

**WELLWOOD HOUSING DEVELOPMENT
TULLAMORE, CO. OFFALY
ECOLOGICAL ASSESSMENT**

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Prepared for

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by

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1.0 INTRODUCTION

BioSphere Environmental Services was commissioned by John Flanagan Developments Ltd. to carry out an ecological assessment of a site on the outskirts of Tullamore, Co. Offaly which is proposed for a housing development.

The study comprises a desk review and a site visit. From this, baseline ecological conditions on site are described and a conservation evaluation is given for the lands. An impact assessment is carried out for the proposed development and mitigation measures are outlined that are considered necessary for such a development.

2.0 METHODS

2.1 Desk study

The following key sources of reference material were utilised:

- The Ordnance Survey website for recent and historic mapping (scales of 1:10,560 & 1:2,500) and aerial images for the years 1995 to 2018 (www.osi.ie/mapviewer).
- BING aerial imagery for high quality aerial photographs (www.bing.com/maps)
- Data on protected species and sites of conservation importance held online by National Parks and Wildlife Service (see <https://www.npws.ie/protected-sites> and <https://www.npws.ie/maps-and-data>) and National Biodiversity Data Centre: (www.biodiversityireland.org).
- Irish Wetlands Birds Survey (I-WeBS) – database of sites in Ireland that support wintering wetland birds (www.birdwatchireland.ie)

Other important general reference material on natural history of Ireland includes:

New Atlas of the British and Irish Flora (2002) – provides distribution maps for all flora species in Ireland (recording unit based on the 10 km square of the national grid).

Irish Birds – the annual publication of BirdWatch Ireland.

Irish Naturalist's Journal – a journal on the natural history of Ireland.

Bird Atlas 2007-11. A publication on wintering and breeding birds of Britain and Ireland (recording unit based on the 10 km square of the national grid).

Atlas of Mammals in Ireland, 2010-2015. A recent publication on the distribution of mammals in Ireland (recording unit based on the 10 km square of the national grid).

For biological recording, the study site is located within 10 km square N 30 20 of the national grid. This square is centred on the town of Tullamore, but otherwise is largely agricultural in character. The Tullamore River and the Silver River pass through the square, along with the Grand Canal. Esker ridges and peat bogs (now mostly cut) are a natural feature of the area, while a notable block of deciduous woodland occurs at the Charleville Demesne.

2.2 Site survey

A site survey was carried out by Dr Brian Madden on 20th December 2022. This comprised a multi-disciplinary walk-over survey of the study site, with focus on the more natural and semi-natural habitats present such as watercourses and hedgerows.

Habitats and flora

Habitat classification is according to Fossitt (2000). Consideration was also given to the possible presence of habitats listed in Annex I of the EU Habitats Directive.

Particular emphasis was given to the possible occurrence of rare or legally protected plant species (as listed in Flora (Protection) Order 2022) or Red-listed plant species (Curtis & McGough 1985, Wyse Jackson *et al.* 2016).

Fauna

Observations were made for fauna species present or likely to occur on site. Emphasis was placed on mammals and birds, and especially for species listed in the respective Red lists, namely Marnell *et al.* (2009) and Gilbert *et al.* (2021).

For mammals, search was focused on signs of their presence, such as tracks, feeding marks and droppings, as well as direct observations. While a bat survey was not carried out, the suitability of habitats to support roosting and/or foraging bats was considered.

Bird species were recorded by sight and sound. However, as the survey was confined to one period (winter) in the year, the likely presence in other seasons of bird species of conservation importance was assessed based on habitats present.

2.3 Ecological evaluation

The criteria used to assess the ecological value of features follows the NRA *Guidelines for Assessment of Ecological Impacts of National Road Schemes* (NRA, 2009). Whilst the NRA guidelines were devised specifically for road schemes, they can be applied to general site evaluations. The NRA system uses the following five-point scale:

- International Importance
- National Importance
- County Importance

- Local Importance (higher value)
- Local Importance (lower value)

2.4 Limitations / Data deficiencies

The habitat and flora assessment was carried out in December, which is outside of the optimum period for botanical survey. However, habitats were still readily identifiable from perennial plant species, while trees and shrubs can be identified during winter. Taking into account that there are no ‘natural’ habitats on site, the timing of the survey in this case is not considered a significant constraint.

