

1.0 INTRODUCTION

This chapter assesses the potential impacts of the proposed development on the biodiversity of the site and surrounding area. This assessment has been undertaken by Doherty Environmental Consultants (DEC) Ltd. on behalf of Steinfort Investment Fund and examines the potential ecological and biodiversity impacts of the proposed development. The purpose of this assessment is to:

- identify the habitats of the site;
- identify the existing fauna of the site;
- identify the potential impact of the proposed development;
- recommend measures to mitigate probable impacts; and
- identify any residual impacts to the site's ecology and biodiversity.

The scope of the following assessment follows the guidance outlined in the *CIEEM's* Guidelines for Ecological Impact Assessment (2006).

The following impact assessment is based upon a review of existing desktop information and the results of on-site field surveys outlined below.

LEGISLATIVE CONTEXT

Flora and fauna in Ireland is protected at a national level by the Wildlife Act, 1976 and the Wildlife (Amendment) Act, 2000 and the Flora (Protection) Order, 1999 (SI 94/1999). They are also protected at a European level by the EU Habitats Directive (92/43/EEC) and the EU Birds Directive (79/409/EEC).

The transposition of the EU Habitats Directive by the European Communities (Natural Habitats) Regulations 1997 – 2015 (referred to as the Habitat Regulations) provides the legal basis for the protection of habitats and species of European importance in Ireland.

The legislative protection of habitats and species provided by the Habitats Directive has been implemented in Ireland and throughout Europe through the establishment of a network of designated conservation areas known as the Natura 2000 (N2K) network (with individual sites being referred to as Natura 2000 Sites). The N2K network includes sites designated as Special Areas of Conservation (SACs), under the EU Habitats Directive and Special Protection Areas (SPAs) designated under the EU Birds Directive. SACs are designated in areas that support habitats listed on Annex I and/or species listed on Annex II of the Habitats Directive. SPAs are designated in areas that

support: 1% or more of the all-Ireland population of bird species listed on Annex I of the EU Birds Directive; 1% or more of the population of a migratory species; and more than 20,000 waterfowl. Under the National Habitat Regulations all designated Natura 2000 Sites are referred to as European Sites.

The Wildlife Act 1976 (as amended) also provides for the statutory designation of nature conservation areas. These areas are referred to under the Wildlife Acts as Natural Heritage Areas and are designated in areas that support habitats and/or species of national importance. Other relevant national legislation concerning the protection of flora, fauna and fisheries include the:

- Planning Act 2010;
- European Communities (Quality of Salmonid Waters) Regulations, 1988;
- The Freshwater Fish Directive 1978 (78/659/EEC); and
- The Surface Water Regulations, 2009.

ASSESSMENT METHODOLOGY

Desk Study

A desktop assessment was carried out to collate available information on the biodiversity baseline of the proposed land-holding and surrounding area. The following baseline data was gathered during the desk study:

- A review of the National Biodiversity Database was completed to identify the presence or otherwise of protected species occurring within close proximity to the proposed site. Species lists reported for the 2km grid squares W67V (in which the project site is located); W67Q; W67W; and W67R were downloaded from www.biodiversityireland.ie and reviewed.
- A review of the NPWS online database to identify the presence or otherwise of designated conservation areas (i.e. SPAs, SACs, NHAs and pNHAs);
- Review of aerial photography and satellite imagery for the proposed site;
- A review of the bat landscape classification was also completed. A landscape conservation guide for Irish bat species was published in 2011 (Lundy et al., 2011). This study identified core areas of favourable habitat for bat species in Ireland. The publication was reviewed to identify whether the project site occurs within the core area for any bat species.
- Review of Offaly Council Planning Portal for any other information pertaining to the biodiversity in the wider area surrounding the project site.
- Review of the Bird Atlas for Wintering and Breeding birds.

Site Investigations

1.1.1.1 Habitat Surveys

Habitat surveys were carried out in May 2019, June 2020 and July 2021 to identify, describe, map and evaluate habitats and to verify information gathered at the desk study stage. The basis of the Habitat Survey was an Extended Phase 1 Habitat Survey. The habitat survey was undertaken in accordance with the Heritage Council's Draft Best Practice Guidance for Habitat Survey and Mapping. Habitats were classified using Fossit's Guide to Habitats in Ireland (2000) which classifies habitats according to a hierarchical framework with Level 1 habitats representing broad habitat groups, Level 2 representing habitat sub-groups and Level 3 representing individual habitats. The field survey focused on identifying Level 3 habitats.

In this report, scientific and common names for higher plants follow those in the Botanical Society of the British Isles (BSBI) standard list, published on its website www.bsbi.org.uk. Scientific and common names for bryophytes follow Smith (2004). Scientific and common names of mammals follow Whilde (1993).

1.1.1.2 Bird Surveys

All birds seen and heard on site during the Phase 1 Habitat Survey and during further site visits in July following the completion of bat surveys were recorded.

1.1.1.3 Bat Surveys

Prior to undertaking activity surveys the status of habitats occurring at the site was classified in terms of their potential to function as bat foraging habitat. The classification follows the approach outlined by Bat Conservation Trust (2012) to assessing the value of potential development sites for bats, based on the occurrence of habitat features within the landscape, and the likelihood of bats being present. The classifications range from low to high.

