

# NATURA IMPACT REPORT

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IN SUPPORT OF THE  
**APPROPRIATE ASSESSMENT**

OF THE  
**TUAM LOCAL AREA PLAN 2018-2024**

(AS AMENDED ON 31<sup>ST</sup> JANUARY 2019)

IN ACCORDANCE WITH THE REQUIREMENTS OF  
**ARTICLE 6(3) OF THE EU HABITATS DIRECTIVE**

**for: Galway County Council**

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# Section 1 Introduction

## 1.1 Background

CAAS has been appointed by Galway County Council to prepare this Natura Impact Report (NIR) in support of the Appropriate Assessment (AA) of the Tuam Local Area Plan 2018-2024 in accordance with the requirements of Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (as amended) (hereafter referred to as the "Habitats Directive").

The overall aim of the Habitats Directive is to maintain or restore the "favourable conservation status" of habitats and species of European Community Interest. These habitats and species are listed in the Habitats and Birds Directives (Council Directive 2009/147/EC on the conservation of wild birds) with Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated to afford protection to the most vulnerable of them. These two designations are collectively known as European Sites.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the European Sites at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations (in particular Part XAB of the Planning and Development (Amendment) Act 2010 and the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended) to ensure the ecological integrity of these sites. AA is an assessment of whether a plan or project, alone and in combination with other plans or projects, could have significant effects on a European Site in view of the Site's conservation objectives.

This report is part of the ongoing AA process that is being undertaken alongside the preparation of the Tuam Local Area Plan. It will be considered, alongside other documentation prepared as part of this process, when the planning authority finalises the AA at adoption of the Plan.

## 1.2 Legislative Context

AA is an assessment of the potential for adverse or negative effects of a plan or project, in combination with other plans or projects, on the conservation objectives of a European Site. These sites consist of SACs and SPAs and provide for the protection and long-term survival of Europe's most valuable and threatened species and habitats.

The Habitats Directive provides legal protection for habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of Community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. In Ireland, these are SACs and SPAs, designated under the Birds Directive, hereafter referred to as European Sites.

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European Sites. Article 6(3) establishes the requirement for AA:

*"Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public."*

*If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

*Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."*

These requirements are implemented in the Republic of Ireland by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended). These regulations consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in judgements of the Court of Justice of the European Union (CJEU).

If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project may nevertheless be carried out for "Imperative Reasons of Overriding Public Interest" (IROPI), including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

### 1.3 Guidance

This NIR has been prepared in accordance with the following guidance:

- *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government, 2010.*
- *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission Environment DG, 2002.*
- *Managing Natura 2000 sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC: European Commission, 2000.*
- *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC, 2001).*
- *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission, Office for Official Publications of the European Communities, Luxembourg (EC, 2007).*
- *Flora (Protection) Order, 1999 (as amended).*

The AA is based on best scientific knowledge and has utilised ecological and hydrological expertise. In addition, a detailed online review of published scientific literature and 'grey' literature was conducted. This included a detailed review of the National Parks and Wildlife Website including mapping and available reports for relevant sites and in particular sensitive qualifying interests/special conservation interests described and their conservation objectives. The EPA Envision Map-viewer ([www.epa.ie](http://www.epa.ie)) and available reports were also reviewed.

Definitions of conservation status, integrity and significance used in this assessment are defined in accordance with 'Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC' (EC, 2000).

- The conservation status of a natural habitat is defined as the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species;
- The conservation status of a species is defined as the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its population;
- The integrity of a European Site is defined as the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified; and
- Significant effect should be determined in relation to the specific features and environmental conditions of the protected site concerned by the plan or project, taking particular account of the site's conservation objectives.

## 1.4 Approach

### 1.4.1 Stages in AA

There are four main stages in the AA process; the requirements for each depending on likely impacts to European Sites (SACs and SPAs).

#### **Stage One: Screening**

The process which identifies the likely impacts upon a European Site of a project or plan, either alone or in combination with other projects or plans and considers whether these impacts are likely to be significant.

#### **Stage Two: Appropriate Assessment**

The consideration of the impact on the integrity of the European Site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts. If adequate mitigation is proposed to ensure no significant adverse impacts on European Sites, then the process may end at this stage. However, if the likelihood of significant impacts remains, then the process must proceed to Stage 3.

#### **Stage Three: Assessment of Alternative Solutions**

The process which examines alternative ways of achieving the objectives of the project or plan that avoids adverse impacts on the integrity of the European Site.

#### **Stage Four: Assessment where no alternative solutions exist and where adverse impacts remain**

An assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed.

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the plan should aim to avoid any impacts on European Sites by identifying possible impacts early in the plan-making process and writing the plan in order to avoid such impacts. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If the plan is still likely to result in impacts on European Sites, and no further practicable mitigation is possible, then it must be rejected. If no alternative solutions are identified and the plan is required for imperative reasons of overriding public interest (IROPI test) under Article 6(4) of the Habitats Directive, then compensation measures are required for any remaining adverse effect.

### **1.4.2 Source-Pathway-Receptor Model**

Ecological impact assessment of potential effects on European Sites is conducted following a standard source-pathway-receptor model, where, in order for an effect to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potential effect is not of any relevance or significance.

- Source(s) – e.g. pollutant run-off from proposed works;
- Pathway(s) – e.g. groundwater connecting to nearby qualifying wetland habitats and
- Receptor(s) – qualifying aquatic habitats and species of European Sites.

In the interest of this report, receptors are the ecological features which are known to be utilised by the qualifying interests or special conservation interests of a European Site. A source is any identifiable element of the LAP provision which is known to have interactions with ecological processes. The pathways are any connections or links between the source and the receptor. This report determines if direct, indirect and cumulative adverse effects (however minor) will arise from the LAP.

### **1.4.3 Zone of Influence**

Following the source-pathway-receptor process a Zone of Influence (ZOI) is determined based on the characteristics of the Plan (detailed in Section 3.2) and the foreseen distribution of likely effects through any pathways is identified. All European Sites within the ZOI are assessed with specific reference to the sensitive receptors of each site and pathways for effect that relate to the ecological integrity of the site.

## **1.5 Relationship between the Appropriate Assessment process and the Plan**

AA is fully integrated with the various stages of the Local Area Plan preparation process in order to help to ensure that the Plan does not affect European Sites. The screening and the assessment of Plan provisions, in the context of mitigation measures and potential effects on European Sites, has been an iterative process throughout each stage of the Plan-making process.

## Section 2 Description of and background to the Tuam Local Area Plan 2018-2024

### 2.1 Galway County Development Plan

The Galway County Development Plan 2015-2021 (as varied) sets out an overall strategy for the proper planning and sustainable development of the functional area of Galway County Council. The Plan presents Galway County Council's outlook for future development of its administrative area up to 2021. It sets out the longer-term vision for the development of the County, while protecting and enhancing its environment through employing the principles of sustainable development in the policies and objectives set out therein.

The LAP builds on the strategies, policies and objectives of the Galway County Development Plan, taking into account recent key development trends and national, regional and local policy developments. In particular, it also takes account of the increased emphasis on flooding, climate change, renewable energy and the need to support economic development. It also takes account of European Union (EU) requirements including the application of Strategic Environmental Assessment and AA to the Plan.

The County Development Plan was subject to SEA, AA and Strategic Flood Risk Assessment (SFRA). The Stage 2 AA for this Plan concluded that:

“Having incorporated mitigation measures, it is considered that the Plan will not have a significant effect on the integrity of the Natura 2000 Network<sup>1</sup>.”

Provisions of the County Development Plan that relate to the protection of ecological processes are detailed on Table 2.2.

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<sup>1</sup> Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:  
(a) no alternative solution available;  
(b) imperative reasons of overriding public interest for the plan to proceed; and  
(c) adequate compensatory measures in place.



**Table 2.1 Policies and Objectives contained within the Galway CDP 2015-2021 that relate to the protection of ecological processes**

<p><b>Strategic Aim 10 – Heritage:</b> Enhance and protect the built heritage and natural environment, including buildings, archaeology, landscape and biodiversity, within the County.</p>
<p><b>Objective DS 5 – Protection and Management of the Assets of the County</b> Protect and manage the assets that contribute to the unique visual and environmental character and sense of identity of County Galway, and which underpin tourism, heritage, biodiversity and quality of life.</p>
<p><b>Objective DS 6 – Natura 2000 Network and Habitats Directive Assessment</b> Protect European sites that form part of the Natura 2000 network (Including Special Protection Areas and Special Areas of Conservation) in accordance with the requirements in the EU Habitats Directive (92/43/EEC), EU Birds Directive (2009/147/EC), the Planning and Development (Amendment) Act 2010, the European Communities (Birds and Natural Habitats) Regulations 2011(SI No. 477 of 2011) (and any subsequent amendments or updated legislation) and having due regard to the guidance in the Appropriate Assessment Guidelines 2010 (and any updated or subsequent guidance). A plan or project (e.g. proposed development) within the Plan Area will only be authorised after the competent authority (Galway County Council) has ascertained, based on scientific evidence, Screening for Appropriate Assessment, and/or a Habitats Directive Assessment where necessary, that: The Plan or project will not give rise to significant adverse direct, indirect or secondary effects on the integrity of any European site (either individually or in combination with other plans or projects); or The Plan or project will have significant adverse effects on the integrity of any European site (that does not host a priority natural habitat type/and or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000; or The Plan or project will have a significant adverse effect on the integrity of any European site (that hosts a natural habitat type and/or a priority species) but there are no alternative solutions and the plan or project must nevertheless be carried out for imperative reasons for overriding public interest, restricted to reasons of human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. In this case, it will be a requirement to follow procedures set out in legislation and agree and undertake all compensatory measures necessary to ensure the protection of the overall coherence of Natura 2000.</p>
<p><b>Objective DS 8 – Climate Change</b> Galway County Council shall support the <i>National Climate Change Strategy</i> and follow on document <i>National Climate Change Adaptation Framework Building Resilience to Climate Change 2012</i>, on an ongoing basis through implementation of supporting objectives in this Plan, particularly those supporting the use of alternative and renewable energy sources, sustainable transport, air quality, biodiversity, green infrastructure, coastal zone management, flooding and soil erosion.</p>
<p><b>Objective DS 9 Projects/Associated Improvement Works/Infrastructure and Appropriate Assessment</b> Ensure that proposed projects and any associated improvement works or associated infrastructure relating to renewable energy projects; water supply and abstraction; wastewater and discharges; flood alleviation and prevention; roads, power lines and telecommunications; and amenity and recreation provision are subject to Appropriate Assessment where relevant.</p>
<p><b>Objective DS10- Impacts of Developments on Protected Sites</b> Have regard to any impacts of development on or near existing and proposed Natural Heritage Areas, Special Protection Areas and Special Areas of Conservation, Nature Reserves, Ramsar Sites, Wildfowl Sanctuaries, Salmonid Waters, Refuges for Flora and Fauna, Connemara National Park, shellfish waters, freshwater pearl mussel catchments and any other designated sites including future designations.</p>
<p><b>Objective DS 13 - SEA Monitoring of the Plan</b> Carry out SEA monitoring of the Plan to ensure that any potential significant environmental effects of implementing the plan are identified and can be addressed accordingly.</p>
<p><b>Objective CS 7 – Core Strategy and the Countryside/Rural Areas</b> Galway County Council shall recognise the important role of the rural areas within the County and shall protect and support these areas through the careful management of its key assets, including its physical and environmental resources, while supporting appropriate development in a balanced and sustainable manner and in accordance with the relevant policies and objectives set out throughout the Plan.</p>
<p><b>Objective UHO 8 – Urban Design</b> Promote the use of sustainable urban design principles and approaches that will help to create high quality built and natural environments appropriate to the context and landscape setting of the specific area, having regard to the guidance contained in the <i>Sustainable Residential Development in Urban Areas Guidelines 2009</i>, the accompanying <i>Urban Design Manual 2009</i> (or any updated version) and the <i>Design Manual for Urban Roads &amp; Streets (2013)</i> (including any superseding document).</p>
<p><b>Objective EDT 25 – Wild Atlantic Way</b> Support and facilitate the Wild Atlantic Way project in conjunction with the relevant stakeholders and Galway County Council will actively encourage the creation of spurs to link in with the Wild Atlantic Way as was intended, considering environmental sensitivities.</p>
<p><b>Objective TI 12 – Noise</b> Require all new proposed development, which is considered to be noise sensitive within 300m of existing, new or planned national roads, or roadways with traffic volumes greater than 8,200AADT, to include a noise assessment and mitigation measures if necessary with their planning application documentation. The cost of mitigation measures shall be borne by the developer. Mitigation measures in order to protect the noise environment of existing residential development will be facilitated or enforced as necessary.</p>
<p><b>Policy WS 5 - Water Quality</b> Promote public awareness of water quality issues and the measures required to protect all waters including all surface water and groundwater bodies.</p>

