

Monaghan County Council Civic Offices

Ecological Impact Assessment Report



For: DBFL Consultants

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1. INTRODUCTION

DBFL Consultants has commissioned Flynn Furney to carry out an Ecological Impact Assessment for the proposed construction of civic offices, road links and an active travel route at a site in Roosky, Monaghan Town, Co. Monaghan. The proposed development will also include all associated ancillary site works such as foul and surface water drainage, internal roads and footpaths, boundary treatment and landscape works. Vehicular access to the proposed development is to be from the existing Ógie Ó Dufaigh Way.

The site was surveyed by Ecologists of Flynn Furney Environmental Consultants in August and October 2022. Further ecological assessments of the site in the townland of Roosky, Monaghan Town was carried out by NM Ecology Ltd. Fieldwork by NM Ecology Ltd. was completed in July and August 2022, including a multi-disciplinary survey and a bat survey. It was agreed that NM Ecology Ltd's survey results would be incorporated into the assessments prepared by Flynn Furney Environmental Consultants. Surveys were carried out to investigate whether any Annex I habitats (EU Habitats Directive), Annex II species (EU Habitats Directive), Annex I Bird Species (EU Birds Directive) or 'stepping stones/Ecological Corridors' (as covered under Annex 10 of the EU Habitats Directive) or locally important habitats are likely to be impacted upon by the proposed development.

1.1. Outline Description of the Proposed Site of Works

The site is located within the townland of Roosky in Monaghan town. In terms of local demographic context, Monaghan town has a population of circa 7,000 and is the largest town in Monaghan. There are a large number of companies expanding across a range of sectors and in conjunction with the economic growth of the town there has been a steady increase in the local population. The proposed work will include the construction of civic offices, road links and an active travel route. The purpose of this project is to deliver a new headquarters building for Monaghan County Council, together with access and active travel links that will enhance connectivity to the wider Roosky lands and Monaghan Town.

According to the National Planning Framework (NPF), although Monaghan is located within the Northern and Western Regional Assembly Area, it is also part of a North East functional area where a key driver is the Dublin- Belfast cross border economic corridor.. Monaghan also lies on the strategic transport corridor from Dundalk to Sligo. One aim of the NPF is to ensure more efficient use of land within and contiguous to the existing built up areas of cities and towns, and which will act as a catalyst for regeneration. The NPF places much emphasis on strengthening the border area generally, to balance development nationally by

harnessing potential for development and building on emerging opportunities for cross-border development.

1.2. Planning Application and Description of Works

The proposed development will consist of the following:

- i. Construction of a new civic office building consisting of:
 - a. office accommodation with a cumulative gross floor area (GFA) of 5,601 sq.m distributed over 3 floors incorporating entrance foyer, office spaces, meeting rooms, staff canteen, Council chamber, public counter and reception desk, welfare facilities, internal landscaped courtyards and supporting spaces;
 - b. external plant enclosure and single storey ESB substation and storage room at ground level; and
 - c. covered services enclosure at ground level containing waste store room, plant, water tanks, UPS room, power distribution and supply rooms, and fire escape.
- ii. Surface car parking spaces and drop-off area.
- iii. Bicycle parking spaces.
- iv. Improvement works to existing road infrastructure and the provision of pedestrian, cycle and vehicular links comprising:
 - a. extension (approx. 120m in length) to existing vehicular route on Slí Ógie Uí Dhufaigh along the route of the existing Ulster Canal Greenway;
 - b. realignment of portion of the existing greenway;
 - c. construction of a priority junction on existing roadway serving Roosky Vale at the interface with the extended Slí Ogie Uí Dhufaigh;
 - d. provision of a new 13m clear span bridge over the River Shambles;
 - e. provision of new combined vehicular/pedestrian link, 'Quarry Walk' (approx. 460m in length) comprising a 5.5m vehicular carriageway, two-way cycle track, footpaths, and roadside SuDs swale;
 - f. provision of a replacement vehicular access to Monaghan Harps GAA club and associated pedestrian links;
 - g. upgrade of existing pedestrian route (Davnet's Row) to Diamond Centre; and

- h. upgrades to the existing Infirmary Hill Path to improve link to Old Cross Square.
- v. Works to facilitate potential future pedestrian and cyclist connections to the adjoining Diamond Centre and the existing public right of way known locally as 'Pump Entry'.
- vi. Signage is to be erected consisting of:
 - a. Wayfinding signage at 4 locations; to the south-west at Davnet's Row Plaza, to the south along Davnet's Row, to the east at the junction between Infirmary Road and Davnet's Row and at the proposed entrance on Infirmary Road.
 - b. Building identity signage comprising 2.1m x 2.1m backlit logo panels on the north-east and south-west facades at building entry points and will include 300mm high text to read Monaghan County Council.
- vii. Provision of surface water attenuation, diversion of existing watermain infrastructure and provision of new surface water, foul and watermain infrastructure.
- viii. Associated earthworks, utilities, landscaping, boundary treatments, lighting, roof-mounted solar PV on the civic office building and all ancillary site development works.

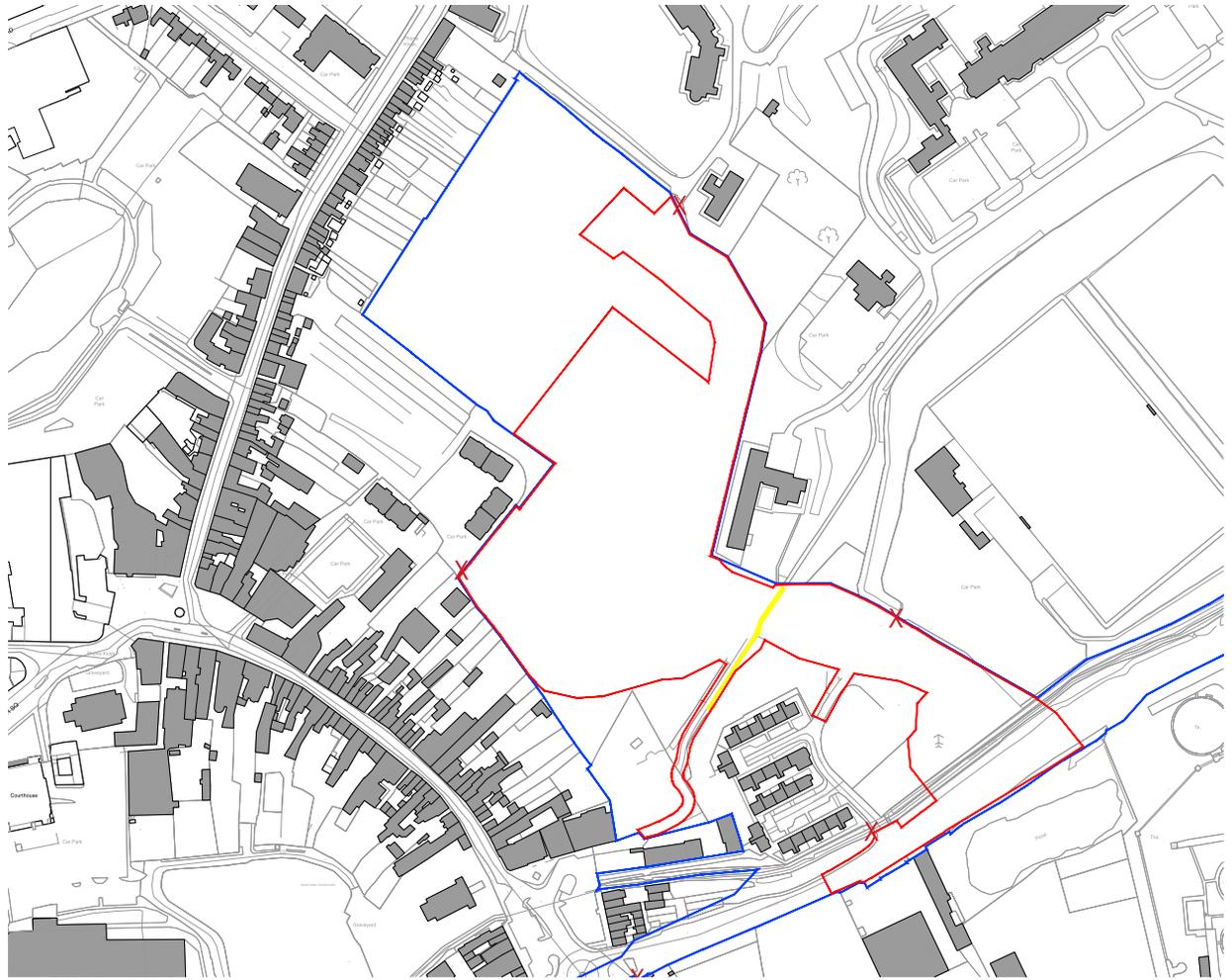


Figure 1. Site Location (from drawing no. MCC-XX-00-DR-HJL-AR-0001 by Henry J Lyons)

1.3. Objectives of this EclA

The objectives of this EclA are as follows:

- To map and describe existing habitats.
- To identify sensitive areas or ecological features within and surrounding the site
- To identify potential ecological conflicts or impacts and;
- To identify ways to avoid and mitigate against impacts, where necessary.

2. Legislation and Planning Policy

2.1. European Council Directives

Council Directive on the Conservation of Natural Habitats of Wild Fauna and Flora

92/43/EEC- The Habitats Directive

The main aim of the Directive is to promote the maintenance of biodiversity through the conservation of natural habitats and wild species listed on the Annexes of the Directive. Member States are required to take measures to maintain or restore, at favourable conservation status, biodiversity whilst taking account of economic, social, cultural requirements and regional and local characteristics.

It gives effect to site and species protection measures through establishment of the Natura 2000 network and designation of European Sites including Special Areas of Conservation (SAC) and Special Protected Areas (SPA). It also establishes a list of species (other than birds) whose habitats must be protected to secure their survival. These priority species and habitats are subject to a higher level of protection.

The Directive also requires appropriate assessment of any plan or project not directly connected with or necessary to the management of a European Site, but likely to have significant effects upon a European site, either individually or in combination with other plans or projects.

2.2 Council Directive on the Conservation of Wild Birds

2009/147/EC- The Birds Directive

The Directive provides a framework for the conservation and management of, and human

interactions with, wild birds in Europe. It makes provisions for the maintenance of the wild bird populations across their natural range; conserves the habitats for rare or vulnerable species listed in Annex I and of migratory species through the classification of SPAs and provides protection for all wild birds.

2.3. Irish Legislation

The European Communities

(Birds and Natural Habitats) (Amendment) Regulations 2015

S.I. No. 355 of 2015

The European Communities (Birds and Natural Habitats) (Amendment) Regulations provides that the following shall be construed together as one:

- Wildlife Act 1976
- Wildlife (Amendment) Acts of 2000, 2010 and 2012
- European Communities (Birds and Natural Habitats) (Restrictions of the Use of Poison Bait) Regulations 2010
- European Communities (Birds and Natural Habitats) Regulations 2011
- European Communities (Birds and Natural Habitats) (Amendment) Regulations of 2013, 2015
- Wildlife Amendment Bill 2016 (proposed legislation)

European Communities (Birds and Natural Habitats)

Regulations 2011 to 2015

The Regulations give effect to requirements relating to the designation of protected sites under the Birds Directive and Habitats Directive. The Regulations provide for the protection and management of European Sites and place obligations on all public authorities to have regard to the requirements of the Habitats Directive beyond the realms of planning related consents issued under the Planning and Development Act 2000, as amended (the PDA). The Regulations also provide for the protection of species of European importance.

Wildlife Acts 1976 to 2012

The Acts provide for *inter alia* the protection of wildlife. The Acts prohibit the intentional killing, taking or injuring of certain wild birds or wild animals; or the intentional destruction, uprooting or picking of certain wild plants.

Wildlife Amendment Bill 2016

The purpose of the Bill is to provide for the implementation of a reconfiguration of the Raised Bog Natural Heritage Area Network arising from (i) the proposals from the Review of Raised Bog Natural Heritage Area Network published in January 2014; (ii) an assessment of the effects on the environment of the proposals arising from the Review and, if required, any other screening for an assessment or as the case may be, assessment, including public consultation undertaken and (iii) observations or submissions received during the course of public consultation.

Taken as a whole, nature conservation legislation is of key importance in undertaking EclA for proposed development as it shapes planning policy.

2.4 Planning Policy

National Planning Policy

Project Ireland 2040 – National Planning Framework

The National Planning Framework (NPF) is a high-level strategy that will shape growth and development in Ireland up to 2040. The NPF draws upon lessons learned from the National Spatial Strategy 2002-2022 and provides a framework for the sustainable development of Ireland's existing settlements. As a framework document it sets in train a process by which more detailed planning documents must follow, including the relevant Regional Spatial and Economic Strategies (RSES's) and County Development Plan. The Strategy contains a range of National Policy Objectives (NPO's) providing a wider context for targeting future growth across the country, and which support the delivery of residential development at a suitable location and scale to achieve an overall target of 550,000 additional households nationwide by 2040.

The National Planning Framework 2040 sets out the importance of development within existing urban areas and sets out strategic objectives which Planning Authorities are to have regard to.

Under the NPF Monaghan is recognised as an important hub in the context of a Dublin-Belfast corridor. Addressing economic resilience and connectivity will be strategic priorities for this area. The maintenance of seamless cross-border movement for people, goods and services, together with improvements in digital and physical infrastructure will create new opportunities to leverage employment and for sustainable population growth, focused on the county towns. Enhanced

connectivity would result in this area being strategically located almost equidistant between the Dublin, Belfast and Derry City regions in terms of time, as well as distance.

Key policies of the NPF in this regard include *'a focused approach to compact, sequential and sustainable development of the larger urban areas along the Dublin- Belfast economic and transport corridor, along which there are settlements with significant populations such as Dundalk and Drogheda.'* (p. 35)

Furthermore, we highlight a number of objectives contained within the NPF which specifically refer to the subject site such as:

Objective 4 states to *'ensure the creation of attractive, liveable, well designed, high quality urban places that are home to diverse and integrated communities that enjoy a high quality of life and wellbeing.'*

Objective 5 *'To develop cities and towns of sufficient scale and quality to compete internationally and be drivers of national and regional growth, investment and prosperity.'*

Objective 6 *'Regenerate and rejuvenate cities, towns and villages of all types and scale as environmental assets, that can accommodate changing roles and functions, increased residential population and employment activity and enhanced levels of amenity and design quality, in order to sustainably influence and support their surrounding area.'*

Objective 7 *'Reversing the stagnation or decline of many smaller urban centres, by identifying and establishing new roles and functions and enhancement of local infrastructure and amenities'; and*

'Encouraging population growth in strong employment and service centres of all sizes, supported by employment growth.'

In more self-contained settlements of all sizes, supporting a continuation of balanced population and employment growth.'

Objective 11 *'In meeting urban development requirements, there will be a presumption in favour*

of development that can encourage more people and generate more jobs and activity within existing cities, towns and villages, subject to development meeting appropriate planning standards and achieving targeted growth.'

Objective 13 states *'In urban areas, planning and related standards, including in particular building height and car parking will be based on performance criteria that seek to achieve well-designed high quality outcomes in order to achieve targeted growth.'*

2.5. Regional Policy

The RSES for the Northern and Western Regional Assembly (NWRA) sets out the strategic plan and investment framework aimed to 'shape future development and to better manage regional planning and economic development throughout the Region.'

In line with the NPF, Monaghan is recognised by the Regional Spatial and Economic Strategy for the Northern and Western Region (RSES 2020) as an important county for the economic corridor extending from Dublin to Belfast. Monaghan is also recognised as an important connection between the remainder of the Northern and Western region and the Greater Dublin Area. Monaghan Town occupies a strategic border location along the Dublin to Letterkenny/ Derry City corridor, and adjacent to the Dublin/Belfast eastern economic corridor.

RPO 3.1 states it is essential to be "Delivering significant compact growth in Key Towns" and "Developing derelict and underutilised sites, with an initial focus within town cores."

Key priorities for Monaghan within the RSES includes to:

"Deliver 20% of projected growth through regeneration and renewal of a significant area of the town centre".

In this context Monaghan Town is identified as an economic driver by both the RSES and NPF.

