



AVRIO



**Appropriate Assessment
Screening & Natura Impact
Statement**

Cloongad, Castlebaldwin, Co. Sligo

Project Details

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Services Provided:	Preparation of an 'Article 6 (3) Appropriate Assessment Screening & Natura Impact Statement'

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AVRIO Quality Information

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1. Introduction

1.1 Background

AVRIO Environmental Management Limited, hereafter "AVRIO", has been appointed by David McMunn to undertake an Appropriate Assessment Screening and, if required, a Natura Impact Statement for a proposed development located at Cloongad, Castlebaldwin, Co. Sligo. (Irish Grid Reference: G 74962 15334). The proposed development includes the erection of a farm machinery shed and filling and improvement of existing agricultural land located at Cloongad, Castlebaldwin, Co. Sligo (Planning Reference: 2360046).

The report has been prepared to address the request for further information (File Ref: PL 23/60046, Date: 04/05/2023):

1. *The applicant shall prepare an Appropriate Assessment Screening report for the proposed development given the hydrological pathway to Lough Arrow SAC, running east of the site.*

1.2 Requirement for an Appropriate Assessment

This Appropriate Assessment Screening and Natura Impact Assessment was prepared for a proposed development at Cloongad, Castlebaldwin, Co. Sligo. Having regard to the location of the proposed development site and its proximity to sites designated under the Natura 2000 network, an Appropriate Assessment of the proposed development was prepared in accordance with Article 6 of the Habitats Directive. This report will allow the Competent Authority, in this case, Sligo County Council, to undertake an Appropriate Assessment of the proposed development, as required under Article 6(3) of the Habitats Directive¹.

The purpose of the assessment is to determine the appropriateness of the proposed project in the context of the conservation status of a European protected site or sites. In Ireland, an Appropriate Assessment takes the form of a Natura Impact Statement (NIS), which is a statement of the likely impacts of the plan or project on a Natura 2000 site. The NIS comprises a comprehensive assessment of the plan or project, and it examines the direct and indirect impacts that the plan or project might have on its own or in combination with other plans or projects on one or more Natura 2000 sites in view of the sites' conservation objectives.

1.3 The Aim of the Report

This Appropriate Assessment Screening and Natura Impact Statement has been prepared in accordance with the European Commission's Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2001) and Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018)² as well as the Department of the Environment's Appropriate Assessment of Plans and

¹ EC (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg. European Commission

² EC (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC;

Projects in Ireland - Guidance for Planning Authorities (DoEHLG, 2010)³, and it provides an assessment of the potential effects of a proposed development at Cloongad, Castlebaldwin, Co. Sligo.

An NIS should provide the information required in order to establish whether or not a proposed development is likely to have a significant impact on certain Natura 2000 sites in the context of their conservation objectives and specifically on the habitats and species for which the Natura 2000 conservation sites have been designated.

Accordingly, a comprehensive assessment of the potential impacts of this application was carried out in June 2023 by AVRIO. This assessment allowed areas of potential ecological value and potential ecological constraints associated with this proposed development to be identified and it also enabled potential ecological impacts associated with the proposed development to be assessed and mitigated for.

1.4 Regulatory Context

1.4.1 Relevant Legislation

1.4.1.1 *The Birds Directive*

- The Birds Directive (Council Directive 2009/147/EC) recognises that certain species of birds should be subject to special conservation measures concerning their habitats⁴. The Directive requires that Member States take measures to classify the most suitable areas as Special Protection Areas (SPAs) for the conservation of bird species listed in Annex 1 of the Directive. SPAs are selected for bird species (listed in Annex I of the Birds Directive), that are regularly occurring populations of migratory bird species, and the SPA areas are of international importance for these migratory birds.

1.4.1.2 *The EU Habitats Directive*

- The EU Habitats Directive (92/43/EEC) requires that Member States designate and ensure that particular protection is given to sites (Special Areas of Conservation) which are made up of or support particular habitats and species listed in annexes to this Directive.⁵ Articles 6(3) and 6(4) of this Directive also call for the undertaking of an Appropriate Assessment for plans and projects not directly connected with or necessary to the management of, but which are likely to have a significant effect on any European designated sites (i.e. SACs and SPAs).

1.4.1.3 *The Water Framework Directive*

- The Water Framework Directive (WFD) (2000/60/EC), which came into force in December 2000, establishes a framework for community action in the field of water policy. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003)⁶. The WFD rationalises and updates

³DoEHLG (2010). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Revision, February 2010. Department of the Environment, Heritage and Local Government;

⁴European Communities (Conservation of Wild Birds) Regulations, 1985, SI 291/1985 & amendments – <http://www.irishstatutebook.ie>;

⁵European Communities (Natural Habitats) Regulations, SI 94/1997, SI 233/1998 & SI 378/2005 – <http://www.irishstatutebook.ie>;

⁶Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.

existing legislation and provides for water management on the basis of River Basin Districts (RBDs). RBDs are essentially administrative areas for coordinated water management and are comprised of multiple river basins (or catchments), with cross-border basins (i.e. those covering the territory of more than one Member State) assigned to an international RBD. The aim of the WFD is to ensure that waters achieve at least good status by 2021 and that status does not deteriorate in any waters.

1.4.2 Appropriate Assessment & Habitats Directive

Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora – the ‘Habitats Directive’ - provides legal protection for habitats and species of European importance. Article 2 of the Directive requires the maintenance or restoration of habitats and species of European Community interest at a favourable conservation status⁷. Articles 3 - 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. Natura 2000 sites are Special Areas of Conservation (SACs) designated under the Habitats Directive and Special Protection Areas (SPAs) designated under the Conservation of Wild Birds Directive (79/409/EEC)⁸.

Articles 6(3) and 6(4) of the Habitats Directive sets out the decision-making tests for plans or projects affecting Natura 2000 sites⁹. Article 6(3) establishes the requirement for Appropriate Assessment:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the 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.”

Article 6(4) deals with the steps that should be taken when it is determined, as a result of appropriate assessment, that a plan/project will adversely affect a European site. Issues dealing with alternative solutions, imperative reasons of overriding public interest and compensatory measures need to be addressed in this case¹⁰.

Article 6(4) states:

“If in spite of a negative assessment of the implications for the 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, the Member States shall take all compensatory measures necessary to ensure that the overall

⁷ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

⁸ Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds

⁹ EC (2007a) 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. European Commission

¹⁰ EC (2007b) Interpretation Manual of European Union Habitats. Version EUR 27. European Commission, DG Environment;

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.”

1.4.3 Screening for Appropriate Assessment

Screening is the process of determining whether an Appropriate Assessment is required for a plan or project. Under Part XAB of the Planning and Development Act, 2000, as amended, screening must be carried out by the Competent Authority. Section 177U of the Planning and Development Act, 2000, as amended, states¹¹

‘A screening for appropriate assessment shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site’.

The Competent Authority’s determination as to whether an Appropriate Assessment is required must be made on the basis of objective information and should be recorded. The Competent Authority may request information to be supplied to enable it to carry out a screening.

Consultants or project proponents may provide for the competent Authority with the information necessary for them to determine whether an Appropriate Assessment is required and provide advice to assist them in the Article 6(3) Appropriate Assessment Screening decision.

Where it cannot be excluded beyond reasonable scientific doubt at the Screening stage, that a proposed plan or project, individually or in combination with other plans and projects, would have a significant effect on the conservation objectives of a European site, an Appropriate Assessment is required.

1.4.4 Natura Impact Statement

Where an Appropriate Assessment is required, the Competent Authority may require the applicant to prepare a Natura Impact Statement. The term Natura Impact Statement (NIS) is defined in legislation¹². A NIS, where required, should present the data, information, and analysis necessary to reach a definitive determination as to 1) the implications of the plan or project, alone or in combination with other plans and projects, for a European site in view of its conservation objectives, and 2) whether there will be adverse effects on the integrity of a European site. The NIS should be underpinned by the best scientific knowledge, objective information and by the precautionary principle. This Appropriate Assessment Screening and Natura Impact Statement has been prepared in compliance with the provision of section 177U of the Planning & Development Act 2010 as amended.

¹¹ DoEHLG (2010). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Revision, February 2010. Department of the Environment, Heritage, and Local Government;

¹² As defined in Section 177T of the Planning and Development Act, 2000 as amended, an NIS means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a proposed development, on its own and in combination with other plans and projects, for a European site in view of its conservation objectives. It is required to include a report of a scientific examination of evidence and data, carried out by competent persons to identify, and classify any implications for the European site in view of its conservation objectives.

1.5 Statement of Authority

Catherine Reilly BSc (Hons), MCIEEM: On site surveys were carried out by Catherine Reilly. Catherine is a Principal Ecologist at AVRIO Environmental Management. Catherine has over 13 years' experience in working within the environmental consultancy industry as a professional ecologist. Prior to that she worked within the conservation sector and delivered numerous bat walks and talks to members of the public. Her initial training for bat survey techniques was in 2007 with the Bat Conservation Trust (BCT). Since then, she has undertaken extensive surveys for bats across a wide variety of habitats throughout Northern Ireland, Ireland and Scotland for numerous projects ranging from simple wind turbine applications, building demolition/refurbishment works to larger more complex sites and wind farm applications. She has provided training to volunteers and NGO's (Non-government organisations), such as Belfast Hill Partnership, on how to design and undertake bat activity surveys within their sites. Catherine has undertaken numerous endoscope surveys throughout various roosting habitats in Northern Ireland. She has identified a number of autumn transitional tree roosts (under licence) through the use of an endoscope.

Catherine is a committee member of the Northern Ireland Bat Group (NIBG) and is a registered bat carer with BCT, NIEA and CEDaR. She holds a volunteer roost visitors licence for Northern Ireland and has obtained numerous site-specific roost disturbance licences (i.e., endoscope survey licences and exclusion licences) for various sites throughout Northern Ireland, Ireland and England. She has also obtained numerous smooth newt survey licences for a variety of sites throughout Northern Ireland. She has experience in designing site-specific mitigation proposals to ensure that development activities do not have a detrimental impact on local bat populations.

Catherine is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) an organisation requiring peer review and a high standard of professional conduct.

Amy Gallagher BSc (Hons), MSc, QCIEEM: This report has been prepared by Amy Gallagher. Amy is an Ecologist at AVRIO Environmental Management. She holds a BSc (Hons) in Ecological Management and an MSc in Ecological Management and Conservation Biology from Queens University Belfast. Amy is an ecologist with over 4 years of experience within the environmental industry Amy is a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM), an organisation requiring peer review and a high standard of professional conduct. Amy has experience contributing to Ecological Impact Assessments (EclA) including assessments for priority species such as Bats, Badger, Otter, Marsh Fritillary, Dragonfly and Damselfly, and habitats assessments including Phase I and Fossitt Habitat Surveys. Amy has experience in Habitat Regulation Assessment (HRA/AASR/NIS), Invasive Species Surveys and Management and production of site-specific mitigation proposals for a range of developments throughout Northern Ireland and the Republic of Ireland.

Fergal Maguire NDA, BSc (Hons), PIEMA: This report has been reviewed by Fergal Maguire. Fergal is the General Manager at AVRIO Environmental Management and Principal Environmental and Ecological Consultant. He holds an NDA and BSc (Hons) in Environmental Science from the Institute of Technology, Sligo. Fergal is a member of the Institute

of Environmental Management & Assessment (IEMA), an organisation requiring peer review and a high standard of professional conduct. He has over 9 years of experience within the environmental industry. He has experience contributing to a number of Environmental Impact Assessments, environmental licence and surrender applications, including Industrial Emissions Licences (IEL), Integrated Pollution Control Licences (IPC) and Waste Licences for submission to the Irish Environmental Protection Agency (EPA), Northern Ireland Environment Agency (NIEA), Scottish Environment Protection Agency (SEPA), United Kingdom Environment Agency (E.A.) and a number of Local Authorities throughout the U.K. and Ireland. Fergal has extensive experience in the sustainable development and management of a number of IED licenced facilities throughout Ireland, the U.K. and greater Europe, as well as general consultancy within the waste management, environmental compliance and ecological sectors. Fergal has extensive experience in Ecological Impact Assessments (EclA), including priority species such as Bats, Badger, Otter, Red Squirrel, Pine martin and breeding birds, and habitats assessments, including Phase I and Fossitt Habitat Surveys. Fergal has extensive experience in Habitat Regulation Assessments (HRA/AASR/NIS), Ecological Clerk of Works (ECoW), Invasive Species Surveys and Management and production of site-specific mitigation proposals for a range of developments throughout Northern Ireland and the Republic of Ireland.

2. Methodology

2.1 Appropriate Assessment

In addition to the guidelines referenced above, the following relevant documents were also considered in the preparation of this report:

1. Council of the European Commission (1992) Council Directive 92/43/EEC of 21st May 1992 on the conservation of natural habitats and of wild fauna and flora. Official Journal of the European Communities. Series L 20, pp. 7-49.¹³
2. EC (2000) Managing Natura 2000 Sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg.¹⁴
3. European Commission (2001). 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.¹⁵
4. European Commission (2006). Nature and Biodiversity Cases: Ruling of the European Court of Justice.¹⁶
5. EC (2007) 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.¹⁷
6. EC (2013) Interpretation Manual of European Union Habitats. Version EUR 28. European Commission.¹⁸
7. European Commission (2018). Managing Natura 2000 Sites: The Provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC.¹⁹
8. Department of Environment, Heritage and Local Government (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities.²⁰
9. National Parks and Wildlife Service (2019). Article 17: The Status of EU Protected Habitats and Species in Ireland. ²¹
10. European Communities (Natural Habitats) (Amendment) Regulations 2005²²;

¹³ EC (2002) 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. European Commission;

¹⁴ EC (2002) 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. European Commission;

¹⁵ EC (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC;

¹⁶ EC (2006) Nature and Biodiversity Cases: Ruling of the European Court of Justice, Office for Official Publications of the European Communities, Luxembourg. European Commission;

¹⁷ EC (2007a) 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. European Commission;

¹⁸ EC (2013) Interpretation Manual of European Union Habitats. Version EUR 28. Office for Official Publications of the European Communities, Luxembourg. European Commission.