<p><b>Objective WS 1 – Protection of Ground Waters</b> Support the protection of groundwater resources and dependent wildlife/habitats in accordance with the Groundwater Directive 2006/118/EC, the European Communities Environmental Objectives (groundwater) Regulations, 2010 (S.I. No. 9 of 2010) or any updated legislation and the Groundwater Protection Scheme and source protection plans for water supplies.</p>
<p><b>Objective WW 1 - EU Policies and Directives</b> Ensure that all wastewater generated is collected, treated and discharged after treatment in a safe and sustainable manner, having regard to the standards and requirements set out in EU and national legislation and guidance and subject to compliance with the provisions and objectives of the EU Water Framework Directive, relevant River Basin Management Plans, Urban Waste Water Directive and the EU Habitats Directive.</p>
<p><b>Objective WW 6 – Adherence to Environmental Standards</b> Promote the provision of safe and secure wastewater infrastructure to ensure that the public is protected and that permitted development, is within the environmental carrying capacity and does not negatively impact on habitat quality or species diversity.</p>
<p><b>Objective WW 7 – Surface Water Drainage &amp; Sustainable Drainage Systems (SuDS)</b> Maintain and enhance, as appropriate, existing surface water drainage systems in the County, ensure that new developments are adequately serviced with surface water drainage infrastructure and promote the use of Sustainable Drainage Systems in all new developments.</p>
<p><b>Objective WW 8 – Substandard Wastewater Treatment Plants</b> Support and facilitate as appropriate the upgrading of substandard public wastewater treatment plants in order to comply with the provisions of the Urban Waste Water Treatment Regulations 2001 and 2004, the Waste Water Discharge (Authorisation) Regulations 2007 and implement the relevant recommendations set out in the EPA document <i>Focus on Urban Waste Water Discharges in Ireland</i> (and any subsequent update).</p>
<p><b>Objective WW9 – Integrated Constructed Wetlands</b> Galway County Council shall support the use of Integrated Constructed Wetlands (ICW) as a low cost and environmentally sustainable alternative having regard to the “Integrated Constructed Wetlands-Guidance Document for Farmyard Soiled Water and Domestic Wastewater Applications” as appropriate.</p>
<p><b>Objective CC 5 - An Ecosystems Approach and Land Use</b> Galway County Council shall implement an ecosystems approach (holistic approach) to land use and land use change and ensure that climate change adaptation measures are considered in planning decisions. The Council shall also a) Have regard to any recommendations and forthcoming recommendations as outlined in the proposed National Raised Bog SAC Management Plan and the National Biodiversity Plan; b) Integrate climate risk into the review of the Biodiversity Action Plan for County Galway 2008 - 2013; c) Seek to control the spread of non-native and alien invasive species on land and water using new regulatory powers.</p>
<p><b>Objective FL 2 – Surface Water Drainage and Sustainable Drainage Systems (SuDs)</b> Maintain and enhance, as appropriate, the existing surface water drainage system in the County. Ensure that new developments are adequately serviced with surface water drainage infrastructure and promote the use of Sustainable Drainage Systems in all new developments. Surface water runoff from development sites will be limited to pre-development levels and planning applications for new developments will be required to provide details of surface water drainage and Sustainable Drainage Systems proposals.</p>
<p><b>Objective FL 3 - Protection of Waterbodies and Watercourses</b> Protect waterbodies and watercourses within the County from inappropriate development, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains. This will include protection buffers in riverine, wetland and coastal areas as appropriate.</p>
<p><b>Policy NHB 1 – Natural Heritage and Biodiversity</b> It is the policy of Galway County Council to support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas proposed Natural Heritage Areas Ramsar Sites, Nature Reserves, Wild Fowl Sanctuaries and Connemara National Park (and other designated sites including any future designations) and the promotion of the development of a green/ecological network within the Plan Area, in order to support ecological functioning and connectivity, create opportunities in suitable locations for active and passive recreation and to structure and provide visual relief from the built environment.</p>
<p><b>Policy NHB 2 – Non-Designated Sites</b> Recognise that nature conservation is not just confined to designated sites and acknowledge the need to protect non-designated habitats and landscapes and to conserve the biological diversity in the county.</p>
<p><b>Policy NHB 3 – Green Infrastructure</b> Protect existing green infrastructure and provide additional green infrastructure where possible such as green roof technology and energy efficiency pumps.</p>
<p><b>Policy NHB 4– Water Resources</b> Protect, conserve and enhance the water resources of the county, including, rivers, streams, lakes, wetlands, springs, turloughs, surface water and groundwater quality, as well as surface waters, aquatic and wetland habitats and freshwater and water dependent species and seek to protect and conserve the quality, character and features of inland waterways by controlling developments close to navigable and non-navigable waterways.</p>
<p><b>Policy NHB 5 – Geological and Geo-Morphological Systems</b> Protect, conserve and enhance important geological and geo-morphological systems in the county and seek to promote access to such sites where possible.</p>

<p><b>Policy NHB 6 – National Biodiversity Plan, Galway County Heritage Plan and Galway County Biodiversity Plan</b> It is the policy of the Council to support the implementation of the <i>National Biodiversity Plan</i> and <i>Galway County Biodiversity Plan</i> and <i>Galway County Heritage Plan</i> in partnership with relevant stakeholder's subject to available resources.</p>
<p><b>Policy NHB 7 - Invasive Species</b> It is a policy of the Council to support measures for the prevention and eradication of invasive species. This will include the dissemination of information to raise public awareness, the adoption of codes of practices/standard biosecurity measures in normal Local Authority activities consultation with relevant stakeholders, the promotion of the use of native species in amenity planting and landscaping and the recording of invasive/native species as the need arises and resources permit.</p>
<p><b>Policy NHB 8 – National Parks and Wildlife Service (NPWS) Management Plans</b> It shall be the policy of the Council to ensure that development considers relevant Management Plans prepared by NPWS for SACs and SPAs.</p>
<p><b>Objective NHB 1 – Protected Habitats and Species</b> Support the protection of habitats and species listed in the Annexes to and/or covered by the EU Habitats Directive (92/43/EEC) (as amended) and Birds Directive (2009/147/EC), and regularly occurring-migratory birds and their habitats, and species protected under the Wildlife Acts 1976-2000 and the Flora Protection Order.</p>
<p><b>Objective NHB 2– Biodiversity and Ecological Networks</b> Support the protection and enhancement of biodiversity and ecological connectivity within the Plan Area, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, stonewalls, geological and geo-morphological systems, other landscape features and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.</p>
<p><b>Objective NHB 3 – Water Resources</b> Protect the water resources in the Plan Area, including rivers, streams, lakes, wetlands, springs, turloughs, surface water and groundwater quality, as well as surface waters, aquatic and wetland habitats and freshwater and water dependent species in accordance with the requirements and guidance in the EU <i>Water Framework Directive 2000 (2000/60/EC)</i>, the <i>European Union (Water Policy) Regulations 2003</i> (as amended), the <i>Western River Basin District Management Plan 2009- 2015</i>, <i>Shannon International River Basin Management Plan 2009-2015</i> and other relevant EU Directives, including associated national legislation and policy guidance (including any superseding versions of same) and also have regard to the Freshwater Pearl Mussel Sub-Basin Management Plans.</p>
<p><b>Objective NHB 4 – Geological and Geo-Morphological Systems</b> Protect and conserve geological and geo-morphological systems, sites and features from inappropriate development that would detract from their heritage value and interpretation and ensure that any Plan or project affecting karst formations, eskers or other important geological and geo-morphological systems are adequately assessed with regard to their potential geophysical, hydrological or ecological impacts on the environment.</p>
<p><b>Objective NHB 5 – Control of Invasive and Alien Invasive Species</b> Where the potential for spread of invasive species are identified as part of a development proposal the developer will be required to submit an invasive species management plan. A landscaping plan will be required for developments near water bodies and ensure that such plans do not include alien invasive species.</p>
<p><b>Objective NHB 6 – Protection of Bats and Bats Habitats</b> Seek to protect bats and their roosts, their feeding areas, flight paths and commuting routes. Ensure that development proposals in areas which are potentially important for bats, including areas of woodland, linear features such as hedgerows, stone walls, watercourses and associated riparian vegetation which may provide migratory/foraging uses shall be subject to suitable assessment for potential impacts on bats. This will include an assessment of the cumulative loss of habitat or the impact on bat populations and activity in the area and may include a specific bat survey. Any assessment shall be carried out by a suitably qualified professional and where development is likely to result in significant adverse effects on bat populations or activity in the area, development will be prohibited or require mitigation and/or compensatory measures, as appropriate.</p>
<p><b>Objective NHB 7 – Eskers</b> Assess applications for quarrying and other proposed developments that are in close proximity to eskers that have the potential to impact on their landscape, scientific or amenity value.</p>
<p><b>Objective NHB 8 – Coastal Zone</b> It is an objective to protect the coastal zone through the following measures: Ensure that conservation works undertaken in coastal areas are in accordance with best practice and measures to protect the coast, the coastal edge and coastal habitats are supported; Seek to prevent the unauthorised removal of sand and related beach material; Protect, enhance and conserve beaches in the County from inappropriate development and seek to maintain the current status of the designated Blue Flag beaches and Green Coasts and to increase the number of beaches and coasts holding this status in the future; Facilitate an Integrated Coastal Zone Management approach to ensure the conservation, management and protection of man-made and natural resources of the coastal zone; Support the preparation of an Integrated Galway Bay Framework Management Plan by all relevant stakeholders to provide for the sustainable and integrated development of the Galway Bay Area in a coordinated manner.</p>
<p><b>Objective NHB 9 – Inland Waterways</b> Protect the amenity and recreational value of navigable and non-navigable waterways.</p>

<p><b>Objective NHB 10 – Protection of the Coastal Zone</b>                  Protect the amenity, character, visual, recreational, economic potential and environmental values of the coast. Ensure that natural coastal defences including sand dunes, beaches and coastal wetlands are not compromised by inappropriate development. Conserve the character, quality and distinctiveness of seascapes.</p>
<p><b>Objective NHB 11 – Trees, Parkland/Woodland, Stone Walls and Hedgerows</b>                  Protect important trees, tree clusters and hedgerows within the county and ensure that development proposals take cognisance of significant trees/tree stands. Ensure that all planting schemes use suitable native variety of trees, of Irish provenance.                  Seek to retain natural boundaries, including stone walls, hedgerows and tree boundaries, wherever possible and replace with a boundary type similar to the existing boundary where removal is unavoidable. Discourage the felling of mature trees to facilitate development and encourage tree surgery rather than felling where possible. All works to be carried out in accordance with the provisions of the Forestry Act, 1946.</p>
<p><b>Objective NHB12 - Soil/Ground Water Protection</b>                  Developments shall ensure that adequate soil protection measures are undertaken, where appropriate, including investigations into the nature and extent of any soil/groundwater contamination.</p>
<p><b>Objective NHB 13 – NPWS &amp; Integrated Management Plans</b>                  Galway County Council shall seek to engage with and support the National Parks &amp; Wildlife Service to ensure Integrated Management Plans are prepared for all Natura 2000 sites and ensure that that such plans are fully integrated with all land use and water management plans in the county, with the intention that such plans are practical, achievable and sustainable and have regard to all relevant ecological, cultural, social and economic considerations and with special regard to local communities.</p>
<p><b>Objective NHB 14 – Protection of Riparian Zones</b>                  Protect the riparian zones of watercourse systems throughout the county, recognizing the benefits they provide in relation to flood risk management and their protection of the ecological integrity of watercourse systems and ensure they are considered in the land use zoning in Local Area Plans.</p>
<p><b>Policy RA 2 – Protection of sensitive areas</b>                  Protect the amenity of scenic and environmentally sensitive areas and promote the knowledge and appreciation of the natural amenities of the County.</p>

## 2.2 Tuam Local Area Plan 2018-2024

The Strategic Vision of the Tuam Local Area Plan is:

*“To promote Tuam as a thriving vibrant market town, providing a focus for future residential, economic & social development in a sustainable manner, encouraging new development and capitalising on the town’s unique historic identity and character, as well as its accessibility, thereby realising Tuam’s potential as well as supporting the surrounding rural hinterland.”*

This is intended to guide the future growth and development of Tuam in a sustainable manner, achieving the strategic objectives set out for the town in the Galway County Development Plan in a way that reflects the existing character and protects the amenity of the area, the surrounding landscape, heritage, environment and improves the quality of life of residents and the local community.