Survey for ground mammals was within the optimum recommended period for survey as much of the high vegetation cover had died back and signs of mammal presence (tracks etc.) were easily visible.

As the bat assessment was limited to visual inspection of habitats for potential roosts, full assessment would require evening/night survey to detect roost sites and/or foraging potential.

Survey for birds in December includes resident species, as well as winter visitors. The likely presence of birds in other seasons can be assessed to a large extent by the diversity of habitats present.

Overall, it is considered that there are no significant limitations to the present evaluation of the ecological importance of the site.

3.0 BASELINE ENVIRONMENT

3.1 Location and physical description of study site

The study site comprises a plot of land situated on the north-eastern outskirts of Tullamore town. The site is within the townland of Puttaghan. It is located just off the N52 Tullamore ring road and just south of the Ardan Roundabout. Existing access is from the local road L1024 which skirts the south-east boundary. All of the land adjoining the site to the south is now residential (Harbour and Thornsberry estates), while the Midland Regional Hospital occurs to the west. A further housing development (Ardan) is located just to the northwest of the site. Undeveloped and disturbed land, which includes a large steel frame structure, occurs to the north and northeast of the site.

The western and north-western boundaries of the site are demarcated by a recent block wall, while much of the southern boundary is marked by fencing of varying types with the adjoining housing.

There are no watercourses on site though there is an open drain and wet area (formerly associated with Thornsberry Lane) which flows into a culvert beneath the wall along the northern site boundary. Drainage for the area appears to be south-southeast towards a tributary of the Tullamore River (which passes beneath the Grand Canal). The Tullamore River flows through Tullamore town and continues westwards to join the Clodiagh River.

The topography of the site is generally flat, with altitude approximately 70 m asl.

The extreme eastern strip of the site comprises an industrial/commercial facility which had recently been used as a furniture manufacturing and retail business (Glenn Wood). The eastern part of the site had been a sport playing ground and associated facilities (Macari Park) but has been abandoned since about 2015. The larger western part appears (from OSI aerial photography) to have been in an unmanaged state since at least the early 2000s. OSI mapping shows a feature, Thornsberry Lane, passing through the westernmost part of the site – this appears to have been intact up to the late 1990s but is now gone.

Overall, the site can be described as being entirely unmanaged land located on the outskirts of the Tullamore urban/commercial area.

3.2 Habitats and flora

The following habitats occur on site (see Figure 1):

- **Dry meadows and grassy verges (GS2)**
- **Wet grassland (GS4)**
- **Drainage ditch (FW4)**
- **Hedgerows (WL1)**
- **Treelines (WL2)**
- **Spoil and bare ground (ED2)**
- **Recolonising bare ground (ED3)**
- **Buildings and artificial surfaces (BL1)**

The majority of the site now comprises unmanaged grassland (see Plates 1 & 2). Formerly, this would have been Amenity grassland (GA2) in use as playing fields and Improved agricultural grassland (GA1) in all of the western sector. In absence of management (other than occasional cutting in eastern sector), the sward has taken on a semi-natural character (GS) and can best be classified as **Dry meadows and grassy verges (GS2)**. However, it is generally of a coarse character with weed type species throughout and has been disturbed in parts. Species present include meadow buttercup *Ranunculus acris*, creeping buttercup *Ranunculus repens*, thistles (*Cirsium* spp.), docks (*Rumex* spp.), nettles *Urtica dioica*, red clover *Trifolium pratense*, ribwort plantain *Plantago lanceolata*, knapweed *Centaurea nigra*, selfheal *Prunella vulgaris*, bush vetch *Vicium sepium*,

silverweed *Potentilla anserina*, perennial rye grass *Lolium perenne*, cock's-foot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus*. Bramble *Rubus fruticosus* is starting to become established in places.

Damp ground occurs in some areas of the site and here there are elements of **Wet grassland** (GS4), with soft rush *Juncus effusus* present. At one location in the northwest of site (where there are 2 wooden ESB poles), a patch of wet ground is dominated by a typical wetland plant species, probably floating sweet grass *Glyceria fluitans* (full identification of this species would require examination in summer). This area is associated with an old **Drainage ditch** (FW4) which had presumably been alongside Thornsberry Lane. A short stretch of channel with water is still present and this flows through a culvert beneath the boundary wall (see Plate 3). Plants present in the standing water include pondweed (*Potamogeton* spp.), duckweed *Lemna minor*, water cress *Nasturtium officinale* and common bent *Agrostis stolonifera*.