2.6. Local Policy

Monaghan County Development Plan 2019 – 2025

The 2019-2025 Monaghan County Development Plan (CDP) sets out the strategic land use objectives and policies for the overall development of the county up to the year 2025, acting as a guide for those interested in pursuing development and to inform development proposals. In terms of settlement hierarchy, under the CDP Monaghan has been identified as a “Key Town in the County at the top of the settlement hierarchy”. This will ensure the continued strengthening of Monaghan Town as a major centre of population in the regional and cross Border context, to ensure it provides benefits across the County and the region in terms of attracting private investment in jobs and the economy, as well as securing investment in infrastructure that is critical to the County. The progression of the Dublin Street Regeneration Plans will assist in sustainable development that will not detract from the viability and vitality of the town centre.

Regarding natural heritage, conservation and landscape (Chapter 6), the County Development Plan commits the County to the promotion of a sustainable management of the landscape. The following specific objectives are of relevance to this report:

HCLSO 1 *To promote and encourage the conservation and preservation of the County’s natural environment, cultural heritage and amenities in accordance with legislation, plans and policies developed to specifically address these areas and to ensure a rich cultural landscape, healthy environment and the full provision of ecosystem services in the County.*

Furthermore, we highlight a number of objectives contained within Chapter 9 relating to conservation:

SNO 2 *Prohibit development that would detrimentally impact on the value or designation of areas of natural amenity value.*

SNO 4 *Prohibit development in Landscape Protection/Conservation Areas unless in exceptional circumstances, where it has been clearly proven to the Planning Authority that the works would not be contrary to the zoning objectives as outlined in Chapter 9 of the Monaghan County*

Development Plan 2019-2025.

SNO 5 *Have regard to nature conservation issues when considering proposals for development which may detrimentally impact on habitats, species, or features worthy of protection.*

3. Methodologies

3.1. Desk Study

Prior to the main fieldwork contributing to this assessment, a desktop survey of available information sources was carried out. These included:

- The National Biodiversity Data Centre Online Database
- The National Biodiversity Network Online Atlas
- The OSI Geohive Database
- The NPWS Protected Species Database and Online Mapping
- The Environmental Protection Agency Database and;
- The EPA Water Quality in Ireland Report

Designated sites were identified using the current boundary shapefiles downloaded from the NPWS website.

Other online mapping reviews included Geohive maps, aerial photography, and EPA shapefile datasets. Habitat mapping reviews included the Irish Semi-Natural Grassland Surveys (ISGS), the National Survey of Native Woodland (NSNW) and the Ancient and long-established Woodland (NPWS shapefiles). Desk research also included review of records available through the National Biodiversity Data Centre mapping system. Consultation was made with a number of bodies and individuals which included the NPWS and Birdwatch Ireland.

3.2. Zone of Influence

Following the guidance set out by the (NRA, 2009b), the proposed development has been evaluated based on an identified zone of influence (Zoi) with regard to the potential impact pathways to ecological features (habitats, flora and fauna). The Zoi for terrestrial habitats is limited to the footprint of the proposed development. Hydrological linkages between the proposed development and aquatic habitats/species can occur over significant distances; however, the significance of the impact will be site specific depending on the receiving water environment and nature of the potential impact. Adopting a precautionary approach, the distance

over which surface water discharges could have a significant impact on receiving watercourses is considered to extend downstream of the proposed development site. The ZOI for significant impacts to breeding birds is considered to extend no more than 100m from the proposed development to take account of disturbance during construction. The ZOI for mammals such as bats, badgers and otters may extend over larger distances due to the fact that they can commute and forage many kilometres from their breeding sites.

3.3 Field surveys

Field work for this survey was carried out over a number of dates in August and October 2022 by FFEC. Field surveys were carried out in July and August by NM Ecology Ltd. The primary aims of the field surveys were to:

- Identify habitat types within the study area.
- Assess for the presence of protected species of flora and fauna.
- Identify ecological and environmental constraints to the construction of this development.
- Identify ecological sensitivities around and within the study area.
- Identify any protected fauna species that may be present.

These surveys considered a broad survey area to ensure all other important features that could be impacted by the development due to connectivity to the proposed development site were considered. These included significant treelines and hedgerows, mammal paths, streams and other watercourses feeding and surrounding the application site. Phase 1 habitat mapping was carried out and is presented in Appendix A. Surveys were carried out for mammals, birds, invertebrates, mature and veteran trees, habitats, bat roosting habitats and botanical features were considered when necessary. The surveys and impact assessment have been carried out in accordance with the following guidelines:

- Habitat survey and mapping was carried out as per the guidelines given by Smith et al (2011).
- Habitats were classified according to Fossitt's Guide to Habitats in Ireland (Fossitt, 2000).
- Surveys for invertebrates were carried out National Road Scheme's Ecological Surveying Techniques for protected Flora and Fauna (NRA, 2008).
- Mammal survey methodology followed NRA (2008) and NRA (2005).

- Bat surveys methodology followed Collins (2016) and classification of bat roost potential followed Billington & Norman (1997). Guidance was consulted from *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016).
- Bird survey methodology followed that of the Birdwatch Ireland's Countryside Bird Survey (Lewis et al., 2019).

These surveys were all carried out by experienced competent ecologists of Flynn Furney Environmental Consultants and of NM Ecology Ltd.

3.3.1. Flora

Habitats on site were classified using *A Guide to Habitats in Ireland* (Fossitt, 2000) and mapped in accordance with the 'Best Practice Guidance for Habitat Survey and Mapping' (Smith, O'Donoghue, O'Hora, & Delaney, 2011). The classification is a standard scheme for identifying, describing and classifying wildlife habitats in Ireland. The classification is hierarchical and operates at three levels, using codes to differentiate habitats based on the plant species present. Species recorded in this report are given both their Latin and common names, following the nomenclature as given in the 'New flora of the British Isles' (Stace, 2010). Invasive species listed on Schedule 3 of the Birds and Natural Habitats Regulations 2011 (as amended) were also recorded during site visits and findings are discussed in this report.

3.3.2. Terrestrial Fauna

The site survey conducted included an assessment of the presence, or likely presence, of a range of rare or protected fauna species. Habitats were assessed for field signs and/or usage by fauna, such as well-used pathways, droppings, places of shelter and features or areas likely to be of particular value as foraging resources.

3.3.3. Bat surveys

The proposed works are largely planned for grassland areas, with only few managed hedgerows. Bat surveys included a visual inspection during daylight hours of trees and hedgerows within the area and an assessment for roosting bats. A dusk emergence and activity survey was carried out by NM Ecology Ltd. A dusk emergence survey was carried out at four mature trees at the southern corner of the site. Sunset was at 20:38, and the survey was undertaken between 20:08 and 22:08.

The dusk survey was followed by an activity survey of the site commencing at 22:08 and finishing at 22:38. Weather conditions were ideal for bats, with mild temperatures, low winds and no rain.

3.3.4. Avifauna

A wintering or breeding bird survey was not deemed to be required due to the habitats present and the walkover survey indicating typical species of an urban area. These included Swallow species (*Hirundinidae spp.*), Jackdaw (*Coloeus monedula*), Magpie (*Pica pica*), Robin (*Erithacus rubecula*), Wren (*Troglodytes troglodytes*), Bullfinch (*Pyrrhula pyrrhula*), Blackbird (*Turdus merula*), Wood Pigeon (*Columba palumbus*), Thrush species (*Turdidae spp.*), House Sparrow (*Passer domesticus*), Great Tit (*Parus major*) and Gold Finch (*Carduelis carduelis*).

3.3.5 Survey Constraints

One identified constraint was the site visit in October was outside of the optimal survey window for phase 1 habitats. This limited the ability to identify plant species. This survey timing also limited opportunity for bat surveys along the active travel route. However, this allowed sufficient data collection to readily identify habitat types. It should be noted that several invasive species (e.g. Japanese Knotweed *Fallopia japonica*) are still readily detectable in the month of October. The survey teams are confident that sufficiently robust data were captured across the period in order to complete this Ecological Impact Assessment.

Statement of Authority of the Ecology Team

Flynn Furney Environmental Consultants have more than 20 years of experience in ecological surveying and management. The company has detailed knowledge on the principles and implementation of both Irish and European environmental legislation. FFEC has worked closely with statutory bodies including the National Parks and Wildlife Service and Waterways Ireland on habitat management and protection projects. Other expertise includes Ecological Impact Assessment, Habitat and Floral Surveys, Bird Surveying, Bat Surveying, Fish and Waterways surveys.

The surveying and reporting were carried out by Erin Mc Crudden and Lauren Woods from FFEC. Surveying and baseline information was carried out by Nick Marchant from NM Ecology Ltd.

3.4 Ecological Impact Assessment Methodology

This ecological impact assessment has been prepared in accordance with relevant legislation and best practice guidance including:

- The Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the UK and Ireland: terrestrial, freshwater and Coastal 2nd Edition. CIEEM (2018).
- The EPA's Draft Advice Notes on Preparing Environmental Impact Statements (EPA,2015a).
- The EPA's Guidelines on Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022).
- Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009).

Ecological features (habitats and species) were evaluated for their conservation importance according to CIEEM(2018). For habitats or species, significance of effects was assessed with reference to their conservation status, abundance and distribution. Description of significant effects follows guidance outlined in the EPA Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022). The term 'significant effect' as used in this report follows guidance by CIEEM (2018) and is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. In the case of designated sites, a negative significant effect would be one that undermines the conservation objectives and targets for that site. The significance of impacts on habitats was determined with reference to the value of the feature being affected and the magnitude of the impact. Impacts are considered ecologically significant at a stated geographic scale or are considered not significant.

3.4.1 Introduction and Context

The impacts which may be expected from the development are assessed below. These possible impacts have been assessed under the CIEEM (2018) and the National Roads Authority guidelines (NRA, 2006). Criteria for assessment of duration of impacts used follows EPA (2022). These provide guidance on assessing impact significance upon features of sites proposed for works. Impact significance must be given in context of their respective ecological value of the site and features under study.

3.4.2. Assessing Ecological Value

The 'ecological value' of an area or feature is therefore defined with reference to geographical context. That is, whether it is of value locally, regionally, nationally or internationally. This is assessed by ecologists on reviewing survey outcomes. Key criteria are the presence of designated sites, the site or feature containing protected species or areas of high biodiversity. The criteria for ecological value are given in Table 1.

Table 1: Ecological Value Criteria

Ecological Value	Criteria
International	<p>'European Sites' including Special Areas of Conservation (SAC) & Special Protection Areas (SPA).</p> <p>Sites that satisfy the criteria for designation as a 'European Site' (see Annex III of the Habitats Directive, as amended).</p> <p>Features essential to maintaining the coherence of the Natura 2000 Network.</p> <p>Sites containing 'best examples' of the habitat types listed in Annex I of the Habitats Directive.</p> <p>Resident or regularly occurring populations (assessed to be important at the national level) of the following:</p> <p>Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or</p> <p>Species of animal and plants listed in Annex II and/or IV of the Habitats Directive.</p> <p>Ramsar Sites</p> <p>World Heritage Sites (Convention for the Protection of World Cultural & Natural Heritage, 1972).</p> <p>Sites hosting significant species populations under the Bonn Convention</p> <p>Sites hosting significant populations under the Berne Convention</p>

<p>National</p>	<p>Areas of Special Scientific Interest (ASSI) or Natural Heritage Area (NHA). National Nature Reserves (NNR). Marine Nature Reserves (MNR). Area of Outstanding Natural Beauty (AONB). Refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended). Undesignated sites fulfilling the criteria for designation as an ASSI; NNR; MNR; and/or refuge for species protected under the Wildlife (Northern Ireland) Order 1985 (as amended). Resident or regularly occurring populations (important at the national level) of the following: Species protected under Wildlife (Northern Ireland) Order 1985 or Wildlife Act 1976, as amended); and/or Species listed on the relevant Red Data list. Sites containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive.</p>
<p>Ecological Value</p>	<p>Criteria</p>
<p>Regional</p>	<p>Sites of Local Nature Conservation Importance (SLNCI). Areas subject to a Tree Preservation Order. Resident or regularly occurring populations (assessed to be important at the Regional level) of the following: Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or Species listed on the relevant Red Data list. Sites containing areas of the habitat types listed in Annex I of the Habitats Directive that do not satisfy the criteria for valuation as of International or National importance.</p>
<p>Ecological Value</p>	<p>Criteria</p>

	<p>Regionally important populations of species or viable areas of semi-natural habitats or natural heritage features identified in the National or Local Biodiversity Action Plan (BAP), if this have been prepared.</p> <p>Sites containing semi-natural habitat types with high biodiversity in a regional context and a high degree of naturalness, or populations of species that are uncommon within the region.</p> <p>Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level.</p>
Local	<p>Locally important populations of priority species or habitats or features of natural heritage importance identified in the Local BAP, if this has been prepared;</p> <p>Resident or regularly occurring populations (assessed to be important at the Local level) of the following:</p> <p>Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive;</p> <p>Species of animal and plants listed in Annex II and/or IV of the Habitats Directive;</p> <p>Species protected under the Wildlife (Northern Ireland) Order 1985 (as amended); and/or</p> <p>Species listed on the relevant Red Data list containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value;</p> <p>Sites containing small areas of semi-natural habitat that are of some local importance for wildlife;</p> <p>Sites or features containing non-native species that are of some importance in maintaining habitat links.</p>

Ecological Impact Assessment must also consider the significance of effects that may be expected arising from a proposed development. CIEEM guidelines (2018) define a significant effect as:

“an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’... or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local”.

It also states that:

“an effect that is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. A significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorise a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring”.

3.4.3. Assessing Significance of Effects

The criteria for assessment of significance of effects is given in the following table. It should be noted that significant effects may also include beneficial effects.

Table 2: Criteria for Assessing Significance of Effects

Impact Significance		Criteria
Significant Negative Effect	Major Adverse	Loss of, permanent damage to or adverse impact on any part of a site of international or national importance; Loss of a substantial part or key feature of a site of regional importance; Loss of favourable conservation status (FCS) of a legally protected species; Loss of or moderate damage to a population of nationally rare or scarce species.
	Moderate Adverse	Temporary disturbance to a site of international or national importance, but no permanent damage; Loss of or permanent damage to any part of a site of regional importance; Loss of a key feature of local importance; A substantial reduction in the numbers of legally protected species such that there is no loss of FCS but the population is significantly more vulnerable; Reduction in the amount of habitat available for a nationally rare or scarce species, or species that are notable at a regional or county level.

Impact Significance		Criteria
No Significant Effect	Minor Adverse	<p>Temporary disturbance to a site of regional value, but no permanent damage;</p> <p>Loss of, or permanent damage to, a feature with some ecological value in a local context but that has no nature conservation designation;</p> <p>A minor impact on legally protected species but no significant habitat loss or reduction in FCS;</p> <p>A minor impact on populations of nationally rare or scarce species or species that are notable at a regional or county level.</p>
	Negligible	<p>No impacts on sites of international, national or county importance;</p> <p>Temporary disturbance or damage to a small part of a feature of local importance;</p> <p>Loss of or damage to land of negligible nature conservation value;</p> <p>No reduction in the population of legally protected, nationally rare, nationally scarce or notable (regional level) species on the site or its immediate vicinity.</p> <p>Beneficial and adverse impacts balance such that resulting impact has no overall effect upon feature.</p>
	Minor Beneficial	<p>A small but clear and measurable gain in general wildlife interest,</p> <p>e.g. small-scale new habitats of wildlife value created where none existed before or where the new habitats exceeds in area that habitats lost.</p>
Significant Positive Effect	Moderate Beneficial	<p>Larger new scale habitats (e.g. net gains over 1 ha in area) created leading to significant measurable gains in relation to the objectives of biodiversity action plans.</p>
	Major Beneficial	<p>Major gains in new habitats (net gains of at least 10 ha) of high significance for biodiversity being those habitats, or habitats supporting viable species populations, of national or international importance cited in Annexes I and II of the habitats Directive or Annex I of the Birds Directive.</p>

3.4.4. Impact duration and likelihood

The duration of impact must also be considered when assessing overall ecological impacts. Criteria for assessment of duration of impacts followed the (EPA 2022), the following terms when quantifying duration:

Table 3. Effect duration and timescales

Effect Duration	Timescale
Momentary Effects	Effects lasting from seconds to minutes.
Brief Effects	Effects lasting less than a day.
Temporary Effects	Effects lasting less than a year.
Short-term Effects	Effects lasting one to seven years.
Medium-term Effects	Effects lasting seven to fifteen years.
Long-term Effects	Effects lasting fifteen to sixty years.