No structures are located within the project site. Mature trees occurring within the project site were inspected for their potential to function as high value roosts for bats. The trees were inspected for the presence of preferential roost features as described by Collins et al. (2016). The potential for trees occurring on site to function as roosts for bats were categorised as low, moderate or high, in line with the guidance set out by Collins et al. (see Table 4.1 of the guidelines).

Manual bat surveys were completed on site during the 2020 and 2021 bat activity seasons. The 2020 survey was completed on the 24th June, 2020, while the 2021 survey was completed on the 12th July 2021. The surveys involved walking a continuous transect through the site to record bat foraging activity. The bat surveys were completed using an Echo-Meter Touch Pro bat detector and a high-powered LED head torch. Both bat surveys were completed during nights of optimal foraging conditions for bats.

1.1.1.4 Mammal Surveys

The project site and surrounding area was searched for the evidence indicating the presence of mammals.

Ecological Evaluation

The nature conservation value of habitats and ecological sites occurring within the proposed site are based upon an established geographic hierarchy of importance as outlined by the National Roads Authorities (NRA, 2009). The outline of this geographic hierarchy is provided below and this has been used to determine ecological value in line with the ecological valuation examples provided by the NRA (see NRA, 2009). The geographic evaluation hierarchy is as follows:

- International Sites (Rating A);
- National Importance (Rating B);
- County Importance (Rating C);
- Local Importance (higher value) (Rating D); and
- Local Importance (lower value) (Rating E)

The evaluation of birds within the project site is based on the methods outlined by Percival (2003).

Impact Assessment

1.1.1.5 Impact Magnitude

Impact magnitude refers to changes in the extent and integrity of an ecological receptor. The IEEM (2006) defines integrity of designated conservation areas as “the coherence of the ecological structure and function across the area that enables it to sustain the complex of habitat and/or the levels of populations of the species for which it was classified”. For non-designated sites this can be amended to: “the coherence of ecological structure and function, that enables it (the site or population’s supported by the site) to be maintained in its present condition’. For the purposes of this assessment the impact magnitude is influenced by the intensity, duration, frequency and reversibility of a potential impact and is categorised as follows:

- High magnitude impact: that which results in harmful effects to the conservation status of a site, habitat or species and is likely to threaten the long-term integrity of the system.
- Moderate magnitude impact: that which results in harmful effects to the conservation status of a site, habitat or species, but does not have an adverse impact on the integrity of the system.
- Low magnitude impact: that which has a noticeable effect but is either sufficiently small or of short duration to cause no harm to the conservation status of the site, habitat or species.
- Imperceptible: that which has no perceptible impact.

- Positive: that which has a net positive impact for the conservation status of a site, habitat or species.

1.1.1.6 Impact Significance

The significance of impacts is determined by evaluating the nature conservation value of the site, habitat or species concerned together with the magnitude of the impacts affecting the system. The more ecologically valuable a receptor and the greater the magnitude of the impact, the higher the significance of that impact is likely to be. Table 5.1 outlines the levels of impact significance to be used during the assessment of impacts. The probability of an impact occurring will also be outlined when defining the significance of impacts.

Nature Conservation Value	Magnitude of Potential Impact			
	High	Moderate	Low	Imperceptible
International	Severe	Major	Moderate	Minor
National	Severe	Major	Moderate	Minor
County	Major	Moderate	Minor	Minor
Local	Moderate	Minor	Minor	Negligible
Low	Minor	Negligible	Negligible	Negligible

Table 10.1: Levels of Impact Significance

Impacts to bird species recorded breeding within the project site is based on the methods outlined in Percival (2003).

Receiving Environment

1.1.1.7 Overview of the project site

The project site is located in an area of agricultural land to the southeast of the centre of Tullamore. It is located approximately 1.8km to the southeast of the town centre. The site is bounded to the north by the Iarnród Éireann railway line, to the south and east by agricultural land in the form of arable land and improved agricultural grassland. The N52 national road is located further south, southeast of the project site. Existing residential housing estates and the R443 form the western boundary to the site.

The application site will include Clonminch Road and works to the road to provide segregated cycle tracks and associated alterations to the carriageway from the application site to the town centre at Bachelors Lane.

The EPA national rivers digital mapping and the Water Framework Directive catchment and subcatchment digital mapping were reviewed for the project site and the surrounding area. The project site is located within the Tullamore River subcatchment of the River Shannon catchment. The Tullamore River is located approximately 935m to the north of the project site boundary. A minor 1st order stream tributary of the Tullamore River, the Cloncollog Stream, is located approximately 870m to the southeast of the project site.

A review of the Cassini 6-inch historical map does not indicate the presence of any other watercourses in the vicinity of the project site not mapped by the EPA on the national rivers database. Artificial drainage ditches flow parallel to the railway to the north of the project site and these drains convey waters to the Tullamore River. Seasonal/ephemeral drains occur along some of the existing hedgerow field boundaries within the project site. Surface water in these drains is currently conveyed in an easterly direction, under the N52 to the Cloncollog Stream, which then flows north and discharges to the Tullamore River.

The quarternary geology at the project site and surrounding area is dominated by till derived from limestone. The dominant soils are limestone till while the bedrock consists of dark limestone and shale. The project site overlies a locally important aquifer. The subsoils are classed by the GIS as being of moderate permeability and the groundwater vulnerability has been assessed as moderate.

