland (CAISIE) www.caisie.ie.

5.1.6 Mitigation Measures for Breeding Birds during Construction

Removal of vegetation (e.g. scrub and grassland) should be avoided, between the 1st of March and the 31st of August, to avoid direct impacts on nesting birds. Where the construction programme does not allow this seasonal restriction to be observed, then these areas will be inspected by a suitably qualified ecologist for the presence of breeding birds prior to clearance. Areas found not to contain nests will be cleared within three days of the nest survey. Where the vegetation is not cleared within three days of checks, a repeat check will be required. Should nesting birds be encountered during surveys, the removal of vegetation will be required to be delayed until after the nesting has finished. Note the only tree removal applies to the cluster of coniferous trees at King's College.

5.1.7 Mitigation Measures for Bats including Lesser Horseshoe Bats

Loss of roosting habitat: Tree felling should ideally be undertaken in the period September to late October/early November, however can also be conducted from later January until the end of February. Outside of these time an Ecological Clerk of Works will need to first verify if impacts will occur.

Loss of foraging and commuting habitat:

Cannon Quinn Park: BMP design report proposes a planting regime within the park including te use of native trees such as Sweet cherry, Strawberry tree, crab apple and hawthorn. Numerous all Ireland Pollinator plan species have been chosen for new flowerbeds here. These should substantially increase the invertebrate diversity and abundance in the park resulting in an improvement in the biodiversity value of this section.

Car Park by County Council building (off street parking proposal): While several trees wihtin the proposed car park will be felled, the proposed development will see additional tree planting and raingarden species thus overall impacts in this respect will be limited,.

No Lesser Horseshoe Bats were recorded or observed in this areas, with records being confined to the Gort River.

Disturbance: Where lighting is unavoidable during construction, low intensity lighting and motion sensors will be used to limit illumination. Exterior lighting, during construction, will be designed to minimize light spillage, thus reducing the effects on areas outside the proposed development, and consequently on bats, i.e: lighting will be directed away from mature trees/treelines around the periphery of the site boundary and woodland areas to minimise disturbance to bats. Directional accessories will be used to direct light away from these features, eg; through the use of light shields (Stone, 2013). The luminaries will be of the type that prevent upward spillage of light and minimise horizontal spillage away from the intended lands.

Operation: Dark Zone: it is essential that Gort River ecological corridor is restored by a change in lighting along the bridge. A lighting plan including a lux diagram has been produced by BDP. An extract from the diagram showing the proposed lights by the bridge is shown below.

Three pairs of lights will be installed on the bridge fitted at a height of 0.35m to prevent any lights shining o n the river. While these lightbars have a temperature of 3000k they will sit below the top of the existing wall which will ensure they do not saturate the natural environment below. The streetlight (84D) alongside its southern neighbour (83D), identified as having some impact on the river will be replaced with a 6m pole with a directional light with a colour temp of 2,200k.

At the proposed Barrack Street car pak (62G to 65G), bat friendly lighting will be installed using a colour variant lacking the blue light component particularly attractive to invertebrates. Lights here will have a 2,200k colour and a reduced height of 6m. No bat roosts were found wihtin the ruins so the main purpose is to reduce light saturation of closeby important dark zones.

Currently the Canon Quinn park has low bat favourability. In order to make the park more usable by bats 6m poles are proposed here with a colour component to f2200K (66A to 77A). this should allow Pipistrelle bats and Leisler's bat easier access. The spotlight shining on the park will be removed. It is expected these measures will result in a marked increase in bat activity here.

The proposed car park by the County Council building is not a viable habitat for LSH given a lack of connectivity to SAC habitats. Mitigation measures proposed for this section including installing reduced height lamp posts (6m); (96G to 108G) using a light without a blue component (2200k). The most frequently occurring bats found here, Soprano and Common pipistrelle and Leislers bats are all capable of fliying above this height. Lights along Lowry's Lane will be positioned at a height of 3m and have a colour temp of 2200k thus allowing Pipistrelles and Leisler's to continue to use this area.

5.1.8 Ecological Clerk of Works

An appropriately qualified Environmental/Ecological Clerk of Works (ECoW) will be employed for the duration of the Construction Contract. The ECoW must be a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) or equivalent body.

The ecologist performing the ECoW role will attend the site on a weekly basis to check that all works are being completed to the appropriate standards. This will form a key element in the delivery of the environmental protection measures as listed above at project stage.

6 CONCLUSION

This Natura Impact Statement presents an analysis of the potential for the project to result in adverse impacts to six European Sites and their relevant qualifying features of interest as set out in Section 1 and Section 4 above. An evaluation of the potential impacts that could arise as a result of the project to these qualifying features of interest and their conservation objectives has been completed.

During the evaluation of potential impacts associated with the Project it was found that the Project will not have the potential to undermine the conservation objectives of 6 number European Sites and their relevant qualifying features of interest occurring within the zone of influence of the development.

A range of mitigation measures have been prescribed that, once implemented in full, will remove the risk of adverse effects posed by the proposed development to these qualifying features of interest.

Based upon the information provided in this NIS, it is the considered view of the authors of this NIS that it can be concluded by Galway County Council that the project will not, alone or in-combination with other plans or projects, result in adverse effects to the integrity and conservation status of European Sites in view of their Conservation Objectives and on the basis of best scientific evidence and there is no reasonable scientific doubt as to that conclusion.

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