¹⁹ EC (2018). Managing Natura 2000 Sites: The Provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC. . Office for Official Publications of the European Communities, Luxembourg. European Commission.

²⁰ DoEHLG (2010). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Revision, February 2010. Department of the Environment, Heritage and Local Government

²¹ NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished NPWS report.

²² EC (1997) 2006. The European Communities (Natural Habitats)(Amendment) Regulations 2005.

The EC Guidance sets out a number of principles as to how to approach decision-making during the process. The primary one is ‘the precautionary principle, which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty.’²³

When considering the precautionary principle, the emphasis for assessment should be on objectively demonstrating with supporting evidence that:

- There will be no significant effects on a Natura 2000 site;
- There will be no adverse effects on the integrity of a Natura 2000 site;
- There is an absence of alternatives to the project or plan that is likely to have an adverse effect on the integrity of a Natura 2000 site; and
- There are compensation measures that maintain or enhance the overall coherence of Natura 2000.

This translates into a four-stage process to assess the impacts, on a designated site or species, of a policy or proposal.²⁴

The EC Guidance states that “each stage determines whether a further stage in the process is required”. Consequently, the Council may not need to proceed through all four stages in undertaking the Appropriate Assessment.

The four-stage process is:

Stage 1: Screening – The process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether or not these impacts are likely to be significant;

Stage 2: Appropriate Assessment – The consideration of the impact on the integrity of the Natura 2000 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;

Stage 3: Assessment of Alternative Solutions – The process which examines alternative ways of achieving objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site;

Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain – An assessment of the 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.

²³ DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. DEHLG, Dublin;

²⁴ DEHLG (2010). Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Revision, February 2010. Department of the Environment, Heritage and Local Government;

In complying with the obligations set out in Articles 6(3) and following the guidelines described above, this Natura Impact Statement has been structured as a stage-by-stage approach as follows:

- Description of the proposed project;
- Identification of the Natura 2000 sites close to the proposed development;
- Identification and description of any individual and cumulative impacts on the Natura 2000 sites likely to result from the project;
- Assessment of the significance of the impacts identified above on site integrity. Exclusion of sites where it can be objectively concluded that there will be no significant effects;
- Description of proven mitigation measures.

2.2 Desk Study

Information pertaining to the proposed site and the surrounding environment was studied and assessed prior to the completion of this assessment. The following data sources were accessed in order to complete a thorough examination of potential impacts:

- National Parks and Wildlife Service (NPWS) online map viewer²⁵;
- Mammals, Amphibians and Reptiles website²⁶;
- Ordnance Survey Ireland Map Viewer: Geohive²⁷;
- Environmental Protection Agency Geographic Information System (EPAGIS)²⁸;
- National Biodiversity Data Centre (NBDC)²⁹;
- NPWS Article 17 Metadata and GIS Database³⁰;
- Geological Survey Ireland, Department of the Environment, Climate and Communications Map Viewer³¹;
- David McMunn ³²

²⁵ National Parks and Wildlife Service: National Parks & Wildlife Service (npws.ie)

²⁶ Mammals, Amphibians and Reptiles: <http://www.habitas.org.uk/nimars/>

²⁷ Ordnance Survey Ireland Map Viewer - GeoHive: <https://webapps.geohive.ie/mapviewer/index.html>

²⁸ Environmental Protection Agency Geographic Information System : <https://gis.epa.ie/EPAMaps/>

²⁹ National Biodiversity Data Centre: www.biodiversityireland.ie

³⁰ NPWS Article 17 Metadata and GIS Database: <https://www.npws.ie/maps-and-data/habitat-and-species-data/article-17>

³¹ Geological Survey Ireland Map Viewer: <https://dcenr.maps.arcgis.com/apps/MapSeries/index>

³² IBID David McMunn

2.3 Site Location & Current Use

The proposed development site is located at Cloongad, Castlebaldwin, Co. Sligo (Irish Grid Reference: G 74962 15334).

The site is situated approximately 0.9 km northwest of Castlebaldwin, 21 km southeast of Sligo town centre, and 101 km northeast of Galway city centre. The site is accessible via the N4 road, located to the west of the site, serving as the primary access route. The development site is bordered by the Collooney to Castlebaldwin dual carriageway to the east, and rough grassland to the north and south. The extended environs surrounding the site showcase a diverse range of land uses, reflecting the rural outskirts of Castlebaldwin. These land uses include agricultural grassland, rough grassland, single dwellings, roads, and farm buildings.

There are three European designated sites within 2km of the development site; Unshin River SAC is 1.4km to the northeast development, Lough Arrow SAC is 1.5km to the east of the development and 1.5km from Lough Arrow SPA. Two Nationally designated sites were noted within 2km of the development site; Unshin River NHA is 1.4km to the northeast of the development site and Lough Arrow NHA is 1.5km to the east of the development site.

The site consists of habitats such as Recolonising bare ground (ED3), Treelines (WL2), Scrub (WS1), Wet Grassland (GS4), Drainage Ditch (FW4) and Ornamental/non-native Shrub (WS3). Pictures 1-5 below illustrates the proposed development area.



Picture 1: Recolonising bare ground (ED3) on site



Picture 2: Scrub (WL2) on site



Picture 3: Wet Grassland (GS4) on site



Picture 4: Treelines (WL2) on site



Picture 5: Drainage ditch (FW4) on site

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Figure 2-1 details the site location within the environs of Cloongad, Castlebaldwin, Co. Sligo and additionally details the site boundary location within the immediate environs.



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2.4 Characteristics of the Proposed Development

2.4.1 Description of the Project

Construction of an agricultural machinery shed to include the filling/ importation of 8,973 cum or 17,048 tons of inert soil and stone material round the proposed shed and complete area of the site along with reseeded to complete area of the as part of the site development.

External yard areas surrounding the shed structure will consist of a stone gravel base. Any and all machinery will be stored within the shed structure on an impermeable base. Any hydrocarbon leaks/spills within the building will be managed through the use of spill kits and waste arisings dealt with via a licenced waste contractor. No vehicles or machinery/equipment containing hydrocarbons or other pollutants will be stored on external permeable surfaces. No foul wastewater will be arising from the proposed development and any surface water arising from building roof run-off will be directed to an on-site soakaway.

Appendix D attached details the current Site Layout Plan.

2.4.2 Description of the Baseline Ecological Environment

Assessing the impacts of any project and associated activities requires an understanding of the ecological baseline conditions prior to and at the time of the project proceeding. Ecological baseline conditions are those existing in the absence of proposed activities³³.

A walkover of the site was undertaken on the 21st of June 2023 by a qualified ecologist, and habitats present were identified in accordance with the Heritage Council's 'Guide to Habitats in Ireland'³⁴. Plant nomenclature for vascular plants follows 'New Flora of the British Isles, while mosses and liverworts nomenclature follows 'Mosses and Liverworts of Britain and Ireland - a field guide'.

The walkover survey was designed to detect the presence, or likely presence, of a range of protected species and habitats. The walkover survey comprehensively covered the entire study area of the subject development and surrounding habitats.

2.4.2.1 Habitats

Habitats located within the site boundary include:

³³ CIEEM, 2018, Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine;

³⁴ Fossitt, J. A. (2000). A Guide to Habitats in Ireland. Dublin: The Heritage Council;

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- Recolonising Bare Ground (ED3)
- Treelines (WL2)
- Scrub (WS1)
- Wet Grassland (GS4)
- Drainage Ditch (FW4)
- Ornamental/Non-native Shrub (WS3)

2.4.2.2 Assessment for Annex I Habitats

No habitats on site consisted of indicator species of habitats that fall under Annex 1 of the EU Habitats Directive.

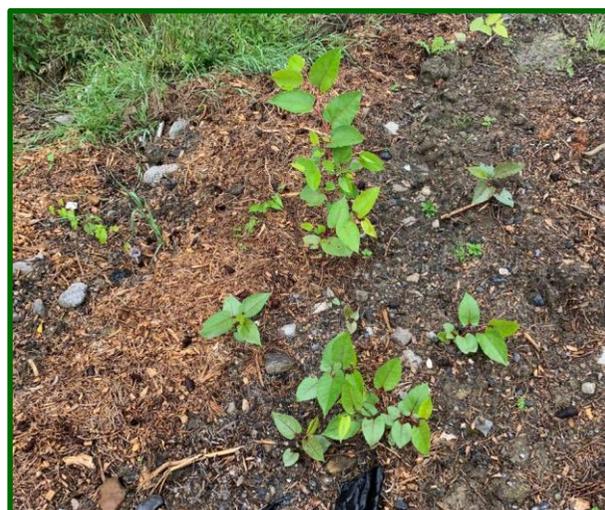
2.4.2.3 Invasive Species (Flora) Survey

Throughout the habitat survey, the site was searched for invasive weed species, focusing on those species listed on the Third Schedule of Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011³⁵. Invasive species included on this list noted on site include Japanese Knotweed (*Fallopia japonica*).

The invasive species survey carried out by AVRIO identified Japanese Knotweed to the east of the site. A number of young Japanese Knotweed stands were noted scattered within an area of spoil.



Picture 6: Japanese Knotweed on site (WS3)



Picture 7: Japanese Knotweed on site (WS3)

³⁵ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora [Habitats Directive] and Directive 2009/147/EC [codified version of Directive 79/409/EEC as amended] [Birds Directive] transposed into Irish law as European Communities [Birds and Natural Habitats] Regulations 2011 [SI 477/2011].

2.4.2.4 Protected Species (Fauna) Survey

Bat Roost Assessment for Trees

All trees on site have been assessed as having **Negligible Suitability** for roosting bats due to insufficient roosting features. The site is deemed optimal for commuting and foraging bats.

Otter (*Lutra lutra*) Survey

No Otter Spraints, Footprints, Paths/slides, Holts or Urination 'green spots' were identified within the immediate vicinity of the site. A stream is present to the east of the site. The site itself is considered optimal for commuting and foraging otter despite no evidence of otter being found on site.

Badger (*Meles meles*) Survey

The site and immediate environ are sub-optimal for this species to create setts within, and no Badger setts, latrines or snuffle holes were identified within the site's boundary or within a 30m buffer of the site.

Breeding Birds Survey

No nests or breeding birds were identified on-site. Treelines and areas of scrub are considered optimal locations for breeding birds. Any removal or facing of tree lines will need to be undertaken outside of the breeding season (March-August inclusive).

Smooth Newt (*Lissotriton vulgaris*)

A survey of the site and the immediate environs did not reveal evidence of this species. Assessments conclude there was no evidence noted during the survey, and the habitat is sub-optimal for smooth newt.

Common Frog (*Rana temporaria*)

A survey of the site and the immediate environs did not reveal evidence of this species. Assessments conclude there was no evidence noted during the survey, and the habitat on site is optimal for common frog.

Red Squirrel (*Sciurus vulgaris*)

No specific evidence of this species was noted within the application boundary itself or in the immediate environs. That habitat on site and within the surrounding environment was deemed to be of poor suitability for Red Squirrel.

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Pine Marten (*Martes martes*)

A Pine Marten was noted commuting from south to north into an area of scrub on site. That habitat on site and within the surrounding environment was deemed to be of moderate suitability for Pine Marten.

2.4.3 Description of the Baseline Geological Environment

2.4.3.1 Bedrock Geology

Bedrock under the site is known as the 'Bricklieve Limestone Formation (lower)' consisting of Carboniferous limestones and shale.

The Bricklieve Limestone Formation was deposited in shallower water over other parts of Sligo at this time. As its name suggests this formation is best exposed on the Bricklieve Mountains.³⁶ The formation comprises mixed shelf carbonate and deltaic ('Yoredale') facies. The lower parts of the cycles, including almost all limestones and many mudstones, were deposited in marine environments. The upper parts of the cycles, including sandstones and coals, were deposited as progradational lobate deltas.³⁷

The Bricklieve Karst is a well-documented and researched karst drainage unit exhibiting many classic karst features. The drainage consists of a widespread diffuse (percolation) input with minor point recharge. The karst unit is an excellent example of upland karst dominated by percolation input to the aquifer and contains many surface karst features in a good state of preservation, including a number of aillts – dry valleys.³⁸

2.4.3.2 Aquifer Classification

The aquifer classification at the site is classed as a Regionally Important Aquifer - Karstified (conduit)'. A description of this aquifer is detailed below:

'Karstification' is the process whereby limestone is slowly dissolved away by percolating waters. It most often occurs in the upper bedrock layers and along certain fractures, fissures and joints, at the expense of others. Karstification frequently results in the uneven distribution of permeability through the rock, and the development of distinctive karst landforms at the surface (e.g. swallow holes, caves, dry valleys), some of which provide direct access for recharge/surface water to enter the aquifer. The landscape is characterised by largely underground drainage, with most flow occurring through the more permeable, solutionally-enlarged, interconnected fissure/conduit zones, which may be several kilometres long. Groundwater velocities through fissures/conduits may be high and aquifer storage is frequently low. Groundwater often discharges as large springs (>2,000 m³/d), which range from regular and dependable to highly variable ('flashy'). There is a strong interconnection between surface water and groundwater³⁹.