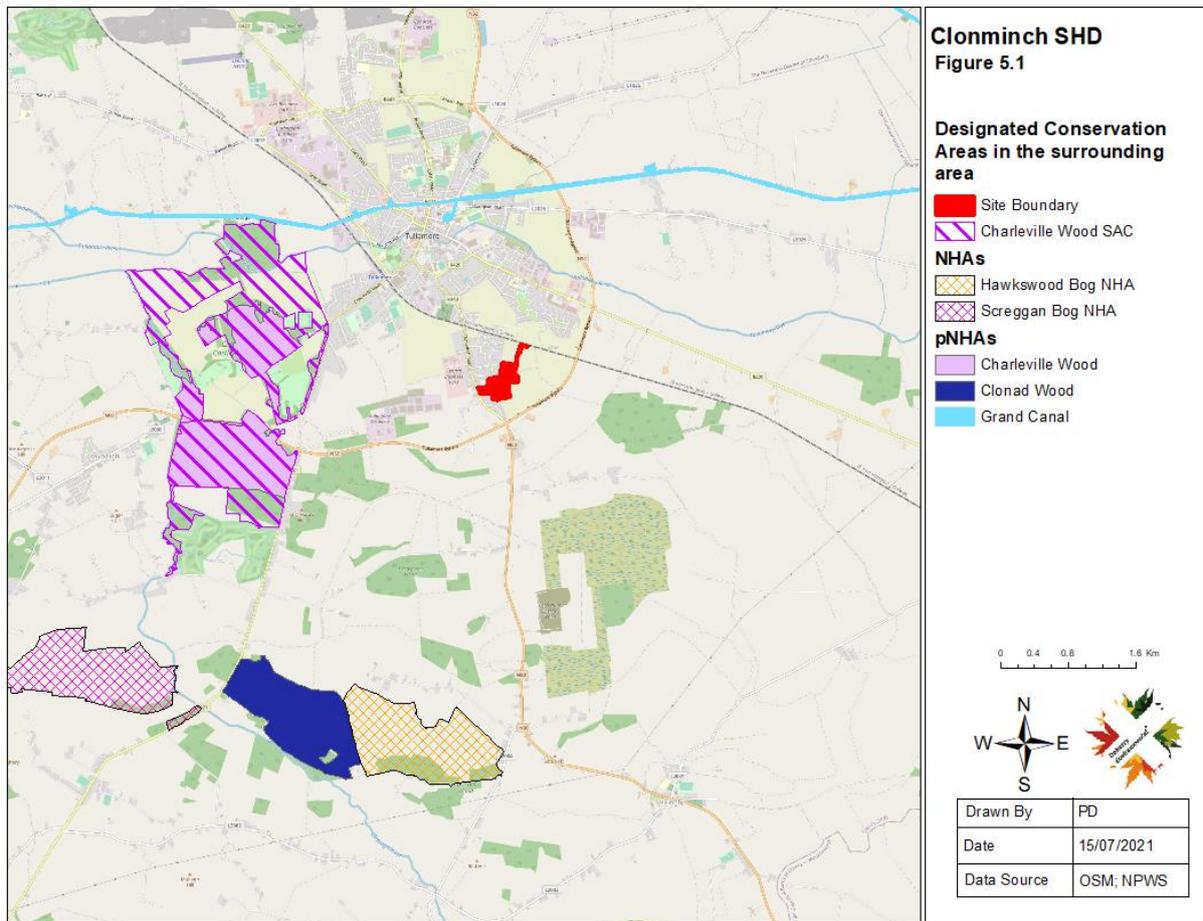
Desktop Analysis

1.1.1.8 Designated Conservation Areas

The project site is not located within or immediately adjacent to any designated conservation areas. The nearest European Site, the Charleville Wood Special Area of Conservation (SAC) and proposed Natural Heritage Area (pNHA) is located approximately 1.8km from the project site. The nearest Natural Heritage Area (NHA), Hawkswood Bog NHA, to the project site is approximately 4km to the south. Screggan Bog NHA occurs approximately 5km to the southwest of the project site. Two other pNHAs, the Grand Canal pNHA and the Clonad Wood pNHA occur to the north and south of the project site. The location of these designated conservation areas are shown on Figure 5.1. All other designated conservation areas are located at a remote distance from the project site and are not connected to it via any pathways. Table 5.2 lists the four sites occurring in the wider area surrounding the project site and establishes whether they are connected to the project site via pathways. Given the distance between the project site and the nearest designated conservation area is approximately 2km any pathways will be restricted to hydrological pathway or the potential for the project site to function as a habitat upon which mobile qualifying species of these designated conservation areas rely.

Site Code	Site Name	Distance	Pathway Connection
571	Charleville Wood SAC & pNHA	1.8km	A hydrological pathway connects the project site to this SAC
2355	Hawkswood Bog NHA	4km	No pathways connect the project site to this NHA. Furthermore this NHA is designated for ombrotrophic raised bog habitat that is not reliant on lotic processes.
921	Screggan Bog NHA	5km	No pathways connect the project site to this NHA. Furthermore this NHA is designated for ombrotrophic raised bog habitat that is not reliant on lotic processes.
2104	Grand Canal pNHA	1.8km	No pathways connect the project site to this pNHA.
574	Clonad Wood pNHA	4km	No pathways connect the project site to this pNHA.