The grassland has been disturbed in places by heavy vehicles, as well as placement of spoil/gravel heaps (see Plate 4). This is especially so in the south-westernmost part of the site where there is a disused access entrance. The disturbed ground varies from bare or near bare soil (**Spoil and bare soil**) to revegetated areas (**Recolonising bare ground**) with a vegetation cover similar to surrounding areas and including brambles.

There are remnant **Hedgerows / Treelines** along the southern boundary of the site adjoining the L1024 road and the Harbour and Thornsberry housing estates (see Plate 5) (other treelines of *Cupressus* trees had existed around the playing fields but have been already removed). The hedging would be remnants from the time the fields were used for agriculture and comprise mainly ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa* and elder *Sambucus nigra*. Brambles tend to dominate the lower parts of the hedging. The hedging on site has not been managed in recent years and is characterised by gaps and other signs of disturbance, such as dumped rubbish/rubble. A line of 6 tall ash trees occurs on the boundary with the adjoining Harbour Drive (see Plate 6). A short stretch of Cypress (*Cupressus* spp.) occurs behind one of the disused sports buildings. A low hawthorn hedge occurs along the frontage of the site with the L1024 road. Ivy *Hedera helix* occurs on some of the remaining trees on site as well as in the ground layer of the hedges. [all hedging & trees are detailed on the Tree Retention/Protection & Removal drawing by Landscape Design Ltd.]

The site includes various commercial buildings (disused) as well as two abandoned buildings that had been associated with the playing fields. Associated hard core surfaces are present with the buildings. All these are classified as **Buildings and artificial surfaces** (see Plates 7 & 8). A small concrete block building (pump house like building) occurs in the northwest sector of site.