³⁶ McAteer, C. & Parkes, M. 2004. The Geological Heritage of Sligo. An Audit of County Geological Sites in Sligo. Geological Survey of Ireland. Unpublished Report. Pg.16

³⁷ British Geological Survey - https://earthwise.bgs.ac.uk/index.php/Lower_Limestone_Formation#:~:text=The%20formation%20comprises%20mixed%20shelf,deposited%20as%20progradational%20lobate%20deltas.

³⁸ SLIGO - COUNTY GEOLOGICAL SITE REPORT - https://gsi.geodata.gov.ie/downloads/Geoheritage/Reports/SO003_Bricklieves_Keshcorran.pdf

³⁹ Geological Survey Ireland Map Viewer: <https://dcenr.maps.arcgis.com/apps/MapSeries/index>

The degree of karstification ranges from slight to intense. Geological Survey of Ireland recognises two types of karst aquifer: those dominated by diffuse flow (Rkd) and those like the aquifer classified above dominated by conduit flow (Rkc)⁴⁰.

2.4.3.3 Groundwater Vulnerability

Groundwater Vulnerability is a term used to represent the natural ground characteristics that determine the ease with which groundwater may be contaminated by human activities. More scientifically, groundwater vulnerability embodies the characteristics of the intrinsic geological and hydrogeological features at a site that determine the ease of contamination of groundwater. The vulnerability category assigned to a site, or an area is thus based on the relative ease with which infiltrating water and potential contaminants may reach groundwater in a vertical or sub-vertical direction. As all groundwater is hydrologically connected to the land surface, it is the effectiveness of this connection that determines the relative vulnerability to contamination. Groundwater that readily and quickly receives water (and contaminants) from the land surface is considered to be more vulnerable than groundwater that receives water (and contaminants) more slowly, and consequently in lower quantities. Additionally, the slower the movement and the longer the pathway, the greater is the potential for attenuation of many contaminants⁴¹.

The Geological Survey Ireland classifies the groundwater vulnerability at the site to be in a vulnerability category of Low (L)⁴².

2.4.3.4 Groundwater Flow Direction

Exact directions of groundwater flow have not been established for the site in question, however, for the purposes of this assessment the precautionary principle is implemented, and a worst-case scenario is used.

The direction of groundwater flow follows a path through an aquifer from areas of high-water levels to areas where water levels are low. Water flows through aquifers to discharge points some distance down-gradient at a spring or offshore into the sea⁴³.

⁴⁰ Geological Survey Ireland Map Viewer: <https://dcenr.maps.arcgis.com/apps/MapSeries/index>

⁴¹ Geological Survey Ireland - Groundwater Vulnerability: <https://www.gsi.ie/en-ie/programmes-and-projects/groundwater/activities/understanding-ireland-groundwater/groundwater-vulnerability/Pages/default.aspx>

⁴² Geological Survey Ireland Map Viewer: <https://dcenr.maps.arcgis.com/apps/MapSeries/index>

⁴³ UK Groundwater Forum (Groundwater Flow): http://www.groundwateruk.org/downloads/groundwater_flow_and_quality.pdf



Legend:

	WS1- Scrub
	GS4- Wet Grassland
	WS3- Ornamental Non-native Shrub- Japanese Knotweed
	ED3- Recolonising Bare Ground
	FW4- Drainage Ditch
	WL2- Treelines
	Site Boundary

Project Title:
 AEMP-2000241
 Cloongad, Castlebaldwin, Co. Sligo

Drawing Title:
 Fossitt Habitat Map

Drawn By: AG	Checked By: MMQ
Project No: 2000241	Drawing No: Figure 2-2
Scale: 1/1000	Date: 1st August 2023

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3. Identification of Relevant European Sites

3.1 Identification of the European Sites within the Likely Zone of Impact

The following methodology was used to establish which European Sites are within the Likely Zone of Impact of the proposed development:

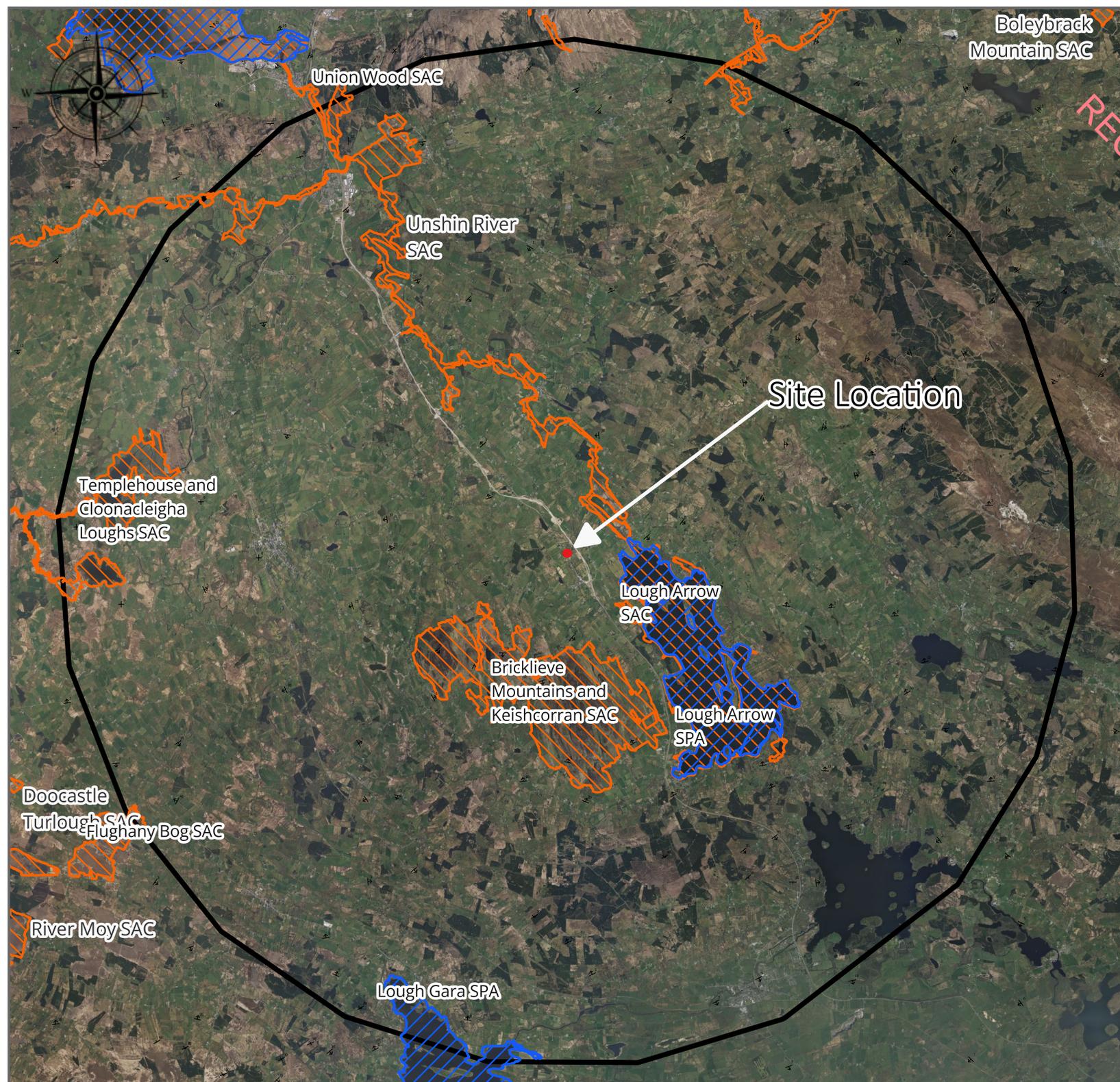
- The most up-to-date GIS spatial datasets for European designated sites and water catchments were downloaded from the NPWS website⁴⁴ and the EPA website⁴⁵ on the 31st of July 2023. These datasets were utilised to identify European Sites that could feasibly be affected by the proposed development;
- All European Sites within a distance of 15km surrounding the development site were identified and are detailed in Figure 3-1 below. In addition, the potential for connectivity with European Sites at distances greater than 15km from the proposed development was also considered. In this case, the proposed project does not give rise to the potential for likely significant effects on European Sites located beyond the 15km zone;
- In relation to Special Protection Areas, in the absence of any specific European or Irish guidance in relation to such sites, the Scottish Natural Heritage (SNH) Guidance, 'Assessing Connectivity with Special Protection Areas (SPA)' (2016) was consulted⁴⁶. This document provides guidance in relation to the identification of connectivity between proposed developments and Special Protection Areas. The guidance considers the distances species may travel beyond the boundary of their SPAs and provides information on dispersal and foraging ranges of bird species that are frequently encountered when considering plans and projects;
- Table 3-1 provides details of all relevant European Sites identified in the preceding steps and assesses which are within the likely Zone of Impact. The assessment considers any likely direct or indirect impacts of the proposed development, both alone and in combination with other plans and projects, on European Sites by virtue of the following criteria: size and scale, land-take, distance from the European Site or key features of the site, resource requirements, emissions, excavation requirements, transportation requirements and duration of construction, operation and decommissioning were considered in this screening assessment.
- The site synopses and conservation objectives, as per the appropriate datasets, were consulted and reviewed when preparing this report (31st of July 2023). Figure 3-1 details the location of the proposed development in relation to all European sites within 15km in the Republic of Ireland.

Where potential pathways for Significant Effect are identified, the site is included within the Likely Zone of Impact, and further assessment is required.

⁴⁴NPWS Protected Site Synopses and maps available on <http://www.npws.ie/en/ProtectedSites/>;

⁴⁵ EPA maps available on [EPA Maps](#)

⁴⁶ Scottish Natural Heritage (SNH) (July 2013) Assessing Connectivity with Special Protection Areas (SPA);



Boleybrack Mountain SAC

Union Wood SAC

Unshin River SAC

Site Location

Templehouse and Cloonacleigha Loughs SAC

Lough Arrow SAC

Bricklieve Mountains and Keishcorran SAC

Lough Arrow SPA

Doocastle Turlough SAC
Flughany Bog SAC

River Moy SAC

Lough Gara SPA

Legend:

-  SAC
-  SPA
-  15km Buffer
-  Site Boundary

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Project Title:
AEMP-2000241
Cloongad, Castlebaldwin, Co. Sligo

Drawing Title:
Natura 2000 Map

Drawn By:
AG

Checked By:
MMQ

Project No:
2000241

Drawing No:
Figure 3-1

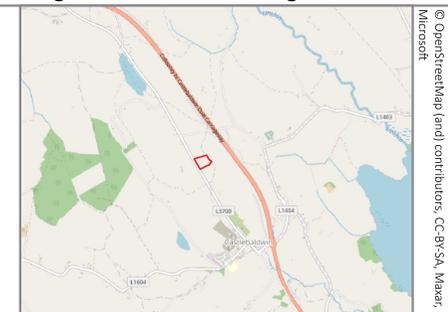
Scale:
1/100000

Date:
1st August 2023



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Table 3-1: Identification of designated sites within 15km Buffer

European Sites and distance from subject development	Qualify Interests/Special Conservation Interests for which the European site has been designated (Sourced from NPWS online Conservation Objectives, www.npws.ie on the 31/07/2023)	Conservation Objectives	Likely Zone of Impact Determination
Special Areas of Conservation (SAC)			
Unshin River SAC [001898] Distance: 1.4km	<ul style="list-style-type: none"> ➤ Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-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] ➤ Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] ➤ Salmo salar (Salmon) [1106] ➤ Lutra lutra (Otter) [1355] 	Detailed conservation objectives for this site (Version 1, December,2021) were reviewed as part of the assessment and are available at www.npws.ie	This development site is located 1.4km to the southwest of this SAC. There is no spatial overlap or no direct land take from this SAC. No direct impacts are anticipated. The proposed development site is hydrologically connected to this SAC via surface water runoff into the Lissycoyne watercourse (EPA code: IE_WE_35U010200) to the east, north and south of the site which are tributaries of the Unshin River and thus Unshin River SAC. Additionally, the percolation of water through a Regionally Important Aquifer with bedrock which is Karstified provides additional pathways to this sensitive receptor (See Figure 2-3). These features are potential pollutant pathway from the development site to Unshin SAC. Indirect impacts are anticipated. This SAC is within the likely zone of impact, and further assessment is required.
Lough Arrow SAC [001673] Distance: 1.5km	<ul style="list-style-type: none"> ➤ Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140] 	Detailed conservation objectives for this site (Version 1, October 2021) were reviewed as part of the assessment and are available at www.npws.ie	This development is located 1.5km to the west of this SAC. There is no spatial overlap or no direct land take from this SAC. No direct impacts are anticipated. No hydrological connection exists between the site of the proposed development and the SAC, therefore, there is no pathway for significant effects via direct or indirect impacts. However, a hydrogeological connection exists through the percolation of water through a Regionally Important Aquifer with bedrock which is Karstified provides additional pathways to this sensitive receptor (See Figure 2-3).

