

# Ecological Impact Statement of a proposed development at The Hive, Carrick-on-Shannon, Co. Leitrim

Compiled by OPENFIELD Ecological Services

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For Leitrim County Enterprise Funding in partnership with Leitrim  
County Council



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## **1 INTRODUCTION**

This Ecological Impact Statement has been prepared by Pádraic Fogarty of OPENFIELD Ecological Services. Pádraic Fogarty has worked for 25 years in the environmental field and in 2007 was awarded an MSc from Sligo Institute of Technology for research into Ecological Impact Assessment (EclA) in Ireland. OPENFIELD is a full member of the Institute of Environmental Management and Assessment (IEMA).

## **2 STUDY METHODOLOGY**

The assessment was carried out in accordance with the following best practice methodology: 'Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland' by the Institute of Ecology and Environmental Management (IEEM, 2016).

A site visit was carried out on the 26<sup>th</sup> of September 2019 in fair weather. The site was surveyed in accordance with the Heritage Council's Best Practice Guidance for Habitat Survey and Mapping (Smith et al., 2010). Habitats were identified in accordance with Fossitt's Guide to Habitats in Ireland (Fossitt, 2000).

The nomenclature for vascular plants is taken from *The New Flora of the British Isles* (Stace, 2010) and for mosses and liverworts *A Checklist and Census Catalogue of British and Irish Bryophytes* (Hill et al., 2009).

September lies within the optimal survey period for general habitat surveys (Smith et al., 2010) and so it was possible to classify all habitats on the site to Fossitt level 3. September lies outside the season for surveying breeding birds and amphibians and is sub-optimal for surveying large mammals (especially Badgers).

## **3 EXISTING RECEIVING ENVIRONMENT**

### **3.1 Zone of Influence**

Best practice guidance suggests that an initial zone of influence be set at a radius of 2km for non-linear projects (IEA, 1995). However, some impacts are not limited to this distance and so sensitive receptors further from the project footprint may need to be considered as this assessment progresses. This is shown in figure 1.

There are a number of designations for nature conservation in Ireland including National Park, National Nature Reserve, RAMSAR site, UNESCO Biosphere reserves, Special Protection Areas (SPA – Birds Directive), Special Areas of Conservation (SAC – Habitats Directive), and Natural Heritage Areas. The mechanism for these designations is through national or international legislation. Proposed NHAs (pNHA) are areas that have yet to gain full legislative protection. They are generally protected through the relevant County Development Plan. There is no system in Ireland for the designation of sites at a local, or county level. The following areas were found to be located within the zone of influence of the application site:

### Lough Drumharlow pNHA (site code: 1643)

The following information is available about this site:

*Drumharlow Lough is the lower part of the River Boyle, from Cootehall Bridge, which opens out into a many-armed lake before it joins the River Shannon 5km south of the town of Leitrim. The lake and its surroundings are used by a flock of Greenland White-fronted Geese.*

*Apart from the open water and aquatic habitats of the lake itself, the main habitats of interest are extensive areas of wet grassland (callowland) which flood in winter, and lakeshore. The lakeshore, in keeping with the other River Shannon lakes, has areas of considerable botanical interest.*

*Hughstown Wood, situated on the shore of the lake is the site of a rare Myxomycete fungus, Paradiacheopsis rigida. There is also a raised bog area of interest which directly borders the flooded callows of the Shannon and grades down to Lough Naseer in the far north of the site.*

*Several areas of callows, wet rough pasture and improved grassland have been included around the lake as these are used for feeding by a flock of Greenland White-fronted Goose. The flock also uses sites around Lough Allen. Formerly of national importance, the three year mean peak number is 111 (up to 1990/91) and does not now regularly reach the qualifying level.*

*Drumharlow Lough is a large complex of habitats typical of the Shannon Lakes and the lake and surrounding grasslands are an important site for the Internationally Important Goose species. (NPWS, 1998)*