The likelihood of impacts should also be defined. Assessment of likelihood of impact followed CIEEM guidelines. These assessed likelihood as follows:

Table 4: Likelihood and probability of impacts

Likelihood	Probability
Almost Certain	Probability estimated at greater than 95%
Probable or Likely	Probability estimated between 50% and 95%
Unlikely	Probability estimated between 5% and 50%
Extremely Unlikely	Probability estimated at less than 5%
Almost Certain	Probability estimated at greater than 95%

3.5 Water Framework Directive (2000/60/EC) Assessment

The potential for the proposed development to impact upon water quality is assessed in the context of the EU Water Framework Directive (Directive 2000/60/EC). The WFD established a framework for the management of water resources throughout the EU. The WFD overarching goal is to achieve at least good ecological status and good chemical status for all surface waters by 2015, or by 2021/2027 via extended deadlines. The WFD aims are specified in Article 17:

- 3.5.1. Prevent further deterioration and protect and enhance the status of aquatic ecosystems and associated wetlands;
- 3.5.2. Promote the sustainable consumption of water;
- 3.5.3. Reduce pollution of waters from priority substances and phasing out of priority hazardous substances;

3.5.4. Prevent the deterioration in the status and to progressively reduce pollution of groundwater; and

3.5.5. Contribute to mitigating the effects of floods and droughts.

The WFD established four core environmental objectives to be achieved for surface waters which include rivers, lakes, transitional and coastal waters (out to 1 nautical mile):

3.5.6. Prevent deterioration;

3.5.7. Protect, enhance and restore good status by 2015;

3.5.8. Protect and enhance artificial and heavily modified water bodies (aim to achieve Good Ecological Potential and good surface water chemical status); and

3.5.9. Progressively reducing pollution from priority substances and ceasing or phasing out emissions, discharges and losses of priority hazardous substances. In addition, the WFD requires achievement of compliance with any standards and objectives for protected areas set by other legislation *i.e.* designated under the Bathing Water Directive, the Shellfish Water Directive, the Drinking Water Directive, the Urban Waste Water Treatment Directive and the Habitats and Birds Directives.

3.4.1. Water Framework Directive Risk Assessment

A pressures and impacts assessment of human activity on surface waters (and groundwater) was conducted under Article V of the WFD to identify those water bodies that may be at risk of failing to meet the Directive's environmental objectives by 2015. The risk categories employed in the first cycle of the WFD (2009 – 2015) in Ireland were revised by EPA for the second WFD cycle (2015 – 2021). A new approach was taken in an attempt to attribute more specific measures to waterbodies which are either not currently meeting their required WFD objectives, or are at risk of such. This approach involved an in-depth analysis of existing biological and chemical monitoring data to determine current status, the distance to relevant quality thresholds (Environmental Quality Standards (EQS) as set out in the Surface Water Regulations (S.I. No. 272 of 2009)) and any significant trends apparent in the data. Input was then sought from Local Authorities and other relevant stakeholders to identify the key pressures acting upon individual waterbodies and throughout catchments as a whole in order to assign the most appropriate further measures required to meet WFD Objectives. A summary of the risk categories is presented in Table 5.

Table 5: WFD Risk Categories

Risk Category	WFD Classification
At Risk	At risk of not meeting WFD objectives
Not at Risk	Currently meeting WFD objectives
Review	Will potentially meet WFD objectives based on further information/ improvements seen from actions take
Unassigned	Monitoring data required

3.6 Stakeholder Consultation

Prior to, during and following the fieldwork assessment for this Ecological Impact Assessment, the authors undertook measures to consult with a number of bodies and known authorities as well as non-governmental and voluntary organisations. The results of this consultation process are provided below.

Table 6.: Stakeholder Consultation

Stakeholder Consulted	Stakeholder Comment
National Parks and Wildlife Service (NPWS)	No comment received at time of writing
Irish Wildlife Trust	No comment received at time of writing
Birdwatch Ireland	No comment received at time of writing
An Taisce	No comment received at time of writing

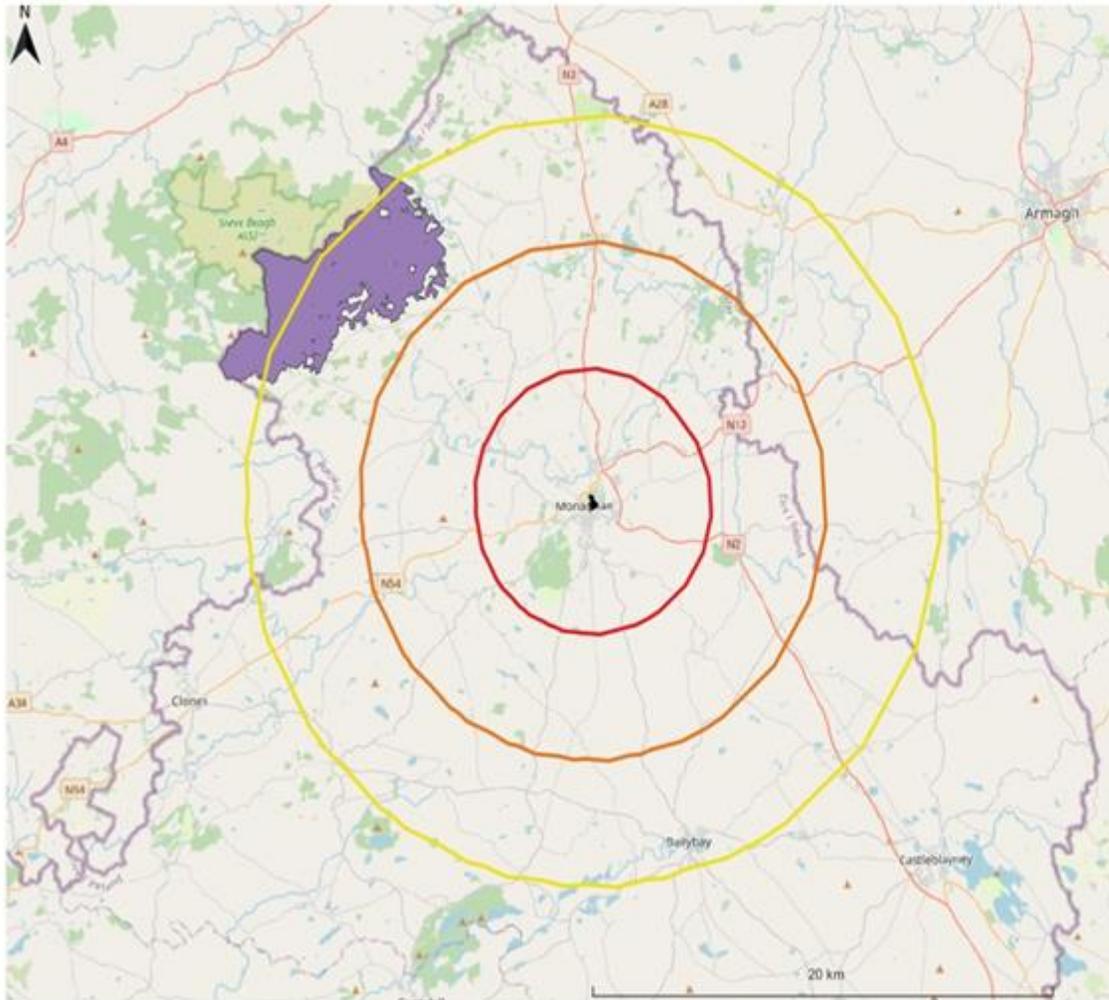
4. Results

4.1. Designated Areas

There are no nationally or European designated sites within the area proposed for development or adjacent to these. There is one internationally protected site located within a 15km buffer of the proposed development. This is Slieve Beagh Special Protection Area. There are no Special Areas of Conservation within this buffer.

4.1.1. European Sites

SACs are sites of international importance due to the presence of Annex I habitats and/or Annex II species listed under the EU Habitats Directive (92/43/EEC). SPAs are designated for the protection of bird species listed on Annex I of the Bird Directive (2009/147/EC), regularly occurring populations of migratory species and areas of international importance for migratory birds. The European sites correspond to those that were subject to Screening for Appropriate Assessment (presented under separate cover). The assessment considered the European sites within the ZOI of the proposed development and/or with hydrological connectivity to the proposed development sites and concluded that there is no likelihood of effects as a result of the proposed development, either alone or in combination with other plans and projects, if the correct mitigation measures are enacted. All sites designated for the conservation of nature within 15km of the proposed works are detailed in Table 7.



SPA sites within a 15km radius of proposed developments
Roosky

Client: DBFL Consulting Engineers

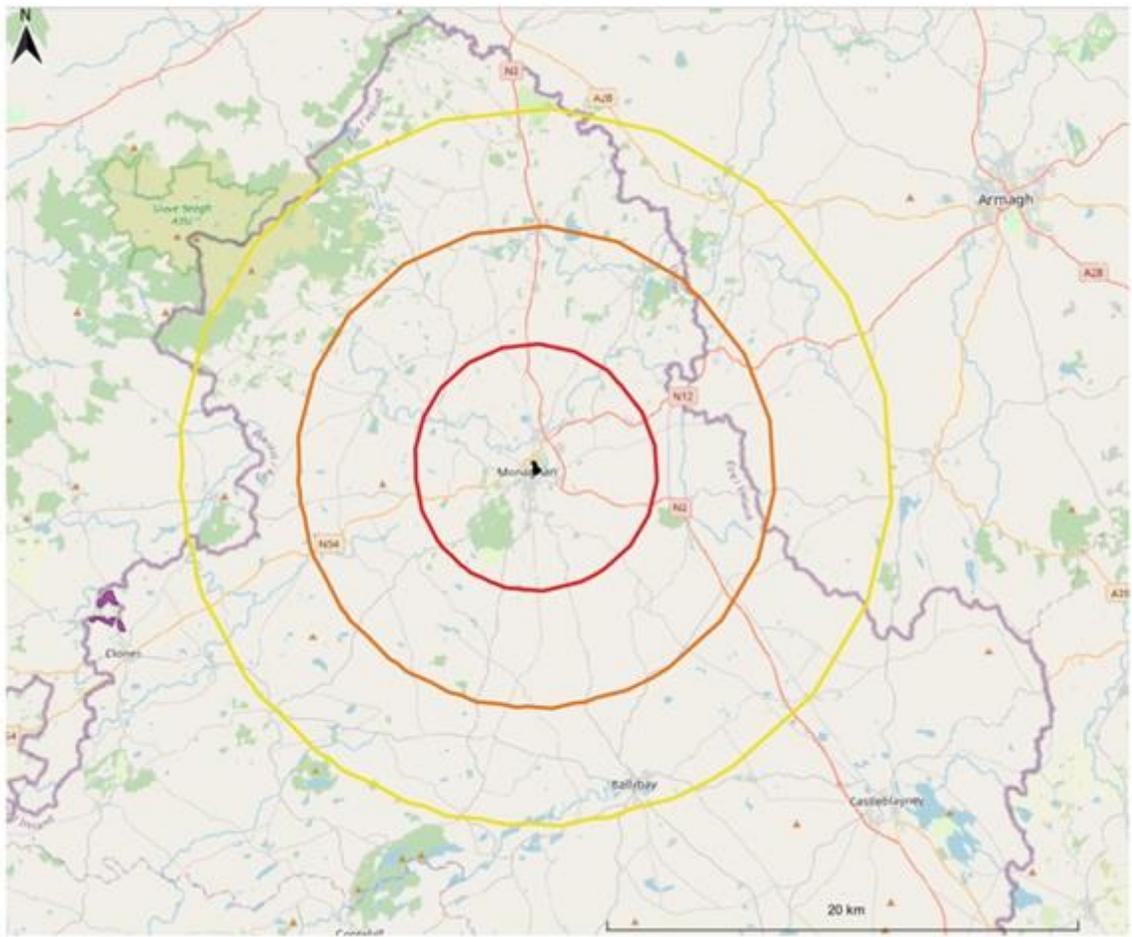
Legend

- 5km buffer
- 10km buffer
- 15km buffer
- Sliabh Beagh SPA



Disclaimer: This map has been prepared in accordance with the scope of services described in the contract or agreement between Flynn Furney Environmental Consultants and the Client. Any findings only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client

Figure 4.1.1.1: Proximity of the works to the nearby SPAs.



**SAC sites within a 15km radius of proposed developments
Roosky**

Client: DBFL Consulting Engineers

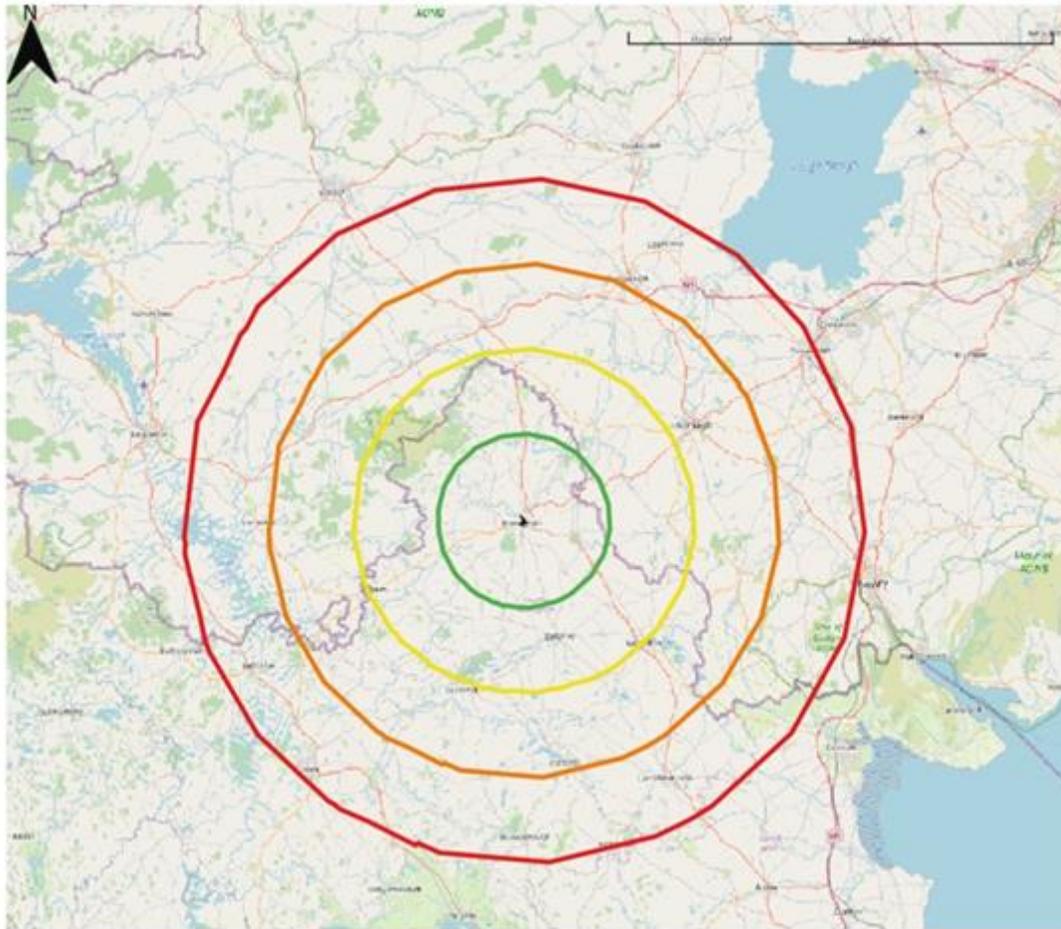
Legend

- 5km buffer
- 10km buffer
- 15km buffer
- Kilroosky Lough Cluster SAC



Disclaimer: This map has been prepared in accordance with the scope of services described in the contract or agreement between Flynn Furney Environmental Consultants and the Client. Any findings only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client

Figure 4.1.1.2.: Proximity of the works to the nearby SACs.