The Strategic Vision is informed by the following guiding principles:

- Realising the town’s potential as the ‘Hub Town’ as set out in the Galway County Development Plan and attracting the population target established in the Core Strategy up to 2021 and beyond.
- The growth of Tuam for the life of the plan should focus on establishing new sustainable communities adopting a sequential approach to the zoning of residential lands extending outwards from the centre of the Town in line with the Guidelines for Planning Authorities - Sustainable Residential Development in Urban Areas (Cities, Towns & Villages) (2009).
- Ensuring that there are a range of facilities, amenities and supporting services including educational, recreational, religious, social, community and civic requirements for children, youths, adults and the elderly, to serve a growing community, which promote an inclusive and cohesive local community.
- Maintaining a strong and vibrant town centre which attracts new businesses and provides appropriate retailing and service functions to serve the needs of the Town and its surrounding hinterland, in addition to offering a pleasant and attractive environment for shopping, business, recreation and living.
- Capitalising on the compact urban form of Tuam town centre by encouraging greater connectivity for new development which promotes and encourages walking and cycling ensuring that principles of sustainable transportation along with practical design measures become central to the development of new neighbourhoods.
- Promoting sustainable development which minimises negative impacts on the environment and helps to mitigate against the likely effects of Climate Change on present and future generations. Including the promotion of low-carbon technologies, building and water efficiency as well as the use of renewable technologies and sustainable forms of water and wastewater drainage.
- Integration of high-quality design into all future development within the Tuam LAP, promoting innovative, green technologies throughout the plan area which make a positive contribution to the environment.
- Ensuring all new development within the Architectural Conservation Area, reinforces local distinctiveness and creates a sense of place while protecting, conserving and enhancing the historic character of Tuam.
- Encouraging development which is sensitively integrated into the existing landscape which demonstrates an understanding of the intrinsic qualities of the landscape setting and, where possible, promote opportunities to protect and enhance landscape characteristics, features and biodiversity.

27 Material Alterations were proposed after public display of the Plan. These Material Alterations were considered by the AA process. Proposed Material Alterations No. 1 and 11 (MA1 and MA11) included the zoning of lands within the Lough Corrib SAC boundary with uses that would have the potential to adversely affect the SAC. MA1 and MA11 were subsequently modified at adoption to exclude areas within the SAC thereby removing the potential for adverse effects. Following adoption, a January 2019 Ministerial Direction resulted in removing zoning from the entirety of MA11 lands.

## 2.3 Relationship with other Relevant Plans and Programmes

The LAP sits within a hierarchy of strategic actions such as plans and programmes. The LAP must comply with Galway CDP and relevant higher-level strategic actions and may, in turn, guide lower level strategic actions.

### 2.3.1 Ireland 2040 – Our Plan, the National Planning Framework

The National Planning Framework is the Government's high-level strategic plan for shaping the future growth and development of to the year 2040. It is a framework to guide public and private investment, to create and promote opportunities for people, and to protect and enhance the environment - from villages to cities, and everything around and in between.

The National Planning Framework and accompanying National Development Plan share ten National Strategic Outcomes as follows:

1. Compact Growth
2. Enhanced Regional Accessibility
3. Strengthened Rural Economies and Communities
4. Sustainable Mobility
5. A Strong Economy, supported by Enterprise, Innovation and Skills
6. High-Quality International Connectivity
7. Enhanced Amenity and Heritage
8. Transition to a Low-Carbon and Climate-Resilient Society
9. Sustainable Management of Water and other Environmental Resources
10. Access to Quality Childcare, Education and Health Services

### 2.3.2 Regional Spatial Economic Strategy (Replacing Regional Planning Guidelines; to commence in 2018 and will be adopted over the lifetime of the Plan)

Regional Planning Guidelines (RPGs) provide long-term strategic planning frameworks and will be replaced by Regional Spatial and Economic Strategies (RSESs).

Each one of the three Regional Assemblies will prepare their own RSES, with the Northern and Western Regional Assembly, of which Galway County Council is part, responsible for the preparation of a RSES for the Northern and Western Region. The Regional Spatial and Economic Strategies will provide a long-term regional level strategic planning and economic framework in support of the implementation of the National Planning Framework.

### 2.3.3 Galway County Development Plan 2015-2021

The Galway CDP vision is to "enhance the quality of life of the people of Galway and maintain the County as a uniquely attractive place in which to live, work, invest and visit, harnessing the potential of the county's competitive advantages in a sustainable and environmentally sensitive manner."

### 2.3.4 Environmental Protection Objectives

The LAP is subject to a number of high-level environmental protection policies and objectives with which they must comply. Examples of Environmental Protection Objectives include the aims of the EU Habitats Directive which is to contribute towards ensuring biodiversity through the conservation of natural habitats and of wild fauna and flora in the European territory of Member States and the purpose of the Water Framework Directive which is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which, among other things, prevents deterioration in the status of all water bodies and protects, enhances and restores all waters with the aim of achieving good status.

## Section 3 Screening for Appropriate Assessment

### 3.1 Introduction to Screening

#### 3.1.1 Background to Screening

This stage of the process identifies any likely significant effects to European Sites from a project or plan, either alone or in combination with other projects or plans. The screening phase was progressed in the following stages. A series of questions are asked during the Screening Stage of the AA process in order to determine:

- Whether a plan or project can be excluded from AA requirements because it is directly connected with or necessary to the management of a European Site.
- Whether the project will have a potentially significant effect on a European Site, either alone or in combination with other projects or plans, in view of the site's conservation objectives or if residual uncertainty exists regarding potential impacts.

An important element of the AA process is the identification of the "conservation objectives", "Qualifying Interests" (QIs) and/ or "Special Conservation Interests" (SCIs) of European Sites requiring assessment. QIs are the habitat features and species listed in Annexes I and II of the Habitats Directive for which each European Site has been designated and afforded protection. SCIs are wetland habitats and bird species listed within Annexes I and II of the Birds Directive. It is also vital that the threats to the ecological / environmental conditions that are required to support QIs and SCIs are considered as part of the assessment.

Site-Specific Conservation Objectives (SSCOs) have been designed to define favourable conservation status for a particular habitat or species at that site. According to the European Commission interpretation document 'Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC', paragraph 4.6(3) states:

"The integrity of a site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives."

Favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, are stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- The conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The screening stage of the AA takes account of the elements detailed above with regard to the details and characteristics of the project or plan to determine if potential for effects to the integrity of the European Site are likely. The characteristics of the Draft Plan were constructed through an iterative process, as a result the European Sites which are screened below may differ from those of high-level plans, due to refinements in the methods/project details available.

#### 3.1.2 Desktop Studies

The ecological desktop study completed for this AA of the LAP comprised the following elements:

- The original Tuam reports (including the initial NIR);
- Identification of European Sites within 15 km of the Plan boundary with identification of potential pathways links for specific sites (if relevant) greater than 15 km from the Plan boundary;

- Review of the NPWS site synopsis and conservation objectives for European Sites with identification of potential pathways from the Plan area; and
- A series of ecological desk studies were undertaken between January and October 2018. This included but is not limited to the collation of information on protected species including Bats, Otters, Bird species (including Annex I species), Annex II habitat types, protected and Red Data Book Flora species, invertebrates and amphibians. The results of these studies are included as part of the Appropriate Assessment where they were deemed relevant to the European Sites and their QIs/SCIs.

### 3.2 Identification of Relevant European Sites

This section of the screening process describes the European Sites which exist within the Zone of Influence (ZOI) of the site. The Department of the Environment (2009) Guidance on AA recommends a 15 km buffer zone to be considered. A review of all sites within the ZOI has allowed a determination to be made that in the absence of significant hydrological links the characteristics of the LAP will not impose effects beyond the 15 km ZOI.

European Sites that occur within 15 km of the LAP is listed in Table 3.1 and illustrated in Figure 3.1 below. Details on the specific qualifying features and special conservation interests of each European Site are also identified in Table 3.1. The Lough Corrib SAC is located within the plan boundary, therefore mitigation measures related to water quality will be required. Hydrological links to European Sites beyond 15 km will be fed through the Lough Corrib river catchment. Thus, no further hydrologically connected sites need to be considered as the effects will be mitigated at source (see Section 5).

In order to determine the potential for effects from the LAP, information on the qualifying features, known vulnerabilities and threats to site integrity pertaining to any potentially affected European Sites was reviewed. Background information on threats to individual sites and vulnerability of habitats and species that was used during this assessment included the following:

- *Ireland's Article 17 Report to the European Commission "Status of EU Protected Habitats and Species in Ireland" (NPWS, 2013);*
- *Site Synopses; and*
- *NATURA 2000 Standard Data Forms.*

The assessment takes consideration of the SSCOs of each of the sites within the ZOI. Since the conservation objectives for the European Sites focus on maintaining the favourable conservation condition of the QIs/SCIs of each site, the screening process concentrated on assessing the potential effects of the LAP against the QIs/SCIs of each site. The conservation objectives for each site were consulted throughout the assessment process.

The site-specific threats and vulnerabilities of each of the sites are detailed in Appendix I.