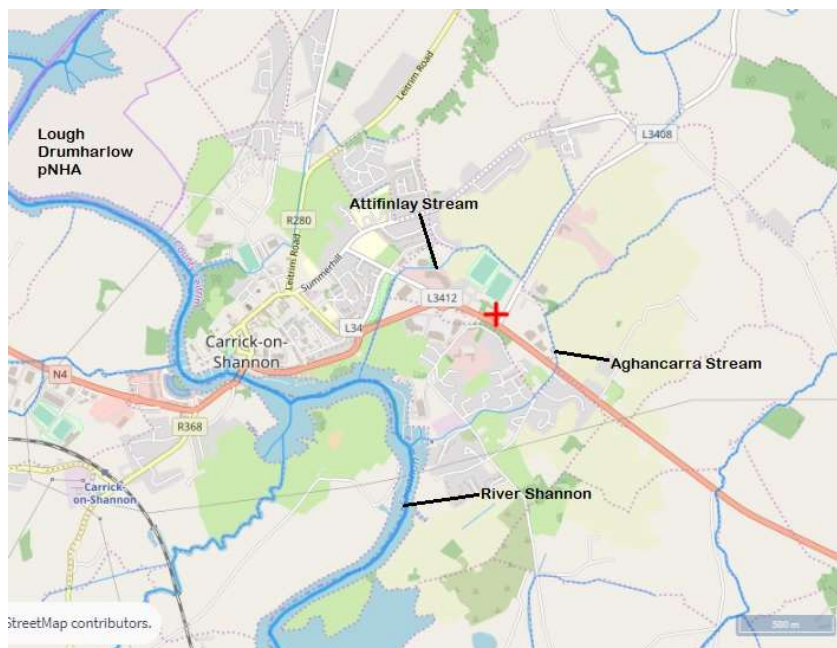


Figure 1 – Site location (red cross) in Carrick-on-Shannon with local water courses and nearby areas for nature conservation (from [www.epa.ie](http://www.epa.ie)).

The web site of the National Biodiversity Data Centre ([www.biodiversity.ie](http://www.biodiversity.ie)) contains a mapping tool that indicates records of legally protected species within a selected Ordnance Survey (OS) 10km grid square. The Carrick-on-Shannon site is located within the square M55 and records of the Clustered Earth-moss *Ephemerum cohaerens* are noted from this 10km square. This moss is protected under the Flora Protection Order 2015 (Schedule B) and its conservation status is assessed as being 'vulnerable'. This record is from "bank of R. Shannon, N of Jamestown" and so is some distance from the development lands. It must be noted that this database cannot be seen as exhaustive as suitable habitat may be available for other important and protected species.

Water quality in rivers, canals and estuaries is monitored on an on-going basis by the Environmental Protection Agency (EPA). The subject lands are in the catchment of the River Shannon. The EU's Water Framework Directive (WFD) stipulates that all water bodies were to have attained 'good ecological status' by 2015. In 2009 a management plan was published to address pollution issues and includes a 'programme of measures' which must be completed. This plan was approved in 2010 (ERBD, 2010). The River Shannon has been assessed by the Environmental Protection Agency (EPA) as 'poor' in terms of its status under the Water Framework Directive for the 2013-18 reporting period. This classification indicates that water quality in the river is of an insufficient standard to meet the requirements of the WFD. Measures must therefore be taken in the coming years to address existing problems and any new developments within the catchment must not contribute to the pollution loading.

In 2018 a second River Basin Management Plan was published which identifies 190 'priority areas for action'. The Lillukan/Shannon sub-catchment, in which Carrick-on-Shannon is located, is among these areas. According to the [www.catchments.ie](http://www.catchments.ie) website, currently seven out of 13 water bodies in this sub-catchment are achieving 'good status'. According to the sub-catchment assessment "Septic tanks and agriculture (i.e. farmyards) are significant pressures identified within Killukin\_010. Diffuse agriculture, septic tanks and urban waste water treatment were also identified as significant pressures within Shannon (Upper)\_060".

### 3.2 Stakeholder Consultation

Because of the low ecological sensitivity of the subject lands, third party observations were not sought.

### 3.3 Site Survey

Aerial photography from the OSI and historic mapping shows that this area has been within the urban fabric of Dublin since historical times.