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			<p>These features are potential pollutant pathway from the development site to Lough Arrow SAC. Indirect impacts are anticipated.</p> <p>This SAC is within the likely zone of impact, and further assessment is required.</p>
<p>Bricklieve Mountains and Keishcorran SAC [001656] Distance: 2.7km</p>	<ul style="list-style-type: none"> ➤ Turloughs [3180] ➤ Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] ➤ Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510] ➤ Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii) [8120] ➤ Euphydryas aurinia (Marsh Fritillary) [1065] ➤ Austropotamobius pallipes (White-clawed Crayfish) [1092] 	<p>Detailed conservation objectives for this site (Version 1, December, 2021) were reviewed as part of the assessment and are available at www.npws.ie</p>	<p>This development is located 2.7km to the north of this SAC. There is no spatial overlap or no direct land take from this SAC. No direct impacts are anticipated.</p> <p>No hydrological connection exists between the site of the proposed development and the SAC, therefore, there is no pathway for significant effects via direct or indirect impacts.</p> <p>However, a hydrogeological connection exists through the percolation of water through a Regionally Important Aquifer with bedrock which is Karstified provides additional pathways to this sensitive receptor (See Figure 2-3).</p> <p>These features are potential pollutant pathway from the development site to Bricklieve Mountains and Keishcorran SAC. Indirect impacts are anticipated.</p> <p>This SAC is within the likely zone of impact, and further assessment is required.</p>
<p>Templehouse and Cloonacleigha Loughs SAC [000636] Distance: 11.9km</p>	<ul style="list-style-type: none"> ➤ 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] 	<p>Detailed conservation objectives for this site (Version 1, October 2021) were reviewed as part of the assessment and are available at www.npws.ie</p>	<p>This development site is located 11.9km to the southeast of this SAC. There is no spatial overlap or no direct land take from this SAC. No direct impacts are anticipated.</p> <p>No hydrological or hydrogeological connection exists between the site of the proposed development and the SAC, therefore, there is no pathway for significant effects via direct or indirect impacts.</p> <p>This site is not within the Likely Zone of Impact, and no further assessment is required.</p>
<p>Union Wood SAC [000638] Distance: 13.7km</p>	<ul style="list-style-type: none"> ➤ Old Oak Woodlands [91A0] 	<p>Detailed conservation objectives for this site (Version 1, October 2021) were reviewed as part of the assessment and are</p>	<p>This development site is located 13.7km to the southeast of this SAC. There is no spatial overlap or no direct land take from this SAC. No direct impacts are anticipated.</p> <p>No hydrological or hydrogeological connection exists between the site of the proposed development and the</p>

		available at www.npws.ie	SAC, therefore, there is no pathway for significant effects via direct or indirect impacts. This site is not within the Likely Zone of Impact, and no further assessment is required.
Lough Gill SAC [001976] Distance: 13.8km	<ul style="list-style-type: none"> ➤ Natural Eutrophic Lakes [3150] ➤ Orchid-rich Calcareous Grassland* [6210] ➤ Old Oak Woodlands [91A0] ➤ Alluvial Forests* [91E0] ➤ White-clawed Crayfish (<i>Austropotamobius pallipes</i>) [1092] ➤ Sea Lamprey (<i>Petromyzon marinus</i>) [1095] ➤ Brook Lamprey (<i>Lampetra planeri</i>) [1096] ➤ River Lamprey (<i>Lampetra fluviatilis</i>) [1099] ➤ Atlantic Salmon (<i>Salmo salar</i>) [1106] ➤ Otter (<i>Lutra lutra</i>) [1355] 	Detailed conservation objectives for this site (Version 1, October 2021) were reviewed as part of the assessment and are available at www.npws.ie	This development site is located 13.8km to the southwest of this SAC. There is no spatial overlap or no direct land take from this SAC. No direct impacts are anticipated. No hydrological or hydrogeological connection exists between the site of the proposed development and the SAC, therefore, there is no pathway for significant effects via direct or indirect impacts. This site is not within the Likely Zone of Impact, and no further assessment is required.
Flughany Bog SAC [000497] Distance: 14.7km	<ul style="list-style-type: none"> ➤ Active raised bogs [7110] ➤ Degraded raised bogs still capable of natural regeneration [7120] ➤ Depressions on peat substrates of the Rhynchosporion [7150] 	Detailed conservation objectives for this site (Version 1, January, 2016) were reviewed as part of the assessment and are available at www.npws.ie	This development site is located 14.7km to the northeast of this SAC. There is no spatial overlap or no direct land take from this SAC. No direct impacts are anticipated. No hydrological or hydrogeological connection exists between the site of the proposed development and the SAC, therefore, there is no pathway for significant effects via direct or indirect impacts. This site is not within the Likely Zone of Impact, and no further assessment is required.
Special Protected Areas (SPA)			
Lough Arrow SPA [004050] Distance: 1.5km	<ul style="list-style-type: none"> ➤ Little Grebe (<i>Tachybaptus ruficollis</i>) [A004] ➤ Tufted Duck (<i>Aythya fuligula</i>) [A061] ➤ Wetland and Waterbirds [A999] 	Detailed conservation objectives for this site (Version 1, October 2022) were reviewed as part of the assessment and are available at www.npws.ie	This development site is located 1.7km to the west of this SPA. There is no spatial overlap or no direct land take from this SPA. No direct impacts are anticipated. No hydrological connection exists between the site of the proposed development and the SPA, therefore, there is no pathway for significant effects via direct or indirect impacts. However, a hydrogeological connection exists through the percolation of water through a Regionally Important Aquifer with bedrock which is Karstified provides additional pathways to this sensitive receptor (See Figure 2-3).

			<p>These features are potential pollutant pathway from the development site to Lough Arrow Bay SPA. Indirect impacts are anticipated.</p> <p>This SPA is within the likely zone of impact, and further assessment is required.</p>
<p>Lough Gara SPA [004048] Distance: 13.5km</p>	<ul style="list-style-type: none"> ➤ Whooper Swan (Cygnus cygnus) [A038] ➤ Greenland White-fronted Goose (Anser albifrons flavirostris) [A395] 	<p>Detailed conservation objectives for this site (Version 1, October 2022) were reviewed as part of the assessment and are available at www.npws.ie</p>	<p>This development site is located 13.5km to the northeast of this SPA. There is no spatial overlap or no direct land take from this SPA. No direct impacts are anticipated.</p> <p>No hydrological or hydrogeological connection exists between the site of the proposed development and the SPA therefore, there is no pathway for significant effects via direct or indirect impacts.</p> <p>This site is not within the Likely Zone of Impact, and no further assessment is required.</p>

4. Article 6(3) Appropriate Assessment Screening Statement & Conclusions

The findings of this Screening Assessment are presented following the European Commission's Assessment of Plans and Projects Significantly affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC (EC, 2001) and Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2018) as well as the Department of the Environment's Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DoEHLG, 2010).

The following sites have been identified as within the likely zone of impact, and further appropriate assessment is required⁴⁷:

1. [Unshin River SAC \[001898\] located 1.4km to the northeast of the proposed development:](#)

- 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]
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]
- Salmo salar (Salmon) [1106]
- Lutra lutra (Otter) [1355]

2. [Lough Arrow SAC \[001673\] is located 1.5km to the east of the proposed development:](#)

- Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140]

3. [Bricklieve Mountains and Keishcorran SAC \[001656\] located 2.7km to the south of the proposed development:](#)

- Turloughs [3180]
- Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]
- Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510]
- Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii) [8120]
- Euphydryas aurinia (Marsh Fritillary) [1065]
- Austropotamobius pallipes (White-clawed Crayfish) [1092]

4. [Lough Arrow SPA \[004050\] is located 1.5km to the east of the proposed development:](#)

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⁴⁷ NPWS Protected Site Synopses and maps available on <http://www.npws.ie/en/ProtectedSites/>;

- Little Grebe (*Tachybaptus ruficollis*) [A004]
- Tufted Duck (*Aythya fuligula*) [A061]
- Wetland and Waterbirds [A999]

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5. Site Identification & Screening

This section provides the background information of the Natura 2000 sites screened to require assessment and the underlying reasoning behind this assessment. In total, nine designations have been identified within 15km of the site. The majority of these designations, due to the benign nature of the development, can be screened out due to distance from the site, no hydrological connection and no direct land-take or disturbance to qualifying species.

The application site is not located within any Natura 2000 site; however, four designations are located within proximity. These include Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC and Lough Arrow SPA. These designations have been identified in terms of the potential for indirect adverse impacts to arise as a result of the proposed development of the site.

5.1 Designated Sites

[Unshin River SAC \[001898\]](#)

Distance: 1.4km northeast

[Site Synopsis Overview](#)

The Unshin River runs from Lough Arrow north to Ballysadare Bay, Co. Sligo. The river is largely undrained and unaltered along much of its course. The Unshin River flows across several geological boundaries between sandstone, shales, and limestone. This results in unusual physio-chemical qualities which in turn are reflected in the rich and varied plant and animal populations.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [3260] Floating River Vegetation
- [6210] Orchid-rich Calcareous Grassland*
- [6410] Molinia Meadows
- [91E0] Alluvial Forests*
- [1106] Atlantic Salmon (*Salmo salar*)
- [1355] Otter (*Lutra lutra*)

The Unshin River supports an excellent example of floating river vegetation including a large diversity of aquatic macrophytes as a result of the good quality water being discharged from Lough Arrow upstream.

Plant species present which indicate base-rich conditions include Lesser Water-parsnip (*Berula erecta*), Blunt-fruited Water-starwort (*Callitriche obtusangula*), Fan-leaved Water-crowfoot (*Ranunculus circinatus*) and the internationally rare River Water-dropwort (*Oenanthe fluviatilis*). Species such as Lesser Marshwort (*Apium inundatum*), normally associated with more acidic peat pools, also occur. Fen and floating mire communities are represented by Bogbean (*Menyanthes trifoliata*), Cowbane (*Cicuta virosa*), Yellow Loosestrife (*Lysimachia vulgaris*) and Water Avens (*Geum rivale*). A rare and unusual alga, *Nostoc parmelioides*, is also present.

There are a number of areas of woodland, many of which flood, included within the site. These wet alluvial woodlands are found on water-logged soils and species such as Alder (*Alnus glutinosa*), Ash (*Fraxinus excelsior*), willows (*Salix* spp.), Pedunculate Oak (*Quercus robur*) and birch (*Betula* spp.) are common. Occasionally, Lime (*Tilia* spp.) and Horse-chestnut (*Aesculus hippocastanum*) are found also. The ground flora is diverse in places, and species such as Meadowsweet (*Filipendula ulmaria*), Wild Angelica (*Angelica sylvestris*), Lesser Celandine (*Ranunculus ficaria*), Wood Anemone (*Anemone nemorosa*), Yellow Iris (*Iris pseudacorus*), Bracken (*Pteridium aquilinum*), Reed Canary-grass (*Phalaris arundinacea*), Soft Rush (*Juncus effusus*), Common Valerian (*Valeriana officinalis*), Bramble (*Rubus fruticosus* agg.), Enchanter's-nightshade (*Circaea lutetiana*), Purple Loosestrife (*Lythrum salicaria*), Golden Saxifrage (*Chrysosplenium oppositifolium*), Greater Tussock-sedge (*Carex paniculata*), Remote Sedge (*Carex remota*), Bottle Sedge (*C. rostrata*), Common Nettle (*Urtica dioica*), Hart's-tongue (*Phyllitis scolopendrium*), Broad Buckler-fern (*Dryopteris dilatata*) and Lady-fern (*Athyrium filix-femina*) are all found. A number of non-native shrub species, some of which are invasive, are found: Snowberry (*Symphoricarpos albus*), Rhododendron (*Rhododendron ponticum*) and Cherry Laurel (*Prunus laurocerasus*). The non-native herbs Japanese Knotweed (*Reynoutria japonica*) and Giant Hogweed (*Heracleum mantegazzianum*) have also been recorded. Areas of grassland, ascribable to the E.U. Habitats Directive Annex I types: Orchid-rich Calcareous Grassland and Molinia Meadows, have been reported. There are also extensive wetlands within this site, and one area contains the Red Data Book plant Swamp Meadow-grass (*Poa palustris*). The Unshin and its tributaries form a very important system for Atlantic Salmon, a species that is listed on Annex II of the E.U. Habitats Directive. The Unshin and its tributaries is the most important salmon producing river in Co. Sligo. The system also supports a good population of Trout. The Annex II species Otter has been recorded in and near this site. Two notable bird species which occur along the river are Whooper Swan, and Kingfisher. Both are listed on Annex I of the E.U. Birds Directive. The quality of the Unshin River and particularly its aquatic macrophyte communities, make it rare in both an Irish and European context, and it is considered one of the most pristine rivers in the country.

Conservation Objectives

- To maintain the favourable conservation condition of Water courses of plain to montane levels with the *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation in Unshin River SAC;

- To restore the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) in Unshin River SAC;
- To restore the favourable conservation condition of Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) in Unshin River SAC;
- To restore the favourable conservation condition of Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, *Alnus incanae*, *Salicion albae*)* in Unshin River SAC;
- To maintain the favourable conservation condition of Atlantic Salmon (*Salmo salar*) in Unshin River SAC; and
- To maintain the favourable conservation condition of Otter (*Lutra lutra*) in Unshin River SAC

[Lough Arrow SAC \[000133\]](#)

Distance: 1.5km to the east

[Site Synopsis Overview](#)

Lough Arrow, located in Counties Sligo and Roscommon, is a large limestone lake that conforms to a type listed on Annex I of the E.U. Habitats Directive. The lake is sheltered on three sides by hills and is the source of the Unshin River. Lough Arrow is unusual in being a mesotrophic natural lake which has changed little in the last 40 years. It is largely spring-fed and very sheltered for its size, and, as such, is hydrologically different from most other lakes.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [3140] Hard Water Lakes

The shores of Lough Arrow are for the most part stony. Several bays occur in which Common Club-rush (*Scirpus lacustris*) and Common Reed (*Phragmites australis*) are found in abundance. In places the reedbeds extend out into the lake and Bogbean (*Menyanthes trifoliata*) and Yellow Iris (*Iris pseudacorus*) also occur. The lakeshore vegetation, which includes sedges (*Carex spp.*), Water Mint (*Mentha aquatica*) and Water Horsetail (*Equisetum fluviatile*), grades into areas of mossy boulders and woodland. The lakes support a diverse submerged aquatic flora.