**Proximity of Lough Neagh to
proposed developments
Roosky**

Client: DBFL Consulting Engineers

Legend



Disclaimer: This map has been prepared in accordance with the scope of services described in the contract or agreement between Flynn Furney Environmental Consultants and the Client. Any findings only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client

Figure 4.1.1.3.: Proximity of Lough Neagh and Lough Beg SPA to proposed development

Table 7: Internationally designated sites within proximity of the Proposed Project Area

Site Name and code	Qualifying interests	Designation	Approx Distance from the Site
Slieve Beagh SPA (004167)	Conservation objective version 1 (26/01/2022): Special Conservation Interests <ul style="list-style-type: none"> ● A082 Hen Harrier (<i>Circus cyaneus</i>) 	SPA	11km
Kilroosky Lough Cluster SAC (001786)	Conservation objective version 1 (16/12/2021): Special Conservation Interests <ul style="list-style-type: none"> ● Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara spp.</i> [3140] ● Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> [7210] ● Alkaline fens [7230] ● <i>Austropotamobius pallipes</i> (White-clawed Crayfish) [1092] 	SAC	19km
Lough Neagh and Lough Beg SPA (UK902009 1)	Conservation objectives version 1 (01/04/15): Special Conservation Interests <ul style="list-style-type: none"> ● A193 Common Tern (<i>Sterna hirundo</i>) breeding population ● A005 Great Crested Grebe (<i>Podiceps cristates</i>) breeding population ● A005 Great Crested Grebe (<i>Podiceps cristates</i>) passage population ● A038 Whooper Swan (<i>Cygnus cygnus</i>) wintering population ● A037 Bewick's Swan (<i>Cygnus Columbianus bewickii</i>) wintering population ● A140 Golden Plover (<i>Pluvialis apricaria</i>) wintering ● A005 Great Crested Grebe (<i>Podiceps cristates</i>) wintering population ● A059 Pochard (<i>Aythya farina</i>) wintering population ● A061 Tufted Duck (<i>Aythya fuligula</i>) wintering population ● A062 Scaup (<i>Aythya marila</i>) wintering population ● A067 Goldeneye (<i>Bucephala clangula</i>) wintering population ● A004 Little Grebe (<i>Tachybaptus ruficollis</i>) wintering population ● A017 Cormorant (<i>Phalacrocorax carbo</i>) wintering population ● A043 Greylag Goose (<i>Anser answer</i>) wintering population ● A048 Shelduck (<i>Tadorna tadorna</i>) wintering population ● A050 Wigeon (<i>Anas penelope</i>) wintering population ● A051 Gadwall (<i>Anas strepera</i>) wintering population ● A052 Teal (<i>Anas crecca</i>) wintering population 	SPA	40km (Straight-line distance) (Hydrological linkage is 60km)

	<ul style="list-style-type: none"> ● A053 Mallard (<i>Anas platyrhynchos</i>) wintering population ● A056 Shoveler (<i>Anas clypeata</i>) wintering population ● A125 Coot (<i>Fulica atra</i>) wintering population ● A142 Lapwing (<i>Vanellus vanellus</i>) wintering population ● Waterfowl Assemblage wintering population (Component species: Whooper Swan, Bewick’s Swan, Golden Plover, Great Crested Grebe (wintering) Pochard, Tufted Duck, Scaup, Goldeneye, Little Grebe, Cormorant, Greylag Goose, Shelduck, Wigeon, Gadwall, Teal, Mallard, Shoveler, Coot, Lapwing) 		
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A separate Appropriate Assessment screening has ruled out any potential for impacts on any Natura 2000 sites.

The remaining Natura 2000 sites are at a greater remove and have no identifiable connectivity with the proposed works. Given the nature and scale of the works, there is no known vector, pathway or conduit for impacts between the proposed works and the remaining Natura 2000 sites. Therefore, the proposed works will have no potential for impacts on these sites.

4.7.2. Nationally designated sites

Natural Heritage Areas (NHAs) are sites deemed to be of national ecological importance and are afforded protection under the Wildlife (Amendment) Act 2000. Many NHA boundaries overlap with European sites. The proposed NHAs (pNHAs) have not been statutorily proposed or designated under the Wildlife Act (as amended). However, they are afforded some protection under planning legislation and objectives are included in the current County Development Plan specifically aimed at protecting pNHAs or providing complimentary protective measures that enhance the network of pNHAs. No pNHAs and or NHAs are hydrologically connected to the proposed site of development.

Nationally designated sites in Northern Ireland must also be considered as the River Shambles is a tributary of the Monaghan Blackwater which discharges eventually into Lough Neagh. An area of special scientific interest or ASSI is a conservation designation denoting a protected area in Northern Ireland. These sites are designated if they have criteria based on fauna, flora, geological or physiographic features. The law relating to ASSIs is contained in the Environment Order (Northern Ireland) 2002, Part IV. The river Blackwater flows along the perimeter of one ASSI, this is 'Caledon and Tynan' (ASSI342) which is designated due to its fen and parkland habitats. See section 7.4 for water quality mitigation measures. Lough Neagh is also an ASSI for freshwater wetlands, breeding birds and overwintering birds.

National Nature Reserves (NNRs) and other statutory nature reserves are areas of prime importance for flora, fauna or features of geological or other special interest. They are managed for conservation and to offer special opportunities for study or research. No NNRs were found with connectivity to the proposed site.

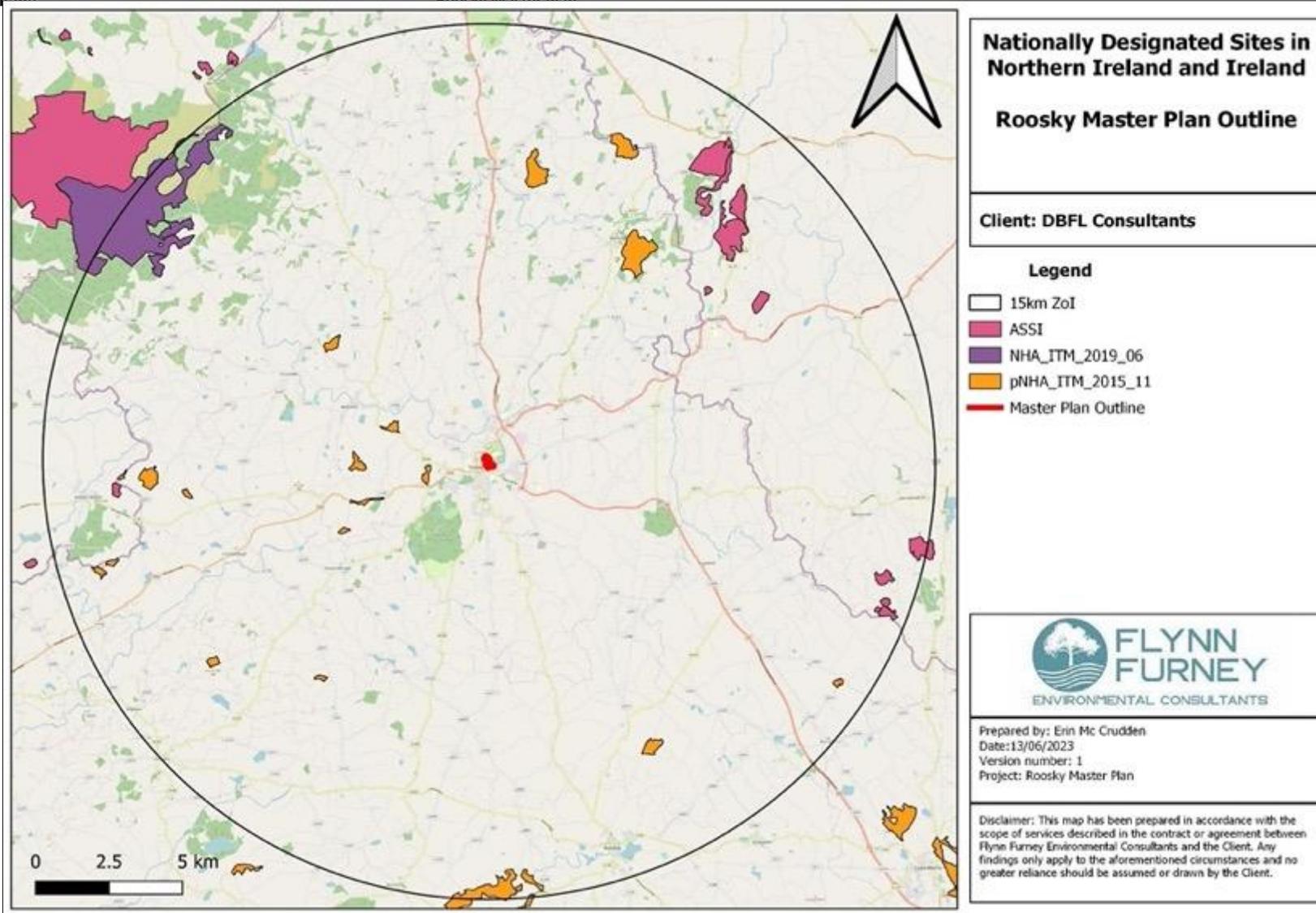


Figure 4.1.2: Nationally protected sites within 15km of the proposed site.

Table 8.: Nationally designated sites within proximity of the proposed site of development.

Site Name / Code	Qualifying interests	Designation	Approx. distance from the Site
Wright's Wood 001612	Old, coppiced ash woodland on a small hillock, close to Monaghan town with diverse herbaceous ground flora.	pNHA	2km
Drumreask Lough 001602	The calcareous nature of the lough is evident from the presence of Stoneworts (<i>Chara spp</i>) which form a narrow shelf all around the lough edge. The calcicole Great Fen-sedge (<i>Cladium mariscus</i>) is also present amongst the reedbeds that surround most of the lough. On the lake margins are pockets of wet, marshy ground.	pNHA	3.2km
Ulster Canal (Aghalisk) 001611	The canal is very dry at the point and is almost entirely colonized by grasses with some Iris (<i>Iris pseudacorus</i>) beds and Meadowsweet (<i>Filipendula ulmaria</i>).	pNHA	3.8km
Rosefield Lake and Woodland 001784	This site, 4km west of Monaghan consists of a small calcareous lake surrounded by alder woodland (<i>Alnus glutinosa</i>) and reed bed communities. This inter drumlin calcareous Lough, oligotrophic/mesotrophic in character has extensive Chara communities present in the fringing reed zones and out into the open water areas.	pNHA	4km
Corcreeghy Lake and Woodland 001783	This is an undisturbed lake with a thin margin of marsh/scraw with the exception of the eastern end which has an extensive wet Willow (<i>Salix spp.</i>), Alder (<i>Alnus glutinosa</i>) stand, and harbours the Marsh fern (<i>Thelypteris palustris</i>) which is a rare plant in County Monaghan.	pNHA	5.1km
Mullaghmore Lake (South) 001785	It is a shallow lake which is rapidly infilling, becoming colonised by floating scraw. The lake surface is colonised by Water Lilies. The emergent vegetation consists of dense reed beds of Common ClubRush (<i>Schoenoplectus lacustris</i>) and Water Horsetail (<i>Equisetum fluviatile</i>), especially in the south and west.	pNHA	6.5km
Glaslough Lake 000559	The main value of the site lies in the lake and adjacent wetland habitats. It is reportedly rich in Calcium with Stoneworts (<i>Chara spp.</i>) and White Water-lily (<i>Nymphaea alba</i>) which is likely to have been introduced. Most of the shore is fringed by a narrow zone of Common Reed (<i>Phragmites australis</i>) mainly backed by the mixed estate woodland. Botanically the most interesting section seems to be the southern end of Glaslough lake which now forms a separate basin entirely within woodland. Here wooded islands also provide a Heronry site.	pNHA	8.1km

Rafinny Lough 001606	Rafinny Lough is a small oligotrophic Lough, situated at an altitude of c. 175m about 9km south-west of Monaghan Town. It is unusually species rich for an upland lake and the flora exhibits a strong northern element. The floating mat vegetation is very well developed and provides an excellent example of a successional sequence typical in small water bodies.	pNHA	9.2km
Emy Lough 000558	This mesotrophic lake lies in an inter-drumlin hollow in the Blackwater catchment area, only 1 km east of Emyvale. The lough is one of the largest lakes in the area with surrounding sections of Alder and Willow species. It is an important over-wintering sites for birds.	pNHA	9.5km
Mullaglassan Lough 001837	Mullaglassan Lough is a small scraw fringed lake located 6 miles west of Monaghan Town. On the southern and western shore of which there are reed beds with <i>Schoenoplectus lacustris</i> , <i>Phragmites australis</i> and in one area on the southwestern shore a species poor <i>Cladium mariscus</i> stand forms a dense community. The open water of the lake supports emergent <i>Nuphar lutea</i> and where reed cover is less dense stands of <i>Iris pseudacorus</i> and <i>Sparganium erectum</i> . The <i>Carex diandra</i> quaking transition mire, which occurs on the land ward side of the reed zone, is the main fen habitat present, and this occurs along much of the southern shore of the lake.	pNHA	10km
Cordoo Lough 001268	Calcium rich lake surrounded by reed swamp and wet grassland with some interesting species including shining pondweed.	pNHA	11.1km
Lisarilly Bog 001781	Lisarilly Bog is a small, fairly remote site situated about 8 km east of Clones. This is an area of poor fen vegetation occurring on a quaking scraw in a hollow surrounded by drumlins. The poor fen has developed on a cutover raised bog and may be in transition to a raised bog. It is oligotrophic in nature and sensitive to nutrient enrichment from the surrounding farmland.	pNHA	11.5km
Monmurray Grassland 000562	Over wintering site for Greenland White Fronted Geese.	pNHA	11.5km
Kilcorran Lough 001838	At about 17ha open water area, Kilcorran Lough is one of the larger of the highly calcareous lakes in the Finn River system. It lies less than 1km from the Monaghan and Fermanagh border at Rosslea. A small catchment in limestone drift ensures a high calcium status, with a substrate of precipitated marl, and a relatively low nutrient status. Swamps are reasonably well developed in a few areas.	pNHA	11.6km

Killyvilly Lough 001839	Killyvilly Lough is a small calcareous lake located on the border between Monaghan and Fermanagh, 12 km west of Monaghan town. The southern half of the lake lies in Monaghan and includes an area of open water, alder woodland and <i>Cladium mariscus</i> fen.	pNHA	12.2km
Eshbrack Bog 001603	Eshbrack Bog NHA is an extensive area of upland blanket bog located about 8 km north-west of Scotstown, Co. Monaghan in the townlands of Eshnaglogh and Knockanearla. The site links directly with Slieve Beagh, a Special Area of Conservation in Northern Ireland and has an altitude range of between 200 m and 350 m. The bedrock geology consists of Carboniferous Sandstone.	NHA	12.7km
Tassan Lough 001666	This small site comprises an inter-drumlin lake, reed swamp, transition mire, poor fen and dry heath on rocky substrate. The small lake has a floating macrophyte zone around much of the lake edge. Dense Common Reed (<i>Phragmites australis</i>) reed swamp extends from the lake edge to the north and south-west. Old mine spoil heaps with sparse vegetation occur to the west of the lake. To the south of the lake is a small transition mire area and adjacent poor fen. Remnant bog vegetation indicates that the area was cut for peat in the past.	pNHA	13.9km
Dromore Lakes 000001	A group of ten main inter-drumlin lakes plus several smaller areas of water stretching along the River Dromore between Cootehill and Ballybay. Nice areas of wet woodland and reed swamp. Important wintering wildfowl population, including Whooper swans, great crested grebe and lapwings.	pNHA	14.1km
Caledon and Tynan (ASSI342)	Caledon and Tynan is a special place because of its parkland and fen habitats. Historic parklands are generally characterised by old, open grown trees and shrubs which have significant amounts of dead wood. These old open-grown trees provide a very specialist habitat for certain species of invertebrates, lichens and fungi, many of which are rare.	ASSI	18.3km (hydrological distance)
Lough Neagh (ASSI030))	Fens, Purple Moor-grass and rush pastures, Reedbeds and swamps, Wet woodland Freshwater & estuarine fish assemblage, Higher plant assemblage, Invertebrate assemblage, Breeding waterbird assemblage, Breeding bird assemblage (wet woodland), Breeding wader assemblage, Common Tern, Coot, Great Cormorant, Gadwall, Golden Plover, Teal	ASSI	c.60Km (hydrological distance)

No pNHA, NHA or NNR will be impacted from the proposed development. The sites mentioned are at a great remove and / or have no identifiable connectivity with the proposed works. However, the River Blackwater flows adjacent to the Caledon & Tynan ASSI (18.3km away hydrologically) and ultimately to the Lough Neagh ASSI (60km away hydrologically). A potential impact upon this site could be a reduction in water quality, see section 7.4 for water quality mitigation measures.

4.7.3. All Ireland Wetlands Survey

Wetland is a collective term for ecosystems (habitats and their associated species) whose formation has been dominated by water, and whose processes and characteristics are largely controlled by water. A wetland is a place that has been wet enough for a long enough time to develop specially adapted vegetation and other organisms (Maltby 1986). They occur where the water table is at or near the surface of the land, or where the land is covered by a layer of shallow water, either throughout the entire year or seasonally. This section includes some wetland areas that have been recorded as being of county or greater importance that are not subject to any designation for the conservation of nature.