#### 3.4.1 Flora

Much of the site is composed of **buildings and artificial surfaces – BL3** including a car park and this includes some marginal areas of amenity grassland. The western half of the site is different in character and is predominantly composed of semi-natural vegetation, although there is a dwelling house adjacent to the public

road and a yard to the rear. This area is a combination of **scrub – WS1** and **immature woodland – WS2** although some of it has grassland characteristics. There are abundant Brambles *Rubus fruticosus agg.* along with stands of Hogweed *Heracleum sphondylium* and Nettle *Urtica dioica*. Woodland trees include Aspen *Populus tremula*, Sycamore *Acer pseudoplatanus* and Crab Apple *Malus sylvestris*. The ground here is wet and is crossed by **drainage ditches – FW4**. There are typical wet-adapted plants such as Meadowsweet *Filipendula ulmaria* and Angelica *Angelica sylvestris*. There is also the non-native Himalayan Honeysuckle *Leycesteria formosa*.

Boundaries to the north and west are composed of **treelines – WL2** with Aspen, Ash *Fraxinus excelsior*, Horse Chestnut *Aesculus hippocastanum*, Beech *Fagus sylvatica* and Sycamore. Cumulatively, these habitats are of high local value but are not associated with any habitats or species for which Natura 2000 sites are typically designated.

The eastern boundary is composed of a non-native, horticultural **hedgerow – WL1** while there is also a short stretch of treeline dominated by the non-native Leyland Cypress *Cuprocyparis leylandii* along the road frontage. In this area there are a number of stands of Japanese Knotweed *Fallopia japonica*. This is an alien invasive species as listed under Schedule 3 of SI No. 477 of 2011. There is also a short stretch of hedgerow running north-west of the house

### 3.4.2 Fauna

The site survey included incidental sightings or proxy signs (prints, scats etc.) of faunal activity, while the presence of certain species can be concluded where there is suitable habitat within the known range of that species. Table 1 details those mammals that are protected under national or international legislation in Ireland. Cells are greyed out where suitable habitat is not present or species are outside the range of the study area.

Table 1 – Protected mammals in Ireland and their known status within the M55 10km grid square<sup>1</sup>. Those that are greyed out indicate either that there are no records of the species from the National Biodiversity Data Centre. Since the site is not coastal the two Seal species are greyed out.

Species	Level of Protection	Habitat <sup>2</sup>
Otter <i>Lutra lutra</i>	Annex II & IV Habitats Directive; Wildlife (Amendment) Act, 2000	Rivers and wetlands
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>		Disused, undisturbed old buildings, caves and mines
Grey seal <i>Halichoerus grypus</i>	Annex II & V Habitats Directive; Wildlife (Amendment) Act, 2000	Coastal habitats
Common seal <i>Phocaena phocaena</i>		

<sup>1</sup> From the National Biodiversity Data Centre, excludes marine cetaceans

<sup>2</sup> Harris & Yalden, 2008

Whiskered bat <i>Myotis mystacinus</i>	Annex IV Habitats Directive; Wildlife (Amendment) Act, 2000	Gardens, parks and riparian habitats
Natterer's bat <i>Myotis nattereri</i>		Woodland
Leisler's bat <i>Nyctalus leisleri</i>		Open areas roosting in attics
Brown long-eared bat <i>Plecotus auritus</i>		Woodland
Common pipistrelle <i>Pipistrellus pipistrellus</i>		Farmland, woodland and urban areas
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>		Rivers, lakes & riparian woodland
Daubenton's bat <i>Myotis daubentoniid</i>		Woodlands and bridges associated with open water
Nathusius' pipistrelle <i>Pipistrellus nathusii</i>		Parkland, mixed and pine forests, riparian habitats
Irish hare <i>Lepus timidus hibernicus</i>	Annex V Habitats Directive; Wildlife (Amendment) Act, 2000	Wide range of habitats
Pine Marten <i>Martes martes</i>		Broad-leaved and coniferous forest
Hedgehog <i>Erinaceus europaeus</i>	Wildlife (Amendment) Act, 2000	Woodlands and hedgerows
Pygmy shrew <i>Sorex minutus</i>		Woodlands, heathland, and wetlands
Red squirrel <i>Sciurus vulgaris</i>		Woodlands
Irish stoat <i>Mustela erminea hibernica</i>		Wide range of habitats
Badger <i>Meles meles</i>		Farmland, woodland and urban areas
Red deer <i>Cervus elaphus</i>		Woodland and open moorland
Fallow deer <i>Dama dama</i>		Mixed woodland but feeding in open habitat
Sika deer <i>Cervus nippon</i>		Coniferous woodland and adjacent heaths