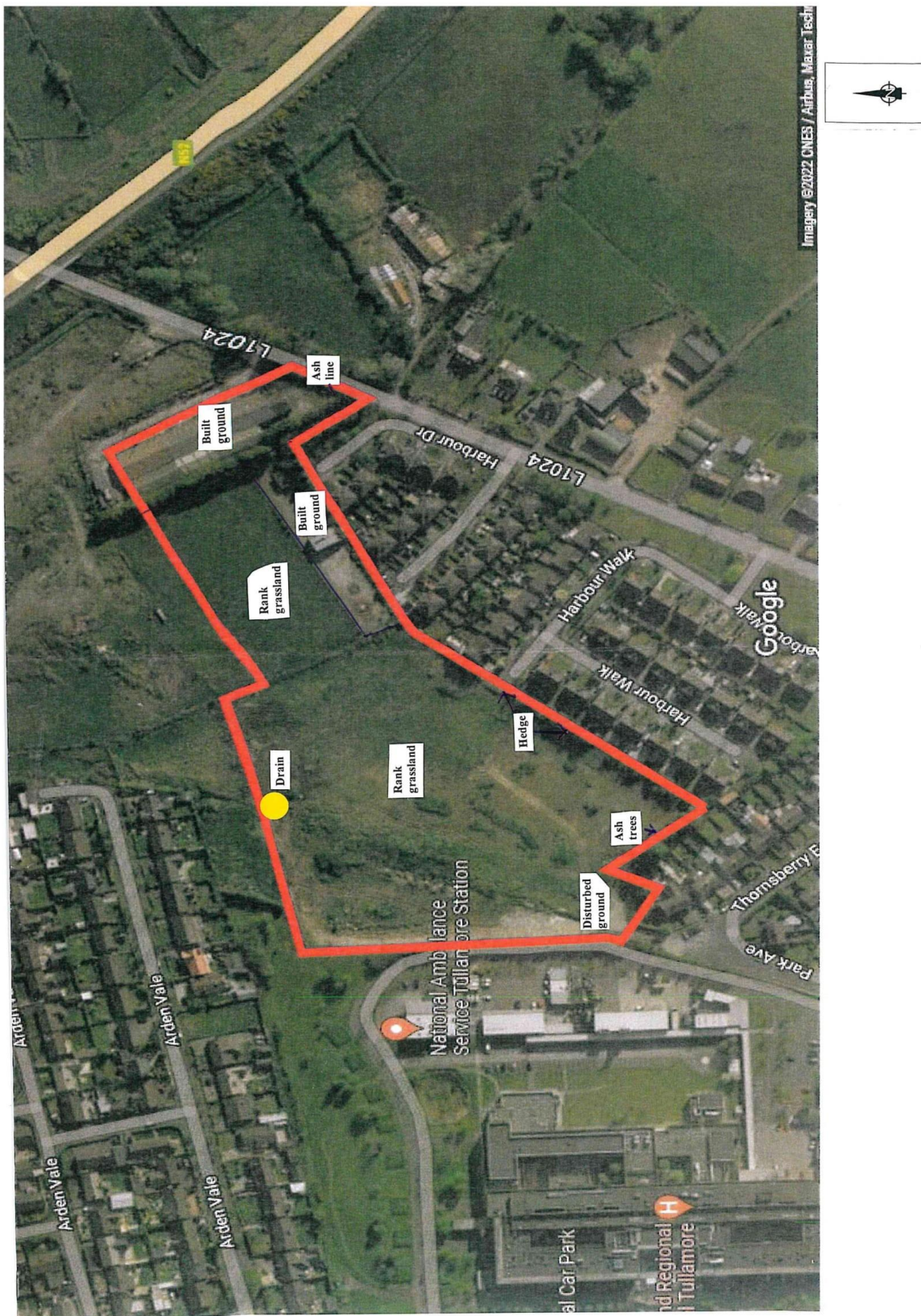


Figure 1. Principal ecological features on site.

3.3 Mammals, amphibians and reptiles

The habitats on site have low potential to support mammal species. There was evidence of rabbit *Oryctolagus cuniculus*, red fox *Vulpes vulpes* and brown rat *Rattus norvegicus* on site, and ubiquitous species such as field mouse *Apodemus sylvaticus*, pygmy shrew *Sorex minutus* and probably hedgehog *Erinaceus europaeus* would be expected.

There was no evidence of badger *Meles meles* presence (such as feeding marks) on site and as the site is practically surrounded by development it is considered unlikely that badger occurs in the immediate area. There are no habitats on site to support otter *Lutra lutra*.

The site has low potential for roosting bats. However, the few tall ash trees on site do have ivy cover so could possibly support bats. While most of the buildings on site are of metal frames and sheeting and are not suitable for roosting bats (see Plate 7), the former Glenn Wood office building has a tile roof (see Plate 8) and bats, especially brown long-eared bat, could be attracted to the attic/roof space through gaps in the tiles. The remanent hedgerows on site could attract foraging bats though the potential is considered low due to the poor quality of the hedging.

As noted, there is a former drainage channel with permanent water in the northwest of the site and this appears suitable for breeding frogs *Rana temporaria*. The common lizard *Zootoca vivipara* is probably unlikely to be on site.

3.4 Birds

The habitats within the site are of relatively low value for birds. At time of survey, a mixed flock (c.100+) of finches were feeding in the western part of site on the seed heads of some of the grassland species, with linnets *Carduelis cannabina*, chaffinches *Carduelis coelebs* and goldfinches *Carduelis carduelis* present. The rank grass would be expected to support breeding skylark *Alauda arvensis* in summer.

The remnant hedgerows on site provide suitable habitat for a range of small bird species. Species recorded included blackbird *Turdus merula*, wren *Troglodytes troglodytes*, robin *Erithacus rubecula*, great tit *Parus major*, coal tit *Parus ater*, house sparrow *Passer domesticus* and chaffinch (most would be expected to breed on site). Willow warbler *Phylloscopus trochilus* would probably occur in the hedging during summer.

Four snipe *Gallinago gallinago* were flushed from a patch of damp ground in the western end of the site.

A kestrel *Falco tinnuculus* was observed hunting on waste ground to the north of the site (close to the large steel frame structure) and at times could be expected to come on site to hunt.

3.5 Sites designated for nature conservation

No part of the study site is within, or adjoins, an area designated for nature conservation (see Figure 2). The following sites lie within a 10 km radius of the site.