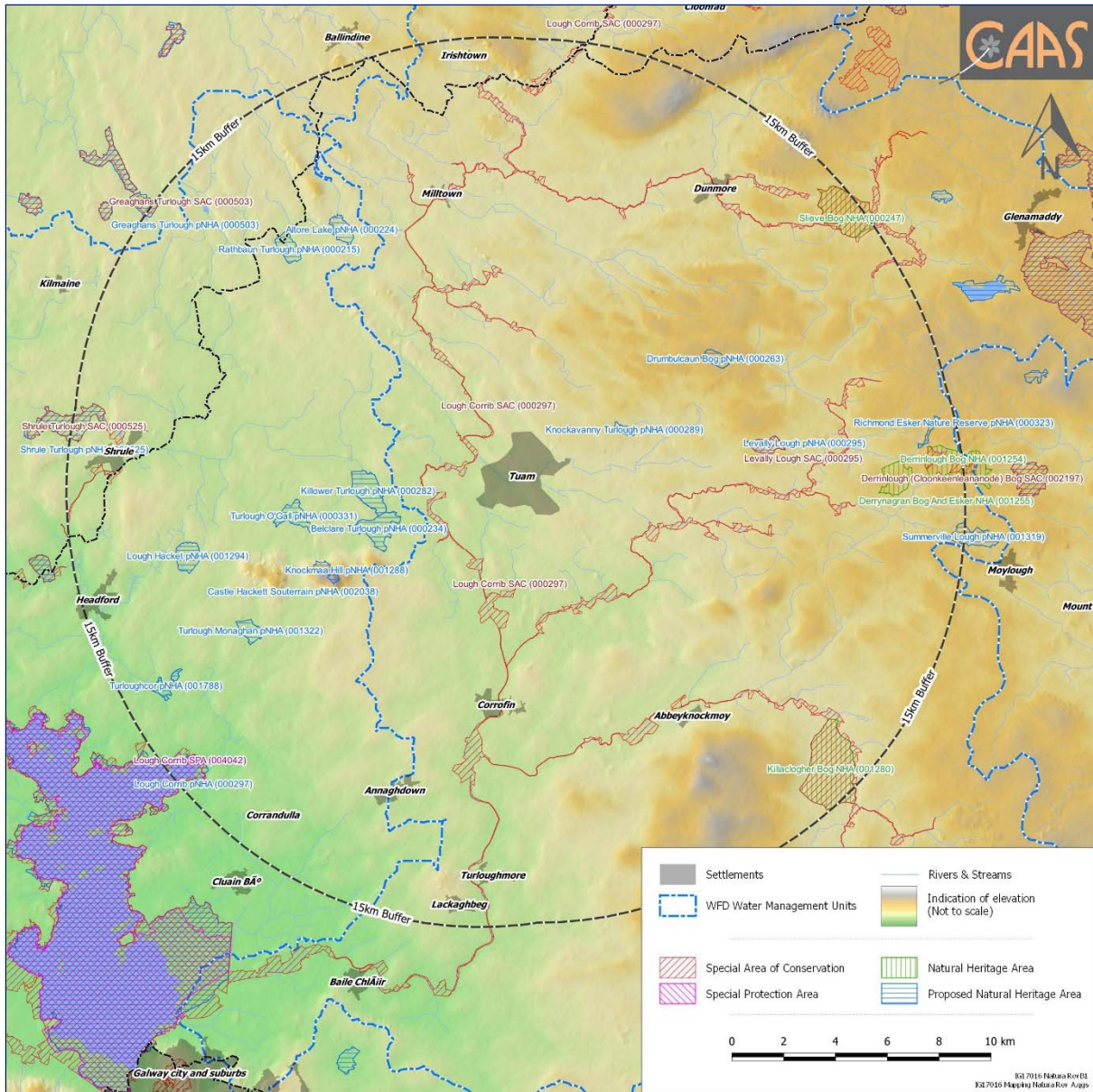


Figure 3.1 European Sites within 15 km of the LAP boundary

**Table 3.1 European Sites within 15 km of the LAP boundary (listed according to distance)**

Site Code	Site Name	Distance	Qualifying Features (Qualifying Interest and Special Conservation Interests)
000297	Lough Corrib SAC <sup>2</sup>	0	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130] Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260] Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150] 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] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Bog woodland [91D0] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Austroptamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Salmo salar (Salmon) [1106] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303] Lutra lutra (Otter) [1355] Drepanocladus vernicosus (Slender Green Feather-moss) [1393] Najas flexilis (Slender Naiad) [1833]
000295	Levally Lough SAC <sup>3</sup>	7.05	Turloughs [3180]
000525	Shrulle Turlough SAC <sup>4</sup>	12.88	Turloughs [3180]
002197	Derrinlough (Cloonkeenleananode) Bog SAC <sup>5</sup>	13.53	Degraded Raised Bog [7120]
004042	Lough Corrib SPA <sup>6</sup>	13.71	Gadwall (Anas strepera) [A051] Shoveler (Anas clypeata) [A056] Pochard (Aythya ferina) [A059] Tufted Duck (Aythya fuligula) [A061] Common Scoter (Melanitta nigra) [A065] Hen Harrier (Circus cyaneus) [A082] Coot (Fulica atra) [A125] Golden Plover (Pluvialis apricaria) [A140] Black-headed Gull (Chroicocephalus ridibundus) [A179] Common Gull (Larus canus) [A182] Common Tern (Sterna hirundo) [A193] Arctic Tern (Sterna paradisaea) [A194] Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] Wetland and Waterbirds [A999]
000503	Greaghans Turlough SAC <sup>7</sup>	14.78	Turloughs [3180]

<sup>2</sup> NPWS (2017) Conservation Objectives: Lough Corrib SAC 000297. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

<sup>3</sup> NPWS (2018) Conservation objectives for Levally Lough SAC [000295]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

<sup>4</sup> NPWS (2018) Conservation objectives for Levally Lough SAC [000295]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

<sup>5</sup> NPWS (2018) Conservation objectives for Derrinlough (Cloonkeenleananode) Bog SAC [002197]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

<sup>6</sup> NPWS (2018) Conservation objectives for Lough Corrib SPA [004042]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

<sup>7</sup> NPWS (2018) Conservation objectives for Greaghans Turlough SAC [000503]. Generic Version 6.0. Department of Culture, Heritage and the Gaeltacht.

### 3.3 Assessment Criteria

#### 3.3.1 Is the Plan Necessary to the Management of European Sites?

Under the Habitats Directive, Plans that are directly connected with or necessary to the management of a European Site do not require AA. For this exception to apply, management is required to be interpreted narrowly as nature conservation management in the sense of Article 6(1) of the Habitats Directive. This refers to specific measures to address the ecological requirements of annexed habitats and species (and their habitats) present on a site(s). The relationship should be shown to be direct and not a by-product of the plan, even if this might result in positive or beneficial effects for a site(s).

The primary purpose of the LAP is not the nature conservation management of the sites, but to provide a framework for the planned, co-ordinated and sustainable development in the Tuam area. Therefore, the LAP is not considered by the Habitats Directive to be directly connected with or necessary to the management of European designated sites.

#### 3.3.2 Elements of the LAP with Potential to Give Rise to Effects

The LAP provides for the sustainable development of the Tuam area. The Development Policies, Objectives and Guidelines relate to the following broad topics:

- Land Use Management
- Residential Development
- Social and Community Development
- Economic Development
- Transportation Infrastructure
- Utilities Infrastructure, Climate Change and Flood Risk Management
- Urban Design and Landscape
- Built and Cultural Heritage
- Natural Heritage & Biodiversity

The Lough Corrib SAC lies directly adjacent to Tuam. The policies and objectives of the Galway CDP which the LAP must comply ensure that no direct land take from designated features of the SAC will result due to the implementation of the Plan. The policies and objectives of the plan will aim to support the protection of the River Nanny, River Clare and the Suileen River (Objective NH 5).

Development within the LAP in relation to the above topics have potential to introduce effects such as alteration to hydrological characterises, air quality and/or indirect disturbance effects due to noise/vibrations. These effects are examined below in relation to the sensitive receptors of each of the European Sites identified with regard to their conservation objectives and the potential pathways for effects. Where there are sources with pathways for effects to sensitive receptors mitigation measures are required to ensure there are no significant effects to the ecological integrity of any European Sites.

#### 3.3.3 Identification of Potential Effects and Screening of Sites

This section documents the final stage of the screening process. It has used the information collected on the sensitivity of each European Site and describes any potential effects to the integrity of European Sites resulting from the LAP. This assumes the absence of any controls, conditions, or mitigation measures. In determining the potential for effects, a number of factors have been taken into account. Firstly, the sensitivity and reported threats to the European Site. Secondly, the individual elements of the LAP and the potential effect they may cause to the site were considered. The elements of the LAP with potential to cause effect to the integrity of European Sites are presented in Table 3.2 below.

Sites are screened out based on one or a combination of the following criteria:

- Where it can be shown that there are significant pathways such as hydrological links between activities of the LAP, and the site to be screened;
- Where the site is located at such a distance from LAP that effects are not foreseen; and
- Where it is that known threats or vulnerabilities at a site cannot be linked to potential impacts that may arise from the LAP.

**Table 3.2 Screening of European Sites within 15 km of the LAP boundary**

Site Code	European Site	Distance (km)	Potential effects	Pathway for Significant Effects	Potential for In-Combination Effects
000297	Lough Corrib SAC	0	The LAP is hydrologically linked to the SAC. Therefore, all development within the LAP has potential to affect the ecological integrity of this site in the absence of mitigation measures. Stage 2 is required. Further investigation into the SSCOs, site threats and vulnerabilities with specific reference to the characteristics of the can be found in Stage 2 of the AA at Section 4.	Yes	Yes
000295	Levally Lough SAC	7.05	<p>Water quality and drainage interactions are the main vectors for potential effects to this site as identified by the NPWS in the Site Synopsis and SSCOs published for the site. Lough Levally lies within the Clare[Galway]_SC_030 sub-catchment. The lake is not downstream of the Tuam LAP. Therefore, there is no pathway for surface water interactions between the LAP and the SAC.</p> <p>The NPWS identify that the site is also sensitive to localised management practices such as agricultural grazing. Similarly, the known threats/vulnerabilities to the qualifying features of the site identified by the NPWS<sup>8</sup> detail land use to be the leading concern for all features. These are localised effects and there are no provisions within the LAP that will introduce any sources for effects such these to the site.</p> <p>Groundwater interactions for this site are unknown therefore a precautionary approach is followed and this site will be considered at Stage 2 AA.</p>	Yes	Yes
000525	Shrule Turlough SAC	12.88	<p>No site-specific threats were identified by the NPWS. However, turloughs are known to be sensitive to hydrodynamic interactions and alteration of rare and protected vegetation on site<sup>8</sup>.</p> <p>The Shrule Turlough is located within the Black (Shrule)_SC_010 sub-catchment. This sub-catchment is isolated from the Tuam LAP that is located within the Clare [Galway]_SC_030 sub-catchment. Both have sub-catchments have separate pathways into the Upper Lough Corrib. Therefore, there is no surface water pathways for hydrological interactions.</p> <p>Turloughs are ground water fed systems, the Shrule Turlough is in the IE_WE_G_0102 groundwater catchment system, and the Tuam LAP is in the IE_WE_G_0020 system according to the EPA Database. The interactions between these groundwater systems are not known therefore a precautionary approach is followed and this site will be considered at Stage 2 AA.</p>	Yes	Yes

<sup>8</sup> NPWS (2013). The Status of Protected EU Habitats and Species in Ireland. Overview Volume 1. Unpublished Report, National Parks and Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Site Code	European Site	Distance (km)	Potential effects	Pathway for Significant Effects	Potential for In-Combination Effects
002197	Derrinlough (Cloonkeenleananode) Bog SAC	13.53	<p>The NPWS have recently published SSCOs for the site which detail the generic objective: <i>'To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected'</i>. The known threats to the SAC include encroachment by Downy Birch and conifers. This poses an ongoing threat to the drier high bog areas which have been recently cleared of conifers and will require some ongoing management to avoid impacts to sensitive areas. Downy birch propagates via seed dispersal and through root or stem cuttings. The Tuam LAP does not provide for any activities or works outside of the LAP boundary which is 13.53 km from the site. This distance is sufficient to determine that the spread of downy birch from Tuam to the site is highly unlikely and therefore there is no effect identified in this regard. It is noted that there are no targets or attributes within the SSCOs.</p> <p>Degraded raised bogs are vulnerable to alterations in land use management condition, hydrological characteristics and other direct habitat interactions. The site is hydrologically isolated from the Tuam LAP as it is upstream within the Clare [Galway]_SC_040, feeding into the Levally Stream that meets the Clare(Galway) river to the south of Tuam. The ongoing restoration works are site specific and relate to localised management of habitats and hydrological condition. There is no provision of the Plan that will interact with the on-site management of this SAC and there is no hydrological pathway between them. Therefore, no effect on the ecological integrity of the SAC is identified, taking into account the ARC and the Qualifying interests.</p>	No	No
004042	Lough Corrib SPA	13.71	<p>The SSCO for this site states <i>'To maintain or restore the favourable conservation condition of the wetland habitat at Lough Corrib SPA as a resource for the regularly-occurring migratory waterbirds that utilize it'</i>. This assessment focuses on determining if the provisions of the plan will adversely affect the ecological integrity of the SPA in relation to the conservation objectives. It is noted that there are no targets or attributes within the SSCOs.</p> <p>There are no site-specific threats identified by the NPWS, therefore the vulnerabilities and sensitivities of the SCI species were used to inform the assessment.</p> <p>Bird species are particularly vulnerable to direct disturbance due to noise and/or vibration. These effects are localised and disturbance effects are foreseen to be low at distances beyond 2km (Scottish Natural Heritage, 2007).</p> <p>Hydrological links exist between Tuam and the SPA; however, the NPWS have not identified water quality to be of specific concern for the site. Given the distances involved and the dilution effects of the River Nanny and River Clare (Galway) there are no significant effects foreseen. However, following the precautionary principle the site will be considered in stage 2 to ensure the ecological integrity of the SPA is maintained.</p>	Yes	Yes
000503	Greaghans Turlough SAC	14.78	<p>No site-specific threats were identified by the NPWS. However, Turloughs are known to be sensitive to hydrodynamic interactions and alteration of rare and protected vegetation on site.</p> <p>The Greaghans Turlough is located within the Black (Shrule)_SC_010 sub-catchment. The Greaghans Turlough is located within the Black (Shrule)_SC_010 sub-catchment. This sub-catchment is isolated from the Tuam LAP that is located within the Clare [Galway]_SC_030 sub-catchment. Both have sub-catchments have separate pathways into the Upper Lough Corrib. Therefore, there is no surface water pathway for hydrological interactions.</p> <p>Turloughs are ground water fed systems, the Greaghans Turlough is in the IE_WE_G_0019 groundwater catchment system, and the Tuam LAP is in the IE_WE_G_0020 system according to the EPA Database. The interactions between these groundwater systems are not known therefore a precautionary approach is followed and this site will be considered at Stage 2 AA.</p>	Yes	Yes