No direct evidence of any mammal activity was recorded. There is no evidence that Badger use the site and no sett is present. There was no evidence that Irish Hare is present while habitat is considered too isolated from other woodland areas to support Deer, Pine Marten or Red Squirrel. Small mammals such as the Irish Stoat, Hedgehog and Pygmy Shrew are considered more or less ubiquitous in the Irish countryside, including on land

in suburban areas (Lysaght & Marnell, 2016). While Rabbits *Oryctolagus cuniculus* and Fox *Vulpes vulpes* are common throughout along with Brown Rat *Rattus norvegicus*, House Mouse *Mus domesticus* and Field Mouse *Apodemus sylvaticus*, these species are not protected. There is no suitable habitat for Otter while the woodland is considered too small and lacking in ecological connectivity to other wooded areas to support either Pine Marten or Red Squirrel.

The disused house on the site may be suitable for roosting bats however this structure will not be interfered with as part of this development. (Hundt, 2012). There are no very large or old trees which are suitable for bat roosts.

September lies outside the optimal season for surveying breeding birds. No birds were recorded however suitable nesting habitat is available for common garden and countryside birds across the western portion of the site, and particularly in areas with trees or Brambles.

Drainage ditches provide suitable habitat for breeding Common Frog *Rana temporaria* and Smooth Newt *Lissotriton vulgaris*. There are no habitats on the site suitable for fish.

Most habitats, even highly altered ones, are likely to harbour a wide diversity of invertebrates. In Ireland only one insect is protected by law, the Marsh Fritillary butterfly *Euphydryas aurinia*, and this is not to be found in this area. Other protected invertebrates are confined rare to freshwater and wetland habitats which are not present on this site.

### **3.5 Overall Evaluation of the Context, Character, Significance and Sensitivity of the Proposed Development Site**

In summary, it has been seen that the application site is composed partly of highly modified habitats within a built-up area. The western half of the site has semi-natural vegetation however, including trees, ditches and wet ground. There are no examples of habitats listed on Annex I of the Habitats Directive or records of rare or protected plants. There are a number of stands of Japanese Knotweed, a species listed as alien invasive as per SI 477 of 2011.

Significance criteria are available from guidance published by the National Roads Authority (NRA, 2009). These are reproduced in table 5. From this an evaluation of the various habitats and ecological features on the site has been made and this is shown in table 6.