An area of wet woodland in the north-west of the site is dominated by willows (*Salix spp.*) and some Alder (*Alnus glutinosa*) occurs also. The ground flora is composed of Yellow Iris, Common Reed, rushes (*Juncus spp.*), Marsh-marigold (*Caltha palustris*), sedges and Common Marsh-bedstraw (*Galium palustre*).

Areas of dry woodland to the north and south of the lake are also included in the site. The dominant species here are Ash (*Fraxinus excelsior*), Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*) and Sycamore (*Acer pseudoplatanus*). The ground flora includes Herb-Robert (*Geranium robertianum*), Bramble (*Rubus fruticosus* agg.), Great Wood-rush (*Luzula sylvatica*), Cleavers (*Galium aparine*), Primrose (*Primula vulgaris*), and a variety of fern, moss and liverwort species.

The wooded islands and some areas along the shore are used by nesting Tufted Duck, while the reedbeds are also used by nesting wildfowl. In winter the lake is frequented by flocks of Tufted Duck (226), Coot (325), Little Grebe (35), Wigeon (87), Mallard (27), Pochard (36) and Goldeneye (49) (data for 2 counts over 1 season, 1984/85 - 1986/87). Lough Arrow supports the highest density of breeding Great Crested Grebe, Merganser and Tufted Duck of any of the large lakes in western Ireland.

The lake is notable for its Brown Trout and Eel populations, both of which are fished. Otter, a Red Data Book species which is legally protected under the Wildlife Act, 1976, and is listed on Annex II of the E.U. Habitats Directive, has been recorded at the site. Lough Arrow and its environs incorporate a variety of habitats, including the E.U. Habitats Directive Annex I listed habitat, hard water lake. The site also supports important numbers of birds. The diversity of lakeshore vegetation and the presence of protected species, in particular Otter, adds to the conservation significance of the site.

Conservation Objectives:

- To restore the favourable conservation condition of Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. in Lough Arrow SAC;

Bricklieve Mountains and Keishcorran SAC [001656]

Distance: 2.7km South

Site Synopsis Overview

The Bricklieve Mountains and Keishcorran are located west of Lough Arrow and approximately 6 km north-west of the town of Boyle and are in Co. Sligo. The site is a large, isolated block of carboniferous limestone that reaches a height of approximately 300 m. Typical landscape features associated with a karst topography are present, including caves, dry valleys and limestone pavement. A striking feature of the Bricklieve Mountains is that they are cut into four slices by narrow rift valleys which run north-west and south-east. The walls of these valleys are vertical cliffs which vary between 10-30 m in height. During the last ice age retreating ice deposited morainic debris across the rift valleys. This helped to form lakes, which subsequently developed into bog.

Botanically this site is extremely rich and varied. This is primarily due to the very different floras of the limestone and peat areas (i.e., the calcicole and calcifuge element of the flora). In places leaching has facilitated the development of an interesting calcifuge flora.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [3180] Turloughs*
- [6210] Orchid-rich Calcareous Grassland*
- [6510] Lowland Hay Meadows
- [8120] Calcareous Scree
- [1065] Marsh Fritillary (*Euphydryas aurinia*)
- [1092] White-clawed Crayfish (*Austropotamobius pallipes*)

The dominant habitats on the site include upland grassland on peaty soil, blanket bog, heath, upland grassland on mineral soil and scrub woodland. Calcareous dry grassland occurs on the lower slopes, bogland on the upper slopes above 200 m and scrub woodland by the cliff walls of the rift valleys.

Lough na Leibe (Lough Labe), a small lake situated within the site, has been noted for its naturally spawning stock of Rainbow Trout, one of the only such sites in Ireland. The lake also supports a good population of White-clawed Crayfish (*Austropotamobius pallipes*), a species listed on Annex II of the E.U. Habitats Directive.

The site is notable for supporting an excellent population of the scarce butterfly, Marsh Fritillary (*Euphydryas aurinia*), a species that is listed on Annex II of the E.U. Habitats Directive. Marsh Fritillary is particularly associated with areas supporting good stands of its food plant, Devil's-bit Scabious (*Succisa pratensis*).

The site is also of archaeological interest. The area has many megalithic tombs, some of considerable size, erected by Neolithic farmers some 4,500 years ago. In caves within the site the bones of extinct bears and other animals have been found.

The main threats to the diverse flora of this site are the application of artificial fertilizers, over-grazing by domestic stock, burning, quarrying, turf-cutting and afforestation. The area has probably been grazed since prehistoric times and so is in equilibrium with the present prevailing land use. However, this equilibrium needs to be maintained as a reduction in grazing pressure would result in the spread of scrub vegetation and over-grazing would lead to poaching and loss in vegetation cover and diversity. Turf-cutting resulted in the drainage of Lough Availe in 1946.

The Bricklieve Mountains and Keishcorran are exceptionally diverse in habitats and species and form a discrete unit of scenic and amenity value. The site is also of geomorphological, geological and archaeological importance. Overall, this site is of high conservation importance.

Conservation Objectives

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- To maintain the favourable conservation condition of Turloughs* in Bricklieve Mountains and Keishcorran SAC;
- To restore the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) in Bricklieve Mountains and Keishcorran SAC;
- To restore the favourable conservation condition of Lowland hay meadows (*Alopecurus pratensis*, *Sanguisorba officinalis*) in Bricklieve Mountains and Keishcorran SAC;
- To restore the favourable conservation condition of Calcareous and calcshist scree of the montane to alpine levels (*Thlaspietea rotundifolii*) in Bricklieve Mountains and Keishcorran SAC;
- To maintain the favourable conservation condition of Marsh Fritillary (*Euphydryas aurinia*) in Bricklieve Mountains and Keishcorran SAC; and
- To maintain the favourable conservation condition of White-clawed Crayfish (*Austropotamobius pallipes*) in Bricklieve Mountains and Keishcorran SAC.

Lough Arrow SPA [004050]

Distance: 1.5km East

Site Synopsis

Lough Arrow is a large limestone lake situated almost entirely within Co. Sligo with a small section extending into Co. Roscommon. It is sheltered on three sides by hills and is the source of the Unshin River which flows north-westwards from its northern end. It has a relatively small catchment and is largely spring-fed. The average depth of water is 9 m (maximum 33 m). The lake is classified as a mesotrophic system. There is a well-developed submerged aquatic flora, with a notable charophyte community. The shores of the lake are for the most part stony, though several bays occur in which Common Club-rush (*Scirpus lacustris*) and Common Reed (*Phragmites australis*) are found in abundance. In places the reedbeds extend out into the lake and Bogbean (*Menyanthes trifoliata*) and Yellow Iris (*Iris pseudacorus*) occur.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species:

- Little Grebe
- Tufted Duck

Lough Arrow supports nationally important populations of Little Grebe (185) and Tufted Duck (467). Other species that occur include Whooper Swan (35), Goldeneye (96), Great Crested Grebe (33) and Coot (201) – all figures are five year mean peaks for the period 2001/02 to 2005/06. It is also a breeding site for a number of species including Great Crested Grebe (23 pairs in 1992), Common Scoter (3 pairs in 1999), Tufted Duck (c. 50 pairs in 1992) and Red-breasted Merganser (26 pairs in 1992). Common Gull (84 pairs) and Lesser Black-backed Gull (110 pairs) also breed on islands in the lake – data from 1993.

Lough Arrow is an important game fishery, with good stocks of Brown Trout and Eel.

Lough Arrow SPA is of ornithological importance on account of the nationally important populations of Little Grebe and Tufted Duck that are associated with the lake. The occurrence of Whooper Swan, a species that is listed on Annex I of the E.U. Birds Directive, is of note.

Conservation Objectives:⁴⁸

- To maintain the favourable conservation condition for Little Grebe in Lough Arrow SPA;
- To maintain the favourable conservation condition for Tufted Duck in Lough Arrow SPA;
- To maintain or restore the favourable conservation condition of the wetland habitat at Lough Arrow SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

5.2 Favourable Conservation Status

The purpose of designating and managing Natura 2000 sites is to maintain at or restore to ‘favourable conservation status’ the habitats and species listed within the Directives for which the sites are notified; individual conservation objectives encapsulate an overall aim of maintaining or achieving favourable conservation status for each feature and maintaining the integrity of the site as a whole.

Favourable conservation status of a habitat is achieved when:

- Its natural range, and area it covers within that range, are stable or increasing, and 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, and 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.

⁴⁸ NPWS (2022) Conservation objectives for Lough Arrow SPA [004050]. First Order Sitespecific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.

Article 6(3) of the Habitats Directive requires that prior assessment be conducted regarding the established conservation objectives for each designated site. A general conservation objective encapsulating an overall aim of maintaining ‘favourable conservation status’ has been applied in relation to each Natura 2000 site and in relation to each site feature for the purposes of initial analysis.⁴⁹

5.3 Screening Matrix

No direct impacts to Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC and Lough Arrow SPA are anticipated due to the scale and nature of the development and upon the existing habitats and species on-site. However, the site is hydrologically and/or hydrogeologically connected to protected areas via surface water run-off and groundwater bodies which flow into the European designated sites detailed above; therefore, a screening matrix has been applied to assess the following potential impacts of the proposed development.

5.4 Potential Pathways

- Surface water runoff from the construction phase via surface water runoff into the watercourses that bound the site to the east, north and south that forms part of the Lissycoyne watercourse (EPA code: IE_WE_35U010200) causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA; and
- Inappropriately managed construction operations within a construction site containing Japanese Knotweed, highly invasive alien plant species, causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA.

There are watercourses to the east, north and south of the site which are tributaries of the Unshin River and thus Unshin River SAC. Therefore, the prevention of contaminants, silts and sediments from entering minor watercourses/field drains hydrologically or hydrogeologically connected to Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC and Lough Arrow SPA during construction and throughout the operational phase of the development is vital. Where this pathway can be eliminated, this will significantly reduce the potential impacts on the integrity of these sites, ensuring no detrimental impacts are likely to occur.

⁴⁹ EC (2002) 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. European Commission

Table 5-1: Stage 1 Test of Likely Significance (TOLS) of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA

<p>Description of project/development</p>	<p>The site consists of habitats such as Recolonising bare ground (ED3), Treelines (WL2), Scrub (WS1), Wet Grassland (GS4), Drainage Ditch (FW4) and Ornamental/non-native Shrub (WS3).</p> <p>The Proposed development includes the construction of an agricultural machinery shed to include the filling/ importation of 8,973 cum or 17,048 tons of inert soil and stone material round the proposed shed and complete area of the site along with reseeding to complete area of the as part of the site development.</p> <p>External yard areas surrounding the shed structure will consist of a stone gravel base. Any and all machinery will be stored within the shed structure on an impermeable base. Any hydrocarbon leaks/spills within the building will be managed through the use of spill kits and waste arisings dealt with via a licenced waste contractor. No vehicles or machinery/equipment containing hydrocarbons or other pollutants will be stored on external permeable surfaces. No foul wastewater will be arising from the proposed development and any surface water arising from building roof run-off will be directed to an on-site soakaway.</p>
<p>Designated site(s)</p>	<p>Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC and Lough Arrow SPA.</p>
<p>Description of likely impacts on designated sites</p>	<ol style="list-style-type: none"> 1. Surface water runoff from during the construction phase via surface water runoff into the watercourses that bound the site to the east, north and south that forms part of the Lissycoyne watercourse (EPA code: IE_WE_35U010200) causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA; and 2. Inappropriately managed construction operations within a construction site containing Japanese Knotweed, highly invasive alien plant species, causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA.
<p>Likely impacts (direct, indirect or secondary impacts) on the designations</p>	
<p>Size and scale</p>	<p>The site is physically separated from the Unshin River SAC by 1.4km, Lough Arrow SAC by 1.5km, Bricklieve Mountains and Keishcorran SAC by 2.7km, & Lough Arrow SPA by 1.5km, and is relatively small in scale.</p>
<p>Land-take</p>	<p>The proposal does not require any land taken from within any SAC/SPA</p>
<p>Distance from designations or key features of the site</p>	<p>The site is physically separated from the Unshin River SAC by 1.4km, Lough Arrow SAC by 1.5km, Bricklieve Mountains and Keishcorran SAC by 2.7km, & Lough Arrow SPA by 1.5km, and is relatively small in scale.</p>
<p>Resource requirements</p>	<p>The proposal does not require any resources from within any SAC/SPA.</p>
<p>Excavation requirements</p>	<p>The proposal does not require any excavation from within either SAC/SPA.</p>
<p>Transport requirements</p>	<p>All transportation requirements will be achieved using the existing public road network and will not result in significant effects on the designated sites.</p>
<p>Duration of construction</p>	<p>Estimated 1-2 years</p>
<p>Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site as a result of:</p>	

Reduction of Habitat	The proposal will not result in the reduction of habitat within any SAC/SPA or areas of supporting natural and semi-natural habitat.
Disturbance to Key species	No disturbance was predicted due to setback distance.
Habitat Fragmentation	During the construction and operational phase, no habitats are to be fragmented, which could be important for any species for which the designations are held.
Reduction of Species Diversity	During the construction and operational phase, the development is not considered to directly reduce the populations of species for which the designations occur. A multitude of factors can influence the reduction of species; however, this proposed development is considered to have a negligible effect upon them.