European sites

The study site is approximately 2.5 km northeast of **Charleville Wood SAC** (code 00571). This SAC, which occurs west of Tullamore town and south of the Grand Canal, is selected for the following Qualifying Interests:

- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) [91E0]
- *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]

The study site is approximately 8 km to the southeast of **Clara Bog SAC** (code 00572). This SAC, which occurs just south of Clara, is selected for the following Qualifying Interests:

- Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210]
- Active raised bogs [7110]
- Degraded raised bogs still capable of natural regeneration [7120]
- Depressions on peat substrates of the Rhynchosporion [7150]
- Bog woodland [91D0]

National sites

There are three proposed NHAs within a 5 km radius of the site, as follows:

[Proposed Natural Heritage Areas are sites of ecological interest. A site list was published on a non-statutory basis in 1995 but has not since been statutorily proposed or designated.]

Grand Canal pNHA (code 2104) – the study site lies approximately 300 m north of the canal, which flows through Tullamore town.

Ballyduff Woods pNHA (code 001777) - the study site is located approximately 2 km to the southeast of the pNHA. The pNHA is of ecological interest as it supports a stand of well-developed mixed woodland.

Ballyduff Esker pNHA (code 0885) – the study site lies just over 4 km to the southeast of the pNHA (which is to the west side of the railway line).

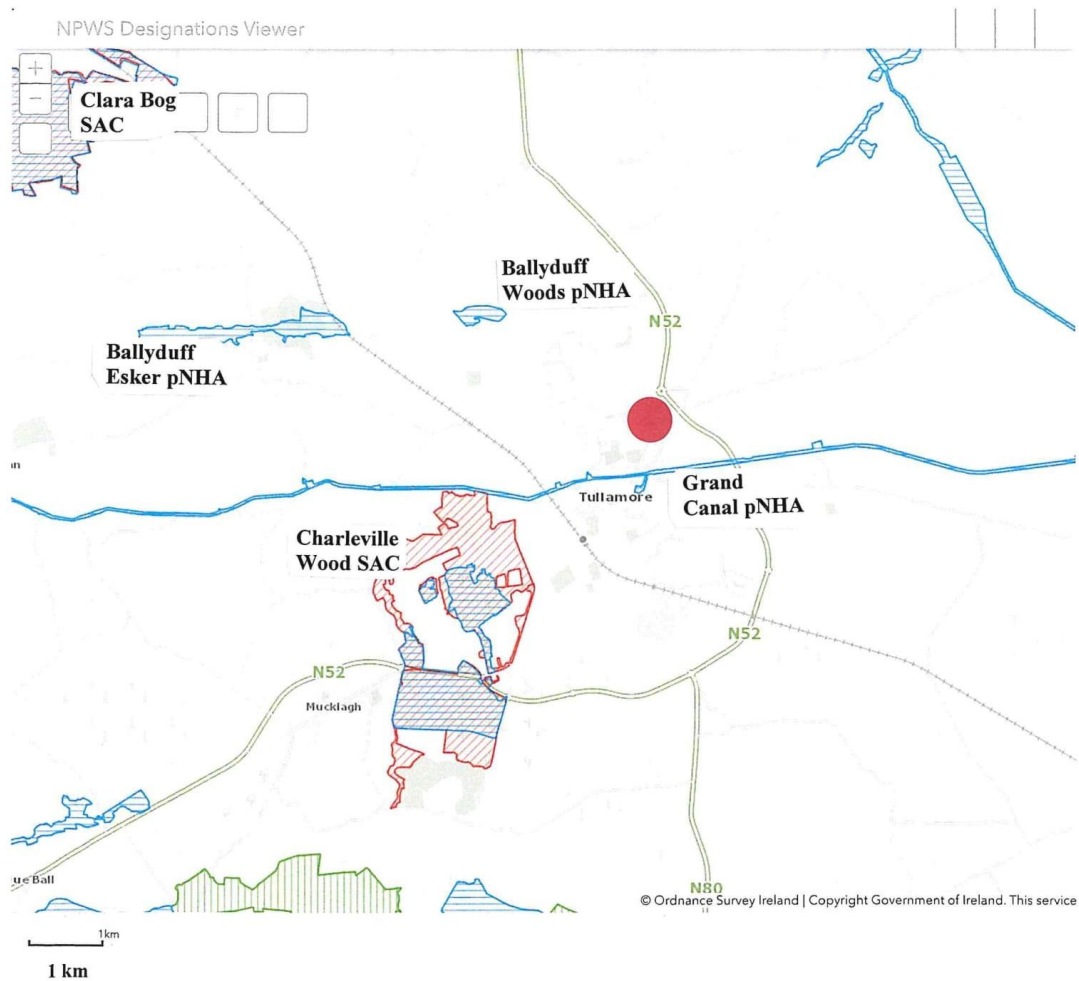


Figure 2. Designated sites within 10 km radius of study site (marked by red dot).