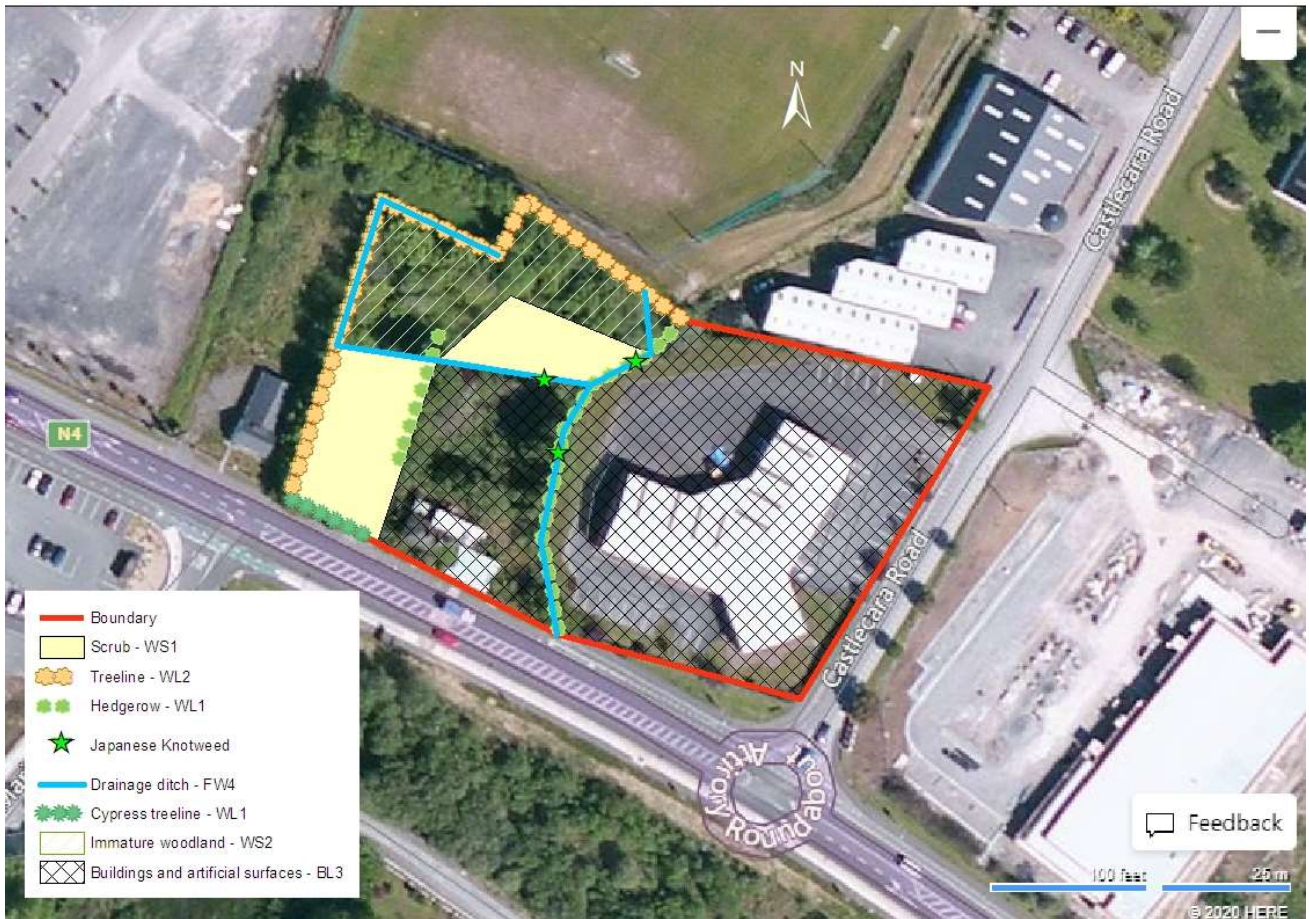


Figure 2 – Development boundary of the subject lands and habitat map (aerial photo from [www.bing.com](http://www.bing.com)).

Table 2 Site evaluation scheme taken from NRA guidance 2009

<b>Site Rating</b>	<b>Qualifying criteria</b>
A - International importance	<p>SAC, SPA or site qualifying as such. Sites containing 'best examples' of Annex I priority habitats (Habitats Directive).</p> <p>Resident or regularly occurring populations of species listed under Annex II (Habitats Directive); Annex I (Birds Directive); the Bonn or Berne Conventions.</p> <p>RAMSAR site; UNESCO biosphere reserve;</p> <p>Designated Salmonid water</p>
B - National importance	<p>NHA. Statutory Nature Reserves. Refuge for Flora and Fauna. National Park.</p> <p>Resident or regularly occurring populations of species listed in the Wildlife Act or Red Data List</p> <p>'Viable' examples of habitats listed in Annex I of the Habitats Directive</p>



<p>C - County importance</p>	<p>Area of Special Amenity, Tree Protection Orders, high amenity (designated under a County Development Plan)</p> <p>Resident or regularly occurring populations (important at a county level, defined as &gt;1% of the county population) of European, Wildlife Act or Red Data Book species</p> <p>Sites containing semi-natural habitat types with high biodiversity in a county context, and a high degree of naturalness, or populations of species that are uncommon in the county</p>
<p>D - Local importance, higher value</p>	<p>Sites containing semi-natural habitat types with high biodiversity in a county context, and a high degree of naturalness, or populations of species that are uncommon in the locality</p> <p>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>E - Local importance, lower 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>