The All-Ireland Wetland Survey In conjunction with Foss Environmental Consulting, Wetland Surveys have developed an online map of all known wetlands in the Republic of Ireland. This map was investigated to identify any wetlands which may be affected by the proposed development.

The Monaghan County Council Development Plan 2019-2025 sets out policies and objectives to protect wetlands recognising that while many protected areas include wetlands, most wetland areas occur outside protected sites.

HCLSO 1 To promote and encourage the conservation and preservation of the County's natural environment, cultural heritage and amenities in accordance with legislation, plans and policies developed to specifically address these areas and to ensure a rich cultural landscape, healthy environment and the full provision of ecosystem services in the County.

It is stated that "the first phase of a project to develop an action plan for Monaghan's wetlands was commenced as part of a National Biodiversity Action Plan funded project. This project will

identify sites from the Monaghan wetland database, where ecosystem services can be identified for enhancement and restoration to improve biodiversity and contribution towards climate change mitigation and adaptation.”

Three wetlands were identified as having the possibility to be affected by the development which are listed below.

Name	Knockaconny – Ulster Canal
Site code	WMI_MN638
Site evaluation	C Rating: Local conservation value (high value)
Main wetland habitat	CANAL, MARSH, RIVER
Description	Main interest on site is the disused Ulster canal. Dense woodland scrub occurs along the edges. Canal channel is dominated by 2 to 3 meters wide marsh vegetation. Stagnant water with muddy substrate.
Data Source	Monaghan County Council 2012

Name	River Blackwater at Corvally
Site code	WMI_MN494
Site evaluation	F Rating: Unknown value - survey required
Main wetland habitat	RIVER, WET WOODLAND (OAK ASH OR WILLOW ALDER), RIPARIAN WOODLAND
Description	Woodland adjacent to river.l
Data Source	Monaghan County Council 2012

Name	WEST OF NEW MILLS BRIDGE - RIVER BLACKWATER
Site code	WMI_MN337
Site evaluation	C+ Rating: County Conservation value

Main wetland habitat	RIVER
Description	Rare plant site. Species grows on sandy alluvial soil on the riverbank.
Data Source	Monaghan County Council 2012

The first site (site code: WMI_MN638) is given a C Rating of local conservation value. (Source: All Ireland Wetlands Survey). Habitats are described as a canal, marsh and river. "Main interest on site is the disused Ulster canal. Dense woodland scrub occurs along the edges. Canal channel is dominated by 2 to 3 meters wide marsh vegetation. Stagnant water with muddy substrate." Data source is County Monaghan Wetland Survey 2012. This site is not hydrologically connected with the proposed site of works as the Ulster Canal is dry for significant areas between this site and Rooskey.

The second site (site code: WMI_MN494) is given a F Rating of local conservation value. (Source: All Ireland Wetlands Survey). Habitats are described as a riparian woodland, wet woodland and river. "Woodland adjacent to river." Data source is County Monaghan Wetland Survey 2012. This site is hydrologically connected with the proposed site of works via the Monaghan Blackwater.

The third site (site code: WMI_MN337) is given a C+ Rating of county conservation value. (Source: All Ireland Wetlands Survey). Habitats are described as river. "Rare plant site. Species grows on sandy alluvial soil on riverbank." Data source is County Monaghan Wetland Survey 2012. This site is hydrologically connected with the proposed site of works via the Monaghan Blackwater.

Two of the wetlands mentioned above are hydrologically connected and have the possibility to transport pollutants to the sites affecting water quality and associated biodiversity.



Figure 4.1.3.1: Wetland site boundaries extracted from the All Ireland Wetland Survey website. (<http://www.wetlandssurveysireland.com/>)



Figure 4.1.3.2: Wetland site boundaries extracted from the All Ireland Wetland Survey website. (<http://www.wetlandssurveysireland.com/>)

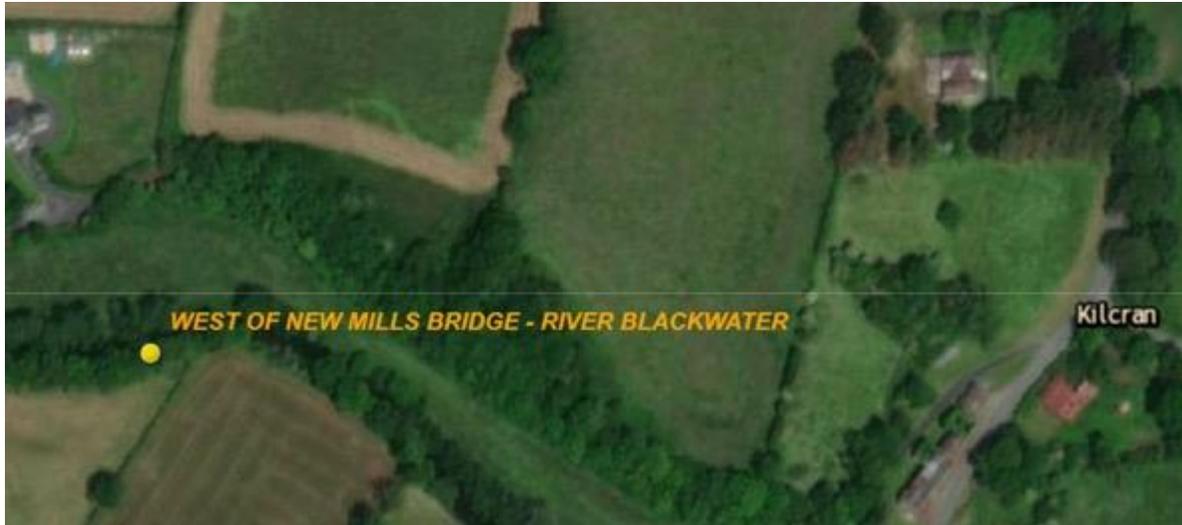


Figure 4.1.3.3: Wetland site boundaries extracted from the All Ireland Wetland Survey website.
[\(http://www.wetlandsurveysireland.com/\)](http://www.wetlandsurveysireland.com/)

4.2. Biodiversity Records

Records of rare and protected species of fauna and flora were obtained from the National Biodiversity Data Centre (NBDC) online database. A 3km polygon was drawn around the application site to determine if any species had been recorded on site (See figure 4.2.1.). See Table 4.2.1 below for details of protected species recorded.

Table 9: NBDC records for proposed site.

Species	Data Source	Year	Protection
Common Frog (<i>Rana temporaria</i>)	Irish National Frog Database	15/06/2003	Annex V Protected Species: Wildlife Acts
Smooth Newt (<i>Lissotriton vulgaris</i>)	Newt Survey 2010-2014	29/06/2010	Protected Species: Wildlife Acts
Barn Swallow (<i>Hirundo rustica</i>)	Birds of Ireland	14/04/2012	Amber-listed
Black-headed Gull (<i>Larus ridibundus</i>)	Bird Atlas 2007 - 2011	14/04/2012	Red-listed
Common Coot (<i>Fulica atra</i>)	Bird Atlas 2007 - 2011	06/01/2023	Amber-listed
Common Grasshopper Warbler (<i>Locustella naevia</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed

Common Kestrel (<i>Falco tinnunculus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Common Kingfisher (<i>Alcedo atthis</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed Annex I species
Common Linnet (<i>Carduelis cannabina</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Common Starling (<i>Sturnus vulgaris</i>)	Bird Atlas 2007 - 2011	04/01/2018	Amber-listed
Common Swift (<i>Apus apus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Common Snipe (<i>Gallinago gallinago</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Eurasian Teal (<i>Anas crecca</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Eurasian Tree Sparrow (<i>Passer montanus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Eurasian Wigeon (<i>Anas penelope</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Eurasian Woodcock (<i>Scolopax rusticola</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
European Golden Plover (<i>Pluvialis apricaria</i>)	Bird Atlas 2007 - 2011	31/12/2011	Red-listed Annex I Listed
Great Cormorant (<i>Phalacrocorax carbo</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Great Crested Grebe (<i>Podiceps cristatus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
House Martin (<i>Delichon urbicum</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed

House Sparrow (<i>Passer domesticus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Jack Snipe (<i>Lymnocyptes minimus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Lesser Black-backed Gull (<i>Larus fuscus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Little Grebe (<i>Tachybaptus ruficollis</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Merlin (<i>Falco columbarius</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed Annex I Listed
Mew Gull (<i>Larus canus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Mute Swan (<i>Cygnus olor</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Northern Lapwing (<i>Vanellus vanellus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Red-listed
Peregrine Falcon (<i>Falco peregrinus</i>)	Bird Atlas 2007 - 2011	31/12/2011	Annex I Listed
Sand Martin (<i>Riparia riparia</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Sky Lark (<i>Alauda arvensis</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Spotted Flycatcher (<i>Muscicapa striata</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Stock Pigeon (<i>Columba oenas</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Tufted Duck (<i>Aythya fuligula</i>)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed

Water Rail (Rallus aquaticus)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed
Whooper Swan (Cygnus cygnus)	Bird Atlas 2007 - 2011	31/12/2011	Amber-listed Annex I



Figure 4.2.1 Polygon used to determine recorded species in and around the application site on the National Biodiversity Data Centre maps.

Nationally protected species such as the Eurasian Badger (*Meles meles*), Eurasian Red Squirrel (*Sciurus vulgaris*), Pine Marten (*Martes martes*) and the West European Hedgehog (*Erinaceus europaeus*) were recorded in existing data records within 2km of the proposed development (author’s own records).

Two invasive species were noted in the area, one was Third schedule species Japanese Knotweed Japanese Knotweed (*Fallopia japonica*) and the other was the Eastern Grey Squirrel (*Sciurus carolinensis*). However, the latter has not been recorded in recent years (author’s own records).

4. Field surveys

4.3. Overview of Habitats and Habitat Classification

An overview of the main habitats recorded is detailed below.

Habitats within the study area were mapped according to Level 3 of the Heritage Council classification (Fossitt, 2000) following the Heritage Council's Best Practice Guidance (Smith et al., 2011) and the Joint Nature Conservation Committee's (JNCC) Handbook for Phase 1 Habitat Survey – a technique for environmental audit (JNCC, 2010). The Heritage Council's *A Guide to Habitats in Ireland* (Fossitt, 2000) is the standard habitat classification system used in Ireland. Habitats were also assessed for correspondence to the Habitats Directive Annex I habitat types (European Commission, 2013). The broadleaved woodland and riparian woodland surrounding the site would be considered to be the most important nature-value habitats.

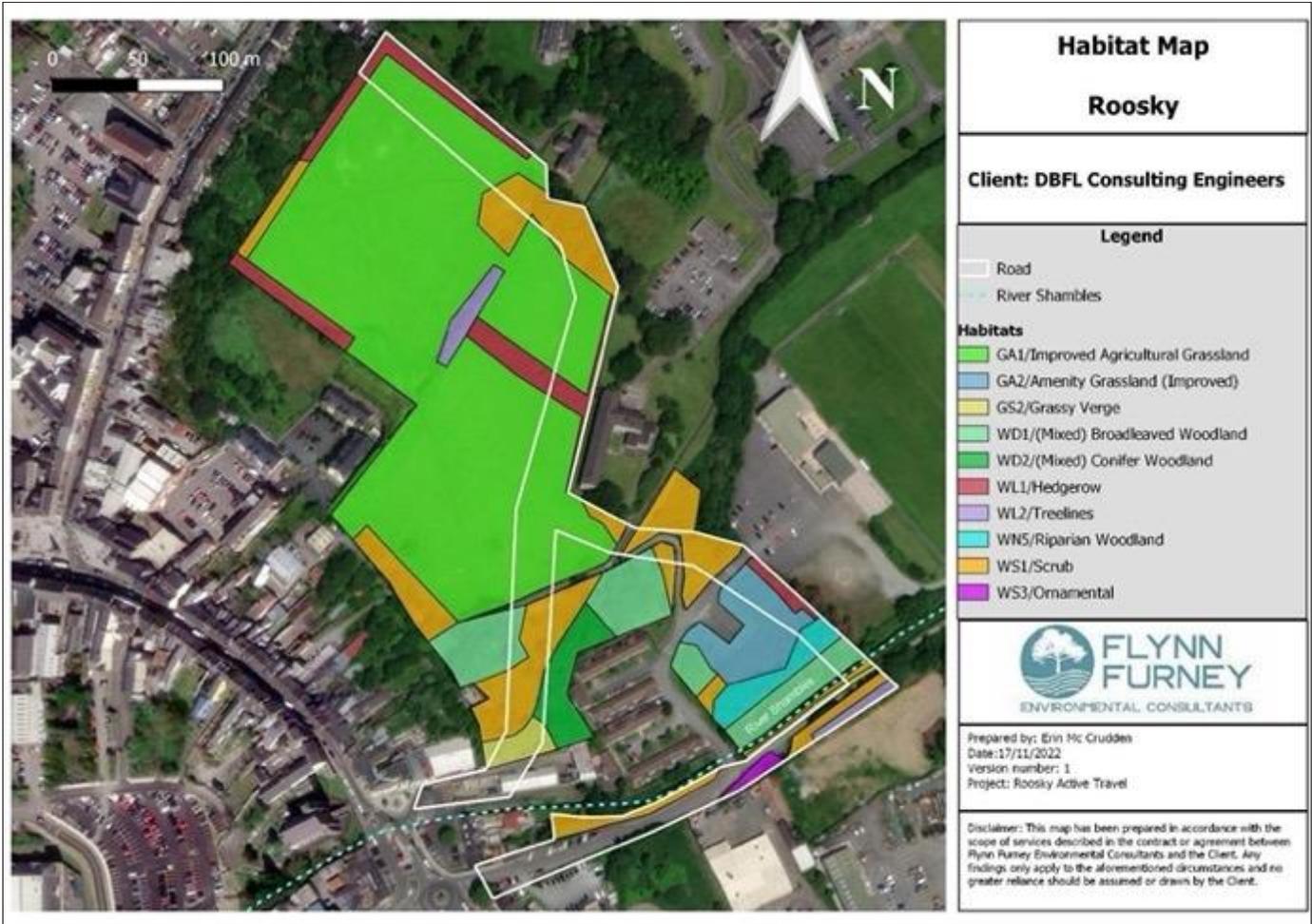


Figure 4.3.1. Habitat types in and around the application site. Produced on QGIS.

Hedgerows - WL1

There is a broad hedgerow of up to 10 m cross-sectional width at the northern end of the site. It is dominated by Hawthorn (*Crataegus monogyna*) and Bramble (*Rubus fruticosus*), with dense thickets of Blackthorn (*Prunus spinosa*) on the southern side, and occasional Elder (*Sambucus nigra*) elsewhere. The ground flora is dominated by Ivy (*Hedera Hibernica*), with locally abundant Cleavers (*Galium aparine*) and occasional Hogweed (*Heracleum sphondylium*).

Part of the western boundary of the site adjoining 'The Diamond' apartments is formed by an immature hedgerow of Cherry Laurel (*Prunus laurocerasus*). The south-western boundary of the site has a linear strip of scrub that resembles a hedgerow. It is dominated by Grey Willow (*Salix cinerea*) and Bramble, with frequent Butterfly-bush (*Buddleja davidii*) and rare Sycamore (*Acer pseudoplatanus*) and Ash (*Fraxinus excelsior*). The ground flora has abundant Nettle (*Urticaceae spp.*) Cleavers and Hedge Bindweed (*Calystegia sepium*), and occasional Wild Turnip (*Brassica rapa*) and Great Willowherb (*Epilobium hirsutum*).

Upland River - FW1

The Shambles River is a small moderate-fast-flowing river that arises several kilometres to the west of the proposed site of works. It is less than 2m in width throughout much of the survey area. Immediately upstream of the survey area, the river has been undergrounded for approximately 0.5km between Glen Road and Old Cross Square. This has a significant impact on the health and overall biodiversity of the river. There is consequently no macrophyte growth in the river here. The river is overhung heavily by bramble for much of its course within the proposed site of works.