### 3.4 Other Plans and Programmes

Article 6(3) of the Habitats Directive requires an assessment of a plan or project to consider other plans or programmes that might, in combination with the plan or project, have the potential to adversely impact upon European Sites. Table 3.3 outlines plans or projects that may interact with the LAP to cause in-combination effects to European Sites. The plans or projects are listed according to a spatial hierarchy of National, Regional/Local Projects and Plans, as follows:

- Ireland 2040 - Our Plan, including the National Planning Framework and the National Development Plan
- Grid 25
- Energy Policy framework 2007-2020, Governments White Paper
- Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan 2014-2016
- Regional Planning Guidelines for the West Region 2010 – 2022, to be replaced by Regional Spatial and Economic Strategy
- Galway County Development Plan 2015-2021 (as varied), including Wind Strategy
- Galway City Area Transport Strategy 2016
- Smarter Travel – A Sustainable Transport Future – A New Transport Policy for Ireland 2009 – 2020 (2009)
- Ireland's First National Cycle Policy Framework (2009)
- Mayo County Development Plan 2014-2020
- Roscommon County Development Plan 2016-2022
- Galway City Development Plan 2017-2023 (as varied)
- Headford Local Area Plan 2015-2021
- Ballinasloe Local Area Plan 2015-2021
- Oranmore Local Area Plan 2012-2022
- Ballygaddy Road Strategic Housing Development

Given the uncertainties that exist with regard to the scale and location of developments facilitated by the LAP, it is recognised that the identification of in-combination effects is limited and that the assessment of in-combination effects will need to be undertaken in a more comprehensive manner at the project-level.

**Table 3.3 Plans or projects within the ZOI of the LAP that may have in-combination effects**

Plan or project	Status	Overview	Possible significant effects from plan or project	Is there a risk of in-combination effects	Possible significant in-combination effects
<b>National</b>					
Ireland 2040 - Our Plan, the National Planning Framework (and associated National Development Plan)	Published	The National Planning Framework is the Government's high-level strategic plan for shaping the future growth and development of to the year 2040. It is a framework to guide public and private investment, to create and promote opportunities for people, and to protect and enhance the environment - from villages to cities, and everything around and in between.	This Framework was subject to SEA and AA which incorporated robust mitigation measures into the plan itself to minimise effects.	Potential in-combination effect may arise where there is a requirement to provide for new infrastructure or where new development occurs. Provision of infrastructure/development may result in: Habitat loss Alteration of hydrology Deterioration in water quality Disturbance during construction / operation	No, the mitigation measures contained within this document, the LAP (including measures proposed as part of this AA) and the County Development Plan prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these documents will not be significant.
Grid 25	Published	Grid25 is a high-level strategy outlining how EirGrid intends to undertake the development of the electricity transmission grid in the short, medium and longer terms, to support a long-term sustainable and reliable electricity supply. The Grid25 strategy thereby seeks to implement the provisions of the 2007 Government White Paper on Energy - "Delivering a Sustainable Energy Future for Ireland" in terms of development of electricity transmission infrastructure. The Grid25 Implementation Programme (IP) is a practical strategic overview of how the early stages of Grid25 are intended to be implemented.	This plan was subject to SEA and AA which incorporated robust mitigation measures into the plan itself to minimise effects.	Potential in-combination effects may arise where there is a requirement to provide for new electrical infrastructure or where associated development occurs. Provision of infrastructure/development may result in: Habitat loss Alteration of hydrology Deterioration in water quality Disturbance during construction / operation.	No, the mitigation measures contained within this document, the LAP (including measures proposed as part of this AA) and the County Development Plan prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant
Energy Policy framework 2007-2020, Governments White Paper	Published	This policy states that the Government is committed to delivering a significant growth in renewable energy as a contribution to fuel diversity in power generation with a 2020 target of 33% electricity consumption	This plan was subject to SEA and AA which incorporated robust mitigation measures into the plan itself to minimise effects.	Potential in-combination effects may arise where there is a requirement to provide for new wind energy infrastructure or where new associated development occurs. Provision of infrastructure/development may result in: Habitat loss Alteration of hydrology Deterioration in water quality Disturbance during construction / operation	No, the mitigation measures contained within this document, the LAP (including measures proposed as part of this AA) and the County Development Plan prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant.
Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan 2014-2016	Published	This Water Services Strategic Plan sets out strategic objectives for the delivery of water services over the next 25 years up to 2040. It details current and future challenges which affect the provision of water services and identifies the priorities to be tackled in the short and medium term.	This plan was subject to SEA and AA which incorporated robust mitigation measures into the plan itself to minimise effects.	Potential in-combination effects may arise where there is a requirement to provide for new water and waste water infrastructure and capacity. Meeting additional potable water demands and waste water treatment demands arising from the proposed increase in population has the potential to adversely affect, in the case of abstractions from and effluent discharges to surface waters, the	No, the mitigation measures contained within this document, the LAP (including measures proposed as part of this AA) and the County Development Plan prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant.

Plan or project	Status	Overview	Possible significant effects from plan or project	Is there a risk of in-combination effects	Possible significant in-combination effects
				<p>ecological status of surface waters and, in the case of groundwater abstractions, the quantitative status of groundwaters. Such demands would occur in-combination with those in adjoining counties. Adverse effects on the ecological status of surface waters and on the quantitative status of groundwaters would have the potential to impact upon protected species and habitats.</p> <p>Provision of infrastructure and increases in capacity may result in:</p> <ul style="list-style-type: none"> <li>Habitat loss</li> <li>Alteration of hydrology</li> <li>Deterioration in water quality</li> <li>Disturbance during construction / operation</li> </ul>	
<b>Regional</b>					
Regional Planning Guidelines for the West Region 2010 – 2022, to be replaced by Regional Spatial and Economic Strategy	Published	<p>Regional Planning Guidelines (RPGs) provide long-term strategic planning frameworks and will be replaced by Regional Spatial and Economic Strategies (RSEs).</p> <p>Each one of the three Regional Assemblies will prepare their own RSES, with the Northern and Western Regional Assembly, of which Galway County Council is part, responsible for the preparation of a RSES for the Northern and Western Region. The Regional Spatial and Economic Strategies will provide a long-term regional level strategic planning and economic framework in support of the implementation of the National Planning Framework.</p>	The Guidelines were subject to SEA and AA which incorporated robust mitigation measures into the Guidelines to minimise effects.	<p>Potential in-combination effects may arise where there is a requirement to provide for new infrastructure or where new development occurs.</p> <p>Provision of infrastructure/development may result in:</p> <ul style="list-style-type: none"> <li>Habitat loss</li> <li>Alteration of hydrology</li> <li>Deterioration in water quality</li> <li>Disturbance during construction / operation</li> </ul>	No, the mitigation measures contained within this document, the LAP (including measures proposed as part of this AA) and the County Development Plan prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant.



Plan or project	Status	Overview	Possible significant effects from plan or project	Is there a risk of in-combination effects	Possible significant in-combination effects
Galway City Area Transport Strategy 2016  Smarter Travel – A Sustainable Transport Future – A New Transport Policy for Ireland 2009 – 2020 (2009)  Ireland's First National Cycle Policy Framework (2009)	Published	Outlines policies for how sustainable travel and transport systems can be achieved to create a connected city region driven by smarter mobility.	These plans were subject to SEA and AA which incorporated robust mitigation measures into the plan itself to minimise effects.	Potential for in-combination effects may arise where there is a requirement to provide for new transport infrastructure, or increase capacity of existing infrastructure/services. Provisions for the development of transport infrastructure/associated development may potentially result in: Habitat loss Alteration of hydrology Deterioration in water quality Disturbance during construction / operation	No, the mitigation measures contained within these documents, the LAP (including measures proposed as part of this AA) and the County Development Plan itself prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant.
<b>County/Local</b>					
Galway County Development Plan 2015-2021 (as varied) including County Galway Wind Strategy	Published	The County Development Plan provides for the proper planning and sustainable development of the administrative area of the Council.  The Strategy supports a plan led approach to wind energy development in County Galway and sets out a) Strategic Areas, b) Acceptable in Principle Areas, and c) areas Open for Consideration.	This plan was subject to SEA and AA which incorporated robust mitigation measures into the plan itself to minimise effects.	Potential in-combination impacts may arise where there is a requirement to provide for new infrastructure. Provision of infrastructure may result in: Habitat loss Alteration of hydrology Deterioration in water quality Disturbance during construction / operation	No, the mitigation measures contained within this Plan and the LAP (including measures proposed as part of this AA) will prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant.
Mayo County Development Plan 2014-2020 Roscommon County Development Plan 2016-2022 Galway City Development Plan 2017-2023 (as varied)	Published	Overall strategies for the proper planning and sustainable development of the administrative area of the relevant local authorities.	These plans were subject to SEA and AA which incorporated robust mitigation measures into the plans themselves to minimise effects.	Galway shares its boundary with a number of counties. Furthermore, a number of European sites are located in more than one county. Similar development plans are in existence throughout the region, accordingly these plans acting alone or in combination can have a cumulative impact on European sites located within County Galway. Provision of infrastructure or where new development occurs may result in: Habitat loss Alteration of hydrology Deterioration in water quality Disturbance during construction / operation	No, the mitigation measures contained within this Plan and the LAP (including measures proposed as part of this AA) will prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant.
Headford Local Area Plan 2015-2021 Ballinasloe Local	Published	Overall strategies for the proper planning and sustainable development of the administrative area of the relevant Local Authorities.	These plans were subject to SEA and AA which incorporated robust	Galway and the area around Tuam have a number of local areas that have had Local Area Plans created for them to facilitate cohesive and sustainable development	No, the mitigation measures contained within these documents, the LAP (including measures proposed as part of this AA) and the County Development

Plan or project	Status	Overview	Possible significant effects from plan or project	Is there a risk of in-combination effects	Possible significant in-combination effects
Area Plan 2015-2021 Oranmore Local Area Plan 2012-2022 Gort Local Area Plan 2013-2018			mitigation measures into the plan itself to minimise effects.	within the county. Provision of infrastructure or where new development occurs may result in: Habitat loss Alteration of hydrology Deterioration in water quality Disturbance during construction / operation	Plan itself prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant.
Ballygaddy Road Strategic Housing Development	Application Lodged Dec 2017	This Strategic Housing Development has been lodged with An Bord Pleanála. This project will be subject to compliance with the existing development framework following the Strategic Housing Development process in accordance with national legislation.	This project will be subject to an EIA and project level AA.	If it is granted, it will have to demonstrate compliance with the EU Habitats and Birds Directives. It must be assumed that the project will only go ahead if it demonstrates its ability to comply.	No, the mitigation measures contained within this application, the LAP and the County Development Plan prioritise the avoidance of effects where possible and provide measures to minimise effects. In combination effects from project which arise from the implementation of these plans will not be significant.

### 3.5 Conclusions

The likely effects that could arise from the Tuam Local Area Plan 2018-2024 have been examined in the context of a number of factors that could potentially affect the integrity of any European Site. On the basis of the findings of this Screening for AA, it is concluded that the LAP:

- Is not directly connected with or necessary to the management of a European Site; and
- May have significant impacts on any European Site.