Table 3 Evaluation of the importance of habitats and species on The Hive site

<p>Scrub – WS1 Native/broadleaf treeline and hedgerow – WL1/WL2 Immature woodland – WS2</p>	<p>Local ecological value</p>
<p>Buildings and artificial surfaces – BL3 Non-native hedgerows and treelines – WL1/WL2</p>	<p>Negligible ecological value</p>

#### 4 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The development will consist of the provision of a new two storey extension to the front of the existing The Hive Building incorporating; alterations to existing reception and stairs, additional work spaces, circulation and new stairs together, alterations to existing elevation, canopy roof over new access, alterations to existing car park, including additional car park spaces, additional cycling spaces and new future overflow car park, alterations to boundary treatment and connections to surface water and systems with all associated site development works.

The proposed development will see site clearance and a construction phase to include all associated infrastructure as shown in figure 3. The wet woodland area to the west is to be cleared to accommodate a car park extension. Post construction the land will be landscaped.



Figure 3 – Development overview.

## 5 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

This section provides a description of the potential impacts that the proposed development may have on flora & fauna in the absence of mitigation. Methodology for determining the significance of an impact has been published by the NRA. This is based on the valuation of the ecological feature in question (table 3) and the scale of the predicted impact. In this way, it is possible to assign an impact significance in a transparent and objective way. Table 4 summaries the nature of the predicted impacts.

### 5.1 Construction Phase

The following potential impacts are likely to occur during the construction phase in the absence of mitigation:

1. The removal of habitats including immature woodland and scrub. Trees in this area are to be felled and the land infilled to accommodate an extension to the car park. These are of high local ecological value. A section of the drainage ditch is to be culverted to provide access to this area. The species to be found are common and widespread however the habitat is of high local value and for this reason the impact to biodiversity from the loss of these habitats is considered to be **moderate negative**.
2. The direct mortality of species during site clearance. This impact is most acute during the bird breeding season which can be assumed to last from March to August inclusive. This may affect a number of locally common countryside birds. Suitable areas for bird nesting are very limited but nevertheless all nests and eggs are protected under the Wildlife Act.
3. Pollution of water courses through the ingress of silt, oils and other toxic substances. While there are no water courses in this vicinity the catchment is important for its biodiversity and so this impact is considered to be potentially **moderate negative**.
4. Spread of invasive species. Japanese Knotweed spreads easily through disturbance of visible stems and subterranean rhizomes, which can spread up to 7m from visible parts of the plant. The stand has been cordoned off to prevent disturbance and appropriate signage has been erected. An initially site assessment has been carried out by Flynn Furney Environmental Consultants. A treatment programme will commence during the 2020 growing season and a multi-annual control plan is to be prepared.

### Operation Phase

The following potential impacts are likely to occur during the operation phase in the absence of mitigation:

5. Pollution of water from foul wastewater arising from the development. Foul effluent from the proposed development will be sent to the wastewater treatment plant for Carrick-on-Shannon. Emissions from the plant are currently fully in compliance with the Urban Wastewater Treatment Directive. This plant is licenced by the EPA (licence no.: D0154-01) to discharge treated effluent to the River Shannon. It has a capacity of 11,500 population equivalent (P.E.) and in 2017 received a P.E. of 7,279 with a spare capacity of 4,221. According to the Annual Environmental Report (AER) for 2017 the plant is not expected to exceed capacity in the next three years. Ambient monitoring of points along the River

Shannon upstream and downstream of the discharge indicates that “the discharge from the WWTP has no observable negative impact on the Water Framework Directive status”, according to the AER (pg8).