Table 5.2: Designated Conservation Areas within 15km of the Project Site



1.1.1.9 Protected Species Records

A search of the National Biodiversity Data Centre (NBDC) for records of rare and/or threatened species previously identified in the vicinity of the project site was completed in July 2021. Information for the two 1km² grid squares N3423 and N3523 (in which the project site is located) was downloaded.

The rare, threatened and protected species identified as occurring within these 1km grid squares are listed in Table 5.3 below and a comment on the project site's potential to support these species is also provided. It is noted that the majority of bird species in Ireland are afforded protection under the Wildlife Acts as amended. However only those species that have been identified as rare, threatened (i.e. Amber or Red listed species on the Birds of Conservation Concern in Ireland) and protected under EU legislation are listed in Table 5.3 below.

Species Group	Species name	Date of last record	Designation	Potential for the project site to support the species
Amphibian	Smooth Newt (<i>Lissotriton vulgaris</i>)	28/05/2020	EU Habitats Directive Annex V	No. No suitable habitat in the form of permanent surface water features occur for this species within the project site.
Terrestrial Mammal	Eurasian Badger (<i>Meles meles</i>)	31/12/2004	Protected Species: Wildlife Acts	The suitability for the site to support setts is limited due to the absence of field boundary banks and the presence of artificial cut drains (that are ephemeral in nature) along the majority of the field boundaries on site. Suitable foraging habitat present on site.
Terrestrial Mammal	Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>)	26/06/2008	EU Habitats Directive Annex IV	Limited roosting habitat present on site. Some mature ash trees on site have limited potential to support roosting bats and are not likely to function as important roost features for bats. Suitable foraging habitat present on site.

Terrestrial Mammal	Eurasian Red Squirrel (Sciurus vulgaris)	02/10/2018	Protected Species: Wildlife Acts	Limited habitat on site to support red squirrel. Field boundary hedgerow and treelines provide corridors for the movement of this species through the site.
Terrestrial Mammal	West European Hedgehog (Erinaceus europaeus)	20/07/2012	Protected Species: Wildlife Acts	Potential for hedgehog to occur along field boundaries on site.

Table 5.3: Rare, Threatened and Protected Species recorded in the 1km square grids N3423 & N3523