Therefore, applying the precautionary principle and in accordance with Article 6(3) of the Habitats Directive, a Stage 2 AA is required for the LAP (see Section 4 of this report).

## Section 4 Stage 2 Appropriate Assessment

### 4.1 Introduction

The main objective of the Stage 2 AA is to determine whether the LAP would result in significant adverse impacts on the integrity of any European Site with respect to the site's structure, function, and/or conservation objectives.

The Stage 1 Screening presented above has identified five European Sites with potential to be affected by the LAP (see Table 4.1). Therefore, taking a precautionary approach, Stage 2 AA is required. The potential adverse effects considered at this stage will either be effects occurring as a result of the implementation of the LAP alone or in-combination with other plans, programmes, and/or projects.

Detailed information relevant to the sites that has been reviewed to inform the AA includes the following:

- *NPWS Site Synopsis;*
- *Natura 2000 Standard Data Form;*
- *Conservation Objectives and supporting documents.*

**Table 4.1 European Sites potentially affected by the LAP**

Site Code	European Site	Distance (km)
000297	Lough Corrib SAC	0
000295	Levally Lough SAC	7.05
000525	Shrule Turlough SAC	12.88
004042	Lough Corrib SPA	13.71
000503	Greaghans Turlough SAC	14.78

### 4.2 Characterisation of European Sites Potentially Affected

The Appropriate Assessment Screening identified five European Sites with pathway receptors for potential from the implementation of the Plan. Therefore, it is necessary to characterize each of these sites and the sensitivities of their qualifying interests, special conservation interests or their conservation objectives.

Table 4.2 characterises each of the qualifying interests of the five European Sites brought forward from Stage 1 (Table 4-1). These are described in context of each of the sites' vulnerabilities in Appendix I. Each of these site characterisations were taken from the NPWS website<sup>9</sup>.

<sup>9</sup> NPWS (2016), last accessed 16<sup>th</sup> July 2018; <https://www.npws.ie/protected-sites>

**Table 4.2 Characterisation of the QIs/SCIs of each Site potentially affected by the LAP**

Site Code	Site Name	Distance (km)	Qualifying features (Qualifying Interests or Special Conservation Interests)
000297	Lough Corrib SAC	0	Active raised bogs [7110] Alkaline fens [7230] Austropotamobius pallipes (White-clawed Crayfish) [1092] Bog woodland [91D0] Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the Rhynchosporion [7150] Drepanocladus vernicosus (Slender Green Feather-moss) [1393] Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140] Lampetra planeri (Brook Lamprey) [1096] Limestone pavements [8240] Lutra lutra (Otter) [1355] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410] Najas flexilis (Slender Naiad) [1833] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130] Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] Petrifying springs with tufa formation (Cratoneurion) [7220] Petromyzon marinus (Sea Lamprey) [1095] Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303] Salmo salar (Salmon) [1106] Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260]
000295	Levally Lough SAC	7.05	Turlough [3180]
000525	Shrule Turlough SAC	12.88	Turlough [3180]
004042	Lough Corrib SPA	13.71	Gadwall (Anas strepera) [A051] Shoveler (Anas clypeata) [A056] Pochard (Aythya ferina) [A059] Tufted Duck (Aythya fuligula) [A061] Common Scoter (Melanitta nigra) [A065] Hen Harrier (Circus cyaneus) [A082] Coot (Fulica atra) [A125] Golden Plover (Pluvialis apricaria) [A140] Black-headed Gull (Chroicocephalus ridibundus) [A179] Common Gull (Larus canus) [A182] Common Tern (Sterna hirundo) [A193] Arctic Tern (Sterna paradisaea) [A194] Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] Wetland and Waterbirds [A999]
000503	Greaghans Turlough SAC	14.78	Turlough [3180]

### 4.3 Identifying and Characterising Potential Significant Effects

The following parameters are described when characterising impacts (following guidance from the Chartered Institute of Ecology and Environmental Management, Environmental Protection Agency and National Roads Authority):

**Direct and Indirect Impacts** - An impact can be caused either as a direct or as an indirect consequence of a proposed development.

**Magnitude** - Magnitude measures the size of an impact, which is described as high, medium, low, very low or negligible.

**Extent** - The area over which the impact occurs – this should be predicted in a quantified manner.

**Duration** - The time for which the effect is expected to last prior to recovery or replacement of the resource or feature.

- Temporary: Up to 1 Year;
- Short Term: The effects would take 1-7 years to be mitigated;
- Medium Term: The effects would take 7-15 years to be mitigated;
- Long Term: The effects would take 15-60 years to be mitigated; and
- Permanent: The effects would take 60+ years to be mitigated.

**Likelihood** – The probability of the effect occurring taking into account all available information.

- Certain/Near Certain: >95% chance of occurring as predicted;
- Probable: 50-95% chance as occurring as predicted;
- Unlikely: 5-50% chance as occurring as predicted; and
- Extremely Unlikely: <5% chance as occurring as predicted.

The Chartered Institute of Ecology and Environmental Management guidelines for ecological impact assessment (2016) define: an ecologically significant impact as an impact (negative or positive) on the integrity of a defined site or ecosystem and/or the conservation status of habitats or species within a given geographic area; and the integrity of a site as the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.

The Habitats Directive requires the focus of the assessment at this stage to be on the integrity of the site as indicated by its Conservation Objectives. It is an aim of NPWS to draw up conservation management plans for all areas designated for nature conservation. These plans will, among other things, set clear objectives for the conservation of the features of interest within a site.

SSCOs have been prepared for a number of European Sites. These detailed SSCOs aim to define favourable conservation condition for the qualifying habitats and species at that site by setting targets for appropriate attributes which define the character habitat. The maintenance of the favourable condition for these habitats and species at the site level will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

***Favourable conservation status of a species** can be described as being achieved when: 'population data on the species concerned indicate that it is maintaining itself, and the natural range of the species is neither being reduced or likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.'*

***Favourable conservation status of a habitat** can be described as being achieved when: 'its natural range, and area it covers within that range, is stable or increasing, and the ecological factors that are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and the conservation status of its typical species is favourable'.*

Generic Conservation Objectives for cSACs have been provided as follows:

- *To maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected.*

One generic Conservation Objective has been provided for SPAs as follows:

- *To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA.*

#### **4.3.1 Identification of Potential Effects**

Potential impacts from the LAP which have, alone and/or in combination, been identified to result in adverse effects upon the QIs/SCIs or integrity of European Sites. Ecological impact assessment of potential impacts on European Sites is conducted utilizing a standard source-pathway-resource process; where, all three elements of this mechanism must be in place to establish an effect arising.

As outlined in the European Commission Environment DG document "*Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*", impacts that could potentially occur through the implementation of the LAP can be categorised under a number of headings:

- Loss / reduction of habitat area (e.g. due to the development of new projects)
- Disturbance to Key Species (e.g. increased public access to protected sites, or during the construction phase of infrastructure projects)
- Habitat or species fragmentation
- Reduction in species density
- Changes in key indicators of conservation value such as decrease in water quality / quantity (e.g. through inadequate wastewater treatment, run-off of pollutants during construction and operation of developments, agricultural runoff)

Each of these elements are considered below with reference to the QIs/SCIs of all of the European Sites brought forward from Stage 1 of the AA process. A detailed analysis of each sites individually can be found below in Table 4.3.

The LAP contributes towards the framework for sustainable development within Tuam, including providing for uses and activities in particular locations. The LAP, in combination with other plans and programmes, contributes towards the development of housing, waste water treatment, tourism, communities and the town centre with supporting transport, water, energy, and communication infrastructure within the Tuam area.

##### **4.3.1.1 Loss/Reduction of Habitat Area**

The LAP is adjacent to and overlaps to a relatively small degree with the Lough Corrib SAC boundary. There are no provisions within the LAP to reduce the area or quality of any European Site. The policies and objectives of the Galway CDP which the LAP must comply ensure that no direct land take from designated features of the SAC will result due to the implementation of the Plan. The policies and objectives of the plan will aim to support the protection of the River Nanny, River Clare and the Suileen River (Objective NH 5). There are a number of policies and objectives (detailed below) that contribute towards the protection of habitat condition of aquatic systems by protecting water quality.

There will be no effects to the reduction of Habitat Area of any European Site as a result of the implementation of the Plan.

##### **4.3.1.2 Habitat or species Fragmentation**

Habitat fragmentation is an issue for biodiversity. The Tuam area is already a highly urbanised area with limited available habitat. The Plan contains policies and objectives, including the following, which focus on the protection of habitat connectivity and contribute towards the avoidance of barriers to the free movement of protected species:

- Objective NH 5 – Biodiversity & Ecological Networks
- Objective NH 2 – Protected Habitats and Species
- Objective WQ 2 – Groundwater & Aquifers

#### 4.3.1.3 Disturbance to Key Species

The maps provided by the NPWS identify the distribution of the QIs of the Lough Corrib SAC. None of the habitat features that the Lough Corrib SAC has been designated for have been identified within the LAP boundary. Similarly, there are no spawning grounds of the aquatic species identified within the River Nanny that runs through Tuam. There is potential for some of the QI species to be present on site; namely the otter (*Lutra lutra*) and the brook lamprey (*Lampetra planeri*).

The Tuam area is highly urbanised, the LAP sets out a development framework for the development of the area in line with the existing condition. Therefore, the operational phase is expected to be consistent with the current receiving environment. The SSCOs of the Lough Corrib SAC and associated supporting documents do not identify any existing disturbance effects. There are no known lesser horseshoe roosts within 4.2km of the LAP which is their known distribution around the roost<sup>10</sup>, therefore no disturbance effects are likely to this species. In general, for bats the plan contains an objective to maintain existing flight paths and ensure fragmentation of habitat is avoided. Otter are known to be tolerant to anthropogenic disturbance and their distribution is more closely related to availability of quality riparian habitats.

The Lough Corrib SPA is designated for a number of bird species which are sensitive to disturbance effects; however, the distance between the Tuam LAP and SPA negate the potential effects. Of the species identified to be sensitive to disturbance effects, there are no pathways for disturbance effects to the species given their known distribution presented in the SSCOs for the relevant European sites. Further details can be found in Table 4.3.

The Lough Corrib SAC and SPA are designated for species and habitat features that are sensitive to hydrological condition. These effects are mitigated for through the policies and objectives listed in Section 4.3.1.4.

#### 4.3.1.4 Changes of Indicators of Conservation Value

Water quality and quantity including groundwater is a key indicator of conservation value and will be mitigated through the following objectives:

##### Measures from the Draft Local Area Plan

- Objective NH 6 – Water Resources
- Objective NH 7 – Wetlands, Springs, Rivers and Streams
- Objective NH 8 – Riparian Zones
- Objective DS 8 – Flood Risk Management and Assessment
- Objective DS 9 – Climate Change & Adaptation
- Objective LU 8 – Constrained Land Use Zone (CL)
- Objective LU 9 – Flood Risk Areas and Land Use Zones (Refer to Map 1, 2 and Map 5)
- Policy FL 1 – Flood Risk Management
- Objective FL 1 – Flood Risk Management and Assessment
- Objective FL 2 – Flood Zones and Appropriate Land Uses
- Objective FL 3 – Structural and Non-Structural Risk Management Measures in Flood Vulnerable Zones
- Objective FL 4 – Flood Risk Assessment for Planning Applications and CFRAMS
- Objective FL 5 – Strategic Flood Risk Assessment and Flood Risk Assessments
- Objective FL 6 – Environmental Impact Assessment/Statement (EIA/EIS) & Flood Risk Assessment
- Objective FL 7 – Pluvial and Groundwater Flood Risk
- Objective FL 8 – New and Emerging Data
- Objective FL 9 – Water Bodies and Watercourses
- Objective FL 10 – Arterial Drainage Scheme
- Objective FL 11 – Improvement &/Or Restoration of Natural Flood Risk Management Functions
- DM Guideline FL 1 – Flood Zones and Appropriate Land Uses

<sup>10</sup> Bontadina et al, 2002. Radio-tracking reveals that lesser horseshoe bats (*Rhinolophus hipposideros*) forage in woodland. *Journal of Zoology*, 258(3), pp.281-290.