Improved Agricultural Grassland - GA1

The areas of agricultural grassland onsite were dominated by grass species such as Cocksfoot (*Dactylis glomerata*), Annual Meadow Grass (*Poa annua*) and Perennial Rye-grass (*Lolium perenne*). These areas also included Meadow Buttercup (*Ranunculus acris*), Creeping Buttercup (*Ranunculus repens*), Red Clover (*Trifolium pratense*), White Clover (*Trifolium repens*), Willow Herb (*Epilobium spp.*), Silver Weed (*Potentilla anserina*), Bush Vetch (*Vicia sepium*) and Broad-leaved Dock (*Rumex obtusifolius*) which were

dispersed occasionally throughout the grassland habitats. However, Lesser Stitchwort (*Stellaria graminea*), Hawksbeard (*Crepis spp.*), Ribwort Plantain (*Plantago lanceolata*) were also found occasionally in one area while Cow parsley (*Anthriscus sylvestris*), Butterbur (*Petasites spp.*), Red Bartsia (*Odontites vernus*), Hogweed (*Heracleum spp.*), Knapweed (*Centaurea spp.*) and Common Mouse-ear (*Cerastium fontanum*) were present occasionally in another section. Overall, the majority of areas within the improved agricultural habitats were comprised of the same species.

Treeline - WL2

One treeline habitat was located along a wall and the other along the path by the Ulster Canal Greenway. The treeline by the wall consisted of Hawthorn (*Crataegus monogyna*) and Ash (*Fraxinus excelsior*). Evidence of Ash dieback was observed. The treeline by the path consisted of Goat Willow (*Salix caprea*).

Mixed Broadleaved Woodland - WD1

A limited proportion of the area under survey would conform to this habitat type. One of the (mixed) broadleaf woodland areas was predominantly Ash (*Fraxinus excelsior*) and Willow (*Salix spp.*) with a small percentage of Scot's Pine (*Pinus sylvestris*) and Cedars (*Cedrus spp.*). Another area found of (mixed) broadleaved woodland was a mixture of Beech (*Fagus spp.*), Sycamore (*Acer pseudoplatanus*), Hawthorn (*Crataegus monogyna*) and less frequently Birch (*Betula pendula*) and Elder (*Sambucus spp.*) trees.

It is worth noting there are three mature Beech trees, two mature Ash and two mature Scot's pine trees present within one area of the (mixed) broadleaved woodland. These have trunk diameters ranging from 1 – 1.5 m and heights of 20 – 25 m. This section also frequently consisted of grass species while Red Clover (*Trifolium pratense*), White Clover (*Trifolium repens*), Ribwort Plantain (*Plantago lanceolata*) and Bush Vetch (*Vicia sepium*) were occasional. Invasive species Butterfly Bush (*Buddleja davidii*) and Pheasant Berry, also known as Himalayan Honeysuckle, (*Leycesteria Formosa*) were present in this area. Evidence of severe littering/dumping was present in this area.

Amenity Grassland (Improved) - GA2

The improved amenity grassland habitat on site was dominated by grass species such as Bents (*Agrostis spp.*). Bird's Foot Trefoil (*Lotus corniculatus*), Red Clover (*Trifolium pratense*) and White Clover (*Trifolium repens*). Frequently found species included Willow Herb (*Epilobium spp.*), Dock species (*Rumex spp.*),

Thistle species (*Cirsium spp.*). Creeping Buttercup (*Ranunculus repens*), Meadow Buttercup (*Ranunculus acris*) and Silverweed (*Potentilla anserina*) were occasional in the habitat while Lesser Trefoil (*Trifolium dubium*) was rare. The most common tree species in this habitat was Goat Willow (*Salix caprea*), with most trees being located along the border of the habitat. Oak (*Quercus spp.*) trees could also be found but were rarer than Goat Willow in this area.

Scrub – WS1

This habitat type included areas that were dominated by at least 50% cover of shrubs, stunted trees or brambles. The canopy height was generally less than 5m in such areas. Scrub can occur in areas where management has been neglected or is irregular. There are several areas within the proposed development where this would occur. Climbing plants such as Bramble (*Rubus fruticosus agg.*), Hedge Bindweed (*Calystegia sepium*), Bush Vetch (*Vicia sepium*), Cleaver (*Galium aparine*) was dominant in these areas. Some areas of scrub also included taller tree species including Willow (*Salix spp.*) and Hawthorn. The herb layer in these areas contained coarse grasses (*Poaceae spp.*) and plants such as Nettles (*Urticaceae spp.*), Thistles (*Cirsium spp.*), Creeping Buttercup (*Ranunculus repens*) and Willow Herb (*Epilobium spp.*). Invasive species Butterfly Bush (*Buddleja davidii*) was present in several sections of scrub areas around the site.

Riparian Woodland – WN5

The riparian woodland habitats consisted mainly of Goat Willow (*Salix caprea*) and less frequently Beech (*Fagus spp.*). Grass species (*Poaceae spp.*), White Clover, Red Clover (*Trifolium pratense*) and Willow Herb (*Epilobium spp.*) were frequent in the habitat. This habitat was adjacent a section of the Ulster Canal.

(Mixed) Conifer Woodland – WD2

One section of the survey area conformed to this habitat type. The dominant tree in this area was the native conifer species, Scot's Pine (*Pinus sylvestris*). Other less frequent tree species included Hawthorn (*Crataegus monogyna*), Elder (*Sambucus spp.*) and Ash (*Fraxinus excelsior*). Bramble was occasional in the habitat while the non-native Garden Privet (*Ligustrum ovalifolium*) was rare in the habitat. Frequently found ground flora species included grass species, Nettle species (*Urticaceae spp.*), Vetch species (*Vicia spp.*), Hogweed (*Heracleum spp.*), Herb Robert (*Geranium robertianum*), Red Clover (*Trifolium pratense*), White Clover (*Trifolium repens*) and Creeping Buttercup (*Ranunculus repens*).

Dry Meadows and Grassy Verges - GS2

Some areas around the margins of the agricultural grassland have not been mowed for a number of

years, and have a greater diversity of plant species. There is also a smaller patch of unmown grassland on the crest of a hill in the east of the site.

Most sections of the habitat consisted mainly of grass species such as Cocksfoot and Annual Meadow Grass. Bindweed (*Convolvulus spp.*) and Willow Herb (*Epilobium spp.*) were also frequent while species such as Creeping Buttercup (*Ranunculus repens*) and Meadow Vetchling (*Lathyrus Pratensis*) were occasional. Other sections of the grassy verge habitats had a greater variety of ground flora including Red Clover (*Trifolium pratense*), White Clover (*Trifolium repens*), Creeping Buttercup (*Ranunculus repens*), Willow Herb (*Epilobium spp.*) and less frequently, Bush Vetch (*Vicia sepium*), Hogweed (*Heracleum spp.*), Red Bartsia (*Odontites vernus*), Lesser Stitchwort (*Stellaria graminea*) and Cleaver (*Galium aparine*). Mullein (*Verbascum Thapsus*) and Wild Mustard (*Sinapis arvensis*) were rare within this habitat. Ash trees (*Fraxinus excelsior*) were scattered throughout the grassy verge. The smaller patch of dry meadow on the crest of the hill is less diverse. False oat-grass (*Arrhenatherum elatius*) is dominant, while Nettle and Great Willowherb are abundant.

Habitats Evaluation

No Annex I habitat types were recorded within or surrounding the proposed development area. Habitat types encountered were typical of agricultural and urban habitats within the county. The table below gives a detailed summary of the main habitat types found within the survey area and their ecological significance.

Table 10: Ecological significance of habitats within and surrounding the proposed development.

Ecological feature	Fossitt code	Ecological Value	Rationale for Determination
Habitats within the Proposed Development Site			
Improved Grassland	GA1	Low Local	Species-poor grassland which has been highly modified.
River	FW1	High Local	Important for habitat connectivity for poor water quality

Hedgerows	WL1	High Local	These hedgerows provide ecological corridors. Importance for birds, bats and small mammals.
Mixed Broadleaf woodland	WD1	High Local	Provides numerous benefits for many species. Mature trees present. Foraging/feeding area for bats.
Riparian Woodland	WN5	High local	Supports local wildlife acting as an ecological corridor. Supports many species.
Scrub	WS1	Low Local	Ecological corridor for wildlife.
(Mixed) Conifer Woodland	WD2	High Local	Supports local wildlife with few mature trees.
Grassy Verges and Dry Meadows	GS2	High Local	Good species diversity to maintain in an urban area.
Treelines	WL2	Low Local	Significant only at a local level.

4.4. Fauna

4.10.1 Mammals

The survey area was surveyed by direct search (during daylight hours) for signs of mammalian activity which included prints, tracks, hairs, droppings, odour, digging and evidence of feeding. Places of refuge, rest and other activity such as Badger (*Meles meles*) setts were sought. Survey techniques are outlined in the National Road Authority's Ecological Surveying Techniques for protected Flora and Fauna (TII/NRA, 2008). Any tangible signs were recorded.

No mammal refugia (e.g. setts of Badger *Meles meles* or Otter *Lutra lutra* holts) were found within the survey area. No evidence of mammal activity, such as holes, trails, burrows or scatt, were found during the course of this survey, though it is possible that mammals use this area for navigation and occasionally foraging. The River Shambles is known to provide Otter habitat (author's own records) but no holts occur within the area under survey. The Ulster Canal here is not watered and would not offer Otter feeding or commuting habitat. No impacts to any protected mammal species are therefore considered likely with the correct implementation of mitigation.

4.4.2. Birds

A dedicated breeding bird survey was not carried out as part of the surveys as it was not deemed an important site for birds based on the poor suitability of the habitats present. Although, all bird species seen and heard during the surveys were noted. These included Swallow species (*Hirundinidae spp.*), Jackdaw (*Coloeus monedula*), Magpie (*Pica pica*), Robin (*Erithacus rubecula*), Wren (*Troglodytes troglodytes*), Bullfinch (*Pyrrhula pyrrhula*), Blackbird (*Turdus merula*), Wood Pigeon (*Columba palumbus*), Thrush species (*Turdidae spp.*), House Sparrow (*Passer domesticus*), Great Tit (*Parus major*) and Gold Finch (*Carduelis carduelis*). It is likely that some will nest within the hedgerows and mature trees during summer months. The Shambles River offers habitat for the Kingfisher – an Annex I species. This bird has been recorded here (by Monaghan Tidy Towns volunteers and author's own records) in recent years. However, no nesting burrows were identified during survey.

4.4.1. Bats

All bat species are protected by law in Ireland under the Bonn Convention (1992), the Bern Convention (1982) the EU 'Habitats' Directive (92/43/EC; transposed into Irish law by S.I. No. 94 of 1997) and the Wildlife Acts 1976 and 2000. Lesser Horseshoe Bats are listed as Annex II species of the Habitats Directive (afforded special protection). All other Irish bat species are listed in Annex IV (general protection) of this Directive.

The proposed works are largely planned for an agricultural field, with some hedgerows and a mixed broadleaf woodland (with mature trees). The Shambles River would also represent both a foraging and commuting habitat for bats. Bat surveys included an activity survey, a visual inspection during daylight hours of mature trees within the area and an assessment for roosting bats.

Potential roost features

There are no buildings or other man-made features within the site boundary.

Trees were inspected from ground level to identify any crevices or cavities that could potentially be suitable for roosting bats. Particular attention was paid to the four large trees at the southern point of the site. No crevices or cavities were observed on any of these trees. Some had dense ivy growth, which was not thick enough to support a bat colony but could potentially be used by individual roosting bats. Overall, the trees were considered to have low suitability for roosting bats, in accordance with the rating system outlined in Collins et al (2016).

Emergence survey

An emergence survey was carried out at the four mature trees at the southern corner of the site. No bats were observed emerging from any of the trees. Some bat activity was recorded in the surrounding area from 20:55 onwards (17 minutes after sunset), predominantly Common Pipistrelles (*Pipistrellus pipistrellus*), but also including some Soprano Pipistrelles (*Pipistrellus pygmaeus*), two passes by Nathusius' Pipistrelles (*Pipistrellus nathusii*) and a single pass by a *Myotis* bat.

Activity survey

After completing the emergence survey, an activity survey was undertaken in the remainder of the site.

Five common pipistrelles passes were recorded at the western corner of the site, and two common pipistrelle passes along the northern hedgerow. Overall, activity levels within the site were relatively low.

Conclusion of bat survey

There was no evidence that any bats roost within or adjacent to the site. Some common bat species feed within the site, particularly around the hedgerows and woodland.

4.4.2. Amphibians and Reptiles

No evidence of breeding activity of Frog (*Rana temporaria*) or Smooth Newt (*Lissotriton vulgaris*) was found within the survey area. The area lacks standing water suitable for frog or newt breeding sites. No Common (or Viviparous) Lizard (*Zootoca vivipara*) were recorded within the site.

4.4.3. Protected Invertebrates

None of the habitats present around the proposed site of development were deemed especially suitable for invertebrates and or protected invertebrates. Invertebrates seen were typical of an agricultural and urban area.

4.4.4. Invasive Species

Three stands of Third Schedule species, Japanese Knotweed (*Fallopia japonica*) (JK), were found in the south-west of the site: one of which is inside the site boundary, and two of which are just outside the boundary. Their locations are provided in Figure 4.4.4.2, and details are provided below. Japanese Knotweed is listed as an invasive species on the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations 2011* (SI 477 of 2011, as amended). In addition, soils and other material containing Japanese Knotweed, and its hybrids, are classified in Part 3 of the Third Schedule as vector materials and are subject to the same strict legal controls. It is an offence under regulations 49(2) and 50(1) to spread, or cause to spread, Japanese Knotweed and its hybrids. Therefore, all care must be taken when carrying out works when within close proximity (e.g. within 10m) of this plant.

Patch JK 1 measure approx. 5 m in diameter. It is located at the side of the access road that forms the south-west boundary of the site.



Figure 4.4.4.1: Japanese Knotweed, patch JK1 in the south-west of site

Patch JK2 is a mature infestation measuring approx. 20 m x 8 m in surface area. It is located among dense scrub approx. 10 m outside the southern boundary of the site.

Patch JK3 is a mature infestation measuring approx. 20 m in diameter. It is located in dense bramble scrub approx. 3 m outside the southern boundary of the site. It is possible that its rhizomes may extend into the site.

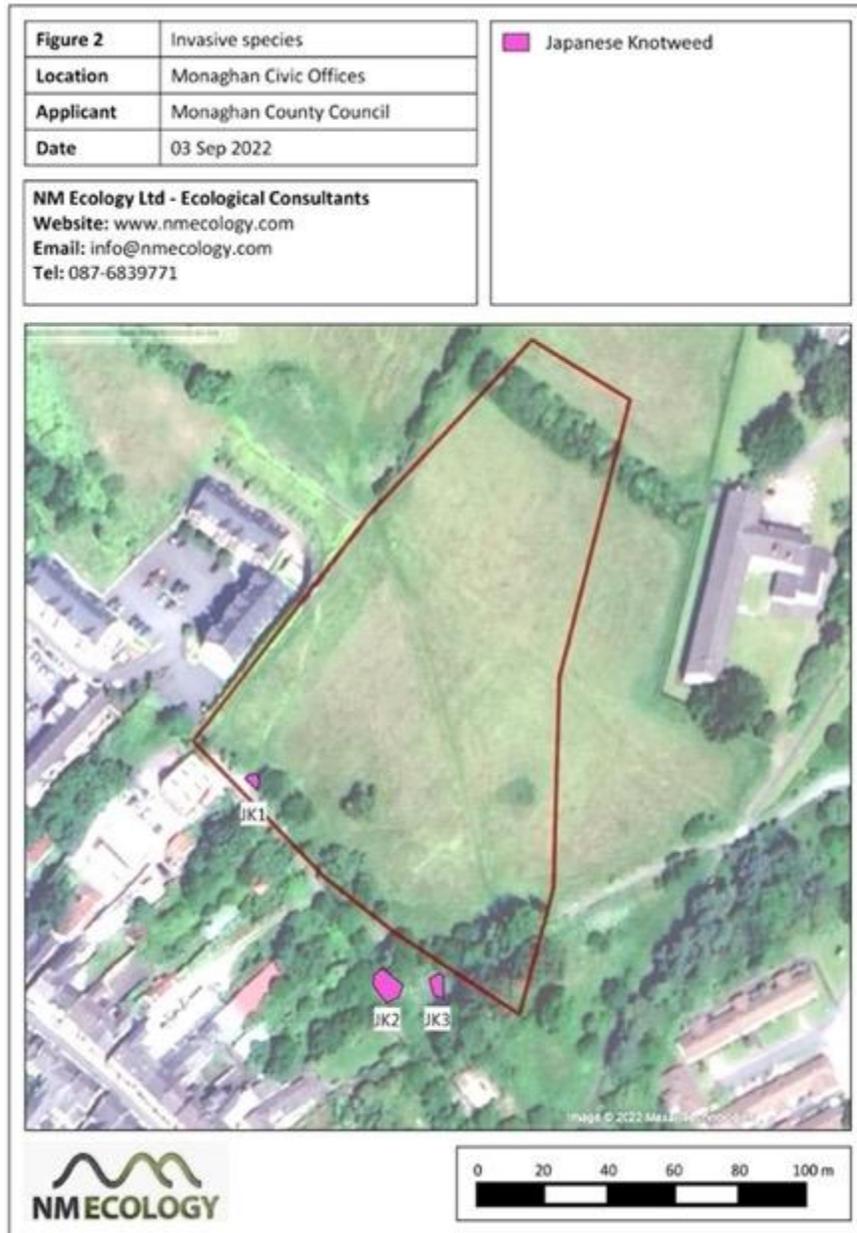


Figure 4.4.4.2: Location of Japanese knotweed stands.