The test of likely significance (TOLS) at Stage 1 has indicated that the proposal is likely to have an effect on Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC, and Lough Arrow SPA, causing degradation to the sensitive selection features as detailed above. Therefore, as indirect impacts are likely to occur and based on the precautionary approach, a Stage 2 Appropriate Assessment must be undertaken.

The following tables 6-1 to 6-3 present mitigation, assessment of mitigation and findings.

6. Stage 2- Appropriate Assessment

6.1 Potential Pathway - Mitigation Proposals

Mitigation proposals to ensure no adverse effect on any natura 2000 site identified within the likely zone of impact highlighted above are detailed below.

- Surface water runoff from the construction phase via surface water runoff into the watercourses that bound the site to the east, north and south that forms part of the Lissycoyne watercourse (EPA code: IE_WE_35U010200) causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA can be managed through an effective and robust Construction Environmental Management Plan (CEMP), ensuring that best practice is applied to all aspects of the construction phase; and
- Inappropriately managed construction operations within a construction site containing Japanese Knotweed, highly invasive alien plant species, causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA can be managed through an effective and robust Japanese Knotweed Management Plan (JKMP), ensuring that best practice is applied to all aspects of the construction and operational phases concerning invasive plant species.

The following tables 6-1 to 6-3 present mitigation, assessment of mitigation and findings.

Table 6-1: Stage 2 Appropriate Assessment: Construction Phase Surface Water Runoff - Mitigation Measures

Mitigation measures to be introduced?	How will the measures avoid adverse effects on the integrity of the site?	How will the measures reduce the adverse effects on the integrity of the site?	Provide evidence of how they will be implemented and by whom?
Surface water runoff from the construction phase via surface water runoff into the watercourses that bound the site to the east, north and south that forms part of the Lissycoyne watercourse (EPA code: IE_WE_35U010200) causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA can be managed through an effective and robust	Source and pathway to receptors have been controlled, managed and/or removed as part of the implementation of the CEMP and measures therein concerning construction activities. No adverse impacts are predicted.	Once a source and pathway to receptors have been controlled, managed and/or removed as part of the implementation of the CEMP. These measures remove the potential for adverse effects on the integrity of the N2K sites.	A CEMP should be required as part of planning approval/conditions and formal approval for the same with the planning authority. The principal contractor will be responsible for the implementation of the CEMP.
	Provide evidence of the degree of confidence in their likely success.	Provide timescale, relative to the project or plan, when they will be implemented.	Explain the proposed monitoring scheme and how any mitigation failure will be addressed.

<p>Construction Environmental Management Plan (CEMP), ensuring that best practice is applied to all aspects of the construction phase.</p> <p>An appropriate buffer from development on site and the watercourses bounding the site must be maintained i.e., a 10m buffer from the stream to the east.</p> <p>(See Appendix A for further detail on CEMP requirements and Appendix B on a buffer example).</p>	<p>If a CEMP is implemented, the pollution source and pathway is controlled, managed and/or removed; therefore, no pollutant can enter pathways, ensuring no adverse effects on N2K sites.</p> <p>Authors are confident in the likely success of these mitigation measures.</p>	<p>Throughout the duration of the construction phase of the development.</p>	<p>Mitigation procedures will be managed by the principal contractor, daily checks shall be undertaken and recorded, and documentation will be retained on a continuous basis to ensure implementation and compliance. Issues raised will be addressed by the principal contractor.</p>
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Table 6-2: Stage 2 Appropriate Assessment: Operations Within an Area Containing Invasive Species - Mitigation

Mitigation measures to be Introduced	How will the measures avoid adverse effects on the integrity of the site?	How will the measures reduce the adverse effects on the integrity of the site?	Provide evidence of how they will be implemented and by whom?
<p>Inappropriately managed construction operations within a construction site containing Japanese Knotweed, highly invasive alien plant species, causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA can be managed through an effective and robust Japanese Knotweed Management Plan (JKMP), ensuring that best practice is applied to all aspects of the construction and operational phases concerning invasive plant species.</p> <p>(See Appendix C for further detail on JKMP requirements).</p>	<p>The objective of an invasive species management plan (JKMP) is to control, and/or eradicate Invasive species from the construction zone in advance of any site works within the infested area. The implementation of an JKMP will ensure this invasive species issue is addressed before main construction activities begin. An effective and robust JKMP will eliminate the issue of invasive species on-site and, in turn, eliminate the potential for adverse effects on designated sites downstream throughout the construction and operational phases.</p> <p>No adverse impacts are predicted.</p>	<p>An effective and robust JKMP will eliminate the potential issue of invasive species on-site and, in turn, eliminate the potential for adverse effects on designated sites downstream throughout the construction and operational phases.</p>	<p>A site-specific JKMP should be developed and prepared in accordance with best practice guidance. Such a plan should be implemented by the principal contractor throughout the construction and operational phases of the development.</p> <p>See Appendices for information on JKMP requirements.</p>
	<p>Provide evidence of the degree of confidence in their likely success.</p>	<p>Provide timescale, relative to the project or plan, when they will be implemented.</p>	<p>Explain the proposed monitoring scheme and how any mitigation failure will be addressed.</p>

	<p>If an effective and robust Japanese Knotweed Management Plan is implemented as part of the development with a goal of controlling and/or eradicating invasive species from the site, such measures will ensure downstream environments will not be affected. Eliminating the source (Japanese knotweed) reduces the risk to downstream environments (designated sites).</p> <p>Authors are confident in the likely success of these mitigation measures.</p>	<p>This JKMP will be implemented throughout the construction and operational phases of the development and will continue until the JKMP objectives are met.</p>	<p>Implementing the plan and the measures therein is the responsibility of the principal contractor. The developed plan will have a range of measures to include a post-construction monitoring and treatment programme to ensure the plan objectives are met.</p>
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Table 6-3: Stage 2 Appropriate Assessment

<p>Describe the elements of the project or plan (alone or in combination with other projects or plans) that are likely to give rise to significant effects on the site (from screening assessment).</p>	<p>The proposed development site is located at Cloongad, Castlebaldwin, Co. Sligo. (Irish Grid Reference: G 74962 15334).</p> <p>The site is situated approximately 0.9 km northwest of Castlebaldwin, 21 km southeast of Sligo town centre, and 101 km northeast of Galway city centre. The site is accessible via the N4 road, located to the west of the site, serving as the primary access route. The development is bordered by the Collooney to Castlebaldwin dual carriageway to the east, and rough grassland to the north and south.</p> <p>The current site consists of habitats such as Recolonising bare ground (ED3), Treelines (WL2), Scrub (WS1), Wet Grassland (GS4), Drainage Ditch (FW4) and Ornamental/non-native Shrub (WS3).</p> <ul style="list-style-type: none"> ○ Surface water runoff from during the construction phase via surface water runoff into the watercourses that bound the site to the east, north and south that forms part of the Lissycoyne watercourse (EPA code: IE_WE_35U010200) causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow can be managed through an effective and robust Construction Environmental Management Plan (CEMP), ensuring that best practice is applied to all aspects of the construction phase; and ○ Inappropriately managed construction operations within a construction site containing Japanese Knotweed, highly invasive alien plant species, causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA can be managed through an effective and robust Japanese Knotweed Management Plan (JKMP), ensuring that best practice is applied to all aspects of the construction and operational phases concerning invasive plant species.
<p>Conservation objectives</p>	<p>Unshin River SAC Conservation Objectives:</p> <ul style="list-style-type: none"> ➤ To maintain the favourable conservation condition of Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation in Unshin River SAC; ➤ To restore the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) in Unshin River SAC; ➤ To restore the favourable conservation condition of Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) in Unshin River SAC;

	<ul style="list-style-type: none"> ➤ To restore the favourable conservation condition of Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)* in Unshin River SAC; ➤ To maintain the favourable conservation condition of Atlantic Salmon (<i>Salmo salar</i>) in Unshin River SAC; and ➤ To maintain the favourable conservation condition of Otter (<i>Lutra lutra</i>) in Unshin River SAC <p>Lough Arrow SAC Conservation Objectives:</p> <ul style="list-style-type: none"> ➤ To restore the favourable conservation condition of Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. in Lough Arrow SAC; <p>Bricklieve Mountains and Keishcorran SAC Conservation Objectives:</p> <ul style="list-style-type: none"> ➤ To maintain the favourable conservation condition of Turloughs* in Bricklieve Mountains and Keishcorran SAC; ➤ To restore the favourable conservation condition of Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (* important orchid sites) in Bricklieve Mountains and Keishcorran SAC; ➤ To restore the favourable conservation condition of Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>) in Bricklieve Mountains and Keishcorran SAC; ➤ To restore the favourable conservation condition of Calcareous and calcshist screes of the montane to alpine levels (<i>Thlaspietea rotundifolii</i>) in Bricklieve Mountains and Keishcorran SAC; ➤ To maintain the favourable conservation condition of Marsh Fritillary (<i>Euphydryas aurinia</i>) in Bricklieve Mountains and Keishcorran SAC; and ➤ To maintain the favourable conservation condition of White-clawed Crayfish (<i>Austropotamobius pallipes</i>) in Bricklieve Mountains and Keishcorran SAC. <p>Lough Arrow SPA Conservation Objectives:</p> <ul style="list-style-type: none"> ➤ To maintain the favourable conservation condition for Little Grebe in Lough Arrow SPA; ➤ To maintain the favourable conservation condition for Tufted Duck in Lough Arrow SPA; ➤ To maintain or restore the favourable conservation condition of the wetland habitat at Lough Arrow SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.
<p>Describe how the project or plan will affect key species and key habitats</p>	<p>The locations of proposed buildings and the nature of the construction activities on-site are likely to increase sediment and hydrocarbon concentrations, via drains, streams, rivers, surface water bodies, groundwater features and other pollutant pathways. These waterbodies and features are a potential pathway from the development site to Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA for potentially contaminated surface water runoff, causing degradation to the sensitive SAC/SPA selection features.</p> <p>Additionally, inappropriate management of construction operations within areas of the construction site containing Japanese Knotweed, a highly invasive alien plant species, causing degradation of the overall environmental and ecological quality of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA.</p> <p>Due to the distance from the Natura 2000 site, it is not anticipated there will be direct disturbance to the qualifying features of Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA from site operations, such as the movement of people and machinery.</p>

<p>Describe how the integrity of the site (determined by structure and function and conservation objects) is likely to be affected by the project or plan.</p>	<p>Degradation of the adjacent aquatic environments from contaminated surface water runoff and inappropriate management of invasive plant species on-site as a result of the construction of the development. Such degradation would have a direct impact on priority species relying on said environments.</p>
<p>Mitigation measures are to be introduced to avoid adverse effects on the integrity of the site.</p>	<ul style="list-style-type: none"> ➤ Implementation of an effective and robust Construction Environmental Management Plan (CEMP); ➤ Implementation of an appropriate buffer zone, where all construction activities should be cut with (10m buffer zone from the watercourse to the east); ➤ Implementation of an effective and robust Japanese Knotweed Management Plan (JKMP), ensuring that best practice is applied to all aspects of the construction and operational phases concerning invasive plant species.

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7. Likely Cumulative Impact (In-Combination)

7.1 Other Plans and Projects

The potential for the proposed works to contribute to a cumulative impact on European Sites was considered. The National Planning Application Database for Sligo County Council⁵⁰ was consulted on the 5th of July 2023. Additional projects identified in the townland and within close proximity to the site within the last five years were reviewed in conjunction with the Policies and Objectives of the Sligo County Development Plan 2017-2023 and were considered as part of this assessment. Table 7-1 below details such considerations.