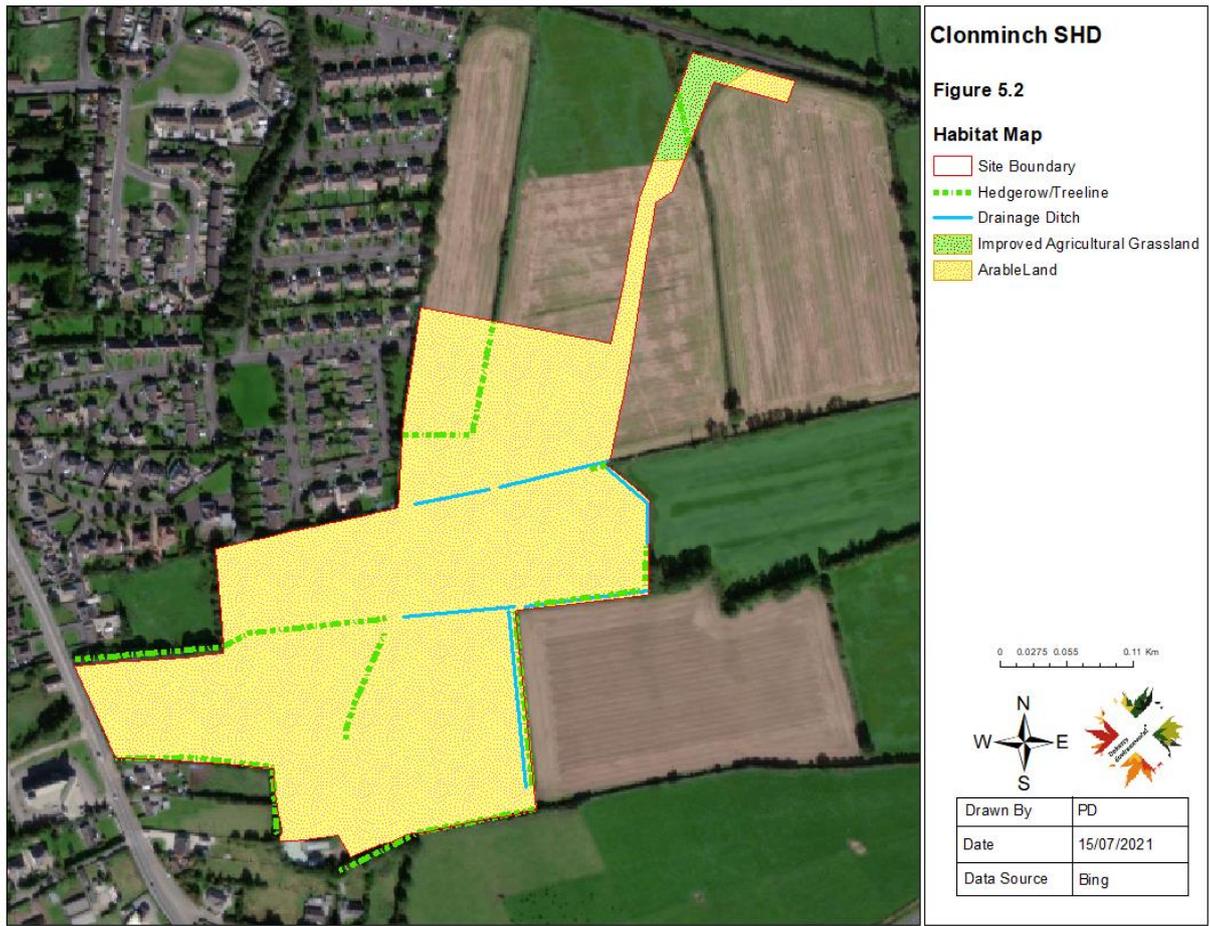
Survey Results

1.1.1.10 Habitats

The following Sub-Sections describe the habitats occurring within and immediately adjacent to the project site. Each habitat described below has been identified to Level 3 of Fossit's *Guide to Habitats in Ireland*. The alphanumeric code for each habitat is also provided alongside the habitat name (e.g. Treeline WL2). The locations and extent of each habitat described below are illustrated in Figure 5.2: Habitat Map. Appendix 1 provides plates detailing a photographic record of the project site and surrounding area.

The nature conservation value of each of the habitats occurring within the project site is also outlined in the following sub-sections. The nature conservation value of habitats has been determined with reference to the methods outlined in Section 5.2 above.

The land cover within the project site is dominated by arable land (BC1). Hedgerows (WL1) form field boundaries throughout the site and as noted above drainage ditches (FW4) occur along many of the field boundaries.



1.1.1.10.1 Arable Land BC1

The tillage crop is sprayed so weed species are few. Field speedwell *Veronica persica*, cut-leaved deadnettle *Lamium hybridum*, hedge mustard *Sisymbrium officinale*, scutch grass *Elytrigia repens*, fumitory *Fumaria* sp and abundant American willowherb *Epilobium ciliatum* occur on most field edges while some sow thistle *Sonchus asper* and great brome *Bromus diandrus* grow amongst the crop.

Nature Conservation Value

The arable land habitat within the project site is an example of an intensively managed habitat that supports low vegetation and fauna diversity and is of low ecological value (Rating E).

1.1.1.10.2 Improved Agricultural Grassland GA1

A small area of improved agricultural grassland occurs towards the very north of the project site near the railway line. This is intensively managed grassland and is dominated by a species poor grassland sward that includes *Lolium perenne*, *Alopecurus pratensis*, *Poa* species, *Veronica persica*, *Fumaria* sp, *Sonchus asper*, *Bromus diandrus*, *Stellaria holostea*, *Veronica chamaedrys*, *Trifolium species* and *Rumex acetosa* grow amongst the crop..

Nature Conservation Value

The improved agricultural grassland within the project site is an example of an intensively management grassland habitat for agricultural purposes. It support a low diversity of vegetation and fauna and is of low ecological value (Rating E).

1.1.1.10.3 Hedgerows & Treelines WL1

The hedgerows provide the main source of biodiversity on site. Some sections around the fields are clipped but others, especially on the site edges, carry tall ash *Fraxinus excelsior* or, occasionally, beech *Fagus sylvatica*. Some of the best grown trees follow an old laneway coming off the Clonminch Road, which runs east from the road along the first 250m of the site boundary. The woody species here include ash *Fraxinus excelsior*, blackthorn *Prunus spinosa*, holly *Ilex aquifolium*, wild apple *Malus domestica*, wild plum *Prunus domestica*, privet *Ligustrum vulgare* and hazel *Corylus avellana*. Elsewhere hawthorn *Crataegus monogyna* and bramble *Rubus fruticosus* predominate in the hedges with blackthorn and holly. Locally there is some grey willow *Salix cinerea*, spindle tree *Euonymus europaeus*, honeysuckle *Lonicera periclymenum* and roses, both *Rosa arvensis* and *R.canina*. One plant of Sherard's rose *Rosa sherardii* grows at the most southerly point in the marginal hedge.

Other herbs occurring along the hedgerows include *Ranunculus ficaria*; *Arum maculata*; *Vicia sepium*; *Vicia cracca*; *Rumex sanguineus*; *Rumex acetosa*; *Galium aparine*; *Calystegia sepium*; *Potentilla reptans*; *Potentilla anserina*; *Potentilla sterilis*; *Veronica chamaedrys*; *Stellaria holostea*; *Allium ursinum*; *Phyllitis scolopendrium*; *Polstichum setiferum*; *Brachypodium sylvaticum*; *Glechoma hederacea* and *Primula vulgaris*.

Alexanders *Smyrniololus atrum* has invaded along some hedge lines from the Clonminch Road and at the southern point while small colonies of rose-bay *Chamerion angustifolium* also occur in places.

Most of the drainage ditches have seasonal flow only and there is seldom enough water to promote any aquatic species of plant. Great willowherb *Epilobium hirsutum*, meadowsweet *Filipendula ulmaria* and fool's watercress *Apium nodiflorum* are seen occasionally. Flow is towards the east and the water discharges under the by-pass and then to a depression on the townland boundary filled by cutover bog and forestry.

Nature Conservation Value

The hedgerow/treelines occurring to the project site are of local importance (higher value) (Rating D).