3.6 Evaluation of conservation value of site

Habitats and flora

The site comprises lands previously used for agriculture and amenity purposes. Unmanaged grassland is now the dominant habitat on site – while reverting to a semi-natural state, the sward has been disturbed in parts and has a coarse, rank character, with some wet patches in places. The grassland is rated as Local Importance (lower value).

The original hedgerows on site have been largely removed or remain as remnants with a high degree of disturbance – rated as Local Importance (lower value). A small section of drainage ditch associated with a former hedge in the northwest of the site is also rated as Local Importance (lower value).

The buildings on site are not of ecological interests from a habitat perspective.

The site is not known to support any rare or protected flora species nor would be expected to due to the history of landuse on the site.

The site does not support any habitat listed on Annex I of the EU Habitats Directive.

Mammals, amphibians, reptiles

The terrestrial mammal species associated with the site are widespread and common species of the countryside, though several legally protected (Wildlife Acts 1976, 2000) species occur or are expected on site (pygmy shrew, hedgehog).

The ash trees on site have some (albeit low) potential to support roosting bats, as does the building with the tile roof (Glenn Wood) at the existing site entrance. All bat species in Ireland are legally protected (Wildlife Acts 1976, 2000) and are listed on Annex IV of the EU Habitats Directive.

The remnant drainage channel in the northwest sector of the site is likely to support the common frog (a protected species).

Birds

Snipe, a Red-list species, was recorded in damp grassland on site. While snipe occur widely in fields during winter, breeding snipe are highly restricted to wetland habitats and the site would not be suitable for breeding purposes. A further Red-list species, kestrel, may visit the site on occasions as one was observed over ground to the north.

Two amber-listed species, linnets and house sparrow, were recorded on site, and skylark and willow warbler (both Amber-listed) are expected in summer.

The site does not have potential to support any species listed on Annex I of the EU Birds Directive.

Designated sites

The site is not within or adjoining any site designated for conservation. However, it is within approximately 300 m of the Grand Canal pNHA.

Overall, the study site has low ecological interests which reflects past and current landuse practices. As an unmanaged site, it attracts some species which are protected or of conservation value. However, none of these species would be dependent on the site for their continued presence in the local area. Overall, the ecological value of the site is rated as Local Importance (lower value).

4.0 POTENTIAL IMPACTS

4.1 The proposed development

The proposed project comprises a residential development, with two apartment blocks and various housing units with gardens.

Surface water will be managed through a Green Infrastructure Plan. The development has been designed in accordance with the principals of Sustainable Urban Drainage System (SuDS). The overall strategy aims to provide an effective system to mitigate the adverse effects of urban storm-water runoff on the environment by reducing runoff rates, volumes and frequency, reducing pollutant concentrations in storm-water, contributing to amenity, aesthetics and biodiversity enhancement and allow for the maximum collection of rainwater for re-use where possible. In addition, SuDS features aim to replicate the natural characteristics of rainfall runoff for any site by providing control of run-off at source and this has been achieved by the current proposals. Approximately 45% of the site area is soft surface landscape (both private and public landscaped areas).

The Landscape Master Plan for the development includes for extensive tree and shrub plantings, with an appropriate mix of native and non-native species. The planting will also incorporate a range of species that will attract feeding invertebrates, including moths, butterflies and bees. It will take account of and implement the relevant objectives of the All-Ireland Pollinator Plan 2015-2020 (<http://www.biodiversityireland.ie/wordpress/wp-content/uploads/All-Ireland%20Pollinator%20Plan%202015-2020.pdf>)

4.2 Impacts during construction

Habitats and flora

The development will result in the loss of practically all of the existing habitats on site, including the hedgerow remnants and the ash trees (latter to be taken out due to concern for spread of Ash Dieback Disease).