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
Sligo County ⁵¹ Development Plan 2017 - 2023	<p><u>Objective O-H-2</u> Adopt and implement, in partnership with all relevant stakeholders, the County Sligo Biodiversity Action Plan 2011-2015 and subsequent biodiversity plans.</p> <p><u>Objective O-DSNC-1</u> Identify and protect local areas of high nature conservation value and support the management of landscape features that are of major importance for wild fauna and flora in accordance with Article 10 of the Habitats Directive.</p> <p><u>Policy P-NH-1</u> Protect, sustainably manage and enhance the natural heritage, biodiversity, geological heritage, landscape and environment of County Sligo in recognition of its importance for nature conservation and biodiversity, and as a non-renewable resource, in association with all stakeholders.</p> <p><u>Policy P-NH-2</u> Promote increased understanding and awareness of the natural heritage and biodiversity of the county.</p> <p><u>Policy P-NH-3</u> Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under the EU Habitats Directive, EU Birds Directive, the Wildlife Act and the Flora Protection Order.</p> <p><u>Policy P-DSNC-1</u> Protect and maintain the favourable conservation status and conservation value of all-natural heritage sites designated or proposed for designation in accordance with European and national legislation and agreements. These include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs), Ramsar Sites, Statutory Nature Reserves. In addition, the Council will identify, maintain</p>	<p>The Development Plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to biodiversity, protected species and designated sites.</p> <p>There are no protected habitats within the site. The proposal includes the construction of an agricultural machinery shed to include the filling/importation of 8,973 cum or 17,048 tons of inert soil and stone material round the proposed shed and complete area of the site along with reseeding to complete area of the as part of the site development.</p> <p>Upon implementation of appropriate mitigation measures, there is no risk of contamination from the proposal.</p> <p>No potential for cumulative negative impacts, when considered in conjunction with the current proposal, were identified.</p>

⁵⁰ Sligo County Council Planning Applications Online, Available at: <https://www.sligococo.ie/planning/SearchPlanningApplications/>

⁵¹ Sligo County Development Plan, Available at: [DraftCDP2017-2023HabitatsDirectiveAssessment.pdf \(sligococo.ie\)](https://www.sligococo.ie/DraftCDP2017-2023HabitatsDirectiveAssessment.pdf)

	<p>and develop non-designated areas of high nature conservation value that serve as linkages or ‘stepping stones’ between protected sites in accordance with Article 10 of the Habitats Directive.</p> <p><u>Policy P-DSNC-2</u></p> <p>Promote the maintenance and, as appropriate, achievement of ‘favourable conservation status’ of habitats and species in association with the NPWS.</p> <p><u>Policy P-DSNC-3</u></p> <p>Carry out an appropriate level of assessment for all development plans, land-use plans and projects it authorizes or proposes to undertake or adopt, to determine the potential for these to impact on designated or proposed designated sites in accordance with the Habitats Directive.</p> <p><u>Policy P-DSNC-4</u></p> <p>Consider development within, or with the potential to affect, Natural Heritage Areas or proposed Natural Heritage Areas, where it is shown that such development, activities or works will not have significant negative impacts on such sites or features, or in circumstances where impacts can be appropriately mitigated.</p>	<p>No developments or projects identified within the Development Plan were found to occur in the wider area surrounding the proposed development.</p>
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8. Assessment of Potential Impacts to Designations

The proposed development at stage one screening test of likely significance has demonstrated that the proposal is likely to increase contaminant concentrations in the sites surface and ground water networks causing further degradation to the Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC and Lough Arrow SPA aquatic environments. The prevention of contaminants, silts, and sediments from entering the sites pollution pathways hydrologically and hydrogeologically connected Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC and Lough Arrow SPA during construction and throughout the operational phase is therefore vital. Where this pathway can be eliminated, this will significantly reduce the potential impacts on the integrity of these sites so that no detrimental impacts are likely to occur.

The implementation and installation of the following mitigation measures will prevent the source (contaminants, silts and sediments) from entering pollution pathways, therefore not adding to/increasing the total pollutant concentrations of the receptor (Unshin River SAC, Lough Arrow SAC, Bricklieve Mountains and Keishcorran SAC & Lough Arrow SPA).

- The implementation of an effective and robust Construction Environmental Management Plan (CEMP), ensuring that best practice is applied to all aspects of the construction phase (see Appendix A);
- The implementation of appropriate buffer zones (10m buffer from watercourses bounding the site to the east), where all development activities should be outwith (see Appendix B); and
- The implementation of an effective and robust Japanese Knotweed Management Plan (JKMP), ensuring that best practice is applied to all aspects of the construction and operational phases concerning invasive plant species.

There are no concerning additional live projects/developments located within proximity. Therefore, it is considered that there is no additive effect for significant cumulative or in combination impacts on the Natura 2000 network to occur as a result of the development.

Appendices

Appendix A - Construction Environmental Management Plan Requirements

The Principal Contractor should implement the following mitigation measures into a CEMP to ensure environmental and ecological issues are prevented as a result of construction activities on-site:

- Construction workers should take all possible steps to avoid impacts on wildlife, habitats, and designated sites. Environmental awareness and a responsible attitude towards the natural environment are essential. The environmental objectives of the construction phase of the development should include minimising the generation of pollutants (i.e., dust, sediment, waste etc.), ensure no pollution incidents occur and minimise disturbance to wildlife while protecting and enhancing biodiversity;
- Prior to any works undertaken, appropriate measures should be implemented to prevent any pollution inputs into the surrounding drains and areas likely to be affected through surface water runoff. If runoff is still likely to occur, surface water should be managed to ensure it does not run into excavations, over disturbed ground or onto haul roads.

Surface & Ground Water Management

- Surface water drains, check dams, silt fencing, sediment traps (dynamic separator, straw bales, straw wattles etc., as deemed necessary prior to works commencing), and geotextile materials will be installed where necessary during the construction phase of the development. These measures will protect the surrounding surface and ground water drains and waterbodies from any sediment (loose soil and debris) that may arise in the event of surface or ground water runoff on-site;
- Existing surface water channels or, where necessary new appropriately sized channels will be installed to collect and channel all surface water runoff.
- Appropriately sized gravel check dams will be installed within all sediment management surface water channels to minimise sediment mobilisation. All surface water channels will be directed to appropriately sized and designed sediment traps;
- Where dewatering from excavated areas is required, water should be pumped to a suitably sized portable settlement tank with silt bags included at the outlet to assist in sediment removal. The location of this system if required should be determined in conjunction with an ECoW on-site prior to dewatering works being undertaken;
- Stockpiles will be kept to a minimum. If soil stockpiling is required, they will be covered with geotextile material, and a silt fence will be erected at the toe of said stockpiles to minimise sediment mobilisation. A perimeter channel will be installed around the base of the stockpiles and directed towards the on-site sediment management channels, which will capture and re-treat any excess stockpile surface water runoff. Timeframes, the soil is stockpiled, and stripped grounds are exposed, will be kept to a minimum.

Sediment Management

- Silt fencing and geotextile materials will be installed during the construction phase of the development. These measures will protect the adjacent watercourse from any sediment (loose soil and debris) that may arise in the event of surface water runoff on-site.
- Silt fencing will be installed along the site boundary to include between the adjacent watercourses and the main site;
- Appropriately sized channels will be installed, as detailed above, to collect and channel all surface water runoff. Appropriately sized gravel check dams will be installed within all sediment management surface water channels to minimise sediment mobilisation. All surface water channels will be directed to an appropriately sized and designed sediment traps;
- Earthworks should not be undertaken during heavy periods of rain;
- Daily inspection and monitoring of sediment management measures and their effectiveness will be undertaken. Maintenance measures will be implemented as required. Waste will be disposed of in accordance with the Waste Hierarchy using licenced contractors

Fuels, Oils, Chemicals, Liquids & Hazardous Materials

- All fuels, oils, chemicals, liquids and hazardous materials will be stored in a designated location with an impervious base and adequately bunded. This area should be located within the construction compound or at an alternative agreed location to secure these materials from possible accidental or intentional damage. This storage location must be located on level ground at least 10 meters from any drain, ditch or possible route of connectivity with the designations. This area must have appropriate signage;
- All material containers will be clearly labelled and stored in resealable containers;
- Bunding must have a minimum capacity of 110% of the volume of the largest tank or 25% of the total storage capacity, whichever is greater. Bunding will be impermeable to the substance being stored;
- Where a Contractor is responsible for materials stored in a bunded area, that Contractor will implement measures for the regular inspection of bunds and emptying of rainwater (when uncontaminated);
- Material storage areas will be at a safe distance from live construction activities;
- All fuels, oils, chemicals, liquids and hazardous materials brought on-site must be accompanied by a Safety Data Sheet (SDS). These products will be stored in accordance with any specific requirements of the SDS;
- A complete register of all SDS's in use on-site will be maintained. Copies of all SDS's will be retained;
- Careful ordering of materials to minimise quantities present on-site;

- Daily inspection and monitoring of fuels, oils, chemicals, liquids and hazardous materials management measures and their effectiveness will be undertaken. Maintenance measures will be implemented as required. Waste will be disposed of in accordance with the Waste Hierarchy using licenced contractors.

Cement, Concrete, Grout & On-Site Washing Facilities

- If concrete is mixed on-site, such activities will be carried out on an impermeable designated area located at least 10 meters from any watercourse or surface water drain to reduce the risk of runoff entering a watercourse;
- Surplus dry concrete, cement and grout will be used elsewhere on-site if possible. Where this is not possible, this material will be disposed of off-site at a suitable disposal facility and transported using a registered waste carrier;
- Excess concrete shall be returned to the batching plant where possible;
- Concrete mixing and delivery lorries shall return to the batching plants for washout;
- All vehicles and equipment used for on-site activities shall be washed out in a designated bunded washout area, specifically designed to contain such wash water. The washout area will be located at least 10 meters away from any watercourse or other elements sensitive to contamination to reduce the risk of runoff entering a watercourse;
- No detergents shall be used in any on-site washdown processes;
- Wash waters will be stored to allow solids to settle out and recirculated to minimise the risk of pollution. Recirculation of wash water will ensure reduced water usage on-site;
- Daily inspection and monitoring of cement, concrete, grout and on-site washing facilities management measures and their effectiveness will be undertaken. Maintenance measures will be implemented as required. Waste will be disposed of in accordance with the Waste Hierarchy using licenced contractors.

Air Quality – Dust Minimisation

- All construction-related traffic will have speed restrictions on unsurfaced roads to 15 kph;
- Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and windy conditions;
- Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy conditions;
- The designated public roads outside the site and the main transport routes to the site will be periodically inspected for cleanliness and cleaned as necessary;
- Material handling systems and material storage areas will be designed and laid out to minimise exposure to wind;

- The transport of soils or other material, which has significant potential to generate dust, will be undertaken in tarpaulin-covered vehicles where necessary;
- Daily inspection and monitoring of dust minimisation measures and their effectiveness will be undertaken.

Noise Minimisation

Best Practicable Means (BPM) of noise control will be applied during construction works to minimise noise (including vibration) at neighbouring residential properties and other sensitive receptors arising from construction activities.

The general principles of noise management are given below:

Control at source:

- Equipment – noise emissions limits for equipment brought to site;
- Equipment – method of directly controlling noise e.g. by retrofitting controls to plant and machinery;
- Equipment - indirect method of controlling noise e.g. acoustic screens;
- Equipment - indirect method of controlling noise e.g. benefits and practicality of using alternative construction methodology to achieve the objective e.g. vibratory piling techniques or hydrodemolition as opposed to more conventional but noisier techniques; selection of quieter tools/machines; application of quieter processes.

Control across the site by:

- Administrative and legislative control;
- Control of working hours;
- Control of delivery areas and times;
- Careful choice of compound location;
- Physically screening site;
- Control of noise via Contract specification of limits;
- Noise Monitoring, to check compliance with noise level limits, cessation of works until an alternative method is found;

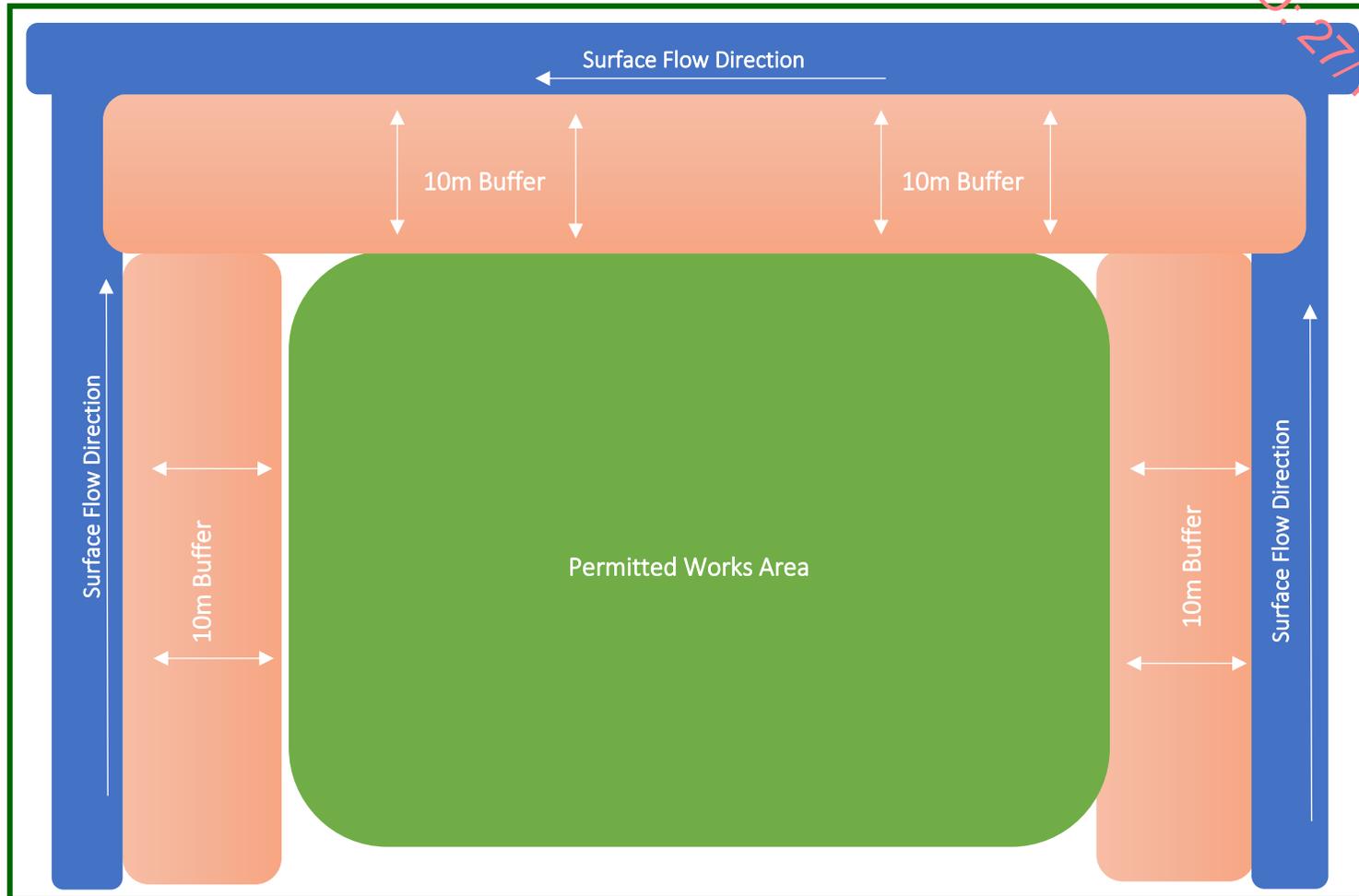
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- Many of the activities which generate noise can be mitigated to some degree by careful operation of machinery and use of tools.