1.1.1.10.4 Drainage Ditches FW4

The drainage ditches occurring within the site are located along field boundaries in association with hedgerows. They are all ephemeral and none were holding water during the July 2021 habitat survey.

Nature Conservation Value

The drainage ditch on site are artificial in nature and ephemeral. They have no fisheries value and are of Local importance (lower value) (Rating E).

1.1.1.11 Fauna

1.1.1.11.1 Non-Volant Mammals

No definitive evidence of protected mammals such as badger, red squirrel, hedgehog etc. was noted within or immediately bounding the project site. No resting places for these species were identified as occurring at the project site during any of the field surveys.

Rabbit occurs at the project site. As noted in Table 5.3 above species likely to foraging within and move through the project site include badgers, hedgehog, red squirrel and fox.

Nature Conservation Value

There was an absence of any field signs indicating the presence of breeding or resting places for non-volant protected mammals. Overall the site is considered to be of Local importance (lower value) (Rating E) for non-volant mammals.

1.1.1.11.2 Volant Mammals – Bat

The Bat Landscape Map (see biodiversityireland.ie) indicates that the site is located in an area that has been assigned a suitability index of 32.11 for all bat species. This is representative of an area of moderate to high habitat potential for bats. The hedgerow field boundary provide foraging habitat for bats. There are no structures on site and the majority of the trees that occur along field boundaries within and bounding the project site are not of a suitable size or maturity to support bat roosts. Mature trees occur along the southern boundary of the project site (towards the southwest) and to the east of the eastern boundary of the project site. These mature trees have limited to potential to support bats. The principal roost feature occurring on trees is dense ivy growth occurring on mature trees to the east of the project site's eastern boundary. The ivy grow well attached to the trees and provided limited roosting opportunity for bats. No other preferential roost features were observed on the trees occurring within or bounding the project site during the day time inspection survey of the trees. Overall the trees on site are considered to be of low potential to function as bat roosts.

The bat survey on the 24th June 2020 recorded Common pipistrelle and Leisler's bats. One to two Common pipistrelle were observed foraging in the vicinity of farm buildings to the south of the project site, while three to four individuals were concentrated along the hedge and old laneway leading in from Clonminch Road. Mature trees to the east of the site has both common pipistrelles and Leisler's bat feeding but there were no bat movements along the (connecting) field boundary leading to the old laneway and these animals seem to form a separate population from the others.

A second bat activity survey was completed on the 12th July 2021. The species recorded during the 2021 surveys were again restricted to Common pipistrelle and Leisler's bat Leisler's bat activity was low during the survey with only 3 passes being recorded. Common pipistrelle activity was also overall low during the survey, with a total of 24 passes being recorded. No more than one Common pipistrelle was visually observed at any one time. The areas where bat passes were recorded are displayed on Figure 5.3

Nature Conservation Value

The bat surveys completed at the project site indicate that the project site is used by low numbers of both Leisler's bat and Common pipistrelle. Both species are widespread and abundantly occurring in Ireland and are typically encountered during bat surveys (NPWS, 2019). Both species have been assessed to be at favourable conservation status at a national range in Ireland (NPWS, 2019). Based on the results of the surveys and the widespread populations of both species, the project site is considered to be of Local importance (lower value) for populations of Common pipistrelle and Leisler's bat.



1.1.1.1.3 Birds

The bird fauna was typical of agricultural land with hedges. Woodpigeon, rook, jackdaw and magpie were the larger species seen while the hedges support blackbird, robin, wren, blue tit, chaffinch, bullfinch and goldfinch. A blackcap was heard singing along the old laneway while a chiffchaff occurred off-site in the tall trees at the eastern end during the June 2020 surveys. Both species were again heard singing in the vicinity of the site during the July 2021 surveys. No red listed songbirds that are associated with agricultural and arable land such as yellowhammer were heard or seen during the habitat surveys.

Nature Conservation Value

The project site is assessed as being of low sensitivity for birds.

POTENTIAL IMPACTS

Construction Phase

1.1.1.12 Designated Conservation Areas

The potential for the project to result in negative impacts to the Charleville Wood SAC has been assessed as part of a Screening for Appropriate Assessment and Natura Impact Statement (NIS) for the project. The Screening Report for Appropriate Assessment and the Natura Impact Statement are presented under separate cover.

Given that the Charleville Wood pNHA overlaps with the SAC and is listed as a pNHA for the same conservation interests as the SAC, the Screening Report for Appropriate Assessment and Natura Impact Statement provide a full examination of the potential impact of the construction phase of the project to the Charleville Wood pNHA.

There will be no potential for the project to result in negative impacts to the Hawkswood Bog NHA and Screggan Bog NHA. This is due to the absence of any pathways connecting the project site to these NHAs.

1.1.1.13 Habitat Loss

The land cover changes associated with the proposed scheme will be the loss of areas of arable land, improved agricultural grassland and sections of hedgerow within the project site. The hedgerows/treelines that bound the project site will be retained.

The arable land and improved agricultural grassland habitats occurring within the project site has been evaluated as being of low nature conservation importance (Rating E). The loss of these habitats to the footprint of the project will represent a high magnitude impact to these habitats. A high magnitude impact to these habitats of low nature conservation value will represent an impact of minor negative significance.