- DM Guideline FL 2 – Structural and Non-Structural Risk Management Measures in Flood Vulnerable Zones
- DM Guideline WQ 1 – Water Bodies and Watercourses

**Measures from the Galway County Development Plan as varied**

- Policies NHB 4, FL 1, FL 2, FL 3, FL 4 and FL 5
- Objectives NHB 3, NHB12, NHB 14, EQ1, AFF 5, AFF 6, AFF9, CS 4, WS 1, WS 2, WS 7, WS 9, WS 11, WW 1, WW 7, FL 1, FL 2, FL 3, FL 4, FL 5, FL 6, DS 7, DS 8, DS 9 and RA 1
- DM Standard 27: Surface Water Drainage & Flooding

These policies and objectives prioritise the avoidance of effects and ensure that all lower tiered plans/projects must ensure they consider and account for potential effects to the River Nanny, and surface/ground water interactions. The objectives broaden the considerations from hydrological condition and ensure the protection of the surrounding riparian habitat which can also contribute to overall ecosystem stability and function.

**Table 4.3 Characterisation of Potential Effects (on QIs/SCIs of the European Sites brought forward from Stage 1) arising from the LAP**

Site Code	Site Name	Distance (km)	Qualifying features	Characterization of Potential Effects <sup>11</sup>	Potential Significant Effects	Mitigation Required
000297	Lough Corrib SAC	Within	Active raised bogs [7110]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the habitat condition, hydrological characteristics with a specific focus on drainage as well as air quality.</p> <p>This habitat is sensitive to land use management activities and hydrological interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities.</p> <p>The LAP has sources for potential effects to water and air quality, which have pathways identified. Therefore, measures are required to ensure that the LAP does not result in adverse effects to the ecological integrity of the SAC. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>	Yes	Yes
			Alkaline fens [7230]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and function with a focus on distinctiveness.</p> <p>This habitat is sensitive to land use management activities and hydrological interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities.</p> <p>The LAP has sources for potential effects to water quality, which have pathways identified. Therefore, measures are required to ensure that the LAP does not result in adverse effects to the ecological integrity of the SAC. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Austropotamobius pallipes (White-clawed Crayfish) [1092]	<p>The targets and attributes for this species focus on the community dynamics and distribution of the species with specific focus on hydrological characteristics, disease and invasive species.</p> <p>There are no sources for invasive species or disease contained within the LAP. The SSCO maps for this species indicate that the distribution of the species is restricted to the northern bounds of Lough Corrib and within the tributaries to the River Clare. There is no clear hydrological pathway to these sites; however, the populations may exist downstream of the LAP. Following a precautionary principal consideration must be given to maintaining the hydrological characteristic of the SAC. Therefore, mitigation measures are required to ensure no adverse effects to water quality occur due to the implementation of the plan. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Bog woodland [91D0]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure.</p> <p>This habitat is sensitive to land use management activities interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities. There are no sources with pathways for effects for which this habitat is sensitive to.</p>		
			Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and function.</p> <p>This habitat is sensitive to land use management activities interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities. There are no sources with pathways for effects for which this habitat is sensitive to.</p>		

<sup>11</sup> NPWS (2013). The Status of Protected EU Habitats and Species in Ireland. Overview Volume 1. Unpublished Report, National Parks & Wildlife Services. Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Site Code	Site Name	Distance (km)	Qualifying features	Characterization of Potential Effects <sup>11</sup>	Potential Significant Effects	Mitigation Required
			Degraded raised bogs still capable of natural regeneration [7120]	<p>It is noted that there are no targets or attributes for this QI.</p> <p>This habitat is sensitive to land use management activities and hydrological interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities.</p> <p>The LAP has sources for potential effects to water and air quality, which have pathways identified. Therefore, measures are required to ensure that the LAP does not result in adverse effects to the ecological integrity of the SAC. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Depressions on peat substrates of the Rhynchosporion [7150]	<p>It is noted that there are no targets or attributes for this QI.</p> <p>This habitat is sensitive to land use management activities and hydrological interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities.</p> <p>The LAP has sources for potential effects to water quality, which have pathways identified. Therefore, measures are required to ensure that the LAP does not result in adverse effects to the ecological integrity of the SAC. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Drepanocladus vernicosus (Slender Green Feather-moss) [1393]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and function. This species is sensitive to land management action.</p> <p>This is a terrestrial species that does not exist within the LAP and there are no sources for effects to the species.</p>		
			Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and hydrological characteristics.</p> <p>This habitat is sensitive to land use management activities and hydrological interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities.</p> <p>The LAP has sources for potential effects to water quality, which have pathways identified. Therefore, measures are required to ensure that the LAP does not result in adverse effects to the ecological integrity of the SAC. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Lampetra planeri (Brook Lamprey) [1096]	<p>The targets and attributes for this species focus on the population structure and juvenile habitat and breeding conditions.</p> <p>There are no policies or objectives that will directly affect the population dynamics of the species. However, there are pathways for potential effects to water quality which could influence the breeding success of the species and effect the overall condition of the habitat available to the species. Therefore, measures are required to protect the water quality of the site. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Limestone pavements [8240]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and function with a focus on distinctiveness.</p> <p>This habitat is sensitive to land use management activities interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities. There are no sources with pathways for effects for which this habitat is sensitive to.</p>		
			Lutra lutra (Otter) [1355]	<p>The targets and attributes in relation to otters relate to the range of the species, protection of holts and prey species populations as well as water quality.</p> <p>The LAP does not introduce any sources for effects that will reduce the habitat availability or resting places of the species or influence the prey densities at the site. There are pathways for effects to water quality and therefore measures are required in this regard. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		

Site Code	Site Name	Distance (km)	Qualifying features	Characterization of Potential Effects <sup>11</sup>	Potential Significant Effects	Mitigation Required
			Margaritifera margaritifera (Freshwater Mussel) [1029] Pearl	<p>The targets and attributes for this species focus on the community dynamics and distribution of the species with specific focus on hydrological characteristics and fringe habitats.</p> <p>There are no policies or objectives that will directly affect the population dynamics of the species. There are no policies or objectives that will directly affect the population dynamics of the species. The maps provided by the NPWS identify the tributary to Lough Corrib that runs through Oughterard to be the current distribution of the species which is not hydrologically connected to the LAP. Therefore, there are also no pathways for effects.</p>		
			Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and function.</p> <p>This habitat is sensitive to land use management activities interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities. There are no sources with pathways for effects for which this habitat is sensitive to.</p>		
			Najas flexilis (Slender Naiad) [1833]	<p>The targets and attributes relate to the distribution and population dynamics of the species as well as the condition of the aquatic habitats and fringe habitat condition.</p> <p>There are no policies or objectives that will directly affect the population dynamics of the species. The maps provided by the NPWS identify the northern bounds of Lough Corrib to be within the current distribution of the species which is not hydrologically connected to the LAP. Therefore, there are also no pathways for effects.</p>		
			Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and function with a focus on distinctiveness.</p> <p>This habitat is sensitive to land use management activities interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities. There are no sources with pathways for effects for which this habitat is sensitive to.</p>		
			Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoetes-Nanojuncetea [3130]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and hydrological characteristics.</p> <p>This habitat is sensitive to land use management activities and hydrological interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities.</p> <p>The LAP has sources for potential effects to water quality, which have pathways identified. Therefore, measures are required to ensure that the LAP does not result in adverse effects to the ecological integrity of the SAC. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and hydrological characteristics.</p> <p>This habitat is sensitive to land use management activities and hydrological interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities.</p> <p>The LAP has sources for potential effects to water quality, which have pathways identified. Therefore, measures are required to ensure that the LAP does not result in adverse effects to the ecological integrity of the SAC. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Petrifying springs with tufa formation (Cratoneurion) [7220]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and hydrological characteristics. There are no distribution maps provided by the NPWS for this habitat. The LAP has no zoning objectives that provide for development within the SAC. Therefore, there will be no direct land take or interaction with the physical structure of the available habitat. There are sources for effects to water quality identified with pathways for effects, which could adversely affect the condition of the available habitat for the species. Therefore, mitigation measures are required to ensure the implementation of the LAP does not affect water Quality. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		

Site Code	Site Name	Distance (km)	Qualifying features	Characterization of Potential Effects <sup>11</sup>	Potential Significant Effects	Mitigation Required
			Petromyzon marinus (Sea Lamprey) [1095]	<p>The targets and attributes for this species focus on the population structure and juvenile habitat and breeding conditions.</p> <p>There are no distribution maps provided by the NPWS for this species. The LAP has no zoning objectives that provide for development within the SAC. Therefore, there will be no direct land take or interaction with the physical structure of the available habitat. There are sources for effects to water quality identified with pathways for effects, which could adversely affect the condition of the available habitat for the species. Therefore, mitigation measures are required to ensure the implementation of the LAP does not affect water Quality. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Rhinolophus hipposideros (Lesser Horseshoe Bat) [1303]	<p>The targets and attributes for this species relate to population size, roost availability and condition, light pollution and connectivity of habitat.</p> <p>The area designated for this species identified in the SSCOs is more than 4.2km from the LAP, which is the known home range of the species. Therefore, there are no pathways for effects to this terrestrial species.</p>		
			Salmo salar (Salmon) [1106]	<p>The targets and attributes for this species focus on the population structure, water quality, juvenile habitat and breeding conditions.</p> <p>There are no distribution maps provided by the NPWS for this species. The LAP has no zoning objectives that provide for development within the SAC. Therefore, there will be no direct land take or interaction with the physical structure of the available habitat. There are sources for effects to water quality identified with pathways for effects, which could adversely affect the condition of the available habitat for the species. Therefore, mitigation measures are required to ensure the implementation of the LAP does not affect water Quality. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
			Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]	<p>The targets and attributes for this QI relate to the habitat area and distribution as well as the vegetation composition/ community structure and function.</p> <p>This habitat is sensitive to land use management activities interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities. There are no sources with pathways for effects for which this habitat is sensitive to.</p>		
			Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation [3260]	<p>The targets and attributes for this QI relate to the habitat area including riparian features and distribution as well as the vegetation composition/ community structure and hydrological characteristics including groundwater.</p> <p>This habitat is sensitive to land use management activities and hydrological interactions. The SSCO maps provide a distribution of the habitat type which shows the habitat is not present within the boundary of the LAP. Therefore, there are no sources for effects to the community structure and composition of the floral communities.</p> <p>The LAP has sources for potential effects to surface and ground water, which have pathways identified. Therefore, measures are required to ensure that the LAP does not result in adverse effects to the ecological integrity of the SAC. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>		
000295	Levally Lough SAC	7.05	Turlough [3180]	<p>There is some grazing on the margins of the turlough, most significantly around the north-east corner. Pollution of the system with organic effluent from around the site would threaten the quality of this site.</p> <p>It is noted that there are no targets or attributes within the SSCOs. There are no provisions in the plan that introduce any sources to affect the land use at the site, and there are no surface water pathways for effects.</p> <p>The only potential source for effects to this QI contained within the LAP is potential changes in the quantity or quality of groundwater feeding this turlough would have the potential to interact with the quality of the site.</p> <p>Turloughs are sensitive to groundwater effects, and the pathways between Tuam and the SAC in this regard are unknown. Measures are contained LAP to ensure development under the Plan does not affect the protection of groundwater, such as:</p> <ul style="list-style-type: none"> <li>• DM Guideline WQ 1 – Water Bodies and Watercourses</li> <li>• Objective NHB12 Soil/Ground Water Protection</li> <li>• Objective WQ 1 – Western River Basin District Management Plan and Protection of Waters</li> <li>• Objective WQ 2 – Groundwater &amp; Aquifers</li> </ul>	Unknown	Yes