The loss of the existing habitats on site, including the remnant hedgerows/trees, is rated as an adverse impact at a local level. It is noted that this impact will be mitigated through implementation of the Landscape Plan for the site.

Mammals, amphibians and reptiles

The site does not support large mammal species such as badger. While small mammals that are expected on site, such as pygmy shrew and hedgehog, will be displaced by site clearance, it is likely that these species will utilise the landscaped areas of the site as well as some of the gardens when the scheme is complete.

As the presence of roosting bats in the ash trees and the Glenn Wood building cannot be ruled out, it is possible that a roost site could be lost. Mitigation, including a pre-construction survey, is required.

The common frog is likely to occur in the drainage channel in the northwest sector of the site. The loss of a breeding site (albeit not a natural pond) is an adverse impact of local importance. Mitigation is required to ensure that frog spawn or adult frogs are not destroyed during construction.

Birds

The rank grassland sward on site is expected to attract breeding skylark and possibly other ground nesting species. The loss of skylark from the site is rated as an adverse impact of local importance.

Various widespread bird species, such as wren and blackbird, are expected to nest in the remnant hedgerows on site. While the loss of any hedgerow is rated as an adverse impact for nesting birds, these bird species will nest readily in the landscaped areas of the site as the trees and shrubs mature.

The buildings on site could support hole nesting bird species, such as starling and house sparrow.

Mitigation would be required to ensure that active nests of any bird species are not destroyed during site clearance.

Designated sites

The development of this site would not have direct impacts on any European designated site (SAC/SPA) or any proposed Natural Heritage Area.

It is noted that while there are no watercourses or substantial drainage channels within or around the site, the local site area drains towards the Tullamore River, which passes through the Charleville Wood SAC. During construction works, it is possible that contaminated surface water (with suspended solids etc) could enter local drains and reach the Tullamore River and ultimately the SAC. While the qualifying interests of the site (Alluvial forest & *Vertigo moulinsiana*) would not be expected to be affected in any

significant way if this were to happen, strict measures are necessary to ensure that all dirty water generated on site is treated before being discharged to drains.

While the study site is close to the Grand Canal pNHA, there is no hydrological connectivity between the two locations.

4.2 Impacts during operation

Once constructed, adverse impacts on local ecology as a result of the project are not anticipated.

As the landscaped areas and private gardens become established, small mammals, birds and insects can be anticipated to utilise these areas for feeding and/or breeding purposes.

5.0 MITIGATION MEASURES

5.1 Mitigation during construction

Mitigation for hedgerows / trees

The removal of hedge remnants and some ash trees will be mitigated through planting by the Landscape Plan (prepared by Anthony Johns NDH Landscape Design Ltd.). The Plan notes that it is proposed to remove 19 no. existing trees and to introduce 160 no. new specimens, resulting in a net long-term gain.

Mitigation for bats

While the site has low potential for roosting bats, a pre-construction survey will take place to check for bat presence in the ash trees to be removed and in the commercial building associated with the former Glenn Wood business.

This will be undertaken by a bat ecologist and within the active season for bats (approx. April-September). Should bats be found, the ecologist will provide a protocol for their removal following best practice and under licence from the Department of Housing, Local Government and Heritage.

Mitigation for breeding birds

Section 40 of the Wildlife Act 1976, as amended by Section 46 of the Wildlife (Amendment) Act 2000, restricts the cutting, grubbing, burning or destruction by other means of vegetation growing on uncultivated land or in hedges or ditches during the nesting and breeding season for birds and wildlife, from 1 March to 31 August.

At this site, removal of the rank grassland, hedging and trees will be done outside of the restricted period to comply with the Wildlife Acts.

As the buildings on site have some potential to support nesting species such as starling, these will be checked for breeding birds if demolition is planned for during the breeding season (March-August).

Mitigation for the common frog

Should construction works commence on site during the period February to June, the drainage ditch in the northwest sector of the site will be checked by and ecologist for the presence of frog spawn, tadpoles and adult frogs. If present, these will be removed under licence from NPWS and transferred to a suitable pond, drain or wetland in the vicinity (which will have been identified beforehand).