The project will result in the loss of approximately 570m of hedgerow/treeline habitat from six separate hedgerow/treeline field boundaries. The hedgerows to be retained and lost as a result of the project are shown on Figure 5.4. The loss of four of these will not result in the severance of potential ecological corridors as these hedgerows represent terminal sections of the existing hedgerow network and do not connect to hedgerows in the wider surrounding area. Two hedgerows that will be lost do connect to hedgerows in the wider surrounding area and their loss will result in the severance of potential corridors. The loss of the hedgerows on site will represent a moderate magnitude impact. A moderate magnitude impact to this habitat of local value (Rating D) will represent, if un-mitigated, an impact of minor negative significance.



1.1.1.14 Impact to Aquatic Habitats

Drainage ditches represent the only aquatic habitat occurring within the project site. The majority of these ditches will be lost as a result of the project. This habitat is of Local importance (lower value) and their loss will represent an impact of negligible to minor significance.

The potential for indirect negative impacts to the water quality of aquatic habitats in the wider surrounding area has been considered as part of Chapter 7 and has also been examined as part of the Natura Impact Statement for the project.

1.1.1.15 Disturbance to/Loss of Habitat for Terrestrial Fauna

No breeding sites or resting places of protected terrestrial non-volant mammals such as badgers were noted within or immediately adjacent to the project site. As such the construction phase of the project will not have the potential to result in significant disturbance to non-volant terrestrial mammals.

1.1.1.16 Impacts to Birds

There will be loss of potential nest habitat for bird species due to the removal of approximately 570m of hedgerow/treeline field boundary habitat. However given the widespread extent of this habitat in the surrounding area, this loss will be representative of an impact of minor significance of birds.

The potential will exist for disturbance to nests and fatalities of chicks in the event that hedgerow/treeline vegetation, supporting nests, is removed from the project site during the breeding bird season.

Noise will be generated during the construction phase and will have the potential to result in a significant increase in noise levels in the immediate vicinity of the project site. As noted in Chapter 9 of this EIAR the impact of noise generated during the construction phase will be limited to the immediate area surrounding the project site. Given the low sensitivity of the project site for birds and the restricted area that will be subject to elevated noise levels at any one time during the construction phase, noise emissions as a result of construction works will represent, at most, a minor negative impact to birds.

Operation Phase

1.1.1.17 Designated Conservation Areas

The operation phase of the project will have the potential, in the absence of suitable design measures, to result in the ongoing discharge of poor-quality surface water runoff to the Tullamore River and could combine with existing pressures to this watercourse to result in negative impacts to water quality with consequent impacts for the qualifying features of interest of the Charleville Wood SAC and pNHA downstream. Further examination of this potential effect is provided in the Natura Impact Statement for the project.

1.1.1.18 Habitat Loss

The operation phase of the development will not result in any further habitat loss within the project site.

1.1.1.19 Impacts to Terrestrial Fauna

The operation phase of the project is not predicted to have the potential to result disturbance to protected terrestrial non-volant mammals or bird species. This is due to the absence of any evidence of protected terrestrial non-volant mammals within the project site during field surveys and the low value habitats within the project site for bird species.

Public lighting will be provided as part of the operation phase of the project. The bat species recorded at the project site, which include Common pipistrelle and Leisler's bat are known to be less sensitive to artificial light at night (ALAN). Nevertheless, the provision of ALAN will have potential to result in negative impacts to bats foraging within and in the vicinity of the project site during the operation phase. It is noted that the lighting proposed for the project has been designed in accordance with best practice guidelines for minimising the impact of night time lighting to bats (Institute of Lighting Professionals, 2018) and will minimise the potential for light spill to parkland habitat to the west of the project site and boundary hedgerows/treeline habitats surrounding the project site to the north, east and south. The lighting design has been prepared so that the parkland area to the west of the project site will not be illuminated and will be outside the 1 lux contour, while the majority of the boundary hedgerows will be outside or at the 1 lux contour level.

Cumulative Impacts

The potential exists for the project to overlap with other construction projects within the lower River Lee catchment. Other recently approved and/or live planning application in the vicinity of the project site have been identified following a search of the Offaly County Council online planning portal was completed in July 2021 to identify any other recently (i.e. within the last 5-years) applied for or granted projects within the vicinity of the project site. Three recent applied for or granted projects were identified during this search. These are as follows:

Application Reg. Ref. 19512: A planning approved development at Tullamore Rugby club consisting of a single storey extension to the rear of the existing stand for plant room for a generator and store room, an extension to the existing car park to the front of the main clubhouse and new entrance off Spollenstown road with ancillary works. This project was screened for Appropriate Assessment and EIA by Offaly County Council and it was determined that it did not have the potential alone or in-combination with other plans or projects to result in likely significant effects to the environment. As such there is no potential for the current project to combine with this project to result in cumulative adverse effects to the biodiversity in the wider surrounding area.

Application Reg. Ref 16352: A planning approved development at St. Joseph's cemetery consisting of a proposed extension to existing St. Joseph's cemetery, Tullamore including new entrance from Spollanstown industrial estate and car parking. this application is within the curtilage of a protected structure. This project was screened for Appropriate Assessment and EIA by Offaly County Council and it was determined that it did not have the potential alone or in-combination with other plans or projects to result in likely significant effects to the environment. As such there is no potential for the current project to combine with this project to result in cumulative adverse effects to the biodiversity in the wider surrounding area.