Other invasive species were recorded on site included Butterfly Bush (*Buddleia sp.*) and Himalayan Honeysuckle (*Leycesteria formosa*). See Figure 4.4.4.3 for location.

5. Impact Assessment

5.1. Impact Assessment of Proposed Development

The potential impacts on the habitats and species within and surrounding the proposed development site is provided here.

5.1.1. Impact Assessment: Designated Sites

Given the very limited scale of works at the River Shambles, no requirement for instream works, distance from Natura 2000 sites located downstream, short duration of works and significant opportunity for dilution from other rivers downstream (in particular the Monaghan Blackwater, it is considered unlikely that any likely significant effects will be incurred upon any Natura 2000 sites downstream.

Any suspended solids which may enter the watercourse adjacent to the works area are likely to be minor in nature and settle within close proximity to the works area downstream. It is likely that average levels of suspended solids observed in the receiving watercourse after rainfall events are higher than those that may be observed from any suspended solids which may enter the watercourse as a result of works.

5.1.2. Impact Assessment: Habitats

The potential impacts on the habitats identified within and surrounding the proposed development site is provided in table 11 below.

Table 11.: Impact Assessment: Habitats.

Impact Assessment: Habitats				
Ecological feature	Evaluation	Nature of Impact	Significance	Duration & Likelihood
Habitats within the Proposed Development Site				
Improved Grassland and Grassy Verges	Low Local	Loss and alteration of all of this habitat area	Negligible	Long-term/Almost Certain

Eroding River (Shambles River)	High Local	Deterioration in water quality	Minor adverse	Unlikely/Temporary
Hedgerows	High Local	Some sections of hedges may be removed to facilitate the construction of the road.	Minor adverse	Long-term/Almost Certain
Mixed Broadleaved Woodland	High local	Sections of the woodland will be removed to allow construction of the road.	Minor adverse	Long-term/Likely
Treelines	Low Local	This habitat may be removed to facilitate the construction of the road.	Negligible	Long-term/Likely
Amenity Grassland (Improved)	Low local	Possible removal or interference.	Negligible	Long-term/Likely

Conifer Woodland	High Local	Loss of habitat.	Minor adverse	Long-term / Likely
Riparian Woodland	High Local	A section of this will be removed.	Minor adverse	Long-term/ Likely
Scrub	Low local	Loss of parts of this habitat	Minor adverse	Long-term/ Likely

5.1.3. Impact Assessment: Fauna

The potential impacts on the fauna within and surrounding the proposed development site is provided in the table below.

Table 12: Impact Assessment: Fauna

Impact Assessment: Fauna			
Species/Group	Nature of Impact	Significance	Duration & Likelihood
Protected Mammals	Feeding/foraging area to be lost.	Minor adverse	Long-term/ Likely
Fish and other Aquatic Species	Potential for pollution to Shambles River during construction.	Minor Adverse	Temporary / Unlikely
Birds	Feeding/foraging area to be lost.	Minor adverse	Long-term/ Likely
Bats	Potential disturbance disruption. Feeding/Foraging area to be lost,	Minor adverse	Long-term/ Likely

	Operational disturbance impact from lighting		
Amphibians	No impacts predicted.	N/A	N/A
Protected Invertebrates	No impacts predicted	N/A	N/A

5.1.4. Cumulative and In-combination Impacts

A search of the County Monaghan online planning databases was carried out. A number of planning files were reviewed. Planning permission has been granted in the area for numerous other developments, mostly for small-scale residential developments and extensions/upgrades of existing buildings. Planning permission was granted for the development of an Aldi outlet (Planning Application File 22240). This site is in close proximity to the site of the proposed development of Rooskey (approximately 0.5km) and both sites are located along the Shambles.

A live application – *South Dublin Street and Backlands Regeneration Project* was also reviewed. The plan includes the demolition of buildings and structures, including street frontage buildings on Dublin Street and associated outbuildings and structures; New building façades/side elevations will be created. Creation of a new urban space, comprising a street, junction and extended footpaths to connect Dublin Street through to its backland areas, opening up new areas for development and enhancing the pedestrian linkages throughout this area is proposed. The creation of new streets and the realignment of existing roads is proposed. New public realm and civic spaces is also proposed.

The Monaghan County Development Plan, in complying with the requirements of the Habitats Directive require that all projects and plans that could affect the Natura 2000 sites in the same zone of impact of the project site would be initially screened for Appropriate Assessment and if requiring Stage 2 AA, that appropriate employable mitigation measures would be put in place to avoid, reduce or ameliorate negative impacts. In this way any in combination impacts with plans or projects for the development area and surrounding townlands in which the development site is located, would be avoided. Any new applications for the project area will be assessed on a case-by-case basis by Monaghan County Council which will determine the requirement for AA Screening as per the requirements of Article 6(3) of the Habitats Directive.

Similarly, objectives to protect biodiversity are set out in Monaghan's County Development Plan and Monaghan's Biodiversity and Heritage Strategic Plan 2020 - 2025. In this way any in-

combination impacts with Plans or Projects for the development area and surrounding townlands in which the development site is located, would be avoided. Any new applications for the Project area will be assessed on a case-by-case basis by Louth County Council which will determine the requirement for AA Screening as per the requirements of Article 6(3) of the Habitats Directive and determine any impact a plan or project may have on any other area of biodiversity.

Having regard to the Appropriate Assessment Screening determination that the proposed project will not have any direct impacts on the Lough Neagh & Lough Beg SPA due to the significant remove of this site from the proposed site of works and that any indirect impacts on other site identified will be avoided through appropriate treatment of wastewater from these other developments prior to discharge, and the ongoing protection of the wetland areas as designated sites identified downstream, with no predicted impacts on the conservation objectives any EU designated sites, it can be concluded that there will be no significant cumulative impacts in terms of the proposed project or from another other plans or projects in the development area.

No other areas of biodiversity interest which may be impacted. None of the developments considered in the scoping will lead to losses of natural or semi-natural habitat areas that could give rise to cumulative or in combination impacts along with the present works under assessment. Being urban habitats highly modified in nature, none of the above developments offer habitat for protected species or groups that could be significantly impacted upon by cumulative or in combination impacts together with this present development. These developments may therefore be scoped out of consideration for cumulative or in combination impacts with the development being assessed here.

6. Discussion of Impact Assessment

6.1. Impact on Habitats

Impacts upon habitat types within the proposed development footprint are considered of *Minor Adverse* or of lesser significance, given the conservation value, scale and likelihood of the impacts predicted from the construction and operation of the proposed development. Negligible ecological impacts of a permanent duration are predicted for improved grassland which makes up the majority of the proposed site. This habitat type will be converted into built land and amenity grassland as a result of the proposed development. Impacts of *Minor Adverse* significance are also predicted to hedgerows, scrub and broadleaved/conifer woodland surrounding the proposed development site. The loss of improved grassland habitat on the application site will result in the loss of some foraging habitat, a *Minor Adverse Impact* is predicted in the absence of mitigation. The Shambles River may also be vulnerable from impacts arising from potential pollutants (e.g. silt) entering the watercourse during construction. Again impacts of *Minor Adverse* significance of *temporary* duration may be predicted in the absence of mitigation from the construction phase of this development. No impacts on water quality arising from the *operation* of the development may be expected as foul and surface water will be treated in the existing waste water treatment plant which is adjacent the proposed site of the development.

The overall impact significance of the proposed development upon these habitats (taken as a whole) can therefore be considered to be *Minor Adverse* or lower. Measures to mitigate any impacts as defined here are given in the following section.

6.2. Impacts on Fauna

Impacts upon fauna within the proposed development footprint are considered of *Minor Adverse* or of lesser significance, given the habitat types being affected and the scale and likelihood of the impacts predicted from the construction and operation of the proposed development. No impacts are predicted on mammalian species bar the loss of foraging/feeding habitat. This is based upon the absence of any signs of definite mammal activity here.

No impacts are predicted upon any protected invertebrates as no food plants of the protected

insect Marsh Fritillary (*Euphydryas aurinia*) were found here. No suitable habitat for any other protected invertebrate occurs here.

Possible impacts of *Minor Adverse* significance are predicted on bird species. This is due to the loss of some feeding and foraging areas that will occur from the development of some improved agricultural grassland areas. No greater significance of impact has been attributed to this owing to the widespread distribution of these habitat types in the greater area.

The proposed development may be predicted as having some permanent impacts upon bat populations due to the loss of grassland, hedgerows and broadleaved woodland. This may cause minor impacts to feeding opportunities for local bat populations. The habitat areas – with the exception of the Shambles River are mostly sub-optimal and would not constitute a significant loss of support habitat for any local bat population. The Shambles River habitat will largely remain unaffected, however. Given that no bat roosts were identified within the site there will be no direct impacts by the proposed development and the availability of similar/better quality habitats locally means that impacts to local bat populations due to the construction of the proposed development is considered *Minor adverse*.

Lighting can severely impact on bat roosting behaviour, foraging behaviour and commuting behaviour with knock-on effects on accessing feeding areas. Many species of bats forage along dark corridors like rivers and hedgerows and are known to stay clear of well-lit areas. Lighting in the new development could impact upon bats' home ranges. Bat vision is an important sense during dusk and dawn as bats begin to move to and from the roosting sites. Excessive illumination particularly around roosting sites can lead to bats becoming disorientated and can also lead to abandonment of roosts. On review it is our professional opinion that given the proposed development is on the edge of an existing lit area impacts to bats due to lighting of the operational phase of the proposed development is considered *minor adverse*. Even low light levels can deter bats from their preferred commuting routes and as such mitigation to avoid light spill as much as possible onto bat commuting routes such as the mixed woodland/hedgerow and riparian woodland on the site should be implemented.

7. Impact Mitigation

Mitigation measures to address the potential impacts from the proposed development on habitats and fauna within and surrounding the proposed developed (as required) are provided below.

7.1. Mitigation Measures: Habitats

Table 13: Mitigation Measures: Habitats

Ecological feature	Nature of Impact	Recommended Mitigation Measures
Habitats within and around the Proposed Development Site		
Hedgerows	Some of this habitat will be removed.	<ul style="list-style-type: none"> - Clearance to be carried out outside of the bird nesting season (March-August inclusive). - Clearance is to be kept to a minimum. Any clearance of mature vegetation or in riparian areas is to be carried out under ecologist supervision. - Area to be cleared to be kept to an absolute minimum. - Any hedge planted as part of the landscape plans should be native species only. - Pruning to be carried out at correct time of year as per guidelines given by Transport Infrastructure Ireland on landscaping.
Mixed Broadleaf Woodland	Section of this habitat will be removed.	<ul style="list-style-type: none"> - Removal of mature trees to be minimised insofar as possible. - Design should allow some connectivity to be retained e.g. by keeping an amount of canopy cover. - Follow the guidance from the National Roads Authority in establishing root protection areas (RPA) around trees to avoid impacts.
Improved Grassland	Loss of habitat	<ul style="list-style-type: none"> - Grass verges to be incorporated into the landscape plan are to include native species.
Mixed Conifer Woodland	Reduction of woodland habitat size.	<ul style="list-style-type: none"> - Design should allow some connectivity to be retained e.g. by keeping an amount of canopy cover. - Removal of mature trees to be minimised insofar as possible. - Follow the guidance from the National Roads Authority (now TII) in establishing root protection areas (RPA) around trees to avoid impacts. -

Riparian Woodland	Section of this habitat will be removed.	<ul style="list-style-type: none"> - Design should allow some connectivity to be retained e.g. by keeping an amount of canopy cover. - Removal of mature trees to be minimised insofar as possible. - Works area in this habitat to be strictly limited.
Grassy Verges and Neutral Grassland	Section of this habitat will be removed.	<ul style="list-style-type: none"> - Replanting and management schemes to be drawn up to allow habitat recreation.
River Shambles	Works may cause temporary pollution of this watercourse.	<ul style="list-style-type: none"> - Best practice guidelines from Inland Fisheries Ireland (IFI, 2016) will be followed. This includes designating storage areas for dangerous substances (oils, fuels etc.) and ensuring that only silt-free run-off enters water courses. To this end, appropriately sized silt traps will be employed. - Works to be carried out under ecologist supervision.
Scrub	Loss of some habitat.	<ul style="list-style-type: none"> - The removal of hedgerows or scrub should not take place from March to August (inclusive) as per the Wildlife Act.

7.2. Mitigation Measures: Fauna

Table 14. Mitigation measures for Fauna.

Species/ Group	Nature of Impact	Recommended Mitigation Measures
Birds	Feeding and /or Foraging area to be lost	<ul style="list-style-type: none"> - Area of works to be strictly delineated. - Landscape planting is to include seed/fruit bearing plants and flowering plants attractive to invertebrates (e.g. Hawthorn, Blackthorn, Cotoneaster). - Landscape planting to be guided by recommendations given in All-Ireland Pollinator Plan. - Timing of works to avoid breeding season (March-August inclusive). - Bird nesting habitat for the Common Swift <i>Apus apus</i> should be incorporated into the new building. Specifically, purpose built 'Swift Bricks' should be incorporated into the structure. It is suggested that the north-facing side of the lift shaft would be an appropriate location for same.
Bats	Feeding and /or Foraging area to be lost	<ul style="list-style-type: none"> - Area of works to be strictly delineated. All construction lighting is to be cognisant of bats in the vicinity of works. This will include feeding and commuting bats. - Landscape planting is to include seed/fruit bearing plants (e.g. Hawthorn) and flowering plants (e.g. Rudbeckia, Nepeta) attractive to invertebrates. - All clearance works are due to take place during hibernation (November to March) and therefore direct impacts from clearing and constructions works should be Negligible. - Night-flowering plants (e.g. honeysuckle) could be included within the planting plan on completion.

	<p>Potential disturbance disruption from lighting</p>	<ul style="list-style-type: none"> - Lighting at site is to be kept to the minimum required. - LED lights will be used due to the fact that they are highly directional, lower intensity, good colour rendition and dimming capability. - A warm white spectrum (<2700 Kelvins will be used to reduce the blue light component of the LED spectrum). - Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats. - Column heights should be carefully considered to minimise light spill. The shortest column height allowed should be used where possible. Bollard lighting should be considered for pedestrian and walking areas, if deemed necessary. Construction lights should be cowled and/or directional to reduce light pollution affecting surrounding features such as hedgerows, treelines, etc.. Cowling (or similar) should direct light at an angle less than 70° from the vertical plane (see figure below). Light that spills sideways and upwards is unnecessary and will attract flying invertebrates from a greater distance. - Only luminaires with an upward light ratio of 0% and with good optical control will be used. - Luminaires will be mounted on the horizontal, i.e. no upward tilt - Avoid lights that emit high levels of ultraviolet light or Metal Halide & Mercury vapour lights. - Place shields or masking over the top to focus light away from navigation paths. - Any external security lighting should be set on motion-sensors and short (e.g. 1min) timers.
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7.3. Mitigation Measures: Invasive Species

Ireland is a signatory to a number of international treaties and conventions, including the Convention on Biological Diversity. Such treaties and conventions require the Irish Government to address issues of invasive alien species. This has been implemented through national legislation via the Wildlife Acts 1976 and 2000 (as amended) and further regulated through the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477).

Articles 49 and 50 of these latter regulations sets out the legal implications associated with alien invasive species and Schedule 3 of the regulations lists non-native species subject to the restrictions of Articles 49 and 50.