6. Pollution of water from surface water run-off. Urban expansion can lead to an increased risk of flooding and a deterioration of water quality. This arises where soil and natural vegetation, which is permeable to rainwater and slows its flow, is replaced with impermeable hard surfaces. A new surface water drainage system is to be installed which includes a soakaway and discharge to the local drainage ditch. This will result in some changes to local surface water run-off patterns which can be assessed as minor negative.
7. Impacts to Natura 2000 area (SACs or SPAs) are not predicted to occur, principally due to the separation distance between the site and these areas. A full assessment of potential effects to these areas is contained within a separate Screening Report for Appropriate Assessment. There are no pathways to the Lough Drumharlow pNHA from this development proposal and so no effects can occur to this area.

Table 4: Significance level of likely impacts in the absence of mitigation

Impact		Significance
Construction phase		
1	Loss of habitats including woodland and scrub	Moderate negative
2	Mortality to animals during construction, including nesting birds	Moderate negative – permanent impacts to species of high local value/or species with legal protection
3	Pollution of water during construction phase	Moderate negative
4	Spread of Japanese Knotweed	Moderate negative
Operation phase		
5	Wastewater pollution	Neutral
6	Surface water pollution	Minor negative
7	Impacts to protected areas	Neutral

Overall it can be seen that four potential moderate negative impacts are predicted to occur as a result of this project in the absence of mitigation.

## 5.2 Cumulative impacts

A number of the identified impacts can also act cumulatively with other impacts from similar developments in this area of Carrick-on-Shannon. These primarily arise through the additional loading to the Wastewater

Treatment Plant. It is considered that this effect is not significant as the plant is fully compliant with requirements of the Urban Wastewater Treatment Directive.

In this instance, the incorporation of SUDS attenuation measures will result in not negative effect to surface water quality.

Increasing urbanisation, and in particular land use change from semi-natural vegetation to urban uses, can result in the loss of habitat for common species of plants and animals. Due to the loss of immature woodland and scrub, this project will contribute to that loss.

## **6 AVOIDANCE, REMEDIAL AND MITIGATION MEASURES**

This report has identified three impacts that were assessed as 'moderate negative' and so mitigation is needed to reduce their severity.

### **6.2 Mitigation Measures Proposed**

The following mitigation measures are proposed for the development

#### **Construction Phase**

##### **1: Habitat loss**

There will be some landscape planting post-construction however given the high local value of the habitat to be removed, the residual impact will remain as moderate negative.

##### **2: Disturbance of birds' nest**

Deliberate disturbance of a bird's nest is prohibited unless under licence from the National Parks and Wildlife Service (NPWS). If possible, site clearance works should proceed outside the nesting season, i.e. from September to February inclusive. If this is not possible, vegetation must first be inspected by a suitably qualified ecologist. If a nest is encountered then works must stop, until such time as nesting has ceased. Otherwise, a derogation licence must be sought from the NPWS to allow the destruction of the nest.

A bat survey should be carried out during the appropriate season. This should determine what species are using the site, whether roosting is taking place in the woodland and what/if any mitigation measures should be put in place to avoid any negative impacts to these protected species.

##### **2: Japanese Knotweed**

The stand of Japanese Knotweed has already been cordoned off, labelled and all site workers have been informed of its presence. It has received a first treatment with herbicide and a management plan will be prepared in order to eradicate the plant and to ensure that site works do not result in its spread.

3: Pollution during construction.

Construction will following guidelines from Inland Fisheries Ireland (2016) on the prevention of pollution during construction projects. This will include storing dangerous substances in bunded areas at all time. Works at the drainage ditch will be undertaken 'in the dry'. In other words, the ditch will be dammed at either end and water pumped around the work zone to prevent any loss of pollutants.

## **8 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT**

This section allows for a qualitative description of the resultant specific direct, indirect, secondary, cumulative, short, medium and long-term permanent, temporary, positive and negative effects as well as impact interactions which the proposed development may have, assuming all mitigation measures are fully and successfully applied.

After mitigation, significant residual effects are likely to arise to biodiversity arising from this project. Specifically, this arises from the loss of immature woodland and scrub habitat.

## **9 MONITORING**

Monitoring is required where the success of mitigation measures is uncertain or where residual impacts may in themselves be significant. In this monitoring for Japanese Knotweed may be required to ensure it does not re-emerge.

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