Application Reg. Ref. 19/285: A planning approved development at Tullamore college consisting of the provision of 2 no 30 meter wide x 13.5 meter high ball-stops, to the east and west sides of the existing playing field, which is located to the east of the existing school, together with all associated siteworks. This project was screened for Appropriate Assessment and EIA by Offaly County Council and it was determined that it did not have the potential alone or in-combination with other plans or projects to result in likely significant effects to the environment. As such there is no potential for the current project to combine with this project to result in cumulative adverse effects to the biodiversity in the wider surrounding area

Offaly County Council Part 8 Application: Offaly County Council submitted an application for the development of 8 residential units on a site immediately to the north of the project site (off Clonminch Road). The application was screened for Appropriate Assessment by Offaly County Council and it was determined that it did not have the potential alone or in-combination with other plans or projects to result in likely significant effects to the environment. As such there is no potential for the current project to combine with this project to result in cumulative adverse effects to the biodiversity in the wider surrounding area

Mitigation Measures

The mitigation measures outlined in the following sections aim to ensure that a best practice approach to minimising ecological disturbance during the construction phase is implemented and that the design of the project's operational phase avoids significant effects to biodiversity occurring at and surrounding the project site.

Measures to Minimise Impacts to Habitats

Habitat disturbance during construction work will be confined strictly to within the direct land-take of the proposed scheme.

Construction machinery will be restricted to site roads and the footprint of the proposed scheme.

Enhancement tree planting will be undertaken as part of the proposed landscaping within the project site. As part of the landscape plan for the project it is proposed to provide a wooded parkland area to the northwest of the site. This parkland feature will be provided adjacent to a hedgerow that runs north to the railway and connects into this linear biodiversity corridor. This will provide linkage between the new woodland/parkland habitat and biodiversity corridors in the wider area.

Measures to Minimise Impacts to Breeding Birds

Where possible vegetation to be cleared onsite will be completed outside the nesting bird season between March and August inclusive. Where it is not possible to time such works outside these months then a survey of hedgerow/treeline vegetation for the presence of nesting birds should be completed prior to the commencement of vegetation removal by an experienced ecologist. In the event that nests are identified in hedgerow/treeline vegetation their clearance/removal will be postponed until after the nest sites are abandoned. In the event that it is not possible to postpone such works, then they will only be allowed to proceed following consultation with the NPWS, and where required, upon receipt of a licence from the Department/NPWS permitting the destruction of the nests.

Measures to Minimise Impacts to Bats

The lighting design in the vicinity of habitat features that offer suitable foraging bats, such as boundary hedgerow that are to be retained and new woodland/parkland habitat that will be provided as part of the project landscaping, has been prepared in line with best practice measures for minimising the impacts of artificial lighting to bats, as detailed in the Institute of Public Lighting 2018 guidance document *Bats and Artificial Lighting in the UK*. This lighting plan aims to limit lighting and light spill on to these habitats to ensure that optimum foraging conditions,

that include unlit and low artificial light over the woodland/parkland and the boundary hedgerows are provided for bats such as Common pipistrelle and Leisler's bat.

Measures to Manage Surface Water Runoff & Wastewater

Measures required to manage surface water runoff from the project site during the construction phase and to thereby avoid the potential for pollution to watercourses in the wider surrounding area have been detailed in Chapter 7 of this EIAR and also in the Natura Impact Statement and the Infrastructure Design Report for the project, both of which are provided under separate cover with the planning application documentation. Provide all these measures are implemented the project will not result in the release of polluted surface water to watercourses in the wider surrounding area or the release of inadequately treated wastewater to receiving waters.

RESIDUAL IMPACTS

The project site will not result in any significant negative residual impacts to designated conservation areas.

As outlined in the baseline and impact assessment sections above, no high-value habitat receptors have been identified within the project site. The loss of hedgerow habitat will represent a minor negative residual impact. The provision of new woodland/parkland habitat to the west of the project site will provide replacement woodland habitat within the project site. However overall there will be a minor negative residual impact as a result of the loss of hedgerow habitats.

There will be no potential to mitigate for the loss of improved agricultural grassland and arable to the footprint of the project. However, the conversion of arable and improved agricultural grassland land cover to artificial surfaces, parkland and amenity grassland will represent a residual impact of negligible to minor significance.

The hedgerow along the old laneway leading east from Clonminch Road will be exposed to increased ALAN due to the proposed development and will have the potential to result in a residual impacts to bats using this habitat for foraging. However, the provision of additional hedgerow and treeline habitat to the east of the site and woodland habitat to the north of the old laneway along the western boundary and the associated low ALAN in these areas (as provided for through the sensitive design of the proposed project lighting regime) will compensate for any decrease in the value of this habitat for bats and will ensure that this is not representative of a significant residual impact.

Residual impacts to birds during the construction phase will be representative of a negligible to minor residual impact and the provision of replacement planting with an increase in the overall extent of woodland habitat bounding the project site will ensure that there is no potential for residual impacts to birds during the operation phase.

MONITORING

In the event that vegetation clearance is proposed to coincide with the breeding bird season monitoring of the vegetation for evidence of nesting birds will be required in line with the mitigation requirements specified above. The monitoring will be completed by an experience ecologist.

DIFFICULTIES ENCOUNTERED

No difficulties were encountered in examining the site and assessing the likely impacts of development.

2.0 REFERENCES

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