Under Article 49 and 50 of these Regulations it is an offence to:

- Plant, disperse, allow dispersal or cause the spread of invasive species.
- Keep the plants in possession for the purpose of sale, breeding, reproduction, propagation, distribution, introduction or release.
- Keep anything from which the plant can be reproduced, or propagated from, without a granted licence.
- Keep any vector material - including infested soil, seeds or plant fragments from a contaminated site, for the purposes of breeding, distribution, introduction or release.

It is important to note that if an invasive species, listed in Schedule 3 of the 2011 Regulations, has been positively identified on a works site it is not an option to do nothing i.e. action of some form must be taken to address the invasive species in order to comply with environmental legislation the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477).

Knotweed produces a dense canopy and prolific root system. If left untreated it can outcompete many native species and come to dominate habitats. Knotweeds can produce seeds however the NIEA and the NBCD note that the seeds of Japanese Knotweed (JKW) are unviable. This species spreads predominately through rhizomes and vegetative growth (Transport Infrastructure Ireland

(2020)). Moving soil material containing plant material and rhizomes is the greatest risk for the spread of this species.

- A preconstruction Invasive Species Management Plan is to be devised prior to the commencement of any site works.
- Where possible herbicide treatments should begin during late September, and additional treatments where necessary in October and November.
- All stands of JKW should be identified on the ground with bunting and signage and an exclusion zone of at least 10 m should be implemented around the stand.
- JKW can be easily spread through the transportation of material containing fragments of stems or the movement of soil containing roots or rhizomes. As such all clearance works undertaken near stands of Knotweed stands must be strictly controlled. All site operatives should be informed of the presences of Knotweed stands.
- During clearance all machinery should be thoroughly cleaned after working in areas where Knotweed stands have been recorded.
- Terram sheeting (or a satisfactory substitute) covered over with gravel or mulch should be laid down along the track to allow machinery to pass over the stands.
- If over-tracking Knotweed is required specific handling measures for terram/stone upon removal will be required to be implemented by the contractor.
- Should allow for the inclusion of repeated control measures over more than one growing season, long-term management.
- Ensure that herbicides are only handled and applied by persons holding a valid Certificate of Competence issued under the Control of Pesticides Regulations (as amended) 1986.
- Soil and material infested with Japanese Knotweed must be treated as 'waste' if taken off site.

- Any and all imported soil/rock/gravel will either be certified invasive-free or the quarry of origin will be inspected for the presence of invasive species
- Boot cleaning facilities should be made available in the site compound. All boots should be scraped/cleaned before entering the site.
- Clean equipment “power wash” prior to moving onto and off from each construction site to prevent the import and export of plant materials & seeds.
- The ECoW is to be contacted with any questions on invasive species, environmental monitoring or any breaches to biosecurity.
- Any additional importation of plants and materials onto the site should be carried out in consultation with an ecologist to avoid unintentionally spreading Invasive Species.

Other invasive species: Other invasive species were recorded on site included Butterfly Bush (*Buddleia sp.*) and Himalayan Honeysuckle (*Leycesteria formosa*). Neither of these species are listed on Schedule 3 of articles 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477) but best practise dictates that these should be removed where possible.

Best practice permits that efforts should be made to ensure that the spread of these species is prevented. This is facilitated by ensuring minimal movement of soil containing these plant species or their seeds onsite. Backfilling of excavated areas with material from those areas would aid in the prevention of the spread of these species. An invasive species management plan should also refer to these species. Though not a legal requirement, a treatment plan for these species is advised. This would usually be prepared as part of preconstruction surveys and reporting.

An ecologist will have to be present during works within any areas affected by any Third Schedule species and biosecurity measures must be followed to avoid any spreading of invasive material. The areas will be monitored during the next growing season in 2024 and any growth treated as required. This monitoring will be extended around the areas of Knotweed as a precaution to check for any accidental spreading or further contamination. Herbicidal treatments should be allowed two weeks to take effect.

7.4. Mitigation Measures: Water Quality

There is a risk for pollutants from the proposal to affect water quality in the Shambles River and its tributaries downstream of the proposed routes and developments. Any potential spills arising during the construction phase of the proposed route, e.g. during construction of watercourse crossings, or a pollutant spill, could affect water quality in the downstream environment, but is likely to be short in duration (e.g. limited to a short period immediately after the pollution event), and minor in scale. The River Shambles connects, via the Monaghan Blackwater, to three wetland sites, an ASSI and Lough Neagh & Lough Beg SPA downstream. However, given the significant downstream distance of these sites, impacts arising from any such deterioration are not considered possible.

Measures are included in this section to address the potential effects of water quality impacts on aquatic and riparian habitats in the immediate receiving environment. The monitoring of water quality is a specialist field, which may be undertaken by a suitably qualified and experienced environmental scientist who will have experience in monitoring water quality, and access to sampling equipment. The project ecologist, working in an ECoW capacity, will be responsible for reporting on adherence to the measures. The contractor will be responsible for adherence to all measures.

Temporary impacts on surface waters may occur during construction. Pollution from mobilised suspended solids (silt) is generally the prime concern. Suspended sediment due to run off from stripped construction areas and excavations can have a severe negative impact on water quality, water dependent habitats and aquatic ecology. This is particularly true in sloping areas with underlying clay following topsoil stripping. In areas of moderate to high rainfall, the potential problems are clearly exacerbated. If allowed to enter surface watercourses this run off can give rise to high suspended solids and detrimental impacts. However, such impacts are unlikely and can generally be avoided through implementation of best practice. No impacts outside the immediate receiving environment are considered likely.

Given the very limited scale of works at the River Shambles, no requirement for instream works, distance from Natura 2000 sites located downstream, short duration of works and significant

opportunity for dilution from other rivers downstream (in particular the Monaghan Blackwater, it is considered unlikely that any likely significant effects will be incurred upon any Natura 2000 sites downstream.

Any suspended solids or any other potential pollutants which may enter the watercourse adjacent to the works area are likely to be minor in nature and settle within close proximity to the works area downstream. It is likely that average levels of suspended solids observed in the receiving watercourse after rainfall events are higher than those that may be observed from any suspended solids which may enter the watercourse as a result of works.

There is the potential for other harmful substances to enter a water course or ground water body during construction. These include accidental spillage of fuels, lubricants and hydraulic fluids from construction plants; concrete spillage; wash down water from exposed aggregate surfaces, concrete trucks and cast in place concrete; wastewater from site toilets, wheel-washing facilities; and bitumen and water proofing compounds.

Prior to the commencement of construction an Environmental Operating Plan (EOP) will be prepared to assist the main contractor in preventing, managing and/or minimizing significant environmental impacts during the construction phase. The following should be included in the EOP;

- Emergency Response Plan detailing actions to be taken in the event of an accidental spillage of fuel, chemicals or other hazardous material.).
- No in-stream works are proposed or will be necessary. However, any works proposed in the vicinity (i.e. within 10m) of watercourses should be subject to a detailed method statement under the EOP.
- Procedures should be identified to ensure that any works which have the potential to impact on the aquatic environment such as in-stream works (culvert installation, channel diversion), discharge of site drainage and any works that have the potential to impact protected aquatic species are being carried out in accordance with required permits, licences, certificates and planning permissions.

- Surface water drainage and proposed discharge points should be mapped on a site plan which should also include the location of existing and proposed measures such as monitoring points, sediment traps, settlement lagoon and oil interceptors.
- Procedures for environmental awareness training and in particular the implementation of the Emergency response Plan and Water Quality Management Plan. The environmental Manger will generally be responsible for any induction training and environmental tool box talks.

Further mitigations for water quality include;

- Provision of measures to prevent the release of sediment during the construction work will be installed prior to the commencement of site clearance. Protective measures may include but are not limited to the use of silt fences and sedimentation mats.
- Provision of exclusion zones and barriers (sediment fences) between earthworks, stockpiles and temporary surfaces will be enacted to prevent sediment washing into the receiving water environment.
- Temporary construction surface drainage and sediment control measures will be in place before earthworks commence.
- If pouring of cementitious materials is required for the works adjacent to the watercourses, this will be carried out in the dry.
- Discharge water generated during placement of concrete will be removed off site for treatment and disposal.
- Where stockpiling is required, temporary stockpiles will be located as far as possible (preferably >50m) from any water features or wetland habitats. Three sides will be surrounded with silt fences with access from the fourth (uphill) side. Sides will be smoothed, and collection of run-off considered i.e. discharging to a settlement pond etc.
- Pumped concrete will be monitored to ensure no accidental discharge. Mixer washings and excess concrete will not be discharged to surface water. Concrete washout areas will be

located remote from any surface water drainage features to avoid accidental discharge to watercourses.

- No storage of hydrocarbons or any polluting chemicals will occur within 50m of the surface water network. Fuel storage tanks will be bunded to a capacity at least 110% of the volume of the storage tank (plus an allowance of 30mm for rainwater ingress). Refuelling of plant will not occur within 50m of the surface water network and only in bunded refuelling areas.
- Emergency procedures and spillage kits will be available and construction staff will be familiar with emergency procedures.
- Implementation of measures to minimise waste and ensure correct handling, storage and disposal of waste.
- If dewatering is required, water will be treated prior to discharge to the existing watercourse. This will include treatment for silt removal either via silt trap, settlement tanks or ponds.
- There will be no direct pumping of contaminated water from the works to the surface water drainage/stream network at any time.
- Foul drainage from site offices and compounds, where not directed to the existing wastewater network, will be contained and disposed of off-site in an appropriate manner and in accordance with the relevant statutory regulations, to prevent the pollution of watercourses.

7.5. Residual Impacts after Mitigation

Residual impacts after mitigation are:

- Permanent loss of improved agricultural grassland. These habitats are of low, local significance.
- Permanent loss of some feeding and foraging areas for birds and bats will also result. However, these habitat areas are widely represented in the greater area surrounding the area proposed for development.

- The replacement of some of the mature trees with the proposed landscape planting will serve to reduce some of the residual impacts of woody vegetation lost. The preference of fruit-bearing and pollinator-friendly species will further assist in reducing residual impacts here.

Following the implementation of the mitigation measures set out in Sections 7.1 – 7.4, the significance of any residual impacts may be described as *negligible*.

8. Conclusion

Ecological surveys were carried out within and surrounding the proposed development site in July, August and October 2022. These were completed within the optimal time for habitats and botanical assessment (except the site visit in October). Surveys included those for mammals, invertebrates, birds, bats, habitats and invasive species. An extensive desktop survey was carried out which used available data from suitable sources which included online databases (e.g. National Parks and Wildlife Service and National Biodiversity Data Centre). Consultation was carried out with a number of statutory bodies including National Parks and Wildlife Service and An Taisce.

Habitat types recorded were typical of agricultural grassland areas that are widespread in Co. Monaghan. No habitats listed in Annex I of the Habitats Directive were noted. No habitats of higher than *High Local* ecological value were found with the proposed development site. Mitigation measures have been recommended to prevent the spread of invasive species identified on site.

The development will not result in the loss of an internationally, nationally, regionally important habitat area.

No protected mammal species were found to occur within or surrounding the proposed development area. It is unlikely that any protected mammal species will be impacted upon as a result of the construction and operation of this development.

A survey of bat habitat within and surrounding the study area found no potential bat roost habitat areas. A number of measures have been described to mitigate against any impacts on bat populations during the construction and operation of this development.

All birds seen and heard during surveys were recorded. All of these were species typical of farmland, woodland and hedgerows species. No Annex II (Birds Directive) bird species or red-listed species were recorded during bird surveys of the site and surrounds. Mitigation measures have been drawn up to address any potential impacts to local bird populations. These include the limiting of works

areas and the protection of woody vegetation during the bird nesting season. Finally, it will be a condition of the contract between proponent and the Main Contractor that the Outline Project Construction and Environmental Management Plan (CEMP) prepared for the project by DBFL Consultants (and provided as part of the application under separate cover) will be implemented by the contractor and overseen by the project proponent. The PCMP specifies how materials with the potential to adversely affect surface water quality, for example, fuel and oil, will be stored and handled in a manner that minimises the risk of accidental spills or leaks. The PCMP also specifies measures that will ensure that spill containment and clean-up equipment is provided and maintained during the construction phase of the development. Finally, the devising and implementation by the contractor of an Environmental Operating Plan (EOP) will guide and inform the high environmental standards of operations as the schedule of works progresses.

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Appendix A: Maps

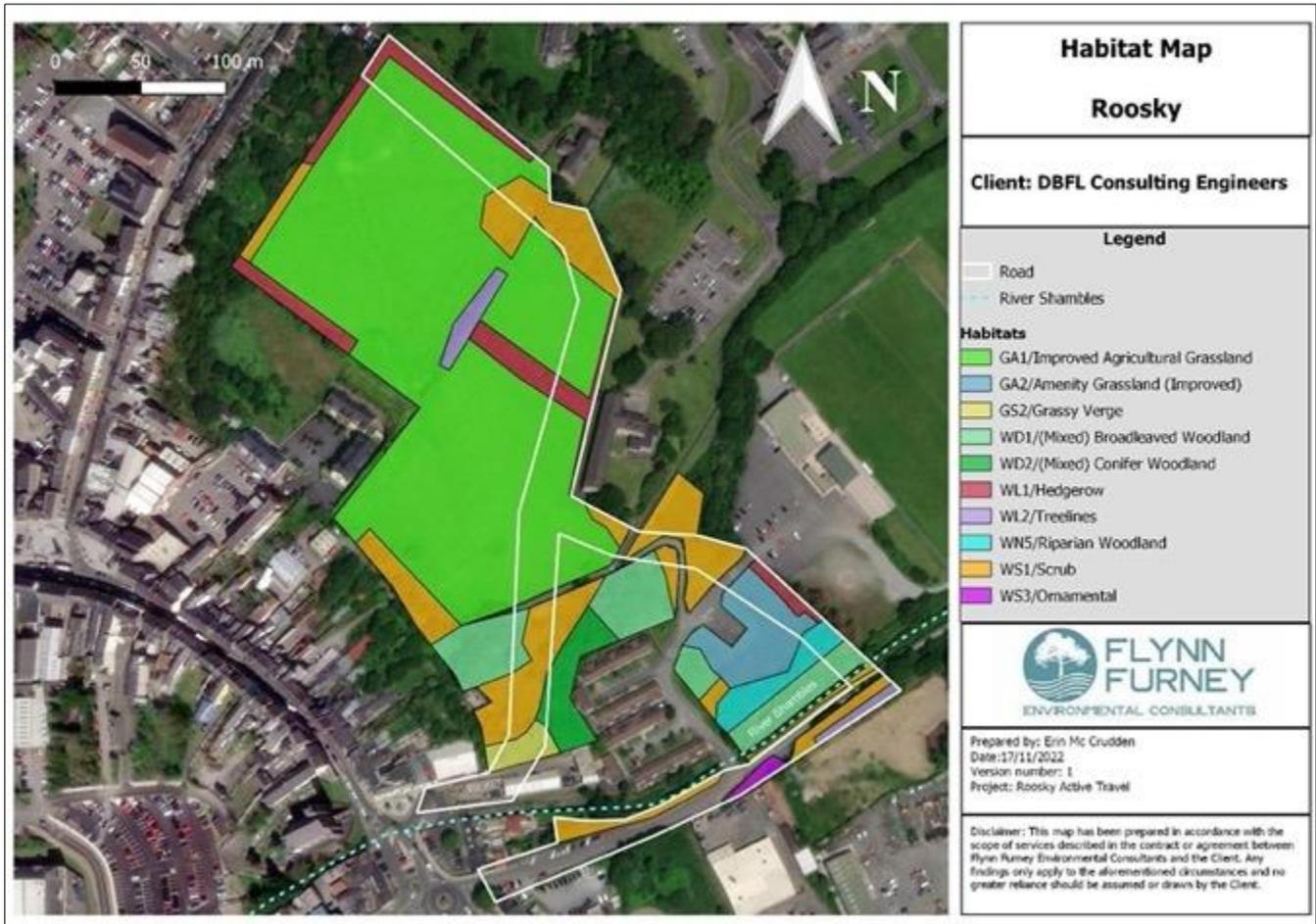


Figure 1: Map showing habitats in and around the application site.

Appendix B: Site Photos

1



Improved agricultural grassland (background), and dry meadows and grassy verges (foreground).

2

D



Northern hedgerow.

3

DBFL Co



South-western hedgerow
(background, centre)