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Site Code	Site Name	Distance (km)	Qualifying features	Characterization of Potential Effects <sup>11</sup>	Potential Significant Effects	Mitigation Required
000525	Shrule Turlough SAC	12.88	Turlough [3180]	<p>No site-specific threats were identified by the NPWS. It is noted that there are no targets or attributes within the SSCOs. There are no provisions in the plan that introduce any sources to affect the land use at the site, and there are no surface water pathways for effects.</p> <p>The only potential source for effects to this QI contained within the LAP is potential changes in the quantity or quality of groundwater feeding this turlough would have the potential to interact with the quality of the site.</p> <p>Turloughs are sensitive to groundwater effects, and the pathways between Tuam and the SAC in this regard are unknown. Measures are contained LAP to ensure development under the Plan does not affect the protection of groundwater, such as:</p> <ul style="list-style-type: none"> <li>• DM Guideline WQ 1 – Water Bodies and Watercourses</li> <li>• Objective NHB12 Soil/Ground Water Protection</li> <li>• Objective WQ 1 – Western River Basin District Management Plan and Protection of Waters</li> <li>• Objective WQ 2 – Groundwater &amp; Aquifers</li> </ul>	Unknown	Yes
004042	Lough Corrib SPA	13.71	Gadwall ( <i>Anas strepera</i> ) [A051] Shoveler ( <i>Anas clypeata</i> ) [A056] Pochard ( <i>Aythya ferina</i> ) [A059] Tufted Duck ( <i>Aythya fuligula</i> ) [A061] Common Scoter ( <i>Melanitta nigra</i> ) [A065] Hen Harrier ( <i>Circus cyaneus</i> ) [A082] Coot ( <i>Fulica atra</i> ) [A125] Golden Plover ( <i>Pluvialis apricaria</i> ) [A140] Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) [A179] Common Gull ( <i>Larus canus</i> ) [A182] Common Tern ( <i>Sterna hirundo</i> ) [A193] Arctic Tern ( <i>Sterna paradisaea</i> ) [A194] Greenland White-fronted Goose ( <i>Anser albifrons flavirostris</i> ) [A395] Wetland and Waterbirds [A999]	<p>It is noted that there are no targets or attributes within the SSCOs. Bird species are particularly vulnerable to direct disturbance due to noise and/or vibration. These effects are localised, and disturbance effects are foreseen to be low at distances beyond 2km.</p> <p>The hydrological pathway between the sites presents a risk of effects to Wetland and Waterbirds habitat quality. Measures are required to ensure all developments within LAP will not adversely influence the water quality of the surrounding area. See Section 4.3.1.4 and Table 5.1 for further details in relation to mitigation measures in this regard.</p>	Unknown	Yes
000503	Greaghans Turlough SAC	14.78	Turlough [3180]	<p>No site-specific threats were identified by the NPWS. It is noted that there are no targets or attributes within the SSCOs. There are no provisions in the plan that introduce any sources to affect the land use at the site, and there are no surface water pathways for effects.</p> <p>The only potential source for effects to this QI contained within the LAP is potential changes in the quantity or quality of groundwater feeding this turlough would have the potential to interact with the quality of the site.</p> <p>Turloughs are sensitive to groundwater effects, and the pathways between Tuam and the SAC in this regard are unknown. Measures are contained LAP to ensure development under the Plan does not affect the protection of groundwater, such as:</p> <ul style="list-style-type: none"> <li>• DM Guideline WQ 1 – Water Bodies and Watercourses</li> <li>• Objective NHB12 Soil/Ground Water Protection</li> <li>• Objective WQ 1 – Western River Basin District Management Plan and Protection of Waters</li> <li>• Objective WQ 2 – Groundwater &amp; Aquifers</li> </ul>	Unknown	Yes

## **Section 5 Mitigation Measures**

### **5.1 Introduction**

This section outlines measures that need to be incorporated into the LAP in order to mitigate against potential effects to European Sites as identified above.

The LAP is being prepared in an iterative manner whereby the Draft Plan and AA documents have each informed subsequent versions of the other.

In order to demonstrate that there will be no adverse effects from implementation of the Plan, mitigation measures have been devised to be incorporated into the text of the Plan, described below.

### **5.2 Measures incorporated into the text of the LAP**

Measures have been included in the policies and objectives of the original LAP that will contribute towards avoidance of effects to the ecological integrity of European Sites. The LAP sits within a hierarchy of land use and other sectoral plans in County Galway.

In addition to complying with LAP provisions relating to the protection and management of the environment, development within Tuam must comply with the provisions of the County Development Plan.

Several objectives were added to the plan as a result of the AA process. For example, the AA identified a specific threat to a European Site because of effects due to residential development leading to the integration of Objective NH13 into the Plan to help ensure that the plan will not have any adverse effects on the ecological integrity of any European Site.

The measures incorporated into the LAP that relate to the protection of ecological processes are listed in Table 5.1.

**Table 5.1 Measures relevant to the protection of European Sites**

<b>Environmental Component</b>	<b>Likely Significant Effect, if unmitigated</b>	<b>Mitigation Measures, including:</b>
All	All	<p><b>Measures from the Local Area Plan</b></p> <ul style="list-style-type: none"> <li>Objective LU 12 - Galway County Development Plan 2009-2015 (as varied)<sup>12</sup></li> <li>Objective NH 13 - Construction Environmental Management Plan</li> <li>Objective TI 4 – Road Schemes/Road Improvements</li> </ul>
Biodiversity and Flora and Fauna	<p>Arising from both construction and operation of development and associated infrastructure:</p> <ul style="list-style-type: none"> <li>Loss of/damage to biodiversity in designated sites (including European Sites and Wildlife Sites) and Annexed habitats and species, listed species, ecological connectivity and non-designated habitats; and disturbance to biodiversity and flora and fauna;</li> <li>Habitat loss, fragmentation and deterioration, including patch size and edge effects; and</li> <li>Disturbance (e.g. due to noise and lighting along transport corridors) and displacement of protected species.</li> </ul>	<p><b>Measures from the Local Area Plan</b></p> <ul style="list-style-type: none"> <li>Objective DS 4 – European Sites Network and Habitats Directive Assessment</li> <li>Objective CF 9 – Amenity Network</li> <li>Objective ED 6 – Tourism Development</li> <li>Objective UD 4 – Green Network and Landscaping</li> <li>Policy NH 1 – Natural Heritage, Landscape and Environment</li> <li>Objective NH 1 – European Sites</li> <li>Objective NH 2 – Protected Habitats and Species</li> <li>Objective NH 3 – Natural Heritage Areas and Proposed Natural Heritage Areas</li> <li>Objective NH 4 – Impact Assessments</li> <li>Objective NH 5 – Biodiversity &amp; Ecological Networks</li> <li>Objective NH 6 – Water Resources</li> <li>Objective NH 7 – Wetlands, Springs, Rivers and Streams</li> <li>Objective NH 8 – Riparian Zones</li> <li>Objective NH 9 – Trees and Hedgerows</li> <li>Objective NH 10 – Geological and Geo-morphological Systems</li> <li>Objective NH 11 – Control of Invasive and Alien Species</li> <li>Objective NH 12 – Consultation with Environmental Authorities</li> <li>DM Guideline NH 1 – Control of Invasive Species &amp; Bio-Security Measures</li> <li>Objective NH 13 - Construction Environmental Management Plan</li> </ul> <p><b>Measures from the Galway County Development Plan as varied</b></p> <ul style="list-style-type: none"> <li>Policies NHB 1, NHB 2, NHB 3, NHB 5, NHB 6 and NHB 7</li> <li>Objectives DS 6, DS 9, EQ1, EQ 4, ICT 1, NHB 1, NHB 2, NHB 4, NHB 5, NHB 6, NHB 7, NHB 11, NHB 13, AFF 6 and DS10</li> </ul>
Soils	Damage to the hydrogeological and ecological function of the soil resource	<p><b>Measures from the Galway County Development Plan as varied</b></p> <ul style="list-style-type: none"> <li>Objective NHB12 Soil/Ground Water Protection</li> <li>Objective NH 10 – Geological and Geo-Morphological Systems</li> </ul>
Water	<p>Adverse impacts upon the status of water bodies arising from changes in quality, flow and/or morphology</p> <p>Increase in the risk of flooding</p>	<p><b>Measures from the Local Area Plan</b></p> <ul style="list-style-type: none"> <li>Objective NH 6 – Water Resources</li> <li>Objective NH 7 – Wetlands, Springs, Rivers and Streams</li> <li>Objective NH 8 – Riparian Zones</li> <li>Objective DS 8 – Flood Risk Management and Assessment</li> <li>Objective DS 9 – Climate Change &amp; Adaptation</li> <li>Objective LU 8 – Constrained Land Use Zone (CL)</li> <li>Objective LU 9 – Flood Risk Areas and Land Use Zones (Refer to Map 1, 2 and Map 5)</li> <li>Policy FL 1 – Flood Risk Management</li> <li>Objective FL 1 – Flood Risk Management and Assessment</li> <li>Objective FL 2 – Flood Zones and Appropriate Land Uses</li> <li>Objective FL 3 – Structural and Non-Structural Risk Management Measures in Flood Vulnerable Zones</li> <li>Objective FL 4 – Flood Risk Assessment for Planning Applications and CFRAMS</li> <li>Objective FL 5 – Strategic Flood Risk Assessment and Flood Risk Assessments</li> <li>Objective FL 6 – Environmental Impact Assessment/Statement (EIA/EIS) &amp; Flood Risk Assessment</li> <li>Objective FL 7 – Pluvial and Groundwater Flood Risk</li> <li>Objective FL 8 – New and Emerging Data</li> <li>Objective FL 9 – Water Bodies and Watercourses</li> <li>Objective FL 10 – Arterial Drainage Scheme</li> <li>Objective FL 11 – Improvement &amp;/Or Restoration of Natural Flood Risk Management Functions</li> <li>DM Guideline FL 1 – Flood Zones and Appropriate Land Uses</li> <li>DM Guideline FL 2 – Structural and Non-Structural Risk Management Measures in Flood Vulnerable Zones</li> <li>DM Guideline WQ 1 – Water Bodies and Watercourses</li> </ul> <p><b>Measures from the Galway County Development Plan as varied</b></p> <ul style="list-style-type: none"> <li>Policies NHB 4, FL 1, FL 2, FL 3, FL 4 and FL 5</li> <li>Objectives NHB 3, NHB12, NHB 14, EQ1, AFF 5, AFF 6, AFF9, CS 4, WS 1, WS 2, WS 7, WS 9, WS 11, WW 1, WW 7, FL 1, FL 2, FL 3, FL 4, FL 5, FL 6, DS 7, DS 8, DS 9 and RA 1</li> <li>DM Standard 27: Surface Water Drainage &amp; Flooding</li> </ul>

<sup>12</sup> Objective LU 12: The provisions of the Galway County Development Plan 2009-2015 (as varied), including the measures contributing towards environmental protection and sustainability (some of these measures are repeated in Section 9 of the SEA Environmental Report that accompanies this Plan) shall be complied with by any future development.



## Section 6 Conclusion

This report has been prepared following the issuing of a Direction to amend the adopted Plan's "Land Use Zoning Objectives" Map by the Minister for Housing and Urban Development in January 2019. Stage 1 Screening and Stage 2 AA has been carried out. The implementation of the Tuam LAP 2018-2024 would have the potential to result in effects to the integrity of any European Sites, if unmitigated.

The risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of the European Sites have been addressed by the inclusion of mitigation measures that will prioritise the avoidance of effects in the first place and mitigate effects where these cannot be avoided. In addition, lower level plans and projects arising through the implementation of the LAP will themselves be subject to AA when further details of design and location are known.

In-combination effects from interactions with other plans and projects were considered in the assessment and the mitigation measures incorporated into the Plan allow a conclusion to be arrived at that there will be no significant adverse effects as a result of the implementation of the Draft LAP either alone or in-combination with other plans/projects.

Having incorporated mitigation measures, it is concluded that the Tuam LAP will not give rise to any effect on the ecological integrity of any European sites, alone or in combination with other plans or projects<sup>13</sup>. This evaluation is made in view of the conservation objectives of the habitats or species for which these sites have been designated.

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<sup>13</sup> Except as provided for in Section 6(4) of the Habitats Directive, viz. There must be:  
a) no alternative solution available,  
b) imperative reasons of overriding public interest for the plan to proceed; and  
c) Adequate compensatory measures in place.