Mitigation for to maintain water quality

All works carried out as part of the construction phase will comply with all Statutory Legislation including the Local Government (Water Pollution) Acts, 1977 to 2007.

The appointed Contractor will prepare a Construction Management Plan (CMP). This will outline measures which will be in force for the duration of the construction phase to ensure protection of surface waterbodies and the control of potential pollutants generated on site. A main purpose of a CMP is to ensure that storm water and wastewater runoff is managed and that there is no off-site environmental impact caused by overland storm water flows.

The following measures will be incorporated into the CRM and will be adhered to by the Contractor during the construction phase to ensure protection of surface waterbodies. These measures are in compliance with the following relevant CIRIA guidance documents:

- Control of Water Pollution from Construction Sites, Guidance for consultants and contractors (C532) (2001); and
- Environmental Good Practice on Site Guide (4th edition, 2015) (C741).

Implementation of the following mitigation measures will ensure that no potential adverse effects will arise from construction-related surface water discharges from the proposed development. The construction contractor will be required to implement the following specific mitigation measures, relating to the release of hydrocarbons, polluting chemicals, sediment/silt and contaminated waters control:

- Specific measures to prevent the release of sediment-laden waters during the construction work include, but are not limited to, the use of silt traps, silt fences, silt curtains, settlement ponds and filter materials to prevent sediment washing into drains and hence the downstream receiving water environment. The location on site for settlement ponds will be identified at the commencement of the works and before any earthworks commence;

- Monitoring shall be carried out on surface water discharge (if necessary and as specified in any Discharge Licence associated with the construction phase of the project);
- Weather conditions will be taken into account when planning ground excavation activities to minimise risk of run-off from the site;
- Prevailing weather and environmental conditions will be taken into account prior to the pouring of cementitious materials for the works. Pumped concrete will be monitored to ensure no accidental discharge. Mixer washings and excess concrete will not be discharged to surface water drainage systems. Concrete washout areas will be located remote from any surface water drainage features to avoid accidental discharge to watercourses;
- Any fuels or chemicals (including hydrocarbons or any polluting chemicals) will be stored in a bunded area to prevent any seepage of into the watercourse, local surface water network or groundwater, and care and attention taken during refuelling and maintenance operations;
- Temporary oil interceptor facilities shall be installed and maintained where site works involve the discharge of drainage water to receiving waters;
- All containment and treatment facilities will be regularly inspected and maintained;
- All fuel containing equipment such as portable generators shall be placed on rip trays. All fuels and chemicals required to be stored on-site will be clearly marked;
- Implementation of response measures to potential pollution incidents;
- Emergency procedures and spillage kits will be available and construction staff will be familiar with emergency procedures in the event of accidental fuel spillages;
- Implementation of measures to minimise waste and ensure correct handling, storage and disposal of waste (most notably wet concrete and asphalt).

5.2 Mitigation during operation

It is unlikely that specific mitigation measures would be required for ecology during the operation of the development.

6.0 RESIDUAL IMPACTS

Taking into account the baseline ecological interests at the site, and with mitigation implemented as outlined in this report, it is expected that the proposed development would not have any significant residual impacts on ecology or local biodiversity.

Similarly, a development on site is not expected to have residual impacts on any site designated for conservation, including the nearby Grand Canal pNHA and the Charleville Woods SAC.

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Plate 1. View of grassland in eastern part of site which had been used for playing fields up to about 2015. Disused buildings, associated with the former sports grounds and with a commercial enterprise are also visible. Looking southeast. (December 2022).



Plate 2. View over unmanaged grassland which dominates western part of site (looking northeast, December 2022).



Plate 3. View of remnant drainage ditch in northwest sector of site. This has permanent water and is expected to support breeding frogs. (December 2022).



Plate 4. View of spoil and rubble heaps in extreme southwest part of site. (looking northwards, December 2022).



Plate 5. View of remnant hedgerow along southern boundary of site – the hedges on site are unmanaged and in a general poor state. (December 2022).



Plate 6. View of ash line at boundary with Harbour housing estate. These trees will be removed due to problem of Ash Dieback Disease. (December 2022).



Plate 7. View of commercial units on site – these are metal structures and generally unsuitable for roosting bats (December 2022).



Plate 8. View of former building used by Glenn Wood company – this building has a tile roof and could possibly support roosting bats. (December 2022).