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Appendix B – Buffer Example

All construction activities should take place out with a 10m buffer from stream channels between 1m and 2m wide. All works should be undertaken in conjunction with the above referenced CEMP after appropriate mitigation is implemented. All works should be undertaken during dry periods. See diagram detailing the appropriate buffer zones below.



Appendix C – Japanese Knotweed Management Plan

A Japanese Knotweed Management Plan should be developed for the site and utilised by the appointed contractor prior to construction activities. An ecological clerk of works may be required to oversee the excavation in order to ensure that all contaminated soils are removed, where required.

The Japanese Knotweed Management Plan should include at minimum:

Japanese Knotweed Management Plan & Reporting Requirements:

A management plan should cover the whole of a property (not just those areas with a Japanese Knotweed infestation) and, if necessary, adjacent land and/or watercourses.

The plan should include:

- The objectives of the management;
- An evaluation of control options (if applicable);
- A detailed description of the control actions to be taken;
- An assessment of the risks associated with any control action;
- A description of how the success of the control action will be evaluated;
- Advice on how to prevent spread around and off site (biosecurity measures);
- Advice on how to prevent additional Japanese Knotweed arriving on-site;
- A treatment schedule;
- A full breakdown of the costs associated with the control action;

Update Report Requirements:

Where work or monitoring is ongoing over an extended timeframe, reports should be provided periodically, e.g., at the end of each year. Update reports should include:

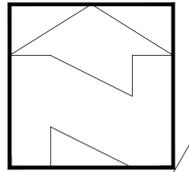
- An assessment of the effectiveness of control action to date;
- The location and extent of any Japanese Knotweed found beyond the distribution determined during site assessment;
- An assessment of any new/changed site features that might impact on the effectiveness of the management plan or increase the risk of spread or re-infestation.
- A description of any newly identified Japanese Knotweed in the local/wider environment and an assessment as to any risk.

Completion Report & Certificate Requirements:

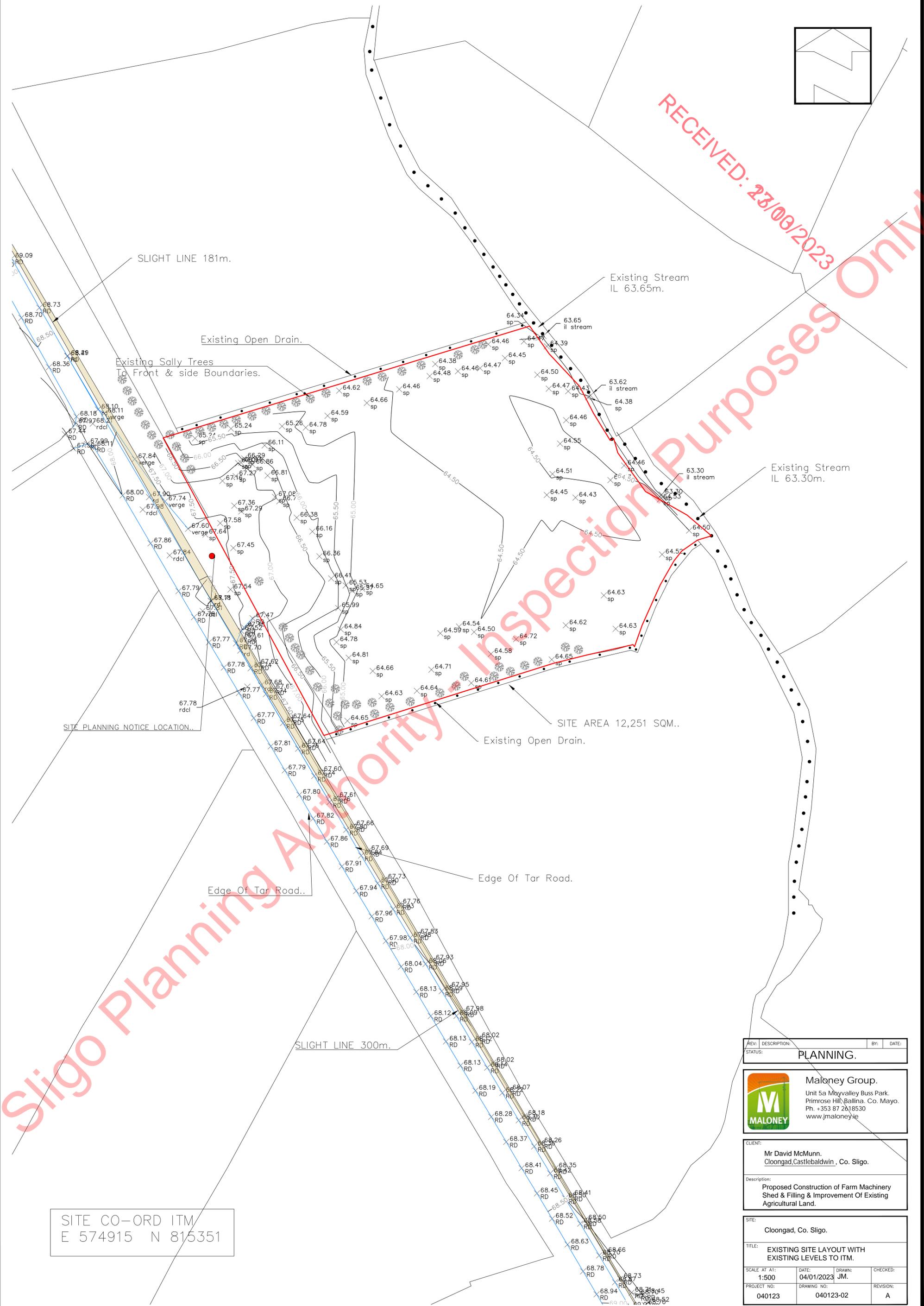
Once control action has been completed successfully, as determined by the criteria outlined in the management plan, a final report should be provided that includes:

- An outline of all control action that was carried out.
- A completion certificate that confirms that the treatment is complete and that the Japanese Knotweed at the site has been remediated.

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SITE CO-ORD ITM
E 574915 N 815351

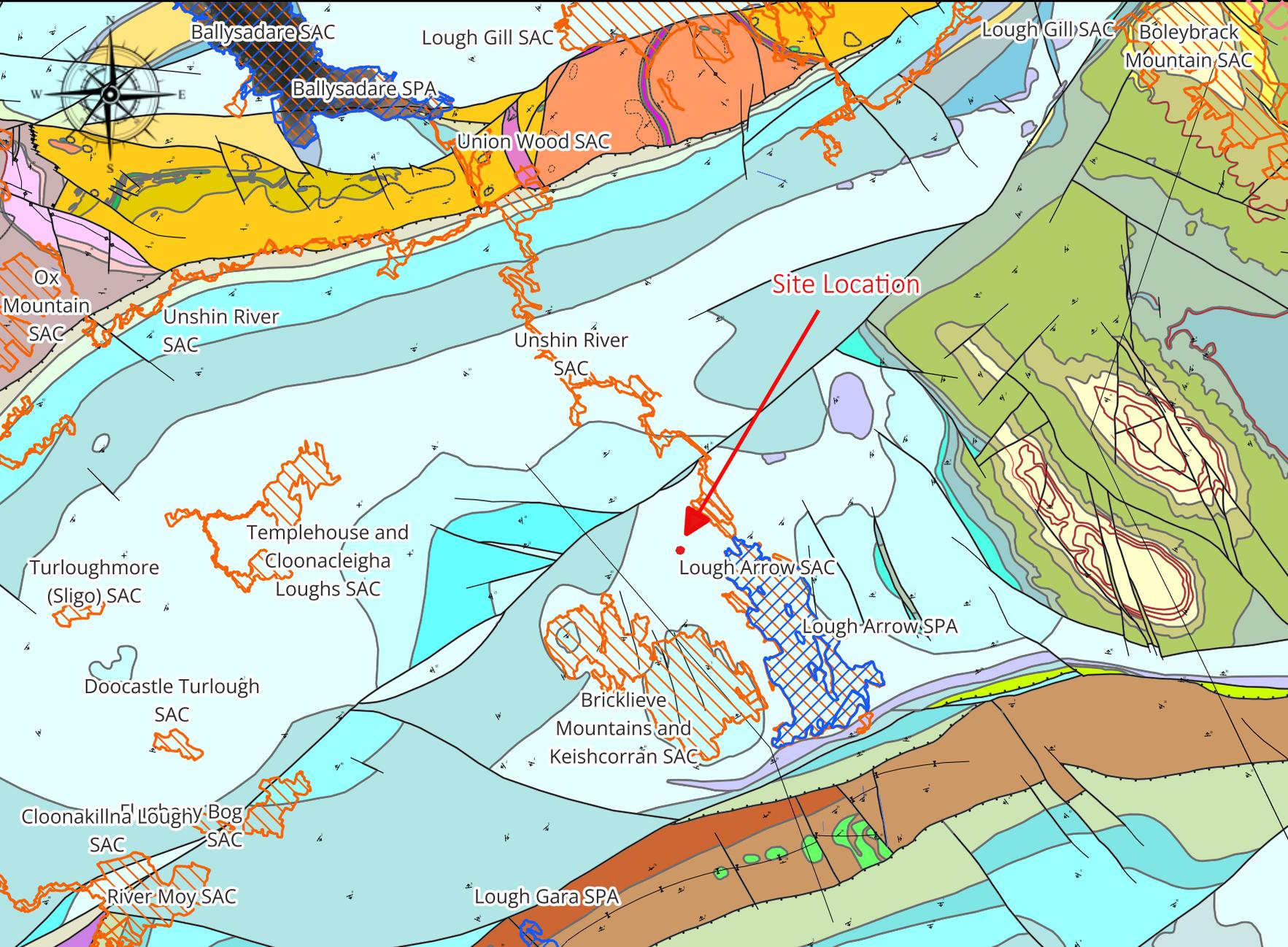
REV:	DESCRIPTION:	BY:	DATE:
STATUS:		PLANNING.	
 Maloney Group. Unit 5a Moyvalley Buss Park, Primrose Hill, Ballina, Co. Mayo. Ph. +353 87 2618530 www.jmaloney.ie			
CLIENT:			
Mr David McMunn, Cloonagd, Castlebaldwin, Co. Sligo.			
Description:			
Proposed Construction of Farm Machinery Shed & Filling & Improvement Of Existing Agricultural Land.			
SITE:			
Cloonagd, Co. Sligo.			
TITLE:			
EXISTING SITE LAYOUT WITH EXISTING LEVELS TO ITM.			
SCALE AT A1:	DATE:	DRAWN:	CHECKED:
1:500	04/01/2023	JM.	
PROJECT NO:	DRAWING NO:	REVISION:	
040123	040123-02	A	

Regionally Important- Karstified (conduit)

Bedrock Polygons 100k ITM 2018: Bricklieve Limestone Formation (lower)

National Groundwater Vulnerability

Aquifer Category:	Category Description:	New Code:	Unit Name:	Description:	Formation:	Lithological Description:	Soil Permeability Code:	Depth to Bedrock (m):	Vulnerability Category:
Regionally Important Aquifer - Rkc	Karstified (conduit)	CDBRICL	Bricklieve Limestone Formation (lower)	Bioclastic Cherty Limestone	Lower Bricklieve Limestone Formation	The Bricklieve Limestone Formation was deposited in shallower water over other parts of Sligo at this time. As its name suggests this formation is best exposed on the Bricklieve Mountains.	L	N/A	Low



Project Title:
AEMP- 2000241
Cloongad, Castlebaldwin, Co. Sligo

Drawing Title:
Hydrogeology Map

Drawn By: AG
Checked By: MMQ

Project No: 2000241
Drawing No: Figure 2-3

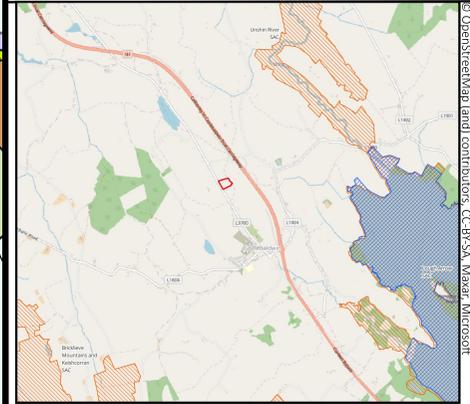
Scale: 1:100000
Date: 1st August 2023



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